

MEJIA INTERNATIONAL GROUP CORP

Bid Contact **Diego Mejia**
dmejia@mejiatelecom.com
Ph 954-675-2652

Address **5752 NW 119 Dr**
Coral Springs, FL 33076

Supplier Code VS0000015556

Qualifications CBE DBE MBE SB SBE

Bid Notes **Attached are the requested docs for your review. Thank you.**

Item #	Line Item	Notes	Unit Price		
PNC2119543R1--01-01	Request for Qualifications - Job Order Contract	Supplier Product Code: Supplier Notes: detailed docs for proposal.	First Offer - 1 / n/a		Y Y
				Supplier Total	\$0.00

MEJIA INTERNATIONAL GROUP CORP

Item: **Request for Qualifications - Job Order Contract**

Attachments

Bondability Letter.pdf

Certificate of Registration FL 2019.pdf

CGC State License 1518265.pdf

CONTRACTOR ASSURANCE STATEMENT.pdf

Current Work Projects.pdf

Experience MTC.pdf

Insurance letter and WC COI.pdf

Financial Statements 12-31-17 Reviewed.pdf

Financial Statements 2018.pdf

Mejia International Group - Complete Safety and Protection Plan.pdf

PNC2119543R1_Evaluation_Criteria_Attachment_C FLL HVAC.pdf

PNC2119543R1_Evaluation_Criteria_Attachment_C Hilliard demo.pdf

PNC2119543R1_Evaluation_Criteria_Attachment_C PBI Demo.pdf

PNC2119543R1_Evaluation_Criteria_Attachment_C Shelter PR.pdf

PNC2119543R1_Evaluation_Criteria_Attachment_C St Augustine.pdf

PNC2119543R1_Evaluation_Criteria_Attachment_C Tampa-Orlando LLWAS.pdf

PNC2119543R1_Evaluation_Criteria_Attachment_C TMB Repairs.pdf

PNC2119543R1_Evaluation_Criteria_Attachment_C Whitehouse.pdf

Professional Experience.pdf

Project approach.pdf

Proposal Bond signed.pdf

Resume Jose R. Enriquez PM.pdf

REsume Superintendent.pdf

REVISED_PNC2119543R1_Evaluation_Criteria_Attachment_A PM.pdf

REVISED_PNC2119543R1_Evaluation_Criteria_Attachment_B.pdf

Summary_Sheet__Vendor_s_Submittal.pdf

Reference Form - Kamili.pdf

ReferenceForm-Michael Eadon.pdf

Vendor Reference Verificaton Form Mejia.pdf

Certification SBE-CBE 2019-2020.pdf



November 14, 2019

Re: Mejia International Group Corp. – Bondability Letter

To Whom It May Concern:

It is our understanding that Mejia International Group Corp. has submitted a bid proposal to Broward County and that a Performance & Payment Bond will be required if they are low bidder.

This letter will serve as evidence that Mejia International Group Corp. is bonded by FCCI Insurance Company. FCCI Insurance Company has an AM Best rating of A (Excellent). Mejia International Group Corp currently has a \$2,500,000.00 single/\$5,000,000.00 aggregate surety program. The current amount of bonding outstanding is \$1,000,000.00.

We have worked with Mejia International Group Corp for 5 years and have found them to have an excellent reputation in the community. In our opinion, this organization remains properly financed, well equipped and capably managed. Should Mejia International Group Corp. have a low bid acceptable to all parties, if all normal underwriting requirements are met, we look forward to providing a final bond on this project.

As this is a letter of recommendation, Kahn-Carlin & Company, Inc., Mejia International Group Corp. and FCCI Insurance Company, its agents and owners accept no liability for its contents. The Surety reserves the right to review each submission and base their decision upon conditions that exist at the time of request.

If we can be of additional assistance, please feel free to give us a call.

Sincerely,

A handwritten signature in blue ink that reads 'Michael Bonet'.

Michael Bonet, CIC, AAI
Director of Construction & Surety

State of Florida

Department of State

I certify from the records of this office that MEJIA INTERNATIONAL GROUP CORPORATION is a corporation organized under the laws of the State of Florida, filed on July 10, 2008, effective July 3, 2008.

The document number of this corporation is P08000065675.

I further certify that said corporation has paid all fees due this office through December 31, 2019, that its most recent annual report/uniform business report was filed on February 8, 2019, and that its status is active.

I further certify that said corporation has not filed Articles of Dissolution.

*Given under my hand and the
Great Seal of the State of Florida
at Tallahassee, the Capital, this
the Eighth day of February, 2019*



Randy Rye
Secretary of State

Tracking Number: 4386657301CC

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RICK SCOTT, GOVERNOR

JONATHAN ZACHEM, SECRETARY



**STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION**

CONSTRUCTION INDUSTRY LICENSING BOARD

THE GENERAL CONTRACTOR HEREIN IS CERTIFIED UNDER THE
PROVISIONS OF CHAPTER 489, FLORIDA STATUTES

MEJIA, CESAR IVAN

MEJIA TELECOMMUNICATIONS COMPANY
5752 NW 119 DRIVE
CORAL SPRINGS FL 33076

LICENSE NUMBER: CGC1518265

EXPIRATION DATE: AUGUST 31, 2020

Always verify licenses online at MyFloridaLicense.com



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Licensee

Name: **MEJIA, CESAR IVAN** License Number: **1518265**
 Rank: **Certified General Contractor** License Expiration Date: **08/31/2020**
 Primary Status: **Current** Original License Date: **01/26/2010**
 Secondary Status: **Active**

Related License Information

License Number	Status	Related Party	Relationship Type	Relation Effective Date	Rank	Expiration Date
	Current	MEJIA INTERNATIONAL GROUP CORPORATION	Primary Qualifying Agent for Business	04/28/2014	Construction Business Information	

Printer Friendly

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CONTRACTOR ASSURANCE STATEMENT

CONTRACTOR ASSURANCE STATEMENT

PROJECT DESCRIPTION: Request For Qualifications - Job Order Contract

I, Diego Mejia, (Authorized Official/Agent) on behalf of the Mejia International Group Corp (Vendor) hereby agree to comply with the County Business Enterprise (CBE) requirements of the solicitation, between Broward County and Mejia International Group Corp (Vendor) for Request For Qualifications - Job Order Contract (Project).

1. Affirm that your company will comply with the County's non-discrimination policy by providing a non-discrimination Statement and;
2. Acknowledge the CBE percentage goal established on the project and;
3. Agree to engage in good faith effort solicitation of approved Broward County Small Business Development Program firms to achieve the project goals as indicated in the solicitation.

A handwritten signature in blue ink, appearing to read 'Diego Mejia', is written over a horizontal line.

Authorized Agent of Vendor

Diego Mejia / Vicepresident
Printed Name & Title

954-6752652
Telephone Number

Date: 11/15/2019

USA: 5752 NW 119th Dr, Coral Springs, FL 33076

Tel: 954-6752652 / 954-5915519

www.mejiainternational.com

WORK ON HAND CONTRACTS

As of: 11/22/2019 (date)

A Project Description Location & Owner	B Design Architect And/Or Design Engineer	C Total Amount of Your Contract (Or Subcontract)	D Expected completion	E Completed Amount of Contract
JOC Miami ATCT Repairs FAA Miami, FL	Kamili Hitchmon	\$494,400.00 Prime	02/14/2020	40%
JOC TPA Lighting FAA Tampa, FL	david Marrero	\$74,554 Prime	03/06/2020	0%
JOC Orlando Towers FAA Orlando, FL	Steven Vitale	\$203,725.00 Prime	12/13/2019	90%
CresView & Brunswick FAA CresView, FL Brunswick, GA	Steven Vitale	\$545,720.00 Prime	05/08/2020	0%
JOC Glide Slope SJU FAA San Juan, PR	Kamili Hitchmon	\$95,592.00 Prime	11/26/2019	95%
Total		\$1,413,991.00		

Approach:

The JOC Program with the FAA is estimated to finish on June 2020.

In case of awarded JOC Broward we'll start a hiring process for local personnel to support the tasks orders resulting from this.

PROJECTS - MEJIA INTERNATIONAL GROUP CORPORATION

Customer	Project	Contract	Original \$	Final with Mods	Location	Description	Performance Period	POC/COR	Tel	Email	CO/PM	Contract	CM
FAA	Tallahassee Roof repair	697DCK-18-F-00070	\$ 86,095.53	\$ 86,095.53	3300 Capital Cir SW, Tallahassee, Florida, 32310	1. Replace ASR 8 roof with a new single membrane roof with the same pitch 2. Re-cast control joints in identified areas on the ASR 8 base building CMU wall 3. Replace bunker roof in identified areas on the ASR 8 base building CMU wall 4. Re-cast gaps in identified areas on the ASR 8 base building CMU wall	Oct 15-17, 2019	Kameli Hitchmon	404-7029563	kameli.hitchmon@faa.gov	Kimberly Burt	IOC	Santiago Botero
FAA	Shelter Alvia	6973DH-18-C-00043	\$ 84,594.00	\$ 118,744.00	27900 Parkinson Road, Alvia, FL 33920	The FAA manages a Customs and Border Protection (CBP) equipment shelter at the base of a large antenna tower. The shelter houses electronics and electrical equipment servicing that antenna. The existing shelter had water damage and a warping floor. A new equipment shelter was purchased from Dupont Building, Inc. by FAA. Dimensions 10 feet wide by 10 feet long by 10 feet tall. Old shelter and foundation removed and grade. The SOW consisted on a complete new site including geotechnical report, structural engineering, MEP and architectural plans, new foundation, perimeter fence, new electrical service, disconnect, transfer switch, install a new propane pad and tank, install a new generator pad and 22kw Generator. New grounding counterpoise system. Remove existing ice bridge and re-install, install new underground conduit for power and new Com line.	June 3-July 12, 2019	James Evans	405-954-2398	james.a.evans@faa.gov	Clony Alejandro	Total SB	Santiago Botero
FAA	SG Power	DTFAEN-15-D-00010/697DCK-18-F-00042	\$ 94,899.77	\$ 96,399.77	Isa Grande, PR	Contractor must provide and install the following: 1. Testing Existing Cable Wire for Possible Use 2. Remove Primary Wire (2000 Ft.) if applicable 3. Provide/Install New Primary Wire (2000 Ft.) 4. Provide/Install (3) Pull Box Improvements for new feeder 5. Provide/Install (1) Switching Unit Fuse Unit and Fuse 6. Provide/Install (1) Primary Wire Termination at Switching Unit 7. Provide/Install (1) Primary Wire Termination at Pad Mounted and Lightning Arrestor 8. Provide/Install (1) New Pad Mounted Transformer 25KVA Stainless Steel 9. Provide/Install (1) New 100 Amps 120/240V Single Phase PREFA Meter Cabinet 10. Provide/Install New Primary Feeder from SU22 to new SW's location 11. Provide/Install New Pad Mounted transformer and PREFA Meter Base 100Amp with breaker of 60A-Phase on a Unistrut Stainless Steel Rack 12. Provide/Install all secondary wiring from transformer to meter base location Operating	July 15-19, 2019	Kameli Hitchmon / Norberto Medina (COR)	404-7029563	kameli.hitchmon@faa.gov	Katherine Fogle	IOC	Juan Rivera
FAA	SU VOR TACAN	697DCK-18-C-00042	\$ 117,720.00	\$ 123,070.00	Carolina, PR	The purpose of this SOW is to outline the materials and costs required replace the high mast TACAN monitoring pole associated with the VOR at the Luis Muñoz Marín International Airport in San Juan, Puerto Rico	May 27-June 7, 2019	Kameli Hitchmon	404-7029563	kameli.hitchmon@faa.gov	Kimberly Burt	IOC	Juan Rivera
FAA	SU Panel Replacement	697DCK-18-C-00059	\$ 237,200.00	\$ 212,750.00	San Juan, PR	Repair work at SUI ATCT including but not limited to: Replace damaged tower panels, provide temporary enclosure to seal interior, replace insulation metal panels, demolish and dispose of existing Bucking wall and install Power Panel Support system, among other tasks	Feb 19, 2018- Apr 11, 2019 (several delays from customer)	Norberto Medina			Kimberly Burt	IOC	Juan Rivera
Stack Construction Inc.	T-Hangar Vaikaria Airport	Vaikaria	\$ 132,888.00	\$ 132,888.00	Malabar, FL	Erect 20-unit metal pre-engineered metal hangar including interior metal walls and rotting doors, and erect two Bulk Hangars on each end of the T-Hangar including foundation and sheet piling installation. Total of 33,027 sqft.	Feb 4-June 21, 2019	Ray Boom		rayb@stackconstruction.com	Ray Boom	Private	José I. Torres
FAA	St Augustine Towers	DTFAEN-15-D-00009-697DCK-18-F-00018	\$ 269,025.03	\$ 300,551.62	St Augustine, FL	Install the structural foundations for the towers with the appropriate conduits. Install a duct banks from the towers to the existing shelter. Assemble and install four 70 foot free-standing antenna tower (GFN) complete with lightning protection. Install 13 each - 7/8" Hialia cable runs to each of the towers. Install a grounding counterpoise system for each tower and connect to the building counterpoise. Remove all rubbish, topsoil, and sod from the site. After the FAA has moved the antennas to the new tower the contractor shall return to the site and remove the old towers.	Oct 22, 2018- May 30, 2019	Stephen Vitale	404-3057077	stephen.vitale@faa.gov	Michael Eadon	IOC	José I. Torres
FAA	Tampa LLWS Station #1	DTFAEN-15-D-00008/697DCK-18-F-00139	\$ 47,450.00	\$ 47,450.00	Tampa, FL	Repair LLWS RW per scope of work. Replace all existing lift cables by 3/16" 7x19 diameter, stainless steel wire ropencorded all required mounting hardware, springs, clips, guides, (with cable Assembly). Replace the specialty cable multi-conductor flexible cables, included all associated terminations, in addition to cable tail to/from the junction box and all connectors, cord grips (stainless steel). Remove obsolete cables (three). Supply and install missing or damaged roller guides assemblies for a proper ring centering during operation. Paint with FAA orange the reflectors assemblies; replace lowering cable guide spring by stainless steel 304 parts+Supply and install winch plate sub-assembly.	Apr 29-May 1, 2019	Wayne Butler	813 371 7780	Wayne.Butler@faa.gov	Stasha Dodler	IOC	Santiago Botero
FAA	Pt Myers LLWS	697DCK-18-C-00136 P00001	\$ 135,119.00	\$ 135,119.00	Pt Myers, FL	Repair LLWS poles to be fully updated and operational	Apr 1-25, 2019	Kevin D. Miles		kevin.d.miles@faa.gov	Kimberly Burt	Small Biz	Santiago Botero
FAA	HVAC PR Aguadilla	DTFAEN-15-D-00010/697DCK-18-F-00143	\$ 239,550.93	\$ 232,774.62	Aguadilla, PR	Furnish all labor, equipment, materials, and supervision for the HVAC Replacement Project at the Borinquen (BQN) Air Route Surveillance Radar (ARR) located near the Rafael Hernández Airport in Aguadilla, Puerto Rico. This contract has two options. Option 1 includes but is not limited to the demo and replacement of 2 - 20 ton Condenser Units, and total replacement of 2 each 1 ton mini-split systems. Option 2 includes but is not limited to the demo and replacement of 2 - 20 ton split system HVAC Units, and 2 each 1 ton mini-split systems.	Oct 29-Dec 6, 2018	Jonathan Satter	202.744.1408	jonsat@faa.gov	Marc Lemay	IOC	Juan Rivera
FAA	Tamiami ATCT Repairs	DTFAEN-15-D-00008_0006	\$ 398,785.19	\$ 709,228.01	Miami, FL	1)Replace exterior mounted Cab roof access ladder and top connector landing including railings. 2)Install new wall panel flashing and re-caulk minor openings and panel joints to prevent rain from entering. 3)Existing door leading to into E/VIS room will need to be weatherproofed with new weather dripping around entire perimeter. 4)Replace exhaust fan and install lower and flashing 5)Tower level and Cab level, provide new aluminum threshold, weather gasket & door sweeps at doors. 6)Remove corrosion and repair the stairwell leading to the cab. Verify that the stairwell is incurring water leaks from either the roof or the exterior landing. Re-grout around former fan opening. Repair leaks if necessary. 7)Re-finish/Replace Siding on the Tower Building. 8)Add handrail to Cab Roof Fall Protection. 9)Provide traffic coating at existing catwalk 10)Replace worn out stair drips 11)Interior railings need repainting 12)Re-concrete Baggo/O stand 13)Interior paint for interior steel framework 14)Cap riser where needed during re-siding efforts (optional) 15)Take sod/til from eastern side of base building and relocate to link entry area 16)Sally's Room: need new VTC floor tile, interior paint and new tile faucet 17)Mer's Room: needs new ceramic tile floor 18) New door at Cab entry	Apr 30- Dec 14, 2018	William Pena	(404)702-9564	William.Pena@faa.gov	Robert Higgins	IOC	Santiago Botero
FAA	Doors Miami Replacement DMA	DTFAEN-15-D-00008/697DCK-18-F-00131	\$ 19,194.61	\$ 19,194.61	Miami, FL	MECHANICAL / PLUMBING UPGRADES 1)Replace the existing ATCT water booster pump system with a vertically mounted variable frequency drive controlled multi-stage in-line, close-coupled centrifugal liquid pump system including all required controls, domestic diagram, expansion tank and accessories. 2)Replace the existing domestic water supply backflow preventer and relocate 6 ft away from building. 3)Replace service line from valve box to preventer 4)The contractor shall provide all labor, transportation, supervision for remove and replace Water Pump House double doors using existing doorframes with new fire rated hollow metal doors with vented louvers and related hardware. Prepare doors, doorframe for primer and finish paint with rust proof paint with existing color. 5)Repair the concrete header structure above the Garage building side doorframe. Remove the existing door and hardware and replace with new hollow metal door and related hardware. Prepare door and doorframe for primer and finish paint with rust proof paint with existing color.	Nov 26-30, 2018	Rafael Rivera	305-7161621	rafael.rivera@faa.gov	Shannon Kirkland	IOC	Santiago Botero

FAA	Sarasota SQR repairs	697-0CX-18-F-00061	\$ 95,849.23	\$ 105,580.39	Sarasota, FL	Provide and install: -Hole mounted despatch for the half door in the Cab -Hole protect the console. -Hole covering for the gap between the back of the Cab console and the window sills/diffusers as per FAA spec. -A "LIFT" response wrap around the bottom 12" of the Cab ladder rail closest to the supervisor console as per FAA Sketch 4. -Holeax signs for the Tower bathroom doors. -Cell phone charging station as shown in FAA Sketch 5. -Heavy duty gate rest on the active leaf of the hazmat building double doors. -Additional bollards at the location in shown in FAA Sketch 6. -A device to electronically control the delivery grate. -Gate rods and receptacle holes for the dumpster gate. -An additional smoke detector in room 501 and in room 205. -A metal pit lid in room 605. -Secure the metal grating in the Tower chaper to building structure. -A heavy duty threshold for door 503B, 503C, and 503D. -A3 receiver plates/top plates on one leave of the cargo entrance gate.	Aug 20-Dec 13th, 2018 (project stopped Sep-Oct-Nov) 4 week project completion	Peter Petrescu	718-309-2175	peter.petrescu@faa.gov	Robert Higgins	DC	Ricardo Rivera
FAA	MCO Upgrades and Repairs	DTFAEN-15-D-00009/ 6970CX-18-F-00025	\$ 70,566.91	\$ 70,566.91	Orlando, FL	Refurbish the TDWR pit enclosure, but not limited to: Grading / Drainage / Stone around the silt Pit/ Entry Gravel / Stone. New Security Fencing and New Security Gate	Sep 24-Oct 5th, 2018	Charles Dean	817-222-4981	charles.ct.dean@faa.gov	Patricia Mogk	DC	Jose I. Torres
FDOT	Bluetooth devices installation	EBR12	\$ 126,000.00	\$ 126,000.00	Turkeypie, FL	Install 90 Bluetooth device systems along several locations along Turkeypie from Homestead to Orlando. Devices were set up and commissioned.	Aug 2, 2018	Derrik Qualls	464-9345151	derrik.qualls@dot.state.fl.us	Stata		Eduardo Rivera
FAA	McArthur Antenna Tower/ Dorsale	DTFAEN-15-D-00011-0008	\$ 90,211.71	\$ 184,932.17	Dorada, PR	Replace 18 existing guy wires with new ones on a 300R antenna tower. Measure and adjust guy wire tension forces with Palm-Tech TM 2000 Dura-Type Tensionometer or engineered approved equivalent. Install a new drainage system around the main equipment building perimeter and power it with a new 4" (dia) x 4' 0" minimum slope a continuous reinforced concrete, wrap-around walkway system, extending the entire building perimeter.	Mar 26-Sep 21, 2018	Alex Mazza	661-901-4052	alex.mazza@faa.gov	Michael Eadon	DC	Juan Rivera
FAA	Maricao Island AWS Pole Installation	DTFAEN-15-D-00004/6970CX-18-F-00034	\$ 12,466.53	\$ 12,466.53	Naples, FL	Install a new AWS Pole at the Maricao Island Regional Airport to upgrade current system	July 2, 2018	Erwin D. Miles	not available	erwin.d.miles@faa.gov	Kimberly Burt	DC	Cesar Rivera
FAA	TFA Window Installation	DTFAEN-15-D-00010-0005	\$ 4,090.00	\$ 4,090.00	Tampa, FL	Install a new window at TFA Airport	Aug 2, 2018	Steven Ockels	478-296-0022	steven.ockels@faa.gov	Kimberly Burt	DC	Cesar Rivera
FAA	Peninsula tower dismantle and reinstall	MTC-P8-0287	\$ 53,720.00	\$ 53,720.00	Penalties, PR	Dismantle a 250ft guyed tower and transport it to Toa Baja. Install a 350R guyed tower in Toa Baja	Apr '19-May 17, 2018	Chen Cui	(FAA) chen.cui@faa.gov		Private		Juan Rivera
FAA	Shafter Puerto Rico	DTFAEN-15-D-00010-0005	\$ 372,221.51	\$ 372,221.51	Carolina, PR	Design and build a concrete shelter for telecom equipment (FAA) that included electrical installations, fiber optic conduits, coaxial cable conduits (from tower to shelter), earthwork, construct one 24' x 27' x 18' concrete foundation, HVAC installation. The work also includes the building cabling conduit, and grounding system, restoration of areas during construction, and installation of appliances.	May 18, 2017 - July 6th, 2018 (Delay for Hurricane and commissioning time FAA)	Rob Hayden	404-752598	rob.hayden@faa.gov	Karina Espinosa	DC	Juan Rivera
FAA	Whitehouse NEN	DTFAEN-15-D-00009-0006	\$ 169,710.93	\$ 175,425.64	Whitehouse, FL	Install electrical panels and do repairs to existing structures including road/parking lot, masonry block repair, vinyl floor repair, tile, replace doors, aluminum dry wall, gutter down spouts, roof phingles, & add floodlights	Dec 4, 2017-Feb 3, 2018 (stopped work from Dec 25-Jan 28 Hurricane and panel delay)	Richard Polk	678-485-6811	richard.polk@faa.gov	Michael Eadon	DC	Santiago Botero
FAA	PB Demolition (Ba)	DTFAEA-17-C-00276	\$ 1,272,000.00	\$ 1,362,537.91	West Palm Beach, FL	Demolish old PB airport tower and building including removal of hazmat containing materials	Aug 7 - Oct 4, 2017 (there was a suspension for Hurricane Irma)	William Penna	404(702)9564	william.penna@faa.gov	Michael Eadon	Ba	Jose I. Torres
FAA	FD Drum Project (Ba)	DTFAEA-17-C-00276	\$ 89,000.00	\$ 89,000.00	FD Drum, FL	Provide all labor, materials, and equipment necessary to replace the existing communication tower and repair the roof at the Ft. Drum FL BCO Site	Aug 7 - Oct 4, 2017 (there was a suspension for H. Irma)	Roddy Gotthard	(478) 915-7940	Roddy.Gotthard@faa.gov	Alex Segun	Ba	Santiago Botero
FAA	Guardhouse CBAP	DTFAEN-15-D-00010-0003	\$ 59,809.65	\$ 59,809.65	San Juan, PR	Remodel the Guardhouse at San Juan CBAP	Mar 20 - Nov 7, 2017	Franki Maldonado	404-305-5763	Franki.maldonado@faa.gov	Karina Espinosa	DC	Juan Rivera
FAA	Hospital Hilliard	DTFAEN-15-D-00009-0005	\$ 88,692.15	\$ 86,382.11	Hilliard, FL	Install floor in both #1, #2 and #3 and remove stair #1 that contained lead	Jun 2 - Sep 22, 2017	Rebeca Barbo	904-845-1658	rebeca.barbo@faa.gov	Kimberly Burt	DC	Frank Betancourt
FAA	Pho del Eise Poles	DTFAEN-15-D-00010-0006	\$ 197,200.00	\$ 197,200.00	Louisville, FL	Replace 2 poles and reestablish power at Ft. Panama PR	Jul 17-30, 2017	Julio Carreras	787-243-8555	Julio.Carreras@faa.gov	Maric Lemay	DC	Juan Rivera
FAA	Spain Miami	DTFAEN-15-D-00008-0005	\$ 17,384.00	\$ 17,384.00	Miami, FL	Supply and install main at Miami BCO	Mar 6th-Apr 4th 2017	Joseph Cordero	Joseph.cordero@faa.gov			DC	Frank Betancourt
FAA	Control Panel PR	DTFAEN-15-D-00010-0004	\$ 179,536.53	\$ 179,536.53	Canning, PR	Install electric panels at San Juan CBAP	Jan 23, 2017 - Mar 17, 2017	Franki Maldonado	404-305-5763	Franki.maldonado@faa.gov	Karina Espinosa	DC	Juan Rivera
FAA	HVAC FIL	DTFAEN-15-D-00010-0004	\$ 185,548.73	\$ 185,548.73	FL Lauderdale	Install 10 ton HVAC and ductwork	Jan 2, 2017 - Feb 17, 2017	Alan Aldama	404-305-7466	Alan.Aldama@faa.gov	Susan Newcomb	DC	Frank Betancourt
FAA	SB Removal Hilliard	DTFAEN-15-D-00009-0003	\$ 345,668.73	\$ 345,668.73	Hilliard, FL	Removal of SB building, removal of SB building foundations, utility disconnection, removal of asphalt paving, installing electrical utility connections to the ASB building, installing asphalt paving, and installing sod located at the Jacksonville Air Route Traffic Control Center, (ARTCC) located in Hilliard, Florida.	Sep 6, 2016- Mar 3rd, 2017	Thomas Wright	604-549-1611	thomas.wright@faa.gov	Karina Espinosa	DC	Jose I. Torres
FAA	Orlando Tampa LLWS systems	DTFAEN-15-D-00009-0003	\$ 294,394.10	\$ 464,891.90	Tampa and Orlando, FL	Site preparation, construction and relocation of existing Low Level Wind Shear Alert (LLWS) system	June 6, 2016 - Jan 31st, 2017	Joshua Ross / Kamill	404(416)5329	joshua.ross@faa.gov	Maric Lemay	DC	Juan Rivera
FAA	Pho del Eise electrical system	DTFAEA-17-C-00276	\$ 187,200.00	\$ 113,700.00	Venango PR	Assess and Repair 1 wood pole and electrical lines at Ft. Panama PR	Jan 16-27, 2017	Julio Carreras	787-243-8555	Julio.Carreras@faa.gov	Maric Lemay	Ba	Juan Rivera
FAA	Weather chair installation	DTFAEN-15-D-00009-0003	\$ 150,923.78	\$ 123,534.78	Hilliard, FL	Install Weather chair system with Stone Fronts at FAA Hilliard	Sep 13-Nov 4, 2016	Mika Coleman	904-3387907	mika.coleman@faa.gov	Karina Espinosa	DC	Frank Betancourt
FAA	Tower Safety Galleway	DTFAEN-15-D-00009-0004	\$ 22,868.77	\$ 22,868.77	Reddick, FL	Provide all items in the scope of work document and drawing. Improve tower safety features. Add new toe boards, guardrails, stair lights, and small antenna mount	Nov 28-Dec 2, 2016	Karwan Safawi	404-8327886	Karwan.Safawi@faa.gov	Karina Espinosa	DC	Jose I. Torres
FAA	Miami Lighting equipment	DTFAEN-15-D-00010-0001	\$ 172,462.88	\$ 172,256.00	Miami, FL	Replace and install several lighting fixtures at FAA Miami ARTCC	April 18 - Aug 25, 2016	George Kanakis	404-3098780	george.kanakis@faa.gov	Karina Espinosa	DC	Frank Betancourt
FAA	Vero Beach Towers	DTFAEN-15-D-00010-0002	\$ 234,065.33	\$ 239,394.71	Vero Beach, FL	Replace six 40ft towers and install conduits and accessories. Install coaxial lines from tower to existing shelter that included concrete foundations, underground conduits, grounding systems.	Apr 4-June 22, 2016	Michael Buff	404-3899780	michael.buff@faa.gov	Maric Lemay	DC	Jose I. Torres
FAA	Operations Building Foundation Drain Project	DTFAEN-15-D-00010-0002	\$ 138,615.14	\$ 143,209.26	San Juan, PR	Operations Building Foundation Drain Project DSU/CBAP Air Route Traffic	Mar 21- Apr 29, 2016	Franki Maldonado	404-305-5763	Franki.maldonado@faa.gov	Hector De Jesus	DC	Jose I. Torres
FAA	LLWS Site Rehabilitation- Daytona	DTFAEN-15-D-00009-0001 Mod 0004	\$ 143,126.00	\$ 141,836.38	Daytona Beach, FL	Site preparation, construction and relocation of existing Low Level Wind Shear Alert (LLWS) system and one (1) 110 ft. pole	Mar 14-Apr 6, 2016	Joshua Ross	(404) 436-5329	joshua.ross@faa.gov	Karina Espinosa	DC	Jose I. Torres
FAA	Maintenance projects	64053	\$ 16,691.94	\$ 16,691.94	Pennetoke Pines, FL	Clearing and grubbing and Shoulder repair	Jan 14- Feb 4 / Mar 9-12, 2016	Dave Knutzel	954-4644603	dave.knutzel@dot.state.fl.us	Ed Wanza	FL state	various
FAA	MVAC PR	DTFAEN-15-D-00010-0001	\$ 110,484.97	\$ 120,008.22	Aguadilla, PR	Install 20ton AC Unit and prepare all air conduits for the Radar System in the Air Base	Nov 15, 2015 - Jan 4th, 2016	Jonathan Salter	425(57)79263	Jonathan.Salter@faa.gov	Maric Lemay	DC	Juan Rivera
FAA	LLWS Site Daytona site 4 & 5	DTFAEN-15-D-00009-0001	\$ 262,273.00	\$ 271,654.58	Daytona Beach, FL	Site preparation, construction, relocation and installation of two (2) Low Level Wind Shear Alert (LLWS) systems and two (2) 110 ft. pole	Oct 5-Nov 6, 2015	Joshua Ross	404(416)5329	joshua.ross@faa.gov	Karina Espinosa	DC	Jose I. Torres
FAA	BCO Hilliard NY	DTFAEN-15-C-00312	\$ 170,000.00	\$ 184,800.00	Hilliard, NY	Supply and install 1 x 30ft telecom tower with antennas, cables and accessories	Nov 13-Nov 6, 2015	John Timony	978-8831189	john.timony@faa.gov	Robert Higgins	Federal	Jose I. Torres
FAA	BCO Hilliard AZ towers	DTFAEN-15-C-00317	\$ 300,000.00	\$ 308,000.00	Hudson AZ, MA	Supply and install 2 x 80ft telecom towers with antennas, cables and accessories	June 15-Nov 16, 2015	John Timony	978-8831189	john.timony@faa.gov	Robert Higgins	Federal	Jose I. Torres
MASEC	AT&T LTE DC	Private	\$ 53,860.00	\$ 53,860.00	Hilliard Florida	Upgrade to AT&T sites for LTE carrier in a Roof Top 1 site SouthFlorida	Jul 17-Aug 20, 2015	Michelle Orr	561-962-9883	Michelle.Orr@masec.com	Michelle Orr	private	Cesar Mejia
MASEC	AT&T LTE SC	Private	\$ 39,203.00	\$ 39,203.00	Tampa area, FL	Upgrade to AT&T sites for LTE @ carrier in North Florida area. Operated also Mejia Telecommunications Company.	Sep 25-2016- Jan 16, 2015	Ruel Langley	407-6182864	Ruel.Langley@masec.com	Ruel Langley	private	Cesar Mejia
FAA	BCO Charleston Airport	DTFAEN-14-R-00063	\$ 119,500.00	\$ 150,445.80	Charleston, SC	Transport and install 3 x 80ft telecom towers with antennas and cabling provided by the FAA. Project in airport	Sep 18-Nov 18, 2014	Michael Dittman	404-7526003	Michael.Dittman@faa.gov	Mike Wargo	Federal	Jose I. Torres
GTP	Melange	Private	\$ 216,000.00	\$ 216,000.00	Puerto Rico	New telecom facilities with tower structure of 150ft installation, fencing 400 ft. 150 yrd foundation	Jan 2013 (2 months)	Lizaida Ramos	813-3168900	lizaida@datumbdevelopments.com	Lizaida Ramos	private	Cesar Mejia
GTP	Luz Marías	Private	\$ 273,000.00	\$ 273,000.00	Puerto Rico	New telecom facilities with tower structure of 150ft installation, fencing 400 ft. 200 yrd foundation	Dec 2013 (2 months)	Lizaida Ramos	813-3168900	lizaida@datumbdevelopments.com	Lizaida Ramos	private	Cesar Mejia
GTP	Catalina Palmas II	Private	\$ 387,800.00	\$ 387,800.00	Puerto Rico	New telecom facilities with tower structure of 150ft installation, fencing 150 ft. 190 yrd foundation	Nov 2013 (2 months)	Lizaida Ramos	813-3168900	lizaida@datumbdevelopments.com	Lizaida Ramos	private	Cesar Mejia



A RISK STRATEGIES COMPANY

11/14/2019

Contractor:
Mejia International Group Corp.

RE: Broward County JOC
Agency: Facilities Management Division

To whom it may concern,

This letter is to confirm that the insurance requirements set forth by Broward County for the JOC project can be met by the above mentioned contractor, Mejia International Group Corp through Risk Strategies Company with the exception of workers compensation and employers liability as those coverage's are placed with another agency.

Please advise if there is anything further needed at this time.

Thank you,

A handwritten signature in black ink, appearing to read "SEly", is positioned above the typed name.

Spencer Ely | Producer

Risk Strategies Company

E: sely@risk-strategies.com

A: 3250 N 29th Ave, Hollywood, FL 33020

P: 954-842-7836

W: www.risk-strategies.com



CERTIFICATE OF LIABILITY INSURANCE

Acct#: 2494138

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Lockton Companies, LLC 2100 Ross Ave., Suite 1400 Dallas, TX 75201	CONTACT NAME: PHONE (A/C No. Ext): 214-771-4411 E-MAIL ADDRESS: wc@resourcingedge.com		FAX (A/C, No):
	INSURER(S) AFFORDING COVERAGE		NAIC #
INSURED Resourcing Edge I, LLC 1309 Ridge Rd., Suite 200 Rockwall, TX 75087 *SEE BELOW	INSURER A : Indemnity Insurance Co. of North America		43575
	INSURER B :		
	INSURER C :		
	INSURER D :		
	INSURER E :		
	INSURER F :		

COVERAGES

CERTIFICATE NUMBER:

REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
	COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS- <input type="checkbox"/> OCCUR <hr/> GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input type="checkbox"/> PRO-IFCT <input type="checkbox"/> LOC OTHER:						EACH OCCURRENCE \$ DAMAGE TO RENTED PREMISES (Ea occurrence) \$ MED EXP (Any one person) \$ PERSONAL & ADV INJURY \$ GENERAL AGGREGATE \$ PRODUCTS - COMP/OP AGG \$ \$
	AUTOMOBILE LIABILITY <input type="checkbox"/> ANY AUTO <input type="checkbox"/> OWNED AUTOS ONLY <input type="checkbox"/> HIRED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> NON-OWNED AUTOS ONLY						COMBINED SINGLE LIMIT (Ea accident) \$ BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$
	UMBRELLA LIAB <input type="checkbox"/> OCCUR EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE DED <input type="checkbox"/> RETENTION \$						EACH OCCURRENCE \$ AGGREGATE \$ \$
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N	N/A	x	C66691792	10/01/2019	10/01/2020
							<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTHER E.L. EACH ACCIDENT \$ 1,000,000 E.L. DISEASE - EA EMPLOYEE \$ 1,000,000 E.L. DISEASE - POLICY LIMIT \$ 1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)
Mejia International (2446) is included as a named insured through endorsement.
Coverage provided for all leased employees but not subcontractors of: Mejia International
WAIVER OF SUBROGATION IN FAVOR OF BROWARD COUNTY WHEN REQUIRED BY WRITTEN CONTRACT.
30 DAY NOTICE OF CANCELLATION APPLIES

CERTIFICATE HOLDER

CANCELLATION

BROWARD COUNTY 115 SOUTH ANDREWS AVENUE FORT LAUDERDALE, FL 33301	2494138	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.
		AUTHORIZED REPRESENTATIVE

Workers' Compensation and Employers' Liability Policy

Named Insured RESOURCING EDGE I, LLC 1309 RIDGE ROAD ROCKWALL TX 75087	Endorsement Number
	Policy Number Symbol: WLR Number: C66691792
Policy Period 10-01-2019 TO 10-01-2020	Effective Date of Endorsement 11-15-2019
Issued By (Name of Insurance Company) INDEMNITY INS. CO. OF NORTH AMERICA	
Insert the policy number. The remainder of the information is to be completed only when this endorsement is issued subsequent to the preparation of the policy.	

WAIVER OF OUR RIGHT TO RECOVER FROM OTHERS ENDORSEMENT

We have the right to recover our payments from anyone liable for an injury covered by this policy. We will not enforce our right against the person or organization named in the Schedule. This agreement applies only to the extent that you perform work under a written contract that requires you to obtain this agreement from us.

This agreement shall not operate directly or indirectly to benefit any one not named in the Schedule.

Schedule

BROWARD COUNTY
115 SOUTH ANDREWS AVENUE
FORT LAUDERDALE, FLORIDA 33301


WAIVER OF SUBROGATION IN FAVOR OF BROWARD COUNTY WHEN REQUIRED BY WRITTEN CONTRACT

For the states of CA, UT, TX, refer to state specific endorsements.

This endorsement is not applicable in KY, NH, and NJ.

The endorsement does not apply to policies in Missouri where the employer is in the construction group of code classifications. According to Section 287.150(6) of the Missouri statutes, a contractual provision purporting to waive subrogation rights against public policy and void where one party to the contract is an employer in the construction group of code classifications.

For Kansas, use of this endorsement is limited by the Kansas Fairness in Private Construction Contract Act(K.S.A.. 16-1801 through 16-1807 and any amendments thereto) and the Kansas Fairness in Public Construction Contract Act(K.S.A 16-1901 through 16-1908 and any amendments thereto). According to the Acts a provision in a contract for private or public construction purporting to waive subrogation rights for losses or claims covered or paid by liability or workers compensation insurance shall be against public policy and shall be void and unenforceable except that, subject to the Acts, a contract may require waiver of subrogation for losses or claims paid by a consolidated or wrap-up insurance program.



Authorized Agent



NOTICE TO OTHERS - SPECIFIC PARTIES

- A.** If we cancel this Policy prior to its expiration date by notice to you or the first Named insured for any reason other than nonpayment of premium, we will endeavor, as set out below, to send written notice of cancellation, via such electronic or other form of notification as we determine, to the persons or organizations listed in the schedule set out below (the "Schedule"). You or your representative must provide us with both the physical and e-mail address of such persons or organizations, and we will utilize such e-mail address or physical address that you or your representative provided to us on such Schedule.
- B.** We will endeavor to send or deliver such notice to the e-mail address or physical address corresponding to each person or organization indicated in the Schedule at least 30 days prior to the cancellation date applicable to the Policy.
- C.** The notice of cancellation is intended only to be a courtesy notification to the person(s) or organization(s) named in the Schedule in the event of a pending cancellation of coverage. We have no legal obligation of any kind to any such person(s) or organization(s). Our failure to provide advance notification of cancellation to the person(s) or organization(s) shown in the Schedule shall impose no obligation or liability of any kind upon us, our agents or representatives, will not extend any Policy cancellation date and will not negate any cancellation of the Policy.
- D.** We are not responsible for verifying any information provided to us in any Schedule, nor are we responsible for any incorrect information that you or your representative provide to us. If you or your representative does not provide us with the information necessary to complete the Schedule, we have no responsibility for taking any action. In addition, if neither you nor your representative provides us with e-mail and physical address information with respect to a particular person or organization, then we shall have no responsibility for taking action with regard to such person or entity.
- E.** We may arrange with your representative to send such notice in the event of any such cancellation.
- F.** You will cooperate with us in providing, or in causing your representative to provide, the e-mail address and physical address of the persons or organizations listed in the Schedule.
- G.** The provisions of this notice do not apply in the event that you cancel the Policy.

SCHEDULE

Name of Certificate Holder	E-Mail Address	Physical Address
BROWARD COUNTY		115 SOUTH ANDREWS AVENUE FORT LAUDERDALE, FLORIDA 33301



ACCIDENT PREVENTION, SAFETY AND HEALTH PROGRAM GUIDE

Guideline obtained from NATE Safety Plan. Revised 2010.



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- Section 2: **HAZARD IDENTIFICATION**
- Section 3: **RECORDKEEPING**
- Section 4: **EDUCATION AND TRAINING**
- Section 5: **INSPECTION POLICY**
- Section 6: **SITE SAFETY AUDIT**
- Section 7: **ACCIDENT INVESTIGATION**
- Section 8: **ALCOHOL AND DRUG POLICY**
- Section 9: **RESPIRATORY PROTECTION**
- Section 10: **FALL PROTECTION**
- Section 11: **COMPETENT CLIMBER REQUIREMENTS**
- Section 12: **CLIMBER EXAM**
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- Section 14: **PERSONNEL HOISTING**
- Section 15: **HAZARD COMMUNICATION STANDARD**
- Section 16: **RF EXPOSURE**
- Section 17: **EMERGENCY RESPONSE**
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SAFETY POLICY STATEMENT

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Introduction

A safety policy statement is the first step in demonstrating that a company has dedicated time and resources to health and safety in the workplace. The statement should outline a company's policy regarding safety and the obligations to which both employer and employee will be expected to adhere. A safety policy statement should also outline the structure for addressing safety issues within the company. A sample statement and related documents are provided to serve as a guideline in developing your company's safety policy statement.

Safety Policy Statement



is committed to protecting employees against safety and health hazards at the workplace in accordance with federal and state law. We are continually updating and modifying our safety program to make our company a safer place to work. Changes in the program will need to be fully understood and enforced in order for this to happen.

Upon the receipt of new information or changes in our safety policy, new processes, new procedures, new equipment, safety activities, hazards and safe work practices, everyone will review the new material which will be relayed in one of the following manners:

- One-on-one meetings with the employee,
- Training sessions, or
- Postings on the bulletin board, or paycheck enclosures.

Each employee will be required to sign a short statement indicating that they have been informed of the changes and will agree to abide by them.

Everyone has the responsibility toward his or her fellow workers to watch for unsafe acts and take steps to bring the action to the Safety Coordinator's attention before an injury occurs. Weekly safety meetings are to be held, recorded, and signed by each crewmember.

If an accident occurs, the entire crew is to stop work and take whatever time is required to discuss how the accident could have been prevented. This discussion must be documented by the Foreman and signed by each member of the crew. If in the field, this report must be immediately faxed or emailed to the office.

Suggestions for safer operations are encouraged from all employees. Any such suggestions are to be brought to the attention of the foreman, discussed on the job, and recorded and submitted to the office as soon as practical.

Procedures for correcting unsafe or unhealthy conditions and work practices will consist of either one or a combination of the following:

- Hazard reduction or abatement,
- Safe guarding,
- Personal protective equipment, or
- Training.

Discipline Statement



requires all employees to comply with safety and health rules. Employees who violate such rules will be subject to disciplinary action, up to and including termination.

Senior Management Representative

Date

Employer Obligations



- (A) Establish the responsibilities of managers, supervisors, employees and other persons for managing safety and health at the workplace;
- (B) Provide managers, supervisors, employees and other persons with authority, access to relevant information, and training commensurate with their safety and health responsibilities;
- (C) Identify at least one manager, supervisor, employee, or other person to receive reports about workplace safety and health conditions and to initiate appropriate corrective action; and
- (D) Enforce compliance with all safety and health laws and regulations with appropriate discipline, up to and including termination.

Employee Participation

The employer shall establish employee participation by implementing:

- (A) Regular, effective communication between the employer and employees about workplace safety and health matters, including providing employees with access to information relevant to the program;
- (B) Employee involvement in the following areas: identifying and assessing hazards, prioritizing hazards, training, and evaluating the effectiveness of the safety and health program;
- (C) Procedures - protocol for employees to promptly report job-related fatalities, injuries, illnesses, incidents, and hazards, and make recommendations about appropriate ways to control those hazards; and
- (D) Prompt answers from the employer to such employee reports.

Employee Statement (optional)

I have read and I understand the Company Safety Policy Statement.

I have the Company safety book, and I understand the safety rules.

I have studied the entire safety book, and I know the responsibility that I have with respect to the safety program.

I agree with the Company's safety rules and I agree to follow and abide by them.

I understand that following the Company's safety policy and rules is mandatory and is a condition of my employment and that I am subject to disciplinary action, up to and including termination if I violate such rules.

Signed:

Employee Signature

Date

Manager's Signature

Date

(Please note that this language may require translation if the employee cannot read or speak English. If the employee does not read or speak English, his or her signature should be witnessed and signed by a management representative who can establish that the employee understood the statement. If the employee cannot read, a management representative should read the Employee Statement to the employee, witness the employee's signature and also sign the document.)

Safety Committee Structure

The Safety Coordinator for  has the responsibility of supervising the overall program, and reporting directly to the president of the Company. The Safety Committee will not become involved in establishing the terms and conditions of any employee's employment, nor will it discipline any employees for violations of any rules or policies relating to employment. The Safety Committee will act as a means of receiving suggestions and other input from employees covering the Company's safety and health programs. The Company's safety organization duties have been assigned to the following individuals who are also Safety Committee members:

- | | |
|-------------------------------------|--|
| A. MANAGEMENT REPRESENTATIVE | <i>Provides guidance regarding safety and health programs.</i> |
| B. SAFETY COORDINATOR | <i>Responsible for the overall implementation of the program.</i> |
| C. SECRETARY | <i>Monitors documentation of program and keeps up with the filing requirements of the state, federal government and insurance carrier.</i> |
| D. FIELD COORDINATOR | <i>Monitors the work in the field and confirms that foremen are adhering to company policies.</i> |
| E. TRAINING COORDINATOR | <i>Supervises training and determines the type, level, and frequency that is needed.</i> |
| F. SHOP COORDINATOR | <i>Responsible for monitoring equipment and vehicle maintenance and inspection of personal protective equipment.</i> |
| G. EMPLOYEE REPRESENTATIVE | <i>Provides input on the field crew's interests towards policies.</i> |

Note: The Safety Committee Structure is for larger companies and may not be practical for smaller entities.



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Introduction

Early identification of potential hazards is a required skill for employees at the worksite. Employees should know the categories of hazards to look for, how to recognize hazards, and what steps to take to report and eliminate hazards. This section provides a sample hazard identification policy as well as an example of a pre-job survey form.

Hazard Identification Policy

OSHA defines a hazard as: “a danger which threatens harm to employees” or “unsafe workplace conditions or practices (dangers) that could cause injuries or illness (harm) to employees.”

To identify hazards in a workplace, one should use a systematic approach. There are various strategies that can be used, depending on the type of work. The following is one approach:

Identify: Use periodic surveys, inspections and observation to identify workplace hazards. Look for hazards in materials, equipment, the environment and that which could be caused by employees. About 3% of all accidents are caused by the first three of the aforementioned. The remaining 97% are caused by the fourth category -- people. Use individual interviews, walk-around inspections and both informal and formal observation programs to identify hazards that could be caused by people. Do not look to place blame; instead look for ways to improve safety.

Analyze: Once a potential hazard or unsafe work practice is identified, an analysis takes a closer look at the hazard to determine its nature and root cause. The analysis also looks at what must be accomplished to eliminate or reduce the impact of the hazard.

A good approach to analysis is to have employees who are the most familiar with the problem area go step-by-step through their job process. Write down and describe each step (have them perform the job five or six times to be sure nothing is missed). Then analyze each step to determine its impact on the potential hazard(s) and how the hazard can be eliminated or reduced.

This is called a “Job Hazard Analysis”. You can also conduct a process analysis, which breaks a process down into its component parts.

Develop Solutions: Once the source of the hazard has been identified, develop ideas for possible solutions. Look at:

1. Engineering Controls - eliminate the hazard by redesigning equipment, changing processes, substituting materials, etc.;
2. Management Controls - reduce exposure to hazards that engineering controls cannot eliminate by establishing safe work procedures, work schedules, improving training and changing human behavior; and
3. Interim Controls - when the desired changes cannot be implemented immediately, use interim controls to eliminate or reduce worker risk until the final solution can be implemented.

Present Recommendations: Provide a report to management that gives them the information they need to make a decision concerning the hazard(s). Identify the hazard(s); give an analysis of the root cause(s); provide alternative solutions; and provide a Return on Investment (ROI) analysis showing the payback and benefits of each solution.

Implement the Changes: Make the changes management has approved.

Evaluate: Monitor, evaluate and get feedback on the effectiveness of the changes. Go back to the first step on the previous page. This is important to ensure that the changes addressed the problem, and whether it is necessary to make additional modifications or improvements.

The previous information is intended as a brief general introduction, for general information purposes only. It is not a substitute for proper training or review of applicable government regulations and standards.

Each job foreman shall review work conditions at the beginning of each job, to identify conditions or exposures that might result in injury to employees. The foreman shall utilize the Pre-Job Survey Form where applicable. Before proceeding with the work, the foreman shall take necessary action to correct such conditions or exposures.

Not less than quarterly, the Safety Coordinator shall also conduct a Hazard Identification Review, utilizing the 'Pre-Job Survey Forms'. The Hazard Identification Reviews shall be coordinated by the Safety Coordinator and forwarded to the president of the Company. The forms, once reviewed, shall be filed and kept for 3 years. If any hazards are discovered which would not be addressed by the company's safety program, then the program shall be reviewed. Work shall not continue until the hazard is corrected.

Hazards to be identified during the Pre-Job Survey shall include the following, as well as those determined appropriate by the Safety Coordinator/Committee before the work commences:

1. Physical Exposures associated with the job site and work conditions, operation of machinery, movement and storage of material and machinery.
2. Chemical Exposures associated with painting, maintenance, housekeeping and employee exposures at customer sites.
3. Employee Work Practices associated with routine operations and in response to emergencies related to the company operations or outside influences.
4. Changes in Company Policies that affect the workers. This could be related to weather, extended work schedules, overtime, travel, etc.
5. Changes in Customer Practices that alter employee's existing routine, performance time restraints or potentially create hazards.

Once the Hazard Identification Review has detected a potential hazard, the Safety Coordinator will assign (document in writing) people with the appropriate qualifications to develop measures (training, operational changes, ordering of appropriate equipment, change in manpower requirements, use of personnel protective equipment, etc.) to prevent accidents due to such hazards or exposure.

The persons who are assigned this task will acknowledge this responsibility in writing by noting in simple terms what they plan to do and the time required. The Safety Coordinator will coordinate with such person to ensure that proper corrective action is taken and documented.

Pre-Job Survey Form

Location of Inspection _____

Job No. _____ Date _____

Inspection Conducted by _____ Time _____

Job Hazard Analysis

The purpose of this form is to assist in reviewing the hazards on a job site and any nearby hazards that personnel may be exposed to while completing a job.

Part 1 - Site Information

Supervisor: _____ Date _____

Job #: _____ Customer: _____

Site Location: _____ Project Manager: _____

Type of Structure: Monopole SST Guyed Rooftop Water Tank Other

Type of Work: New Monopole New SST New Guyed Repair Maintenance

Replace Members Change Wires Add or Remove Antennas

Add or Remove TX Lines Add Reinforcement

Scope of work: _____

Part 2 - Emergency Contact Information

Coordinates: _____

Police: _____

Fire: _____

Hospital: _____

Directions to Hospital: _____

Directions for EMS: _____

Part 3 - Project Personnel

Name _____ Initials _____

Name _____ Initials _____

Name _____ Initials _____

Name _____ Initials _____

Name _____ Initials _____

Name _____ Initials _____

Name _____ Initials _____

Name _____ Initials _____

Name _____ Initials _____

Part 4 - Structural Hazard Checklist

- Have you completed a general Job Safety Analysis (JSA) to observe all the general hazards on the site? Yes No N/A
- Is there a recent inspection report/structural analysis of the structure? Yes No N/A
- Did you check all guys and their associated anchors for corrosion? Yes No N/A
- Did you check all guys and the structure for plumb and tension? Yes No N/A
- Have you visually inspected the tower condition before climbing? Yes No N/A

Part 5 - Overall Hazard Checklist

- Have you checked for overhead power lines? Yes No N/A
- Do you have the proper PPE for the hazards on site? Yes No N/A
- Have you inspected the site for fall protection hazards and do you have the applicable equipment on site to mitigate those hazards? Yes No N/A
- Do you have a documented site specific rescue plan on site? Yes No N/A
- Have you reviewed the RF/EME hazards of the site? Yes No N/A
- Is there First Aid/CPR certified individuals on site? Yes No N/A

Part 6 - Job Site Exposures and Hazard Identification (Check the Applicable Hazards)

Physical Hazards

- | | |
|---|---|
| <input type="checkbox"/> Falls from Elevations | <input type="checkbox"/> Elevation/Site Terrain |
| <input type="checkbox"/> Electrical | <input type="checkbox"/> Other Workers on Site |
| <input type="checkbox"/> Heavy Equipment | <input type="checkbox"/> Fire Hazards |
| <input type="checkbox"/> Slips, Trips, or Falls | <input type="checkbox"/> Holes and Trenches |
| <input type="checkbox"/> Underground Utilities | <input type="checkbox"/> Confined Space |
| <input type="checkbox"/> Overhead Utilities | <input type="checkbox"/> Trash and Debris |
| <input type="checkbox"/> Vehicle Traffic | <input type="checkbox"/> Other: _____ |

Health Hazards

- | | |
|---|---|
| <input type="checkbox"/> Heat Stress | <input type="checkbox"/> Silica Exposure (Concrete Cutting) |
| <input type="checkbox"/> Cold Stress | <input type="checkbox"/> EME/RF |
| <input type="checkbox"/> High Noise (>85 dBA) | <input type="checkbox"/> Lifting Hazard |
| <input type="checkbox"/> Chemical Exposure | <input type="checkbox"/> Other: _____ |

Part 7 - Hazard Control Measures (Check the Applicable Control Measures)

PPE

- | | |
|---|--|
| <input type="checkbox"/> Head Protection | <input type="checkbox"/> Hand Protection |
| <input type="checkbox"/> Foot Protection | <input type="checkbox"/> RF Monitors |
| <input type="checkbox"/> Eye Protection | <input type="checkbox"/> First Aid Kit |
| <input type="checkbox"/> Hearing Protection | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Fall Protection | |

Inspections

- | | |
|--|--|
| <input type="checkbox"/> Tools/Equipment | <input type="checkbox"/> Ground Fault Protection |
| <input type="checkbox"/> Rigging | <input type="checkbox"/> Gin Poles |
| <input type="checkbox"/> Housekeeping | <input type="checkbox"/> Hoists |
| <input type="checkbox"/> Tag Lines | <input type="checkbox"/> Call Before Digging _____ |

Safety Training & Programs

- | | |
|---|--|
| <input type="checkbox"/> Tailgate Meeting | <input type="checkbox"/> Excavation Log |
| <input type="checkbox"/> Site Signage | <input type="checkbox"/> Permit System (Hoisting Personnel, Confined Space, Excavation, Descent Control, etc.) |
| <input type="checkbox"/> Lockout/Tagout | |

Part 8 - Complete for Civil Work

Describe type and depth of excavations: _____

Describe cave-in control measures to be used if excavation will be greater than 39" and personnel are entering the trench:

- Sloping Benching Shoring Trench Shield/Box Ladder in Trench

Describe the elevation, site terrain and environmental hazards: _____

Describe hazards with site/vehicle access (i.e. boom and cranes/electrical lines) and storage of materials:

Describe the electrical hazards: _____

Part 9 - Complete for Tower Work (Fall Protection & Using Suspended Personnel Platform)

Type of Structure: _____

- Fall protection to be used: Full Body Harness Double Leg or Two Lanyards Rope Grab
 Cable Grab Retractable Lifeline Anchorage Straps Ropes Descenders

Has each employee inspected his or her fall protection equipment? Yes No

Describe the fall protection system to be used when accessing antenna booms or performing tower erection: Yes No

Hoisting Equipment to be used (if applicable):

- | | |
|---|---|
| <input type="checkbox"/> N/A | <input type="checkbox"/> Gin Pole |
| <input type="checkbox"/> Base Mounted Hoist | <input type="checkbox"/> Personnel Platform |
| <input type="checkbox"/> Crane/Boom Truck | |

Does the Personnel Platform meet regulations and is the pre-lift protocol complete? Yes No

Does the hoist comply with the regulations for lifting personnel? Yes No

Was the Job Hazard Analysis discussed and reviewed with all crew members and other contractors on site? Yes No

Supervisor Signature

Site specific conditions may require a more detailed pre-job hazard survey. NATE provides this example as an illustrative and non-exhaustive guide to potential hazards.



RECORDKEEPING

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Introduction

This Section contains a complete copy of the OSHA 300 Log and Summary of Occupational Injuries and Illnesses that must be utilized. Injuries and illness must be recorded and reported. There are instructions on the reverse side to address many instances that may require recording. The Bureau of Labor Statistics Guidelines for Recordkeeping (1986) should be consulted in questionable cases.

For more information or to order forms, go to www.osha.gov or if you fall under the authority of a state-run plan, contact your state Occupational Safety and Health Administration.

Recordkeeping

I. RECORDKEEPING

1. A system should be in place for the worker to notify the supervisor immediately that the worker has sustained a work-related injury or illness. The supervisor should report this incident as soon as possible to the Company's designated record keeper. In many states, the record keeper has 7 days from receiving knowledge of the injury or illness to enter recordable cases on the OSHA 300 Log. To determine if the case is recordable, the record keeper should refer to the Recordkeeping Guidelines for Occupational Injuries and Illnesses (29 CFR 1904) or local jurisdiction. In questionable cases, OSHA can be contacted without identifying the Company's name to obtain guidance.
2. For every line entry on the OSHA 300 Log, the employer must have a supplementary record giving details of the injury or illness. The employer may use OSHA's Form 301, or any internal form containing at least the same information as OSHA's Form 301.

NOTE: Usually Worker's Compensation Claim Forms have the required information, but not every recordable case may be compensable under workers compensation insurance.

3. The OSHA 300 Log must be maintained and retained for a period of 5 years following the year to which it relates. If, during the 5-year retention period, there is a change in the extent or outcome of an injury or illness that affects entries on the form, the form must be updated to reflect these changes.

NOTE: All information regarding a specific injury or illness must be kept on the log for the year in which it occurred. Information should not be carried forward to the next calendar year.

The stored OSHA 300 Logs must be updated by the employer to include any newly discovered recordable injuries or illnesses.

4. At the end of each calendar year, the form must be totaled and a copy of the totals following the fold line must be posted in the place or places where notices to employees are customarily posted. The summary (OSHA 300-A form) must be posted no later than February 1 and must remain in place until April 30.

NOTE: The form must be posted even if there were no recordable injuries or illnesses during the year. A company executive shall certify that he or she has examined the OSHA 300 Log by signing at the bottom of the form.

5. Where the work site is of a transient nature (in operation for less than one year), and there is no mobile base of operations, the employer must keep the records at an established central location. If the records are kept centrally:
 - (a) The address and telephone number of the place where the records are kept must be available at the work site; and

(b) There must be someone available at the central location during normal business hours to provide information from the records.

6. All recordkeeping will be kept in a separate safety and recordkeeping binder. This system will document all safety, toolbox, and committee meetings, all tests and proof of training and all injuries and accidents on the OSHA 300 Log form.

II. HOISTING EQUIPMENT RECORDS

Including, as applicable -

- Annual inspection reports
- Load test reports
- Repair records
- Wire rope inspection reports
- Daily inspection of personnel hoists
- Sling inspection reports
- Manufacturer's manuals on operation, maintenance and inspection of equipment

III. FIRST AID TRAINING RECORDS

Including -

- List of employees trained in first aid or CPR

IV. TRAINING RECORDS

Including -

- Records of safety meetings - dates, topics and who attended
- Individual employee training records including, if applicable:
 - Powered Industrial Trucks
 - Fall Protection
 - Ladder use
 - Scaffolds/Aerial Lifts
 - PPE (hearing, respiratory, safety harness, lanyards, hard hats, foot protection, hand protection, eye protection, etc.)
 - Equipment Operators (hoist/crane/other)
 - Electrical
 - HazCom (Right to Know)
 - Task Training
 - Portable fire extinguisher use training
 - Other

V. WORK SITE INSPECTION REPORTS

VI. QUARTERLY UNANNOUNCED CONSTRUCTION SITE VISIT REPORTS



OSHA Forms for Recording Work-Related Injuries and Illnesses



What's Inside...

In this package, you'll find everything you need to complete OSHA's *Log* and the *Summary of Work-Related Injuries and Illnesses* for the next several years. On the following pages, you'll find:

▼ **An Overview: Recording Work-Related Injuries and Illnesses** — General instructions for filling out the forms in this package and definitions of terms you should use when you classify your cases as injuries or illnesses.

▼ **How to Fill Out the Log** — An example to guide you in filling out the *Log* properly.

▼ **Log of Work-Related Injuries and Illnesses** — Several pages of the *Log* (but you may make as many copies of the *Log* as you need.) Notice that the *Log* is separate from the *Summary*.



▼ **Summary of Work-Related Injuries and Illnesses** — Removable *Summary* pages for easy posting at the end of the year. Note that you post the *Summary* only, not the *Log*.



▼ **Worksheet to Help You Fill Out the Summary** — A worksheet for figuring the average number of employees who worked for your establishment and the total number of hours worked.

▼ **OSHA's 301: Injury and Illness Incident Report** — Several copies of the OSHA 301 to provide details about the incident. You may make as many copies as you need or use an equivalent form.



Take a few minutes to review this package. If you have any questions, visit us online at www.osha.gov or call your local OSHA office. We'll be happy to help you.

An Overview: Recording Work-Related Injuries and Illnesses

The Occupational Safety and Health (OSH) Act of 1970 requires certain employers to prepare and maintain records of work-related injuries and illnesses. Use these definitions when you classify cases on the Log. OSHA's recordkeeping regulation (see 29 CFR Part 1904) provides more information about the definitions below.

The *Log of Work-Related Injuries and Illnesses* (Form 300) is used to classify work-related injuries and illnesses and to note the extent and severity of each case. When an incident occurs, use the *Log* to record specific details about what happened and how it happened. The *Summary* — a separate form (Form 300A) — shows the totals for the year in each category. At the end of the year, post the *Summary* in a visible location so that your employees are aware of the injuries and illnesses occurring in their workplace.

Employers must keep a *Log* for each establishment or site. If you have more than one establishment, you must keep a separate *Log* and *Summary* for each physical location that is expected to be in operation for one year or longer.

Note that your employees have the right to review your injury and illness records. For more information, see 29 Code of Federal Regulations Part 1904.35, *Employee Involvement*.

Cases listed on the *Log of Work-Related Injuries and Illnesses* are not necessarily eligible for workers' compensation or other insurance benefits. Listing a case on the *Log* does not mean that the employer or worker was at fault or that an OSHA standard was violated.

When is an Injury or Illness Considered Work-Related?

An injury or illness is considered work-related if an event or exposure in the work environment caused or contributed to the condition or significantly aggravated a preexisting condition. Work-relatedness is

presumed for injuries and illnesses resulting from events or exposures occurring in the workplace, unless an exception specifically applies. See 29 CFR Part 1904.5(b)(2) for the exceptions. The work environment includes the establishment and other locations where one or more employees are working or are present as a condition of their employment. See 29 CFR Part 1904.5(b)(1).

Which work-related injuries and illnesses should you record?

Record those work-related injuries and illnesses that result in:

- ▼ death,
- ▼ loss of consciousness,
- ▼ days away from work,
- ▼ restricted work activity or job transfer, or
- ▼ medical treatment beyond first aid.

You must also record work-related injuries and illnesses that are significant (as defined below) or meet any of the additional criteria listed below.

You must record any significant work-related injury or illness that is diagnosed by a physician or other licensed health care professional. You must record any work-related case involving cancer, chronic irreversible disease, a fractured or cracked bone, or a punctured eardrum. See 29 CFR 1904.7.

What are the additional criteria?

You must record the following conditions when they are work-related:

- ▼ any needlestick injury or cut from a sharp object that is contaminated with another person's blood or other potentially infectious material;
- ▼ any case requiring an employee to be medically removed under the requirements of an OSHA health standard;
- ▼ tuberculosis infection as evidenced by a positive skin test or diagnosis by a physician or other licensed health care professional after exposure to a known case of active tuberculosis.

What is medical treatment?

Medical treatment includes managing and caring for a patient for the purpose of combating disease or disorder. The following are not considered medical treatments and are NOT recordable:

- ▼ visits to a doctor or health care professional solely for observation or counseling;
- ▼ diagnostic procedures, including administering prescription medications that are used solely for diagnostic purposes; and
- ▼ any procedure that can be labeled first aid. (See below for more information about first aid.)

What do you need to do?

1. Within 7 calendar days after you receive information about a case, decide if the case is recordable under the OSHA recordkeeping requirements.
2. Determine whether the incident is a new case or a recurrence of an existing one.
3. Establish whether the case was work-related.
4. If the case is recordable, decide which form you will fill out as the injury and illness incident report.
You may use OSHA's 301: *Injury and Illness Incident Report* or an equivalent form. Some state workers compensation, insurance, or other reports may be acceptable substitutes, as long as they provide the same information as the OSHA 301.

How to work with the Log

1. Identify the employee involved unless it is a privacy concern case as described below.
2. Identify when and where the case occurred.
3. Describe the case, as specifically as you can.
4. Classify the seriousness of the case by recording the **most serious outcome** associated with the case, with column J (Other recordable cases) being the least serious and column G (Death) being the most serious.
5. Identify whether the case is an injury or illness. If the case is an injury, check the injury category. If the case is an illness, check the appropriate illness category.

What is first aid?

If the incident required only the following types of treatment, consider it first aid. Do NOT record the case if it involves only:

- ▼ using non-prescription medications at non-prescription strength;
- ▼ administering tetanus immunizations;
- ▼ cleaning, flushing, or soaking wounds on the skin surface;
- ▼ using wound coverings, such as bandages, BandAids™, gauze pads, etc., or using SteriStrips™ or butterfly bandages.
- ▼ using hot or cold therapy;
- ▼ using any totally non-rigid means of support, such as elastic bandages, wraps, non-rigid back belts, etc.;
- ▼ using temporary immobilization devices while transporting an accident victim (splints, slings, neck collars, or back boards).
- ▼ drilling a fingernail or toenail to relieve pressure, or draining fluids from blisters;
- ▼ using eye patches;
- ▼ using simple irrigation or a cotton swab to remove foreign bodies not embedded in or adhered to the eye;
- ▼ using irrigation, tweezers, cotton swab or other simple means to remove splinters or foreign material from areas other than the eye;
- ▼ using finger guards;
- ▼ using massages;
- ▼ drinking fluids to relieve heat stress

How do you decide if the case involved restricted work?

Restricted work activity occurs when, as the result of a work-related injury or illness, an employer or health care professional keeps, or recommends keeping, an employee from doing the routine functions of his or her job or from working the full workday that the employee would have been scheduled to work before the injury or illness occurred.

How do you count the number of days of restricted work activity or the number of days away from work?

Count the number of calendar days the employee was on restricted work activity or was away from work as a result of the recordable injury or illness. Do not count the day on which the injury or illness occurred in this number. Begin counting days from the day after the incident occurs. If a single injury or illness involved both days away from work and days of restricted work activity, enter the total number of days for each. You may stop counting days of restricted work activity or days away from work once the total of either or the combination of both reaches 180 days.

Under what circumstances should you NOT enter the employee's name on the OSHA Form 300?

You must consider the following types of injuries or illnesses to be privacy concern cases:

- ▼ an injury or illness to an intimate body part or to the reproductive system,

- ▼ an injury or illness resulting from a sexual assault,
- ▼ a mental illness,
- ▼ a case of HIV infection, hepatitis, or tuberculosis,
- ▼ a needlestick injury or cut from a sharp object that is contaminated with blood or other potentially infectious material (see 29 CFR Part 1904.8 for definition), and
- ▼ other illnesses, if the employee independently and voluntarily requests that his or her name not be entered on the log. You must not enter the employee's name on the OSHA 300 Log for these cases. Instead, enter "privacy case" in the space normally used for the employee's name. You must keep a separate, confidential list of the case numbers and employee names for the establishment's privacy concern cases so that you can update the cases and provide information to the government if asked to do so.

If you have a reasonable basis to believe that information describing the privacy concern case may be personally identifiable even though the employee's name has been omitted, you may use discretion in describing the injury or illness on both the OSHA 300 and 301 forms. You must enter enough information to identify the cause of the incident and the general severity of the injury or illness, but you do not need to include details of an intimate or private nature.

What if the outcome changes after you record the case?

If the outcome or extent of an injury or illness changes after you have recorded the case, simply draw a line through the original entry or, if you wish, delete or white-out the original entry. Then write the new entry where it belongs. Remember, you need to record the most serious outcome for each case.

Classifying injuries

An injury is any wound or damage to the body resulting from an event in the work environment.

Examples: Cut, puncture, laceration, abrasion, fracture, bruise, contusion, chipped tooth, amputation, insect bite, electrocution, or a thermal, chemical, electrical, or radiation burn. Sprain and strain injuries to muscles, joints, and connective tissues are classified as injuries when they result from a slip, trip, fall or other similar accidents.



Classifying illnesses

Skin diseases or disorders

Skin diseases or disorders are illnesses involving the worker's skin that are caused by work exposure to chemicals, plants, or other substances.

Examples: Contact dermatitis, eczema, or rash caused by primary irritants and sensitizers or poisonous plants; oil acne; friction blisters, chrome ulcers; inflammation of the skin.

Respiratory conditions

Respiratory conditions are illnesses associated with breathing hazardous biological agents, chemicals, dust, gases, vapors, or fumes at work.

Examples: Silicosis, asbestosis, pneumonitis, pharyngitis, rhinitis or acute congestion; farmer's lung, beryllium disease, tuberculosis, occupational asthma, reactive airways dysfunction syndrome (RADS), chronic obstructive pulmonary disease (COPD), hypersensitivity pneumonitis, toxic inhalation injury, such as metal fume fever, chronic obstructive bronchitis, and other pneumoconioses.

Poisoning

Poisoning includes disorders evidenced by abnormal concentrations of toxic substances in blood, other tissues, other bodily fluids, or the breath that are caused by the ingestion or absorption of toxic substances into the body.

Examples: Poisoning by lead, mercury, cadmium, arsenic, or other metals; poisoning by carbon monoxide, hydrogen sulfide, or other

gases; poisoning by benzene, benzol, carbon tetrachloride, or other organic solvents; poisoning by insecticide sprays, such as parathion or lead arsenate; poisoning by other chemicals, such as formaldehyde.

All other illnesses

All other occupational illnesses.

Examples: Heatstroke, sunstroke, heat exhaustion, heat stress and other effects of environmental heat; freezing, frostbite, and other effects of exposure to low temperatures; decompression sickness; effects of ionizing radiation (isotopes, x-rays, radium); effects of nonionizing radiation (welding flash, ultra-violet rays, lasers); anthrax; bloodborne pathogenic diseases, such as AIDS, HIV, hepatitis B or hepatitis C; brucellosis; malignant or benign tumors; histoplasmosis; coccidioidomycosis.

When must you post the Summary?

You must post the *Summary* only — not the *Log* — by February 1 of the year following the year covered by the form and keep it posted until April 30 of that year.

How long must you keep the Log and Summary on file?

You must keep the *Log* and *Summary* for 5 years following the year to which they pertain.

Do you have to send these forms to OSHA at the end of the year?

No. You do not have to send the completed forms to OSHA unless specifically asked to do so.

How can we help you?

If you have a question about how to fill out the *Log*,

- visit us online at www.osha.gov or
- call your local OSHA office.

Optional

Calculating Injury and Illness Incidence Rates

What is an incidence rate?

An incidence rate is the number of recordable injuries and illnesses occurring among a given number of full-time workers (usually 100 full-time workers) over a given period of time (usually one year). To evaluate your firm's injury and illness experience over time or to compare your firm's experience with that of your industry as a whole, you need to compute your incidence rate. Because a specific number of workers and a specific period of time are involved, these rates can help you identify problems in your workplace and/or progress you may have made in preventing work-related injuries and illnesses.

How do you calculate an incidence rate?

You can compute an occupational injury and illness incidence rate for all recordable cases or for cases that involved days away from work for your firm quickly and easily. The formula requires that you follow instructions in paragraph (a) below for the total recordable cases or those in paragraph (b) for cases that involved days away from work, and for both rates the instructions in paragraph (c).

(a) To find out the total number of recordable injuries and illnesses that occurred during the year, count the number of line entries on your OSHA Form 300, or refer to the OSHA Form 300A and sum the entries for columns (G), (H), (I), and (J).

(b) To find out the number of injuries and illnesses that involved days away from work, count the number of line entries on your OSHA Form 300 that received a check mark in column (H), or refer to the entry for column (H) on the OSHA Form 300A.

(c) The number of hours all employees actually worked during the year. Refer to OSHA Form 300A and optional worksheet to calculate this number.

You can compute the incidence rate for all recordable cases of injuries and illnesses using the following formula:

$$\frac{\text{Total number of injuries and illnesses} \div \text{Number of hours worked by all employees} \times 200,000 \text{ hours}}{\text{Total recordable case rate}}$$

(The 200,000 figure in the formula represents the number of hours 100 employees working 40 hours per week, 50 weeks per year would work, and provides the standard base for calculating incidence rates.)

You can compute the incidence rate for recordable cases involving days away from work, days of restricted work activity or job transfer (DART) using the following formula:

$$\frac{\text{Number of entries in column H} + \text{Number of entries in column I} \div \text{Number of hours worked by all employees} \times 200,000 \text{ hours}}{\text{DART incidence rate}}$$

You can use the same formula to calculate incidence rates for other variables such as cases involving restricted work activity (column (I) on Form 300A), cases involving skin disorders (column (M-2) on Form 300A), etc. Just substitute the appropriate total for these cases, from Form 300A, into the formula in place of the total number of injuries and illnesses.

What can I compare my incidence rate to?

The Bureau of Labor Statistics (BLS) conducts a survey of occupational injuries and illnesses each year and publishes incidence rate data by

various classifications (e.g., by industry, by employer size, etc.). You can obtain these published data at www.bls.gov or by calling a BLS Regional Office.

Worksheet

Total number of recordable injuries and illnesses in your establishment

÷

X 200,000 =

Total recordable cases incidence rate

Hours worked by all your employees

Total number of recordable injuries and illnesses with a checkmark in column H or column I

÷

X 200,000 =

DART incidence rate

Hours worked by all your employees



How to Fill Out the Log

The *Log of Work-Related Injuries and Illnesses* is used to classify work-related injuries and illnesses and to note the extent and severity of each case. When an incident occurs, use the *Log* to record specific details about what happened and how it happened.

If your company has more than one establishment or site, you must keep separate records for each physical location that is expected to remain in operation for one year or longer.

We have given you several copies of the *Log* in this package. If you need more than we provided, you may photocopy and use as many as you need.

The *Summary* — a separate form — shows the work-related injury and illness totals for the year in each category. At the end of the year, count the number of incidents in each category and transfer the totals from the *Log* to the *Summary*. Then post the *Summary* in a visible location so that your employees are aware of injuries and illnesses occurring in their workplace.

You don't post the Log. You post only the Summary at the end of the year.

OSHA's Form 300

Log of Work-Related Injuries and Illnesses

Attention: This form contains information relating to employee health and must be used in a manner that protects the confidentiality of employees to the extent possible while the information is being used for occupational safety and health purposes.

Year 20
U.S. Department of Labor
Occupational Safety and Health Administration

You must record information about every work-related death and about every work-related injury or illness that involves loss of consciousness, restricted work activity or job transfer, days away from work, or medical treatment beyond first aid. You must also record significant work-related injuries and illnesses that are diagnosed by a physician or licensed health care professional. You must also record work-related injuries and illnesses that meet any of the specific recording criteria listed in 29 CFR Part 1904.9 through 1904.12. Feel free to use two lines for a single case if you need to. You must complete an Injury and Illness Incident Report (OSHA Form 301) or equivalent form for each injury or illness recorded on this form. If you are not sure whether a case is recordable, call your local OSHA office for help.

Employer name: XYZ Company
City: Anywhere State: MA

Identify the person		Describe the case			Classify the case				Enter the number of days the injured or ill worker was:		Check the "Injury" column or choose one type of illness:					
(A) Case no.	(B) Employer's name	(C) Job title (e.g. Welder)	(D) Date of injury or onset of illness	(E) Where the event occurred (e.g. Loading dock north end)	(F) Describe injury or illness, parts of body affected, and object/substance that directly injured or made person ill (e.g. Second degree burns on right forearm from molten metal)	(G) Death	(H) Days away from work	(I) Job transfer or restriction	(J) Restricted work activity	(K) Days lost	(L) Days lost	(1) Injury	(2) Skin disorder	(3) Respiratory	(4) Musculoskeletal	(5) All other
1	Mark Bogin	Welder	5 / 25 morning	basement	fracture, left arm and left leg, fell from ladder	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	12 days	15 days	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Shana Alexander	Foundry man	7 / 2 morning	pouring deck	poisoning from lead fumes	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	30 days	30 days	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Sam Sander	Electrician	8 / 15 morning	2nd floor storeroom	broken left foot, fell over box	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	7 days	30 days	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Ralph Boveella	Laborer	9 / 17 morning	packaging dept	Back strain lifting boxes	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	3 days	3 days	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Jarrod Daniels	Machine op.	10 / 23 morning	production floor	dust in eye	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	0 days	0 days	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			/			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0 days	0 days	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			/			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0 days	0 days	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Be as specific as possible. You can use two lines if you need more room.

Revise the log if the injury or illness progresses and the outcome is more serious than you originally recorded for the case. Cross out, erase, or white-out the original entry.

Choose ONE of these categories. Classify the case by recording the most serious outcome of the case, with column J (Other recordable cases) being the least serious and column G (Death) being the most serious.

Note whether the case involves an injury or an illness.

OSHA's Form 300 Log of Work-Related Injuries and Illnesses

Attention: This form contains information relating to employee health and must be used in a manner that protects the confidentiality of employees to the extent possible while the information is being used for occupational safety and health purposes.

Year 20____
U.S. Department of Labor
Occupational Safety and Health Administration

Form approved OMB no. 1218-0176

You must record information about every work-related death and about every work-related injury or illness that involves loss of consciousness, restricted work activity or job transfer, days away from work, or medical treatment beyond first aid. You must also record significant work-related injuries and illnesses that are diagnosed by a physician or licensed health care professional. You must also record work-related injuries and illnesses that meet any of the specific recording criteria listed in 29 CFR Part 1904.8 through 1904.12. Feel free to use two lines for a single case if you need to. You must complete an injury and illness Incident Report (OSHA Form 301) or equivalent form for each injury or illness recorded on this form. If you're not sure whether a case is recordable, call your local OSHA office for help.

Establishment name _____
City _____ State _____

Identify the person		Describe the case			Classify the case				Enter the number of days the injured or ill worker was:		Check the "injury" column or choose one type of illness:					
(A) Case no.	(B) Employee's name	(C) Job title (e.g., <i>Welder</i>)	(D) Date of injury or onset of illness	(E) Where the event occurred (e.g., <i>Loading dock north end</i>)	(F) Describe injury or illness, parts of body affected, and object/substance that directly injured or made person ill (e.g., <i>Severe degree burns on right forearm from acetylene torch</i>)	Using these four categories, check ONLY the most serious result for each case:				On job transfer or restriction	Away from work	(M)				
						Death	Days away from work	Job transfer or restriction	Other recordable cases	(K) days	(L) days	Injury	Skin disorder	Respiratory condition	Poisoning	All other illnesses
						(G)	(H)	(I)	(J)			(1)	(2)	(3)	(4)	(5)
			month/day			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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OSHA's Form 300A

Summary of Work-Related Injuries and Illnesses

Year 20__



U.S. Department of Labor
Occupational Safety and Health Administration
Form approved OMB no. 1218-0176

All establishments covered by Part 1904 must complete this Summary page, even if no work-related injuries or illnesses occurred during the year. Remember to review the Log to verify that the entries are complete and accurate before completing this summary.

Using the Log, count the individual entries you made for each category. Then write the totals below, making sure you've added the entries from every page of the Log. If you had no cases, write "0."

Employees, former employees, and their representatives have the right to review the OSHA Form 300 in its entirety. They also have limited access to the OSHA Form 301 or its equivalent. See 29 CFR Part 1904.35, in OSHA's recordkeeping rule, for further details on the access provisions for these forms.

Number of Cases

Total number of deaths	Total number of cases with days away from work	Total number of cases with job transfer or restriction	Total number of other recordable cases
_____	_____	_____	_____
(G)	(H)	(I)	(J)

Number of Days

Total number of days of job transfer or restriction	Total number of days away from work
_____	_____
(K)	(L)

Injury and Illness Types

Total number of . . . (M)	
(1) Injuries _____	(4) Poisonings _____
(2) Skin disorders _____	(5) All other illnesses _____
(3) Respiratory conditions _____	

Establishment Information

Your establishment name _____
 Street _____
 City _____ State _____ ZIP _____

Industry description (e.g., *Manufacture of motor truck trailers*) _____
 Standard Industrial Classification (SIC), if known (e.g., *SIC 3715*) _____

Employment Information (If you don't have these figures, see the Worksheet on the back of this page to estimate.)

Annual average number of employees _____
 Total hours worked by all employees last year _____

Sign here

Knowingly falsifying this document may result in a fine.

I certify that I have examined this document and that to the best of my knowledge the entries are true, accurate, and complete.

Company executive _____ Title _____

 Phone _____ Date _____

Post this Summary page from February 1 to April 30 of the year following the year covered by the form.

Public reporting burden for this collection of information is estimated to average 50 minutes per response, including time to review the instructions, search and gather the data needed, and complete and review the collection of information. Persons are not required to respond to the collection of information unless it displays a currently valid OMB control number. If you have any comments about these estimates or any other aspects of this data collection, contact: US Department of Labor, OSHA Office of Statistics, Room N-3644, 200 Constitution Avenue, NW, Washington, DC 20210. Do not send the completed forms to this office.



Optional

Worksheet to Help You Fill Out the Summary

At the end of the year, OSHA requires you to enter the average number of employees and the total hours worked by your employees on the summary. If you don't have these figures, you can use the information on this page to estimate the numbers you will need to enter on the Summary page at the end of the year.

How to figure the average number of employees who worked for your establishment during the year:

- Add** the total number of employees your establishment paid in all pay periods during the year. Include all employees: full-time, part-time, temporary, seasonal, salaried, and hourly.
- Count** the number of pay periods your establishment had during the year. Be sure to include any pay periods when you had no employees.
- Divide** the number of employees by the number of pay periods.
- Round** the answer to the next highest whole number. Write the rounded number in the blank marked *Annual average number of employees*.

The number of employees paid in all pay periods = 1

The number of pay periods during the year = 2

1 / 2 = 3

The number rounded = 4

For example, Acme Construction figured its average employment this way:

For pay period... Acme paid this number of employees...

1	10	Number of employees paid = 830	1
2	0		
3	15	Number of pay periods = 26	2
4	30		
5	40	830 ÷ 26 = 31.92	3
▼	▼	26	
24	20	31.92 rounds to 32	4
25	15		
26	+10	32 is the annual average number of employees	
	830		

How to figure the total hours worked by all employees:

Include hours worked by salaried, hourly, part-time and seasonal workers, as well as hours worked by other workers subject to day to day supervision by your establishment (e.g., temporary help services workers).

Do not include vacation, sick leave, holidays, or any other non-work time, even if employees were paid for it. If your establishment keeps records of only the hours paid or if you have employees who are not paid by the hour, please estimate the hours that the employees actually worked.

If this number isn't available, you can use this optional worksheet to estimate it.

Optional Worksheet

Find the number of full-time employees in your establishment for the year.

X Multiply by the number of work hours for a full-time employee in a year.

This is the number of full-time hours worked.

+ Add the number of any overtime hours as well as the hours worked by other employees (part-time, temporary, seasonal)

Round the answer to the next highest whole number. Write the rounded number in the blank marked *Total hours worked by all employees last year*.

OSHA's Form 301 Injury and Illness Incident Report

Attention: This form contains information relating to employee health and must be used in a manner that protects the confidentiality of employees to the extent possible while the information is being used for occupational safety and health purposes.



U.S. Department of Labor
Occupational Safety and Health Administration

Form approved OMB no. 1218-0176

This *Injury and Illness Incident Report* is one of the first forms you must fill out when a recordable work-related injury or illness has occurred. Together with the *Log of Work-Related Injuries and Illnesses* and the accompanying *Summary*, these forms help the employer and OSHA develop a picture of the extent and severity of work-related incidents.

Within 7 calendar days after you receive information that a recordable work-related injury or illness has occurred, you must fill out this form or an equivalent. Some state workers' compensation, insurance, or other reports may be acceptable substitutes. To be considered an equivalent form, any substitute must contain all the information asked for on this form.

According to Public Law 91-596 and 29 CFR 1904, OSHA's recordkeeping rule, you must keep this form on file for 5 years following the year to which it pertains.

If you need additional copies of this form, you may photocopy and use as many as you need.

Information about the employee

- 1) Full name _____
- 2) Street _____
City _____ State _____ ZIP _____
- 3) Date of birth ____/____/____
- 4) Date hired ____/____/____
- 5) Male
 Female

Information about the physician or other health care professional

- 6) Name of physician or other health care professional _____

- 7) If treatment was given away from the worksite, where was it given?
Facility _____
Street _____
City _____ State _____ ZIP _____

- 8) Was employee treated in an emergency room?
 Yes
 No
- 9) Was employee hospitalized overnight as an in-patient?
 Yes
 No

Information about the case

- 10) Case number from the Log _____ (Transfer the case number from the Log after you record the case.)
- 11) Date of injury or illness ____/____/____
- 12) Time employee began work _____ AM / PM
- 13) Time of event _____ AM / PM Check if time cannot be determined
- 14) What was the employee doing just before the incident occurred? Describe the activity, as well as the tools, equipment, or material the employee was using. Be specific. Examples: "climbing a ladder while carrying roofing materials"; "spraying chlorine from hand sprayer"; "daily computer key-entry."
- 15) What happened? Tell us how the injury occurred. Examples: "When ladder slipped on wet floor, worker fell 20 feet"; "Worker was sprayed with chlorine when gasket broke during replacement"; "Worker developed soreness in wrist over time."
- 16) What was the injury or illness? Tell us the part of the body that was affected and how it was affected; be more specific than "hurt," "pain," or "sore." Examples: "strained back"; "chemical burn, hand"; "carpal tunnel syndrome."
- 17) What object or substance directly harmed the employee? Examples: "concrete floor"; "chlorine"; "radial arm saw." If this question does not apply to the incident, leave it blank.
- 18) If the employee died, when did death occur? Date of death ____/____/____

Completed by _____

Title _____

Phone (____) _____-____ Date ____/____/____

Public reporting burden for this collection of information is estimated to average 22 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Persons are not required to respond to the collection of information unless it displays a current valid OMB control number. If you have any comments about this estimate or any other aspects of this data collection, including suggestions for reducing this burden, contact: US Department of Labor, OSHA Office of Statistics, Room N-3641, 200 Constitution Avenue, NW, Washington, DC 20210. Do not send the completed forms to this office.

If You Need Help...

If you need help deciding whether a case is recordable, or if you have questions about the information in this package, feel free to contact us. We'll gladly answer any questions you have.

▼ Visit us online at www.osha.gov

▼ Call your OSHA Regional office
and ask for the recordkeeping
coordinator

or

▼ Call your State Plan office

Federal Jurisdiction

Region 1 - 617 / 565-9860
**Connecticut; Massachusetts; Maine; New
Hampshire; Rhode Island**

Region 2 - 212 / 337-2378
New York; New Jersey

Region 3 - 215 / 861-4900
DC; Delaware; Pennsylvania; West Virginia

Region 4 - 404 / 562-2300
Alabama; Florida; Georgia; Mississippi

Region 5 - 312 / 353-2220
Illinois; Ohio; Wisconsin

Region 6 - 214 / 767-4731
Arkansas; Louisiana; Oklahoma; Texas

Region 7 - 816 / 426-5861
Kansas; Missouri; Nebraska

Region 8 - 303 / 844-1600
**Colorado; Montana; North Dakota; South
Dakota**

Region 9 - 415 / 975-4310

Region 10 - 206 / 553-5930
Idaho

State Plan States

Alaska - 907 / 269-4957

Arizona - 602 / 542-5795

California - 415 / 703-5100

*Connecticut - 860 / 566-4380

Hawaii - 808 / 586-9100

Indiana - 317 / 232-2688

Iowa - 515 / 281-3661

Kentucky - 502 / 564-3070

Maryland - 410 / 767-2371

Michigan - 517 / 322-1848

Minnesota - 651 / 284-5050

Nevada - 702 / 486-9020

*New Jersey - 609 / 984-1389

New Mexico - 505 / 827-4230

*New York - 518 / 457-2574

North Carolina - 919 / 807-2875

Oregon - 503 / 378-3272

Puerto Rico - 787 / 754-2172

South Carolina - 803 / 734-9669

Tennessee - 615 / 741-2793

Utah - 801 / 530-6901

Vermont - 802 / 828-2765

Virginia - 804 / 786-6613

Virgin Islands - 340 / 772-1315

Washington - 360 / 902-5554

Wyoming - 307 / 777-7786

*Public Sector only



Have questions?

If you need help in filling out the *Log* or *Summary*, or if you have questions about whether a case is recordable, contact us. We'll be happy to help you. You can:

- ▼ Visit us online at: www.osha.gov
- ▼ Call your regional or state plan office. You'll find the phone number listed inside this cover.





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Introduction

The purpose of a safety inspection is to identify hazards, including hazards resulting from failure to follow the safety program. Employees are to be instructed to inspect for hazards continually, especially at the beginning of their shift. It's important to remember that the identification of a hazard is only half of the inspection process. The other half is eliminating or reducing the hazards that are found.

The following are lists of Federal Regulations that apply to typical tower sites. This list does not include references to all applicable regulations for safety inspections. Lacking a specific OSHA rule or regulation for a specific piece of equipment, always refer to the owner's manual or instructions for proper care, maintenance and inspection.

Company Inspection Policy

The supervisor has the ultimate responsibility for safety at the site. This inspection policy is intended to assist in maintaining such safety.

To assist the company in the inspection and accident evaluation process, the safety coordinator for , shall ask the insurance loss control representative (LCR) to service the account quarterly. The purpose of this service shall be to review the work environment, review claims and loss reserves, and discuss procedures for offering alternate duties to workers still off work due to injury.

The loss control representative shall be asked to visit the company, conduct inspections, and assist in training. Documentation of this written request and a copy of the reports received shall be filed in the safety meeting records.

Once a hazard is identified, immediate action shall be taken to correct the hazard where possible. Where it is not possible to correct a serious hazard immediately, work will cease until the hazard is corrected.

Inspections shall be conducted at four (4) levels:

1. BEGINNING OF WORK

Every employee shall be required to inspect his/her work environment for unsafe conditions. Any unsafe condition including the condition of tools, shall be reported to a supervisor with the authority to make corrections or stop the conditions that cause the exposure.

NO WORKER IS TO CONTINUE WORKING OR ALLOW OTHERS TO WORK WHEN THERE IS A KNOWN HAZARD OF A SERIOUS NATURE.

2. PERIODIC INSPECTIONS

The work site shall be inspected on a regular basis by supervisors or management (the appropriate frequency shall be determined by the Safety Coordinator) to monitor the work environment. The purpose of these inspections is to note the quality of the employee's inspections and to inspect conditions, machinery, and processes that do not fall under the employee inspection.

3. HAZARDOUS IDENTIFICATION REVIEWS

Whenever work conditions change, a Hazard Identification Review shall be conducted to inspect the work environment and anticipate upcoming exposures.

Reviews may be triggered by:

- Equipment
- Physical Facility
- Job Location
- Chemicals
- Weather Conditions
- Change in Customer Base
- Number of Accidents
- Type of Accidents
- Materials Used/Handled
- Workforce Size
- Company Job/Product
- Near Misses

4. ANNUAL INSPECTION

An overall inspection of the company's operations on and off-site shall be conducted not less than yearly. Adequate time shall be delegated for the inspection to obtain an overall view of the company's work environment. A team shall be assembled to conduct the inspection to insure the quality of the inspection. The insurance carrier safety engineer shall be asked to be part of the yearly review.

SELF-INSPECTION SCOPE

The scope of your self-inspection should include the following:

- General Processing, Receiving, Shipping and Storage - equipment, job planning, layout, heights, floor loads, projection of materials, materials-handling and storage methods
- Building and Grounds Conditions - floors, walls, ceilings, exits, stairs, walkways, ramps, platforms, and driveways
- Housekeeping Program - waste disposal, tools, objects, materials, leakage and spillage, cleaning methods, schedules, work areas, remote areas, and storage areas
- Electricity - equipment, switches, breakers, fuses, switch-boxes, junctions, special fixtures, circuits, insulation, extensions, tools, motors, grounding, and NEC compliance
- Heating and Ventilation - type, effectiveness, temperature, humidity, controls, natural and artificial ventilation and exhausting
- Machinery - points of operation, flywheels, gears, shafts, pulleys, key ways, belts, couplings, sprockets, chains, frames controls, lighting for tools and equipment, brakes, exhausting, feeding, oiling, adjusting, maintenance, lock out, grounding, work space, location, and purchasing standards
- Personnel - training, experience, methods of checking machines before use, type of clothing, personal protective equipment, use of guards, tool storage, work practices, method of cleaning, oiling or adjusting machinery
- Lighting - type, intensity, controls, conditions, diffusion, location, glare and shadow control
- Hand and Power Tools - purchasing standards, inspection, storage, repair, types, maintenance, grounding, use and handling
- Chemicals - storage, handling, transportation, spills, disposals, amounts used, toxicity or other harmful effects, warning signs, supervision, training, protective clothing and equipment
- Fire Prevention - extinguishers, alarms, sprinklers, smoking rules, exits, personnel assigned, separation of flammable materials and dangerous operations, explosive-proof fixtures in hazardous locations, and waste disposal
- Maintenance - regularity, effectiveness, training of personnel, materials and equipment used, records maintained, method of locking out machinery, and general methods

- Personal Protective Equipment - type, size, maintenance, repair, storage, assignment of responsibility, purchasing methods, standards observed, training in care and use, rules of use, and method of assignment

It is not necessary that all items be inspected daily. However, all items should be inspected before each new job and periodically. A complete safety audit should be completed at least annually.

To assist in such inspections, one should refer to the Checklists contained in the Safety Audit Section. Specific attention should be paid to the following sections: Safety; Gin Pole; Hoist; Down Haul Ball; Personnel Cage; Crane or Boom Truck; and Miscellaneous.

Include a list of common potential hazards.

Checklist of Workplace Safeguards

Answers to the following questions should help the interested reader to determine the safeguarding needs of his or her own workplace, by drawing attention to hazardous conditions or practices requiring correction.

Requirements for All Safeguards

1. Do the safeguards provided meet the minimum OSHA requirements? Yes No
2. Do the safeguards prevent workers' hands, arms, and other body parts from making contact with dangerous moving parts? Yes No
3. Are the safeguards firmly secure (and not easily removable)? Yes No
4. Do the safeguards ensure that no objects will fall into the moving parts? Yes No
5. Do the safeguards permit safe, comfortable, and relatively easy operation of the machine? Yes No
6. Can the machine be oiled without removing the safeguard? Yes No
7. Is there a system for shutting down the machinery before safeguards are removed? Yes No
8. Can the existing safeguards be improved? Yes No

Mechanical Hazards

The Point of Operation:

1. Is there a point-of-operation safeguard provided for the machine? Yes No
2. Does it keep the operator's hands, fingers, and body out of the danger area? Yes No
3. Is there evidence that the safeguards have been tampered with or removed? Yes No
4. Could you suggest a more practical, effective safeguard? Yes No

Power Transmission Apparatus:

1. Are there any unguarded gears, sprockets, pulleys, or flywheels on the apparatus? Yes No
2. Are there any exposed belts or chain drives? Yes No
3. Are there any exposed set screws, key ways, collars, etc.? Yes No
4. Are starting and stopping controls within easy reach of the operator? Yes No

5. If there is more than one operator, are separate controls provided? Yes No

Other Moving Parts:

1. Are safeguards provided for all hazardous moving parts of the machine, including auxiliary parts? Yes No

Non-mechanical Hazards

1. Have appropriate measures been taken to safeguard workers against noise hazards? Yes No
2. Have special guards, enclosures or personal protective equipment been provided, where necessary, to protect workers from exposure to harmful substances used in machine operation? Yes No

Electrical Hazards

1. Is the machine installed in accordance with National Fire Protection Association and National Electrical Code requirements? Yes No
2. Are there loose conduit fittings? Yes No
3. Is the machine properly grounded? Yes No
4. Is the power supply correctly fused and protected? Yes No
5. Do workers occasionally receive minor shocks while operating any of the machines? Yes No

Training

1. Do operators and maintenance workers have the necessary training in how to use the safeguards? If not, why? _____
_____ Yes No
2. Have operators and maintenance workers been trained in where the safeguards are located, how they provide protection, and what hazards they protect against? Yes No
3. Have operators and maintenance workers been trained in how and under what circumstances guards can be removed? Yes No
4. Have workers been trained in the procedures to follow if they notice guards that are damaged, missing, or inadequate? Yes No

Protective Equipment and Proper Clothing

- 1. Is protective equipment required? Yes No
- 2. If protective equipment is required, is it appropriate for the job, in good condition, kept clean and sanitary, and stored carefully when not in use? Yes No
- 3. Is the operator dressed safely for the job (e.g., no loose-fitting clothing or jewelry)? Yes No

Machinery Maintenance and Repair

- 1. Have maintenance workers received up-to-date instruction on the machines they service? Yes No
- 2. Do maintenance workers lock out the machine from its power sources before beginning repairs? Yes No
- 3. Where several maintenance workers work on the same machine, are multiple lock out devices used? Yes No
- 4. Do maintenance workers use appropriate and safe equipment in their repair work? Yes No
- 5. Is the maintenance equipment itself properly guarded? Yes No

OSHA Standards Checklist - Subpart I

1926.300 to 1926.305 - Tools: Hand and Power

This checklist was developed as a memory aid. It cannot be used as a substitute for OSHA standards.

1926.300 - General Requirements

(a) Condition of tools and equipment (Employer's or Employee's)

1. Maintained in a safe condition.

(b) Guarding of power operated tools

1. When power operated tools are designed to accommodate guards, they shall be equipped with such guards when in use.
2. The following parts must be guarded if exposed to employee contact or otherwise create a hazard:
- a. Belts
 - b. Gears
 - c. Shafts
 - d. Pulleys
 - e. Sprockets
 - f. Spindles
 - g. Drums
 - h. Flywheels
 - i. Chains
 - j. Other reciprocating, rotating or moving parts of equipment
 - k. Guarding shall meet the requirements of ANSI B15.1-1953

(R1958) Safety Code for Mechanical Power Transmission Apparatus.

(c) Personal Protective Equipment

Employees exposed to one or more of the following hazards while using hand or power tools shall be provided with the particular personal protective equipment necessary to protect them from the hazard:

- 1. Flying objects (protective helmets, eye and face protection)
- 2. Abrasive objects (eye, face, and respiratory protection)
- 3. Splashing objects (eye and face protection)
- 4. Harmful dust (eye, face, and respiratory protection)
- 5. Harmful fumes (eye, face, and respiratory protection)

- 6. Harmful vapors (eye, face, and respiratory protection)
- 7. Harmful mists (eye, face, and respiratory protection)
- 8. Harmful gases (eye, face, and respiratory protection)
- 9. Personal protective equipment must meet the requirements and be maintained according to Subparts D and E of the Part.

(d) Switches used on the following hand held power tools are to be as follows:

- 1. Positive On-Off Switch
 - a. Sanders
 - b. Grinders 2" or less wheel diameter
 - c. Routers
 - d. Planers
 - e. Laminate trimmers
 - f. Nibblers
 - g. Shears
 - h. Scroll saws
 - i. Jigsaws (blade shanks 1/4" wide or greater in diameter)
- 2. Momentary contact "on-off" where turn-off can be accomplished with the same finger or fingers that turn it on.
 - a. Drills
 - b. Topper
 - c. Fastener drivers
 - d. Grinders with wheels 2" or greater in diameter
 - i) Horizontal
 - ii) Vertical
 - iii) Angle
 - e. Disc sanders
 - f. Belt sanders
 - g. Reciprocating saws
 - h. Saber saws
 - i. Other similar operating powered tools
- 3. Constant pressure switch will be used on all other hand held powered tools that will shut the power off when the pressure is released.
 - a. Circular saws
 - b. Chain saws
 - c. Percussion tools

1926.301 Hand Tools

Do not issue or permit the use of hand tools if the following exists:

- 1. Wrenches, including adjustable, pipe, end, socket
 - a. Sprung jaws (slippage)
- 2. Impact tools, drift pins, wedges, chisels, etc.
 - a. Mushroomed heads (flying metal)
- 3. Tools requiring wooden handles must be tight in the tool and be:
 - a. Free of splinters
 - b. Free of cracks or splits (no tape)

1926.302 Power-operated hand tools

(a) Electric power-operated hand tools shall be either:

- 1. Approved double insulated
- 2. Grounded per Subpart K of 1926

(b) Electric Cord shall not be used to:

- 1. Hoist tool
- 2. Lower tool

(c) Pneumatic power tools will be used as follows:

- 1. Secured to the hose or whip by a positive means to prevent accidental disconnection of the tools from the air supply line.
 - a. Wire
 - b. Chain
- 2. Tool attachments must be secured.
 - a. Safety Clips
 - b. Retainers
- 3. The following pneumatically driven tools, which operate at more than 100 psi, with an automatic fastener feed, shall have a safety device at the muzzle to prevent fastener ejection unless the muzzle is in contact with the work surface.
 - a. Nailers
 - b. Staplers
 - c. Other similar equipment
- 4. Compressed air for cleaning purposes must not be used unless:
 - a. Pressure
 - i) Less than 30 psi
 - b. Guarding

- i) Chip
- ii) Personal protective equipment (face, eye, etc.)
- c. Exception: 30 psi does not apply to:
 - i) Concrete form
 - ii) Mill scale
 - iii) Similar cleaning purposes

EXCEPTION: The minimum is required to allow proper retract and contact with the work.

1926.304 Other Requirements

- 1. All woodworking tools and machinery shall meet with applicable requirements of ANSI 01.1-1 961 Safety Code for Woodworking Machinery.

1926.305 Jacks, Lever and Ratchet, Screw and Hydraulic (1926.305)

(a) General Requirements

- 1. Manufacturer rated capacity legibly marked on all jacks
- 2. Shall not be exceeded
- 3. Positive stop to prevent over travel
- 4. Lift Slab Construction (Hydraulic Jacks)
 - a. Shall have a safety device which will support the load in any position if jack malfunctions
 - b. If slabs are automatically controlled, jacks shall have device that will stop the operation when the 1/2" leveling to tolerance is exceeded
- 5. Blocking (all jacks) when necessary:
 - a. For a firm foundation, base will be blocked or cribbed
 - b. Possibility of slippage of the metal cap on the load, a wood block is to be used between cap and load

1910.244 Jack Operation and Maintenance

- 1. After the load has been raised it shall be secured.
 - a. Blocked
 - b. Cribbed
 - c. Otherwise, secured
- 2. Subject to freezing temperatures will have adequate antifreeze solution.
- 3. Properly Lubricated:
 - a. Regular intervals
 - b. Manufacturer's instructions to be followed
 - c. Lubricate as recommended by manufacturer

- 4. Thorough inspection of all jacks will be made depending upon service condition but not less frequently than:
 - a. Constant or intermittent use at one locality
 - i) Once every 6 months
 - b. Special Work
 - i) When sent out of shop
 - ii) When returned
 - c. Abnormal load or shock
 - i) Immediately before use
 - ii) Immediately after use
- 5. Repair or replacement parts will be examined
 - a. For possible defects
- 6. Out of order or deficient jacks shall be
 - a. Tagged out of order
 - b. Not to be used until repaired and/or serviced

OSHA Standards Checklist - Subpart J

1926.350 - Gas Welding and Cutting

(a) Transporting, Moving and Storing Compressed Gas Cylinders

- 1. Keep valve protection caps in place.
- 2. When hoisted, secure on a cradle, sling board or pallet.
- 3. Move by tilting and rolling on the bottom.
- 4. Secure in a vertical position while transporting.
- 5. Do not lift by the valve protection cap.
- 6. Remove regulators and install valve protection caps before moving cylinders.
- 7. Use a cylinder truck, chain, or other steadying device on cylinder in use.
- 8. Close cylinder valves when empty or being moved.
- 9. Secure in upright position when hoisted or carried.

(b) Placing Cylinders

- 1. Keep away from sparks, hot slag, or flame.
- 2. Prevent from becoming part of an electrical circuit.
- 3. Place fuel gas cylinders valve end up.
- 4. Do not take into confined spaces.

(c) Treatment of Cylinders

- 1. Do not use as rollers or supports.
- 2. Do not refill or mix gases.
- 3. Remove damaged or defective cylinders from use.

(d) Use of Fuel Gas

Instruct employees in the safe use of fuel gas as follows:

- 1. Stand to one side, away from welding work, sparks, or flame before "cracking" the valve.
- 2. Do not open fuel gas cylinders more than one-and-one-half (1 1/2) turns.
Leave wrench in position on the stem.
- 3. Always attach a regulator to the cylinder valve or manifold.
- 4. Close and release the gas before removing a regulator from a cylinder valve.
- 5. Close the valve and tighten the gland nut if the valve stem leaks. If leak continues remove cylinder from work area.
- 6. If the fuse plug leaks, remove cylinder from the work area.

(e) Fuel Gas and Oxygen Manifolds

- 1. Paint in letters at least 1-inch high the substances contained in fuel gas and oxygen manifolds.
- 2. Place in a safe, well ventilated, accessible location. Never within enclosed spaces.
- 3. Hose connections must not be interchangeable.

- 4. Place nothing on top of the manifold.

(f) Hoses

- 1. RED for fuel gas hoses. GREEN for oxygen hoses. Must not be interchangeable.
- 2. When taping together cover no more than 4" out of every 12".
- 3. Inspect all hoses at the beginning of each shift. Remove defective hoses from service.
- 4. If flashback occurs, test and remove defective hose.
- 5. Use hose couplings that require rotary motion to be disconnected.
- 6. Ventilate boxes used for storing gas hoses.
- 7. Keep hoses and cable clear of passageways, ladders and stairs.

(g) Torches

- 1. Clean clogged torch tips with wires, drills or devices designed for the purpose.
- 2. Inspect torches at the beginning of each shift. Remove defective torches from service.
- 3. Light torches by friction lighters or other approved devices only.

(h) Regulators and Gauges

- 1. Use only oxygen and fuel gas regulators and gauges that are in proper working order.

(i) Oil and Grease Hazards

- 1. Keep all oxygen cylinders, connectors and other apparatus away from oil and grease.

(j) Additional Rules

- 1. Use ANSI Z49.1 - 1967 for all details not covered in this subpart.

1926.351 - Arc Welding and Cutting

(a) Manual Electrode Holders

- 1. Use only electrode holders designed to safely handle the maximum rated current required.
- 2. Hand-held parts of the electrode holder and the outer jaws must be fully insulated.

(b) Welding Cables and Connectors

- 1. All arc welding and cutting cables must be flexible and fully insulated.
- 2. The lead cable must be free from repair or splices within ten (10) feet of the electrode holder.
- 3. Connectors and splices must be securely fastened and fully insulated.
- 4. Cables in need of repair must be removed from service.

(c) Ground Returns and Machine Grounding

- 1. Ground return cables must have a safe current carrying capacity.
- 2. Do not use gas or flammable liquid pipelines, or electrical conduit as a ground return.
- 3. Do not use as a ground return circuit, any structure or pipeline that generates arcs, sparks, or heat at any point.
- 4. When a structure or pipeline is used as a ground return circuit bond all joints and inspect periodically.
- 5. Ground the frames of all arc welding and cutting machines at the source of the current.
- 6. Inspect all ground connections to ensure that they are strong and adequate.

(d) Operating Instructions

Note: Instruct all employees in the safety measures of arc welding and cutting as follows:

- 1. Remove electrodes from the holders when not in use and protect from contact with employees or other objects.
- 2. Do not dip hot electrode holders in water.
- 3. Turn off the power supply when leaving or moving the arc welding or cutting equipment.
- 4. Report all faulty or defective equipment to the supervisor.
- 5. Use applicable NEO, NFPA, and ANSI requirements.

1926.352 - Fire Prevention

- (a) Move objects to be welded, cut or heated to a safe location.
- (b) If the object to be welded, cut or heated cannot be moved, take positive means.
- (c) Do no welding, cutting, or heating in the presence of flammable painting, flammable compounds, or heavy dust concentrations.
- (d) Provide and maintain suitable fire extinguishing equipment.
- (e) While welding, cutting, or heating and fire prevention precautions are not sufficient, assign a guard, instructed as to the specific fire hazards and how to use the firefighting equipment provided.
- (f) When welding, cutting, or heating on walls, floors, or ceiling, take the same precautions on the opposite side as on the side being welded.
- (g) When Not In Use
 1. Shut off the gas supply to the torch outside of an enclosed space.
 2. Remove open-ended fuel gas and oxygen hoses from enclosed spaces.
- (h) Keep Closed
 1. All containers which contain or have contained flammable liquids.
 2. Remove empty containers to a safe area.
- (i) Fill with water or thoroughly clean all drums, containers, or hollow structures which have contained toxic or flammable substances before welding, cutting, or heating.
- (j) Vent all drums, containers, or hollow structures before applying heat.

1926.353 - Ventilation and Protection in Welding, Cutting, and Heating

(a) Mechanical Ventilation

- 1. Consists of general mechanical ventilation or local exhaust system.
- 2. General mechanics ventilation must be of sufficient capacity to maintain welding fumes and smoke within safe limits.
- 3. Local exhaust ventilation with freely movable hoods must be located so as to remove fumes and smoke at the source and keep the breathing zone within safe limits.
- 4. Contaminated air must be exhausted into the open, clear of the source of intake air.
- 5. Make up air must be clean and respirable.
- 6. Do not use oxygen for:
 - a. Ventilation;
 - b. Cooling;
 - c. Blowing dust from clothing; or
 - d. Cleaning the work area.

(b) Welding, Cutting and Heating in Confined Spaces

- 1. When welding, cutting or heating in confined spaces, either general mechanical or local exhaust ventilation must be used.
- 2. When sufficient ventilation cannot be obtained, employees in the confined space must:
 - a. Wear an air line respirator.
 - b. Have an employee outside the confined space to maintain communication and aid in case of emergency.

(c) Welding, Cutting, or Heating of Metal of Toxic Significance

- 1. Use general mechanical or local exhaust ventilation, when welding, cutting, or heating the following metals in enclosed spaces.
 - a. Zinc-bearing base or filler metals or metals coated with zinc-bearing materials.
 - b. Lead base metals.
 - c. Cadmium-bearing filler materials.
 - d. Chromium-bearing metals or metals coated with chromium-bearing materials.
- 2. Use local exhaust ventilation or wear air line respirators when welding, cutting or heating the following metals in enclosed spaces.
 - a. Metals containing lead, other than as an impurity, or metals coated with lead-bearing materials.
 - b. Cadmium-bearing or cadmium-coated base metals.
 - c. Metals coated with mercury-bearing metals.
 - d. Beryllium-containing base or filler metals.
Note: Work-involving Beryllium must be done with both local exhaust ventilation and air line respirators.
- 3. Use filter-type respirators when welding, cutting, or heating in the open air.
Note: Use air line respirators if work involves Beryllium-containing base or filler metals.

- 4. Other employees exposed to the same atmosphere must be protected in the same manner as the burner or welder.

(d) Inert-Gas Metal-Arc Welding

- 1. Before engaging in inert-gas metal-arc welding:
 - a. Keep chlorinated solvents at least 200' away unless shielded. Be sure surfaces prepared with chlorinated solvents are thoroughly dry.
 - b. Vision protection
 - i) Use filter lenses if not protected by screening.
 - ii) Use filter lenses under the welding helmet when there are two or more welders.
 - iii) Use hand shields when the helmet is lifted or the shield is removed.
 - c. i) Cover skin completely.
 - ii) Welding helmets and shields must be free of leaks, openings, and highly reflective surfaces.
 - d. When inert-gas metal-arc welding on stainless steel use local exhaust ventilation or air line respirators.

(e) General Welding, Cutting, and Heating

- 1. Use suitable mechanical ventilation or respiratory equipment when unusual physical or atmospheric conditions are present.
- 2. Use suitable eye protection while performing any type of welding, cutting, or heating.

1926.354 - Welding, Cutting, and Heating in Way of Preservative Coatings

- (a) Test flammability of preservative coating before welding, cutting or heating.
Note: Preservative coatings are considered to be highly flammable when scrapings burn with extreme rapidity.
- (b) Strip highly flammable coatings from the area to be heated.
- (c) Protection against toxic preservative coatings;
 - 1. Strip toxic coatings at least 4" from the area of heat application when in enclosed spaces or wear air line respirator.
 - 2. Use respirator in the open air.
- (d) Remove preservative coatings or use artificial cooling on the area to be heated.



SITE SAFETY AUDIT

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Introduction

The employer is required under its safety and health program to designate a competent person to conduct frequent and regular inspection of the job site, materials, and equipment under 29 CFR 1926.20(b)(2). The designated competent person is defined under 29 CFR 1926.32(f) as one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees and who has the authorization to take prompt corrective measures to eliminate them. A copy of a checklist for this purpose is included in this section as a guide, but is not intended to address all possible conditions that might exist at a worksite. If deficiencies are noted they must be corrected before work continues. Failure to correct such deficiencies could be the basis for regulatory citations and other liability claims.

Unannounced Construction Site Visit

BRANCH NO. _____

PROJECT NO. _____

DATE _____

SITE LOCATION _____

SCOPE OF WORK DURING VISIT _____

I. FIRST IMPRESSIONS

A. Field crews overall appearance

1. Uniforms worn? Yes No N/A

B. Equipment

1. Are vehicles clean? Yes No N/A

2. Abused; describe: Yes No N/A

3. Is the oil being changed regularly? Yes No N/A

4. Check the operation of all lights? Yes No N/A

5. Check general condition of the vehicle? Yes No N/A

6. Adequate for the job? Yes No N/A

7. Are all inspection stickers current? Yes No N/A

8. Is insurance certificate current and readily available? Yes No N/A

C. Foreman

1. Is project laid out properly? Yes No N/A

D. Are the appropriate personnel on site to complete this project satisfactorily?

Yes No N/A

II. SAFETY

- A. Are all employees wearing hard hats? Yes No N/A
- B. Are all riggers on tower wearing fall safe equipment? Yes No N/A
 - 1. Are ropes utilized and in good condition? Yes No N/A
 - 2. Are the harnesses and all equipment in good condition? Yes No N/A
 - 3. Are the personal safety belts & straps in good condition? Yes No N/A
 - 4. Was a daily safety check performed? Yes No N/A
- C. Are hazardous chemicals properly secured and marked? Yes No N/A
- D. Are fire extinguishers in the vehicles? Yes No N/A
- E. Are first aid kits in vehicles and well stocked? Yes No N/A
- F. Are there any unsafe work conditions or practices noted? Yes No N/A
- G. Is rigging equipment in good condition? (chokers and shackles) Yes No N/A
- H. Are blocks in good condition? Yes No N/A
- I. Do the blocks have good hook latches? Yes No N/A
- J. Are come-a-longs in good condition? Yes No N/A
- K. Are there hook latches on the come-a-long hooks? Yes No N/A
- L. Is there satisfactory equipment on site to do the job? Yes No N/A
- M. Is proper footwear being used? Yes No N/A
- N. Is the site clean and orderly? Yes No N/A

III. CLIENT'S IMPRESSIONS

- A. Was client on site during visit? Yes No N/A
- Specific comments brought to your attention:

IV. SITE EQUIPMENT

- A. Gin Pole
 - 1. Is the proper size gin pole on site for project? Yes No N/A
 - 2. Is the rooster head well greased and in good condition? Yes No N/A
 - 3. Are the basket and collar chokers in good condition? Yes No N/A

4. Is the pole straight and in good structural condition? Yes No N/A
- B. Hoist**
1. Is the proper size-hoisting unit on site for the project? Yes No N/A
2. Asset # _____ properly marked? Yes No N/A
3. Is cable of proper size for greatest load anticipated? Yes No N/A
4. Is cable in serviceable condition? Yes No N/A
5. Is hoist marked to meet OSHA specifications? Yes No N/A
6. Does the hoist appear to be well serviced? Yes No N/A
7. Is there a fire extinguisher attached? Yes No N/A
8. Is there a current inspection sticker? Yes No N/A
- C. Down Haul Ball**
1. Is proper size down haul ball being utilized? Yes No N/A
2. Is the down haul ball properly secured to cable? Yes No N/A
3. Are slings and chokers of proper size for project? Yes No N/A
4. Is the eye splice made properly and secured? Yes No N/A
- D. Crane or Boom Truck**
1. Is there a crane unit on site? Yes No N/A
2. What size and type of crane is it? _____
3. Is it rented without an operator? Yes No N/A
4. If so, was at least one (1) employee on the site a licensed crane operator? Yes No N/A
5. Is the cable in serviceable condition? Yes No N/A
6. Is the crane in good condition? Yes No N/A
7. Does the crane have a current inspection sticker? Yes No N/A
8. Are the inspection forms in the truck? Yes No N/A
- E. Does the equipment on site require a CDL licensed driver?** Yes No N/A
1. Does at least one (1) employee on site have a CDL license? Yes No N/A
- F. Is at least one (1) employee on site certified in first aid and CPR?** Yes No N/A
- G. Did foreman have the telephone numbers of the nearest EMS facility? (911 does not always work)** Yes No N/A
- H. Did equipment leave the shop with all necessary tools, materials, and equipment to do the job?** Yes No N/A
- I. Did equipment have a back up warning system?** Yes No N/A

V. GENERAL NOTES AND COMMENTS:

VI. SPECIFIC COUNSEL, RECOMMENDATIONS OR COMMENDATION GIVEN AT TIME OF VISIT:

VII. AMOUNT OF TIME SPENT ON THIS VISIT? _____ Hours _____ Days

VIII. NECESSARY TO FOLLOW UP WITH WRITTEN INFORMATION? Yes No N/A

IX. NECESSARY TO TAKE DISCIPLINARY ACTION? Yes No N/A
If yes, explain:

X. THIS REPORT WAS REVIEWED WITH Foreman Crew

XI. CREW MEMBERS

Assessor Foreman

Job Site Checklist

TRUCK(S) IDENTITY

Make _____ Model _____ Year _____

Vehicle Identification Number _____ License Plate Number _____

Issuing State _____

- 1. Body Damage Yes No
- 2. Cleanliness
 - A) Inside Acceptable Unacceptable
 - B) Outside Acceptable Unacceptable
- 3. Gang Box Locked Yes No
- 4. Spare Tire & Jack
 - A) Locked Yes No
- 5. Oil Level Good Low
 - A) Window Sticker (up to date) Yes No
- 6. Tire Condition
 - A) Pressure Acceptable Unacceptable
 - B) Spare Yes No
- 7. Gas Cans Locked Up Yes No
- 8. Any Maintenance Done
 - A) Receipts to Office Yes No

JOB SITE

- 1. Equipment Organized and Centralized Acceptable Unacceptable
- 2. Gang Box Locked Yes No
- 3. Emergency Numbers Posted Yes No
- 4. Site Security
Type _____
Badge number or ID _____
- 5. Site Keys – Who is Responsible
Name: _____

6. Trash Picked Up Yes No

MATERIALS

1. Secured Yes No

2. Organized Yes No

3. Tag Identified Yes No

4. Correct Fit Checked Yes No

5. Any Shortages Not Reported Yes No

6. Radios Being Charged
Daily Model _____ No. _____ Yes No

7. Who Is Responsible Name _____

8. Fire Extinguisher Where _____

9. Signage Posted Yes No

OUR EQUIPMENT ON SITE

1. Safety Signs Around Equipment Yes No

2. Blocks, Chokers, Come-a-longs Put Up Yes No

3. Anchor Rigging Clean Yes No

4. Anything Left Out Overnight Yes No

If yes, list: _____

HOIST

State Type & Model _____ S/N Year _____

1. Tie Down Cable Intact and Secured Yes No

2. Monthly Inspections Performed Yes No

3. Operator (Primary) Name _____

- 4. Fuel Level
Empty ----- Full
- 5. Oil Level Within Gauge Range Low
- 6. Load Line Hazard Marked, Cones, Tape, Etc. Yes No
- 7. Alignment (Is It Spooling Properly) Yes No
- 8. Timbers Yes No
- 9. Distance to Tower Base In Feet (Est.) _____
- 10. Base Block Size Inches & Tonnage _____
- 11. Is Load Line Running Clear from Hoist to Base Yes No
- 12. From Base to Top (Is It Running on Any Steel) Yes No
- 13. Hoist Inspection Yes No
- 14. Lift Check Yes No

WORK PERFORMED

- 1. Estimate Completion of Tasks
 - Task No. 1 _____
0% -----50%-----100%
 - Task No. 2 _____
0% -----50%-----100%
 - Task No. 3 _____
0% -----50%-----100%
 - Task No. 4 _____
0% -----50%-----100%
- 2. Blueprints on Site and Available Yes No
- 3. On Completed Tasks -- All Bolts Installed Correctly -- Same Direction Yes No
- 4. Correct Bolt Type Stainless, A-325, Galvanized Yes No
- 5. Projection of Bolts Acceptable Unacceptable
- 6. How Many Bolts Affected Number _____

- 7. Location of Bolts _____
- 8. Steel Touch Up Painting Yes No
- 9. Wires and Coaxial Cable Secure Yes No
- 10. Proper Operation Achieved Yes No
 - A) Installed Properly Yes No

If not, explain: _____

- 11. Any Extra Charges

CREW

Does crew have certified cards with them? Yes No

- 1. List Crew _____ *Rate Safety Performance on this Job*
 Acceptable Unacceptable
 _____ Acceptable Unacceptable
 _____ Acceptable Unacceptable
 _____ Acceptable Unacceptable

- 2. Foreman _____ *Rate Safety Performance on this Job*
 Acceptable Unacceptable

3. On Time Arrival Yes No

- 4. Complaints or Comments

INSPECTION PERFORMED BY:

Signature _____

DATES INVOLVED:

COST OF SITE VISIT:

Airfare _____

Auto _____

Motel _____

Misc. _____

Total Cost _____



ACCIDENT INVESTIGATION

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Introduction

It is important to conduct post-accident investigations whenever there has been physical injury, or an incident occurred where there was a “near miss” with a potential for physical injury.

Whenever there has been physical injury, senior management must be notified within 24 hours or as soon as possible, so that a complete investigation may be conducted which can be the basis for corrective action but does not implicate the company for legal liability because of the manner in which the investigation was conducted. The individuals who conduct the investigation must be competent and have adequate training to identify hazards and learn to assess the factual information obtained so that proper corrective action can be taken.

Since the company and managers may also face criminal liability as a result of the accident in which there is serious injury or death, it is necessary to consult with legal counsel in order to avoid waiving legal rights of the company and managers in any such investigation and to create appropriate legal privileges which may protect the company and managers from such liability.

Accident Investigation Policy

I. WHAT TO INVESTIGATE

Every accident, regardless of dollar amount, shall be reviewed. In addition, incidents which had the potential for causing accidents shall also be reviewed.

II. HOW TO INVESTIGATE

Sample forms are provided for accident/incident investigations. All forms shall be completed when appropriate. In most cases, the 'Foreman's First Report of Accident' (page 15), and the 'Injured Employee Report' (page 16), will be required to be completed. Next, the 'Witness Statement' form (page 18) should be completed. The 'Request for Release to Limited Duty' form (page 10) should be completed when the employee is ready to return to work.

III. URGENCY OF INVESTIGATION

An accident investigation shall be conducted during the same shift, if at all possible. Unless approval is given by the Safety Coordinator, all investigations shall be completed within 24 hours of the incident.

IV. FILING PROCEDURE

The investigation results shall be provided to the Safety Coordinator, who will present it at the next safety committee meeting. If corrective action is necessary, the report will be rescheduled for each forthcoming safety committee meeting until the corrective action is complete.

V. ACCIDENT INVESTIGATIONS - REQUIREMENTS

The following incidents will be investigated and reported as indicated:

- A. Any accident or any incident having the potential of causing an accident. Notify Safety Coordinator as soon as possible.
- B. Any accident where company equipment is damaged in excess of \$1000. Notify Safety Coordinator within 24 hours.
- C. Any accident where company equipment or property valued over \$1000 is destroyed. Notify Safety Coordinator within 24 hours.
- D. Any fatal injury or injury resulting in the dismemberment of an employee or non-employee at the job site. Notify the Safety Coordinator immediately.
- E. Any occupational illness incurred by employees (exposure to any toxic materials or physical agent, i.e., radiation, pesticides, toxic substance, heat, stress, noise, etc.) in the workplace. Notify the Safety Coordinator as soon as possible.

VI. RESPONSIBLE PARTIES

The foreman is responsible for contacting senior management to obtain instructions on who is to conduct the accident investigation. In the event of a fatality or hospitalization of three or more employees, OSHA must be contacted within eight hours. Senior management will consult with legal counsel in a fatality or serious injury case to select the investigator, establish the scope of the investigation and control the submission of evidence to OSHA or any other regulatory authority. Senior management will also determine what physical evidence from the accident may need to be preserved for future litigation.

VII. SAFETY AUDIT/INSPECTIONS

PURPOSE: Safety audits/inspections detect and identify conditions or acts, which cause or may cause accidents. Accordingly, safety audits/inspections will be conducted periodically.

- A. Facility safety audits/inspections must be done periodically. The Safety Coordinator will conduct the audit/inspection.
- B. The Safety Coordinator will present his/her safety audit/inspection findings for the month at the next month's safety meeting.
- C. The Safety Coordinator is responsible for ensuring that recommendations for corrective action receive administrative approval, when necessary, and for following up on all corrective action taken.
- D. The Safety Coordinator will retain all documentation reports regarding safety audit/inspections and is subject to review by the appropriate company officials.
- E. Facility safety audits/inspections are not substitutes for local, state or federal inspection requirements, but will be performed in conjunction with them.

Investigation Guidelines

UNSAFE ACTS:

Operating Without Authority

Examples:

1. Starting, stopping, using, operating, moving, etc., without proper authority

Operating at Unsafe Speed

Examples:

1. Throwing material instead of passing or carrying it
2. Jumping from platforms or ladders
3. Moving materials or equipment too fast
4. Hoisting personnel or materials too fast

Making Safety Devices Inoperative

Examples:

1. Removing safety devices
2. Blocking, plugging, or tying safety devices
3. Maladjusted safety devices
4. Disconnecting safety devices

Using Unsafe Equipment or Using Equipment Unsafely

Examples:

1. Using defective equipment or tools
2. Unsafe use of equipment or tools
3. Using hands instead of hand tools
4. Gripping objects insecurely
5. Taking wrong hold of objects

Unsafe Loading, Placing, Mixing

Examples:

1. Overloading, crowding, lifting or carrying loads which are too heavy
2. Arranging or placing objects unsafely
3. Mixing, combining one substance with another causing fire or explosion such as grease on oxygen cylinders
4. Introducing objects or materials unsafely such as a knife or fork into an electric toaster
5. Throwing aerosol cans into compactors, incinerators, etc.

Taking Unsafe Position

Examples:

1. Exposure under ladder
2. Putting body into shaft openings or standing too close to an opening
3. Lifting with back bent or other awkward position
4. Exposure to falling or sliding objects without proper personal protective equipment (PPE)

Unsafe Tower Construction

Examples:

1. Workers ascending on load/fall hazards
2. Hoist and gin pole charts not available
3. Improper rigging observed
4. PPE not being used correctly

Working on Moving or Dangerous Equipment

Examples:

1. Getting on or off moving equipment
2. Cleaning, oiling, adjusting, etc., equipment while it is moving
3. Packing, chalking, repairing, etc., equipment under pressure (pipes, valves, etc.)
4. Working on electrically charged equipment
5. Repairing or welding equipment containing dangerous chemical substances

Distraction, Teasing, Horse Play

Examples:

1. Unnecessary distraction
2. Throwing objects, teasing, abusing, practical joking, quarreling, fighting, etc.

Failure to Use Personal Protective Devices

Examples:

1. Failure to wear climbing harness or lanyards
2. Failure to utilize other fall protection devices

UNSAFE CONDITIONS:

Inadequately Guarded

Examples:

1. Danger points inadequately guarded
2. Guards not installed (grinder, rotary saw, chop saw)

Unguarded

Examples:

1. Danger points not guarded
2. Guards removed or not installed (cap removed from oxygen cylinder during transport)

Defective Tools, Equipment or Substance

Examples:

1. Rough, slippery, sharp edged, aged, worn, frayed
2. Not insulated

Hazardous Arrangement

Examples:

1. Unsafely stored or piled tools or materials
2. Poor housekeeping, untidy trucks or working area
3. Presence of harmful solids or liquids, poisonous plants, insects, etc.

Unsafe Illumination

Examples:

1. Night-time work without proper head lamps or other lighting

Unsafe Ventilation

Examples:

1. Impure source of air
2. Lack of ventilating system
3. Ventilating system of wrong type, insufficient capacity, improperly installed and/or poorly maintained

Unsafe Clothing

Examples:

1. Defective shoes, goggles, gloves, hanging jewelry, etc.

Accident Investigation

STATEMENT: To determine the cause of accidents and provide the information necessary to take corrective action and prevent similar occurrences in the future.

- I. The department head/supervisor initiates the accident investigation in his/her area immediately after an incident has occurred. The department head/supervisor contacts the Safety Coordinator to assist in conducting the accident investigation.
- II. Criteria for initiating/conducting an accident investigation are:
 - A. All accidents involving personal injury; and
 - B. All incidents which had the potential of causing accidents, i.e. near misses.
- III. The department head/supervisor notifies the employee and witnesses that an accident investigation will be conducted and its purpose:
 - A. The employee is the individual who best understands his/her injury and is encouraged to suggest possible solutions which can help prevent a similar accident from occurring; and
 - B. Management is concerned for the safety and well-being of all employees, residents, etc.
- IV. Accident investigations should be initiated within 24 hours of notification of the occurrence of the incident, and must be documented, citing any unsafe acts or conditions (refer to attached Investigation Guidelines) and recommendations for corrective action.
- V. The investigation report must be submitted to senior management for review and any necessary approval for corrective action. The supervisor is responsible for taking appropriate corrective action, when an employee has violated safety policy or procedure. The Safety Coordinator is responsible for taking and following up on corrective action.
- VI. In cases where corrective action involves new or revised safety rules, the appropriate company official will notify all employees of such a change.
- VII. The appropriate company official retains the original accident investigation report attached to the incident report for the facility file. The Safety Coordinator will retain a copy of the investigation report for review at the next safety committee meeting.

Injured Employee Interview

PURPOSE OF INTERVIEW

The purpose of this interview is not to assign blame, but to reduce the likelihood of future injuries to the workforce by eliminating the conditions that permitted the injury. The injured worker is asked to contribute his/her knowledge to this process by participating in the accident review process.

CONTINUATION OF WORK

The company is committed to the implementation of personnel policies that accommodate the needs of our employees. One of those needs is to maintain their normal income without interruption.

Whenever employees are injured and cannot perform their normal duties, an effort will be made to provide such work to meet the employee's work restrictions. To provide work requires cooperation on the part of the injured employee, the treating physician and the company. Forms are provided to assist in this evaluation.

PURPOSE OF ACCIDENT REVIEW

To help the company lessen the likelihood of other employees being injured in a similar manner, all accidents are investigated. A part of this investigation process is an interview with the injured employee.

The purpose of the interview is to:

- Identify the hazards associated with injury;
- Determine dominating and influencing causes of injury;
- Note need for more training or re-training; and
- Counsel with worker and review work practices.

ACCIDENT REVIEW

Request the injured employee to respond, on attached paper, to the following questions:

1. Provide a description of the accident in as much detail as necessary for the Safety Coordinator to understand it.
2. Give the immediate cause(s) of the accident. What immediate condition was present that caused the accident?
3. Comment on incidental causes. What other conditions existed that supported immediate cause? (example; improper maintenance results in a hand injury)
4. In the employee's opinion, offer suggestions on what the company should do to prevent future injuries OF THIS TYPE.

Options to consider, but should not be limited to, include:

- New training or retraining
- Change in procedure
- Altering of physical conditions
- Need for different or additional equipment
- Better enforcement of in-place procedures

EMPLOYEE COUNSELING

Would adherence to existing policies and procedures have prevented the injury? If so, is there something that the company can do to encourage this adherence by the injured worker in the future and for all other workers? Is the injured worker aware of the company's discipline policy? Does he/she feel that other employees are aware of the policy? Does the worker understand the position the company is placed in if policies and procedures are not enforced?

The employee participation in the accident review process is appreciated and a copy of the interview will be placed in the employee's personnel file.

DISCIPLINARY ACTION

To fulfill the company's obligation to all of its employees, enforcement of the policies and procedures is required. If the accident/review process indicated that discipline is necessary, a copy of the specific measures taken will be attached to this report.

INTERVIEW ACKNOWLEDGEMENT

The undersigned employee has been asked to participate in the accident review process and the following components have been discussed with the injured worker:

- Policy of Continued Work
- Purpose of Accident Review
- Causes of Accident
- Discipline Policy
- Disciplinary Action Taken

Signature of Interviewer

Date of Interview

Signature of Employee

Request for Release to Limited Duty

TO: <Treating Physician>

_____ is committed to the implementation
Company Name
of personnel policies that respond to the physical needs of our employees. When a worker is injured and cannot return to full work duties, altered work requirements may be made available to provide work within physical restrictions. To provide this altered work which will allow an injured employee to return to work requires the assistance of the attending physician.

If the employee cannot be released to full duty, please indicate any type of physical and/or mental task limitations that should be imposed upon the employee listed below. Attached to this letter is a form that may be utilized to suggest alternate duties that the injured employee may perform.

Employee Name: _____

Employee's Job Description: _____

RETURN TO WORK RELEASE

- The employee named above has been released to full work duty.
- The employee named above has been released to restricted duty.
- The employee named above has not been released to restricted duty, but it is estimated that he/she can be released to such duty by _____.

Type/Print Physician's Name

Physician's Signature

Physician's Phone Number

Date of Signature

Limited Duties Opportunities

ATTENDING PHYSICIAN: Please indicate the limitations that should be imposed upon the duties of the injured employee. If limitations beyond strength/lifting, range of motion, and rest periods are necessary, please utilize the list of some of the duties that are available to indicate how the company can continue to utilize the skills of the injured worker.

- Indicate any modifications that could be made to allow the employee to alter his/her work schedule to accommodate rest, medication, and therapy.

STRENGTH/LIFTING RESTRICTIONS: _____

RANGE OF MOTION LIMITATIONS: _____

REST REQUIREMENTS: _____

Possible Duties Available

- Work on job estimations
 - Answer telephone and take messages
 - Perform inventory duties
 - Perform light housekeeping
 - Attend training classes (first aid, defensive driving, safety)
 - Accompany driver
 - Monitor job site
 - Drive/delivery
 - Repair/paint equipment
 - Other: *(describe)* _____
- _____

Accident/Incident Review Chart

YEAR:	QUARTER:	REPORTED BY:
Incident Number		
Extent of Injury		
Fatality		
Lost Time		
OSHA Reportable		
First Aid Only		
Location of Injury		
Arm/Hand		
Leg/Foot		
Back/Torso		
Head		
Eye		
Type of Injury		
Laceration/Puncture		
Bruise/Contusion		
Broken Bone		
Lodged Object		
Concussion/Internal		
Cause of Injury		
Cut		
Struck By		
Caught In		
Fall		
Object in Eye		
Vehicle Accident		
Department of Employment		
Tower Crew		
Shop/Yard		
Civil Work		
Office		
Other Information		
Location of Accident*		
Type of Work Involved**		
Hour of Occurrence		
Day of Occurrence		
Time Employed (months)		

*Use the following location codes: On a Tower-**T**; On Ground at Tower Site-**G**; Shop/Yard-**S**; Civil Construction Site-**C**; Road/Highway-**R**; Off-Duty-**OD**; Other-**O**.

Use the following work codes: Rigging-R**; Tower Erection-**TE**; Line/Antenna Installation-**LA**; Concrete Work-**C**; General Construction-**GC**; Power Tool Use-**PT**; Machine Operation-**M**; Driving-**D**; Other-**O**.

Accident Reporting Procedure

THESE FORMS MUST BE KEPT IN EVERY COMPANY VEHICLE

The information herein must be relayed to your branch office as soon as possible on the same day after accident, illness or exposure. A separate report must be completed for each employee when more than one employee is injured even if injury resulted from the same accident or injury.

The branch office or field crew must send a full report to the Safety Coordinator as soon as possible (same day) thereafter.

Section 1

“Foreman’s Report of Accident”

To be completed by foreman and sent to the office with sections 2 and 3.

Section 2

“Injured Employee’s Report”

This section is for the employee to give his/her personal opinion on what occurred or caused the accident. If an employee is not admitted to a hospital, this section should be completed and accompany “Foreman’s Report”. It must accompany either Section 1 or Section 3, whichever is applicable.

Section 3

“Manager and Foreman’s Report”

This section must be completed by the foreman, and discussed either in person or by telephone with the branch manager. If section 2 had not been completed yet it should accompany this section (3) if possible. All applicable sections or complete report should be sent to the branch office according to the job number where the accident occurred. If that is the foreman’s branch office, they should be sent in with the daily report package.

SPECIAL PROCEDURE

If it is not the foreman’s branch, it is the foreman’s responsibility to get the accident reports to the correct branch.

The branch office or field crew must relay this information to the Safety Coordinator immediately upon receipt.

Section 4

“Witness Statement”

This form can be utilized as a guide to interview other employees besides the injured employee, as well as third party witnesses. A trained manager should conduct a verbal interview of such person concerning the purpose of the statement and how to properly complete the statement.

Safety Coordinator

The Safety Coordinator will ensure that everyone will learn of the nature of the accident in order to create a safer working environment. This is not to criticize our company's mistakes, but to learn from them and become a safer working team.

Section 1: Foreman's First Report of Accident

Date of injury: _____ Time of injury: _____

Name of employee: _____

Site name and job number: _____

Treated as an outpatient and released: Yes No

Able to return to work: Yes No

If not able to return to work, how many day(s) employee gone? _____

A) What was employee doing when injured or exposed?

B) What part or parts of the body were affected?

C) Was the person involved in the accident using applicable equipment at the time of the accident? Yes No
(if no was checked, please explain in detail)

Foreman's Printed Name

Foreman's Signature

Date Signed

Section 2: Injured Employee Report

A) Please state in your own words what you were doing at the time of the accident or injury and what caused the injury.

B) What do you think you could have done to prevent this injury?

C) What can be done in the future to prevent an accident like this from happening again?

Employee's Printed Name

Employee's Signature

Date Signed

Section 3: Manager's and Foreman's Report

****FINAL REPORT ON ACCIDENT****

Date: _____ Employee's name: _____

A) What is the status of the employee?

B) In your personal opinion how could this accident have been prevented?

Branch Manager's Printed Name

Foreman's Printed Name

Branch Manager's Signature

Foreman's Signature

Did a conversation take place between the Branch Manager and Foreman in order to complete this section?

Branch Manager's initials: _____ Yes _____ No

Section 4: Witness Statement

Claim No.: _____ Date: _____

Name: _____ Age: _____

Business Address: _____

Phone: _____

Residence Address: _____

Phone: _____

Did you see the accident? Yes No Date: _____ Hour: _____

Where did it happen? _____

Where were you? _____

What happened? _____

What statements did you hear the parties make? _____

Names and addresses of other witnesses: _____

Witness' Printed Name

Witness' Signature

Date Signed



ALCOHOL AND DRUG POLICY

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Introduction

The use of drug and alcohol testing for pre-employment, post-accident and on a random basis is well recognized. Certain employers are required to have drug and alcohol testing programs if they are subject to regulations, such as the Department of Transportation.

The manner and means of conducting such testing is heavily regulated by federal law, including the Americans with Disabilities Act, as well as state law. Thus, no drug and alcohol testing program should be utilized until it has been reviewed by legal counsel for state and federal compliance.

The law also places restrictions on the use and access to the actual test data, which must be followed. Despite these restrictions, drug and alcohol testing can be an invaluable tool in eliminating those employees who may cause serious injury or death to themselves, co-employees and third parties because of their inability to work in a safe fashion while impaired by these substances.

Suggested Drug Abuse Policy Statement Requirements

WRITTEN POLICY MUST BE FURNISHED TO EACH EMPLOYEE:

An employer must provide a written copy of the drug abuse policy statement to all employees within 30 days after the date of the policy. An employer should also provide its employees with 30 days notice that the employer will be implementing a drug abuse policy. New employees must receive a copy on or before the first day of their employment. It is suggested, but not required, that each employee sign the policy statement and a copy be retained in the employee's permanent file.

SUGGESTED ELEMENTS OF THE DRUG ABUSE POLICY STATEMENT:

1. A statement of the purpose and scope of the policy;
2. A statement that the policy includes alcoholic beverages, as well as inhalants and illegal drugs. The policy may include prescription drugs if they create a safety or health hazard or employee abuse;
3. A statement of what the policy prohibits, i.e. what constitutes prohibited conduct;
4. A statement of any consequences the employee may suffer if found violating the policy;
5. A description of available treatment programs, if any, and how they may be requested, such as assistance provided by the employee's health care insurance or drug and alcohol abuse rehabilitation programs sponsored by the employer;
6. The availability of, and the requirements for participation in, drug and alcohol abuse education and treatment programs, if any;
7. A description of any drug-testing program that the employer has in force;
8. The circumstances under which employees will be tested;
9. Definitions of key terms, such as "under the influence," "MRO," etc.; and
10. A summary description of testing procedures (required in some states).


Be sure each of these elements is incorporated into the policy.

Sample Drug Abuse Statement

The sample drug abuse policy statement on the next page should comply with all requirements. However, each state has its own drug and alcohol laws, including the ability to conduct drug and alcohol testing. We strongly suggest that each company consult with legal counsel regarding applicable laws. Some states provide worker's compensation discounts to employers with drug and alcohol programs meeting certain requirements. We suggest that each company investigate whether such discounts are available within the state(s) where it operates.

Drug Abuse Policy - Option A

1. Statement of Purpose and Scope

 **Mejia International** Group Corporation recognizes that alcohol and drug abuse in the workplace has become a major safety and health concern. We believe that by reducing drug and alcohol abuse, we will improve the safety, health and productivity of employees. The object of our drug and alcohol abuse policy is to provide a safe and healthy workplace (“workplace” is defined as all places our employees are required to spend time at in the course of carrying out their duties; this includes customer work sites and company premises, including company parking lots and company vehicles) for all employees and prevent accidents.

The use, possession, sale, transfer, or purchase of drugs by employees at any time on company premises or while on company business is prohibited. The illegal use of any drug is prohibited. Employees must not report for duty or be on company property while not fit for duty as a result of the use of drugs or alcohol. Determinations regarding compliance with the preceding sentence shall be made by a doctor chosen or employed by the company after a referral by the employee’s supervisor. Employees must not have any drug in their possession (other than a legally prescribed drug) while on duty or on company property.

Employees who are convicted of, plead guilty to (including a plea of nolo contendere or no contest), or are sentenced for a crime involving illegal drugs in the workplace must report the conviction, plea or sentence to their supervisors or the Human Resources Department within five (5) days after such conviction, plea or sentence. If an employee who is convicted of, pleads guilty to or is sentenced for a crime involving illegal drugs performs work directly relating to the company’s contracts with a state or the federal government, the company will report such conviction, plea or sentence to the contracting agency within ten (10) days after it receives notice.

(Note: This paragraph is required if the company is a contractor or grant recipient covered by the federal Drug-Free Workplace Act, 41 U.S.C. § 701 et seq., and/or similar state statutes).

This policy applies to all employees and is a condition of their employment. The company reserves the right to amend or modify this policy in its discretion in accordance with the requirements of applicable law or for any other lawful reason.

2. Definition of Drug

For the purpose of this policy, the term “drug” wherever it appears in this policy statement, includes alcoholic beverages, as well as inhalants and illegal drugs.

For the purposes of this policy, the term “illegal drugs” means all controlled substances that are not being used or possessed under the supervision of a licensed health care professional. (Controlled substances are listed in Schedules I-V of 21 U.S.C. § 812 and 21 C.F.R. Part 1308).

3. Consequences of Violating the Drug Abuse Policy

Violation of this drug abuse policy will result in one of the following forms of corrective action: immediate discharge, suspension, probation, oral warning or written warning. In arriving at a

decision for proper action, the seriousness of the infraction, any past violations of the company's drug and alcohol policy, and the circumstances surrounding the matter will all be taken into consideration. This policy shall be enforced consistently with respect to all employees, regardless of position within the company.

(Make any changes necessary to make the procedures for discipline for violating the drug and alcohol policy consistent with the company's other disciplinary procedures.)

4. Treatment Programs and Employee Insurance

While we do not sponsor or endorse any specific drug treatment programs, such programs are available through public and private health care facilities in our area. Affected employees are encouraged to seek assistance for themselves and their dependents. The group health insurance offered to employees and their dependents provides limited coverage for expenses related to drug treatment programs. See your supervisor or refer to the plan description for details.

(Company should consider offering treatment programs)

5. Education and Training Programs

We do not offer, nor require participation in, drug and alcohol abuse education and training programs. However, various public and private facilities in our area offer such programs and affected employees are encouraged to seek assistance.

6. Drug Testing

We do not require drug testing as a condition for employment.

(This paragraph should be optional because many companies may want to require drug testing. Alternatively, the paragraph could read: "The company reserves the right to conduct reasonable suspicion and other drug and alcohol tests in accordance with the requirements of applicable law.")

I have read and understand this drug abuse policy and agree to abide by its terms and conditions.

Signature of Employee

Date Signed

Drug Abuse Policy - Option B

I. INTRODUCTION

The company realizes the importance of providing a safe and healthy workplace. For these reasons we are committed to protecting the health and safety of our employees from hazards caused by the use or abuse of alcohol and illegal drugs.

Accordingly, we have adopted the following policy and rules with respect to employee involvement with alcohol, illegal drugs and other controlled substances in the workplace. This policy and these rules apply to all company employees.

It is not the intent of the company to intrude into the private lives of our employees; however, the effects of alcohol use and the illegal use of drugs on safety, work quality, and lost productivity necessitate these policies.

II. POLICY STATEMENT

The use, possession, manufacture, transfer, offering, furnishing, purchase or sale of alcohol or illegal drugs or implements or paraphernalia while on duty or in the workplace is prohibited, except as otherwise permitted in this policy.

III. PROCEDURES

A. Employee Assistance

The company recognizes that alcoholism and/or drug dependencies require treatment if there is to be successful rehabilitation. It is the company's desire and intent to encourage any employee with an alcohol or drug dependency problem to voluntarily enter a rehabilitation program. The company will treat any such employee who seeks approved medical attention prior to a violation of this policy in the same manner as employees with other medical problems. However, where a violation of this policy has occurred, an employee's request to submit to a rehabilitation program will not serve to waive the application of disciplinary action, which the company determines is appropriate for the policy violation.

B. Policy on Alcohol

You should know that under the alcohol policy:

1. The use, possession, transfer, offering, furnishing, or sale of alcohol, while on duty or in the workplace is prohibited except as otherwise permitted in this policy.
2. Reporting to work, returning to work, being or remaining in the workplace while under the influence of alcohol is prohibited. Performing work for the company while under the influence of alcohol is prohibited regardless of the where the work is being performed. Being unable to perform your job as a result of the use of alcohol is prohibited. After a referral by the employee's supervisor, a doctor

or employee chosen by the company shall make determinations regarding compliance with this paragraph.

- a. An employee with .04 percent of alcohol in his/her system is considered to be “under the influence” and such level of alcohol is prohibited.
- b. A blood-alcohol level of less than .04 percent may be considered with other objective evidence in determining whether an employee is “under the influence” and engaged in prohibited conduct.

Employees may consume or possess alcohol provided by the company at authorized company functions or in certain legitimate business settings such as client entertainment. At all such times, however, employees are expected to act responsibly and not drink to the point that they are under the influence. The company may withdraw these privileges if they are abused by an employee or if an employee violates this policy.

C. Policy on Drugs

You should know that under the drug policy:

1. The use, manufacture, possession, sale, purchase, transfer, offering, or furnishing of illegal drugs and the possession of implements and paraphernalia for drug use while on duty or in the workplace is prohibited.
2. Reporting for work, returning to work, being or remaining at work, in the work place or while performing work for the company, with the presence of any detectable amount of any illegal drug in an employee’s system (indicating the individual is currently engaged in illegal drug use), or being incapable of safely performing your job, is prohibited.

(Note: The following paragraph is required if the company is a contractor or grant recipient covered by the federal Drug-Free Workplace Act, 41 U.S.C. § 701 et seq., and/or similar state statutes).

Employees who are convicted of, plead guilty to (including a plea of nolo contendere or no contest), or are sentenced for a crime involving illegal drugs in the workplace must report the conviction, plea or sentence to their supervisors or the Human Resources Department within five (5) days of such conviction, plea or sentence. If an employee who is convicted of, pleads guilty to, or is sentenced to a crime involving illegal drugs performs work directly relating to the company’s contracts with a state or the federal government, the company will report such conviction, plea or sentence to the contracting agency within ten (10) days after it receives notice. The company may take disciplinary and/or other appropriate action when an employee is involved in any crime that damages the company’s operations or reputation.

D. Testing

(Note: Drug and alcohol testing, including the types of testing that may be collected, and other collection and testing procedures, may be regulated by federal and state constitutions, statutes, regulations, and common law. Therefore, the company should consult with legal counsel prior to implementing some or all of the following testing procedures).

1. **Reasonable Suspicion.** If the company has a reasonable suspicion that an employee has or is in violation with this alcohol and drug policy, the company may require the employee to submit to a drug and/or alcohol test in the form chosen by the company. This may require the employee to submit urine or blood or submit to a breathalyzer test. All such testing shall be conducted by a medical professional chosen or employed by the company and under conditions determined by the company.
2. **Random Testing.** The company may conduct and require a certain percentage of employees to submit to drug and/or alcohol testing without prior notice. This may require the employee to submit urine or blood or submit to a breathalyzer test. All such testing shall be conducted by a medical professional chosen or employed by the company and under conditions determined by the company.
3. **Testing After Accidents.** The company may require an employee to submit to a drug and/or alcohol test if the employee sustains an on-the-job injury which requires medical attention or is involved in what the company determines to be a serious accident or an incident which has or could have resulted in serious injury to any person or damage to property. This may require the employee to submit urine or blood or submit to a breathalyzer test. All such testing shall be conducted by a medical professional chosen or employed by the company and under conditions determined by the company.
4. **Return to Duty/Follow-up.** Employees who test positive for drugs and/or alcohol or otherwise violate this policy, but are not terminated, must pass a drug and/or alcohol test before they can return to duty and are subject to follow-up drug and/or alcohol testing at times and frequencies determined by the company for up to two (2) years.
5. **Pre-employment.** All applicants must pass a drug test before they receive an unconditional offer of employment and/or begin working at the company.

E. Summary of Drug Collection and Testing Procedures

1. Applicants and employees subject to drug testing shall be sent or escorted to a company designated collection site where they shall be required to verify their identity and otherwise cooperate in the site's normal urine specimen collection procedures.
2. Urine specimens shall be collected by a trained collection site person who will use approved collection containers and custody and control forms. Specimens shall be sealed, labeled and the collection process will be documented on a custody and control form. Chain of custody procedures shall be maintained from collection to the time specimens may be discarded.
3. Collected urine specimens shall be transmitted to and tested by a certified laboratory. The laboratory shall test specimens for marijuana, cocaine, opiates, amphetamines, and phencyclidine (PCP) (and such other controlled substances as may be dictated by the circumstances). The laboratory shall first screen speci-

mens; specimens which screen positive shall be subject to gas chromatography/mass spectrometry confirmation testing.

4. Applicants and employees who have a confirmed positive, adulterated, substituted or invalid test result shall be offered a reasonable opportunity, in a confidential setting, to explain or rebut their results to a Medical Review Officer (MRO) before the MRO reports a positive result to the company.
5. The MRO shall advise the company if an applicant or an employee has passed or failed the test, if a specimen is diluted, if an applicant or an employee refused to cooperate, or if a test should be canceled.

F. Summary of Alcohol Collection and Testing Procedures

1. Employees subject to alcohol testing shall be sent or escorted to a company designated testing site where they shall be required to verify their identity and cooperate in the site's normal breath specimen collection procedures.
2. The collection and testing will be conducted in a private setting by trained technicians who will use approved breath testing devices. The breath testing devices are regularly calibrated. Chain of custody procedures shall be maintained from collection to the time specimens may be discarded.
3. A screening test will be done first. If the screen test result is less than .02, the employee will have passed the test, and the technician will notify the company in a confidential manner.
4. If the employee's measured alcohol concentration is .02 or more, the employee shall be required to take a confirmation test. The results of the confirmation test, not the screen test, control. If the employee's confirmation test result is less than .04, the employee shall have passed the test. If an employee's confirmation test result is .04 or more, the person has tested positive for alcohol. The technician will notify the company of the employee's test result in a confidential manner.

G. Prescribed and Over-the-Counter Drugs

This policy and rule does not prohibit the use of a drug which is taken under the supervision of a licensed health care professional, provided:

1. The drug is prescribed or authorized by a licensed health care professional;
2. The drug is used at the dosage recommended or prescribed; and
3. The drug, if prescribed, is possessed in the original container demonstrating that the drug was prescribed to the employee possessing the prescription.

Whether or not an employee is taking a prescription drug, non-prescription drug, or other medication, an employee who reports to work, returns to work, remains at work, or who is observed at work or in the workplace and is incapable of safely performing his/her job

or whose job performance is affected by a drug may, depending on the circumstances, be subject to disciplinary action, which may include termination of employment.

H. Consequences of Violating the Alcohol and Drug Policies

Any employee who refuses to cooperate in a drug and/or alcohol test, who tests positive for drugs and/or alcohol or who otherwise violates these rules, will be subject to severe disciplinary action as the company determines appropriate, up to and including termination of employment, and may also be subject to a reduction or complete loss of worker's compensation and unemployment compensation benefits as allowed by law. Depending on the circumstances, an employee's return to work, reinstatement and/or continued employment, may be conditioned on the employee's successful participation in and/or completion of any and all evaluations, counseling, treatments, and rehabilitation programs, passing of return-to-duty and follow-up tests, and/or other appropriate conditions as determined by the company. *(Note: As a matter of policy, employers may wish to give employees a second chance; also some states require a one-time referral to EAP before termination).*

Any applicant who refuses to cooperate in a drug test or who tests positive for drugs will not be hired by the company.

I. Inspections

The company reserves the right to inspect all parts and aspects of its premises for illegal drugs, alcohol or other contraband. All employees and visitors may be asked to cooperate in inspections of their persons, work areas and property (such as purses, tool boxes, lunch boxes, briefcases, desks, lockers or vehicles) that might conceal illegal drugs, alcohol or other contraband.

J. Confidentiality

Information and records relating to test results, drug and alcohol dependencies, medical restrictions, and legitimate medical explanations provided by the MRO shall be kept confidential and maintained in files separate from employees' personnel files. Such records and information may be disclosed to applicants and employees or any other person designated in writing by an applicant or an employee, the MRO, to the company's supervisors on a need to know basis, where relevant to the company's defense in a grievance, charge, claim, lawsuit or other legal proceeding, or as required by law.

K. Definitions

"Alcohol" means the intoxicating agent in beverage alcohol or any low molecular weight alcohols such as ethyl, methyl or isopropyl alcohol. The term includes beer, wine, spirits, and medications, such as cough syrup, that contain alcohol.

"Workplace" includes, but is not limited to, all land, property, buildings, offices, facilities, grounds, parking lots, and places owned, leased or managed by the company.

"Illegal drugs" means all controlled substances that are not being used or possessed

under the supervision of a licensed health care professional. (Controlled substances are listed in Schedules I-V of 21 U.S.C. ‘ 812 and 21 C.F.R. Part 1308.)

“Medical Review Officer” or **“MRO”** is a licensed physician who has knowledge and training regarding substance abuse disorders and who will, among other things, review applicants’ and employees’ positive drug test results and evaluate any medical explanations for such results.

“Refuses to cooperate” means to obstruct the collection or testing process, to not promptly proceed to a collection site and provide specimens when told to do so, to provide an adulterated, dilute, or substituted urine specimen, or not to sign breath testing and other required forms.

“Test positive for alcohol” means to take an alcohol test that results in an alcohol concentration of .04 or more (grams of alcohol per 210 liters of breath).

“Test positive for drugs” means to take a drug test that results in a concentration of marijuana, cocaine, opiates, amphetamines, and phencyclidine, or their metabolites, that exceeds the cutoff levels that are set forth in 49 C.F.R. Part 40 and are subject to change by the U.S. government.

“Under the influence” means to test positive for drugs and/or alcohol or an employee’s actions, appearance, speech or bodily odors that reasonably cause a supervisor to conclude that the employee is impaired because of illegal drug or alcohol use.

Certificate of Receipt

I, _____ (*print name*), certify that I have received a copy of the _____ (*Name of the Company*) Drug and Alcohol Policy Statement, which sets forth the company's policy regarding illegal drug use and alcohol misuse by applicants and employees. I have been told to read the policy and urged to contact the Human Resources Department if I have any questions.

I understand that:

- My compliance with the policy is a condition of my continued employment;
- I am subject to mandatory drug and alcohol testing under the policy;
- The company has the right to inspect all parts and aspects of its premises for illegal drugs, alcohol or other contraband; and
- I will be terminated if I refuse to cooperate in a drug and/or alcohol test, test positive for drugs and/or alcohol, or otherwise violate the policy.

I agree to abide by the terms of the policy.

Signature

Date

Applicant Consent/Refusal Form

I, _____ (*print name*), understand that I must take and pass a drug test if I want to be hired by _____ (*Name of the Company*).

I know I may refuse to take a test if I wish, but that my refusal will mean I will not be hired.

I understand that if I choose to be tested:

- I will have to provide a urine specimen at a collection site chosen by the company and cooperate in the site's normal collection procedures;
- My urine specimen will be sent to a certified laboratory chosen by the company and tested for marijuana, cocaine, opiates, amphetamines, and phencyclidine (and such other controlled substances as may be dictated by the circumstances);
- If the laboratory finds evidence of drug use in my specimen, a Medical Review Officer ("MRO") will make reasonable efforts to contact me to explain or rebut my test results. If I explain or rebut the results to the satisfaction of the MRO, I will be treated as if I passed the test(s); and
- If I fail a drug test and do not satisfactorily rebut or explain any evidence of drug use, my test results will be disclosed to the company and I will not be hired by the company.

After considering my options, I have freely, knowingly and voluntarily decided to:

Refuse to be tested

Consent to and authorize testing and the disclosure of my test results to the company and release the company, its medical review officer, clinic and laboratory, and their agents from any liability they might otherwise have for the actions I am authorizing.

Applicant Signature

Date and Time

Employee Consent/Refusal Form

TO BE COMPLETED BY SUPERVISOR:

Employee Name: _____

Supervisor Name: _____

Date and Time: _____ Location: _____

Other Supervisor(s) Involved: _____

Type of Test:

Specimen(s) To Be Collected:

- Reasonable suspicion
- Post-accident
- Random
- Return-to-duty
- Follow-up

- Breath
- Urine
- Blood

TO BE READ AND COMPLETED BY EMPLOYEE:

I understand that I have been selected for a drug and/or alcohol test under the _____ (Name of the Company) Drug and Alcohol Policy Statement.

I understand that I may refuse to be tested if I wish, but that my refusal will result in the termination of my employment.

I also understand that if I cooperate in testing:

- I will have to provide urine and/or breath specimen(s) and/or blood at a collection site chosen by the company and cooperate in the site's normal collection procedures;
- If the measured alcohol concentration of my breath specimen is .02 or more, I will be required to submit to confirmation testing. If the confirmation test results in a measured alcohol concentration of .04 or more, I will have failed the test;
- My urine specimen will be sent to a certified laboratory chosen by the company and tested for marijuana, cocaine, opiates, amphetamines, and phencyclidine (and such other controlled substances as may be dictated by the circumstances);
- If the laboratory finds evidence of drug use in my specimen, a Medical Review Officer ("MRO") will make reasonable efforts to discuss my test results with me. If I explain or rebut the results to the satisfaction of the MRO, I will be treated as if I passed the test(s); and
- My employment will be terminated if I refuse to cooperate in a drug and/or alcohol test, test positive for drugs and/or alcohol, or otherwise violate the policy.

After considering my options, I have freely, knowingly and voluntarily decided to:

Refuse to be tested

Consent to and authorize testing and the disclosure of my test results to the company and release the company, its medical review officer, clinic and laboratory, and their agents from any liability they might otherwise have for the actions I am authorizing.

Employee Signature

Date and Time

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Introduction

Title: Respiratory Protection

Purpose: Provide employees with personal safety equipment and training to prevent or reduce exposure to potentially harmful chemical substances and physical agents.

Regulatory References: OSHA 29 CFR 1910.134, Respiratory Protection

- Procedure:**
1. Respirators must be provided to employees who are potentially exposed to concentrations of airborne contaminants (e.g., asbestos, silica dust, solvent vapors) that exceed Permissible Exposure Limits or where employees may work in oxygen deficient atmospheres.
 2. Respirators may be provided for employee comfort (voluntary use) where concentrations of airborne contaminants do not exceed permissible exposure limits.
 3. Employees with beards or other facial hair, which comes between the respirator face piece sealing area and the user's face, are not to be issued respirators.

Employees may be required to be clean-shaven in order to perform jobs that require the use of respirators or to participate in respirator training. Those who refuse to shave should be informed that their job requires that they wear a respirator and that they will be subject to disqualification should they refuse to do so.

4. Each facility that has an employee or employees who use respirators is required to have a written *Respirator Program* (SWP Form 1011).
 - a. To complete the preparation of a written Respirator Program, the Facility Manager, or his/her designate, must complete a *Respirator Assignment Log* (SWP Form 1012). Guidance on the selection of respirators is provided in (SWP Form 1012ex).
 - b. The Respirator Assignment Log must be updated as necessary in order to maintain its accuracy.
5. Employees who voluntarily use dust masks (filtering face pieces), where conditions do not require the use of a respirator, must be trained, fit tested and be provided with, review and understand the *Non-Mandatory Respirator Use Statement* (SWP Form 1015) before being issued a dust mask.

6. Employees who are required to use a respirator or who voluntarily use a respirator (other than a dust mask) must complete a *Respirator Users Medical Questionnaire* (SWP Form 1016) and receive written authorization (SWP Form 1017) from a Professional Licensed Health Care Provider (PLHCP) before being fitted for that respirator.

Employees who voluntarily wear dust masks for conditions where airborne contaminants are less than the Permissible Exposure Limit are not required to complete a Medical Questionnaire.

7. Respirator users must be fit tested prior to initial use of the respirator to ensure that a proper seal is achieved.
 - a. A written record SWP Form 1013 must be maintained from each fit test. Guidance on the recording of fit tests is provided on SWP Form 1013ex. Approved fit testing procedures are provided on SWP Form 1014.
 - b. Employees who voluntarily use a respirator (other than a dust mask), where conditions do not require the use of a respirator, must be provided with, review and understand the *Non-Mandatory Respirator Use Statement* (SWP Form 1015) before being fit tested with a respirator.
 - c. Fit testing must be repeated annually.
8. Respirators designated for emergency use must be inspected at least monthly. Inspection records must be maintained in writing using *Emergency Respirator and Air-Supplied Respirator Inspection Report* (SWP Form 1018).
9. Air supplied respirator systems must be inspected to ensure that breathable-quality air is provided consistently to the respirator user. Inspection records must be maintained in writing using *Emergency Respirator and Air-Supplied Respirator Inspection Report* (SWP Form 1018).
10. Periodic employee observation must be performed by trained supervisors to ensure that the respirator program is being properly implemented.

Training:

1. Prior to issue of a respirator, each employee must be properly trained and fitted.
 - a. Minimum training requires that the respirator user must view the appropriate video and be properly fitted.
 - b. Training and fitting must be repeated annually or when changes in potential exposures and application necessitate.
 - c. Training must be documented in writing (SWP Form 1003).

2. Immediate supervisors of employees who use respirators must be trained in an identical manner.

Forms:

Respirator Program (SWP 1011)

Respirator Assignment Log (SWP 1012)

Sample Respirator Assignment Log (SWP 1012ex)

Respirator Fit Testing Log (SWP 1013)

Sample Respirator Fit Testing Log (SWP 1013ex)

Respirator Fit Testing Procedure (SWP 1014)

Non-Mandatory Respirator Use Statement (SWP 1015)

Respirator Users Medical Questionnaire (SWP 1016)

Medical Authorization for Respirator Use (SWP 1017)

Emergency Respirator and Supplied Air Inspection Report (SWP 1018)

Employee Training Record (SWP 1003)

Respirator Program

Respirators are issued for two reasons:

- A. An employee has requested a respirator for nuisance conditions and the use is appropriate.
- B. An employee is potentially exposed to a concentration of an airborne contaminant that is above permissible limits or an oxygen deficient atmosphere.

When respirators are worn by employees in atmospheres that do not have a potential for exceeding established Permissible Exposure Limits, respiratory protection is provided and worn according to the following voluntary-use respirator program procedures:

1. Only NIOSH approved respirators are used.
2. Employees are initially trained in the limitations of the respirator and the correct methods of respirator wear/maintenance by viewing the appropriate respirator training video. Training also includes a review of SWP Form 1015, *Information for Employees Using Respirators When Not Required Under the Standard*.
3. Each employee who voluntarily wears a respirator (other than dust mask) during the course of his/her assigned work, must complete SWP Form 1016, *Respirator Users Medical Questionnaire* and must receive written authorization, using SWP Form 1017, *Medical Authorization for Respirator Use*, from a Professional Licensed Health Care Provider (PLHCP) before being fitted for that respirator.

Note: Employees, who voluntarily wear dust masks, are not required to complete a Medical Questionnaire.

4. All respirator users are required to try on and fit the respirator using both a positive and a negative pressure test, as outlined in SWP Form 1014, *Respirator Fit Testing Procedure*.
5. Facial hair, such as a beard, long sideburns, or a long mustache, which comes between the contact areas of the respirator face piece and the user's face, is cause for disqualification from respirator use.
6. Immediate supervisors of respirator users are trained in an identical manner and are responsible for ensuring that respirators are properly used, cleaned and maintained.

When respirators are worn by employees in atmospheres that have a potential for exceeding or are known to exceed established Permissible Exposure Limits, respiratory protection is provided and worn according to the procedures listed in 1 to 6 above. All employees, who are required to use a respirator during the course of their assigned work (even when the respirator that they are required to wear is a dust mask), must also:

7. Complete SWP Form 1016, *Respirator Users Medical Questionnaire* and receive written authorization, using SWP Form 1017, *Medical Authorization for Respirator Use*,

from a Professional Licensed Health Care Provider (PLHCP) **before** being fitted for their respirator.

8. Try on and fit their respirator in a test atmosphere prior to use, as outlined in SWP Form 1014, *Respirator Fit Testing Procedure*.
9. Quantitative fit testing is required for employees who are assigned to use self-contained breathing apparatus (SCBA's) for protection during confined space entry, fire fighting or emergency rescue.

Respirator selection for routine and foreseeable emergency situations is based on a worksite evaluation of the potential hazards that employees may encounter at this facility. Guidance on the selection of respirators for this facility is provided on the SWP Form 1012ex, *Sample Respirator Assignment Log*. The facility's Respiratory Program Coordinator completes the Log using the Sample Log, and as necessary, other information related to facility specific hazards and conditions.

A sufficient selection of respiratory face piece sizes and styles is available to achieve an acceptable fit on most employees. Where additional styles or sizes of respirators are required to obtain a proper fit, they will be provided. Respirator, assignment, selection, medical evaluation, training and fit testing information is recorded for each employee, who wears a respirator, on SWP Form 1013, *Respirator Fit Testing Log*. Guidance on the selection and use of respirators for this facility is provided on the SWP Form 1013ex, *Sample Respirator Fit Testing Log*.

Employees who are either required to wear respirators, including those worn for emergency response or rescue, or who voluntarily wear a respirator (other than a dust mask) during the course of their assigned work, will receive a medical evaluation before being allowed to start respirator fit testing. The facility's Program Coordinator will identify a PHLCP to perform the medical evaluations. The Program Coordinator, or his/her designated representative, will provide the PHLCP with information on:

1. The type and weight of the respirator to be used by the facility's employees;
2. The duration and frequency of respirator use (including use for rescue and escape);
3. The expected physical work effort;
4. Additional protective clothing and equipment to be worn;
5. Temperature and humidity extremes that may be encountered; and
6. A copy of the company's written respiratory protection program and a copy of the OSHA Standard on Respiratory Protection, 29 CFR 1910.134.

Employees who are required to complete the Medical Evaluation will be provided with a copy of SWP Form 1016, *Respirator Users Medical Questionnaire* and a copy of SWP Form 1017, *Medical Authorization for Respirator Use*. The employee will be instructed to complete Sections 1 and 2 of Part A of SWP Form 1016, and to place it, with the partially completed SWP 1017, in the confidential envelope that has been provided. The employee must then give the sealed envelope to the Program Coordinator, or his/her designated representative, who will forward it to the PHLCP.

The PHLCP will complete Form 1017 and will return it to the company contact specified on the form. Follow-up medical examinations are required for any employee who gives a positive response among questions 1-8 in Section 2 or who has demonstrated to the PHLCP the need for a follow-up medical examination.

The medical questionnaire and examinations are administered confidentially during the employee's normal working hours or at a time and place convenient to the employee. Medical examinations related to medical authorization for respirator use, are provided at no cost to the employee.

Additional medical evaluations will be repeated if:

1. An employee reports medical signs or symptoms that are related to ability to use a respirator;
2. A PLHCP or the Program Coordinator determines that an employee needs to be reevaluated;
3. Information from the respiratory protection program, including observations made during fit testing and program evaluation, indicates a need for employee reevaluation; or
4. A change occurs in workplace conditions (e.g., physical work effort, protective clothing, temperature) that may result in a substantial increase in the physiological burden placed on an employee.

All employees who are either assigned to use respirators or are permitted to voluntarily use respirators are initially trained in the limitations of the respirator and the correct methods of respirator wear, cleaning and maintenance by viewing the appropriate respirator training video. For voluntary respirator users this training also includes a review of SWP Form 1015, *Information for Employees Using Respirators When Not Required Under the Standard*.

Training is repeated annually, for employees who continue to wear respirators, and when the following situations occur:

1. Changes in the workplace or the type of respirator render previous training and fitting obsolete;
2. Inadequacies in the employee's knowledge or use of the respirator indicate that the employee has not retained the requisite understanding or skill; or
3. Any other situation arises in which retraining appears necessary to ensure safe respirator use.

Following training, employees are required to successfully complete a negative and positive pressure respirator fit test. Employees may not be assigned or allowed to use a respirator until they have passed both pressure tests. Those employees who will voluntarily use respirators airborne contaminant concentrations below permissible exposure limits are not required to complete test atmosphere fit tests. All other respirator users must complete test atmosphere fit tests, as outlined in SWP Form 1014, *Respirator Fit Testing Procedure*.

Fit Testing is repeated annually for employees who continue to wear respirators, and whenever the employee reports, PLHCP, supervisor, or Program Coordinator makes visual observations of changes in the employee's physical condition that could affect respirator fit. Such conditions include, but are not limited to, facial scarring, dental changes, cosmetic surgery, or an obvious change in body weight.

Respirator maintenance is the responsibility of each individual who has been assigned a personal respirator. Each respirator user is initially provided with a respirator that is clean, sanitary, and in good working order. Respirator users are also provided with a container to protect the respirator from damage, contamination, dust, sunlight, extreme temperatures, excessive moisture, and damaging chemicals. Each respirator user is instructed to ensure that their respirator is properly cleaned, dried, packed or stored to prevent deformation of the face piece and exhalation valve, inspected and to report any defects immediately to their supervisor.

Where employees are assigned to wear supplied air or emergency respirators, SWP Form 1018, *Emergency and Supplied Air Respirator Inspection Report*, is used to verify monthly inspections (emergency respirators) and air quality (supplied air). *The Report* is placed in a clear protective sleeve next to or in the respirator's storage container. *The Report* is completed and updated as necessary to keep it up-to-date by the Program Coordinator, or his/her designated representative.

Periodic employee observations are made by trained supervisors and the Program Coordinator to ensure that the written respiratory protection program is being properly implemented, and to consult employees to ensure that they are using the respirators properly. Problems that are identified during this assessment are corrected.

Key elements of these observations include, but are not limited to:

1. Respirator fit (including the ability to use the respirator without interfering with effective workplace performance);
2. Appropriate respirator selection for the hazards to which the employee is exposed;
3. Proper respirator use under the workplace conditions the employee encounters; and
4. Proper respirator maintenance.

This written respirator program will be updated at least annually to keep it accurate and to recognize relevant changes in the worksite specific procedures.

Respirator Assignment Log - SWP 1012

Tasks for which respirators are assigned?	Respirator and Cartridge Selection	Training Required?	Pos./Neg. Fit Test Required?	Test Atmosphere Fit Test Required?	Medical Evaluation Required?

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Respirator Assignment Log - SWP 1012 Example

Tasks for which respirators are assigned?	Respirator and Cartridge Selection	Training Required?	Pos./Neg. Fit Test Required?	Test Atmosphere Fit Test Required?	Medical Evaluation Required?
Work where employees may encounter low levels of non-hazardous (nuisance) dust. Concentrations should not exceed the PEL.	(N95) Dust/Mist Filtering Facepiece	YES	YES	NO	NO
Work where dust concentrations may exceed the PEL for nuisance dust. Concentrations should not exceed 10X the PEL.	Half Mask - Small Facepiece (N95) Cartridges	YES	YES	YES	YES
Painting equipment, buildings and interior surfaces. Periodic exposure to solvent vapors and paint aerosols. Concentrations should not exceed 10X the PEL.	Half Mask - Medium Facepiece Organic vapor cartridges with (P95) particulate prefilter	YES	YES	YES	YES
Welding in out-of-doors or in maintenance shops. Short-term exposures to welding fume particulates. Concentrations should not exceed 10X the PEL.	(N95) Dust/Mist/Fume Filtering Facepiece	YES	YES	YES	YES
Spray painting, concentrations do not exceed should not exceed 2,000X the PEL and are not IDLH.	Positive pressure airline spray painting respirator, with tight fitting facepiece	YES	YES	YES	YES
Sandblasting	Airline abrasive blasting respirator (hood)	YES	YES	NO	YES

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Respiratory Protection

Respirator Fit Testing Log - SWP 1013

Employee Name and Social Security Number	Respirator Facepiece Cartridge Selection	Date* Medical Evaluation Completed	Date** Respirator Training Completed	Date** Pos./Neg. Fit Test Completed (method used)	Date** Atmosphere Fit Test Completed

* An initial evaluation is required before fit testing is performed. ** Fit testing is required prior to initial use, whenever a different facepiece is used, and at least annually thereafter.

Respirator Fit Testing Log - SWP 1013 Example

Employee Name and Social Security Number	Respirator Facepiece Cartridge Selection	Date* Medical Evaluation Completed	Date** Respirator Training Completed	Date** Pos./Neg. Fit Test Completed (method used)	Date** Atmosphere Fit Test Completed
Homer Simpson 123-45-6789	(N95) Dust/Mist Filtering Facepiece	N/A	01/01/98	01/02/98 (Bitrex)	N/A
Bart Simpson 234-56-7890	Half Mask - Small Facepiece (N95) Cartridges	12/30/97	01/01/98	01/02/98 (Bitrex)	01/02/98
Joe Cool 345-67-8901	Half Mask - Medium Facepiece Organic vapor cartridges with (N95) painting prefilter	12/30/97	01/01/98	01/02/98 (Bitrex)	01/02/98
Moe Howard 456-78-9012	(N95) Dust/Mist/Fume Filtering Facepiece	12/30/97	01/01/98	01/02/98 (Bitrex)	01/02/98
Curley Howard 567-89-0123	Positive pressure airline spray painting respirator, with tight fitting facepiece	12/30/97	01/01/98	01/02/98 (Bitrex)	01/02/98
Larry Howard 678-90-1234	Airline abrasive blasting respirator (hood)	12/30/97	01/01/98	N/A	01/02/98

* An initial evaluation is required before fit testing is performed. ** Fit testing is required prior to initial use, whenever a different facepiece is used, and at least annually thereafter.

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Respiratory Protection

Fit Testing Procedures

Appendices A & B to Sec. 1910.134

Appendix A, Part I. OSHA-Accepted Fit Test Protocols

A. Fit Testing Procedures-General Requirements

The employer shall conduct fit testing using the following procedures. The requirements in this appendix apply to all OSHA-accepted fit test methods, both QLFT and QNFT.

1. The test subject shall be allowed to pick the most acceptable respirator from a sufficient number of respirator models and sizes so that the respirator is acceptable to, and correctly fits, the user.
2. Prior to the selection process, the test subject shall be shown how to put on a respirator, how it should be positioned on the face, how to set strap tension and how to determine an acceptable fit. A mirror shall be available to assist the subject in evaluating the fit and positioning of the respirator. This instruction may not constitute the subject's formal training on respirator use, because it is only a review.
3. The test subject shall be informed that he/she is being asked to select the respirator that provides the most acceptable fit. Each respirator represents a different size and shape, and if fitted and used properly, will provide adequate protection.
4. The test subject shall be instructed to hold each chosen face piece up to the face and eliminate those that obviously do not give an acceptable fit.
5. The more acceptable face pieces are noted in case the one selected proves unacceptable; the most comfortable mask is donned and worn at least five minutes to assess comfort. Assistance in assessing comfort can be given by discussing the points in the following item A.6. If the test subject is not familiar with using a particular respirator, the test subject shall be directed to don the mask several times and to adjust the straps each time to become adept at setting proper tension on the straps.
6. Assessment of comfort shall include a review of the following points with the test subject and allowing the test subject adequate time to determine the comfort of the respirator:
 - (a) Position of the mask on the nose;
 - (b) Room for eye protection;
 - (c) Room to talk; and
 - (d) Position of mask on face and cheeks.
7. The following criteria shall be used to help determine the adequacy of the respirator fit:
 - (a) Chin properly placed;
 - (b) Adequate strap tension, not overly tightened;
 - (c) Fit across nose bridge;
 - (d) Respirator of proper size to span distance from nose to chin;

that the alternative IAA source will generate an IAA test atmosphere with a concentration equivalent to that generated by the paper towel method.

- (5) Allow two minutes for the IAA test concentration to stabilize before starting the fit test exercises. This would be an appropriate time to talk with the test subject; to explain the fit test, the importance of his/her cooperation, and the purpose for the test exercises; or to demonstrate some of the exercises.
- (6) If at any time during the test, the subject detects the banana-like odor of IAA, the test is failed. The subject shall quickly exit from the test chamber and leave the test area to avoid olfactory fatigue.
- (7) If the test is failed, the subject shall return to the selection room and remove the respirator. The test subject shall repeat the odor sensitivity test, select and put on another respirator, return to the test area and again begin the fit test procedure described in (b) (1) through (7) above. The process continues until a respirator that fits well has been found. Should the odor sensitivity test be failed, the subject shall wait at least 5 minutes before retesting. Odor sensitivity will usually have returned by this time.
- (8) If the subject passes the test, the efficiency of the test procedure shall be demonstrated by having the subject break the respirator face seal and take a breath before exiting the chamber.
- (9) When the test subject leaves the chamber, the subject shall remove the saturated towel and return it to the person conducting the test, so that there is no significant IAA concentration buildup in the chamber during subsequent tests. The used towels shall be kept in a self-sealing plastic bag to keep the test area from being contaminated.

Saccharin Solution Aerosol Qualitative Fit Test Protocol

The entire screening and testing procedure shall be explained to the test subject prior to the conduct of the screening test.

- (a) Taste threshold screening.

The saccharin taste threshold screening, performed without wearing a respirator, is intended to determine whether the individual being tested can detect the taste of saccharin.

- (1) During threshold screening as well as during fit testing, subjects shall wear an enclosure about the head and shoulders that is approximately 12 inches in diameter by 14 inches tall with at least the front portion clear and that allows free movements of the head when a respirator is worn. An enclosure substantially similar to the 3M hood assembly, parts # FT 14 and # FT 15 combined, is adequate.

- (2) The test enclosure shall have a 3/4-inch (1.9 cm) hole in front of the test subject's nose and mouth area to accommodate the nebulizer nozzle.
- (3) The test subject shall don the test enclosure. Throughout the threshold-screening test, the test subject shall breathe through his/her slightly open mouth with tongue extended. The subject is instructed to report when he/she detects a sweet taste.

(Note to paragraph 3. (a): If the test subject eats or drinks something sweet before the screening test, he/she may be unable to taste the weak saccharin solution.)

- (4) Using a DeVilbiss Model 40 Inhalation Medication Nebulizer or equivalent, the test conductor shall spray the threshold check solution into the enclosure. The nozzle is directed away from the nose and mouth of the person. This nebulizer shall be clearly marked to distinguish it from the fit test solution nebulizer.
- (5) The threshold check solution is prepared by dissolving 0.83 gram of sodium saccharin USP in 100 ml of warm water. It can be prepared by putting 1 ml of the fit test solution in 100 ml of distilled water.
- (6) To produce the aerosol, the nebulizer bulb is firmly squeezed so that it collapses completely, then released and allowed to fully expand.
- (7) Ten squeezes are repeated rapidly and then the test subject is asked whether the saccharin can be tasted. If the test subject reports tasting the sweet taste during the ten squeezes, the screening test is completed. The taste threshold is noted as ten regardless of the number of squeezes actually completed.
- (8) If the first response is negative, ten more squeezes are repeated rapidly and the test subject is again asked whether the saccharin is tasted. If the test subject reports tasting the sweet taste during the second ten squeezes, the screening test is completed. The taste threshold is noted as twenty regardless of the number of squeezes actually completed.
- (9) If the second response is negative, ten more squeezes are repeated rapidly and the test subject is again asked whether the saccharin is tasted. If the test subject reports tasting the sweet taste during the third set of ten squeezes, the screening test is completed. The taste threshold is noted as thirty regardless of the number of squeezes actually completed.
- (10) The test conductor will take note of the number of squeezes required to solicit a taste response.
- (11) If the saccharin is not tasted after 30 squeezes (step 9), the test subject is unable to taste saccharin and may not perform the saccharin fit test.

- (12) If a taste response is elicited, the test subject shall be asked to take note of the taste for reference in the fit test.
- (13) Correct use of the nebulizer means that approximately 1 ml of liquid is used at a time in the nebulizer body.
- (14) The nebulizer shall be thoroughly rinsed in water, shaken dry, and refilled at least each morning and afternoon or at least every four hours.
- (15) Saccharin solution aerosol fit test procedure.
- (16) The test subject may not eat, drink (except plain water), smoke, or chew gum for 15 minutes before the test.
- (17) The fit test uses the same enclosure described in (a) (3) above.
- (18) The test subject shall don the enclosure while wearing the respirator selected in section I. A. of this appendix. The respirator shall be properly adjusted and equipped with a particulate filter(s).
- (19) A second DeVilbiss Model 40 Inhalation Medication Nebulizer or equivalent is used to spray the fit test solution into the enclosure. This nebulizer shall be clearly marked to distinguish it from the screening test solution nebulizer.
- (20) The fit test solution is prepared by adding 83 grams of sodium saccharin to 100 ml of warm water.
- (21) As before, the test subject shall breathe through the slightly open mouth with tongue extended, and report if he/she tastes the sweet taste of saccharin.
- (22) The nebulizer is inserted into the hole in the front of the enclosure and an initial concentration of saccharin fit test solution is sprayed into the enclosure using the same number of squeezes (either 10, 20 or 30 squeezes) based on the number of squeezes required to elicit a taste response as noted during the screening test. A minimum of 10 squeezes is required.
- (23) After generating the aerosol, the test subject shall be instructed to perform the exercises in section I. A. 14. of this appendix.
- (24) Every 30 seconds the aerosol concentration shall be replenished using one half the original number of squeezes used initially (e.g., 5, 10 or 15).
- (25) The test subject shall indicate to the test conductor if at any time during the fit test the taste of saccharin is detected. If the test subject does not report tasting the saccharin, the test is passed.
- (26) If the taste of saccharin is detected, the fit is deemed unsatisfactory and the test is failed. A different respirator shall be tried and the entire test procedure is repeated (taste threshold screening and fit testing).

- (27) Since the nebulizer has a tendency to clog during use, the test operator must make periodic checks of the nebulizer to ensure that it is not clogged. If clogging is found at the end of the test session, the test is invalid.

Irritant Smoke (Stannic Chloride) Qualitative Fit Test Protocol

This qualitative fit test uses a person's response to the irritating chemicals released in the "smoke" produced by a stannic chloride ventilation smoke tube to detect leakage into the respirator.

(a) General Requirements and Precautions

- (1) The respirator to be tested shall be equipped with high efficiency particulate air (HEPA) or P100 series filter(s).
- (2) Only stannic chloride smoke tubes shall be used for this protocol.
- (3) No form of test enclosure or hood for the test subject shall be used.
- (4) The smoke can be irritating to the eyes, lungs, and nasal passages. The test conductor shall take precautions to minimize the test subject's exposure to irritant smoke. Sensitivity varies, and certain individuals may respond to a greater degree to irritant smoke. Care shall be taken when performing the sensitivity screening checks that determine whether the test subject can detect irritant smoke to use only the minimum amount of smoke necessary to elicit a response from the test subject.
- (5) The fit test shall be performed in an area with adequate ventilation to prevent exposure of the person conducting the fit test or the build-up of irritant smoke in the general atmosphere.

(b) Sensitivity Screening Check

The person to be tested must demonstrate his or her ability to detect a weak concentration of the irritant smoke.

- (1) The test operator shall break both ends of a ventilation smoke tube containing stannic chloride, and attach one end of the smoke tube to a low flow air pump set to deliver 200 ml per minute, or an aspirator squeeze bulb. The test operator shall cover the other end of the smoke tube with a short piece of tubing to prevent potential injury from the jagged end of the smoke tube.
- (2) The test operator shall advise the test subject that the smoke can be irritating to the eyes, lungs, and nasal passages and instruct the subject to keep his/her eyes closed while the test is performed.
- (3) The test subject shall be allowed to smell a weak concentration of the irritant smoke before the respirator is donned to become familiar with its irritating properties and to determine if he/she can detect the irritating properties of the

smoke. The test operator shall carefully direct a small amount of the irritant smoke in the test subject's direction to determine that he/she can detect it.

(c) **Irritant Smoke Fit Test Procedure**

- (1) The person being fit tested shall don the respirator without assistance, and perform the required user seal check(s).
- (2) The test subject shall be instructed to keep his/her eyes closed.
- (3) The test operator shall direct the stream of irritant smoke from the smoke tube toward the face seal area of the test subject, using the low flow pump or the squeeze bulb. The test operator shall begin at least 12 inches from the face piece and move the smoke stream around the whole perimeter of the mask. The operator shall gradually make two more passes around the perimeter of the mask, moving to within six inches of the respirator.
- (4) If the person being tested has not had an involuntary response and/or detected the irritant smoke, proceed with the test exercises.
- (5) The exercises identified in section I.A.14. of this appendix shall be performed by the test subject while the respirator seal is being continually challenged by the smoke, directed around the perimeter of the respirator at a distance of six inches.
- (6) If the person being fit tested reports detecting the irritant smoke at any time, the test is failed. The person being retested must repeat the entire sensitivity check and fit test procedure.
- (7) Each test subject passing the irritant smoke test without evidence of a response (involuntary cough, irritation) shall be given a second sensitivity screening check, with the smoke from the same smoke tube used during the fit test, once the respirator has been removed, to determine whether he/she still reacts to the smoke. Failure to evoke a response shall void the fit test.
- (8) If a response is produced during this second sensitivity check, then the fit test is passed.

Appendix B-1, OSHA - User Seal Check Procedures

The individual who uses a tight-fitting respirator is to perform a user seal check to ensure that an adequate seal is achieved each time the respirator is put on. Either the positive and negative pressure checks listed in this appendix, or the respirator manufacturer's recommended user seal check method shall be used. User seal checks are not substitutes for qualitative or quantitative fit tests.

I. Face Piece Positive and/or Negative Pressure Checks

A. Positive pressure check.

Close off the exhalation valve and exhale gently into the face piece. The face fit is con-

sidered satisfactory if a slight positive pressure can be built up inside the face piece without any evidence of outward leakage of air at the seal. For most respirators this method of leak testing requires the wearer to first remove the exhalation valve cover before closing off the exhalation valve and then carefully replacing it after the test.

B. Negative pressure check.

Close off the inlet opening of the canister or cartridge(s) by covering with the palm of the hand(s) or by replacing the filter seal(s), inhale gently so that the face piece collapses slightly, and hold the breath for ten seconds. The design of the inlet opening of some cartridges cannot be effectively covered with the palm of the hand. The test can be performed by covering the inlet opening of the cartridge with a thin latex or nitrile glove. If the face piece remains in its slightly collapsed condition and no inward leakage of air is detected, the tightness of the respirator is considered satisfactory.

II. Manufacturer's Recommended User Seal Check Procedures

The respirator manufacturer's recommended procedures for performing a user seal check may be used instead of the positive and/or negative pressure check procedures provided that the employer demonstrates that the manufacturer's procedures are equally effective.

Appendix B-2, OSHA - Respirator Cleaning Procedures

These procedures are provided for employer use when cleaning respirators. They are general in nature, and the employer as an alternative may use the cleaning recommendations provided by the manufacturer of the respirators used by their employees, provided such procedures are as effective as those listed here in Appendix B-2. Equivalent effectiveness simply means that the procedures used must accomplish the objectives set forth in Appendix B-2, i.e., must ensure that the respirator is properly cleaned and disinfected in a manner that prevents damage to the respirator and does not cause harm to the user.

I. Procedures for Cleaning Respirators

- A. Remove filters, cartridges, or canisters. Disassemble face pieces by removing speaking diaphragms, demand and pressure-demand valve assemblies, hoses, or any components recommended by the manufacturer. Discard or repair any defective parts.
- B. Wash components in warm (43° C [110° F] maximum) water with a mild detergent or with a cleaner recommended by the manufacturer. A stiff bristle (not wire) brush may be used to facilitate the removal of dirt.
- C. Rinse components thoroughly in clean, warm (43° C [110° F] maximum), preferably running water. Drain.
- D. When the cleaner used does not contain a disinfecting agent, respirator components should be immersed for two minutes in one of the following:
 1. Hypochlorite solution (50 ppm of chlorine) made by adding approximately one ml of laundry bleach to one liter of water at 43° C (110° F); or,

2. Aqueous solution of iodine (50 ppm iodine) made by adding approximately 0.8 ml of tincture of iodine (6-8 grams ammonium and/or potassium iodide/100 cc of 45% alcohol) to one liter of water at 43° C (110° F); or,
 3. Other commercially available cleansers of equivalent disinfectant quality when used as directed, if their use is recommended or approved by the respirator manufacturer.
- E. Rinse components thoroughly in clean, warm (43° C [110° F] maximum), preferably running water. Drain. The importance of thorough rinsing cannot be overemphasized. Detergents or disinfectants that dry on face pieces may result in dermatitis. In addition, some disinfectants may cause deterioration of rubber or corrosion of metal parts if not completely removed.
- F. Components should be hand-dried with a clean lint-free cloth, or air-dried.
- G. Reassemble face piece, replacing filters, cartridges, and canisters where necessary.
- H. Test the respirator to ensure that all components work properly.

Information for Employees Using Respirators When Not Required Under the Standard *Appendix D to Sec. 1910.134*

Respirators are an effective method of protection against designated hazards when properly selected and worn.

Respirator use is encouraged, even when exposures are below the exposure limit, to provide an additional level of comfort and protection for workers. However, if a respirator is used improperly or not kept clean, the respirator itself can become a hazard to the worker. Sometimes, workers may wear respirators to avoid exposures to hazards, even if the amount of hazardous substance does not exceed the limits set by OSHA standards.

If your employer provides respirators for your voluntary use, or if you provide your own respirator, you need to take certain precautions to be sure that the respirator itself does not present a hazard.

You should do the following:

1. Read and heed all instructions provided by the manufacturer on use, maintenance, cleaning and care, and warnings regarding the respirator's limitations;
2. Choose respirators certified for use to protect against the contaminant of concern. National Institute for Occupational Safety and Health (NIOSH) of the U.S. Department of Health and Human Services, certifies respirators. A label or statement of certification should appear on the respirator or respirator packaging. It will tell you what the respirator is designed for and how it will protect you;
3. Do not wear your respirator into atmospheres containing contaminants for which your respirator is not designed to protect against. For example, a respirator designed to filter dust particles will not protect you against gases, vapors, or very small solid particles of fumes or smoke; and
4. Keep track of your respirator so that you do not mistakenly use someone else's respirator.

OSHA Respirator Medical Evaluation Questionnaire - SWP 1016

Appendix C to Sec. 1910.134

To the employer: Answers to questions in Section 1, and to question 9 in Section 2 of Part A, do not require a medical examination.

To the employee: Can you read? (*circle one*): Yes / No

Your employer must allow you to answer this questionnaire during normal working hours, or at a time and place that is convenient to you. To maintain your confidentiality, your employer or supervisor must not look at or review your answers, and your employer must tell you how to deliver or send this questionnaire to the health care professional who will review it.

Part A. Section 1.

The following information must be provided by every employee who has been selected to use any type of respirator (*please print*).

1. Today's date: _____ / _____ / _____
2. Your job title: _____
3. Your name: _____
4. Your age (to nearest year): _____
5. Gender (*circle one*): Male / Female
6. Your height: _____ ft _____ in.
7. Your weight: _____ lbs.
8. A phone number where you can be reached by the health care professional who reviews this questionnaire (Include the Area Code): (_____) _____
9. The best time to phone you at this number: _____ AM / PM
10. Has your employer told you how to contact the health care professional who will review this questionnaire? (*circle one*): Yes / No
11. Check the type of respirator you will use (you can check more than one category):
 - a. _____ N, R, or P disposable respirator (filter-mask, non-cartridge type only).
 - b. _____ Other type (for example, half- or full-facepiece type, powered-air purifying, supplied-air, self-contained breathing apparatus).
12. Have you worn a respirator? (*circle one*): Yes / No
If "yes," what type(s): _____

Part A. Section 2.

Questions 1 through 9 below must be answered by every employee who has been selected to use any type of respirator (*please circle "yes" or "no"*).

1. Do you currently smoke tobacco, or have you smoked tobacco in the last month?	Yes	No
---	-----	----

2. Have you ever had any of the following conditions:	*	*
a. Seizures (fits)?	Yes	No
b. Diabetes (sugar disease)?	Yes	No
c. Allergic reactions that interfere with your breathing?	Yes	No
d. Claustrophobia (fear of closed-in places)?	Yes	No
e. Trouble smelling odors?	Yes	No

3. Have you ever had any of the following pulmonary or lung problems:	*	*
a. Asbestosis?	Yes	No
b. Asthma?	Yes	No
c. Chronic bronchitis?	Yes	No
d. Emphysema?	Yes	No
e. Pneumonia?	Yes	No
f. Tuberculosis?	Yes	No
g. Silicosis?	Yes	No
h. Pneumothorax (collapsed lung)?	Yes	No
i. Lung cancer?	Yes	No
j. Broken ribs?	Yes	No
k. Any chest injuries or surgeries?	Yes	No
l. Any other lung problem of which you are aware?	Yes	No

4. Do you currently have any of the following symptoms of pulmonary or lung illness:	*	*
a. Shortness of breath?	Yes	No
b. Shortness of breath when walking fast on level ground or walking up a slight hill or incline?	Yes	No
c. Shortness of breath when walking with other people at an ordinary pace on level ground?	Yes	No
d. Have to stop for a breath when walking at your own pace on level ground?	Yes	No
e. Shortness of breath when washing or dressing yourself?	Yes	No
f. Shortness of breath that interferes with your job?	Yes	No
g. Coughing that produces phlegm (thick sputum)?	Yes	No
h. Coughing that wakes you early in the morning?	Yes	No
i. Coughing that occurs mostly when you are lying down?	Yes	No
j. Coughing up blood in the last month?	Yes	No
k. Wheezing?	Yes	No
l. Wheezing that interferes with your job?	Yes	No
m. Chest pain when you breathe deeply?	Yes	No
n. Any other symptoms that you think may be related to lung problems?	Yes	No

5. Have you ever had any of the following cardiovascular or heart problems:	*	*
a. Heart attack?	Yes	No
b. Stroke?	Yes	No
c. Angina?	Yes	No
d. Heart failure?	Yes	No
e. Swelling in your legs or feet (not caused by walking)?	Yes	No
f. Heart arrhythmia (heart beating irregularly)?	Yes	No
g. High blood pressure?	Yes	No
h. Any other heart problem that you've been told about?	Yes	No

6. Have you ever had any of the following cardiovascular or heart symptoms:	*	*
a. Frequent pain or tightness in your chest?	Yes	No
b. Pain or tightness in your chest during physical activity?	Yes	No
c. Pain or tightness in your chest that interferes with your job?	Yes	No
d. In the past two years, have you noticed your heart skipping or missing a beat?	Yes	No
e. Heartburn or indigestion that is not related to eating?	Yes	No
f. Any other symptoms that you think may be related to heart or circulation problems?	Yes	No

7. Do you currently take medication for any of the following problems:	*	*
a. Breathing or lung problems?	Yes	No
b. Heart trouble?	Yes	No
c. Blood pressure?	Yes	No
d. Seizures (fits)?	Yes	No

If you've never used a respirator, circle "No" and go to question 9	*	No
--	---	----

8. If you've used a respirator, have you ever had any of the following problems:	*	*
a. Eye irritation?	Yes	No
b. Skin allergies or rashes?	Yes	No
c. Anxiety?	Yes	No
d. General weakness or fatigue?	Yes	No
e. Any other problem that interferes with your use of a respirator?	Yes	No

9. Would you like to talk to the health care professional who will review this questionnaire regarding your answers to this questionnaire?	Yes	No
---	-----	----

Questions 10 to 15 below must be answered by every employee who has been selected to use either a full-face piece respirator or a self-contained breathing apparatus (SCBA). For employees who have been selected to use other types of respirators, answering these questions is voluntary.

10. Have you ever lost vision in either eye (temporarily or permanently)?	Yes	No
11. Do you currently have any of the following vision problems:	*	*
a. Wear contact lenses?	Yes	No
b. Wear glasses?	Yes	No
c. Color blind?	Yes	No
d. Any other eye or vision problem?	Yes	No
12. Have you ever had an injury to your ears, including a broken ear drum?	Yes	No
13. Do you currently have any of the following hearing problems:	*	*
a. Difficulty hearing?	Yes	No
b. Wear a hearing aid?	Yes	No
c. Any other hearing or ear problem?	Yes	No
14. Have you ever had a back injury?	Yes	No
15. Do you currently have any of the following musculoskeletal problems:	*	*
a. Weakness in any of your arms, hands, legs, or feet?	Yes	No
b. Back pain?	Yes	No
c. Difficulty fully moving your arms and legs?	Yes	No
d. Pain or stiffness when you lean forward or backward at the waist?	Yes	No
e. Difficulty fully moving your head up or down?	Yes	No
f. Difficulty fully moving your head side to side?	Yes	No
g. Difficulty bending at your knees?	Yes	No
h. Difficulty squatting to the ground?	Yes	No
i. Climbing a flight of stairs or a ladder carrying more than 25 lbs?	Yes	No
j. Any other muscle or skeletal problem that interferes with using a respirator?	Yes	No

Part B. Any of the following questions, and other questions not listed, may be added to the questionnaire at the discretion of the health care professional who will review the questionnaire.

1. In your present job, are you working at high altitudes (over 5,000 feet) or in a place that has lower than normal amounts of oxygen?	Yes	No
If “yes,” do you have feelings of dizziness, shortness of breath, pounding in your chest, or other symptoms when you're working under these conditions?	Yes	No
2. At work or at home, have you ever been exposed to hazardous solvents, hazardous airborne chemicals (e.g., gases, fumes, or dust), or have you come into skin contact with hazardous chemicals?	Yes	No
If “yes,” please list: _____ _____		

3. Have you ever worked with any of the materials, or under any of the conditions, listed below:	*	*
a. Asbestos?	Yes	No
b. Silica (e.g., in sandblasting)?	Yes	No
c. Tungsten/cobalt (e.g., grinding or welding this material)?	Yes	No
d. Beryllium?	Yes	No
e. Aluminum?	Yes	No
f. Coal (for example, mining)?	Yes	No
g. Iron?	Yes	No
h. Tin?	Yes	No
i. Dusty environments?	Yes	No
j. Any other hazardous exposures?	Yes	No
If "yes," describe these exposures: _____ _____		
4. List any second jobs or side businesses you have: _____ _____		
5. List your previous occupations: _____ _____		
6. List your current and previous hobbies: _____ _____		
7. Have you been in the military services?	Yes	No
If "yes," were you exposed to biological or chemical agents (either in training or combat)?	Yes	No
8. Have you ever worked on a HAZMAT team?	Yes	No
9. Other than medications for breathing and lung problems, heart trouble, blood pressure, and seizures mentioned earlier in this questionnaire, are you taking any other medications for any reason (including over-the-counter medications)?	Yes	No
If "yes," please list: _____ _____		
10. Will you be using any of the following items with your respirator(s):	*	*
a. HEPA Filters?	Yes	No
b. Canisters (for example, gas masks)?	Yes	No
c. Cartridges?	Yes	No

11. How often are you expected to use the respirator(s)?(circle "yes" or "no" for all answers that apply to you):	*	*
a. Escape only (no rescue)?	Yes	No
b. Emergency rescue only?	Yes	No
c. Less than 5 hours per week?	Yes	No
d. Less than 2 hours per day?	Yes	No
e. 2 to 4 hours per day?	Yes	No
f. Over 4 hours per day?	Yes	No
12. During the period you are using the respirator(s), is your work effort:	*	*
a. Light (less than 200 kcal per hour)?	Yes	No
If "yes," how long does this period last during the average shift: _____ hrs. _____ mins. Examples of a light work effort are sitting while writing, typing, drafting, or performing light assembly work; or standing while operating a drill press (1-3 lbs.) or controlling machines.		
b. Moderate (200 to 350 kcal per hour)?	Yes	No
If "yes," how long does this period last during the average shift: _____ hrs. _____ mins. Examples of moderate work effort are sitting while nailing or filing; driving a truck or bus in urban traffic; standing while drilling, nailing, performing assembly work, or transferring a moderate load (about 35 lbs.) at trunk level; walking on a level surface about 2 mph or down a 5-degree grade about 3 mph; or pushing a wheelbarrow with a heavy load (about 100 lbs.) on a level surface.		
c. Heavy (above 350 kcal per hour)?	Yes	No
If "yes," how long does this period last during the average shift: _____ hrs. _____ mins. Examples of heavy work are lifting a heavy load (about 50 lbs.) from the floor to your waist or shoulder; working on a loading dock; shoveling; standing while bricklaying or chipping castings; walking up an 8-degree grade about 2 mph; climbing stairs with a heavy load (about 50 lbs.).		
13. Will you be wearing protective clothing and/or equipment (other than the respirator) when you're using your respirator?	Yes	No
If "yes," describe this protective clothing and/or equipment: _____ _____		
14. Will you be working under hot conditions (temperature exceeding 77° F)?	Yes	No
15. Will you be working under humid conditions?	Yes	No
16. Describe the work you'll be doing while you're using your respirator(s): _____ _____ _____ _____ _____ _____		

17. Describe any special or hazardous conditions you might encounter when you're using your respirator(s) (for example, confined spaces, life-threatening gases):

18. Provide the following information, if you know it, for each toxic substance that you'll be exposed to when you're using your respirator(s):

Name of the **first** toxic substance: _____

Estimated maximum exposure level per shift: _____

Duration of exposure per shift: _____

Name of the **second** toxic substance: _____

Estimated maximum exposure level per shift: _____

Duration of exposure per shift: _____

Name of the **third** toxic substance: _____

Estimated maximum exposure level per shift: _____

Duration of exposure per shift: _____

The name of any other toxic substances that you'll be exposed to while using your respirator:

19. Describe any special responsibilities you'll have while using your respirator(s) that may affect the safety and well-being of others (for example, rescue, security):

Medical Authorization for Respirator Use - SWP 1017

To be completed at the Company Facility

Employee Name		Social Security Number		Job Title	
Company Name		Street Address		City	
State	Zip Code	Name and Title of Company Contact		Phone Number	

The above referenced employee has been assigned to perform a task(s) that will require the use of a respirator. Our company respirator policy, and the regulations of the Occupational Safety and Health Administration (OSHA) in 29 CFR 1910.134, require that this employee receive a written recommendation evaluation from a Professional Licensed Health Care Professional (PLHCP) before he/she is allowed to be fitted with or to wear a respirator in their assigned work.

Enclosed is a copy of a completed *Respirator Medical Evaluation Questionnaire* (SWP Form 1016) from this employee. Please review the contents of his/her Questionnaire, then complete the bottom portion of this Form. Return the original completed Form to the Company Contact listed above, retaining a copy for the employee's medical file.

To be completed at the PLHCP's Facility

Clinic or Medical Facility Name		Street Address		City	
State	Zip Code	Name and Title of PHLCP Contact		Phone Number	

I certify that I have been provided with the following concerning an employee's ability to use a respirator:

1. The type and weight of the respirator to be used by the employee;
2. The duration and frequency of respirator use (including use for rescue and escape);
3. The expected physical work effort;
4. Additional protective clothing and equipment to be worn;
5. Temperature and humidity extremes that may be encountered; and
6. A copy of the company's written respiratory protection program and a copy of the OSHA Standard on Respiratory Protection, 29 CFR 1910.134. (circle choice)
Yes No

I further certify that I have reviewed the completed *Respirator Medical Evaluation Questionnaire* (SWP Form 1016) from this employee and have determined that the employee: (circle choice)

- Can wear the respirator to which he/she has been assigned. Yes No
- Has been informed of the examination results and has been provided with a completed copy of this report. Yes No
- Requires a follow-up medical evaluation and is not currently able to wear the assigned respirator. Yes No
- Is medically qualified for the job described with the following limitation(s). Yes No

Printed Name of PHLCP: _____

Signature of PHLCP: _____ **Date of Evaluation:** _____

Emergency Respirator and Supplied Air Respirator Report - SWP 1018

Location: _____

Use: (check one) Confined Space Emergency Response/Egress Spray Painting
 Sand Blasting Other _____

Facepiece Type: (check one) Half-face Full-face Hood

Respirator Model Number(s): _____

Regulator Type: (check one) Continuous Flow Pressure Demand

Regulator Model Number(s): _____

Respirator With Egress Device: (check one) Yes No

Air Source: Bottle (check one) Grade D Air Grade E Air

Capacity in Minutes (check one) 5 15 30 60 _____

Compressor (check one) Oil-less Type Oil Type

High Temperature Shut-Off (check one) Yes No

Carbon Monoxide Alarm (check one) Yes No

Airline Filter (check one) Yes No

Monthly Inspection Record

Year _____	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Facepiece												
Regulator												
Bottle (pressure)												
Bottle (Hydro)												
Airline HT Alarm												
Airline CO Alarm												
Airline Filter												
Cartridge/Canister												
Inspector												
Date Inspected												

Repair Performed: _____ Date: _____ Repaired By: _____

Repair Performed: _____ Date: _____ Repaired By: _____

Repair Performed: _____ Date: _____ Repaired By: _____

Repair Performed: _____ Date: _____ Repaired By: _____

Repair Performed: _____ Date: _____ Repaired By: _____



FALL PROTECTION

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Introduction

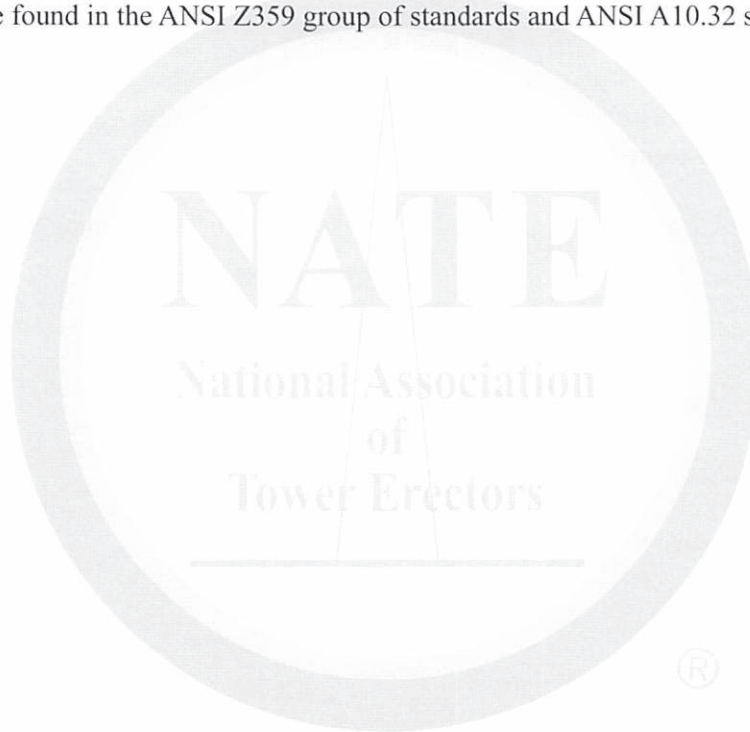
All employers performing construction and maintenance work must develop a fall protection program to protect their employees while working at heights above six feet in accordance with OSHA regulations and current ANSI standards applicable to our industry.

Exceptions and Applicable Standards

29 CFR 1926.500 – Subpart M – is utilized by OSHA as the source for rules regarding the development of fall protection systems for workers performing duties at heights. The broadcast and communication tower industry is exempt, however, from certain elements of Subpart M, as defined in 29 CFR 1926.500(a)(3)(iv): which states, “Section 1926.502 does not apply to the erection of tanks and communication and broadcast towers.”

Even though tower erectors are exempt from subsection 502 of Subpart M, OSHA instructs the value of subpart M as a resource for effective fall protection systems remains valid. OSHA recommends, however, that tower erectors utilize Subpart M as a source for designing fall protection systems.

It should be pointed out that the definitive source of recognized best practices for fall protection criteria and practices can be found in the ANSI Z359 group of standards and ANSI A10.32 standards.



Fall Protection Protocol

The fall hazards and the available controls shall be assessed before work starts.

1. **Elimination or Substitution**, attempt to eliminate the fall hazards associated with the work task entirely. (For example, perform as much work as possible at ground level.)
2. **Passive Fall Protection**, attempt to utilize fall prevention controls by selecting the most suitable controls from the following:
 - i. Guardrail systems (work platforms with approved handrails, scaffolds, etc.)
 - ii. Mechanical lifting systems (JLG, scissor lift, man-baskets, etc.)
 - iii. Climbing systems (stairways, fixed or portable ladders, etc.)
3. **Fall Restraint**, securing the climber to an anchorage using a system short enough to prevent the person from being exposed to a fall.
4. **Fall Arrest**, utilize a Personal Fall Arrest System (PFAS) including all required components and additional hardware:
 - i. Full body harness
 - ii. Shock-absorbing lanyards
 - iii. Connectors
 - iv. Suitable anchorages
 - v. Lifelines
 - vi. Rope grabs controlled descent device
 - vii. Develop approach to manage fall hazards

Fall Protection Policy

The employer shall ensure there is a program in place that provides 100% fall protection on all work sites where there is the potential of an employee falling six feet or more to a lower level.

All supervisors shall monitor all its employees for compliance to the requirements and shall take immediate action when non-compliance is observed.

- a) All employees shall comply with the rules and regulations in OSHA CFR 1926 and 1910 along with reference to the ANSI Z359 group of standards along with ANSI A10.32.
- b) All employees shall wear fall protection equipment that complies with the ANSI Z359 standards.
- c) Only personnel meeting Authorized Climber, Competent Climber and Competent Rescuer requirements are allowed to work at elevated heights.
- d) The ANSI markings on the equipment shall be legible.
- e) Conduct pre-job safety communication and JSA with all employees prior to commencing work.
- f) Ensure only trained climbers perform all elevated work.
- g) Ensure all Personal Fall Arrest System (PFAS) components meet inspection requirements and are being worn properly prior to allowing elevated work to commence.
- h) Ensure appropriate rescue provisions and personnel are on site. No one performs elevated work without another rescue trained tower climber being available for immediate rescue response or an equivalent plan in place to have the climber rescued.
- i) Monitor climber personnel work practices (behavior) and worksite conditions.

Fall Protection Training

A training program will be provided for each employee who might be exposed to fall hazards. The program shall enable each employee to recognize the hazards of falling and shall train each employee in the procedures to be followed in order to minimize these hazards.

- a) The employer shall assure that each employee has been trained, as necessary, by a competent person qualified in the following areas:
 - i. The nature of fall hazards in the work area;
 - ii. The correct procedures for erecting, maintaining, disassembling, and inspecting the fall protection systems to be used;
 - iii. The use and operation of guardrail systems, personal fall arrest systems, warning line systems, safety monitoring systems, controlled access zones, and other protection to be used;
 - iv. The correct procedures for the handling and storage of equipment and materials and the erection of overhead protection;
 - v. The role of employees in fall protection plans;
 - vi. Rescue procedures and equipment; and
 - vii. OSHA regulations.

- b) Employers shall ensure that all employees are trained on the applicable equipment they are using and that equipment shall conform to the most recent ANZI Z359 standards. If the equipment manufacturer has more comprehensive instructions than referenced by the standards then those variations shall be covered and could include the following:
 - i. The force measured during the sample force test;
 - ii. The maximum elongation measured for lanyards during the force test;
 - iii. The deceleration distance measured for deceleration devices during the force test;
 - iv. Caution statements on critical use limitations;
 - v. Application limits;
 - vi. Proper hook-up, anchoring and tie-off techniques, including the proper D-ring or other attachment point to use on the body belt and harness for fall arrest;
 - vii. Methods of inspection, use, cleaning, and storage; and
 - viii. Specific lifelines which may be used.

- c) The employer shall verify compliance by preparing a written certification record. The written certification record shall contain the following:
- i. The name or other identity of the employee trained;
 - ii. The date(s) of the training; and
 - iii. The signature of the person who conducted the training or the signature of the employer.

If the employer relies on training conducted by another employer or completed prior to the effective date of this program, the certification record shall indicate the date the employer determined the prior training was adequate rather than the date of actual training.

The latest training certification shall be maintained.

Certification of Training

- a) Complete the following necessary training:
- i. Initial Authorized Climber course (New Hire training)
 - ii. Competent Climber course, (must be evaluated once a year)
 - iii. Competent Climber Rescue course, (must practice rescue at least once a year)
 - iv. Rescue training exercise to simulate actual working conditions
 - v. Complete re-training as required
- b) Carry wallet cards or similar documentation that identifies:
- i. The organization that provided the training
 - ii. The date the training was completed
- c) Participate in a pre-climb meeting prior to each climb.
- d) Inspect their Personal Fall Arrest System (PFAS) components prior to each use.
- e) Have their PFAS components inspected by another competent person at least once a year.
- f) Immediately remove from service any components of a PFAS that are found to be defective.
- g) Not perform elevated work without adequate rescue provisions (personnel and equipment) in place at the job site.
- h) Never connect to step bolts, pegs, and other non-rated anchorages for fall protection unless engineering documentation exists to support acceptable use.



Retraining

When the employer has reason to believe that any affected employee who has already been trained does not have the understanding and skill required by this program, the employer shall retrain each such employee. Some circumstances where retraining is required include:

- a) Changes in the workplace render previous training obsolete;
- b) Changes in the types of fall protection systems or equipment to be used render previous training obsolete;
- c) Inadequacies in an affected employee's knowledge or use of fall protection systems or equipment indicate that the employee has not retained the requisite understanding or skill; or
- d) Re-certification of rescue skills.

Rescue

When Personal Fall Arrest Systems are used, the employer must assure that employees can be promptly rescued or can rescue themselves should a fall occur. The availability of trained rescue personnel, and rescue equipment should be evaluated.

Rescue equipment shall be provided at each jobsite where PFAS equipment is being used, and a rescue plan shall be in place.

All employees trained and certified in the use of PFAS equipment should also be trained and certified in rescue of fellow employees who have fallen into their PFAS.



Fall Protection Systems

The following is a explanation of the various fall protection systems outlined in the OSHA regulations and the ANSI standards. These explanations are not exhaustive and do not include all requirements of the system described.

Guardrail Systems

If the employer chooses to use guardrail systems to protect workers from falls, the systems must meet the following criteria:

- a) The top edge height of top rails, or (equivalent) guardrails must be 42 inches plus or minus 3 inches, above the walking/working level;
- b) Screens, mid rails, mesh, intermediate vertical members, or equivalent intermediate structure members must be installed between the top edge of the guardrail system and the walking/working surface when there are no walls or parapet walls at least 21 inches high;
- c) When mid rails are used, they must be installed at a height midway between the top edge of the guardrail system and the walking/working level;
- d) The guardrail system must be capable of withstanding a force of at least 200 pounds applied within 2 inches of the top edge in any outward or downward direction;
- e) When the 200-pound test is applied in a downward direction, the top edge of the guardrail must not deflect to a height less than 39 inches above the walking/working level;
- f) Mid rails, screens, mesh, intermediate vertical members, solid panels, and equivalent structural members shall be capable of withstanding a force of at least 150 pounds applied in any downward or outward direction at any point along the mid rail or other member; and
- g) Guardrail systems shall be surfaced to protect workers from punctures or lacerations and to prevent clothing from snagging.

Warning Line Systems

Warning line systems may only be used on surfaces or areas where natural walking can occur and consist of ropes, wires, or chains, mounted on supporting stanchions and are deployed as follows:

- a) Warning lines shall be erected around all sides of roof work areas if it applies.
- b) The warning lines must be erected:
 - i. Not less than 6 feet from the roof edge;
 - ii. The line shall be flagged at not more than 6-foot intervals with high-visibility material; and
 - iii. The line shall be rigged and supported so that the lowest point (including sag) is not less

- v. When attaching your lanyard to the structure it should be so attach to prevent a free fall greater than 6 feet.
- vi. Bring an employee to a complete stop and limit maximum deceleration distance an employee travels to 3.5 feet.

f) Vertical Fall Protection Lifelines

All ropes shall be designed and manufactured per the applicable standard.

- i. All vertical fall protection ropes shall be:
 - a. Constructed of synthetic fibers;
 - b. Specifically designed for lifeline use; and
 - c. Meet the requirements of CI-1801.
- ii. Each rope shall have a document inspection for the life of the rope.
- iii. A lifeline shall extend to the ground or be provided with a positive stop that prevents the rope grab from running off the end of the lifeline.
- iv. Only one person shall actively use a lifeline at a time.
- v. A vertical lifeline termination or eye must not decrease the capacity of the rope to less than 5,000 lbs.
- vi. Lifelines shall be protected against being cut or abraded.

g) Horizontal Lifelines

All horizontal lifelines shall be designed to the current applicable standard.

- i. A temporary horizontal lifeline shall be designed by a certified professional engineer.
- ii. A temporary horizontal lifeline shall be installed by a Competent Person and under the guidance of a Qualified Person.

h) Rope Grabs for Vertical Lifelines

- i. All employees must use only those rope grabs that match the size and type of rope they are using;
- ii. Always ensure the rope grab is installed properly;
- iii. Never use a lanyard attached to the dorsal D-ring that would create a distance greater than 3 feet to the center of the vertical lifeline; and
- iv. The sternum and frontal connections shall have a maximum length of 9 inches.

Inspection

All PFAS, positioning device system, suspension and descent control equipment must be inspected prior to each use.

- a) A component must be removed from service whenever the structural integrity of the unit is in question and could include the following:
 - i. Cuts, tears, abrasions, mold, or undue stretching;
 - ii. Alterations or additions which might affect its efficiency;
 - iii. Damage due to deterioration;
 - iv. Contact with fire, acids, or other corrosives;
 - v. Distorted hooks, D-rings or faulty closures or locking devices;
 - vi. Tongues unfitted to the shoulder of buckles;
 - vii. Loose or damaged mountings;
 - viii. Non-functioning parts; or
 - ix. Wearing or internal deterioration in the ropes.
- b) The defective equipment should be tagged or marked as unusable, or destroyed.
- c) A PFAS and its components subjected to impact loading shall be immediately removed from service and shall not be used again for employee protection until inspected and determined by a competent person to be undamaged and suitable for reuse.
- d) NOTE: There is a presumption that it is feasible and will not create a greater hazard to implement at least one of the above-listed fall protection systems. Accordingly, the employer has the burden of establishing that it is appropriate to implement a fall protection plan which complies with 1926.502(k) for a particular workplace situation, in lieu of implementing any of those systems.

Ladder Safety Device Systems

(Refer to 29 CFR 1926.1053(a), 1910.21(e))

A ladder safety device is any device, other than a cage or well, designed to eliminate or reduce the possibility of accidental falls on a fixed ladder. Some method of safeguarding an employee while climbing a ladder must be incorporated where the total length of a climbing ladder equals or exceeds 24 feet. The ladder safety device is the most common method and consists of a rigid rail or flexible cable (carrier) that runs along the entire length of the ladder, and a friction or locking device that connects between the carrier and the employee's body harness. In the event of a fall the device will lock down on the carrier and stop the fall.

- a) Ladder safety devices, and related support systems, shall conform to the following:
 - i. They shall be capable of withstanding without failure a drop test consisting of an 18-inch drop of a 500-pound weight;
 - ii. They shall permit the employee using the device to ascend or descend without continually having to hold, push, or pull any part of the device, leaving both hands free for climbing;
 - iii. They shall be activated within 2 feet after a fall occurs, and limit the descending velocity of an employee to 7 feet/sec. or less; and
 - iv. The connection between the carrier and the point of attachment to the body harness shall not exceed 9 inches in length.

- b) The mounting of ladder safety devices for fixed ladders shall conform to the following:
 - i. Mountings for rigid carriers shall be attached at each end of the carrier, with intermediate mountings, as necessary, spaced along the entire length of the carrier, to provide the strength necessary to stop employees' falls;
 - ii. Mountings for flexible carriers shall be attached at each end of the carrier. When the system is exposed to wind, cable guides for flexible carriers shall be installed at a minimum spacing of 25 feet and maximum spacing of 40 feet along the entire length of the carrier, to prevent wind damage to the system; and
 - iii. The design and installation of mountings and cable guides shall not reduce the design strength of the ladder.

Positioning Device Systems

As defined by the standard, positioning devices shall not be used as a primary fall arrest system and are not considered part of a Personal Fall Arrest System.

- a) Positioning devices shall be rigged such that an employee cannot free fall more than 2 feet and shall be secured to an anchorage capable of supporting at least twice the potential impact load of an employee's fall or 3,000 pounds, whichever is greater.
- b) Ropes and straps (webbing) used in lanyards shall be made from synthetic fibers.
- c) Connectors shall be drop forged, pressed or formed steel, or made of equivalent materials and shall have a corrosion-resistant finish, and all surfaces and edges shall be smooth to prevent damage to interfacing parts of the system.
- d) D-rings and snap-hooks shall have a minimum tensile strength of 5,000 pounds and shall be proof-tested to a minimum tensile load of 3,600 pounds without cracking, breaking, or taking permanent deformation.
- e) Snap-hooks shall be a locking type designed and used to prevent disengagement of the snap-hook by the contact of the snap-hook keeper by the connected member. Only locking type snap-hooks shall be used.

Descent Control and Suspended Positioning

(Refer to 1926.451(g)(1)(i))

Anchorage used to support suspended positioning or descent control rigs shall be independent of any anchorage being used for attachment of a PFAS and shall be capable of supporting at least 5,000 pounds per employee attached.

Ropes and straps (webbing) used in suspension and descent control rigs shall be made from synthetic fibers. Suspension and rappelling lines or systems and all necessary slings, connectors and friction devices shall have a minimum breaking strength of 5,000 pounds. All lines shall be protected against being cut or abraded.

Each employee on a suspended positioning or descent control rig shall be protected by a PFAS.



Excavations

Each employee at the edge of an excavation 6 feet or more deep shall be protected from falling by guard-rail systems, fences, barricades or covers. Where walkways are provided to permit employees to cross over excavations, guardrails are required on the walkway if it is 6 feet or more above the excavation.

Formwork and Reinforcing Steel

Each employee on the face of formwork or reinforcing steel shall be protected from falling 6 feet or more to lower levels by Personal Fall Arrest Systems, or Positioning Device Systems.



Holes

Each employee on walking/working surfaces shall be protected from falling through holes (including skylights) more than 6 feet above lower levels, by Personal Fall Arrest Systems, covers, or guardrail systems erected around such holes.

Each employee shall be protected from tripping in or stepping into or through holes (including skylights) by covers.

Each employee shall be protected from objects falling through holes (including skylights) by covers.

Covers

All covers must be able to support at least twice the weight of employees, equipment, and materials that will be imposed on the cover at any one time. To prevent accidental displacement resulting from wind, equipment, or workers' activities, all covers must be secured. All covers shall be color-coded or bear the markings 'HOLE' or 'COVER'.

Covers located in roadways and vehicular aisles shall be capable of supporting, without failure, at least twice the maximum axle load of the largest vehicle expected to cross over the cover.



Wall Openings

Each employee working on, at, above, or near wall openings where the outside bottom edge of the wall opening is 6 feet or more above lower levels and the inside bottom edge of the wall opening is less than 39 inches above the walking/working surface must be protected from falling by the use of guardrail system or a personal fall arrest system.

Definitions

Anchorage:

A secure point of attachment for lifelines, lanyards or deceleration devices.

Body Harness:

Straps that may be secured about a person in a manner that distributes the fall arrest forces over at least the thighs, pelvis, waist, chest, and shoulders with a means for attaching the harness to other components of a personal fall arrest system.

Carabiner:

A connector consisting of an oval-shaped member with a normally closed keeper, or gate, which may be opened to permit the oval to receive an object and, when released automatically closes to retain the object.

Connector:

A device that is used to couple (connect) parts of a personal fall arrest system or positioning device system together.

Deceleration Device:

Any mechanism, such as rope, grab, ripstitch lanyard, specially woven lanyard, tearing or deforming lanyards, automatic self-retracting lifelines/lanyards – which serves to dissipate a substantial amount of energy during a fall arrest, or otherwise limits the energy imposed on an employee during fall arrest.

Deceleration Distance:

The additional vertical distance a falling person travels, excluding lifeline elongation and free fall distance, before stopping, from the point at which a deceleration device begins to operate.

Fixed Ladder:

A ladder that cannot be readily moved or carried because it is an integral part of a building or structure. A side-step fixed ladder is a fixed ladder that requires a person getting off at the top to step to the side of the ladder side rails to reach the landing. A through fixed ladder is a fixed ladder that requires a person getting off at the top to step between the side rails of the ladder to reach the landing.

Free Fall:

The act of falling before a Personal Fall Arrest System begins to apply force to arrest the fall.

Free Fall Distance:

The vertical displacement of the fall arrest attachment point on the employee's body harness between onset of the fall and just before the system begins to apply force to arrest the fall. This distance excludes deceleration distance, and lifeline/lanyard elongation, but includes any deceleration device slide distance or self-retracting lifeline/lanyard extension before they operate and fall arrest forces occur.

Guardrail System:

A barrier erected to prevent employees from falling to lower levels.

Hole:

A void or gap 2 inches (5.1 centimeters) or more in the least dimension in a floor, roof, or other walking/working surface.

Ladder Safety Device:

Any device, other than a cage or well, designed to eliminate or reduce the possibility of accidental falls and which may incorporate such features as life belts, friction brakes, and sliding attachments.

Lanyard:

A flexible line of rope, wire rope, or strap that generally has a connector at each end for connecting the body belt or body harness to a deceleration device, lifeline, or anchorage.

Lifeline:

A component consisting of a flexible line for connection to an anchorage at one end to hang vertically (vertical lifeline), or for connection to anchorages at both ends to stretch horizontally (horizontal lifeline), and which serves as a means for connecting other components of a Personal Fall Arrest System to the anchorage.

Lower Level:

Those areas to which an employee can fall from a stairway, ladder or unprotected side or edge. Such areas include ground levels, floors, roofs, ramps, excavations, tanks, material, water, equipment, antenna mounts and similar surfaces. It does not include the surface from which the employee falls.

Low-Slope Roof:

A roof having a slope or pitch less than or equal to 4 in 12 (vertical to horizontal).

Openings:

A gap or void 30 inches (76 centimeters) or more high and 18 inches (46 centimeters) or more wide, in a wall or partition, through which employees can fall to a lower level.

Personal Fall Arrest System:

A system including but not limited to an anchorage, connectors, and a body harness used to arrest an employee in a fall from a working level.

Portable Ladder:

A ladder that can be readily moved or carried.

Positioning Device System:

A full body harness system rigged to allow an employee to be supported on an elevated vertical surface, such as a wall, and work with both hands free while leaning backwards.

Rope Grab:

A deceleration device that travels on a lifeline and automatically, by friction, engages the lifeline and locks to arrest a fall.

Self-Retracting Lifeline/Lanyard:

A deceleration device containing a drum-wound line, which can be slowly extracted from, or retracted onto, the drum under minimal tension during normal employee movement and which, after onset of a fall, automatically locks the drum and arrests the fall.

Snap-Hook:

A connector consisting of a hook-shaped member with a normally closed keeper, or similar arrangement, which may be opened to permit the hook to receive an object and, when released automatically closes to retain the object.

Steep Roof:

A roof having a slope or pitch greater than 4 in 12 (vertical to horizontal).

Toe Board:

A low protective barrier that prevents material and equipment from falling to lower levels; and which protects personnel from falling.

Unprotected Sides and Edges:

Any side or edge (except at entrances to points of access) of a walking/working surface (e.g. floor, roof, ramp, or runway) where there is no wall or guardrail system at least 39 inches (1 meter) high.

Walking/Working Surface:

Any surface, whether horizontal or vertical, on which an employee walks or works, including but not limited to floors, roofs, ramps, bridges, runways, formwork, and concrete reinforcing steel. Does not include ladders, vehicles, or trailers on which employees must be located to perform their work duties.

Warning Line System:

A barrier erected on a roof to warn employees that they are approaching an unprotected roof side or edge and which designates an area in which roofing work may take place without the use of guardrail, body belt, or safety net systems to protect employees in the area.

Work Area:

That portion of a walking/working surface where job duties are being performed.



COMPETENT CLIMBER REQUIREMENT

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Referenced Standards

29 CFR 1910, Subpart F (1910.66)

29 CFR 1926, Subpart N (1926.550)

ASME B30.5, 1994

ASME B30.6, 1990

API Specification 2c, 4th Edition, March 1, 1988

API Recommended Practice 2D, 2nd Edition, Oct. 14, 1989


Braden Service Bulletin Number 523, Feb. 25, 1995

Timberland Equipment Letter dated July 7, 1995

OSHA Directive CPL 2-1.36, March 26, 2002

NATE Tower Climber Fall Protection Training Standard (NATE CTS)

ANSI Z359, Fall Protection Code (current standard)



Introduction

In 2005, NATE established the NATE Tower Climber Fall Protection Training Standard (NATE CTS). As a member of the Association, your company was provided with a free copy of the NATE CTS, and that document should be considered a companion piece to this section of the NATE Accident Prevention, Safety & Health Program Guide. All climber training questions should be addressed through that publication. The NATE CTS clarifies the minimum requirements for a climber being deemed an authorized climber, a competent climber or a competent rescuer.

In the tower industry, a fall is the primary hazard facing employees on a day-to-day basis. Because of this hazard, employers must develop an effective fall protection program that meets the requirements of ANSI Z359 group of standards. The standards set out a performance goal of 100% fall protection. Thus, whenever there is a risk of an employee falling from a work level over six feet above the ground or from a workstation, the employee must be protected by some conventional means of fall protection, which may include an integral fall arrest system.

This section is a reference publication designed to provide NATE member companies with certain guidelines for qualifying individuals as climbers beyond the minimum requirements of the NATE CTS. A “Competent Climber” is a distinction of experience found in the NATE CTS, which is referenced under Number 4, definitions.

The information in this publication is intended to provide a generic, non-exhaustive overview of the work-related activities on towers (broadcast, communication, etc.) and similar structures.

This publication is not intended to determine compliance or other responsibilities. Any company, whether or not a NATE member company, using this publication to implement a safety policy, assumes all responsibility for its actions and agrees to hold harmless and waives any claim for any damages against the National Association of Tower Erectors, its Directors, Officers, Staff and any and all assigns, from any and all possible legal action.

NATE disclaims any responsibility for the application of this information or for any injury or damages which may result from its use.

Competent Climber Requirements

1. Scope

NATE is dedicated to promoting an accident-free workplace. This can be accomplished by minimizing exposure to unsafe working conditions. This section is intended to inform all employees of the hazards involved when working at elevated positions and the techniques needed to do their work safely.

2. Objective

The objective of this section is to provide a means for NATE member companies to assess the abilities of employees to the training standards defined by the NATE CTS.

3. Mandate

There shall be a competent person on site at all times while work is progressing.

The competent person will be empowered to remove from duty any employee who does not comply with company policy, regulations or procedures, regardless of their level of climbing expertise.

In the field each day the competent person will be responsible for determining if employees involved with work in elevated positions are physically and mentally able to safely perform the task at hand and to ensure that there are no impairments.

4. Definitions

The following stated definitions and interpretations shall prevail throughout this course:

“may” = permissive choice;

“shall” = mandatory under normal conditions;

“should” = suggested or advisory (best available advice at the time); and

“will” = mandatory, with provisions allowing some discretionary action.

The NATE CTS defines the requirements for being deemed an authorized climber, competent climber or competent rescuer. There is a distinction between these definitions and those for authorized, competent and qualified person.

Authorized Climber – An individual with the physical capabilities to climb; who may or may not have previous climbing experience; has been trained in fall protection regulations, the equipment that applies to communication structures work, and instruction for proper use of the equipment.

Competent Climber – An individual with the physical capabilities to climb; has actual tower climbing experience; is trained in fall protection regulations including the equipment that applies to tower work; is capable of identifying existing and potential fall hazards; and has the employer’s authority to take prompt corrective action to eliminate those hazards.

Competent Rescuer – An individual designated by the employer who by training, knowledge, and experience is capable of the implementation, supervision, and monitoring of the employer's fall protection rescue program.

Authorized Person – For purposes of the fall protection standard, a person assigned by the employer to perform duties at a location where the person will be exposed to a fall hazard.

Competent Person – An individual designated by the employer to be responsible for the immediate supervision, implementation, and monitoring of the employer's managed fall protection program who, through training and knowledge is capable of identifying, evaluating, and addressing existing and potential fall hazards, and has the employer's authority to take prompt corrective action with regard to such hazards.

Competent is defined by Webster's dictionary as suitable, skillful, capable, adequate or authorized.

Designated Person – Means an authorized person (see above).

Qualified Person – A person with a recognized degree or professional certificate and with extensive knowledge, training, and experience in the fall protection and rescue field who is capable of designing, analyzing, evaluating and specifying fall protection and rescue systems to the extent required by his employer.

5. **Responsibility**

Every employee working on any project is responsible for knowing all of the safety rules, company policy and job procedures contained in the company's safety manual. This is a requirement of employment.

All employers must supply each employee with a copy of, or easy access to, the company safety and health manual.

While in the field, the Competent Person is responsible for making certain that his or her crew members are in a condition to work safely, and that crew members do not exhibit any signs or symptoms of a physical or mental impairment.

The Competent Person will hold a tailgate/toolbox meeting at each work location before crew members ascend structures, to assess the condition of the crew members, to analyze the work situation, identify hazards, inspect PPE and other equipment, and to remind crew members of safety procedures. Job Hazard Analysis (JHA).

6. **Evaluation**

This is a guideline document for an employer to base their training requirements and upon completion of this course, the employee should be aware of the hazards involved in performing duties from elevated positions. The employee's climbing skills shall be monitored by a competent person and recorded on a skills proficiency sheet (or some other form of documentation according to company policy). A copy of these records will be placed in the employee's permanent file and included in the company's safety records.

The employee's skills shall be monitored closely. Any mistakes must be discussed and corrected immediately. Deviation from the company safety plan, NATE approved guidelines or federal and/or state laws shall not be tolerated and discipline should be imposed based on the circumstances.

7. Climbing Steel Poles and Towers

Steel poles and towers come in a variety of shapes, sizes and designs. Proper training and practice are necessary in order to climb these structures safely and efficiently.

The basic equipment used for climbing these structures generally consists of a hard hat, short leather gloves, leather climbing boots with good arch support, positioning belt and an approved full-body harness with lanyards.

As a general rule, the above listed equipment is sufficient for most climbing tasks. However, depending on the structure and specific company requirements, additional equipment is sometimes necessary. For example, the diameter of many steel pole structures may be too large to allow the regular use of an anchorage strap or hook and special equipment may need to be identified before the climb starts.

Temporary steps are another example of additional equipment that may be necessary when climbing steel poles or towers. Temporary steps fit into brackets attached to structures to provide foot and hand holds. In most cases, temporary steps are designed for use on a specific type of structure and must be installed properly before climbing can begin.

In addition to the equipment already mentioned, specialized tools and equipment may be required to climb certain types of towers. As a general rule, specialized equipment is designed to meet the safety and climbing requirements of a specific type of structure in a specific location.

8. Installing Steps on a Steel Pole

When ascending and descending steel poles, a climber usually uses some sort of steps or rungs. In some cases the steps are permanently attached to the structure. In most cases, however, temporary steps must be installed. Temporary steps are generally designed to fit into brackets permanently mounted on a steel pole. A climber using temporary steps should make certain that the steps intended for use are specifically designed for the structure to be climbed. Failure to do so may result in a serious accident, as improperly fitting or improper steps may not be able to support the climber's weight.

In many cases step brackets are installed on the pole 15 feet or more above the ground. Climbers typically use a work ladder to reach the first sets of brackets in order to begin installing the steps. After the first few steps are installed, the climber must move from the ladder to the steps and ascend the pole, installing steps along the way.

There are a number of ways to install steps while climbing. A commonly used method requires the use of a bucket and a hand line. When the climber leaves the ladder and begins climbing the steps, a bucket and hand line is carried along. The bucket is used to hold the temporary steps and the hand line is used to receive more steps when the bucket is empty.

9. Climbing Hazards

There are hazards that are typically associated with climbing steel poles and towers. In order to climb safely and efficiently, a climber must be able to recognize hazards and take steps to avoid them.

The condition and height of a structure may also present hazards to a climber. Steel tower structures can be very high and a fall from such a structure can be serious and even fatal. Where the structure is not equipped with a functional safety climb device, the only fall protection systems available would be double-hooking or use of a hook, rope grab and lifeline. The use of such methods can dramatically increase climber fatigue due to continually connecting and disconnecting these devices during ascent and descent. Missing or loose steps or support members, excessive corrosion or failing to use approved safety equipment, can all contribute to or cause an accident.

Other hazards that may be found on a structure are natural hazards such as rain, snow, ice and wind. These natural elements can make climbing steel poles and towers difficult and dangerous. Climbing under adverse weather conditions is to be avoided unless an emergency exists. Extra care must be taken when climbing in adverse weather conditions.

Other natural hazards include wasps and other stinging insects that often build nests on steel structures. A climber who accidentally disturbs a wasp nest may discover a situation where it is extremely difficult to maintain position on the structure. If there is an expectation that wasps will be encountered, employees should be asked if they have any health conditions, such as allergies, that might pose a serious health hazard to the employee.

For the most part, there is little that a climber can do to rid a tower of structural deficiencies or naturally occurring hazards. The climber must be able to recognize hazards and take appropriate measures to avoid them.

Personal hazards are something quite different than structural or natural hazards. These are hazards that can be avoided and company policy generally indicates how. In addition to following company policy, climbers need to develop a proper mental attitude towards safety on the job.

Some examples of personal hazards include loose fitting clothing, large cuffed work gloves and improperly bundled ropes or slings hanging from a belt. Each of these items can get hung up on steps or other equipment and contribute to an accident.

Climbers must remain alert to the conditions on a structure that may cause equipment to get snagged and take action to avoid these conditions. If a piece of equipment does become snagged, the climber should maintain position, find the cause of the problem and take appropriate action to correct the problem. Being alert to hazards that exist on structures is the first step in developing and maintaining the proper mental attitude toward safe climbing.

10. Pre-climb Planning and Inspection

In order to minimize the hazards found on towers, all climbing jobs must be carefully pre-planned and all equipment must be inspected prior to ascending the structure. Conduct equipment inspections according to company policy, manufacturer's recommendations, NATE procedures, and existing federal and state regulations.

11. The Tailgate Session

Before climbing any structure or performing any maintenance task on a tower, an experienced crew will take the time to carefully plan the job. This planning is usually done in what is commonly referred to as a “tailgate session” at the job site. The reason for this is to identify any hazards such as overhead power lines, view obstructions or structural damage.

At a typical tailgate session, the Competent Person or supervisor briefs the crew on the job that is to be done. The proper procedures to be followed are discussed in detail and specific crew assignments are made. Safety requirements, special tools or equipment needed for the job, and any other special considerations are discussed.

The tailgate session is also a time for crew members to ask questions about their specific duties and responsibilities.

Before ascending the tower the climber must first plan a climbing path. Most towers have ladders permanently attached. Other towers do not have an attached ladder and these structures deserve special consideration.

When planning a climbing path, keep in mind that things look very different from the ground than they do in the air. A climber must always be prepared to modify the climbing path if conditions change or are not what was expected.

12. Site Inspection

Many companies have well-established policies for performing various types of jobs. For their safety, an experienced crew will know and follow these policies.

Experienced crew members know that even though many structures look alike, factors such as the condition of the structure, site location and the task to be completed make each situation different.

In order to minimize surprises while attempting to perform a given task, crew members will make a thorough site inspection before climbing. One of the first items checked during a site inspection is the condition of the anchors and guy wires.

Crew members also look at the structural components and ground wires for signs of damage or unusual conditions that could become hazardous to a climber. Items such as loose or missing support members, damaged steps or insulators, excessive corrosion, evidence of wasp nests or other natural hazards are among the basic considerations of a site inspection.

If hazards are discovered, the crew should be made aware that such conditions exist and planning should be done to avoid or correct them. Hazards that are not corrected should be reported to appropriate supervisory personnel so that corrective action can be scheduled. Depending on the nature of the hazard and the potential for severe injury, it may be necessary to stop work until the hazard can be abated.

13. Inspection of Tools and Equipment

Once a competent person is satisfied that the structure is safe to climb, the tools and equipment to be used must be inspected.

Items looked for include damage to the buckles, D-rings and other belt components. Check for loose stitching and worn spots. Make sure that tool pouches and equipment bags are properly attached. Examine the condition of the gloves to be worn, the condition of the safety strap, harness and lanyard(s). Boots should be in good condition and all other tools and equipment to be used must be in good working order.

If the climbing task involves the use of specialized equipment, the climber should make sure that the equipment being used is designed for the specific structure being climbed. Using equipment that is not specifically designed for the structure being climbed could result in an accident.

Only after everything has been inspected and documented according to policy should a climber begin to climb.

14. Climbing Lattice Towers

Lattice towers are designed in a number of ways. The crisscross construction of a lattice tower generally provides a climber with numerous possibilities for climbing. The type of work to be done, the tower's type of construction and individual company policies will determine the method of climbing to be used.

15. Climbing Techniques for Lattice Towers

When climbing a lattice tower, a climber should remain on the outside of the graduating slope of the structure. Using this technique allows gravity to work for the climber by pulling him or her into the structure. If the low side of a structure is used, gravity pulls the climber away from the structure. This causes fatigue and can contribute to the likelihood of an accident.

16. Climbing to the Permanent Steps

Most lattice towers have some type of permanent steps or ladders installed on them to make climbing easier. To discourage unauthorized persons from climbing these structures, the steps may start 15 feet or more above the ground.

One of the first tasks in climbing a lattice tower is to get to the permanent steps. The two methods most commonly used are climbing the steel and installing temporary steps.

When climbing the steel, a climber uses whatever cross members are available to get up the tower. Upon reaching the permanent steps, the climber transitions over to the steps and continues the ascent.

Climbing the steel is not always the preferred method of climbing according to company policy. If ropes or equipment must be carried up the structure, a climber may find that climbing the steel is impossible in some cases and dangerous in others.

The other general method of reaching the permanent steps is to use temporary steps. There are many different types of temporary steps and each is designed for use on a specific type of structure. In general, temporary steps are designed to fit only one way into brackets or holes on a structure. A climber using temporary steps should make certain that the proper steps for a given structure are on the job site and that they fit correctly.

17. Ascending and Descending a Tower

There are specific techniques involved in ascending or descending a tower. A climber moves up or down the permanent or temporary steps by shifting his or her weight from one leg to the other. This helps climbers ensure their stability and safety. When the worker moves up or down a step, the climber's legs should do the majority of the work. Arms and hands should be used only to maintain balance and position on the structure.

18. Alternate Climbing Procedures

Company procedures for maneuvering and climbing on a steel tower can vary greatly. The following procedure is the minimum allowed to ensure safety.

When a pre-job hazard survey reveals that one or more areas on a structure will render 100% tie-off climbing infeasible, then a procedure must be put in place that will provide equal protection to the employee.

Gather the crew for a tailgate or toolbox meeting to discuss the hazards associated with the particular structure.

Inspect all personal protective equipment (PPE). All non-conforming equipment shall be appropriately identified and taken out of service.

When alternate means and methods are used, a site-specific safety plan will be required. This site-specific safety plan must be developed in writing and retained as part of your company's records for this particular job.

Upon ascent of the tower, remember to follow the proper climbing technique. Always use three-point contact, which means two feet and one hand or two hands and one foot must be in contact with the ladder, pegs, or structure at all times for ascent, descent and transition.

Break your climbing runs (lengths without stopping) to a comfortable distance. Do not reach a point of exhaustion before stopping to rest.

19. 100% Tie-Off Climbing Procedures

The purpose of this text is to familiarize the foreman/crew with a typical situation that would be encountered when arriving at a structure to be climbed that has a functional safety climb device or where other means of 100% tie-off climbing are to be utilized. When a pre-job hazard survey reveals that the structure to be worked on has a functional safety climb device, or where other means of 100% tie-off climbing are to be utilized, a procedure for ascent, descent, and transition is needed. The following is to be used as a procedure:

- A) Gather the crew for a tailgate or toolbox meeting to discuss the hazards associated with the particular structure;
- B) Inspect all personal protective equipment (PPE). All non-conforming equipment shall be appropriately identified and taken out of service;
- C) When you are ready to begin ascending the structure, approach the ladder at the base and connect to the functional safety climb device. Check for proper operation, climb a few feet (less than 6') and forcibly engage the device without letting go of the ladder. If the device functions as intended, begin your ascent;
- D) Upon ascent of the structure, remember to follow the proper climbing technique. Always use three-point contact, which means two feet and one hand or two hands and one foot must be in contact with the functional safety climb device, pegs, or structure at all times for ascent, descent and transition;
- E) Break your climbing runs (lengths without stopping) to a comfortable distance. Do not reach a point of exhaustion before stopping to rest;
- F) Do not disconnect from the functional safety climb device or other means of fall protection without first connecting to an appropriate anchor point; and
- G) To transition to other parts of the structure, use appropriate attaching devices - first connecting the next attaching device before disconnecting the first. If safe transition while using 100% tie off procedures becomes infeasible, refer to the alternate climbing procedures. Do not use any alternate climbing techniques without first consulting and discussing the problem with your supervisor or competent person and having a site safety plan developed to address the specific circumstances involved. The site safety plan must be in writing and must be retained for your company's records.

20. Working from Towers

A hand line and bucket system is frequently used by tower climbers to transport small items and tools up and down the structure. They are also used for positioning tools and equipment where they are needed. When not in use, hand lines are generally tied off to the structure or tended by a crew member so that it is kept in the clear.

When working from an area on the tower, crews typically work from the high side of the structure. Working from the high side allows gravity to work for the climber by pulling him or her into the structure. This tends to minimize fatigue and increases safety.

21. Steel Assembly and Disassembly

Many times during the course of assembling steel towers, the climber will be subjected to fall hazards. By following the NATE climbing procedures detailed previously, or by following company climbing procedures, a climber can minimize the risk of an accident.

22. Personnel Lifting Procedures

In those cases where personnel hoisting is to be conducted, the following requirements shall be followed:

- A) All employees on the tower have been deemed qualified by the employer;
- B) All hoist operators are deemed qualified by the employer, in accordance with applicable federal and state regulations;
- C) The hoist shall be rated for the work intended;
- D) The hoist shall be serviced and maintained per the manufacturer's recommendations;
- E) An anti-two block device will be used on all hoists;
- F) All tower rigging, load line, and chokers will have a 10:1 safety factor;
- G) When hoisting personnel (versus material) the hoist capacity load rating must be de-rated by a factor of 2; and
- H) All employees are provided with and required to use the proper safety equipment.

23. Trial Lift, Proof Testing and Inspection

A trial lift with a load of at least the anticipated lift weight shall be made from ground level to the location of where personnel are to be hoisted.

The trial lift shall be made immediately prior to placing personnel on the load line. The operator shall determine that all systems, controls and safety devices are activated and functioning properly.

The operator shall also determine that no interference exists; and that all configurations necessary to reach those work locations will allow the operator to remain under the 50% limit of the hoist's rated capacity, and additionally maintain a 10:1 safety factor on the lifting system. A single trial lift shall be performed at one time for all locations that are to be reached from a single set-up position.

The trial lift shall be repeated prior to hoisting employees whenever the hoist is moved and set up in a new location or returned to a previously used position. Additionally, the trial lift shall be repeated when the lift route is changed unless the operator determines that the route change is not significant (the route change would not affect the safety of the hoisted employees). After the trial lift, employees shall not be lifted unless the following conditions are determined to exist:

- A) Hoist wire ropes shall be free of damage as prescribed as per industry standards for wire rope;
- B) Multiple part lines shall not be twisted around each other;
- C) If the load wire rope is slack, the hoisting system shall be inspected to ensure all wire ropes are properly seated on drums and in sheaves;

- D) A visual inspection of the hoist, rigging and base support or ground shall be made by a competent person immediately after the trial lift to determine whether testing has exposed any defect or adverse effect upon any component of the structure;
- E) Any defects found during an inspection, which may create a safety hazard, shall be corrected before hoisting personnel;
- F) At each job site, prior to hoisting employees, and after any repair or modification, the personnel rigging will be proof tested to 125% of the approximate load by holding it in a suspended position for five minutes with the test load evenly distributed. This may be done concurrently with the trial lift. After proof testing, a competent person shall inspect the rigging. Any deficiencies found shall be corrected and another proof test shall be conducted; and
- G) Personnel hoisting shall not be conducted until the proof testing requirements are satisfied.

24. Work Practices

The hoist operator shall remain at the controls at all times when the engine is running and personnel are on the load line.

Hoisting of employees shall be promptly discontinued upon any indication of dangerous weather conditions or other impending danger, except in the case of emergency removal.

Employees being hoisted shall remain in continuous sight of, and/or in direct communication with, the operator or signal person. In those situations where direct visual contact with the operator is not possible, and the use of a signal person would create a greater hazard for the person being hoisted, direct communication alone, such as by radio, may be used.

25. Pre-lift Meeting

A meeting attended by the hoist operator, employees to be lifted and the crew chief shall be held to review the appropriate procedures to be followed and the requirements outlined in this document.

The meeting shall be held prior to the trial lift at each location and shall be repeated for any newly assigned employees to the operation.

26. Documentation

Trial lift, inspection and proof test will be documented and the documentation shall remain on site during the entire length of the project.

The pre-lift meeting will be documented and the documentation shall remain on site during the entire length of the project.

27. Criteria for Hoisting the Employee(s) to the Work Station

OSHA has recognized that employers may utilize the load line to lift employees to a working level. The OSHA guidance is reflected in OSHA Instruction, Directive No. CPL 2-1.36. A copy of the OSHA Directive is included in this guide (Section 14).

The employee(s) attached to the load line shall be provided with and required to use the proper safety equipment as prescribed by the employer.

The maximum rate of travel of an employee being hoisted on a load line shall not exceed 200 feet per minute. The use of free-spooling is prohibited when using the load line to raise or lower personnel.

When the load line is being used to raise or lower an employee there shall be no other load attached to any load line and no other load shall be raised or lowered at the same time on the same hoist.

28. Movement from the Load Line to the Tower

The following procedure will ensure personnel a safe and effective way to move from the load line to the tower:

- A) Employees on the load line must maintain constant communication with the hoist operator; and
- B) Employees must maintain 100% hook-off while moving from the load line to the tower.

29. Hoist/Hoist Operator Qualifications

All base mounted hydraulic hoists in use shall meet the applicable requirements for design, construction, installation, testing, inspection, maintenance, and operations as prescribed by the manufacturer.

The hydraulic hoist shall be positioned so that it is level and the distance between the drum and the foot block will allow proper spooling of wire rope.

The foot block of the drum hoist shall be anchored to prevent displacement and be supported to maintain proper alignment.

The hydraulic hoist shall be properly aligned and anchored to prevent movement.

All controls used during the normal operation cycle shall be located within easy reach of the operator's station.

The controls of the hydraulic hoist shall be self-centering controls that will return the machine to neutral and engage the drum brakes.

Exposed moving parts such as gears, projecting screws, chain sprockets, and reciprocating or rotating parts, which constitute a hazard, shall be guarded.

The operator of the hoist shall remain at the controls when an employee is in a suspended position.

Refer to the NATE Hoist Operator Educational Requirements manual to further define this subject.

30. Communication - Climber/Hoist Operator

Employees being hoisted shall remain in continuous sight of and/or in direct communication with the operator or signal person. In those situations where direct visual contact with the operator is not possible, and the use of a signal person would create a greater hazard for the person being hoisted, direct communication alone, such as by radio, may be used. When hand signals are used all employees must use industry standardized hand signals in accordance with proper crane/hoist operations.

31. Weather Conditions/Energized Power Lines

Employees shall not be hoisted during adverse weather conditions, which could affect the safety of an employee on the load line or the operator of the hoist.

The hoist system used to raise and lower employees shall not be used under energized power transmission and distribution lines or within 10 feet horizontally, at the closest point of travel from the line.

32. Hoist Standards

The hoist shall be designed to lift materials and also personnel with the same drum or drums.

All base-mounted drum hoists in use shall meet the applicable requirements for design, construction, installation, testing, inspection, maintenance and operations, as referenced in the above standards or guidelines.

Any hoist that has been modified or repaired must be proof tested to 125% of its rated capacity.

Rated load capacities, and recommended operating speeds, special hazard warnings or instructions shall be conspicuously posted on all hoists.

Instructions or warnings shall be visible to the operator while he/she is at the controls.

The hoist shall be anchored so as to resist at least two times the reaction induced at the maximum attainable line pull and shall be so anchored that the hoist will not twist or turn.

The hoist shall have an hour meter and a line speed indicator.

The hoist shall be capable of controlled lowering.

Line speed must not exceed 200 feet per minute when raising or lowering personnel from the tower.

33. **Mounting**

Attachment of the hoists to the structure shall be sized to resist at least two times the reactions induced at the maximum attainable line pull.

The alignment of hoist components will be maintained within limits that shall prevent premature deterioration of gear teeth, bearings, splines, bushings, and any other parts of the hoist mechanism.

The hoist manufacturer shall provide a mounting procedure, which shall prevent excessive distortion of the hoist base as it is attached to the mounting surface. Flatness of the mounting surface shall be held to tolerances specified by the hoist manufacturer.

Belts, gears, shafts, pulleys, sprockets, spindles, drums, fly wheels, chains or other rotating parts, where exposed, shall be guarded.

All exhaust pipes shall be guarded where exposed.

An accessible fire extinguisher of 5BC rating or higher shall be available at the operator's station.

34. **Drums**

Drums shall be capable of raising or lowering 125% of the rated load of the hoist.

The hoist drum shall have a positive means of attaching the wire rope to the drum.

The hoist drum and load blocks shall have a diameter or enough wraps on the drum to maintain an 18:1 ratio to the wire rope. If the hoist drum cannot maintain an 18:1 ratio on the bare drum, then at least three wraps should be maintained.

During operations the flange will be two times the wire rope diameter higher than the top layer of wire rope at all times.

35. **Brakes and Clutches**

Brakes and clutches shall be capable of arresting any over-speed descent of the load.

The hoist shall be provided with a primary brake and at least one independent secondary brake, each capable of stopping and holding 125% of the lifting capacity of the hoist.

The primary brake shall be directly connected to the drive train of the hoisting machine, and shall not be connected through belts, chains, clutches or screw-type devices.

The secondary brake shall be automatic-emergency type of brake that if actuated during each stopping cycle, shall not engage before the hoist is stopped by the primary brake.

When a secondary brake is actuated, it shall stop and hold the load within a vertical distance of 24 inches.

Brakes and clutches shall be provided with adjustments where necessary, to compensate for wear and to maintain adequate force on springs where used.

Controlled lowering must be maintained.

When power brakes, having no continuous mechanical linkage between the actuating and braking mechanism, are used for controlling loads, an automatic means shall be provided to set the brake to prevent the load from falling in the event of loss of brake actuating power.

Static brakes shall be provided to hold the drum from rotating in the lowering direction and shall be capable of holding the rated load indefinitely without attention from the operator.

Brakes shall be automatically applied upon return of the control lever to its center (neutral) position.

Brakes, which are applied on stopped hoist drums, shall have sufficient impact capacity to hold 1.5 times the rated torque of the hoist.

36. Controls

Power plant controls shall be within easy reach of the operator and shall include a means to start and stop, control speed of internal combustion engines, stop prime mover under emergency conditions, and shift selective transmissions.

All controls used during the normal operation of the hoist shall be located within easy reach of the operator while at the operator's station.

All control levers must spring return to neutral when released and when in neutral the brakes must come on automatically.

Controls shall be clearly marked and easily visible from the operator's station. This can be accomplished by marking each control or by a control arrangement diagram.

Foot-operated pedals, where provided, shall be constructed so the operator's feet will not readily slip off and the force necessary to move the pedals shall be easily accomplished.

37. Wire Rope and Rigging

All wire rope and rigging shall be inspected daily before use.

All eyes in wire rope slings shall be fabricated with thimbles.

All eyes in wire rope shall be field fabricated by a qualified person or factory made with an independent wire rope core and a minimum diameter of 3/8 inches.

All eyes in wire rope shall use a safety factor of 10:1 and take into account the percentage of loss of the eye connection: Manufactured eye – 100%, Wedge socket – 85%, Flemish eye with a clip – 85%.

38. Operator Qualifications

The operator shall have documentation of classroom training, a minimum of 40 hours experience and the following minimum physical criteria: a) vision of at least 20/30 Snellen in one eye and 20/50 in the other (with or without glasses), b) be able to distinguish red, green, and yellow, regardless of position of colors, and c) have adequate hearing (with or without hearing aid.)

The operator shall not engage in the operation of a hoist when he/she is physically or mentally unfit.

The operator shall be responsible for those operations under his/her direct control. Whenever there is any doubt as to safety, the operator shall have the authority to stop and refuse to handle the load until it is handled properly.

The operator shall not leave his/her position at the controls while the load is suspended.

Before starting the hoist the operator shall ensure that a) the daily inspection has been done, b) that all controls are in the "off" position, and c) that all personnel are in the clear.

39. Inspections

Inspections shall be performed daily before use. A more detailed quarterly inspection shall be performed by a qualified and trained inspector.

A hoist that has been idle for a period of one month, but less than six months shall be thoroughly inspected before being put into service.

A hoist that has been idle for a period of over six months shall be given an annual inspection which should include the hoist being completely disassembled, cleaned and inspected. Replacement of all worn, cracked, corroded or distorted parts such as pins, bearings, shafts, gears, brake plates, drum and base is mandatory.

Infrequent to Moderate Usage - Applies to those hoists that have been used for fifty hours or less per month and normally operate at considerably less than the hoist rated capacity - based on the average use over a month. Hoists in this category shall have a means of determining the average number of hours used monthly. Hoists of this category could go up to thirty-six months between teardown inspections if serviced under a good preventive maintenance program that would include annual oil sample analysis. Oil in these hoists should be changed on an annual basis (minimum), just after the oil sample is taken. Hoists not subject to recommended oil sample analysis should undergo an annual teardown inspection.

Heavy Usage - Applies to those hoists that are used for more than fifty hours per month. Hoists in this category could go up to twenty-four months between teardown inspections if serviced under a good preventive maintenance program that includes semi-annual oil sample analysis. Oil in these hoists should be changed on an annual basis. Hoists not subjected to recommended oil sample analysis should undergo a teardown inspection on a twelve-month basis.

The oil sample analysis is to evaluate the mechanical integrity of the hoist. Oil sample analysis need not necessarily mean a laboratory analysis, but can be effectively accomplished in the field

by a qualified person and a cheesecloth smell, paying special attention to metallic particle and signs of overheating.

The rebuilt hoist assembly must be line pull tested to the rated load. The hoist drum must be rotated several times in both hoisting and lowering directions under full-rated load, while checking for smooth operation.

After inspection, a new certificate for personnel handling will be issued by the inspector/service-person effective on the date the hoist is placed back in service.

Inspection records and reports of repairs and modifications shall be available and accessible for two years after the hoist is sent in for a periodic inspection. These records should include, but not be limited to, hoist model and serial number, name and employer of repair technician, date and description of repair, and functional test reports.

40. Conclusion

In reviewing these materials, if anyone has questions regarding these materials, they should review applicable standards listed throughout this section of the safety program guide to ensure they are following the practices and procedures.



CLIMBER EXAM

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Climber Exam	2
Answer Key	5



Introduction

This exam has been developed as the minimum necessary for evaluating comprehension. This exam utilizes information contained within the Fourth Edition of the NATE Safety Program Guide and the NATE Tower Climber Fall Protection Training Standard (NATE CTS). It is intended to be used as a sample or guide for the development of NATE member company climber exams. NATE members should be aware that practical examinations and on-the-job training experience are also essential for evaluating a climber's proficiency as defined in the NATE CTS.

Climber Exam

1. **In some cases, different types of anchorage straps may need to be used to accommodate certain types of steel poles and towers.**
 - a. True
 - b. False

2. **What should a worker do if a piece of equipment or a tool gets snagged while climbing?**
 - a. Move laterally on the tower while disconnecting the snagged tool or equipment.
 - b. Descend a short distance until the problem spot is above you.
 - c. Maintain tie-off and position on the tower, locate the source of the problem and take appropriate action.
 - d. Keep climbing until well above the problem spot.

3. **A crew must complete a site inspection (Job Hazard Analysis) to identify and verify any potential hazards.**
 - a. True
 - b. False

4. **A site inspection includes which of the following?**
 - a. Inspect the condition of the anchors and guy wires, including connections and tension.
 - b. Look for and identify any overhead power lines.
 - c. Locate any existing natural hazards (wasp nests, etc.).
 - d. Check the tower for plumb.
 - e. All of the above.

5. **What occurs during a tailgate or toolbox meeting?**
 - a. Discussion of the condition of the crew vehicle.
 - b. Planning the day's activities, responsibilities and potential hazards for each crew member.
 - c. Planning of the upcoming evening's entertainment.
 - d. Discussion of the previous evening's entertainment.
 - e. All of the above.

6. **During the tailgate or toolbox talk, all of the potential hazards are identified from the ground and a climbing path is chosen. This climbing path should never be changed.**
 - a. True
 - b. False

7. **How often should personal protective equipment be inspected?**
- Once a week.
 - Once a month.
 - Before each use.
 - Only when wear and tear indicates an inspection is necessary.
8. **A proper mental attitude towards climbing safely is essential in minimizing personal hazards.**
- True
 - False
9. **What should a worker always do when ascending or descending a structure?**
- Follow his or her company policy with regards to fall protection and 100% tie-off.
 - Always remain on the high side of the structure.
 - Utilize the Three Points of Contact rule.
 - Only b and c.
 - All of the above.
10. **When climbing a structure that uses temporary steps:**
- It is okay to use any type of step.
 - The manufacturer's recommended steps should be used.
 - It is okay to not use any steps.
 - None of the above.
 - All of the above.
11. **Prior to beginning the day's activities, the experienced crew will hold this type of meeting.**
- Manufacturer's meeting.
 - Smoke break.
 - Tailgate or toolbox meeting.
 - None of the above.
12. **While in the act of climbing it is important to utilize the Three Points of Contact rule, which is two feet and one hand or two hands and one foot.**
- True
 - False
13. **While climbing, it is important for the climber to visually inspect the tower for any hazardous conditions or situations.**
- True
 - False

14. **The three main types of towers are: guyed, self-supporting and monopoles.**
- a. True
 - b. False
15. **While climbing, it is important to climb with a steady, even rhythm and stop frequently.**
- a. Because this is faster.
 - b. Because this will keep you more alert and thus creating less chance of an accident.
 - c. Because this will help maintain the Three Points of Contact rule.
 - d. Both b and c.
 - e. All of the above.
16. **All climbers must utilize 100% tie-off wherever they are working at heights above six feet.**
- a. True
 - b. False
17. **When working on a self-supporting lattice structure, a climber should always climb on the high side.**
- a. True
 - b. False
18. **Before any piece of personal protective equipment (PPE) is used, it must be carefully inspected to make sure it is in good condition.**
- a. True
 - b. False
19. **While climbing a worker exerts most of the climbing effort with his or her _____ to minimize fatigue.**
- a. Arms
 - b. Legs
 - c. None of the above.
20. **Who is responsible for following company safety policy?**
- a. The crew chief or foreman.
 - b. The new hire.
 - c. The supervisor.
 - d. All employees.

Answer Key

- | | | | | | |
|-----|---|---|---|---|---|
| 1. | • | B | C | D | E |
| 2. | A | B | • | D | E |
| 3. | • | B | C | D | E |
| 4. | A | B | C | D | • |
| 5. | A | • | C | D | E |
| 6. | A | • | C | D | E |
| 7. | A | B | • | D | E |
| 8. | • | B | C | D | E |
| 9. | A | B | C | D | • |
| 10. | A | • | C | D | E |
| 11. | A | B | • | D | E |
| 12. | • | B | C | D | E |
| 13. | • | B | C | D | E |
| 14. | • | B | C | D | E |
| 15. | A | B | C | • | E |
| 16. | • | B | C | D | E |
| 17. | • | B | C | D | E |
| 18. | • | B | C | D | E |
| 19. | A | • | C | D | E |
| 20. | A | B | C | • | E |



COMPETENT CLIMBER PRACTICAL APPLICATION EVALUATION

Introduction	1
Competent Climber Practical Application Evaluation.....	2

Introduction

The following competent climber practical evaluation is an example of a document that should be present in your company's safety program to help determine and record whether or not an employee meets the criteria for being considered a competent climber.

This evaluation is a sample to assist each company in developing its own system of evaluation, and by no means is the following document a complete evaluation for determining if an employee can be considered a competent climber. For a thorough review of what is required to be considered a competent climber, please refer to the NATE Tower Climber Fall Protection Training Standard (NATE CTS).

Competent Climber Practical Application Evaluation

Employee Name: _____

Job Title: _____

Supervisor: _____

Date of Hire: _____

NOTE: EVERY CREW MEMBER MUST FIRST COMPLETE A SUCCESSFUL WRITTEN EXAMINATION ON PROPER CLIMBING PROCEDURES AND THEN BE EVALUATED BY A CREW CHIEF OR SUPERVISOR ON PROPER TECHNIQUES PRIOR TO BEING CONSIDERED A COMPETENT CLIMBER.

NOTE: COMPETENT CLIMBERS SHALL HAVE AS A PRE-REQUISITE TO COMPETENT CLIMBER TRAINING A MINIMUM OF 90 DAYS, DOCUMENTED, FULL TIME , CLIMBER EXPERIENCE UTILIZING FALL PROTECTION EQUIPMENT.

THE PROSPECTIVE COMPETENT CLIMBER WILL BE RATED ON EACH GOAL OR FACTOR AND WILL HAVE AN OVERALL RATING BASED ON A FOUR-POINT SCALE. FOLLOWING IS A DESCRIPTION OF THAT SCALE:

4 = EXCEEDS GOAL OR FACTOR

3 = FULLY MEETS GOAL OR FACTOR

2 = PARTIALLY MEETS GOAL OR FACTOR

1 = DOES NOT MEET GOAL OR FACTOR

1. **AWARENESS: Consider how the employee regards his or her surroundings.**

Does he or she evaluate or perceive hazards?

Comments:

Evaluation: (Circle one) 1 2 3 4

2. **EASE/COMFORT**: Consider amount of difficulty employee has in climbing.

Are there signs of fear or unease?

Comments:

Evaluation: (Circle one) 1 2 3 4

3. **STABILITY**: Does the employee seem to be sure footed? Are hands and feet working together?

Consider stability on ladder while climbing and resting.

Comments:

Evaluation: (Circle one) 1 2 3 4

4. **SPEED**: Consider how quickly the employee can move around on the tower.

Does he or she seem confident and swift, or timid and slow?

Comments:

Evaluation: (Circle one) 1 2 3 4

5. **PERSONAL HABITS: Is the employee safety conscious?**

Does he or she exhibit signs of carelessness or excess bravado?

Comments:

Evaluation: (Circle one) 1 2 3 4

6. **SAFETY: Does the employee always utilize 100% tie-off procedures while working at heights of six feet or greater?**

Comments:

Evaluation: (Circle one) 1 2 3 4

SUPERVISOR'S EVALUATION:

Total points: _____

Does the employee demonstrate these practical skills at a level of proficiency to be a competent climber, pending successful completion of other NATE CTS requirements?

Comments:



PERSONNEL HOISTING

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Introduction

The practice of hoisting personnel to their workstation, when performed according to accepted safety practices, is a proven method of tower climbers safely accessing their workstation and returning to the ground. Personnel hoisting, commonly referred to as “riding the line”, diminishes exposure to repetitive joint injuries and the hazards associated with the fatigue caused by climbing. This section contains the procedures and practices that have been developed to ride the line safely, and within the scope of federal regulations.

Years of hard work between NATE and OSHA led to OSHA Instruction, Directive Number CPL 2-1.29. That Directive outlined the policy and procedures under which OSHA allows employees to ride the line, but restricted that activity to work stations above two hundred feet. In March 2002 OSHA revised that Directive, and issued Instruction Directive Number CPL 2-1.36 authorizing personnel hoisting to any elevation, so long as developed procedures are followed.

OSHA approved procedures for riding the line are included in the enclosed Directive. The only change in policy between the first and second Directive is the elimination of the two hundred foot exclusion. Also included in this section is an OSHA publication on Crane or Derrick Procedures.

Guidelines for riding the line can also be found in the Competent Climber section of this document (Section 11).

OSHA Directive CPL 2-1.36

DIRECTIVE NUMBER: CPL 2-1.36

EFFECTIVE DATE: March 26, 2002

SUBJECT: Interim Inspection Procedures During Communication Tower Construction Activities

ABSTRACT

Purpose: This instruction changes OSHA's inspection policy by removing the restriction on hoisting employees on the hoist line to their workstations if those workstations are lower than 200 feet. Otherwise, the original directive is unchanged and continues to ensure uniform enforcement by field enforcement personnel of the provisions addressing fall protection and safe access to communications towers during construction.

Scope: OSHA-wide.

References: Construction Safety and Health Standards, Subpart E, 29 CFR 1926.550 and Subpart M; American National Standard, ANSI - B30.7, Base Mounted Drum; Michigan Department of Consumer and Industry Services (MIOSHA) interim order from rule R408.4113 (1), Rule 1113(1); National Association of Tower Erectors (NATE) Guidelines for the Radio, Television, Communications Tower Industry; ANSI/TIA/EIA-222-F-1996, Structural Standard for Steel Antenna Towers and Antenna Supporting Structures.

Cancellations: This instruction cancels the prohibition contained in CPL 2-1.29 on hoisting persons on the hoist line to tower workstations below 200 feet.

State Impact: This instruction describes a Federal Program Change for which State adoption is not required.

Action Offices: National, Regional, and Area Offices.

Originating Office: Directorate of Construction

Contact: Mark Hagemann (202) 693-2345
Directorate of Construction
200 Constitution Ave., N.W., Room N3468
Washington, DC 20210

By and Under the Authority of John L. Henshaw

- I. Purpose - This instruction revises inspection policy as it relates to safe access to communications towers during construction and removes the restriction on hoisting employees on the hoist line to workstations below 200 feet. Otherwise the policies and procedures contained in the directive remain unchanged.

- II. Scope - This instruction applies OSHA-wide.
- III. References:
- A. Construction Safety and Health Standards, Subpart E, 29 CFR 1926.550 and Subpart M;
 - B. American National Standard, ANSI - B30.7, Base Mounted Drum;
 - C. Michigan Department of Consumer and Industry Services (MIOSHA) interim order from rule R408.4113 (1), Rule 1113(1);
 - D. National Association of Tower Erectors (NATE) Guidelines for the Radio, Television, Communications Tower Industry;
 - E. ANSI/TIA/EIA-222-F-1996, Structural Standard for Steel Antenna Towers and Antenna Supporting Structures; and
 - F. Occupational Safety and Health Act of 1970, Section 5(a)(1).
- IV. Application - This instruction applies only to the construction of new communications towers. Activities such as maintenance, retrofitting, and dismantling will be addressed in a future directive.
- V. Action - Regional Administrators and Area Directors shall ensure that compliance officers are familiar with the contents of this instruction and that the enforcement guidelines are followed.
- VI. Federal Program Change - This instruction describes a modification to a previously issued Federal Program Change for which State adoption is not required.

NOTE: In order to effectively enforce safety and health standards, guidance to compliance staff is necessary. Although adoption of this instruction is not required, states are expected to have standards, enforcement policies and procedures, which are at least as effective as those of Federal OSHA. States may accept employer compliance with the industry guidelines contained in this instruction as providing the necessary protection for worker access during tower erection.

- VII. Background - Accessing towers by the use of fixed ladders with attached climbing devices has been the preferred method as it provides conventional fall protection during ascent and descent of the structure.
- A. Some representatives of the tower construction industry assert that continual climbing of high towers is physically demanding and can lead to stress and medical ailments over an extended period of time and may contribute to other safety problems including falls. To alleviate these problems, the industry has asked that employees be allowed to ride a hoist line to work stations on towers.
 - B. Since OSHA does not specifically address tower erection under its current standards but wishes to help reduce the accident and injury rates associated with tower erection, OSHA believes that the methods in Appendix A represent the best practices which can be implemented to safeguard employees while being hoisted to workstations on the tower.

VIII. Compliance Guidelines for Fall Protection and Employee Access by Hoist During Communication Tower Construction Activities - For purposes of this Directive, OSHA agrees that the hoist line may be used to hoist employees for access to tower work.

When climbing the tower during construction activities, employees must be protected from falls using a fall arrest system meeting the criteria of 1926.502 or a ladder assist safety device meeting the requirements of 1926.1053(a). These are acceptable methods of accessing tower workstations regardless of height. All employees climbing or otherwise accessing towers must be trained in the recognition and avoidance of fall hazards and in the use of the fall protection systems to be used, pursuant to 1926.21 or where applicable, 1926.1060.

Some industry representatives have joined with OSHA in recommending that each employee six feet or more above a lower level should be protected from falling by a guardrail system, safety net system, ladder safety device, fall arrest system or positioning device system. However, current OSHA standards only require fall protection at heights of more than 25 feet.

IX. Citation Guidelines - For hazards associated with falls once employees are at their workstation at levels in excess of 25 feet, employers who fail to provide fall protection shall be cited under 1926. 105(a). Whenever an employer fails to follow the guidelines set forth in Appendix A, citations shall be issued under the applicable provisions of subpart N and, in the alternative, Section 5(a)(1) of the Occupational Safety and Health Act (the general duty clause) for hazards associated with work practices and equipment used to hoist employees on load lines to gain access to towers.

APPENDIX A:

Compliance Guidelines for Employee Access by Hoist During Communication Tower Construction Activities

Definitions:

Crew Chief: One who is authorized, designated, deemed competent and qualified by the employer.

Anti-Two Blocking: A positive acting device which prevents contact between the load block or overhaul ball and the top block (two-blocking), or a system which deactivates the hoisting action before damage occurs in the event of a two-block situation.

Maximum Intended Load: The total load of all employees, tools, materials, load lines and other loads reasonably anticipated to be applied to the hoist apparatus when an employee is hoisted.

Competent Person: One who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees and who has authorization to take prompt corrective measures to eliminate problems.

Authorized Person: A person approved or assigned by the employer to perform a specific type of duty or duties or to be at a specific location or locations at the job site.

Qualified Person: One who, by possession of a recognized degree, certificate or professional standing, or who by extensive knowledge, training and experience, has successfully demonstrated the ability to solve or resolve problems relating to the subject matter, the work or the project.

Gin Pole: A device attached to the tower used to raise sections of tower steel or equipment into position.

Specific Requirements - Employees may be hoisted on the hoist line to reach workstations only if all of the following conditions are met. The Agency believes that strict adherence to the guidelines set forth in this Appendix will provide employers with the appropriate safety measures for access during tower erection.

Training - Before an employee is allowed to perform any job related to hoisting employees aloft for tower work, the employee shall receive training on safe access pursuant to these guidelines. The operator of the hoist shall have a thorough understanding of these guidelines pertaining to hoisting employees on the hoist line.

Equipment - An anti-two block device shall be used on all hoists, except where an employer can demonstrate that ambient radiation frequency (RF) precludes that use. In such case, a site-specific safety and health program will be established and maintained on site to ensure that two blocking cannot occur and that effective communication between the hoist operator and personnel being hoisted is maintained. This program could include a cable marking system, an employee situated on the tower in a position to observe the top block, or any other system which will adequately ensure communication.

1. The rigging, hoist line and slings shall have a factor of safety of 10 against failure during personnel lift(s). The hoist line used to raise or lower employees shall be equipped with a swivel to prevent any rotation of the employees. The use of spin-resistant wire rope is prohibited when hoisting employees.

2. When hoisting personnel (versus material) the hoist capacity load rating shall be de-rated by a factor of 2 (reduced by half). All employees shall be provided with and required to use the proper personal protective equipment (including fall protection equipment) which shall be inspected before each lift.
3. Except where the employer can demonstrate that specific circumstances or conditions preclude its use, a guide line (tag line) shall be used to prevent the employees or the platform from contacting the tower during hoisting.
4. The gin pole shall be thoroughly inspected before use by a competent person to determine that it is free from defects, including but not limited to: damaged and/or missing members; corrosive damage; missing fasteners and broken welds at joints; and general deterioration.
5. The gin pole shall be attached to the tower as designed by a registered professional engineer. There shall be a minimum of two attachment locations: at the bottom of the gin pole and near the top of the tower being erected.
6. The personnel load capacity and material capacity of the lifting system in use shall be posted at the site near the location of the hoist operator. If the system is changed (for example, if the gin pole angle is changed), the posted capacity shall be changed accordingly.

Trial Lift and Proof Testing - A trial lift of the maximum intended personnel load shall be made from ground level to the location to which personnel are to be hoisted.

1. The trial lift shall be made immediately prior to placing personnel on the hoist line.
2. The hoist operator shall determine that all systems, controls and safety devices are activated and functioning properly.
3. A single trial lift may be performed for all locations that are to be reached from a single set-up position.
4. The hoist operator shall determine that no interference exists and that all configurations necessary to reach those work locations remain under the limit of the hoist's rated capacity as identified in paragraph 2(e), and additionally maintain a 10:1 factor of safety against failure.
5. The trial lift shall be repeated prior to hoisting employees whenever the hoist is moved and set up in a new location or returned to a previously used position.
6. After the trial lift, employees shall not be lifted unless the following conditions are met:
 - a) Hoist wire ropes are determined to be free of damage in accordance with the provisions of 29 CFR 1926.550;
 - b) Multiple part lines are not twisted around each other; and

- c) The proof testing requirements have been satisfied.
7. If the hoist wire rope is slack, the hoisting system shall be inspected to ensure that all wire ropes are properly seated on drums and in sheaves.
 8. A visual inspection of the hoist, rigging, base support and foundation shall be made by a competent person immediately after the trial lift to determine whether testing has exposed any defect or adverse effect upon any component of the structure.
 - a) Any defects found during the inspection which may create a safety hazard shall be corrected, and another trial lift shall be performed before hoisting personnel.
 - b) Prior to hoisting employees and after any repair or modification, the personnel rigging shall be proof tested to 125% of the greatest anticipated load by holding it in a suspended position for five minutes with the test load evenly distributed (this may be done concurrently with the trial lift).
 - c) After proof testing, a competent person shall inspect the rigging. Any deficiencies found shall be corrected and another proof test shall be conducted.

Pre-Lift Meeting - A pre-lift meeting shall be held prior to the trial lift at each location. The pre-lift meeting shall:

1. Be attended by the hoist operator, employees to be lifted, and the crew chief;
2. Review the procedures to be followed and all appropriate requirements contained in this guideline; and
3. Be repeated for any employee newly assigned to the operation.

Documentation - All trial lifts, inspections and proof tests shall be documented, and the documentation shall remain on site during the entire length of the project. The pre-lift meeting shall be documented, and the documentation shall remain on site during the entire length of the project.

Hoisting an Employee to the Work Station - Except where an employer can demonstrate that specific circumstances or conditions preclude its use, a personnel platform must be used to hoist more than one employee to the workstation. That personnel platform must meet the requirements of 29 CFR 1926.550 (g).

1. When a boatswains seat-type or full body seat harness is used to hoist employees, the following shall apply:
 - a) No more than two employees may be hoisted at a time;
 - b) The employee's harness shall be attached to the hook by a lanyard meeting the strength requirements of 29 CFR 1926.502;
 - c) Only locking-type snap hooks shall be used;

- d) The harness shall be equipped with two side rings and at least one front and one back D ring; and
 - e) The hoist line hook shall be equipped with a safety latch which can be locked in a closed position to prevent loss of contact.
2. When a personnel platform cannot be used, the following provisions must be followed:
- a) The maximum rate of travel shall not exceed 200 feet per minute when a guideline is used to control personnel hoists. When a guideline cannot be used, the rate of travel of the employee being hoisted shall not exceed 100 feet per minute;
 - b) In all personnel hoist situations, the maximum rate shall not exceed 50 feet per minute when personnel being lifted approach to within 50 feet of the top block;
 - c) The use of free-spooling (friction lowering) is prohibited. When the hoist line is being used to raise or lower employee(s), there shall be no other load attached to any hoist line, and no other load shall be raised or lowered at the same time on the same hoist;
 - d) As-built drawings approved by a registered professional engineer shall provide the lifting capacity of the gin pole and shall be available at the job site; and
 - e) The gin pole raising line shall not be used to raise or lower employees. Employees must maintain 100% tie-off while moving between the hoist line and the tower.

Communication Between the Hoist Operator and Hoisted Employees - Employees being hoisted shall remain in continuous sight of and/or in direct communication with the operator or signal person.

1. In those situations where direct visual contact with the operator is not possible and the use of a signal person would create a greater hazard for the person being hoisted, direct communication alone, such as by radio, shall be used.
2. When radios are used, they shall be non-trunking closed 2-way selective frequency radio systems. When hand signals are used, the employees must use industry standardized hand signals as required by 1926.550(a)(4).

Weather Conditions - Employees shall not be hoisted during adverse weather conditions (high winds, electrical storms, snow, ice, sleet), or other impending danger, except in the case of emergency employee rescue. This determination shall be made by the competent person.

Energized Power Lines - The hoist system (gin pole and its base hoists) used to raise and lower employees on the hoist line, shall not be used unless the following clearance distances as recommended by ANSI are maintained at all times during the lift.

Power line voltage phase to phase (kV)	Minimum safe clearance (feet)
50 or below	10
Above 50 to 200	15
Above 200 to 350	20
Above 350 to 500	25
Above 500 to 750	35
Above 750 to 1,000	45

Hydraulic Hoists (Drum Hoists) - The hoist used for personnel lifting shall meet the applicable requirements for design, construction, installation, testing, inspection, maintenance, modification, repair and operations as referenced in this Appendix and as prescribed by the manufacturer.

1. Where manufacturers' specifications are not available, the limitations assigned to the equipment shall be based on the determinations of a registered professional engineer. The hoist shall be positioned so that it is level and the distance between the drum and the foot block at the base of the tower will allow proper spooling of wire rope. The foot block shall be anchored to prevent displacement and be supported to maintain proper alignment.
2. The hoist shall be designed to lift materials and personnel with the same drum or drums. Any hoist that has been modified or repaired must be proof-tested to 125% of its rated capacity.
3. Rated load capacities, recommended operating speeds, and special hazard warnings or instructions shall be conspicuously posted on all hoists.
4. Belts, gears, shafts, pulleys, sprockets, spindles, drums, fly wheels, chains or other rotating parts, where exposed, shall be totally enclosed.
5. Personnel load capacity for the current configuration of the gin pole shall be posted within sight of the hoist operator.
 - a) The hoist shall have an hour meter and a line speed limiter. The hoist shall be designed for and must use powered lowering.
 - b) The alignment of hoist components shall be maintained within manufacturer's specified limits that prevent premature deterioration of gear teeth, bearings, splines, bushings, and any other parts of the hoist mechanism.
6. All exhaust pipes shall be guarded where exposed. An accessible fire extinguisher of 5BC rating or higher shall be available at the operator's station.
7. The hoist shall be serviced and maintained per the manufacturer's recommendations.
 - a) The operating manual developed by the manufacturer for the specific make and model hoist being used shall be maintained at the site at all times.

- b) A hoist logbook shall be used to record all hoist inspections, tests, maintenance and repair. The log shall be updated daily as the hoist is being used and shall be signed by the operator and/or crew chief. Service mechanics shall sign the log after conducting maintenance and repair. The log shall be maintained at the site.

Hoist Mounting - The hoist shall be installed following the manufacturer's mounting procedures to prevent excessive distortion of the hoist base as it is attached to the mounting surface.

1. Flatness of the mounting surface shall be held to tolerances specified by the hoist manufacturer.
2. The hoist shall be anchored so as to resist at least two times any reaction induced at the maximum attainable line pull and shall be anchored so that the hoist will not twist or turn.
3. If the hoist is mounted to a truck chassis, it shall be properly aligned and anchored in at least two corners to prevent movement, and the wheels shall be properly chocked.

Drums - The hoist drum shall be capable of raising or lowering 125% of the rated load of the hoist.

1. The hoist drum shall have a positive means of attaching the wire rope to the drum.
2. There shall always be at least three full wraps of wire rope on the hoist drum when personnel are being hoisted.
3. During operation, the flange shall be two times the wire rope diameter higher than the top layer of wire rope at all times.

Brakes and Clutches - Brakes and clutches shall be capable of arresting any over-speed descent of the load.

1. The hoist shall be provided with a primary brake and at least one independent secondary brake, each capable of stopping and holding 125% of the lifting capacity of the hoist.
 - a) The primary brake shall be directly connected to the drive train of the hoisting machine, and shall not be connected through belts, chains, clutches or screw-type devices.
 - b) The secondary brake shall be an automatic emergency-type brake that, if actuated during each stopping cycle, shall not engage before the hoist is stopped by the primary brake. When a secondary brake is actuated, it shall stop and hold the load within a vertical distance of 24 inches.
2. Brakes and clutches shall be adjusted, where necessary, to compensate for wear and to maintain adequate force on springs where used. Powered lowering must be used.
3. When power brakes having no continuous mechanical linkage between the actuating and braking mechanism are used for controlling loads, an automatic means shall be provided to set the brake to prevent the load from falling in the event of loss of brake actuating power.

4. Static brakes shall be provided to prevent the drum from rotating in the lowering direction and shall be capable of holding the rated load indefinitely without attention from the operator. Brakes shall be automatically applied upon return of the control lever to its center (neutral) position.
5. Brakes applied on stopped hoist drums shall have sufficient impact capacity to hold 1.5 times the rated torque of the hoist.

Hoist Controls - Power plant controls shall be within easy reach of the operator and shall include a means to start and stop, control speed of internal combustion engines, stop prime mover under emergency conditions, and shift selective transmissions.

1. All controls used during the normal operation of the hoist shall be located within easy reach of the operator at the operator's station.
2. Controls shall be clearly marked (or be part of a control arrangement diagram) and easily visible from the operator's station. Foot-operated pedals where provided, shall be constructed and maintained so the operator's feet will not readily slip off and the force necessary to move the pedals can be easily applied.
3. The controls shall be self-centering controls (i.e., "deadman" type) that will return the machine to neutral and engage the drum brakes if the control lever is released.

Wire Rope and Rigging - All wire rope and rigging shall be inspected daily before use.

1. All eyes in wire rope slings shall be fabricated with thimbles.
2. All eyes in wire rope slings shall:
 - a) Be made with swaged-type fittings; and
 - b) Be field fabricated by a qualified person or factory made.

Hoist Operator - The hoist operator shall have classroom training, a minimum of forty (40) hours experience as a hoist operator, not less than eight (8) hours experience in the operation of the specified hoist or one of the same type, and demonstrated the ability to safely operate the hoist.

1. The employer shall not allow an employee to operate a hoist when that employee is physically or mentally unfit.
2. The hoist operator shall be responsible for those operations under his/her direct control.
3. Whenever there is any doubt as to safety, the operator shall have the authority to stop and refuse to handle the load until safety has been assured.
4. The hoist operator shall remain at the controls at all times when personnel are on the hoist line.

5. Before starting the hoist, the operator shall ensure that:
 - a) The daily inspection has been conducted;
 - b) All controls are in the “off” position; and
 - c) All personnel are in the clear.

Hoist Inspections - Each day before use, all hoists shall be visually inspected by a qualified person.

1. All hoists shall be inspected thoroughly at three (3)-month intervals by a qualified person, as will any hoists that have been idle for more than one month but less than six months. Such inspection will include a hands-on operation of all moving parts to ensure that they are intact and will properly function before being put into service.
2. All hoists shall undergo a tear-down inspection annually unless the following conditions exist that allow for less frequent tear-down inspections:
 - a) A hoist that has been idle for a period of over six (6) months shall be given an annual inspection which includes the hoist being completely disassembled cleaned and inspected. Parts such as pins, bearings, shafts, gears, brake plates, etc. found worn, cracked, corroded, distorted or otherwise non-functional must be replaced before the hoist is used.
 - b) Hoists with infrequent to moderate usage (hoists that have been used for fifty (50) hours or less per month and normally operate at considerably less than the hoist rated capacity based on the average use over a month) may go up to thirty-six (36) months between tear-down inspections if serviced under a preventive maintenance program (as specified by the manufacturer) that includes annual hydraulic oil sample analysis. An oil sample analysis, meaning a laboratory analysis, is used to evaluate the mechanical integrity of the hoist. Oil in these hoists shall be changed at least on an annual basis, just after the oil analysis is performed. Hoists not subjected to recommended oil sample analysis shall undergo an annual tear-down inspection.
 - c) Hoists that experience heavy usage (hoists that are used for more than fifty (50) hours per month) may go up to twenty-four (24) months between tear-down inspections if serviced under a preventive maintenance program as in (2) above.
 - d) Any rebuilt hoist assembly must be line pull tested to the rated load. The hoist drum must be rotated several times in both raising and lowering directions under full-rated load, while checking for smooth operation.

Crane or Derrick Procedures (Including Suspended Personnel Platforms)

U.S. Department of Labor
Ann McLaughlin, Secretary

Occupational Safety and Health Administration
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OSHA 3100

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Foreword

The hoisting of personnel using cranes or derricks, poses a significant risk to employees being lifted, even if certain precautions are followed. To help prevent employee injury or death, the Occupational Safety and Health Administration (OSHA) has issued rules to limit the use of personnel hoisting and to prescribe the proper safety measures for these operations.

The rule generally prohibits hoisting personnel by crane or derrick but permits it if no safe alternative is available and if the requirements described below are met. For example, if it would be unsafe to use scaffolds or ladders, then personnel hoisting by crane or derrick would be permitted. But if it is safe to use scaffolds or ladders; personnel hoisting is not prohibited.

The rules of personnel hoisting are written in performance-oriented language that allows employers flexibility in deciding how to provide the best protection for their employees against the hazards associated with hoisting operations and in determining how to bring their worksites into compliance with the requirements of the standard.

This booklet discusses OSHA's requirements for hoisting personnel by crane or derrick in the construction industry, prescribes measures employers must take to bring their work operations into compliance, and describes safe work practices for employees.

The guidelines for personnel hoisting are outlined in OSHA CPL 2-1.36. This directive is located on pages 2 - 12 of this section.

CRANE AND DERRICK OPERATIONS

Cranes and derricks used to hoist personnel must be placed on firm ground and the crane or derrick must be leveled.

The crane operator must always have full control over the movement of the personnel platform. Any movement must be performed slowly and cautiously without any sudden jerking of the crane, derrick or

platform. Wire rope used for personnel lifting must have a minimum safety factor of seven. (This means it must be capable of lifting seven times the maximum permitted load.)

When the occupied personnel platform is in a stationary position, all brakes and locking devices on the crane or derrick must be set.

The combined weight of the loaded personnel platform and its rigging must not exceed fifty percent (50%) of the rated capacity of the crane or derrick.

INSTRUMENTS AND COMPONENTS

Cranes and derricks with variable angle booms must have a boom angle indicator that is visible to the operator. Cranes with telescoping booms must be equipped with a device that clearly shows the boom's extended length, or the load radius must be accurately determined before hoisting workers. Cranes and derricks also must be equipped with (1) an anti-two-blocking device that prevents contact between the load block or overhaul ball and the boom tip, or (2) the two-block damage feature that deactivates the hoisting action before damage occurs.

PERSONNEL PLATFORMS

The platforms used for lifting personnel must be designed with a minimum safety factor of five, and a qualified engineer or a qualified person who is competent in structural design must design them. The suspension system must be designed to minimize tipping when personnel move on the platform.

Each personnel platform must be provided with a standard guardrail system that is enclosed from the toe board to the mid-rail to keep tools, materials, and equipment from falling on employees below. The platform also must have a grab rail, overhead protection when needed, adequate headroom for employees, and a plate or other permanent marking that clearly indicates the platform's weight and rated load capacity or maximum intended load.

An access gate, if provided, must not swing outward during hoisting and must have a restraining device to prevent accidental opening.

Employees must not be exposed to any rough edges on the platform. All rough edges must be ground smooth to prevent injuries to employees.

A qualified welder who is knowledgeable of weld grades and types of materials used must perform all welding. The materials used should be those specified in the platform design.

LOADING

The rated load capacity of the platform must not be exceeded. Only authorized personnel, their tools, equipment, and materials needed for the job are allowed on the platform. Materials and tools must be secured and evenly distributed to balance the load while the platform is in motion.

RIGGING

When a wire rope bridle is used to connect the platform to the load line, the bridle legs must be connected to a master link or shackle so that the load is evenly positioned between the legs. Bridles used as connections for the personnel platform must not be used for any other purpose.

Attachment assemblies such as hooks must close and lock to keep the hook throat from opening; an alloy anchor-type shackle with a bolt, nut and retaining pin may be used as an alternative. "Mousing" (using wire rope to close the hook opening) is not permitted.

INSPECTION AND TESTING

A trial lift must be made before any employees are allowed to be hoisted. During the trial lift, the personnel platform must be loaded to its anticipated lift weight. The lift must start at ground level or at the location where employees will enter the platform, and proceed to each location where the personnel platform is to be hoisted and positioned.

The crane or derrick operator must check all systems, controls, and safety devices to ensure that:

- They are functioning properly;
- There are no interferences; and
- All configurations necessary to reach work locations will allow the operator to remain within the fifty percent (50%) load limit of the hoist's rated capacity.

If a crane or derrick is moved to a new location or returned to a previously used location, the trial lift must be repeated before hoisting personnel. After the trial lift, the personnel platform must be hoisted a few inches and inspected to ensure that it remains secured and is properly balanced.

Before employees are hoisted, a designated person must check to ensure the following:

- Hoist ropes are free of kinks;
- Multiple part lines are not twisted; and
- There is not slack in the wire rope. If the rope is slack, the hoisting system must be inspected.

After the trial lift, a thorough inspection of the crane or derrick, personnel platform, and ground must be performed by a competent person to determine if the lift test produced any adverse effect on any component or structure. Any defects found during inspections must be corrected.

When initially brought to the job site, and after repairs or modifications are completed, the platform and rigging must be proof tested to 125% of the platform's rated capacity. This is achieved by holding the overloaded platform in a suspended position for five minutes. Then, the platform and rigging must be re-inspected for defects. If any problems are detected, they must be corrected and another proof test must be conducted. This process is repeated until the competent person feels that it is safe to begin hoisting personnel.

PRE-LIFT MEETING

The employer must hold a meeting with all employees involved in personnel hoisting (crane or derrick operator, signal person(s), employees to be lifted, and the person responsible for the hoisting operation), to review the OSHA requirements and the procedures to be followed before any lift operations are performed.

This meeting must be held before the trial lift at each new work site and must be repeated for any new employees assigned to the operation.

SAFE WORK PRACTICES

Employees can also contribute to safe personnel hoisting operations and help to reduce the number of accidents and injuries associated with personnel hoisting operations.

Employees must follow these safe work practices:

- Wear a belt or harness system with a lanyard. The lanyard must be attached to the lower load block or overhaul ball, or to a structural member within the personnel platform. If the hoisting operation is performed over water, the employee should wear a U.S. Coast Guard approved life jacket or buoyant work vest instead of a belt or harness in accordance with Title 29 Code of Federal Regulation, Section 1926.106-Working Over or Near Water;
- Never “ride the load”; use only platforms specifically designed for personnel lifting. Use tag lines where practical; and
- Keep all body parts inside the platform during raising, lowering, and positioning. Make sure the platform is secured before exiting or entering it.

Crane and derrick operators must follow these safe work practices:

- Never leave crane or derrick controls unattended when the engine is running or when the platform is occupied;
- Stop all hoisting operations if there are signs of a severe storm or other impending danger. Stay in view of, or in direct communication with, the operator or signal person; and
- Do not make any lifts with another load line while personnel are being hoisted.

MOVEMENT OF CRANES

Personnel hoisting is prohibited while the crane is traveling, except when the employer demonstrates that this is the least hazardous way to accomplish the task or when portal, tower, or locomotive cranes are used.

When cranes are moving while hoisting personnel, the following rules apply:

- Travel must be restricted to a fixed track or runway;
- Travel also must be limited to the radius of the boom during the lift;
- The boom must be parallel to the direction of travel;
- There must be a complete trial run before employees occupy the platform; and
- If the crane has rubber tires, the condition and air pressure of the tires must be checked and the chart capacity for lifts must be applied to remain under the fifty percent (50%) limit of the hoist's rated capacity.

Compliance with the common sense requirements of the OSHA standard will reduce or eliminate injuries and accidents during personnel hoisting operations.



HAZARD COMMUNICATION STANDARD

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Introduction

Hazard Communication Standard
OSHA Standard 29 CFR 1910.1200

Purpose

- To ensure that the hazards of all chemicals produced in or imported into the United States are evaluated;
- To ensure that information concerning the hazards of chemicals is transmitted to employers and employees; and
- To ensure that requirements for hazard communication in occupational settings are consistent nationwide, by preempting any legal requirements of a state, or a political subdivision of a state, pertaining to this subject.

Written Hazard Communication Program

- Reflects what the company employees are doing in the workplace (specific to the company).
- The program includes the following:
 1. Hazardous chemicals present in the workplace(s);
 2. Who is responsible for the various aspects of the program;
 3. Where the written materials are located and their availability to employees; and
 4. How the company will meet the requirements for:
 - a. Labels and other forms of warning;
 - b. Material Safety Data Sheets (MSDS); and
 - c. Employee information and training.

Sample Program

Hazard Communication Standard

The Hazard Communication Standard is based on a simple concept that “employees have both a need and a right to know the hazards and identities of the chemicals they are exposed to when working”. They also need to know what protective measures are available to prevent adverse effects from occurring. The program applies to any chemical which is known to be present in the workplace where employees may be exposed under normal working conditions or in a foreseeable emergency. The program is designed to provide employees with the information they need. Through knowledge and information we can take steps to reduce exposures, substitute less hazardous materials and establish proper work practices.

<Insert Name of Company> is complying with the OSHA Hazard Communication Standard, Title 29 Code of Federal Regulations 1910.1200, by compiling a hazardous chemicals list, by using material safety data sheets (MSDS), by ensuring that containers are labeled, and by providing employees with training. The Company shall rely on the hazard determination made by the chemical manufacturer as indicated on the Material Data Safety Sheet (MSDS).

The administrator of this program will be <Insert Name of Administrator>. <Insert Name of Company> has not only implemented the program, but will revise the program when changes occur. This program will be reviewed on an annual basis. The policy and all of its components apply to all employees. The success of the program will be directly related to the level of involvement by all employees.

Hazard Determination

All hazardous chemicals in our facility are purchased materials from manufacturers or suppliers. Therefore, the Company shall rely on the hazard determination made by the chemical manufacturer as indicated on the Material Safety Data Sheet (MSDS).

List of Hazardous Chemicals

The Company has compiled a master list of hazardous chemicals that are used in the workplace. The list will be updated as necessary and whenever a new chemical is introduced into the workplace. The master list of hazardous chemicals is maintained in the Company office and is available during normal working hours.

Material Safety Data Sheets (MSDS)

Material Safety Data Sheets (MSDS) are provided by the chemical manufacturers and/or suppliers. The MSDS provide detailed information on each hazardous chemical, including its potential hazardous effects, its physical and chemical characteristics, and recommendations for appropriate protective measures. The Company acquires MSDS for each hazardous chemical in our master hazardous chemical list.

In addition to the master list, MSDS are located in notebooks stored in each company work truck. They are located in each truck so they are readily available to employees and other contractors at the work site(s).

When chemicals are ordered or purchased, the Company will specify that the products shall include a corresponding MSDS. When an MSDS arrives, it shall be reviewed for completeness by the Company administrator. Should any MSDS be incomplete, the manufacturer shall be contacted in writing to request the additional information. The new chemical can not be used until such time as a complete MSDS is acquired.

MSDS must contain the following information:

1. Identity used on the label; chemical and common name(s);
2. Manufacturer name, address, telephone number;
3. Physical and chemical characteristics (example: vapor pressure, flashpoint);
4. Physical hazards including potential for fire, explosion and reactivity;
5. Health hazards including signs and symptoms of exposure, and any medical conditions which are generally recognized as being aggravated by exposure to the chemical;
6. Primary routes of entry;
7. The OSHA permissible exposure limit and any other exposure limit used or recommended by the chemical manufacturer or importer;
8. Whether the chemical is listed as a carcinogen (latest edition of NTP annual report) or has been found to be a potential carcinogen by OSHA and/or IARC;
9. Any generally applicable precautions for safe handling and use;
10. Any generally applicable control measures such as engineering controls, work practices or personal protective equipment;
11. Emergency and first aid procedures;
12. The date of preparation of the MSDS or the last change to it;
13. Regulatory information; and
14. If no relevant information is found for any given category on the MSDS, the preparer shall mark it to indicate that no applicable information was found.

Labels and Other Forms of Warning

The Hazard Communication Standard requires that hazardous chemicals be labeled by the manufacturer. The label must contain the identity of the hazardous chemical(s) contained therein, appropriate hazard warnings, the name and address of the chemical manufacturer, importer, or other responsible party.

The Company shall rely on the labels provided by the suppliers and/or manufacturers on the original containers (verbal text labels). Labels on all containers must be prominently displayed and completely

readable when purchased and remain so until the content of the container has been completely used or disposed of. Employees should take care not to deface or destroy labels. Containers having labels defaced or otherwise made unreadable are to be removed from the workplace.

Chemicals shall not be transferred from the original container and placed into unmarked or unlabeled containers, unless one of the following conditions is met:

1. If you transfer a “hazardous chemical” from a labeled container to another container (portable container) and it will be used immediately by the employee who performs the transfer, no label is required on the portable container; or
2. If a transferred material is not going to be used immediately, then a label must be attached to the container with the appropriate information (trade/chemical name, hazard warnings, name and address of manufacturer).

NOTE: The contents of a portable container must be used immediately or returned to the original container and are never to be left unattended by the employee performing the transfer.

All employees are responsible for ensuring that all hazardous chemicals in the workplace are properly labeled. Any updates shall be made by *<Insert Name of Administrator>* as necessary.

Exposure or Exposed

Each employee who **may** be “exposed” to hazardous chemicals when working must be provided information and trained prior to initial assignment of work with a hazardous chemical, and any time the hazard changes. “**Exposure**” or “**Exposed**” under this rule means that “an employee is subjected in the course of employment to a hazardous chemical that is a physical or health hazard, and includes potential (i.e. accidental or possible) exposure. “Subjected” in terms of health hazards includes any route of entry (e.g. inhalation, ingestion, skin contact or absorption).

Non-routine Tasks

When employees are required to perform hazardous non-routine tasks (e.g. entering confined spaces, etc.), a special training session will be conducted to inform them of the hazardous chemicals to which they may be exposed and the proper precautions to take to reduce or avoid exposure.

Employee Information & Training

New employees will receive health and safety orientation training. This training consists of all core components of the Company’s Hazard Communication Program. The training plan will emphasize the following:

- Overview of the Hazard Communication Standard;
- Overview of the Company’s Hazard Communication Policy;
- Location of the Company’s MSDS list and data sheets including how to read and interpret the information on both labels and MSDSs;

- How employees may obtain additional hazard information;
- Chemicals present in the workplace (specific operations);
- The labeling system and how it is utilized;
- Chemical and physical properties of hazardous materials (i.e. flash point, reactivity); methods of observation techniques that can be used to determine the presence or release of hazardous chemicals in the workplace (visual appearance, odor);
- Physical hazards of chemicals (i.e. potential for fire, explosion, etc.);
- Health hazards, including signs and symptoms of exposure, associated with exposure to chemicals and any medical condition known to be aggravated by exposure to the chemical;
- Procedures to protect against hazards (i.e. personal protective equipment required, proper use and maintenance; work practices or methods to assure proper use and handling of chemicals; procedures for emergency responses);
- Work procedures to follow to assure protection when cleaning hazardous chemical spills and leaks; and
- Safety and emergency procedures to follow if exposure occurs.

Retraining is required when a hazard changes or when a new hazard is introduced into the workplace. It is the Company policy to provide annual training to ensure the effectiveness of the program. Following each training session, employees will be required to take a written quiz. The quiz will aid the Company in the assessment of the employee's comprehension of the subject matter and the overall effectiveness of the training. All training records will be kept on file at the main Company office.

Multi-Employer Workplaces

Occasionally, one or more contractors work at a job site with our Company's employees. If there is the possibility that another Company's employees may be exposed to hazardous chemicals that our employees are utilizing, it is our responsibility to inform all affected persons on site. Affected persons will be provided with sufficient information as the situation/circumstances requires. The affected persons will be informed of the location of our Company's on site MSDS and if requested, provide them with a copy of the MSDS.

Each contractor shall also provide our employees with the appropriate hazard information for any chemicals they are utilizing which may affect our workers.

This exchange of information is critical to the safety of all workers no matter whom their employer may be.

Safety and Emergency Procedures to Follow

1. Consult and follow the special handling, special precautions and spill/leak procedures and information located on each MSDS;

2. Follow the Company's chain of command and accident protocol for an emergency or accident in the workplace;
3. Consult MSDS for information regarding health hazard/routes of entry, emergency first aid procedures and emergency telephone numbers;
4. Only persons trained and certified in first aid procedures shall offer assistance and first aid to injured individual(s); and
5. Within 24 hours of an incident or injury, the supervisor or the crew chief shall fill out an accident or near miss report. All incidents or accidents are to be investigated by a supervisor or member of management as soon as practical.

Additional Information

All employees or their designated representative may obtain further information on the written program, the Hazard Communication Standard and applicable MSDS from the company administrator. This information is located in the Company's main office and is available during normal business hours.

Program Review

This written Hazard Communication Program for *<Insert Name of the Company>* shall be reviewed annually and updated as necessary. Employees provided with review or updated training will be tested in order to evaluate their comprehension of the subject matter.

The success of this program is directly related to the involvement of all employees. We encourage full participation from all employees. Please feel free to provide feedback as to any possible improvements or enhancements.

Health Hazard Definitions

Although safety hazards related to the “physical” characteristics of a chemical can be objectively defined in terms of testing requirements (i.e. flammability), health hazard definitions are less precise and more subjective. Health hazards may cause measurable changes in the body – such as decreased pulmonary function. These changes are generally indicated by signs and symptoms in the exposed employee(s) – such as shortness of breath, a non-measurable, subjective feeling. Employee(s) exposed to such hazards must be apprised of both the change in body function and the signs and symptoms that may occur to signal that change.

The determination of occupational health hazards is complicated by the fact that many of the effects or signs and symptoms occur commonly in non-occupationally exposed populations, so that effects of exposure are difficult to separate from normally occurring illness. The situation is further complicated by the fact that most chemicals have not been adequately tested to determine their health hazard potential and data does not exist to substantiate these effects.

There have been many attempts to categorize effects and to define them in various ways. Generally, the terms “acute” and “chronic” are used to delineate between effects on the basis of severity or duration. “Acute” effects usually occur rapidly as a result of short-term exposures and are of short duration. “Chronic” effects generally occur as a result of long-term exposure and are of long duration.

The “acute” effects referred to most frequently are those defined by the ANSI standard for Precautionary Labeling of Hazardous Industrial Chemicals (Z129.1-1988) – irritation, corrosivity, sensitization and lethal dose. Although these are important health effects, they do not adequately cover the considerable range of acute effects which may occur as a result of occupational exposure, for example, narcosis (a deep drug induced unconsciousness; immobility in an organism caused by chemicals such as carbon dioxide).

Similarly, the term “chronic” effect is often used to cover only carcinogenicity, teratogenicity, and mutagenicity. These effects are obviously a concern in the workplace; but again, do not adequately cover the area of chronic effects, for example, blood dyscrasias (such as anemia, chronic bronchitis and liver atrophy).

The goal of defining precisely, in measurable terms, every possible health effect that may occur in the workplace as a result of chemical exposures cannot realistically be accomplished. This does not negate the need for employees to be informed of such effects and protected from them.

Hazard evaluation is a process which relies heavily on the professional judgment of the evaluator, particularly in the area of chronic hazards. It is the duty of the chemical manufacturer, importer or the employer to conduct a thorough evaluation, examining all relevant data and producing a scientifically defensible evaluation. For purposes of this standard, the following criteria shall be used in making hazard determinations to meet the requirements of this standard:

1. **Carcinogenicity** - A determination by the National Toxicology Program, the Internal Agency for Research on Cancer, or OSHA that a chemical is a carcinogen or potential carcinogen will be considered conclusive evidence for purposes of this section.

2. **Human data** - Where available, epidemiological studies and case reports of adverse health effects shall be considered in the evaluation.
3. **Animal data** - Human evidence of health effects in exposed populations is generally not available for the majority of chemicals produced or used in the workplace. Therefore, the available results of toxicological testing in animal populations shall be used to predict the health effects that may be experienced by exposed workers. In particular, the definitions of certain acute hazards refer to specific animal testing results.
4. **Adequacy and reporting of data** - The results of any studies which are designed and conducted according to established scientific principles, and which report statistically significant conclusions regarding the health effects of a chemical shall be a sufficient basis for a hazard determination and reported on any material safety data sheet.

Any chemicals which meet the following definitions, as determined by the criteria set forth above, are health hazards. However, this is not intended to be an exclusive categorization scheme.

1. **Carcinogen** - A chemical is considered to a carcinogen if:
 - a. It has been evaluated by the International Agency for Research on Cancer (IARC) and found to be a carcinogen or potential carcinogen;
 - b. It is listed as a carcinogen or potential carcinogen in the Annual Report on Carcinogens published by the National Toxicology Program (NTP) (latest edition); or
 - c. Is regulated by OSHA as a carcinogen.
2. **Corrosive** - A chemical that causes visible destruction of, or irreversible alterations in, living tissue by chemical action at the site of contact. This term shall not refer to action on inanimate surfaces.
3. **Highly toxic** - A chemical falling within any of the following categories:
 - a. A chemical that has a median lethal dose (LD(50)) of 50 milligrams or less per kilogram of body weight when administered orally to albino rats weighing between 200 and 300 grams each;
 - b. A chemical that has a median lethal dose (LD(50)) of 200 milligrams or less per kilogram of body weight administered by continuous contact for 24 hours (or less if death occurs within 24 hours) with the bare skin of albino rabbits weighing between two and three kilograms each; or
 - c. A chemical that has a median lethal concentration (LC(50)) in air of 200 parts per million by volume or less of gas or vapor, or 2 milligrams per liter or less of mist, fume, or dust, when administered by continuous inhalation for one hour (or less if death occurs within one hour) to albino rats weighing between 200 and 300 grams each.

4. **Irritant** - A chemical, which is not corrosive, but which causes a reversible inflammatory effect on living tissue by chemical action at the site of contact.
5. **Sensitizer** - A chemical that causes a substantial proportion of exposed people or animals to develop an allergic reaction in normal tissue after repeated exposure to the chemical.
6. **Toxic** - A chemical falling within any of the following categories:
 - a. A chemical that has a median lethal dose (LD(50)) of more than 50 milligrams per kilogram but not more than 500 milligrams per kilogram of body weight when administered orally to albino rats weighing between 200 and 300 grams each;
 - b. A chemical that has a median lethal dose (LD(50)) of more than 200 milligrams per kilogram but not more than 1,000 milligrams per kilogram of body weight when administered by continuous contact for 24 hours (or less if death occurs within 24 hours) with bare skin of albino rabbits weighing between two and three kilograms each; or
 - c. A chemical that has median lethal concentration (LC(50)) in air of more than 200 parts per million but not more than 2,000 parts per million by volume of gas or vapor, or more than two milligrams per liter but not more than 20 milligrams per liter of mist, fume, or dust, when administered by continuous inhalation for one hour (or less if death occurs within one hour) to albino rats weighing between 200 or 300 grams each.
7. **Target organ Effects** - The following is a target organ categorization of effects which may occur, including examples of signs and symptoms and chemicals which have been found to cause such effects. These examples are presented to illustrate the range and diversity of effects and hazards found in the workplace, and the broad scope employers must consider in this area, but are not intended to be all-inclusive:
 - a. *Hepatotoxins*: Chemicals which produce liver damage
Signs & Symptoms: Jaundice; liver enlargement
Chemicals: Carbon tetrachloride; nitrosamines
 - b. *Nephrotoxins*: Chemicals which produce kidney damage
Signs & Symptoms: Edema; proteinuria
Chemicals: Halogenated hydrocarbons; uranium
 - c. *Neurotoxins*: Chemicals which produce their primary toxic effects on the nervous system
Signs & Symptoms: Narcosis; behavioral changes; decrease in motor functions
Chemicals: Mercury; carbon disulfide
 - d. *Agents which act on the blood or hemato-poietic system*: Decrease hemoglobin function; deprive the body tissues of oxygen
Signs & Symptoms: Cyanosis; loss of consciousness
Chemicals: Carbon monoxide; cyanides

- e. *Agents which damage the lung:* Chemicals which irritate or damage pulmonary tissue
Signs & Symptoms: Cough; tightness in chest; shortness of breath
Chemicals: Silica; asbestos

- f. *Reproductive toxins:* Chemicals which affect the reproductive capabilities including chromosomal damage (mutations) and effects on fetuses (teratogenesis)
Signs & symptoms: Birth defects; sterility
Chemicals: Lead; DBCP

- g. *Cutaneous hazard:* Chemicals which affect the dermal layer of the body
Signs & Symptoms: Defatting of the skin; rashes; irritation
Chemicals: Ketones; chlorinated compounds

- h. *Eye hazards:* Chemicals which affect the eye or visual capacity
Signs & Symptoms: Conjunctivitis; corneal damage
Chemicals: Organic solvents; acids

Material Safety Data Sheets and Labels

Material Safety Data Sheets (MSDS) are printed pages which provide all the critical information about how to use, transport, store and dispose of hazardous chemicals/materials. The MSDS is to be used as a planning and preparation “tool” and is to be consulted before use of a hazardous chemical/material. It is also used by medical professionals to provide proper treatment for those that have experienced an “exposure/overexposure”.

Required information on all MSDS

- **Identity of the chemical**
Typically a common chemical name. The chemical name on the MSDS must be linked to the chemical name on the container or label.
- **Physical and chemical characteristics**
For example: Vapor pressure, flashpoint, and solubility.
- **Physical hazards**
For example: Potential for fire, explosion, or reaction with water or other chemicals.
- **Health hazards**
For example: Signs and symptoms of exposure, and medical conditions that might be aggravated by exposure.
- **Primary routes of chemical entry**
How the chemical enters the body.
- **Permissible exposure limits**
The maximum amount of the chemical that one can be exposed to during an eight hour work shift.
- **Carcinogenicity**
Based on finding in the National Toxicology Program Annual Report on Carcinogens or the International Agency for Research on Cancer Monographs (latest editions).
- **Precautions for safe use**
How to handle the chemical safely, hygiene and protective practices, and clean-up procedures for spills and leaks.
- **Control measures**
The engineering controls, safe work practices, and personal protective equipment necessary to control exposure.
- **Emergency and first aid procedures**
How to respond to spills, leaks, contamination, and overexposure.
- **Preparation date**
The date the MSDS was prepared or updated.

- **Name, address, and phone number**
Who to contact for more information on the chemical's hazards and emergency response procedures.

LABELS

Labels on consumer products provide similar information that is also included in that individual product's MSDS sheet. Labels must at "minimum" include the following:

- Name and address of the manufacturer;
- Identity of the chemical/material; and
- Hazard warning(s).

The label may (and usually does) include additional critical information. Without exception, it is every individual's responsibility to read the label of a product prior to its use.

As stated before, it is also company policy that every employee is responsible for verifying that all labels are readable (completely) prior to using a product. If the label is not readable, the product is to be disposed of "properly". Proper disposal does not always mean throwing the item in the trash. If you do not know how to dispose of the item properly, bring it to *<Insert name of Administrator>*.

Physical hazards are exhibited by certain chemicals/materials due to their physical properties. For example: Flammable, reactive, unstable, volatile, explosive, etc.

Chemicals fall into the following classes:

- Flammable liquids or solids
- Combustible liquids
- Compressed gases
- Explosives
- Organic peroxide
- Oxidizers
- Pyrophoric materials (may ignite spontaneously in specific air temps)
- Unstable materials
- Water reactive materials

Health hazards occur when a chemical brings about an acute or chronic health effect in exposed employees. A health hazard may not necessarily cause immediate, obvious harm or make you sick right away. You may not see, feel or smell the danger.

An **acute** health effect usually occurs rapidly, following a brief exposure (example: immediate death following the inhalation of cyanide).

A **chronic** health effect is an adverse health effect resulting from continuous and follows repeated long-term exposure.

Examples of chemicals that cause health hazards:

- Carcinogens (cancer-causers such as formaldehyde or benzene)
- Toxic agents (lawn & garden insecticides, arsenic compounds)
- Reproductive toxins (nitrous oxide)
- Irritants (bleaches, ammonia)
- Corrosives (battery acid, caustic sodas)
- Sensitizers (creosote, epoxy resins)
- Organ-specific agents (act on specific organs or parts of the body; sulfuric acid affects skin, asbestos affects lungs)

Methods of observations used to detect the presence or release of hazardous chemicals in the work area include:

- Smell;
- Odor;
- Visual;
- Physical; and
- Spill.

Sample Material Safety Data Sheet

1. CHEMICAL PRODUCT

General Product Name: Biodiesel (B100)

Synonyms: Methyl Soyate, Rapeseed Methyl Ester (RME)

Product Description: Methyl esters from lipid sources

CAS Number: Methyl Soyate: 67784-80-9; RME: 73891-99-3;

2. COMPOSITION/INFORMATION ON INGREDIENTS

This product contains no hazardous materials.

3. HAZARDS IDENTIFICATION

Potential Health Effects:

INHALATION:

Negligible unless heated to produce vapors. Vapors or finely misted materials may irritate the mucous membranes and cause irritation, dizziness, and nausea. Remove to fresh air.

EYE CONTACT:

May cause irritation. Irrigate eye with water for at least 15 to 20 minutes. Seek medical attention if symptoms persist.

SKIN CONTACT:

Prolonged or repeated contact is not likely to cause significant skin irritation. Material is sometimes encountered at elevated temperatures. Thermal burns are possible.

INGESTION:

No hazards anticipated from ingestion incidental to industrial exposure.

4. FIRST AID MEASURES

EYES:

Irrigate eyes with a heavy stream of water for at least 15 to 20 minutes.

SKIN:

Wash exposed areas of the body with soap and water.

INHALATION:

Remove from area of exposure; seek medical attention if symptoms persist.

INGESTION:

Give one or two glasses of water to drink. If gastro-intestinal symptoms develop, consult medical personnel. (Never give anything by mouth to an unconscious person.)

5. FIRE FIGHTING MEASURES

Flash Point (Method Used): 130.0 C or 266.0 F min (ASTM 93)

Flammability Limits: None known

EXTINGUISHING MEDIA:

Dry chemical, foam, halon (may not be permissible in some countries), CO₂, water spray (fog). Water stream may splash the burning liquid and spread fire.

SPECIAL FIRE FIGHTING PROCEDURES:

Use water spray to cool drums exposed to fire.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

Biodiesel soaked rags or spill absorbents (i.e. oil dry, polypropylene socks, sand, etc.) can cause spontaneous combustion if stored near combustibles and not handled properly.

Store biodiesel soaked rags or spill absorbents in approved safety containers and dispose of properly. Oil soaked rags may be washed with soap and water and allowed to dry in well ventilated area. Firefighters should use self-contained breathing apparatus to avoid exposure to smoke and vapor.

6. ACCIDENTAL RELEASE MEASURES SPILL CLEAN-UP PROCEDURES

Remove sources of ignition, contain spill to smallest area possible. Stop leak if possible.

Pick up small spills with absorbent materials and dispose of properly to avoid spontaneous combustion (see unusual fire and explosion hazards above).

Recover large spills for salvage or disposal. Wash hard surfaces with safety solvent or detergent to remove remaining oil film. Greasy nature will result in a slippery surface.

7. HANDLING AND STORAGE

Store in closed containers between 50°F and 120°F.

Keep away from oxidizing agents, excessive heat, and ignition sources.

Store and use in well ventilated areas.

Do not store or use near heat, spark, or flame, store out of sun.

Do not puncture, drag, or slide this container.

Drum is not a pressure vessel; never use pressure to empty.

8. EXPOSURE CONTROL /PERSONAL PROTECTION

RESPIRATORY PROTECTION:

If vapors or mists are generated, wear a NIOSH approved organic vapor/mist respirator.

PROTECTIVE CLOTHING:

Safety glasses, goggles, or face shield recommended to protect eyes from mists or splashing. PVC coated gloves recommended to prevent skin contact.

OTHER PROTECTIVE MEASURES:

Employees must practice good personal hygiene, washing exposed areas of skin several times daily and laundering contaminated clothing before re-use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point, 760 mm Hg:>200°C Volatiles, % by Volume: <2

Specific Gravity (H₂O=1): 0.88 Solubility in H₂O, % by Volume: insoluble

Vapor Pressure, mm Hg: <2 Evaporation Rate, Butyl Acetate=1: <1

Vapor Density, Air=1:>1

Appearance and Odor: pale yellow liquid, mild odor

10. STABILITY AND REACTIVITY

GENERAL:

This product is stable and hazardous polymerization will not occur.

INCOMPATIBLE MATERIALS AND CONDITIONS TO AVOID:

Strong oxidizing agents

HAZARDOUS DECOMPOSITION PRODUCTS:

Combustion produces carbon monoxide, carbon dioxide along with thick smoke.

11. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL:

Waste may be disposed of by a licensed waste disposal company. Contaminated absorbent material may be disposed of in an approved landfill. Follow local, state and federal disposal regulations.

12. TRANSPORT INFORMATION

UN HAZARD CLASS: N/A

NMFC (National Motor Freight Classification):

PROPER SHIPPING NAME: Fatty acid ester

IDENTIFICATION NUMBER: 144920

SHIPPING CLASSIFICATION: 65

13. REGULATORY INFORMATION:

OSHA STATUS:

This product is not hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29 CFR 1910.1200. However, thermal processing and decomposition fumes from this product may be hazardous as noted in Sections 2 and 3.

TSCA STATUS:

This product is listed on TSCA.

CERCLA (Comprehensive Response Compensation and Liability Act):

NOT reportable.

SARA TITLE III (Superfund Amendments and Reauthorization Act):

Section 312 Extremely Hazardous Substances:

None

Section 311/312 Hazard Categories:

Non-hazardous under Section 311/312

Section 313 Toxic Chemicals:

None

RCRA STATUS:

If discarded in its purchased form, this product would not be a hazardous waste either by listing or by characteristic. However, under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste, (40 CFR 261.20-24)

CALIFORNIA PROPOSITION 65:

The following statement is made in order to comply with the California Safe Drinking Water and Toxic Enforcement Act of 1986. This product contains no chemicals known to the state of California to cause cancer.

14. OTHER INFORMATION:

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any other process. Such information is to the best of the company's knowledge and believed accurate and reliable as of the date indicated. However, no representation, warranty or guarantee of any kind, express or implied, is made as to its accuracy, reliability or completeness and we assume no responsibility for any loss, damage or expense, direct or consequential, arising out of use. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use.

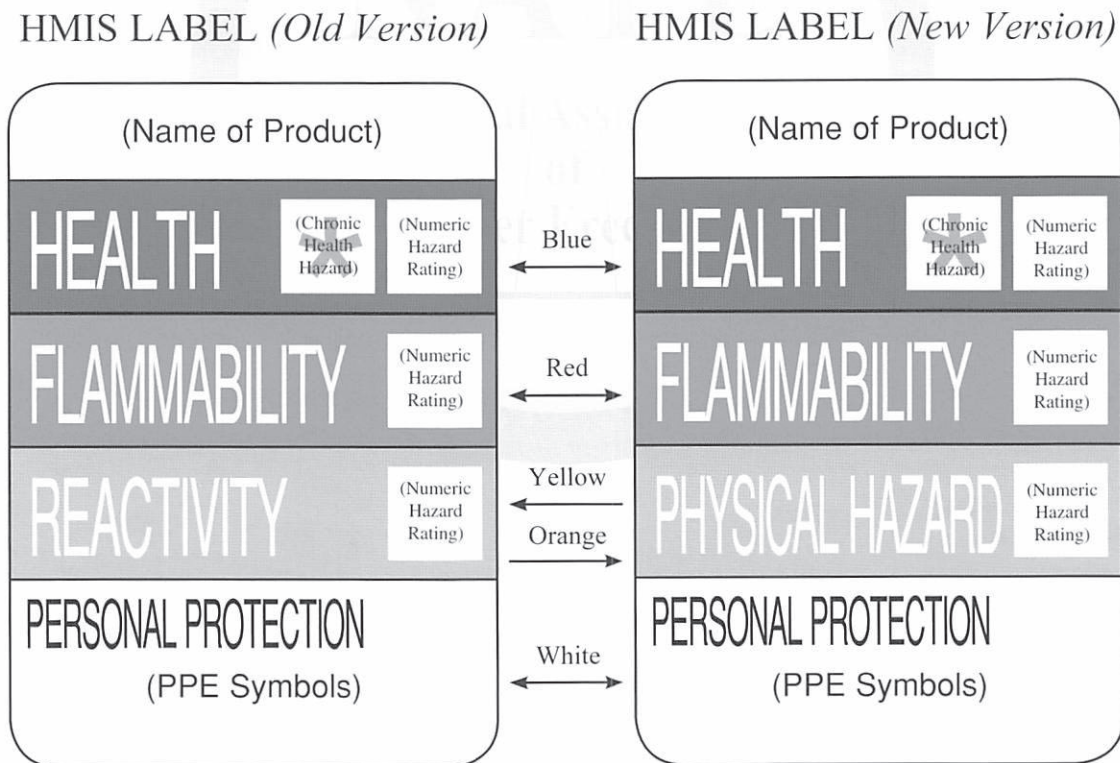
Signage and Labeling

All existing labels on hazardous substance containers must remain intact. Where labels are not present or legible, a Hazardous Materials Information System (HMIS) label (shown below) will be affixed to all containers holding the hazardous substance.

Labels on incoming containers of hazardous substances shall not be removed or defaced. Containers used by subcontractors shall be properly labeled prior to the use of the hazardous substance.

The HMIS label is shown below. It is a means for an employee to quickly assess the type of hazards presented by a material. On the following pages the numbers for each hazard category (Health, Flammability, and Reactivity), are defined, along with the various symbols for Personal Protection Equipment (PPE).

Note: The HMIS system was revised in April 2002. The Reactivity category has become obsolete and been replaced with a Physical Hazard category. On the HMIS label, the Reactivity bar was yellow. The new labels will show the Physical Hazard bar as orange.



Hazard Category Numbers

HEALTH

- 4 **Deadly:** Even the slightest exposure to this substance would be life threatening. Only specialized protective clothing for these materials should be worn.
- 3 **Extreme Danger:** Serious injury would result from exposure to this substance. Do not expose any body surface to these materials. Full protective measures should be taken.
- 2 **Dangerous:** Exposure to this substance would be hazardous to your health. Protective measures are indicated.
- 1 **Slight Hazard:** Irritation or minor injury would result from exposure to this substance. Protective measures are indicated.
- 0 **No Hazard:** Exposure to this substance offers no significant risk to health.

FLAMMABILITY

- 4 **Flash Point Below 73°F and Boiling Point Below 100°F:** This substance is very flammable, volatile or explosive depending on its state. Extreme caution should be used in handling or storing of these materials.
- 3 **Flash Point Below 100°F:** Flammable, volatile or explosive under almost all normal temperature conditions. Exercise great caution in storage or handling of these materials.
- 2 **Flash Point Below 200°F:** Moderately heated conditions may ignite this substance. Caution procedures should be employed in handling.
- 1 **Flash Point Above 200°F:** This substance must be pre-heated to ignite. Most combustible solids would be in this category.
- 0 **Will Not Burn:** Substances that will not burn.

REACTIVITY

- 4 **May Detonate:** Substances that are readily capable of detonation or explosion at normal temperatures and pressures. Evacuate area if exposed to heat or fire.
- 3 **Explosive:** Substances that are readily capable of detonation or explosion by a strong initiating source, such as heat, shock or water. Monitor from behind explosion resistant barriers.
- 2 **Unstable:** Violent chemical changes are possible at normal or elevated temperatures and pressures. Potentially violent or explosive reaction may occur when mixed with water. Monitor from a safe distance.

1 **Normally Stable:** Substances that may become unstable at elevated temperatures and pressures or when mixed with water. Approach with caution.

0 **Stable:** Substances that will remain stable when exposed to heat, pressure or water.

Physical Hazard

Note: The HMIS system was revised in April 2002. The Reactivity category has become obsolete and has been replaced with a Physical Hazard category.

Reactivity hazards are assessed using the OSHA criterion of physical hazard.

Physical hazard means a chemical for which there is scientifically valid evidence that it is a combustible liquid, a compressed gas, explosive, flammable, an organic peroxide, an oxidizer, pyrophoric, unstable (reactive) or water-reactive.

Seven such hazard classes are recognized:

- Water reactives
- Organic peroxides
- Explosives
- Compressed gases
- Pyrophoric materials
- Oxidizers
- Unstable reactives

This version replaces the now obsolete yellow section titled Reactivity.

As in the previous sections, the level of hazard is indicated using numeric values:
(0 = low hazard to 4 = high hazard).

Personal Protection Symbols



WEAR
RESPIRATOR



RADIOACTIVE
MATERIAL



NO
SMOKING



WEAR
GLOVES



WEAR EYE
PROTECTION



WEAR
FACE SHIELD



WEAR
APRON



WEAR FOOT
PROTECTION



WEAR
DUST MASK

Additional References/Resources

Hazard Communication, 29CFR 1910.1200
Subpart Z, Toxic and Hazardous Substances
www.osha.gov

Hazard Communication Guidelines for Compliance
OSHA Publication 3111
www.osha.gov

Chemical Hazard Communication
OSHA Publication 3084
www.osha.gov

OSHA Fact Sheet #93-26, 01/01/1993
Hazard Communication Standard
www.osha.gov

OSHA Publications
<http://www.osha.gov/pls/publications/publication.html>

Most Frequently Requested Publications (OSHA)
http://www.osha.gov/dcsp/compliance_assistance/frequent_pubs.html

OSHA e-Tools and Electronic Products for Compliance Assistance
<http://www.osha.gov/dts/osta/oshasoft/index.html>

Hazard Communication power point presentation
Georgia Tech
<http://www.oshainfo.gatech.edu/hazcom/index.htm>



RF EXPOSURE

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Introduction

It is especially important to read and understand the contents of OET Bulletin 65.

Exposure to radiofrequency (RF) fields of sufficiently high intensity can present a hazard to personnel. This hazard is primarily related to (a) the possibility of high RF energy absorption rates in the tissues of the body that can lead to body heating and (b) the possibility of RF burns caused by contacting objects with a high RF voltage on them, leading to an electrical arc to the skin and a subsequent localized tissue burn. The Federal Communications Commission (FCC) has adopted regulations that prescribe maximum permissible exposure (MPE) limits to minimize or eliminate these hazards. In addition, the Occupational Safety and Health Administration (OSHA) requires all employers to ensure that the working environment is free of hazards, including those associated with intense RF fields. NATE member companies frequently perform services during which personnel are in close proximity to active transmitting antennas, and, hence, have the opportunity of exposure to intense RF fields; therefore, control measures will often be required to avoid excessive exposure that could exceed the MPE limits. NATE policy requires that member companies comply at all times with the FCC MPE limits and OSHA regulations. OSHA has endorsed the FCC MPE limits as useful for avoiding hazardous exposure to RF fields, abiding by the FCC limits as set forth in FCC Bulletin OET-65¹ helps satisfy both agencies relative to compliance with RF safety. Therefore, it is the responsibility of all NATE members to ensure that their employees are made aware of such hazards and are provided with appropriate information on how to anticipate and reduce their on-the-job exposure to RF fields so that they remain safe and comply with the FCC rules. The best way to meet this requirement is to implement a company RF safety program. This document provides recommended content that can be included in such a program.

Generally, safety programs, including those for RF fields, are often tailored to specific activities and work environments. This allows for a more direct approach to hazard controls and can eliminate some program elements that may not be relevant to a particular situation. Such is the case with RF safety programs. For example, when personnel routinely work at a specific facility, prior hazard assessments can provide useful guidance for safe work. However, the nature of the work environment of most NATE member companies is diverse; personnel typically visit a very wide range of RF environments wherein little or no control measures may exist to ensure compliance with the FCC RF exposure limits, or alternatively, detailed safety programs may be in place. Hence, these personnel are generally working at different transmitter sites on a day-to-day basis with little consistency in the degree or methods of RF exposure control. Thus, NATE member companies must be especially vigilant to the range of possibilities wherein their employees may have access to intense RF fields and be prepared to offer proper guidance for remaining safe, regardless of the nature of the work site. This means that NATE member RF safety programs must be flexible, but at the same time, will generally include a wider degree of constraints than might be found in organizations where RF exposures occur on a repetitive basis to an unchanging work environment.

¹ Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields. FCC OET Bulletin 65 (Edition 97-01), August 1997.

This document describes the kind of content that can be useful to NATE member companies in developing new RF safety programs or auditing and/or revising an existing program. The following content described is directly relevant to the tower erection industry and others involved in the installation, repair and maintenance of towers and/or associated antennas. This content may not be appropriate for other industrial applications and the reader should consult other sources for relevant elements for RF safety programs. Remember that it is not the length of the RF safety program documentation that is important, but rather, the effectiveness with which the intent of the program is implemented. RF safety programs should be reviewed periodically to make sure that they are appropriate and relevant to their intended application. A brief program document that is clearly conveyed to the employees and consistently implemented is superior to a long document that is never or infrequently implemented.

Recommended Content of a RF Safety Program

1. Administrative Issues

A. Company Policy

Each company RF safety program should clearly state that the policy of the company is to comply with applicable RF exposure limits and the company's expectations for controlling such exposures. For example, a policy statement could include language such as: "Where RF exposure may exceed established standards or regulations, an effective RF Safety Program (RFSP) can be used to ensure employees and the general public are protected. Centralized control will be exercised over safe work practices to ensure compliance with human exposure limits defined by the Federal Communications Commission (FCC) and Occupational Safety and Health Administration (OSHA) as well as any applicable state or local regulations and ordinances for the general worker population in the company to preclude injurious exposure to all personnel. All company RF work activities shall be conducted in conformance with the provisions of this Radiofrequency Safety Program and applicable federal and state regulations. An appendix to this program document provides details on limits of exposure to RF fields as used by this program."

B. Accountable Person - RFSO

Every company should appoint an RF Safety Officer (RFSO). This person is responsible for the development and implementation of the program and should have the necessary authority and resources to implement and enforce all aspects of the RF safety program. Site or Project Managers, where delegating the day-to-day work of an RFSO to another person, must recognize their own responsibility for maintaining a safe environment. It must be emphasized, however, that due to the unique nature of the constantly changing work environment of NATE member companies and the often wide geographic distribution of workers, each employee must assume certain responsibilities normally assigned to the RFSO. Hence, each employee must become responsible for their own actions in regard to observing situations where RF exposures may exceed limits and how to mitigate such exposures to comply with the limits.

The RFSO serves as an RF technical expert in all matters pertaining to RF safety. The RFSO is explicitly responsible for the safe conduct of all work involving RF exposure by company personnel. The RFSO is responsible for conducting safety analysis as deemed relevant, either by utilizing their own expertise and engineering ability or by directing and coordinating the efforts of other individuals such as consultants, engineers and test and operational personnel.

The RFSO should have a general understanding of RF fields and antennas, regulations governing human exposure to RF fields, and measurement techniques. The RFSO should have sufficient management or administrative talent for (a) the employment of competent specialists with technical expertise when required (e.g., for the calculation or measurement of RF fields or other exposure parameters when such is deemed relevant) and (b) the development and application of policies and procedures of an RF safety program.

C. Documentation and Records

Programs intended for ensuring compliance with RF exposure standards/regulations must be in the form of printed documents that are distributed to relevant company personnel and readily available to all employees. Records of periodic checks for compliance with the safety program and any observed deviancies from the program should be maintained for assuring continuing compliance and to aid in the correction of repeated deviations from the program. Documented records of all of the following activities should be undertaken:

Employee exposure assessments including:

- Calculations
- Measurements
- Interpretations
- Training
- Incident Reports

All records should be filed and stored in a manner conducive to retrieval and review. All records should, at a minimum, include company name, author, date and all other information pertinent to that record. Training records should include title, course agenda, method of presentation, trainer's name (where applicable), date, list of attendee's employee identity number and signature.

D. Employee Involvement

Employee involvement in the structure and operation of the company program and in decisions that affect their safety and health should be sought to make full use of their collective insight and to encourage their understanding and commitment to the safe work practices established by the RF safety program. Exposure assessments, for example, should be made in the presence of employees to facilitate their understanding and confidence in the program.

E. RF Safety Committee

In some cases, it may be appropriate to establish an RF Safety Committee (RFSC). In large organizations that may have multiple business locations, an RFSC, working through an RFSO, can provide assurance that the views of each business location and their potentially widespread employees are known, and that they will cooperate in ensuring that all comply with the applicable standards and regulations. However, in many situations, an RFSC will not be necessary. The functions of an RFSC may already be carried out, for example, by an existing safety committee. In some special cases, however, where a member company may have a long-term presence at a large facility, and there are continuing issues relative to RF exposure, an RFSC that is dedicated solely to RF safety operations at that specific site may be appropriate and necessary.

2. Identification of Potential RF Hazards

A. Determining the Potential RF Hazard

Contrary to the approach that would commonly be used at a facility where workers repetitively access RF emitting equipment for which exposure assessments have already been carried out, NATE member companies employ personnel who must enter transmitter sites with little, if any, prior study of potential RF hazards. This relatively unique aspect of NATE member workers places substantial limits on the ability to determine exactly what the RF safety issues may be at a given work site. Generally, there will be no opportunity to explore the technical performance specifications of the various RF emitters at a site or go through a theoretical analysis of potential exposure levels near certain antennas.

B. Exposure Assessment

Exposure assessments at typical NATE member company work sites, while they will not normally be accomplished via a detailed analysis or RF measurement survey, should include an attempt to identify any previous RF field analysis or measurements that may have been performed for the site that may be available. In some cases, such information can directly provide useful guidance for avoiding specific high RF field areas at the site or recognizing particular conditions at the site under which high RF fields may be present. The RFSO and/or site worker shall, prior to proceeding with the project, attempt to locate any such documentation about the site and use it for assessing the likelihood of high level RF exposures and how to mitigate such exposures during the planned work.

3. Controls

A. General Inapplicability of Engineering Controls

Engineering controls are generally viewed as very positive ways for limiting RF field exposures. For example, use of physical barriers to restrict access and engineering of antenna mounting configurations to minimize accessible RF field levels represent practical and reliable means for eliminating excessive exposures. However, in the NATE member company work environment, rarely will such controls be practical in as much as workers must access areas that may lie within normally restricted regions. Moreover, the implementation of engineering controls for RF safety is typically not the responsibility of service firms, such as NATE member companies.

B. Administrative

Administrative controls that will have some applicability to field crews working at active broadcasting or telecommunications sites include:

1. Signs

RF safety signs found posted at the site shall always be obeyed. Workers should be provided with sufficient awareness of what RF safety signs look like to recognize them at the site.

2. Restricting Access According to Location and Duration

An important aspect of complying with personnel exposure limits is observing the time-averaging provisions of the MPE limits. This means that personnel entering RF restricted access areas must use care in monitoring their exposures to ensure that the time-averaged MPE limits are not exceeded. If time-averaging of exposure is used for compliance with the MPE limits, extra caution will be necessary to accurately evaluate the magnitude of the RF fields and the length of time spent in these fields. This can be a difficult task.

3. Turning Off Transmitters or Reducing Power

When necessary, transmitters should be turned off or power should be reduced to eliminate exposures that could exceed the MPE limits. When making adjustments to transmitters to prevent excessive exposure, the use of lock-out/tag-out techniques should be used to prevent inadvertent exposures while personnel are aloft and near normally active antennas.

4. Using Personal RF Monitors

Personal RF monitors can provide a reliable first line of defense against exposure to RF fields exceeding FCC limits. This is especially so when working at sites where no information is available on the location of regions with intense RF fields. Nonetheless, care must be used in personal monitor application in the company RF safety program. Key aspects of using personal RF monitors include:

- (a) Selecting a monitor that is appropriate for the RF environment (this principally means selecting a monitor that is responsive over the frequency range of transmitting antennas at the work site);
- (b) Performing an operational check of the function of the monitor to ensure that it is working correctly (this should be done each day that the monitor is used);
- (c) Determining that the alarm threshold of the monitor is set to less than the applicable MPE limit (e.g., 50% of the MPE limit will provide a margin for uncertainty in the precise calibration of the monitor);
- (d) Recognizing the fact that, should a monitor alarm, the work being done at the time should be stopped until job specific work practices have been established to avoid the need to be exposed to RF fields that could exceed the MPE limits. NATE member companies should make special efforts to develop appropriate work procedures to follow when personal monitors alarm. These work practices could include use of lock-out/tag-out procedures, reducing transmitter power levels, using personal protective equipment (PPE) such as RF protective suits and electrically insulating gloves along with an RF survey meter for measuring fields and prohibiting access to specific locations. Should work be necessary in a region wherein the monitor alarms, subsequent, more detailed measurements

will likely be necessary to better define the potential exposure of personnel who will work at the site; and

- (e) Understanding the limitations and proper use of the monitor and how it can be best attached to the body to offer maximum coverage for detection of incident RF fields. No personal monitor provides for proper detection of RF fields beyond certain angular limits. As a consequence, RF personal monitors should generally be worn on the front of the body with the sensor facing outward, away from the body. Since personal monitors cannot provide direct indications of the spatially averaged RF field level, users must be alert to the fact that the maximum detected field levels in non-uniform fields may not represent the maximum possible exposure of a part of the body and, at the same time, may suggest that exposures exceed the MPE when, in fact, the spatially averaged value does not. For example, if the monitor is worn near waist level, the monitor will generally not be capable of indicating RF at head height near an active antenna. Users must be diligent in their attention to the limitations of personal monitors at all times.

5. Incident Response

RF safety programs need to have a mechanism for recognizing responding to and recording RF exposure incidents wherein personnel may have been exposed to RF fields exceeding the MPE limits. NATE member companies should foster a climate that encourages the reporting of exposure incidents from employees and recording the date, circumstances of the incident and names of personnel presumably exposed. Employees should contact the RFSO within one hour of an incident. Depending on the insight of the RFSO, it may be appropriate to investigate the RF field levels that may have been associated with the reported event and to seek medical help for the exposed employee.

6. Medical Devices & Implants

Implanted medical devices, including metallic implants, may exhibit interference susceptibility to very strong RF fields. Personnel using such devices should consult with their physicians as to whether they can work safely in the RF environments typical of their employment. To provide useful information to the physician, RF field measurement data may be necessary.

C. Personal Protective Equipment (PPE)

Personal Protective Equipment (PPE) may consist of electrically insulated gloves to prevent RF burns and special RF protective clothing in the form of conductive overalls to reduce RF energy absorption within the body when exposed to strong RF fields. PPE of this type can be very effective in reduction of exposure in many cases but it must be recognized that the use of PPE is not necessarily a guarantee of compliance with MPE limits, depending on the situation. For example, while RF protective overalls can reduce exposure, they have limits on incident RF field levels beyond which they will not provide sufficient reduction in fields to ensure compliance with certain exposure limits.

In extremely strong RF fields, conductive materials can also exhibit surface arcing and localized burn points. Hence, application of PPE must be made with some knowledge of the RF field environment in which it is to be used. It must be stressed that member companies should ensure that their employees receive all appropriate RF documentation that exists for any given site prior to work being accomplished. Without knowledge of the RF environment that workers may enter, it makes the task of preparing for the work more difficult in that proper PPE may not be available on site when it is needed. Prior knowledge of the maximum RF field levels that may be encountered during work on the site is necessary to ensure that the maximum exposure limits of the PPE is not exceeded.

1. Selection of Appropriate PPE

Most currently available RF protective overalls include an associated hood assembly to cover the head and conductive gloves and socks. With the hood in use, typical minimum field reduction is specified as about 10-13 dB. This means that the overalls may be used in RF environments having fields up to about ten to twenty times the MPE limit when expressed in terms of power density. However, if used in stronger fields, the products may not offer sufficient field reduction to permit meeting the particular MPE limit at a given frequency. The manufacturers' performance specifications should be carefully reviewed and discussed with the manufacturer prior to general application of the products. For example, it is more meaningful to have specifications relating to the ability of the PPE to reduce near-field specific absorption rates (SAR's) in the body rather than simply shielding effectiveness found by inserting a field probe inside a hollow suit placed in a given RF field. It is important to note the applicable frequency range over which the product is believed to offer protection and see that this is suitable to the intended work environment. The manufacturer may also be able to provide specific guidance for use of the product in different environments.

Appendix D provides more detailed information about RF protective suits as they are commonly called. When used at frequencies above approximately 800 MHz, the hood assembly should be used with the overalls. Unfortunately, it is not possible to provide explicit rules as to when other suit components including the socks and gloves should be used. At lower frequencies, such as in the VHF range, use of socks, when effectively in contact with the pant leg, can help in reducing induced body currents. Specific guidance from the PPE manufacturer should be followed. This may include printed materials and training videos.

2. Maintenance, Use, Accessibility

Any RF safety program that employs PPE must address the maintenance and use of the product by providing instructions to field personnel on its proper care and use. RF protective clothing should be frequently inspected prior to each use to ensure that there are no rips or tears in the fabric that could lead to higher energy absorption rates when working in strong fields. When advised by the manufacturer, the hood assembly, and other garments such as gloves and socks, if provided, should be used to ensure maximum field reduction. A measurement of the RF fields at representative points on the site can provide the necessary insight for when the hood is necessary. Users of PPE should be cautious during the climbing

phase of tower work and avoid situations that will increase potential fall hazards due to poor visibility caused by wearing of protective hoods. Finally, if PPE is used as an element of a RF safety program, its availability should be clearly designated. For example, employees should not have to search for where PPE is stored; it should be conveniently available to those needing it.

4. Training for Workers and Administrators

Perhaps the most important aspect of RF safety for personnel working in RF environments and those responsible for their safety is training. NATE member companies should institute RF safety programs with a training component to include, at a minimum, the following:

A. Explanation of RF Exposure Limits

All personnel potentially exposed to RF fields as a consequence of employment shall receive training that explains the relevant RF exposure limits so that they can understand the importance of complying with the FCC RF rules. For personnel who may use an implanted medical device, consultation with their physician should be recommended;

B. Use and Maintenance of Controls

Personnel using RF personal monitors must be trained in their proper use, their limitations and the need to avoid areas wherein the monitor alarms. The same applies to those personnel who may use PPE. The appearance of RF safety signs should be recognizable and personnel should be instructed on what they look like;

C. Recognition of Abnormal Conditions

The ability to recognize abnormal conditions is extremely important in any safety program. This is especially so with RF safety programs. For example, personnel must be able to recognize the alarm provided by personal monitors (users should also be able determine if the alarm is functional in their particular work environment). Being aware of body heating sensations that seem unusual should be stressed during the training as an indicator of possible excessive exposure; and

D. Seeking of Additional Information

Personnel should be trained to know how to respond if their work requires them to access areas wherein a personal RF monitor alarms. Generally, this will require contacting the RFSO for guidance. Each company should provide information about RF safety for those personnel who may wish to learn more about how to remain safe when working in intense RF environments.

5. Program Review

Safety programs must be subject to periodic review to (a) ensure that the program content is relevant to the work activities of the company and adequate for providing the necessary protection and to (b) determine if the program is being properly implemented. This aspect of the program would normally be accomplished with help from an outside expert. The frequency and rigor of

the program review may vary substantially and will normally be dependent on the nature of the specific RF safety program. Programs that apply to large numbers of personnel and that include a higher probability of access to more intense RF fields would normally be expected to be scrutinized more often and in more detail.

Limits for Maximum Permissible Exposure (MPE)

Appendix A

Adopted by the Federal Communications Commission
(Reference = Table 1. Title 47 CFR)

(A) Limits for Occupational/Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f ²)*	6
30-300	61.4	0.163	1.0	6
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6

(B) Limits for General Population/Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f ²)*	30
30-300	27.5	0.073	0.2	30
300-1500	--	--	f/1500	30
1500-100,000	--	--	1.0	30

f = frequency in MHz

*Plane-wave equivalent power density

NOTE 1: **Occupational/controlled** limits apply in situations in which persons are exposed as a consequence of their employment, provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply, provided he or she is made aware of the potential for exposure.

NOTE 2: **General population/uncontrolled** exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

NOTE 3: The FCC does not permit use of time averaging to demonstrate compliance with the general public/uncontrolled MPE limits.

NATE Policy Statement on Radiofrequency (RF) Exposure *Appendix B*

NATE recognizes the following:

1. Exposure to intense RF fields has been established as a potential hazard to personnel;
2. Tower work is often associated with exposure to intense RF fields;
3. The FCC has promulgated regulations that prescribe limits on maximum permissible exposure to RF fields; and
4. OSHA has indicated that they endorse the use of the FCC MPE limits as protective of worker safety.

NATE recognizes the necessity of embracing a specific policy of recommending caution relative to RF exposure of employees of its member companies. NATE strongly recommends that member companies develop or adopt RF safety programs that address any potential exposure of employees to RF fields encountered as a consequence of their work. Further, member companies should ensure that all relevant employees are informed of the details of their RF safety program and the programs should be periodically reviewed for adequacy and revised as appropriate.

To assist NATE member companies in developing such a policy, a sample model RF safety program template is included beginning on page 22 of this section.

Outline for Possible Employee RF Safety Awareness Training *Appendix C*

The level of detail contained in the RF safety awareness training should be kept to the minimum necessary to ensure compliance with the FCC RF exposure MPE limits while accomplishing the intended work. This will be determined by the complexity of the work being performed, the complexity of the site at which the work is to be accomplished and the necessity of work in areas that may approach or exceed the applicable MPE limits. The basic elements of a suitable RF safety awareness training program for NATE member companies may be divided between Basic and Advanced modules. The following critical elements, and their order of presentation, are suggested for inclusion in these modules:

Basic Employee RF Safety Orientation

1. What RF safety signs look like;
2. MPE limits and why they are important;
3. Being aware of unusual body heating when working near antennas;
4. Radiofrequency Interference (RFI) and medical devices (see physician);
5. Objective is not to be over-exposed (need to report incidents);
6. Purpose of using a personal RF monitor, how to use and their limitations;
7. "Clearing" the site, tower and/or ground areas before proceeding with work;
8. Staying out of areas where RF personal monitor alarms;
9. Using lock-out/tag-out procedures to keep transmitters off when necessary; and
10. Seeking guidance if necessary to work where monitor alarms.

Advanced Employee RF Safety Orientation

1. Use of PPE and its limitations;
2. Use of time-averaging to manage exposures; and
3. RF field measurements with meters and probes.

Descriptions of Commercially Available RF Protective Suits *Appendix D*

Currently, two RF protective suits are commercially available in the United States. Both of these suits are made from Nomex® fabrics that contain stainless steel fibers that are integrated into the Nomex® yarn. The presence of the stainless steel fibers in the fabric gives them a RF shielding quality when worn on the body. Both of these suits have been evaluated using specific absorption rate (SAR) methods to determine their ability to reduce RF energy absorption in a person wearing the suit in strong RF fields. Both suits have been found to offer significant SAR reduction in laboratory studies using full-sized human phantom models subject to RF near-field exposures at 150, 450, 835 and 1,950 MHz (i.e., ranging generally between 20 and 30 dB or 100 and 1,000 times reduction of SAR). See Figures D-1 and D-2 for illustrative data.

Each suit is equipped with a hood assembly, having a window constructed from a metallic mesh, conductive gloves and conductive socks. When wearing all of these components, the entire body is enclosed in a conductive envelope that will result in very low SAR in the body. Based on some of the suit evaluation data (see Tell, 1996), it was determined that RF fields up to approximately 325% of the MPE limit at 835 MHz, for near-field exposures, could be acceptable for bare-head exposure before the peak SAR limit inherent to the MPE limits would be reached.²

Use of the conductive gloves and socks may also not be required for routine tower work, but this is subject to further evaluation. Higher SARs are permitted in the extremities³ but relatively significant induced body currents have been found to be associated with VHF electric fields that are substantially higher in frequency than the body resonance frequency (Tofani, et al., 1995). Hence, pending additional analysis, should it be determined that the use of RF protective suits is appropriate at certain NATE member companies, this use should include use of the gloves and socks. The two suits can be seen in Figures D-3 and D-4.

² The FCC adopted MPE limits are based on controlling the whole-body averaged SAR to less than 0.4 watts per kilogram of body mass and the spatial peak SAR in any one gram of tissue to less than 8 watts per kilogram.

³ The SAR limit for the wrists, hands, ankles and feet is set at 20 W/kg based on any one gram of tissue.

Measured SAR Reduction of an RF Protective Suit

Note: All values exceed dynamic range of measurement system

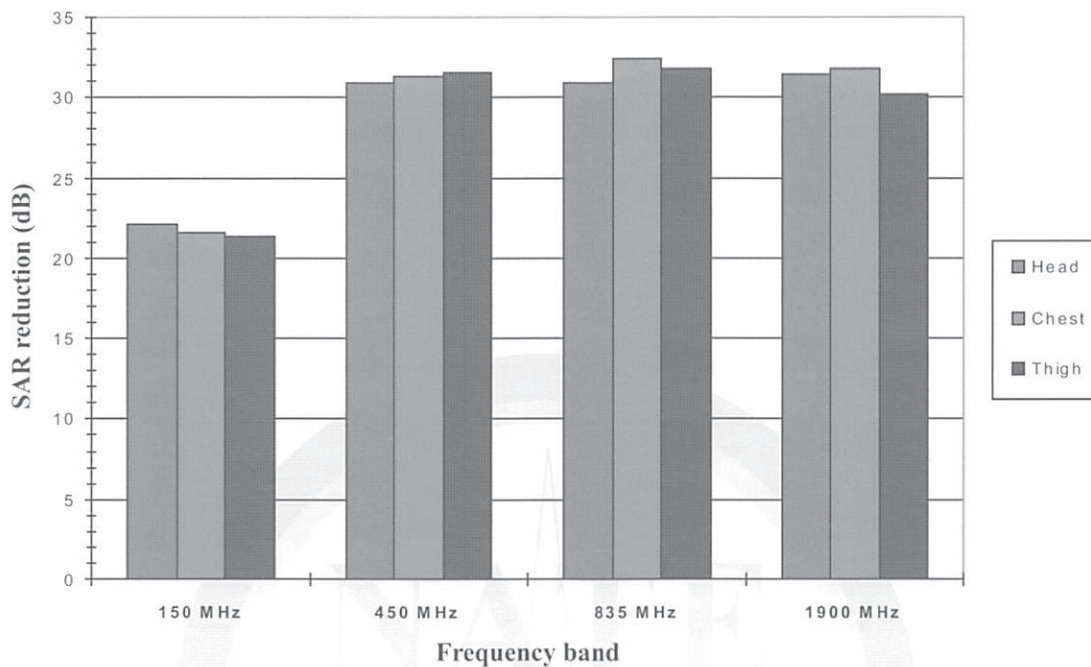


Figure D-1. SAR reduction data for an RF protective suit obtained by the manufacturer in an independent laboratory evaluation.

SAR vs. Longitudinal Distance in Phantom

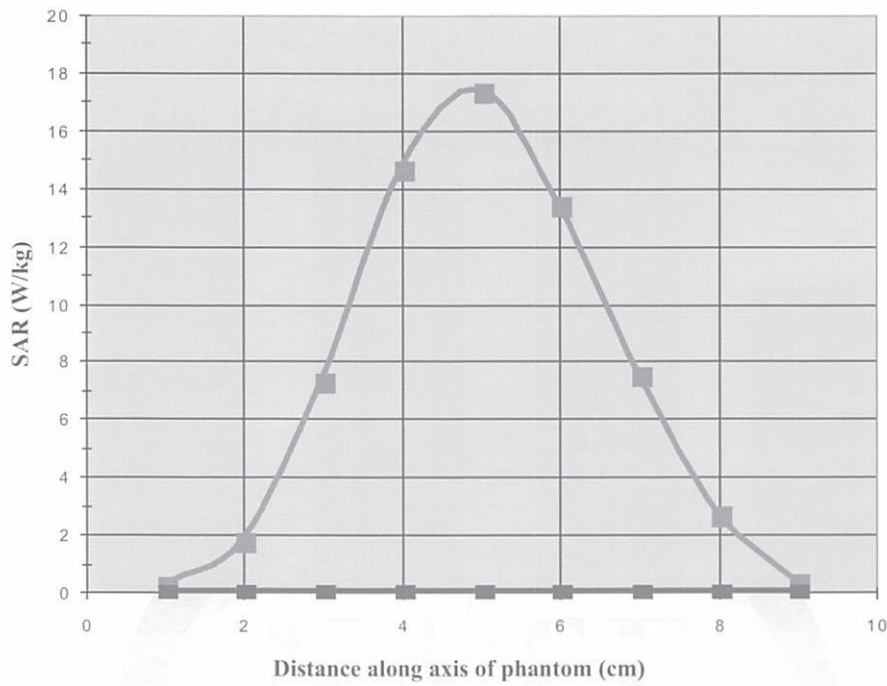


Figure D-2. Example SAR measurement data showing the peak SAR in the chest region of the phantom with and without an RF protective suit. The straight horizontal line along the bottom axis represents the SAR measurement system noise floor (i.e., minimum detectable SAR). In this particular test, the suit reduced the SAR in the phantom to below the system's minimum detection level.



Figure D-3. Photograph of tower climber wearing RF protective suit.

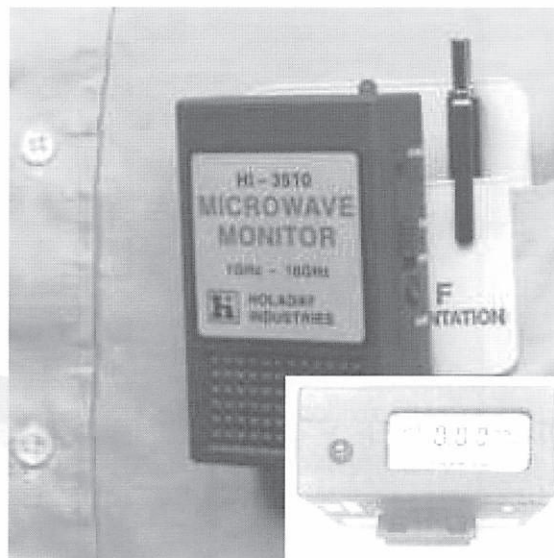
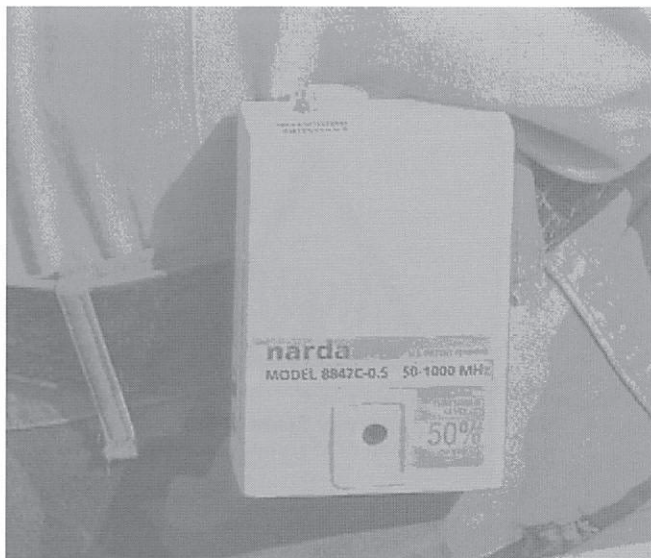


Figure D-4. Photograph of RF protective suit being used during an RF survey.

Euclid (1998). *An Evaluation of Test Measurement Data Obtained on the KW-Gard™ RF Protective Suit*. Review of test data obtained by Euclid Garment Manufacturing under contract with Ilssan America, Inc., Ft. Lauderdale, FL, March 30, 1998. Prepared by Richard Tell Associates, Inc.

Tell, R. A. (1996). *SAR Evaluation of the Naptex™ Suit for Use in the VHF and UHF Telecommunications Bands*. Presented at the International RF Safety Workshop, Schwangau, Germany, September 25-27, 1996.

Tofani, S, G. d'Amore, G. Fiandino, A. Benedetto, O. P. Gandhi and J-Y Chen (1995). Induced foot-currents in humans exposed to VHF radio-frequency EM fields. IEEE Transactions on Electromagnetic Compatibility, Vol. 37, No. 1, February, 1995, pp. 96-99.

Representative RF Personal Monitors**Appendix E**

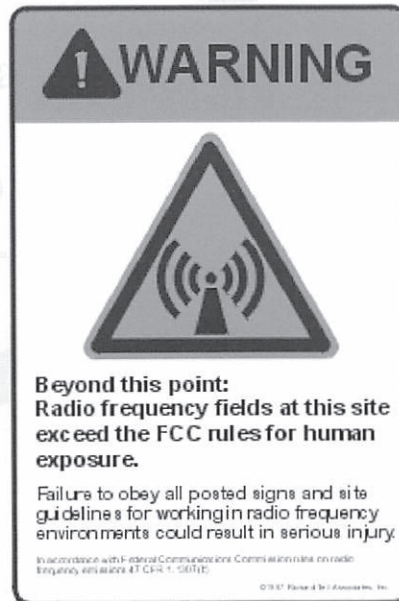
Several different models of RF personal monitors are commercially available. These devices come in both frequency conformal and flat frequency response models. Different models permit coverage of wide frequency ranges. For example, some units can cover the common telecommunications and broadcast range of 50-2000 MHz. Others are designed to cover the 1-18 GHz range, or even more.

Personal monitors are designed to alarm when the ambient field in which they are immersed exceeds a predefined threshold that has been established by either the manufacturer or the user with adjustable alarm units. The alarm is usually in the form of both an audible tone and a flashing LED. The sensor in a frequency conformal model possesses a frequency shaped response that tracks the frequency dependency of the MPE curve so that the monitor may be used in multifrequency environments without concern for the relative RF field levels associated with the various antennas at the site. Flat frequency response units provide an alarm when the preset alarm threshold, usually expressed in units of power density, is exceeded, regardless of frequency. Some units can be obtained that exhibit frequency responses that conform to different standards, such as those used in Canada (Safety Code 6) or in the United Kingdom and Europe.

Some monitors provide for a continuous monitoring of the running time-averaged value of the detected field. This feature can be very useful when working on towers and moving in and out of areas of intense RF fields. In this fashion, work may be performed in area exhibiting RF fields that may momentarily exceed the applicable MPE limit, but when time averaged, actually comply with the MPE limit.

RF Safety Alerting Signs

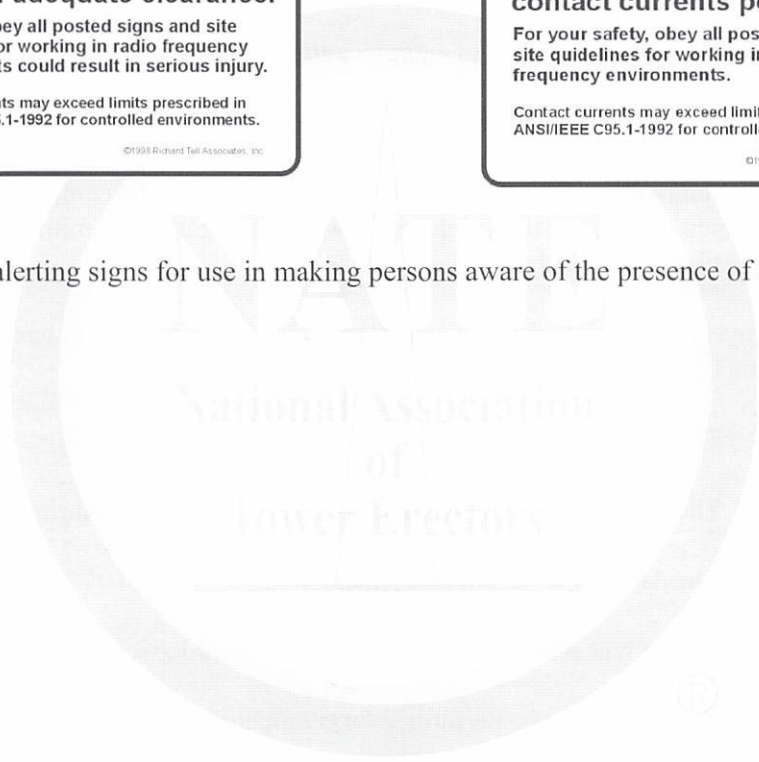
Appendix F



Representative RF alerting signs for use in making persons aware of the presence of RF fields that may exceed the FCC MPE limits.



Representative RF alerting signs for use in making persons aware of the presence of RF high RF voltages or contact currents.



Outline of the Major Elements of the RF Safety Portion of a Comprehensive Health and Safety Program

- 1) Procedures to control RF exposure hazards must be identified and utilized by trained personnel based on the RF hazards identified (OSHA 29 CFR 1910.147).
 - a) Employers must provide training to ensure that all employees understand the purpose and function of the RF energy control program and that the knowledge and skills required for their safe application, usage, and removal are acquired by employees. The training must address the following functional areas:
 - i) Recognizing hazardous energy sources (7) (I) (A);
 - ii) Purpose and the use of energy control procedures (7) (I) (B); and
 - iii) Employee training has been accomplished and is being kept up to date (7) (iv).
 - b) Employee involvement in the structure and operation of the company safety program is encouraged to enhance the employees understanding and commitment to the safe work practices being established by the company.
 - c) Employers shall verify that the workplace hazard assessment has been performed through a written certification that identifies:
 - i) The workplace evaluated;
 - ii) The person certifying that the evaluation has been performed; and
 - iii) The date of the hazard assessment.

This document will serve as certification of the hazard assessment being performed.
- 2) RF hazard identification should be performed by “competent” personnel who are trained to effectively assess potential RF exposure hazards.
 - a) RF hazard identification is performed by reviewing the “RF inventory” of each site location, which contains a detail of the RF emitters and their worst-case field strengths expressed in percent of applicable standard, as outlined in the FCC Office of Engineering and Technology Bulletin 65 (OET65). These screening methods are normally sufficient to identify potential RF hazards that may require some type of control strategy. Additionally, RF fields can also induce currents in nearby conducting objects. These situations must also be evaluated to ensure they do not constitute an RF shock and/or burn hazard.
 - b) If an RF inventory of the site location is not available, then personnel must either 1) not perform services on the site location, or 2) perform an actual RF field survey with calibrated measurements of the area with instrumentation capable of accurately measuring all operating frequencies and power levels present. Once complete, the results are converted

into percent of applicable standard, taking into account all relevant instrumentation correction factors.

- 3) Once RF hazards are identified, applicable procedures must be followed to control exposure to the hazards. Site locations that meet the FCC's guidelines for RF compliance must be clearly marked with appropriate signage, barricades, floor markings, etc.
 - a) When and where possible, controls should be established under the assumption that standards are not time weighted (e.g., assume the standards are ceiling limits which are not to be exceeded).
 - b) When standards must be time weighted, employers must guarantee that workers can control their exposure time and distance between the RF source and all personnel to maintain exposures below recommended levels. Hazardous areas must be identified prior to commencing work and areas can be controlled by reducing RF levels below applicable standards or by Lock-out/Tag-out.
- 4) OSHA requires that all personnel utilizing PPE be competent and qualified in its use.
 - a) Employees must be provided with and be trained in the use and maintenance of all PPE (OSHA 29 CFR 1910.132). Personal RF monitors and RF protective suits are forms of PPE. The employer shall verify that each employee has received and understood the required training through a written certification process that:
 - i) Contains the name of each employee trained;
 - ii) Contains the date of training; and
 - iii) Identifies the subject of the certification.
 - b) Training must be updated at least annually or more often, as needed.
- 5) Implementation of an appropriate medical surveillance program.
 - a) RF conditions at the site location are necessary to determine the need and scope of a medical surveillance program.
 - b) Medical surveillance may consist of a means to report the occurrence of RF shocks or burns, implanted medical device problems, or the reporting of non-routine heating. A medical exam may be appropriate for accidental exposures above applicable thresholds.
- 6) Assignment of Responsibilities.
 - a) The contractor's site (project) manager must have the authority and resources to implement and enforce all aspects of the RF protection program. (e.g., Competent Person).
 - b) Without the commitment of the employer, the elements of the program cannot be effective.

7) **Additional References:**

- a) **OSHA 29 CFR 1910.268 – Telecommunications**

Frequently Asked Questions

The following is a list of frequently asked questions. For further information on these and other topics please refer to OET Bulletin 65

WHAT ARE “RADIOFREQUENCY” AND MICROWAVE RADIATION?

Electromagnetic radiation consists of waves of electric and magnetic energy moving together (i.e., radiating) through space at the speed of light. Taken together, all forms of electromagnetic energy are referred to as the electromagnetic “spectrum.” Radio waves and microwaves emitted by transmitting antennas are one form of electromagnetic energy. They are collectively referred to as “radiofrequency” or “RF” energy or radiation. Note that the term “radiation” does not mean “radioactive.” Often, the terms “electromagnetic field” or “radiofrequency field” may be used to indicate the presence of electromagnetic or RF energy.

The RF waves emanating from an antenna are generated by the movement of electrical charges in the antenna. Electromagnetic waves can be characterized by a wavelength and a frequency. The wavelength is the distance covered by one complete cycle of the electromagnetic wave, while the frequency is the number of electromagnetic waves passing a given point in one second. The frequency of an RF signal is usually expressed in terms of a unit called the “hertz” (abbreviated “Hz”). One Hz equals one cycle per second. One megahertz (“MHz”) equals one million cycles per second.

Different forms of electromagnetic energy are categorized by their wavelengths and frequencies. The RF part of the electromagnetic spectrum is generally defined as that part of the spectrum where electromagnetic waves have frequencies in the range of about 3 kilohertz (3 kHz) to 300 gigahertz (300 GHz). Microwaves are a specific category of radio waves that can be loosely defined as radiofrequency energy at frequencies ranging from about 1 GHz upward.

WHAT IS NON-IONIZING RADIATION?

“Ionization” is a process by which electrons are stripped from atoms and molecules. This process can produce molecular changes that can lead to damage in biological tissue, including effects on DNA, the genetic material of living organisms. This process requires interaction with high levels of electromagnetic energy. Those types of electromagnetic radiation with enough energy to ionize biological material include X-radiation and gamma radiation. Therefore, X-rays and gamma rays are examples of ionizing radiation.

The energy levels associated with RF and microwave radiation, on the other hand, are not great enough to cause the ionization of atoms and molecules, and RF energy is, therefore, is a type of non-ionizing radiation. Other types of non-ionizing radiation include visible and infrared light. Often the term “radiation” is used, colloquially, to imply that ionizing radiation (radioactivity), such as that associated with nuclear power plants, is present. Ionizing radiation should not be confused with the lower-energy, non-ionizing radiation with respect to possible biological effects, since the mechanisms of action are quite different.

HOW IS RADIOFREQUENCY ENERGY USED?

Probably the most important use for RF energy is in providing telecommunications services. Radio and television broadcasting, cellular telephones, personal communications services (PCS), pagers, cordless telephones, business radio, radio communications for police and fire departments, amateur radio, microwave point-to-point links and satellite communications are just a few of the many telecommunications

applications of RF energy. Microwave ovens are an example of a non-communication use of RF energy. Radiofrequency radiation, especially at microwave frequencies, can transfer energy to water molecules. High levels of microwave energy will generate heat in water-rich materials such as most foods. This efficient absorption of microwave energy via water molecules results in rapid heating throughout an object, thus allowing food to be cooked more quickly in a microwave oven than in a conventional oven. Other important non-communication uses of RF energy include radar and industrial heating and sealing. Radar is a valuable tool used in many applications range from traffic speed enforcement to air traffic control and military surveillance. Industrial heaters and sealers generate intense levels of RF radiation that rapidly heats the material being processed in the same way that a microwave oven cooks food. These devices have many uses in industry, including molding plastic materials, gluing wood products, sealing items such as shoes and pocketbooks, and processing food products. There are also a number of medical applications of RF energy, such as diathermy and magnetic resonance imaging (MRI).

HOW IS RADIOFREQUENCY RADIATION MEASURED?

An RF electromagnetic wave has both an electric and a magnetic component (electric field and magnetic field), and it is often convenient to express the intensity of the RF environment at a given location in terms of units specific to each component. For example, the unit “volts per meter” (V/m) is used to express the strength of the electric field (electric “field strength”), and the unit “amperes per meter” (A/m) is used to express the strength of the magnetic field (magnetic “field strength”). Another commonly used unit for characterizing the total electromagnetic field is “power density.” Power density is most appropriately used when the point of measurement is far enough away from an antenna to be located in the “far-field” zone of the antenna.

Power density is defined as power per unit area. For example, power density is commonly expressed in terms of watts per square meter (W/m²), milliwatts per square centimeter (mW/cm²), or microwatts per square centimeter (μW/cm²). One mW/cm² equals 10 W/m², and 100 μW/cm² equals one W/m². With respect to frequencies in the microwave range, power density is usually used to express intensity of exposure.

The quantity used to measure the rate at which RF energy is actually absorbed in a body is called the “Specific Absorption Rate” or “SAR.” It is usually expressed in units of watts per kilogram (W/kg) or milliwatts per gram (mW/g). In the case of exposure of the whole body, a standing ungrounded human adult absorbs RF energy at a maximum rate when the frequency of the RF radiation is in the range of about 70 MHz. This means that the “whole-body” SAR is at a maximum under these conditions. Because of this “resonance” phenomenon and consideration of children and grounded adults, RF safety standards are generally most restrictive in the frequency range of about 30 to 300 MHz. For exposure of parts of the body, such as the exposure from hand-held mobile phones, “partial-body” SAR limits are used in the safety standards to control absorption of RF energy (see later questions on mobile phones).

WHAT BIOLOGICAL EFFECTS CAN BE CAUSED BY RF ENERGY?

Biological effects can result from exposure to RF energy. Biological effects that result from heating of tissue by RF energy are often referred to as “thermal” effects. It has been known for many years that exposure to very high levels of RF radiation can be harmful due to the ability of RF energy to heat biological tissue rapidly. This is the principle by which microwave ovens cook food. Exposure to very high RF intensities can result in heating of biological tissue and an increase in body temperature. Tissue damage in humans could occur during exposure to high RF levels because of the body’s inability to cope with or dissipate the excessive heat that could be generated. Two areas of the body, the eyes and the testes, are

particularly vulnerable to RF heating because of the relative lack of available blood flow to dissipate the excess heat load.

At relatively low levels of exposure to RF radiation, i.e., levels lower than those that would produce significant heating; the evidence for production of harmful biological effects is ambiguous and unproven. Such effects, if they exist, have been referred to as “non-thermal” effects. A number of reports have appeared in the scientific literature describing the observation of a range of biological effects resulting from exposure to low-levels of RF energy. However, in most cases, further experimental research has been unable to reproduce these effects. Furthermore, since much of the research is not done on whole bodies (in vivo), there has been no determination that such effects constitute a human health hazard. It is generally agreed that further research is needed to determine the generality of such effects and their possible relevance, if any, to human health. In the meantime, standards-setting organizations and government agencies continue to monitor the latest experimental findings to confirm their validity and determine whether changes in safety limits are needed to protect human health.

CAN PEOPLE BE EXPOSED TO LEVELS OF RADIOFREQUENCY RADIATION THAT COULD BE HARMFUL?

Studies have shown that environmental levels of RF energy routinely encountered by the general public are typically far below levels necessary to produce significant heating and increased body temperature. However, there may be situations, particularly in workplace environments near high-powered RF sources, where the recommended limits for safe exposure of human beings to RF energy could be exceeded. In such cases, restrictive measures or mitigation actions may be necessary to ensure the safe use of RF energy.

CAN RADIOFREQUENCY RADIATION CAUSE CANCER?

Some studies have also examined the possibility of a link between RF exposure and cancer. Results to date have been inconclusive. While some experimental data have suggested a possible link between exposure and tumor formation in animals exposed under certain specific conditions, the results have not been independently replicated. Many other studies have failed to find evidence for a link to cancer or any related condition. The Food and Drug Administration has further information on this topic with respect to RF exposure from mobile phones at the following website: www.fda.gov/cellphones/.

WHAT RESEARCH IS BEING DONE ON RF BIOLOGICAL EFFECTS?

For many years, research into the possible biological effects of RF energy has been carried out in laboratories around the world, and such research is continuing. Past research has resulted in a large number of peer-reviewed scientific publications on this topic. For many years the U.S. Government has sponsored research into the biological effects of RF energy. The majority of this work has been funded by the Department of Defense, due in part, to the extensive military interest in using RF equipment such as radar and other relatively high-powered radio transmitters for routine military operations. In addition, some U.S. civilian federal agencies responsible for health and safety, such as the Environmental Protection Agency (EPA) and the U.S. Food and Drug Administration (FDA), have sponsored and conducted research in this area. At the present time, most of the non-military research on biological effects of RF energy in the U.S. is being funded by industry organizations, although relatively more research by government agencies is being carried out overseas, particularly in Europe.

In 1996, the World Health Organization (WHO) established a program called the International EMF

Project, which is designed to review the scientific literature concerning biological effects of electromagnetic fields, identify gaps in knowledge about such effects, recommend research needs, and work towards international resolution of health concerns over the use of RF technology. The WHO maintains a website that provides extensive information on this project and about RF biological effects and research (www.who.ch/peh-emf).

The FDA, the EPA and other federal agencies responsible for public health and safety have worked together and in connection with the WHO to monitor developments and identify research needs related to RF biological effects. More information about this can be obtained at the FDA website: www.fda.gov/cellphones/.

WHAT LEVELS ARE SAFE FOR EXPOSURE TO RF ENERGY?

Exposure standards for radiofrequency energy have been developed by various organizations and countries. These standards recommend safe levels of exposure for both the general public and for workers. In the United States, the FCC has adopted and used recognized safety guidelines for evaluating RF environmental exposure since 1985. Federal health and safety agencies, such as the EPA, FDA, NIOSH and OSHA have also been involved in monitoring and investigating issues related to RF exposure. The FCC guidelines for human exposure to RF electromagnetic fields were derived from the recommendations of two expert organizations, the National Council on Radiation Protection and Measurements (NCRP) and the Institute of Electrical and Electronics Engineers (IEEE). Both the NCRP exposure criteria and the IEEE standard were developed by expert scientists and engineers after extensive reviews of the scientific literature related to RF biological effects. The exposure guidelines are based on thresholds for known adverse effects, and they incorporate prudent margins of safety. In adopting the most recent RF exposure guidelines, the FCC consulted with the EPA, FDA, OSHA and NIOSH, and obtained their support for the guidelines that the FCC is using.

Many countries in Europe and elsewhere use exposure guidelines developed by the International Commission on Non-Ionizing Radiation Protection (ICNIRP). The ICNIRP safety limits are generally similar to those of the NCRP and IEEE, with a few exceptions. For example, ICNIRP recommends somewhat different exposure levels in the lower and upper frequency ranges and for localized exposure due to such devices as hand-held cellular telephones. One of the goals of the WHO EMF Project (see above) is to provide a framework for international harmonization of RF safety standards. The NCRP, IEEE and ICNIRP exposure guidelines identify the same threshold level at which harmful biological effects may occur, and the values for MPE recommended for electric and magnetic field strength and power density in both documents are based on this level. The threshold level is a SAR value for the whole body of 4 watts per kilogram (4 W/kg).

In addition, the NCRP, IEEE and ICNIRP guidelines for maximum permissible exposure are different for different transmitting frequencies. This is due to the finding (discussed above) that whole-body human absorption of RF energy varies with the frequency of the RF signal. The most restrictive limits on whole-body exposure are in the frequency range of 30-300 MHz where the human body absorbs RF energy most efficiently when the whole body is exposed. For devices that only expose part of the body, such as mobile phones, different exposure limits are specified (see below).

The exposure limits used by the FCC are expressed in terms of SAR, electric and magnetic field strength and power density for transmitters operating at frequencies from 300 kHz to 100 GHz. The actual values can be found in either of two informational bulletins available at this website (OET Bulletin 56 or OET Bulletin 65); see listing for "OET Safety Bulletins."

WHY HAS THE FCC ADOPTED GUIDELINES FOR RF EXPOSURE?

The FCC authorizes and licenses devices, transmitters and facilities that generate RF radiation. It has jurisdiction over all transmitting services in the U.S. except those specifically operated by the Federal Government. However, the FCC's primary jurisdiction does not lie in the health and safety area, and it must rely on other agencies and organizations for guidance in these matters.

Under the National Environmental Policy Act of 1969 (NEPA), all Federal agencies are required to implement procedures to make environmental consideration a necessary part of an agency's decision-making process. Therefore, FCC approval and licensing of transmitters and facilities must be evaluated for significant impact on the environment. Human exposure to RF radiation emitted by FCC-regulated transmitters is one of several factors that must be considered in such environmental evaluations. In 1996, the FCC revised its guidelines for RF exposure as a result of a multi-year proceeding and as required by the Telecommunications Act of 1996.

Facilities under the jurisdiction of the FCC having a high potential for creating significant RF exposure to humans, such as radio and television broadcast stations, satellite-earth stations, experimental radio stations and certain cellular, PCS and paging facilities are required to undergo routine evaluation for compliance with RF exposure guidelines whenever an application is submitted to the FCC for construction or modification of a transmitting facility or renewal of a license. Failure to show compliance with the FCC's RF exposure guidelines in the application process could lead to the preparation of a formal Environmental Assessment, possible Environmental Impact Statement and eventual rejection of an application. Technical guidelines for evaluating compliance with the FCC RF safety requirements can be found in the FCC's OET Bulletin 65.

Low-powered, intermittent, or inaccessible RF transmitters and facilities are normally "categorically excluded" from the requirement of routine evaluation for RF exposure. These exclusions are based on calculations and measurement data indicating that such transmitting stations or devices are unlikely to cause exposures in excess of the guidelines under normal conditions of use. The FCC's policies on RF exposure and categorical exclusion can be found in Section 1.1307(b) of the FCC's Rules and Regulations [47 CFR 1.1307(b)]. It should be emphasized, however, that these exclusions are not exclusions from compliance, but, rather, only exclusions from routine evaluation. Transmitters or facilities that are otherwise categorically excluded from evaluation may be required, on a case-by-case basis, to demonstrate compliance when evidence of potential non-compliance of the transmitter or facility is brought to the Commission's attention [see 47 CFR 1.1307(c) and (d)].

HOW SAFE ARE MOBILE AND PORTABLE PHONES?

In recent years, publicity, speculation, and concern over claims of possible health effects due to RF emissions from hand-held wireless telephones prompted various research programs to investigate whether there is any risk to users of these devices. There is no scientific evidence to date that proves that wireless phone usage can lead to cancer or a variety of other health effects, including headaches, dizziness or memory loss. However, studies are ongoing and key government agencies, such as the Food and Drug Administration (FDA) continue to monitor the results of the latest scientific research on these topics. Also, as noted previously, the WHO has established an ongoing program to monitor research in this area and make recommendations related to the safety of mobile phones.

The FDA, which has primary jurisdiction for investigating mobile phone safety, has stated that it cannot rule out the possibility of risk, but if such a risk exists, "it is probably small." Further, it has stated that,

while there is no proof that cellular telephones can be harmful, concerned individuals can take various precautionary actions, including limiting conversations on hand-held cellular telephones and making greater use of telephones with hands-free kits where there is a greater separation distance between the user and the radiating antenna. The website for the FDA's Center for Devices and Radiological Health provides further information on mobile phone safety: www.fda.gov/cellphones/.

The Government Accounting Office (GAO) prepared a report of its investigation into safety concerns related to mobile phones. The report concluded that further research is needed to confirm whether mobile phones are completely safe for the user, and the report recommended that the FDA take the lead in monitoring the latest research results.

The FCC's exposure guidelines specify limits for human exposure to RF emissions from hand-held mobile phones in terms of Specific Absorption Rate (SAR), a measure of the rate of absorption of RF energy by the body. The safe limit for a mobile phone user is an SAR of 1.6 watts per kg (1.6 W/kg), averaged over one gram of tissue, and compliance with this limit must be demonstrated before FCC approval is granted for marketing of a phone in the United States. Somewhat less restrictive limits, e.g., 2 W/kg averaged over 10 grams of tissue, are specified by the ICNIRP guidelines used in Europe and most other countries.

Measurements and analysis of SAR in models of the human head have shown that the 1.6 W/kg limit is unlikely to be exceeded under normal conditions of use of cellular and PCS hand-held phones. The same can be said for cordless telephones used in the home. Testing of hand-held phones is normally done under conditions of maximum power usage, thus providing an additional margin of safety, since most phone usage is not at maximum power. Information on SAR levels for many phones is available electronically through the FCC's website and database (see next question).

HOW CAN I OBTAIN THE SPECIFIC ABSORPTION RATE (SAR) VALUE FOR MY MOBILE PHONE?

As explained above, the SAR is the unit used to determine compliance of cellular and PCS phones with safety limits adopted by the FCC. The SAR is a value that corresponds to the rate at which RF energy absorbed in the head of a user of a wireless handset. The FCC requires mobile phone manufacturers to demonstrate compliance with an SAR level of 1.6 watts per kilogram (averaged over one gram of tissue).

Information on SAR for a specific cell phone model can be obtained for almost all cellular telephones by using the FCC identification (ID) number for that model. The FCC ID number is usually printed somewhere on the case of the phone or device. In many cases, you will have to remove the battery pack to find the number. Once you have the number proceed as follows. Go to the following website: Equipment Authorization. Click on the link for "FCC ID Search". Once you are there you will see instructions for inserting the FCC ID number. Enter the FCC ID number (in two parts as indicated: "Grantee Code" is comprised of the first three characters, the "Equipment Product Code" is the remainder of the FCC ID). Then click on "Start Search." The grant(s) of equipment authorization for this particular ID number should then be available. Click on a check under "Display Grant" and the grant should appear. Look through the grant for the section on SAR compliance, certification of compliance with FCC rules for RF exposure or similar language. This section should contain the value(s) for typical or maximum SAR for your phone. For portable phones and devices authorized since June 2, 2000, maximum SAR levels should be noted on the grant of equipment authorization. For phones and devices authorized between about mid-1998 and June 2000, detailed information on SAR levels is typically found in one of the "exhibits" associated with the grant. Therefore, once the grant is accessed in the FCC database, the exhibits can be viewed by

clicking on the appropriate entry labeled "View Exhibit." Electronic records for FCC equipment authorization grants were initiated in 1998, so devices manufactured prior to this date may not be included in our electronic database.

Although the FCC database does not list phones by model number, there are certain non-government websites such as www.cnet.com that provide information on SAR from specific models of mobile phones. However, the FCC has not reviewed these sites for accuracy and makes no guarantees with respect to them. In addition to these sites, some mobile phone manufacturers make this information available at their own websites. Also, phones certified by the Cellular Telecommunications and Internet Association (CTIA) are now required to provide this information to consumers in the instructional materials that come with the phones.

If you want additional consumer information on safety of cell phones and other transmitting devices please consult the information available below at this website. In particular, you may wish to read or download our OET Bulletin 56 (see "OET RF Safety Bulletins" listing) entitled: "Questions and Answers about Biological Effects and Potential Hazards of Radiofrequency Electromagnetic Fields." If you have any problems or additional questions you may contact us at: rfsafety@fcc.gov or you may call: 1-888-225-5322. You may also wish to consult a consumer update on mobile phone safety published by the U.S. FDA that can be found at: www.fda.gov/cellphones/.

DO "HANDS-FREE" EAR PIECES FOR MOBILE PHONES REDUCE EXPOSURE TO RF EMISSIONS? WHAT ABOUT MOBILE PHONE ACCESSORIES THAT CLAIM TO SHIELD THE HEAD FROM RF RADIATION?

"Hands-free" kits with ear pieces can be used with cell phones for convenience and comfort. In addition, because the phone, which is the source of the RF emissions, will not be placed against the head, absorption of RF energy in the head will be reduced. Therefore, it is true that use of an ear piece connected to a mobile phone will significantly reduce the rate of energy absorption (or "SAR") in the user's head. On the other hand, if the phone is mounted against the waist or other part of the body during use, then that part of the body will absorb RF energy. Even so, mobile phones marketed in the U.S. are required to meet safety limit requirements regardless of whether they are used against the head or against the body. So either configuration should result in compliance with the safety limit. Note that hands-free devices using "Bluetooth" technology also include a wireless transmitter; however, the Bluetooth transmitter operates at a much lower power than the cell phone.

A number of devices have been marketed that claim to "shield" or otherwise reduce RF absorption in the body of the user. Some of these devices incorporate shielded phone cases, while others involve nothing more than a metallic accessory attached to the phone. Studies have shown that these devices generally do not work as advertised. In fact, they may actually increase RF absorption in the head due to their potential to interfere with proper operation of the phone, thus forcing it to increase power to compensate.

CAN MOBILE PHONES BE USED SAFELY IN HOSPITALS AND NEAR MEDICAL TELEMETRY EQUIPMENT?

The FCC does not normally investigate problems of electromagnetic interference from RF transmitters to medical devices. Some hospitals have policies, which limit the use of cell phones, due to concerns that sensitive medical equipment could be affected. The FDA's Center for Devices and Radiological Health (CDRH) has primary jurisdiction for medical device regulation. FDA staff has monitored this potential problem and more information is available from the CDRH website: www.fda.gov/cdrh.

ARE CELLULAR AND PCS TOWERS AND ANTENNAS SAFE?

Cellular radio services transmit using frequencies between 824 and 894 megahertz (MHz). Transmitters in the Personal Communications Service (PCS) use frequencies in the range of 1850-1990 MHz. Antennas used for cellular and PCS transmissions are typically located on towers, water tanks or other elevated structures including rooftops and the sides of buildings. The combination of antennas and associated electronic equipment is referred to as a cellular or PCS "base station" or "cell site." Typical heights for free-standing base station towers or structures are 50-200 feet. A cellular base station may utilize several "omni-directional" antennas that look like poles, 10 to 15 feet in length, although these types of antennas are less common in urbanized areas.

In urban and suburban areas, cellular and PCS service providers commonly use "sector" antennas for their base stations. These antennas are rectangular panels, e.g., about 1 by 4 feet in size, typically mounted on a rooftop or other structure, but they are also mounted on towers or poles. Panel antennas are usually arranged in three groups of three each. It is common that not all antennas are used for the transmission of RF energy; some antennas may be receive-only.

At a given cell site, the total RF power that could be radiated by the antennas depends on the number of radio channels (transmitters) installed, the power of each transmitter, and the type of antenna. While it is theoretically possible for cell sites to radiate at very high power levels, the maximum power radiated in any direction usually does not exceed 50 watts.

The RF emissions from cellular or PCS base station antennas are generally directed toward the horizon in a relatively narrow pattern in the vertical plane. In the case of sector (panel) antennas, the pattern is fan-shaped, like a wedge cut from a pie. As with all forms of electromagnetic energy, the power density from the antenna decreases rapidly as one moves away from the antenna. Consequently, ground-level exposures are much less than exposures if one were at the same height and directly in front of the antenna. Measurements made near typical cellular and PCS installations, especially those with tower-mounted antennas, have shown that ground-level power densities are thousands of times less than the FCC's limits for safe exposure. This makes it extremely unlikely that a member of the general public could be exposed to RF levels in excess of FCC guidelines due solely to cellular or PCS base station antennas located on towers or monopoles.

When cellular and PCS antennas are mounted at rooftop locations it is possible that a person could encounter RF levels greater than those typically encountered on the ground. However, once again, exposures approaching or exceeding the safety guidelines are only likely to be encountered very close to and directly in front of the antennas. For sector-type antennas, RF levels to rear are usually very low.

For further information on cellular services go to http://wireless.fcc.gov/services/index.htm?job=service_home&id=cellular.

ARE CELLULAR AND OTHER RADIO TOWERS LOCATED NEAR HOMES OR SCHOOLS SAFE FOR RESIDENTS AND STUDENTS?

As discussed above, radiofrequency emissions from antennas used for cellular and PCS transmissions result in exposure levels on the ground that are typically thousands of times below safety limits. These safety limits were adopted by the FCC based on the recommendations of expert organizations and endorsed by agencies of the Federal Government responsible for health and safety. Therefore, there is no reason to believe that such towers could constitute a potential health hazard to nearby residents or students.

Other antennas, such as those used for radio and television broadcast transmissions, use power levels that are generally much higher than those used for cellular and PCS antennas. Therefore, in some cases there could be a potential for higher levels of exposure to persons on the ground. However, all broadcast stations are required to demonstrate compliance with FCC safety guidelines, and ambient exposures to nearby persons from such stations are typically well below FCC safety limits.

ARE EMISSIONS FROM RADIO AND TELEVISION BROADCAST ANTENNAS SAFE?

Radio and television broadcast stations transmit their signals via RF electromagnetic waves. There are thousands of radio and TV stations on the air in the United States. Broadcast stations transmit at various RF frequencies, depending on the channel, ranging from about 540 kHz for AM radio up to about 800 MHz for UHF television stations. Frequencies for FM radio and VHF television lie in between these two extremes. Broadcast transmitter power levels range from a few watts to more than 100,000 watts. Some of these transmission systems can be a significant source of RF energy in the local environment, so the FCC requires that broadcast stations submit evidence of compliance with FCC RF guidelines.

The amount of RF energy to which the public or workers might be exposed as a result of broadcast antennas depends on several factors, including the type of station, design characteristics of the antenna being used, power transmitted to the antenna, height of the antenna and distance from the antenna. Note that the power normally quoted for FM and TV broadcast transmitters is the "effective radiated power" or ERP not the actual transmitter power mentioned above. ERP is the transmitter power delivered to the antenna multiplied by the directivity or gain of the antenna. Since high gain antennas direct most of the RF energy toward the horizon and not toward the ground, high ERP transmission systems such as used for UHF-TV broadcast tend to have less ground level field intensity near the station than FM radio broadcast systems with lower ERP and gain values. Also, since energy at some frequencies is absorbed by the human body more readily than at other frequencies, both the frequency of the transmitted signal and its intensity is important. Calculations can be performed to predict what field intensity levels would exist at various distances from an antenna.

Public access to broadcasting antennas is normally restricted so that individuals cannot be exposed to high-level fields that might exist near antennas. Measurements made by the FCC, EPA and others have shown that ambient RF radiation levels in inhabited areas near broadcasting facilities are typically well below the exposure levels recommended by current standards and guidelines. There have been a few situations around the country where RF levels in publicly accessible areas have been found to be higher than those recommended in applicable safety standards. As they have been identified, the FCC has required that stations at those facilities promptly bring their combined operations into compliance with our guidelines. Thus, despite the relatively high operating powers of many broadcast stations, such cases are unusual, and members of the general public are unlikely to be exposed to RF levels from broadcast towers that exceed FCC limits.

Antenna maintenance workers are occasionally required to climb antenna structures for such purposes as painting, repairs, or lamp replacement. Both the EPA and OSHA have reported that in such cases it is possible for a worker to be exposed to high levels of RF energy if work is performed on an active tower or in areas immediately surrounding a radiating antenna. Therefore, precautions should be taken to ensure that maintenance personnel are not exposed to unsafe RF fields.

HOW SAFE ARE RADIO ANTENNAS USED FOR PAGING AND “TWO-WAY” COMMUNICATIONS? WHAT ABOUT “PUSH-TO-TALK” RADIOS SUCH AS “WALKIE-TALKIES?”

“Land-mobile” communications include a variety of communications systems, which require the use of portable and mobile RF transmitting sources. These systems operate in several frequency bands between about 30 and 1000 MHz. Radio systems used by the police and fire departments, radio paging services and business radio are a few examples of these communications systems. They have the advantage of providing communications links between various fixed and mobile locations.

There are essentially three types of RF transmitters associated with land-mobile systems: base-station transmitters, vehicle-mounted transmitters, and hand-held transmitters. The antennas and power levels used for these various transmitters are adapted for their specific purpose. For example, a base-station antenna must radiate its signal to a relatively large area, and therefore, its transmitter generally has to use higher power levels than a vehicle-mounted or hand-held radio transmitter. Although base-station antennas usually operate with higher power levels than other types of land-mobile antennas, they are normally inaccessible to the public since they must be mounted at significant heights above ground to provide for adequate signal coverage. Also, many of these antennas transmit only intermittently. For these reasons, base-station antennas are generally not of concern with regard to possible hazardous exposure of the public to RF radiation. Studies at rooftop locations have indicated that high-powered paging antennas may increase the potential for exposure to workers or others with access to such sites, e.g., maintenance personnel. This could be a concern especially when multiple transmitters are present. In such cases, restriction of access or other mitigation actions may be necessary.

Transmitting power levels for vehicle-mounted land-mobile antennas are generally less than those used by base-station antennas but higher than those used for hand-held units. Some manufacturers recommend that users and other nearby individuals maintain some minimum distance (e.g., 1 to 2 feet) from a vehicle-mounted antenna during transmission or mount the antenna in such a way as to provide maximum shielding for vehicle occupants. Studies have shown that this is probably a conservative precaution, particularly when the percentage of time an antenna is actually radiating is considered. Unlike cellular telephones, which transmit continuously during a call, two-way radios normally transmit only when the “push-to-talk” button is depressed. This significantly reduces exposure, and there is no evidence that there would be a safety hazard associated with exposure from vehicle-mounted, two-way antennas when the manufacturer’s recommendations are followed.

Hand-held “two-way” portable radios such as walkie-talkies are low-powered devices used to transmit and receive messages over relatively short distances. Because of the low power levels used, the intermittency of these transmissions (“push-to-talk”), and due to the fact that these radios are held away from the head, they should not expose users to RF energy in excess of safe limits. Although FCC rules do not require routine documentation of compliance with safety limits for push-to-talk two-way radios as it does for cellular and PCS phones (which transmit continuously during use and which are held against the head), most of these radios are tested and the resulting SAR data are available from the FCC’s Equipment Authorization database.

HOW SAFE ARE MICROWAVE AND SATELLITE ANTENNAS?

Point-to-point microwave antennas transmit and receive microwave signals across relatively short distances (from a few tenths of a mile to 30 miles or more). These antennas are usually circular (“dish”) or rectangular in shape and are normally mounted on a supporting tower, rooftop, sides of buildings or on similar structures that provide clear and unobstructed line-of-sight paths between both ends of a trans-

mission path. These antennas have a variety of uses, such as relaying long-distance telephone calls, and serving as links between broadcast studios and transmitting sites.

The RF signals from these antennas travel in a directed beam from a transmitting antenna to the receiving antenna, and dispersion of microwave energy outside of this narrow beam is minimal or insignificant. In addition, these antennas transmit using very low power levels, usually on the order of a few watts or less. Measurements have shown that ground-level power densities due to microwave directional antennas are normally thousands of times or more below recommended safety limits. Moreover, microwave tower sites are normally inaccessible to the general public. Significant exposures from these antennas could only occur in the unlikely event that an individual were to stand directly in front of and very close to an antenna for a period of time.

Ground-based antennas used for satellite-earth communications typically are parabolic “dish” antennas, some as large as 10 to 30 meters in diameter, that are used to transmit (“uplink”) or receive (“downlink”) microwave signals to or from satellites in orbit around the earth. These signals allow delivery of a variety of communications services, including television network programming, electronic newsgathering and point-of-sale credit card transactions. Some satellite-earth station antennas are used only to receive RF signals (i.e., like the satellite television antenna used at a residence), and because they do not transmit, RF exposure is not an issue for those antennas.

Since satellite-earth station antennas are directed toward satellites above the earth, transmitted beams point skyward at various angles of inclination, depending on the particular satellite being used. Because of the longer distances involved, power levels used to transmit these signals are relatively large when compared, for example, to those used by the terrestrial microwave point-to-point antennas discussed above. However, as with microwave antennas, the beams used for transmitting earth-to-satellite signals are concentrated and highly directional, similar to the beam from a flashlight. In addition, public access would normally be restricted at uplink sites where exposure levels could approach or exceed safe limits. Although many satellite-earth stations are “fixed” sites, portable uplink antennas are also used, e.g., for electronic news gathering. These antennas can be deployed in various locations. Therefore, precautions may be necessary, such as temporarily restricting access in the vicinity of the antenna, to avoid exposure to the main transmitted beam. In general, however, it is unlikely that a transmitting earth station antenna would routinely expose members of the public to potentially harmful levels of RF energy.

ARE RF EMISSIONS FROM AMATEUR RADIO STATIONS HARMFUL?

There are hundreds of thousands of amateur radio operators (“hams”) worldwide. Amateur radio operators in the United States are licensed by the FCC. The Amateur Radio Service provides its members with the opportunity to communicate with persons all over the world and to provide valuable public service functions, such as making communications services available during disasters and emergencies. Like all FCC licensees, amateur radio operators are required to comply with the FCC’s guidelines for safe human exposure to RF fields. Under the FCC’s rules, amateur operators can transmit with power levels of up to 1500 watts. However, most operators use considerably less power than this maximum. Studies by the FCC and others have shown that most amateur radio transmitters would not normally expose persons to RF levels in excess of safety limits. This is primarily due to the relatively low operating powers used by most amateurs, the intermittent transmission characteristics typically used and the relative inaccessibility of most amateur antennas. As long as appropriate distances are maintained from amateur antennas, exposure of nearby persons should be well below safety limits.

To help ensure compliance of amateur radio facilities with RF exposure guidelines, both the FCC and American Radio Relay League (ARRL) have issued publications to assist operators in evaluating compliance for their stations. The FCC's publication (Supplement B to OET Bulletin 65 can be viewed and downloaded elsewhere at this website (see "OET RF Safety Bulletins").

WHAT IS THE FCC'S POLICY ON RADIOFREQUENCY WARNING SIGNS? FOR EXAMPLE, WHEN SHOULD SIGNS BE POSTED, WHERE SHOULD THEY BE LOCATED AND WHAT SHOULD THEY SAY?

Radiofrequency warning or "alerting" signs should be used to provide information on the presence of RF radiation or to control exposure to RF radiation within a given area. Standard radiofrequency hazard warning signs are commercially available from several vendors. Appropriate signs should incorporate the format recommended by the IEEE and as specified in the IEEE standard: IEEE C95.2-1999 (Web address: www.ieee.org). Guidance concerning the placement of signs can be found in IEEE Standard C95.7-2005. When signs are used, meaningful information should be placed on the sign advising affected persons of: (1) the nature of the potential hazard (i.e., high RF fields), (2) how to avoid the potential hazard, and (3) whom to contact for additional information. In some cases, it may be appropriate to also provide instructions to direct individuals as to how to work safely in the RF environment of concern. Signs should be located prominently in areas that will be readily seen by those persons who may have access to an area where high RF fields are present.

CAN IMPLANTED ELECTRONIC CARDIAC PACEMAKERS BE AFFECTED BY NEARBY RF DEVICES SUCH AS MICROWAVE OVENS OR CELLULAR TELEPHONES?

Over the past several years there has been concern that signals from some RF devices could interfere with the operation of implanted electronic pacemakers and other medical devices. Because pacemakers are electronic devices, they could be susceptible to electromagnetic signals that could cause them to malfunction. Some anecdotal claims of such effects in the past involved emissions from microwave ovens. However, it has never been shown that the RF energy from a properly operating microwave oven is strong enough to cause such interference.

Some studies have shown that mobile phones can interfere with implanted cardiac pacemakers if a phone is used in close proximity (within about 8 inches) of a pacemaker. It appears that such interference is limited to older pacemakers, which may no longer be in use. Nonetheless, to avoid this potential problem, pacemaker patients can avoid placing a phone in a pocket close to the location of their pacemaker or otherwise place the phone near the pacemaker location during phone use. Patients with pacemakers should consult with their physician or the FDA if they believe that they may have a problem related to RF interference. Further information on this is available from the FDA: www.fda.gov/cdrh.

DOES THE FCC REGULATE EXPOSURE TO THE ELECTROMAGNETIC RADIATION FROM MICROWAVE OVENS, TELEVISION SETS AND COMPUTER MONITORS?

The FCC does not regulate exposure to emissions from these devices. Protecting the public from harmful radiation emissions from these consumer products is the responsibility of the FDA. Inquires should be directed to the FDA's Center for Devices and Radiological Health (CDRH), and, specifically, to the CDRH Office of Compliance at (301) 594-4654.

DOES THE FCC ROUTINELY MONITOR RADIOFREQUENCY RADIATION FROM ANTENNAS?

The FCC does not have the resources or the personnel to routinely monitor the emissions for all of the thousands of transmitters that are subject to FCC jurisdiction. However, the FCC does have measurement instrumentation for evaluating RF levels in areas that may be accessible to the public or to workers. If there is evidence of potential non-compliance with FCC exposure guidelines for an FCC-regulated facility, staff from the FCC's Office of Engineering and Technology or the Enforcement Bureau can conduct an investigation, and, if appropriate, perform actual measurements. It should be emphasized that the FCC does not perform RF exposure investigations unless there is a reasonable expectation that the FCC exposure limits may be exceeded. Potential exposure problems should be brought to the FCC's attention by contacting the FCC at: 1-888-225-5322 or by emailing: rfsafety@fcc.gov.

DOES THE FCC MAINTAIN A DATABASE THAT INCLUDES INFORMATION ON THE LOCATION AND TECHNICAL PARAMETERS OF ALL OF THE TRANSMITTER SITES IT REGULATES?

The FCC does not have a comprehensive, transmitter-specific database for all of the services it regulates. The FCC has information for some services such as radio and television broadcast stations, and many larger antenna towers are required to register with the FCC if they meet certain criteria. In those cases, location information is generally specified in terms of degrees, minutes, and seconds of latitude and longitude. In some services, licenses are allowed to utilize additional transmitters or to increase power without notifying the FCC. Other services are licensed by geographic area, such that the FCC has no knowledge concerning the actual number or location of transmitters within that geographic area.

The FCC General Menu Reports (GenMen) search engine unites most of the FCC's licensing databases under a single umbrella. Databases included are the Wireless Telecommunications Bureau's ULS, the Media Bureau's CDBS, COALS (cable data) and BLS, and the International Bureau's IBFS. Entry points or search options in the various databases include frequency, state/county, latitude/longitude, call sign and licensee name.

The FCC also publishes, generally on a weekly basis, bulk extracts of the various FCC licensing databases. Each licensing database has its own unique file structure. These extracts consist of multiple, very large files. OET maintains an index to these databases.

OET has developed a Spectrum Utilization Study Software tool-set that can be used to create a Microsoft Access version of the individual exported licensing databases and then create MapInfo "mid" and "mif" files so that radio assignments can be plotted. This experimental software is used to conduct internal spectrum utilization studies needed in the rulemaking process. While the FCC makes this software available to the public, no technical support is provided.

For further information on the FCC's existing databases, please contact the FCC at 1-888-225-5322 or 1-888-835-5322 TTY.

WHICH OTHER FEDERAL AGENCIES HAVE RESPONSIBILITIES RELATED TO POTENTIAL RF HEALTH EFFECTS?

Certain agencies in the Federal Government have been involved in monitoring, researching or regulating issues related to human exposure to RF radiation. These agencies include the Food and Drug Administra-

tion (FDA), the Environmental Protection Agency (EPA), the Occupational Safety and Health Administration (OSHA), the National Institute for Occupational Safety and Health (NIOSH), the National Telecommunications and Information Administration (NTIA) and the Department of Defense (DOD).

By authority of the Radiation Control for Health and Safety Act of 1968, the Center for Devices and Radiological Health (CDRH) of the FDA develops performance standards for the emission of radiation from electronic products including X-ray equipment, other medical devices, television sets, microwave ovens, laser products and sunlamps. The CDRH established a product performance standard for microwave ovens in 1971 limiting the amount of RF leakage from ovens. However, the CDRH has not adopted performance standards for other RF-emitting products. The FDA is, however, the lead federal health agency in monitoring the latest research developments and advising other agencies with respect to the safety of RF-emitting products used by the public, such as cellular and PCS phones.

The FDA's microwave oven standard is an emission standard (as opposed to an exposure standard) that allows specific levels of microwave energy leakage (measured at five centimeters from the oven surface). The standard also requires ovens to have two independent interlock systems that prevent the oven from generating microwaves if the latch is released or if the door of the oven is opened. The FDA has stated that ovens that meet its standards and are used according to the manufacturer's recommendations are safe for consumer and industrial use. More information is available from: www.fda.gov/cdrh.

The EPA has, in the past, considered developing federal guidelines for public exposure to RF radiation. However, EPA activities related to RF safety and health are presently limited to advisory functions. For example, the EPA chairs an Inter-agency Radiofrequency Working Group, which coordinates RF health-related activities among the various federal agencies with health or regulatory responsibilities in this area. OSHA is part of the U.S. Department of Labor, and is responsible for protecting workers from exposure to hazardous chemical and physical agents. In 1971, OSHA issued a protection guide for exposure of workers to RF radiation [29 CFR 1910.97]. However, this guide was later ruled to be only advisory and not mandatory. Moreover, it was based on an earlier RF exposure standard that has now been revised. At the present time, OSHA uses the IEEE and/or FCC exposure guidelines for enforcement purposes under OSHA's "general duty clause" (for more information see: www.osha.gov/SLTC/radiofrequencyradiation/).

NIOSH is part of the U.S. Department of Health and Human Services. It conducts research and investigations into issues related to occupational exposure to chemical and physical agents. NIOSH has, in the past, undertaken to develop RF exposure guidelines for workers, but final guidelines were never adopted by the agency. NIOSH conducts safety-related RF studies through its Physical Agents Effects Branch in Cincinnati, Ohio.

The NTIA is part of the U.S. Department of Commerce and is responsible for authorizing Federal Government use of the RF electromagnetic spectrum. Like the FCC, the NTIA also has NEPA responsibilities and has considered adopting guidelines for evaluating RF exposure from U.S. Government transmitters such as radar and military facilities.

CAN LOCAL AND STATE GOVERNMENTAL BODIES ESTABLISH LIMITS FOR RF EXPOSURE?

In the United States, some local and state jurisdictions have also enacted rules and regulations pertaining to human exposure to RF energy. However, the Telecommunications Act of 1996 contained provisions relating to federal jurisdiction to regulate human exposure to RF emissions from certain transmitting devices. In particular, Section 704 of the Act states that, "No State or local government or instrumentality

thereof may regulate the placement, construction, and modification of personal wireless service facilities on the basis of the environmental effects of radio frequency emissions to the extent that such facilities comply with the FCC's regulations concerning such emissions." Further information on FCC policy with respect to facilities siting is available from the FCC's Wireless Telecommunications Bureau (see <http://wireless.fcc.gov/siting/>).

WHERE CAN I OBTAIN MORE INFORMATION ON POTENTIAL HEALTH EFFECTS OF RADIOFREQUENCY ENERGY?

Although relatively few offices or agencies within the Federal Government routinely deal with the issue of human exposure to RF fields, it is possible to obtain information and assistance on certain topics from the following federal agencies, all of which also have Internet websites.

FDA: For information about radiation from microwave ovens and other consumer and industrial products contact: Center for Devices and Radiological Health (CDRH), Food and Drug Administration. [<http://www.fda.gov/cdrh/radhealth/>]

EPA: The Environmental Protection Agency's Office of Radiation Programs is responsible for monitoring potential health effects due to public exposure to RF fields. Contact: Environmental Protection Agency, Office of Radiation and Indoor Air, Washington, D.C. 20460, (202) 564-9235. [Click on EPA's website: Frequent Questions on EMF, RF, & Other Nonionizing Radiation]

OSHA: The Occupational Safety and Health Administration's (OSHA) Health Response Team has been involved in studies related to occupational exposure to RF radiation. [http://www.osha.gov/SLTC/radiation_nonionizing/index.html]

NIOSH: The National Institute for Occupational Safety and Health (NIOSH) conducts research on RF-related safety issues in workplaces and recommends measures to protect worker health. Contact: NIOSH, Engineering and Physical Hazards Branch, Mail Stop R-5, 4676 Columbia Parkway, Cincinnati, Ohio 45226, or phone 1-513-841-4221. Toll-free public inquiries: 1-800-CDC-INFO (1-800-232-4636), or by email: cd-info@cdc.gov. Internet information on workplace RF safety: <http://www.cdc.gov/niosh/topics/emf/#rffield>.

NCI: The National Cancer Institute, part of the U.S. National Institutes of Health, conducts and supports research, training, health information dissemination, and other programs with respect to the cause, diagnosis, prevention, and treatment of cancer. Contact: NCI Public Inquiries Office, 6116 Executive Boulevard, Room 3036A, Bethesda, MD 20892-8322. [<http://www.cancer.gov/cancertopics/factsheet/Risk/cellphones>] Toll-free number: 1-800-4-CANCER (1-800-422-6237).

FCC: Questions regarding potential RF hazards from FCC-regulated transmitters can be directed to the Federal Communications Commission, Consumer & Governmental Affairs Bureau, 445 12th Street, S.W., Washington, D.C. 20554; Phone: 1-888-225-5322; Email: rfsafety@fcc.gov; or go to: www.fcc.gov/oet/rfsafety.

In addition to federal government agencies, there are other sources of information regarding RF energy and health effects. Some states and localities maintain non-ionizing radiation programs or, at least, some expertise in this field, usually in a department of public health or environmental control. The following table lists some representative Internet websites that provide information on this topic. However, the FCC neither endorses nor verifies the accuracy of any information provided at these sites. They are being provided for information only.

- Bioelectromagnetics Society: <http://www.bioelectromagnetics.org/>
- EPA's RadTown USA: <http://www.epa.gov/radtown/basic.html>
- International Commission on Non-Ionizing Radiation Protection (ICNIRP Europe):
<http://www.icnirp.de/>
- IEEE Committee on Man & Radiation: <http://ewh.ieee.org/soc/embs/comar/>
- Microwave News: <http://www.microwavenews.com/>
- National Council on Radiation Protection & Measurements: <http://www.ncrponline.org/>
- NJ Dept Radiation Protection: <http://www.nj.gov/dep/rpp/nrs/index.htm>
- RFcom (Canada): <http://www.rfcom.ca/welcome/index.shtml>
- Wireless Industry (CTIA): <http://www.ctia.org/>
- World Health Organization (WHO): <http://www.who.ch/peh-emf>
- Germany's EMF Portal: <http://www.emf-portal.de/>

For more information on this topic please note:

OET Bulletin 56: Questions and Answers About the Biological Effects and Potential Hazards of Radiofrequency Radiation.

Any questions regarding this subject matter should be addressed to: The RF Safety Program



Mejia International
Group Corporation

EMERGENCY RESPONSE

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Introduction

Emergency situations require quick, deliberate, appropriate actions under circumstances that may likely challenge an employee's ability to respond accordingly. For this reason, wherever possible, the potential for emergencies must be anticipated, and the procedures for addressing emergencies must be established in advance, as in the job hazard analysis. Employees shall be notified of their responsibilities under emergent conditions and the procedures they are expected to follow. This section provides information from the United States Department of Labor and NATE on preparation for workplace emergencies.

How to Prepare for Workplace Emergencies

U.S. Department of Labor - Program Highlights

OSHA 3088 1995 (Revised)

(The following reference, while developed for waste water, is appropriate for a general guideline for emergency response.)

Employers should establish effective safety and health programs and prepare their workers to handle emergencies before they arise.

Planning

Essential to an effective emergency action plan are top management support and commitment along with the involvement of all employees. Where required by OSHA, plans for firms with more than 10 employees should be written; smaller companies may communicate their plans orally.

Management should review plans with employees initially and whenever the plan itself, or employees' responsibilities under it, change. Plans should be re-evaluated and updated periodically. Emergency procedures, including the handling of any toxic chemicals and site-specific plans, should include:

- Escape procedures and routes, designated on maps;
- Local emergency numbers;
- Reliable means of communication (Not all areas are serviced by 911);
- Special procedures for employees who perform or shut down critical plant operations;
- A system to account for all employees after evacuation;
- Rescue and medical duties for appropriate employees;
- Means for reporting fires and other emergencies; and
- Contacts for further information about the plan.

Chain of Command

An emergency response coordinator and a back-up coordinator should be designated. The coordinator may be responsible for job site operations, public relations and ensuring that outside aid is called in. A back-up coordinator recommends that at least two competent personnel are always available. Duties of the coordinator include:

- Determining whether an emergency requiring activation of emergency procedures exists;
- Directing all emergency activities including evacuation of personnel;

- Ensuring that outside emergency services such as medical aid and local fire departments are called in when necessary; and
- Directing the shutdown of operations when necessary.

Emergency Response Teams

Members of emergency response teams should be thoroughly trained for potential emergencies and physically capable of carrying out their duties, know about all site-specific hazards in the workplace and be able to judge when to evacuate personnel or depend on outside help (e.g. when a fire is too large for them to handle).

One or more teams should be trained in:

- Use of various types of fire extinguishers;
- First aid, including cardiopulmonary resuscitation (CPR);
- Shutdown procedures;
- Evacuation measures;
- Chemical spill control procedures;
- Use of self-contained breathing apparatus (SCBA); and
- Search and emergency rescue procedures.

Response Activities

Effective emergency communication is vital. An alternate area for a communications center other than management offices should be established in the plans, and the emergency response coordinator should operate from this center. Management should provide emergency action plans and ensure that employees know how to report emergencies data plan. An updated list of key personnel and off-duty telephone numbers should be maintained.

A system should be established for accounting for personnel once workers have been evacuated, with a person in the control center responsible for notifying police or emergency response team members of persons believed missing.

Effective security procedures, such as cordoned-off areas, can prevent unauthorized access and protect vital records and equipment. Duplicate records should be kept in off-site locations for essential accounting files, legal documents and lists of employees' relatives to be notified in case of emergency.

Training

Every employee needs to know details of the emergency action plan, including evacuation plans, alarm systems, reporting procedures for personnel, shutdown procedures and types of potential emergencies. Drills should be held at random intervals, at least annually, and include, if possible, outside police and fire authorities.

Training should be conducted initially when new employees are hired, and at least annually. Additional training is needed when new equipment, materials or processes are introduced, when procedures have been updated or revised, or when exercises show that employee performance is not adequate.

Personal Protection

Employees exposed to accidental chemical splashes, falling objects and flying particles, unknown atmospheres with inadequate oxygen or toxic gases, fires and live electrical wiring, or similar emergencies need personal protective equipment (PPE), including:

- Full body harness – 100% tie off;
- RF protection gear and detection devices;
- Safety glasses, goggles or face shields for eye protection;
- Hard hats and safety shoes;
- Properly selected and fitted respirators;
- Whole body coverings, gloves, hoods and boots; and
- Body protection for abnormal environmental conditions such as extreme temperatures.

Medical Assistance

Employers not near an infirmary, clinic or hospital should have two personnel on-site trained in first aid and CPR, have medical personnel readily available for advice and consultation, and develop written emergency medical procedures.

First aid supplies for the trained person to use, emergency phone numbers in conspicuous places near or on telephones.

Further Information

More detailed information on workplace emergencies is provided in “How to Prepare for Workplace Emergencies” available free from your local OSHA office or from: U.S. Department of Labor, Occupational Safety and Health Administration, OSHA Publications, Room S4516, Frances Perkins Building, Third Street and Constitution Avenue, NW, Washington, D.C. 20210. You can also go online to www.osha.gov to order publications.

This is one of a series of fact sheets highlighting U.S. Department of Labor programs. It is intended as a general description only and does not carry the force of legal opinion.

In addition, OSHA requires Emergency Action Plans described and contained in 1910.38

1910.38(a)

Application. An employer must have an emergency action plan whenever an OSHA standard in this part requires one. The requirements in this section apply to each such emergency action plan.

1910.38(b)

Written and oral emergency action plans. An emergency action plan must be in writing, kept in the work-place, and available to employees for review. However, an employer with 10 or fewer employees may communicate the plan orally to employees.

1910.38(c)

Minimum elements of an emergency action plan. An emergency action plan must include at a minimum:

- **1910.38(c)(1)**
Procedures for reporting a fire or other emergency;
- **1910.38(c)(2)**
Procedures for emergency evacuation, including type of evacuation and exit route assignments;
- **1910.38(c)(3)**
Procedures to be followed by employees who remain to operate critical plant operations before they evacuate;
- **1910.38(c)(4)**
Procedures to account for all employees after evacuation;
- **1910.38(c)(5)**
Procedures to be followed by employees performing rescue or medical duties; and
- **1910.38(c)(6)**
The name or job title of every employee who may be contacted by employees who need more information about the plan or an explanation of their duties under the plan.

1910.38(d)

Employee alarm system. An employer must have and maintain an employee alarm system. The employee alarm system must use a distinctive signal for each purpose and comply with the requirements in § 1910.165.

1910.38(e)

Training. An employer must designate and train employees to assist in a safe and orderly evacuation of other employees.

1910.38(f)

Review of emergency action plan. An employer must review the emergency action plan with each employee covered by the plan:

- **1910.38(f)(1)**
When the plan is developed or the employee is assigned initially to a job;
- **1910.38(f)(2)**
When the employee's responsibilities under the plan change; and
- **1910.38(f)(3)**
When the plan is changed.

[45 FR 60703, Sept. 12, 1980; FR 67 67963, Nov. 7, 2002]



Mejia International
Group Corporation

EMPLOYEE/EMPLOYER RELATIONS

Introduction	1
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Introduction

This section provides suggestions for handling issues that may arise between employers and employees, including guidelines for employee termination and a suggested policy for employee discipline.

NATE expresses that these suggestions are no more than an overview of the minimum details likely required for a company policy. You should contact a local attorney to advise you on state and local regulations regarding employee rights and employer requirements.

Hiring and Termination Suggestions

The employer should be careful to exercise diligence and discipline when hiring and terminating. Failure to do so may result in a wrongful termination case, or, at the very least, a claim by the employee for unemployment benefits, which will then likely result in an increase in the employer's UI rate for the following three years. Here are a few guidelines to use in creating your own policy:

1. Verify an applicant's information before hiring. It is better to eliminate undesirable people before they become your employees.
2. Explain all conditions of employment and expectation of employment.
3. Provide a copy of the company policy handbook and have employees sign and acknowledge that they have received these documents. Make sure that the handbook has no provision in it that constitutes a guarantee of continued employment.
4. Make all employees aware of your communications protocol, i.e., who to contact with a problem or grievance. If persons responsible for certain functions, be sure to notify employees of any new reporting structure.
5. Require all employees to sign appraisals/evaluations. (Evaluations are worthless unless supervisors give honest, objective appraisals to the employee, and document that they did so.) If an employee refuses to sign a document, be sure to make note of the date and time of the refusal.
6. Advise any employee that is not performing satisfactorily. (Without being put on notice, employees have no way of knowing that improvement is necessary.)
7. Put warnings to employees in writing to keep in their personnel file. (No specific requirement sets out the number of reprimands an employee should receive prior to termination, but an employer must be able to substantiate the fact that the employee was warned.)
8. When you discharge an employee, explain truthfully why the action was taken. (While law does not require this, it can be important to fight an unemployment claim or wrongful termination lawsuit.) Provide as much detail as possible including date, time and other factors to recall the situation accurately.
9. Ask resigning employees to submit letters of resignation specifying the reasons for leaving. This can be helpful in reflecting about ways to improve communications and setting expectations in the future.
10. If you fear reprisals for a disciplinary session or a termination, seek out admissions by the employee prior to the conference. For example, some employees, after being terminated, have claimed to be injured. If you suspect such a claim might be made, or even if you do not, it might be wise to ask the employee, in a friendly way, whether they are feeling okay, had any problems, been injured on the job, etc. If you can get admissions that they have not experienced any of these matters, they are less likely to make such claims after the termination, and afterwards, make notes regarding the discussion (tape recording would be better, but may be intimidating). Place any notes regarding exit interview, in the employee's personal file.

Except in flagrant and limited circumstances, firing an employee should not be a hasty response to frustrations of the moment. By impulsively terminating an employee without developing a record of a valid reason for such termination, a business greatly increases its chances of having a payable claim for unemployment compensation, as well as an increase in its unemployment compensation account liability under state law.

Guidelines for Employee Termination

Introduction

Prior to termination of an employee, the employer should consider consulting with legal counsel to determine whether there is sufficient factual documentation to support a termination and that such termination does not violate any state or federal employment discrimination laws or the employer's employee handbook.

Termination should be the culmination of a reasonable process of discipline with ample and documented groundwork laid along the way. When termination is finally necessary, it's too late to start thinking about taking progressive steps.

To prove misconduct, it is necessary to have more than just vague allegations of "poor attitude" or inability to get along with co-workers. It is important to be incident specific, to have supporting documentation and to be able to provide first-hand testimony about the misconduct for which the employee was terminated.

It is essential that companies have clear, written company policies. This provides ground rules for both management and labor and is helpful in pre-empting excuses of ignorance on the part of an employee.

Suggested Progressive Discipline Policy

It is the intent of the Company to enforce discipline in a fair manner. The Company's disciplinary policy may include the following actions for employee violations:

1st Infraction – Verbal warning with note in file;

2nd Infraction – Written warning signed by the employee and a note in the file;

3rd Infraction – Suspension for a given time period or termination; and

4th Infraction – Termination.

Exceptions to this 4-step progressive discipline policy described above may include, but not be limited to:

1. Falsification of employment application;
2. Use of alcohol or non-prescription drugs while on duty;
3. Vandalism of company equipment or property;
4. Theft of company equipment;
5. Loss of any license necessary to perform work;
6. Unacceptable performance during any probation period; or
7. Any verbal or physical acts which constitute harassment of an employee or other person, or which constitute an act or threat of physical violence toward an employee or other person.

ATTACHMENT C
COMPARABLE CONSTRUCTION EXPERIENCE

1) Firm's Name: MEJIA INTERNATIONAL GROUP CORP

2) Agency/Client Name: Federal Aviation Administration

3) Project Name: FLL HVAC Repairs (JOC Task Order)

4) Project Number: DTFAEN-15-D-00008/0004 5) Project Value: \$185,548.73

6) **Achieved or Anticipated Final Acceptance after January 1, 2014** Yes No

7) **Company Role:** Sub Contractor Prime Contractor

8) **Agency:** County City Private Other: Federal/Government

9) **Project Type:** Public Works Aviation Port Other: _____

10) **Percentage of Self Performed Work with the Company's Trades:** 40 %

11) **Project Type:** (Check ALL boxes that apply to the Scope of Work)

- Interior Renovation Mechanical Upgrades Electrical Upgrades Concrete Floor
- Medical Center Exterior / Interior painting Roofing Replacement/Repair Boiler Replacement
- Bituminous Paving Concrete Masonry Exterior Facade Security Camera Installation
- Canopy Replacement/Repair Elevator Repair/Replacement Escalator Repair/Replacement
- Duct bank repair / installation Outdoor light installation Fire Suppression System Installation
- Steel Erection Landscaping Fencing Earthwork / Site Work Other (Attach Additional Sheet)

12) **Client Reference for Construction:** (It is your responsibility to assure that the contact information listed is correct. If your reference can not be contacted, this project may not be considered.)

Reference's contact:

Name: Susan Newcomb Title: Contracting Officer

Telephone: 781-238-7659 Email Address: susan.newcomb@faa.gov

13) **Description of Any Problems or Major Issues Encountered During the Project (If Any) and What Was Done to Resolve:** (Attach Additional Information As Necessary)

None

ATTACHMENT C
COMPARABLE CONSTRUCTION EXPERIENCE

1) Firm's Name: MEJIA INTERNATIONAL GROUP CORP

2) Agency/Client Name: Federal Aviation Administration

3) Project Name: Whitehouse NEN (JOC Task Order)

4) Project Number: DTFAEN-15-D-00009/0003 5) Project Value: \$345,668.73

6) **Achieved or Anticipated Final Acceptance after January 1, 2014** Yes No

7) **Company Role:** Sub Contractor Prime Contractor

8) **Agency:** County City Private Other: Federal/Government

9) **Project Type:** Public Works Aviation Port Other: _____

10) **Percentage of Self Performed Work with the Company's Trades:** 90 %

11) **Project Type:** (Check ALL boxes that apply to the Scope of Work)

- Interior Renovation Mechanical Upgrades Electrical Upgrades Concrete Floor
- Medical Center Exterior / Interior painting Roofing Replacement/Repair Boiler Replacement
- Bituminous Paving Concrete Masonry Exterior Facade Security Camera Installation
- Canopy Replacement/Repair Elevator Repair/Replacement Escalator Repair/Replacement
- Duct bank repair / installation Outdoor light installation Fire Suppression System Installation
- Steel Erection Landscaping Fencing Earthwork / Site Work Other (Attach Additional Sheet)
[Structure demolition](#)

12) **Client Reference for Construction:** (It is your responsibility to assure that the contact information listed is correct. If your reference can not be contacted, this project may not be considered.)

Reference's contact:

Name: Karina Espinosa Title: Contracting Officer

Telephone: 404-305-5782 Email Address: karina.espinosa@faa.gov

13) **Description of Any Problems or Major Issues Encountered During the Project (If Any) and What Was Done to Resolve:** *(Attach Additional Information As Necessary)*

We had some delays with lighting pole supplier in delivery, but we maintained clear communication with client so the agency was informed and then could plan accordingly. We documented all communication with supplier.

ATTACHMENT C
COMPARABLE CONSTRUCTION EXPERIENCE

1) Firm's Name: MEJIA INTERNATIONAL GROUP CORP

2) Agency/Client Name: Federal Aviation Administration

3) Project Name: PBI ATCT Demolition (8a project)

4) Project Number: DTFASA-17-C-00276 5) Project Value: \$1,362,537.91

6) **Achieved or Anticipated Final Acceptance after January 1, 2014** Yes No

7) **Company Role:** Sub Contractor Prime Contractor

8) **Agency:** County City Private Other: Federal/Government

9) **Project Type:** Public Works Aviation Port Other: _____

10) **Percentage of Self Performed Work with the Company's Trades:** 80 %

11) **Project Type:** (Check ALL boxes that apply to the Scope of Work)

Interior Renovation Mechanical Upgrades Electrical Upgrades Concrete Floor

Medical Center Exterior / Interior painting Roofing Replacement/Repair Boiler Replacement

Bituminous Paving Concrete Masonry Exterior Facade Security Camera Installation

Canopy Replacement/Repair Elevator Repair/Replacement Escalator Repair/Replacement

Duct bank repair / installation Outdoor light installation Fire Suppression System Installation

Steel Erection Landscaping Fencing Earthwork / Site Work Other (Attach Additional Sheet)

[Control tower demolition, drainage system, hazmat abatement](#)

12) **Client Reference for Construction:** (It is your responsibility to assure that the contact information listed is correct. If your reference can not be contacted, this project may not be considered.)

Reference's contact:

Name: Michael Eadon Title: Contracting Officer

Telephone: (404) 305-5981 Email Address: michael.eadon@faa.gov

13) **Description of Any Problems or Major Issues Encountered During the Project (If Any) and What Was Done to Resolve:** (Attach Additional Information As Necessary)

None

ATTACHMENT C
COMPARABLE CONSTRUCTION EXPERIENCE

1) Firm's Name: MEJIA INTERNATIONAL GROUP CORP

2) Agency/Client Name: Federal Aviation Administration

3) Project Name: Shelter CERAP Replacement (JOC Task Order)

4) Project Number: DTFAEN-15-D-00010-0005 5) Project Value: \$372,221.55

6) **Achieved or Anticipated Final Acceptance after January 1, 2014** Yes No

7) **Company Role:** Sub Contractor Prime Contractor

8) **Agency:** County City Private Other: Federal/Government

9) **Project Type:** Public Works Aviation Port Other: _____

10) **Percentage of Self Performed Work with the Company's Trades:** 80 %

11) **Project Type:** (Check ALL boxes that apply to the Scope of Work)

- Interior Renovation Mechanical Upgrades Electrical Upgrades Concrete Floor
- Medical Center Exterior / Interior painting Roofing Replacement/Repair Boiler Replacement
- Bituminous Paving Concrete Masonry Exterior Facade Security Camera Installation
- Canopy Replacement/Repair Elevator Repair/Replacement Escalator Repair/Replacement
- Duct bank repair / installation Outdoor light installation Fire Suppression System Installation
- Steel Erection Landscaping Fencing Earthwork / Site Work Other (Attach Additional Sheet)
[Design and build](#)

12) **Client Reference for Construction:** (It is your responsibility to assure that the contact information listed is correct. If your reference can not be contacted, this project may not be considered.)

Reference's contact:

Name: Karina Espinosa Title: Contracting Officer

Telephone: 404-305-5782 Email Address: karina.espinosa@faa.gov

13) **Description of Any Problems or Major Issues Encountered During the Project (If Any) and What Was Done to Resolve:** (Attach Additional Information As Necessary)

None

ATTACHMENT C
COMPARABLE CONSTRUCTION EXPERIENCE

1) Firm's Name: MEJIA INTERNATIONAL GROUP CORP

2) Agency/Client Name: Federal Aviation Administration

3) Project Name: St Augustine Antenna Tower (JOC Task Order)

4) Project Number: DTFAEN-15-D-00009 - 697DCK-18-F-00018 5) Project Value: \$300,551.62

6) **Achieved or Anticipated Final Acceptance after January 1, 2014** Yes No

7) Company Role: Sub Contractor Prime Contractor

8) Agency: County City Private Other: Federal/Government

9) Project Type: Public Works Aviation Port Other: _____

10) Percentage of Self Performed Work with the Company's Trades: 90 %

11) Project Type: (Check ALL boxes that apply to the Scope of Work)

- Interior Renovation Mechanical Upgrades Electrical Upgrades Concrete Floor
- Medical Center Exterior / Interior painting Roofing Replacement/Repair Boiler Replacement
- Bituminous Paving Concrete Masonry Exterior Facade Security Camera Installation
- Canopy Replacement/Repair Elevator Repair/Replacement Escalator Repair/Replacement
- Duct bank repair / installation Outdoor light installation Fire Suppression System Installation
- Steel Erection Landscaping Fencing Earthwork / Site Work Other (Attach Additional Sheet)

12) Client Reference for Construction: (It is your responsibility to assure that the contact information listed is correct. If your reference can not be contacted, this project may not be considered.)

Reference's contact:

Name: Michael Eadon Title: Contracting Officer

Telephone: (404) 305-5981 Email Address: michael.eadon@faa.gov

13) Description of Any Problems or Major Issues Encountered During the Project (If Any) and What Was Done to Resolve: (Attach Additional Information As Necessary)

None

ATTACHMENT C
COMPARABLE CONSTRUCTION EXPERIENCE

1) Firm's Name: MEJIA INTERNATIONAL GROUP CORP

2) Agency/Client Name: Federal Aviation Administration

3) Project Name: Tampa-Orlando LLWAS install (JOC Task Order)

4) Project Number: DTFAEN-15-D-00008/0003 5) Project Value: \$464,891.90

6) **Achieved or Anticipated Final Acceptance after January 1, 2014** Yes No

7) **Company Role:** Sub Contractor Prime Contractor

8) **Agency:** County City Private Other: Federal/Government

9) **Project Type:** Public Works Aviation Port Other: _____

10) **Percentage of Self Performed Work with the Company's Trades:** 90 %

11) **Project Type:** (Check ALL boxes that apply to the Scope of Work)

- Interior Renovation Mechanical Upgrades Electrical Upgrades Concrete Floor
- Medical Center Exterior / Interior painting Roofing Replacement/Repair Boiler Replacement
- Bituminous Paving Concrete Masonry Exterior Facade Security Camera Installation
- Canopy Replacement/Repair Elevator Repair/Replacement Escalator Repair/Replacement
- Duct bank repair / installation Outdoor light installation Fire Suppression System Installation
- Steel Erection Landscaping Fencing Earthwork / Site Work Other (Attach Additional Sheet)

12) **Client Reference for Construction:** (It is your responsibility to assure that the contact information listed is correct. If your reference can not be contacted, this project may not be considered.)

Reference's contact:

Name: Marc Lemay Title: Contracting Officer

Telephone: 404-305-5745 Email Address: marc.lemay@faa.gov

13) **Description of Any Problems or Major Issues Encountered During the Project (If Any) and What Was Done to Resolve:** (Attach Additional Information As Necessary)

None

ATTACHMENT C
COMPARABLE CONSTRUCTION EXPERIENCE

1) Firm's Name: MEJIA INTERNATIONAL GROUP CORP

2) Agency/Client Name: Federal Aviation Administration

3) Project Name: Tamiami TMB Repairs (JOC Task Order)

4) Project Number: DTFAEN-15-D-00008_0006 5) Project Value: \$709,228.01

6) **Achieved or Anticipated Final Acceptance after January 1, 2014** Yes No

7) **Company Role:** Sub Contractor Prime Contractor

8) **Agency:** County City Private Other: Federal/Government

9) **Project Type:** Public Works Aviation Port Other: _____

10) **Percentage of Self Performed Work with the Company's Trades:** 70 %

11) **Project Type:** (Check ALL boxes that apply to the Scope of Work)

- Interior Renovation Mechanical Upgrades Electrical Upgrades Concrete Floor
- Medical Center Exterior / Interior painting Roofing Replacement/Repair Boiler Replacement
- Bituminous Paving Concrete Masonry Exterior Facade Security Camera Installation
- Canopy Replacement/Repair Elevator Repair/Replacement Escalator Repair/Replacement
- Duct bank repair / installation Outdoor light installation Fire Suppression System Installation
- Steel Erection Landscaping Fencing Earthwork / Site Work Other (Attach Additional Sheet)

12) **Client Reference for Construction:** (It is your responsibility to assure that the contact information listed is correct. If your reference can not be contacted, this project may not be considered.)

Reference's contact:

Name: Wilfredo Perea Title: COTR

Telephone: (404)702-9564 Email Address: wilfredo.perea@faa.gov

13) **Description of Any Problems or Major Issues Encountered During the Project (If Any) and What Was Done to Resolve:** (Attach Additional Information As Necessary)

None

ATTACHMENT C
COMPARABLE CONSTRUCTION EXPERIENCE

1) Firm's Name: MEJIA INTERNATIONAL GROUP CORP

2) Agency/Client Name: Federal Aviation Administration

3) Project Name: Whitehouse NEN (JOC Task Order)

4) Project Number: DTFAEN-15-D-00009-0006 5) Project Value: \$175,425.64

6) **Achieved or Anticipated Final Acceptance after January 1, 2014** Yes No

7) **Company Role:** Sub Contractor Prime Contractor

8) **Agency:** County City Private Other: Federal/Government

9) **Project Type:** Public Works Aviation Port Other: _____

10) **Percentage of Self Performed Work with the Company's Trades:** _____%

11) **Project Type:** (Check ALL boxes that apply to the Scope of Work)

- Interior Renovation Mechanical Upgrades Electrical Upgrades Concrete Floor
- Medical Center Exterior / Interior painting Roofing Replacement/Repair Boiler Replacement
- Bituminous Paving Concrete Masonry Exterior Facade Security Camera Installation
- Canopy Replacement/Repair Elevator Repair/Replacement Escalator Repair/Replacement
- Duct bank repair / installation Outdoor light installation Fire Suppression System Installation
- Steel Erection Landscaping Fencing Earthwork / Site Work Other (Attach Additional Sheet)

12) **Client Reference for Construction:** (It is your responsibility to assure that the contact information listed is correct. If your reference can not be contacted, this project may not be considered.)

Reference's contact:

Name: Michael Eadon Title: Contracting Officer

Telephone: (404) 305-5981 Email Address: michael.eadon@faa.gov

13) **Description of Any Problems or Major Issues Encountered During the Project (If Any) and What Was Done to Resolve:** (Attach Additional Information As Necessary)

None

EVALUATION CRITERIA

ABILITY OF PROFESSIONAL PERSONNEL

Since 2014 we have been working with the FAA in a JOC program in Florida and Puerto Rico as main contractors for these territories.

We have gained key experience handling these types of contracts and also in managing the estimating software 4Clicks and RS Means from Gordian to provide estimates for JOC Task orders.

Under JOC we have execute more than 40 projects/task orders with total satisfaction to our client and with zero incidents and no claims.

Our personnel is experienced in the management of JOC Contracts and we are confident that we'll adapt quickly to execute task orders for JOC in Broward.

Resumes are attached for key personnel that will be appointed to this solicitation.

Project coordination will vary depending on amount of Task Orders issues and complexity of them. We are prepared to hire additional relevant workforce to cover any requirement in workload that we might not handle with current resources.

Our team is used to detailed work, high standards, multitasking and professional work.

We have developed projects across Florida, and we know how to get local resources depending on each Task Order requirement.

Lizaida@dattumdevelopments.com
813-316-8900 (Cell)

PROFESSIONAL HIGHLIGHTS

Over 22 years of diversified Program and Project Management experience, highly motivated, self starter with strong interpersonal skills, leadership and organizational. Ability to learn new concepts, identify potential issues and resolve complex problems. Good communication and organizational skills, detail oriented, results-driven, critical thinker, ability to prioritize tasks, delegate and follow up, Bilingual (Spanish), Computer literate (Excel, Word, Access, Oracle, Power Point, Microsoft Project and Siterra) and successful working independently or collaboratively in a team effort.

PROFESSIONAL EXPERIENCE

Mejia International Group Corp **Program Manager (Contractor)**

Valrico, FL. 6/2017-Present

Lead JOC program with the FAA and main liaison with Contracting Officers and COTRs to coordinate communication and main project tasks.

Project Manager for the several task orders from the JOC Program in Florida and Puerto Rico.

Has led over 20 projects coordinating schedules, submittals, change orders, RFIs, permits and other tasks with the FAA to keep projects running smoothly.

Dattum Developments, LLC. **Owner/Program Manager**

Valrico, FL. 1/2010-Present

Manage the day-to-day operations of the business, overseeing financial operations, hiring of all personnel, review and approval of contracts and client management.

Program Manager for projects within the Telecommunications Industry, responsible for the Real Estate, Site Acquisition services (Leasing, Permitting and Zoning) and reporting of each project assigned to a turnkey company or directly to the carrier.

- AT&T Program Manager (LTE Modifications, New Build, Microwave, and Generator Projects)
- AT&T Construction Program Manager (LTE Modifications)
- T-Mobile UMTS Phase II Program Manager
- T-Mobile UMTS Construction Manager (Puerto Rico Market)
- Phoenix Tower International Asset Manager (Puerto Rico Market)
- GTP Asset Manager (Puerto Rico Market)
- American Tower Asset Manager (Puerto Rico Market)
- T-Mobile Mods and Generator Project (N. Florida Market) – Permitting Process
- Mejia International Group Corp. - FAA Projects (Florida and Puerto Rico Markets) – Project Management

Spire Development, Inc. **Program Manager/Sr. Project Manager**

Tampa, FL. 3/2007-3/2010

Program managed new build and modification projects for multiple wireless carriers. Provided day to day planning, support, project management, and remotely attended weekly status meetings to keep management, clients and project teams informed to ensure seamless execution and acceptance of each project.

➤ **AT&T-New Builds and Modification Projects (Generator/BAU/UMTS/LTE)-North Florida**

Managed site acquisition, zoning and permitting specialists for new builds and multiple modification projects. Reviewed suitable candidates, completed lease audits, prepared or reviewed submittal of collocation applications, leases, amendments, zoning and permit packages. Attended and conducted weekly meetings both internally to management and externally to landlords to provide detailed updates of each project. Extensively supported with items requiring high escalation and resolution to achieve defined milestones within the projected schedule and responsible for tracking billing of each project.

➤ **T-Mobile-New Builds-South Florida**

Negotiated, reviewed, prepared leases, amendments, collocation applications, zoning analysis, site walks, prepared zoning applications and permit packages for raw land and collocation sites by interacting with more than 10 different jurisdictions.

➤ **Sprint-Microwave Project-Puerto Rico**

Managed all real estate services for 98 microwave sites in the Caribbean (Vieques, Culebra, St.Thomas, St.John, St.Croix, Virgin Islands and Puerto Rico), coordinated site acquisition specialist to complete lease reviews, collocation applications, amendments and A&E firms to complete site audits and tower mappings for each site. Provided on site and remote project management services to successfully complete the project in six months and tracked all financials of the project.

➤ **Sprint-Cell Site Hardening Project (Generators-North Florida)**

Managed vendors (ACF, ASCO, TAW, Kohler) on the installation and turn-up of generators and transfer switches for over 200 sites, tracked all trouble tickets and managed over fifteen hundred punch list items.

T-Mobile USA

Tampa, FL. 8/2006-3/2007

Tower Asset Manager-Southeast Market (FL, GA, AL, MS, TN, KY, LA)

Asset manager for incoming collocations of T-Mobile towers portfolio in the Southeast Market. Developed business relationships with landlords, leasing agents and carriers to ensure success within the market, reviewed and prepared leases, amendments and reviewed construction drawings, structural reports to ensure proper installation for each site. Managed all FDOT sites and directed weekly deployment meetings with clients to meet their aggressive build schedule.

Cingular Wireless

Tampa, FL. 12/2000-8/2006

Project Manager Real Estate & Construction-North Florida

Managed and implemented real estate and construction activities of new cell sites in North Florida from leasing, zoning, permitting, regulatory, compliance, utilities and construction provided scope of work to local and turnkey vendors, forecasted milestones, reviewed and maintained budgets, aggressively monitored schedules, addressed daily issues ensuring compliance and company guidelines were met. Interacted with internal groups (RF Engineers, Implementation, Operations) and external vendors (Contractors, ILEC's and Power companies) providing solutions to obstacles to complete each project within a fast paced, changing environment. Managed all pre-construction activities, site walks, designs, construction drawing approvals, structural report reviews, bids, awarded contracts, purchased equipment, and ordered services, which include, but not limited to, surveys, title, Phase I's, NEPA's, FAA and FCC registrations. Directed weekly deployment meetings to report project deliverables and progress to senior management and single point of contact for vendors in regards to billing.

NewSouth Communications

Orlando, FL. 6/1997-12/2000

Project Specialist Team Leader-South Region

Managed orders and installations of T-1's, DS3 circuits and data products for thirty-five Account Executives in the South Region serviced existing accounts with up selling and coordinating installation of the new products sold, and primary liaison between Sales Department, Sales Engineers, Provisioning, Field Technicians and customers. Conducted weekly meetings in regional and branch offices on installation updates, process improvements, and challenges to provide to Regional Managers and VP's. Trained new Project Specialists in the region and the position also provided me with extensive involvement and continuous training with the Incubation ISP Team for our Internet product and new TBS (Telecom Business Solution) system.

LCC International, Inc./BellSouth Mobility PCS

Tampa, FL. 6/1996-4/1997

Network Utilities Specialist (Telco/Power)

Accountable for coordinating and ordering Telco (T-1's) with three LECS (Sprint, GTE and BellSouth) and Power corresponding daily with eleven power companies for the BellSouth Mobility PCS build-out project of (186) cell towers. Interacted daily with Contractors, Field Inspectors, Provisioning and Utility Engineers, coordinated and attended pre-construction site walks for each cell site. Reported status of the project in weekly deployment meetings and continually updated milestone completion and cell site information in databases for each cell site.

EDUCATION/CERTIFICATONS

Hillsborough Community College; Tampa, Florida (AA Architecture) - Present

Project Management Fundamentals Certificate (Dr. John Eggert, Ph.D)
July, 2002 (The Learning Edge Internet Course)-Cingular Wireless

People Safe RF Safety and Hazard Training, Tampa, Florida
Presented by Site Safe, Arlington, VA

National Women's Business Enterprise Certification (WBENC)
Florida State Minority Supplier Development Certification (NMSDC)
Florida Notary Public (Commission EE023584) 9-25-2018

Diego A. Mejia, MBA

8871 Wiles Road #305 • Coral Springs, FL 33067 • 787.409.6024 • dimejia14@gmail.com

BUSINESS DEVELOPMENT MANAGER

Field Manager | Business Development | Brand Awareness Campaigns/ Strategies/Development/Recognitions
Team Motivation /Training | Negotiations | LATAM Campaigns | Competitive Analysis/Market Trends | Grassroots |

Tenacious bilingual (English/Spanish) leader, utilizing outstanding organization, communication, and correspondence skills to build solid customer relationships and explore new channel development. Experience in business-to-consumer and business-to-business sales and marketing in Fortune 500 consumer goods companies, telecommunications, finance, and retail marketing. Background involves both account management and new business development. Recognized for exceeding expectations, as well as establishing, conveying, and implementing vision. Recognized for leading development of Award Winning Campaigns in Caribbean. Proven record of success launching new products and creating brand name recognition in a highly competitive marketplace in Caribbean and Latin America.

Value Added Areas of Expertise

- Strategic Sales/Marketing Skills
- Customer/Client Relationships
- Training/Employee Development
- Market Research/Campaigns
- Sponsorships/Agency Management
- Finance/Budgeting/P L's
- Multi-site/Regional Marketing Manager
- New Product Launch
- PR/Advertising Agencies/Ads/Media
- Sales, Budgeting and Forecasting
- Strategic Alliances

PROFESSIONAL EXPERIENCE

Business Development Manager / Vicepresident
Mejia International Group Corp, Coral Springs, FL

Feb 2014 to Present

Lead the Marketing and Commercial Strategy of the company to expand business opportunities with major telecommunications companies (TMobile, Sprint, At&T), major contractors (Mastec, Exi Parsons, etc...) and Federal Contracting Agencies in Florida and Puerto Rico.

Selected Accomplishments:

- Increased company revenue from \$604,000 in 2014 to \$2,874,479 in 2017.
- Maintained FAA relationship to keep a smooth workflow of projects for our organization.
- Built and delivered cases to obtain Minority Business Certification such as: Broward Health Office of Diversity Certification, CBE/SBE Broward County.
- Supported bid to obtain first federal projects for Federal Aviation Administration totaling \$1,500,000 in contracts in 2017.
- Contributed to build relationship with Mastec to be awarded more than 10 LTE projects in 2014 for North Florida.
- Participated in key federal programs as Bonding Program by DOT Office Small Business Utilization in Puerto Rico in March 2014.
- Financial management of company to make sure we have the adequate resources to maintain and grow our operations.

Marketing Manager

June 2012 to Feb 2014

Dr. Pepper Snapple Group, Boca Raton, FL

Lead the Marketing Strategy for our International Division that covers more than 40 countries worldwide and more than 10 recognized brands like Mott's, Snapple, Hawaiian Punch, Mystic, 7UP, Dr Pepper, Canada Dry, among others, to impact top and bottom line of the organization.

Selected Accomplishments:

- Developed Motts Juice promo campaign from April-May 2013 and increased sales 43% vs last year.
- Debuted Hawaiian Punch promo in Puerto Rico in conjunction with Fox animated film "Epic" partnership which preliminarily increased sales for partners 84% YOY.
- Successfully executed 2012 Latin Grammys promo with 7UP in Puerto Rico that resulted in more than 13,000 entries and a +11% sales growth in Chain Supermarket August 2012 vs. PP.
- Delivered growth for BIB (Fountain) sales for 7UP in Puerto Rico with a +2% vol YOY with "Elige tu Destino" combo promo.
- Increased Facebook fan number to more than 25% users in six months via creative and relevant content.
- Reduced label process development timeframe in more than 40% for two new projects for 7UP.
- Record launch, "Biggest in company": Spearheaded 7UP TEN launch in Puerto Rico including label development in less than three months vs. six months company average.
- Increased Mystic sales and brand awareness via promotional program in Puerto Rico by 100%!

PEPSICO, Inc., Deerfield Beach, FL March 2009 to June 2012
 Career Progression: Regional Brand Manager Caribbean July 2011 to June 2012 | Field Marketing Manager March 2009 to July 2011

Regional Brand Manager Caribbean July 2011 to June 2012
 PEPSICO, Inc., Deerfield Beach, FL

Recruited to direct the brand strategy of the non-carbonated portfolio in all Caribbean including leading brands as Tropicana, Aquafina, Sobe, Ocean Spray, and AMP.

- Supported launch of AMP energy drink in Puerto Rico with a 360 campaign that has resulted in 61% Brand awareness in five months and 20% Awareness to Trial ratio (similar to leaders in market).
- Launched new brand transition from Tropicana to Tropics in Jamaica with full activation including the launch of new Grape flavor that resulted in more than 10% sales growth YOY.
- Developed and launched Tropicana Gable Top project in Puerto Rico to provide affordable products to consumers.
- Launched Gatorade Sports Cap in Dominican Republic with integrated marketing campaign in Q2 2012.

Field Marketing Manager July 2011 to March 2009

Negotiated and directed regional marketing plans and initiatives for more than 28 islands in Caribbean West Indies with a marketing budget of \$6M+. Oversaw communications between the regional marketing team and bottler's marketing team to achieve annual operating plans.

- PepsiCo's global award "Chairman Award" for Bubbla campaign in Jamaica.
- Recognized with "Smile for Excellence" Award for outstanding business results in Jamaica market in 2011.

PROVEN SUCCESS as FIELD MARKETING MANAGER

Campaigns Launched	Region	Result
Pepsi500ml "Bubbla"	Jamaica	+29% sales growth and +59% for cola; Campaign was presented as Single Serve benchmark for Latin America Region in 2011
Market Share	Jamaica	Increased Jamaica Soft Drink market share from 67% to 72% in 2010 vs. 2009
Usain Bolt with Gatorade	Jamaica	New bottle at new price resulting in +20% sales growth in summer vs. 2010.
Global Football Worldcup/Cricket	Jamaica, Trinidad, ROC	Increased overall KPIS: TOM, P4W, Awareness and FSLM. Successfully coordinated Cricket World Cup Twenty 20 in 2010 simultaneously in 4 countries as PepsiCo sponsors that resulted in +15% sales growth vs. YAGO.
Power of One (PO1)/Fritolay	Trinidad for holidays	+15% sales increase during promo period

Marketing Manager/Owner April 2008 to March 2009
 Mejia Telecommunications, Co., Coral Springs, FL

Oversaw communication materials, business relationships, sales, and new business opportunities.

- Generated sales of steel towers and accessories for more than \$80,000 per month.
- Established agency partnership with CMA Ltd to supply telecom equipment for Puerto Rico and Florida.
- Coordinated development of company website www.mejiatelecom.com and other marketing tools, catalogs, and presentation folders; contractual agreements with major telecom companies including: Exi Parsons, FDH, and AWS.

Lending Portfolio Analyst July 2007 to April 2008
 American Express, San Juan, PR

Charged with the design and implementation of actions to increase profitability and reduce cost of the lending portfolio in Puerto Rico.

- Coordinated proactive solutions that generated more than \$200,000 in write-off savings.
- Supported spend lifting activities that generated more than \$5M in spending as "Dia y Noche de Compras" in Puerto Rico.
- Implement LOC solutions to reduce risk of lending portfolio and avoid write-offs.

EDUCATION

Masters in Business Administration - 2006

Universidad de Puerto Rico, San Juan, PR ▪ GPA: 3.93 - Major: Marketing. Graduated with Honors

Bachelor of Science, Industrial Engineering - 2002

Pontificia Universidad Javeriana, Bogota, Colombia, GPA: 3.65 - Major: Management

Cesar Ivan Mejia

5752 NW 119 Dr.

Coral Springs, FL 33076

Tel (954) 5915519 / (787) 554-3741

cmejia@mejiatelecom.com

Professional Profile:

More than 22 years of experience as project manager and project coordinator in the Telecommunication and Construction industry. Also experience as supervisor of cell site construction (collocations, Greenfield, rooftop), including civil works (earth work, foundations, concrete pads, access road, new building construction, etc), electrical works (high voltage installations, poles, transformers, low voltage installations, grounding systems, etc.), steel structures erections, RF elements installation (antennas, coax cables, etc), telecommunications systems testing projects quotations, coordinate bid walks, monitoring project expenses, implementation of safety standards (OSHA), subcontractors coordination, personnel management experience, project schedule preparation, acquisitions for new site development. .

Experience:

2008 – to present

**Mejia International Group Corp
President / Project Manager**

Coordinate all the stages of the development of new facilities for telecommunication tower sites, construction including site acquisitions, civil work, land preparation concrete works, electric work, optimization and maintenance, prepare project cost statement, establish the strategies and logistics plans for each project, produce technical reports to the customer, monitoring the project expenses accuracy, inspection of new personnel training in the safety procedures; management of projects for companies such as: Parsons, Bechtel, Mas Tec, T-Mobile, Crown Castle, Puerto Rico Government Agencies, Federal Aviation Administration, Florida Department of Transportation.

2005 – to 2008

**Nec Comm Corp, Puerto Rico .USA
Project Manager.**

Coordinate all the stages of the development of new telecommunication tower sites construction including site acquisitions, cell sites construction, optimization and maintenance, prepare project cost statement, establish the strategies and logistics plans for each project, produce technical reports to the customer, monitoring the project expenses accuracy, inspection of new personnel training in the safety procedures and RF elements installation; management of projects for companies such as: Crown Castle International ,Mountain Union Telecom, Alcatel-Lucent (Verizon Wireless, Cingular Wireless, AT&T), SunComm Wireless, NBC Int..(Telemundo), Puerto Rico Government Agencies, High Tower Investment Corp.

Cesar Ivan Mejia

5752 NW 119 Dr.
Coral Springs, FL 33076
Tel (954) 5915519 / (787) 554-3741
cmejia@mejiatelecom.com

2000 – 2005 Alpha Construction Corp, Puerto Rico.
Project Manager.

Wireless site construction coordination including: inspection of civil Works, electrical Works, RF elements installation, tower erection, sweep test traces interpretation, produce: schedule, quotation and scope of work of each project, projects expenses accuracy, training of new personnel, focus in safety procedures and handling of RF elements such as antennas, connectors, jumpers, coax cables, grounding systems, color coding, verify the accomplishment with the specifics construction standards of each customer (carrier). Supervise installation of wireless telecommunication equipment such as CDMA, TDMA, GSM, UMTS.

Management of projects for companies such as: AT&T (Bechtel), Sprint PCS, Cingular Wireless, Movistar (Open Mobil), Centennial, Procomm (Nextel, US Unwire, Crown Castle, Cell South, SBA), in Puerto Rico and continental USA.

1995 – 2000 Solutions Producers Ltda,
Project Engineer.

Provide consulting services to the manufacturing industries, design and implementation industrial equipment maintenance programs (Preventive, predictive and corrective), planning and manage expansion projects of manufacturing facilities, including civil works, electrical works, air pressure systems, plumbing systems, equipment relocation and new equipment selection and installation, inspection of new steel structures installation.

Education

1989 – 1994 EAFIT UNIVERSITY
BS Mechanical Engineer.

EAFIT UNIVERSITY
Marketing systems of engineering products and services

BECHTEL
Labor Safety Training (OSHA)

ANRITSU Site Master Certified

COMMSCOPE Certified

PROSHA, Fall protection training

Cesar Ivan Mejia

5752 NW 119 Dr.

Coral Springs, FL 33076

Tel (954) 5915519 / (787) 554-3741

cmejia@mejiatelecom.com

COMTRAIN, Climbing of telecommunication towers certified.

ERICSSON, Equipment installation certified.

OSHA 30 HOURS

Abestos 40Hours Supervisor Certification

M.O.T by FDOT

Asbestos Supervisor Certified

Other Skills:

Personnel management, computer skills, internet, Autocad, electrical skills, Microsoft Office, Blue Prints interpretation, high sense of responsibility, team work oriented, experience hands on, administrative skills, bilingual (Spanish – English).

Jose I. Torres

4794 Felicity Ln, Pace Florida, 32571
Joset37@gmail.com / 850-227-8898

Career Summary

Solution oriented Project Manager with over 20 years of construction, hands-on project management, estimation and supervision experience. A resourceful team player with strong field troubleshooting skills to progress milestones, ensuring on-time project completion adhering to OSHA safety standards. An effective process implementation specialist seeking to leverage background into a construction manager role with a progressive company.

Performance Summary

- Provide on-site coordination for all phases of construction projects, including coordinating subcontractors, material and equipment.
- Ensure that specifications are being strictly followed, and work is proceeding on schedule and within budget.
- Responsible for scheduling, inspections, quality control, and job site safety.
- Inspect and supervise construction sites.
- Perform Inspections of construction facilities in multiple trade disciplines such as: electrical, plumbing, HVAC systems, masonry, painting, carpentry and civil works.
- Ensure projects are completed in conformance to safety standards.
- Plan, design and implement all facets of projects with facility planners, contractors and subcontractors.
- Communicate with staff and respond to safety concerns regarding facilities, project completion and aesthetic improvements, as well as, inspect each step of these processes.
- Perform administrative duties; communicate and negotiate claims and repairs.
- Use proper estimation skills and manage time and material in efficient ways.
- Maintain job records, work orders, inventory supplies for machinery and tools.
- Schedule, train and evaluate routine construction processes.

<p>Technical Competencies:</p> <p>OSHA: 30 Hours Occupational Safety and Health Comtrain "Tower Climbing In-House Instructor Safety and Rescue"</p> <p>American Concrete Institute Level 2 Training</p> <p>Radiation Safety and Use of Nuclear Gauges</p> <p>PROSHA: Scaffolds Safety and Fall Protection</p> <p>Commscope Cell Reach and Extremeflex Products</p> <p>Lead 40 Hr. Abatement Supervisor Course</p> <p>FDOT Maintenance of Traffic (MOT) Advance Course</p>	<p>Technical Competencies and Core Competencies:</p> <p>Bilingual-Spanish/English</p> <p>Occupational Hazards and Safety Instruction</p> <p>Excellent communication and interpersonal skills</p> <p>First Aid and CPR AED trained</p> <p>Foundation for Safety Leadership</p> <p>Scaffold Scissor, Aerial, Boom lift, AWP 29 CFR 1926.454</p> <p>Safety in scaffold and fall protection 29 CFR 1926.L:M</p> <p>Scaffold Suspended Swing stage, boatswain chair</p> <p>ASME/ANSI B56.6 and B56.1- Rough Terrain and Industrial Forklift</p> <p>ANSI A92.5, A92.6, AWP Operator</p> <p>Skid-Steer, backhoe and compact excavator license</p>
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Jose I. Torres

Professional Experience:

Operations Project Manager-06/2013-present

Mejia International Group Corp-Coral Springs, Florida

- Operations lead of all projects and main contact for CM as support for operations.
- Analyze CM strategies to approach a project and study thoroughly RFP documents.
- Identify issues or RFIs when evaluating documents.
- Revise with CM and Estimator draft and final estimates. Revise and approve schedule.
- Support CMs to escalate issues and attend site visits when possible.
- Follow up on approval of Change Orders and provide frequent updates of each project performance.
- Distribute project award docs with CMs as part of the management team.
- Review and deliver submittals in alignment with CMs.

Construction Superintendent -07/2010-06/2013

Julian Tile and Hardwood Construction Corp- Linden, NC

- Assisted superintendent in assigning jobs and ensuring employees performed duties as directed.
- Ensured that subcontractors performed assigned jobs according to blueprint specifications.
- Ensured that jobs were performed according to OSHA guidelines.
- Scheduling and directing the daily activities of work and taking necessary action to assure that the project objectives of cleanliness, safety, price, schedule, quality and process are met.
- Submitted completion reports for field activities in a daily basis.
- In charge of quality and performance of projects including timesheets and payroll of employees.
- Assigned, supervised and inspected daily activities and ensured that project was completed in accordance to specs.
- Communicated with clients to ensure customer satisfaction.

Estimator-10/2009-06/2010

Slack Construction Corp-Ocala, Florida

- Represented the company in over 50 bids and pre-bids.
- Prepared estimates for the selection of vendors and subcontractors.
- Analyzed blueprints and other documentation to prepare time, cost, material and labor estimates.
- Conferred with engineers, architects, owners, contractors and subcontractors for change orders.
- Assessed cost effectiveness of products, projects and services; tracked actual cost of materials.
- Conducted special studies to develop and establish standard hour and related data to reduce company costs.
- Interpreted and explained plans to administrative staff, employees and subcontractors.

Operation Manager-05/2001-09/2009

Alpha Construction Corp-Caguas, PR.

- Developed project timelines and supervised daily activities of 5 crews.
- Kept track of staffing requirements and hire new talent as needed to correspond with specific duties and skill sets.
- Prepared contracts and negotiated changes to contractual agreements with architects, clients, suppliers and contractors. Conducted safety trainings and studied job specs to determine methods.
- Prepared and submitted budget estimates along with progress and cost tracking reports.

Jose I. Torres

Senior Engineer Technician-05/1991-04/2001

Geo Consult Engineering- Guaynabo, PR.

- Conducted daily material testing, analysis and reported data to supervisor.
- Used tools, equipment and applied ASTM codes to perform different soil testing.
- Operated nuclear gauges for density tests and ACI procedures for concrete testing.
- Operated and repaired testing equipment in accordance to current good manufacturing practices.
- Trained and supervised 3 employees in field operation projects.

Education

Technical Institute of Puerto Rico

San Juan, Puerto Rico, USA

A.S. Civil Engineer Technician

Polytechnic University of Puerto Rico

San Juan, Puerto Rico, USA

Completed 90 credits towards a Bachelor's Degree in Civil Engineer

CARLOS EDUARDO RIVERA RIVERA

4794 Felicity Ln, Pace, FL 32571

Tel: 850-7814091

Summary:

Teamwork, responsible and committed to fulfill projects with excellence and safety.

Education:

Bachelor in Business Administration 1984-1990

Concentration in Science Computers

Interamericana University (Rio Piedras, PR)

High School Diploma 1981- 1984

Jose Gautier Benitez School (Caguas, PR)

Professional Experience:

Mejia International Group Corp 2017 – present

Safety Officer/ Supervisor

- Responsible to monitor, track and supervise all activities related to safety on Job site.
- Supervised million-dollar project at PBI to make sure personnel and subs operated under our safety plan.
- Lead safety officer for sensitive project in SJU Airport Tower to change the control tower panels.
- Develop Safety Plan in conjunction with Superintendent for federal projects.
- Proven track record of zero accidents in the projects supervised.
- Certified in OSHA 30 hours, OSHA Foundations for Safety Leadership, OSHA Safety in Scaffold and Fall Protection, OSHA Safety in Scaffold Suspended Swinstage, OSHA Safety Scaffold Scissors, Aerial Boomlift.
- Certified in CPR/AED.

Corp SANOS (Caguas, PR) 2012 –2017

Supervisor / Safety coordinator for Mobile Unit

- Federal Heart Service Centers supervision (330 centers).

- Heart First Aid CPR AED.
- Provided training in security and hazard to employees.
- Outreach and enrollment trainings.

Turabo Ophthalmology Institute (Caguas, PR)

2007 – 2012

Administrator and Surgery Coordinator

- Responsible for surgery coordinator training.
- Heart First Aid CPR AED.
- Responsible of Payroll, Purchases, Training.

Skills:

Bilingual (Spanish/English), Customer service oriented, computer literate, adaptability to changing conditions and fast paced environments, problem-solver.

SANTIAGO BOTERO

2675 NW 145th St, Citra, FL 32113 | Tel: 786-4164508 | boterosanti@gmail.com

OBJECTIVE

To become a Project Manager and lead different construction projects across the company.

SKILLS & ABILITIES

OSHA 30 Hours, Scaffold And Fall Protection Certificate, CPR, M.O.T Certified, COMTRAIN Rigger Certification, AWP Certified and Trainer, Boomlift Operator, Scissors Lift operator, Bilingual (Spanish/English).

EXPERIENCE

- Feb 2017 -Present Construction Manager/Estimator, *Mejia International Group Corp*
- Supervise projects execution from inception to completion. Coordinate labor crews, subcontractors, personnel and suppliers. In addition, responsible to build estimates for the company and conduct site visits for federal projects.
 - Major accomplishments involve:
 - -Lead more than 10 projects with proven satisfactory records and no accidents.
 - -Handle more than \$1M in projects for the company.
 - -Estimate more than 20 projects in specialized software 4Clicks.
- Mar 2010-Feb 2017 Owner, *Tilar Inc*
- Responsibilities included the overall management of the company and design the main strategies to make the business profitable. In addition, I was the one in charge of getting the projects for the company and lead crews for project execution in commercial and residential areas.
 - Achievements:
 - -More than \$5M in projects achieved.
 - -Proven record of projects completion with no issues or accidents.
 - -Coordinate at the same time more than 25 persons at the same project.

EDUCATION

2006 High School Diploma, Hallandale Beach, FL, *Hallandale Beach High School*

José R. Enríquez Marín
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JOSÉ R. ENRÍQUEZ MARÍN, PE

70 Doncella Street, Mayagüez, PR 00680 • (787) 365 -2154
• E mail: jose_enriquezmarin@yahoo.com

SUMMARY OF QUALIFICATIONS

Professional with a proven record in Construction and Engineering. Strong experience leading multi-skilled teams to drive projects through continuous process improvements. Experienced in federal contracting and JOC Contracts. Manage the construction process, contractor relations, cost and budget issues, progress measurements and execution, as well as client expectations (including Quality Control and Safety). Detail driven with solid background in construction management and inspection, cost estimates, constructability review, construction planning and support of Industrial, Pharmaceutical, Civil, Interiors and MEP projects. Certified as accredited Qualified Commissioning Process Provider. Knowledgeable in MS Office (Word, Excel, Power Point, Outlook, Internet Explorer), Microsoft Project and Primavera scheduling software. Fully bilingual (English-Spanish).

MAJOR ACCOMPLISHMENTS

- Successfully estimated and negotiated several contract modification or claims, resulting in major cost savings to owners.
- Planned, coordinated and managed the layout, permits and building of the new Construction Management Group office; completed within time frame and budget.
- Recognized for advising on a possible building roof collapse due to a design omission and preventing millions of dollars in direct loss and legal claims.

PROFESSIONAL EXPERIENCE

Mejia International Group Corp (Coral Springs, FL)

Project Manager

October 2018 – present

Responsible for FAA JOC Projects

- Management, supervision and inspection of federal projects to make sure projects were completed in a safe and professional manner.
- Successfully overlooked key sensitive projects in federal compounds.
- Coordinate with FAA representatives for project scheduling, safety conditions and budget control.

Self – Employed

January 2017 – Oct 2018

Professional Engineering Services

- Inspection of construction work including jobsite safety.
- Field inspection, assessment of damages and related repair cost of damage properties due to Hurricane Maria effects in Puerto Rico.
- Construction cost estimates.

Tamrio, LLC, Miami, FL

Project Engineer/Superintendent

April 2016 – September 2016

Responsible for day-to-day construction and contract management of assigned projects.

- Management, coordination, supervision and inspection of construction work at jobsite, including safety and site conditions.
- Prepare and process pay applications, evaluate and process change orders and buy –

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out of equipment and material.

- Maintain projects management logs (RFI's, Change Orders, Submittals and construction documents).
- Controlling and monitoring project budget and progress schedule.

Tamrio, Inc., Mayagüez, PR

January 2014 – March 2016

Project Manager / Quality Manager

Responsible for the management or assistance of managing, all phases of project planning and executions to ensure all project success factors are met.

- Provide leadership, oversight management, delegation and coordination to the various internal and external resources that are providing services to projects.
- Manage the assigned projects, including scope, schedule, cost, safety, and quality aspect.
- Evaluate conflicts and initiate Request for Information Memos, maintain Request for Information Log and monitor status.
- Coordinate submittals with subcontractors and vendors. Maintain Project Submittal Log, monitor status and prepare monthly certificates for payment requests.
- Define and develop detailed work plans, schedules, cost estimates and status reports.
- Update project schedule in coordination with subcontractors and superintendents.

State Engineering, PSC, San Juan, PR

January 2011 - November 2012

Project Manager

Responsible for managing of several construction contracts, ensuring that Contractors execution conforms to the project plans and objectives.

- Monitoring contractor activities for compliance with contract terms, plans and specifications, environmental, health, safety and code requirements.
- Performed field investigations activities and technical support of construction projects.
- Resolution of issues identified during construction, and coordinate with government agencies as required.
- Cost Estimating, Change Order process management and claims evaluation.
- Management of project's permits and endorsements process.

Instituto Socio-Económico Comunitario, Mayagüez, PR

June 2009 - January 2010

Office Manager

Responsible for the coordination and management of the construction phase of two Housing Rehabilitation Programs.

- Supervision of office personnel consisting of two Jr. Engineers, one Buyer, one Secretary and one Driver.
- Coordinating contractors work, material buyout and delivery for all new home construction and rehabilitations.
- Assists Staff with supervision of contracted housing rehabilitation work.
- Management and preparation of Annual Operational Budget.

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CDM Caribbean Engineers P.S.C., San Juan, PR

July 2006 – April 2009

SENIOR PROJECT MANAGER

Responsible for the coordination of construction projects of the Puerto Rico Aqueduct & Sewer Authority (PRASA) Capital Improvements Program.

- Coordinated several construction projects, including the construction of a \$21 Million new Potable Water Filter Plant, Water Distribution System and a new Sanitary Sewer System.
- Supervised the project Resident Inspectors, review and process claims, change orders, application for payments, RFI, progress schedules updates and submittals.
- Maintained relationship with owner, contractors, design professionals and consultants.
- Monitored the project schedules, provided performance status reports, ensured and enforced contractual responsibilities and compliance with quality control and safety plans.

Bristol-Myers Squibb, Mayagüez, PR

November 2000 - July 2006

PROJECT ENGINEER / ASSISTANT PROJECT MANAGER (CONTRACT)

Responsible for the management of all construction related issues of assigned projects.

- Coordinated and monitored contractors / sub-contractors daily activities and performance, including compliance with safety and codes regulations.
- Developed and prepare monthly project progress summary reports.
- Conducted weekly progress reviews meetings. Coordinate, clarifies and seek solutions concerning constructions methods, scheduling, project's development and cost control management.
- Responsible for the evaluation and/or approval of submittals and change orders, revision of contractor's application for payment.
- In charged of the revision, modification and re-design of several project components and systems.
- Collaborated in development, execution, supervision and commissioning of the Finished HPLC Laboratory, Asphalt Resurface of Employees Parking and Streets, Sample Retention and documents filing areas.

Fluor Daniel Caribbean, Inc., San Juan, PR
CONTRACTS ADMINISTRATION MANAGER

2000 - 2000

North West Construction Corp., Rincón, PR
PROJECT MANAGER / ESTIMATOR

1995 - 2000

R.C. Engineering, Mayagüez, PR
PROJECT MANAGER / ESTIMATOR

1994 - 1995

J. N. Construction Corp., Mayagüez, PR
PROJECT MANAGER

1992 - 1994

Lebrón and Associates Añasco, PR
PROJECT MANAGER / ESTIMATOR

1987 - 1992

EDUCATIONAL BACKGROUND

UNIVERSITY OF PUERTO RICO, Mayagüez Campus
Bachelor in Science, Civil Engineering

TRAININGS & CERTIFICATIONS

- Management of Maintenance
- Design of Concrete Masonry Blocks Structure
- OSHA Training (30hrs)
- Introduction to Auto-Cad
- Using Interactive Computer graphics to Analyze two-dimensional frames
- Principles of Scheduling and Analysis
- Project Management
- Environmental Site Assessment for Real Estate Transactions
- Commissioning Process for Building Assemblies & Systems
- Commissioning Process for Delivering Quality Constructed Buildings
- Simplified Design of Concrete Structures
- Basic of Concrete Repair, Part I
- Construction Management Training and Sustainability



Solicitation: PNC2119543R1

EVALUATION CRITERIA

PROJECT APPROACH

General Understanding of JOC Program

We have over 5 years of experience as JOC Contractors for the Federal Aviation Administration (FAA) in Florida and Puerto Rico.

We have executed over 40 projects resulting from Task Order of JOC Contracts. All projects completed successfully, with no accidents and with zero claims.

We understand all the concept for Priced and Non-Priced items and all the supporting documentation of estimates.

Based on our experience in JOC Programs, it is critical that JOC Contractor and client develop a close relationship from design to execution, so each task order is successfully completed.

It is very important to manage thoroughly the cost estimating tool such as RS Means in order to assign effectively the cost for each task involved in each contract.

Our personnel is oriented to teamwork approach and we have helped our clients to develop Scope of Works detailed to properly obtain an accurate estimate that reflects the most detail possible.

In case engineering is required, we have a network of local companies that we have worked before to deliver engineering needs.

This JOC Program with the FAA is estimated to finish on June 2020.

Subcontractor management

We have in place processes to identify and select local subcontractors to execute very specialized trades (ie HVAC, Elevators, Roofing, etc...).

Each subcontractor that will be assigned to this project will be carefully evaluated and approved from Broward County before starting. We review Certificate of Insurances, Licenses and Qualifications before engaging in any activity. We draft agreements with subs to make sure we build serious and responsible commitment to execute the projects.

We strive to execute each project with our own resources averaging 70% self-perform and rest with subs.

For this JOC Program with Broward we expect to execute with our own resources:

- Civil Works
- Earthwork/ Excavations
- Demolition
- Painting
- Flooring
- Electrical work
- Plumbing
- Steel structures installation
- Interior work
- Concrete work
- Site work
- Fencing
- Remodeling

We'll have available to this Project the following personal (we can increase this quantity depending on amount of task orders awarded with local personnel):

- 2 foreman
- 2 carpenter
- 10 skilled labors

Equipment:

- Excavators
- Trailers
- Skid Steer
- Small tools and equipment
- Safety equipment

Safety Plan

Overall, we have a Master Safety Plan that applies to our operations.

For each project, we develop the following specific :

- Emergency Plan
- Weather and Preparedness plan

The person in charge of this is Mr Carlos Rivera, Safety Officer that will ensure plans are according to task order needs and monitor safety and quality performance.

He is trained to identify dangerous situations and take the proper actions to prevent and mitigate these potential hazards. He is OSHA 30 Hours certified and other key trainings.

Past Experience

We have more than 100 years of combined experience in commercial.

We are attaching with these proposals the 3 Vendor Reference Verification Form for JOC Contracts and 8 projects of experience as reference for the past 5 years.

Also an entire list of other projects for the last 5 years.

Financial Ability

Bonding letter (see attached)

To perform the work, we count with the following resources:

- BBT Line of Credit available \$100,000.00
- Regions Bank- Line of Credit available \$250,000.00
- Company credit cards with available limit \$200,000.00
- We have several key suppliers with Credit Net 30 so we can manage effectively our cash flow.
- Current cash on hand \$300,000.00.
- We have a line of credit with KUBOTA for heavy equipment.

Along company history, we have always paid our subcontractors and suppliers on time with no claims or liens executed against us.

PROPOSAL BOND

This form must be completed and submitted with the Vendor's submittal. Failure to comply will deem vendor non-responsive.

BY THIS BOND, we Mejia International Group Corp, as Principal, hereinafter called VENDOR, and FCCI Insurance Company, as Surety, are bound to the Board of County Commissioners of Broward County, Florida, as Obligee, hereinafter called County, in the Amount of Five Thousand Dollars and 00/100 (\$ 5,000.00) for the payment whereof VENDOR and surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally.

WHEREAS, the County is seeking to contract with a firm (registered with the Florida Department of State, Division of Corporations) for the County agencies; and

WHEREAS, the County is utilizing a request for proposals (RFP) solicitation process for this project and VENDOR in response to Solicitation No. PNC2119543R1 agrees and is bound that:

The CONDITION OF THIS BOND is that if:

VENDOR submits a timely proposal in response to the County's solicitation process; THEN THIS BOND WILL REMAIN IN FULL FORCE AND EFFECT UNTIL CONTRACT AWARD. If the VENDOR is awarded the Agreement, but fails to enter into the Agreement, (including providing a Performance and Payment Guaranty, evidence of insurance, and other requirements stated herein) then the VENDOR and surety, jointly and severally, shall be liable to the County for the full sum herein stated which shall be due and payable to the County immediately upon demand of the County, in good and lawful money of the United States of America; as liquidated damages for failure thereof of said VENDOR; OTHERWISE THE BOND SHALL REMAIN IN FULL FORCE AND EFFECT.

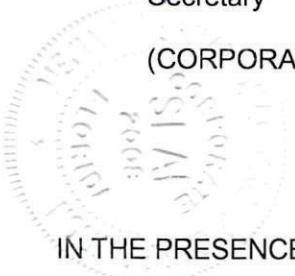
No right of action shall accrue on this bond to or for the use of any person or corporation other than County named herein; and

In the event suit is brought upon this bond by the County, surety shall pay reasonable attorneys' fees and costs incurred by the County in such suit.

Signed and sealed this 20th day of November, 2019.

WITNESSES:

[Signature]
Secretary
(CORPORATE SEAL)



Meija International Group Corp
(Name of Corporation)

By [Signature] PRESIDENT
(Signature and Title)

CSAR MEJIA / PRESIDENT
(Type Name and Title Signed Above)

IN THE PRESENCE OF:

[Signature]
Genesis Florian - Witness

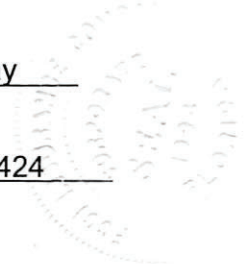
SURETY COMPANY: FCCI Insurance Company

By [Signature]
Agent and Attorney-in-Fact Michael A. Bonet

Address: 6300 University Parkway
(Street)

Sarasota, FL 34240-8424
(City/State/Zip Code)

Telephone No.: 800-226-3224





More than a policy. A promise.

GENERAL POWER OF ATTORNEY

Know all men by these presents: That the FCCI Insurance Company, a Corporation organized and existing under the laws of the State of Florida (the "Corporation") does make, constitute and appoint:

Roy V Fabry; Michael A Bonet

Each, its true and lawful Attorney-In-Fact, to make, execute, seal and deliver, for and on its behalf as surety, and as its act and deed in all bonds and undertakings provided that no bond or undertaking or contract of suretyship executed under this authority shall exceed the sum of (not to exceed \$10,000,000.00): \$10,000,000.00

This Power of Attorney is made and executed by authority of a Resolution adopted by the Board of Directors. That resolution also authorized any further action by the officers of the Company necessary to effect such transaction.

The signatures below and the seal of the Corporation may be affixed by facsimile, and any such facsimile signatures or facsimile seal shall be binding upon the Corporation when so affixed and in the future with regard to any bond, undertaking or contract of surety to which it is attached.

In witness whereof, the FCCI Insurance Company has caused these presents to be signed by its duly authorized officers and its corporate seal to be hereunto affixed, this 31st day of January, 2019.

Attest: Craig Johnson
Craig Johnson, President
FCCI Insurance Company

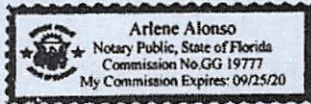


Cina Welch
Cina Welch, EVP, General Counsel,
Chief Audit & Compliance Officer, Secretary
FCCI Insurance Company

State of Florida
County of Sarasota

Before me this day personally appeared Craig Johnson, who is personally known to me and who executed the foregoing document for the purposes expressed therein.

My commission expires: 9/25/2020

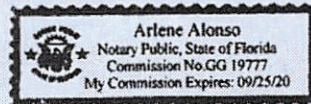


Arlene Alonso
Notary Public

State of Florida
County of Sarasota

Before me this day personally appeared Cina Welch, who is personally known to me and who executed the foregoing document for the purposes expressed therein.

My commission expires: 9/25/2020



Arlene Alonso
Notary Public

CERTIFICATE

I, the undersigned Secretary of FCCI Insurance Company, a Florida Corporation, DO HEREBY CERTIFY that the foregoing Power of Attorney remains in full force and has not been revoked; and furthermore that the February 24, 2011 Resolution of the Board of Directors, referenced in said Power of Attorney, is now in force.

Dated this 20th day of November, 2019

Cina Welch
Cina Welch, EVP, General Counsel,
Chief Audit & Compliance Officer, Secretary



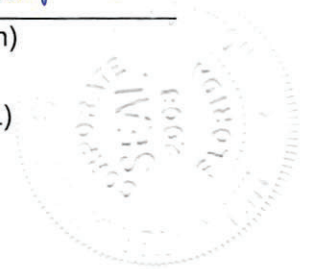
CERTIFICATE AS TO CORPORATE PRINCIPAL

I, DIEGO MEJIA, certify that I am the Secretary of the corporation named as Principal in the foregoing Proposal Bond; that CESAR MEJIA, who signed the Bond on behalf of the Principal, was then PRESIDENT of said corporation; that I know his/her signature; and his/her signature thereto is genuine; and that said Bond was duly signed, sealed and attested to on behalf of said corporation by authority of its governing body.

[Signature] (Seal) as Secretary of

MEJIA INTERNATIONAL GROUP CORP
(Name of Corporation)

(SEAL)



STATE OF FLORIDA)
) SS.
COUNTY OF BROWARD)

Before me, a Notary Public duly commissioned, qualified and acting personally, appeared Diego Mejia to me well known, who being by me first duly sworn upon oath says that he/she has been authorized to execute the foregoing Proposal Bond on behalf of VENDOR named therein in favor of COUNTY.

Subscribed and Sworn to before me this 22nd day of November, 2019.

My commission expires:
05/20/2023

[Signature]
Notary Public, State of Florida at Large



Bonded by [Signature]

José R. Enríquez Marín
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JOSÉ R. ENRÍQUEZ MARÍN, PE

70 Doncella Street, Mayagüez, PR 00680 • (787) 365 -2154
• E mail: jose_enriquezmarin@yahoo.com

SUMMARY OF QUALIFICATIONS

Professional with a proven record in Construction and Engineering. Strong experience leading multi-skilled teams to drive projects through continuous process improvements. Experienced in federal contracting and JOC Contracts. Manage the construction process, contractor relations, cost and budget issues, progress measurements and execution, as well as client expectations (including Quality Control and Safety). Detail driven with solid background in construction management and inspection, cost estimates, constructability review, construction planning and support of Industrial, Pharmaceutical, Civil, Interiors and MEP projects. Certified as accredited Qualified Commissioning Process Provider. Knowledgeable in MS Office (Word, Excel, Power Point, Outlook, Internet Explorer), Microsoft Project and Primavera scheduling software. Fully bilingual (English-Spanish).

MAJOR ACCOMPLISHMENTS

- Successfully estimated and negotiated several contract modification or claims, resulting in major cost savings to owners.
- Planned, coordinated and managed the layout, permits and building of the new Construction Management Group office; completed within time frame and budget.
- Recognized for advising on a possible building roof collapse due to a design omission and preventing millions of dollars in direct loss and legal claims.

PROFESSIONAL EXPERIENCE

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Project Manager

October 2018 – present

Responsible for FAA JOC Projects

- Management, supervision and inspection of federal projects to make sure projects were completed in a safe and professional manner.
- Successfully overlooked key sensitive projects in federal compounds.
- Coordinate with FAA representatives for project scheduling, safety conditions and budget control.

Self – Employed

January 2017 – Oct 2018

Professional Engineering Services

- Inspection of construction work including jobsite safety.
- Field inspection, assessment of damages and related repair cost of damage properties due to Hurricane Maria effects in Puerto Rico.
- Construction cost estimates.

Tamrio, LLC, Miami, FL

Project Engineer/Superintendent

April 2016 – September 2016

Responsible for day-to-day construction and contract management of assigned projects.

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- Prepare and process pay applications, evaluate and process change orders and buy –

José R. Enríquez Marín
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out of equipment and material.

- Maintain projects management logs (RFI's, Change Orders, Submittals and construction documents).
- Controlling and monitoring project budget and progress schedule.

Tamrio, Inc., Mayagüez, PR

January 2014 – March 2016

Project Manager / Quality Manager

Responsible for the management or assistance of managing, all phases of project planning and executions to ensure all project success factors are met.

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- Evaluate conflicts and initiate Request for Information Memos, maintain Request for Information Log and monitor status.
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January 2011 - November 2012

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- Performed field investigations activities and technical support of construction projects.
- Resolution of issues identified during construction, and coordinate with government agencies as required.
- Cost Estimating, Change Order process management and claims evaluation.
- Management of project's permits and endorsements process.

Instituto Socio-Económico Comunitario, Mayagüez, PR

June 2009 - January 2010

Office Manager

Responsible for the coordination and management of the construction phase of two Housing Rehabilitation Programs.

- Supervision of office personnel consisting of two Jr. Engineers, one Buyer, one Secretary and one Driver.
- Coordinating contractors work, material buyout and delivery for all new home construction and rehabilitations.
- Assists Staff with supervision of contracted housing rehabilitation work.
- Management and preparation of Annual Operational Budget.

José R. Enríquez Marín
Page 4 of 4

CDM Caribbean Engineers P.S.C., San Juan, PR

July 2006 – April 2009

SENIOR PROJECT MANAGER

Responsible for the coordination of construction projects of the Puerto Rico Aqueduct & Sewer Authority (PRASA) Capital Improvements Program.

- Coordinated several construction projects, including the construction of a \$21 Million new Potable Water Filter Plant, Water Distribution System and a new Sanitary Sewer System.
- Supervised the project Resident Inspectors, review and process claims, change orders, application for payments, RFI, progress schedules updates and submittals.
- Maintained relationship with owner, contractors, design professionals and consultants.
- Monitored the project schedules, provided performance status reports, ensured and enforced contractual responsibilities and compliance with quality control and safety plans.

Bristol-Myers Squibb, Mayagüez, PR

November 2000 - July 2006

PROJECT ENGINEER / ASSISTANT PROJECT MANAGER (CONTRACT)

Responsible for the management of all construction related issues of assigned projects.

- Coordinated and monitored contractors / sub-contractors daily activities and performance, including compliance with safety and codes regulations.
- Developed and prepare monthly project progress summary reports.
- Conducted weekly progress reviews meetings. Coordinate, clarifies and seek solutions concerning constructions methods, scheduling, project's development and cost control management.
- Responsible for the evaluation and/or approval of submittals and change orders, revision of contractor's application for payment.
- In charged of the revision, modification and re-design of several project components and systems.
- Collaborated in development, execution, supervision and commissioning of the Finished HPLC Laboratory, Asphalt Resurface of Employees Parking and Streets, Sample Retention and documents filing areas.

Fluor Daniel Caribbean, Inc., San Juan, PR
CONTRACTS ADMINISTRATION MANAGER

2000 - 2000

North West Construction Corp., Rincón, PR
PROJECT MANAGER / ESTIMATOR

1995 - 2000

R.C. Engineering, Mayagüez, PR
PROJECT MANAGER / ESTIMATOR

1994 - 1995

J. N. Construction Corp., Mayagüez, PR
PROJECT MANAGER

1992 - 1994

Lebrón and Associates Añasco, PR
PROJECT MANAGER / ESTIMATOR

1987 - 1992

EDUCATIONAL BACKGROUND

UNIVERSITY OF PUERTO RICO, Mayagüez Campus
Bachelor in Science, Civil Engineering

TRAININGS & CERTIFICATIONS

- Management of Maintenance
- Design of Concrete Masonry Blocks Structure
- OSHA Training (30hrs)
- Introduction to Auto-Cad
- Using Interactive Computer graphics to Analyze two-dimensional frames
- Principles of Scheduling and Analysis
- Project Management
- Environmental Site Assessment for Real Estate Transactions
- Commissioning Process for Building Assemblies & Systems
- Commissioning Process for Delivering Quality Constructed Buildings
- Simplified Design of Concrete Structures
- Basic of Concrete Repair, Part I
- Construction Management Training and Sustainability

SANTIAGO BOTERO - Superintendent

2675 NW 145th St, Citra, FL 32113 | Tel: 786-4164508 | boterosanti@gmail.com

OBJECTIVE

To become a Project Superintendent and lead different construction projects across the company.

SKILLS & ABILITIES

OSHA 30 Hours, Scaffold And Fall Protection Certificate, CPR, M.O.T Certified, COMTRAIN Rigger Certification, AWP Certified and Trainer, Boomlift Operator, Scissors Lift operator, Bilingual (Spanish/English), JOC Contracting and RS Means (4 Clicks Software management)

EXPERIENCE

- Feb 2017 -Present *Construction Manager/Estimator, Mejia International Group Corp*
- Supervise projects execution from inception to completion. Coordinate labor crews, subcontractors, personnel and suppliers. In addition, responsible to build estimates for the company and conduct site visits for federal projects through RS Means and 4 Clicks software.
 - Major accomplishments involve:
 - -Lead more than 15 projects with proven satisfactory records and no accidents.
 - -Handle more than \$1M in projects for the company.
 - -Estimate more than 30 projects in specialized software 4Clicks and RS Means for JOC.
- Mar 2010-Feb 2017 *Owner, Tilar Inc*
- Responsibilities included the overall management of the company and design the main strategies to make the business profitable. In addition, I was the one in charge of getting the projects for the company and lead crews for project execution in commercial and residential areas.
 - Achievements:
 - -More than \$5M in projects achieved.
 - -Proven record of projects completion with no issues or accidents.
 - -Coordinate at the same time more than 25 persons at the same project.

EDUCATION

2006 High School Diploma, Hallandale Beach, FL, *Hallandale Beach High School*

ATTACHMENT A
KEY PERSONNEL
PROJECT MANAGER

1) Firm's Name: MEJIA INTERNATIONAL GROUP CORP

2) Project Manager's Name : JOSE ENRIQUEZ

3) Type of Key Personnel: Primary Assigned to the Contract Full Time Additional Staff on As-Needed Basis

4) # of Years with the Firm: 1.2

5) # of Years Experience with Job Order Contracting: 5

6) Client Type Experience & # of Years Experience: Years 35

Public Works Aviation Port Other: highways, bridges, structures, etc...

7) Experience: (Check ALL boxes that apply)

- Interior Renovation Mechanical Upgrades Electrical Upgrades Concrete Floor
- Medical Center Exterior / Interior painting Roofing Replacement/Repair Boiler Replacement
- Bituminous Paving Concrete Masonry Exterior Facade Security Camera Installation
- Canopy Replacement/Repair Elevator Repair/Replacement Escalator Repair/Replacement
- Duct bank repair / installation Outdoor light installation Fire Suppression System Installation
- Steel Erection Landscaping Fencing Earthwork / Site Work Other (Attach Additional Sheet)

8) **ATTACH RESUME** Yes

9) Licenses, Training, and Industry Recognized Certifications. List any and all State and County Licenses, Specialty Training, and Industry Recognized Certifications

OSHA 30 hours

Simplified design of concrete structures

Basic of Concrete Repair, Part I

Construction Management training and sustainability

Professional Engineer (PE)

Principles of scheduling and analysis

Management of maintenance

Introduction to Autocad

ATTACHMENT B
KEY PERSONNEL
GENERAL SUPERINTENDENT

1) Firm's Name: MEJIA INTERNATIONAL GROUP CORP

2) General Superintendent's Name : Santiago Botero

3) Type of Key Personnel: Primary Assigned to the Contract Full Time Additional Staff on As-Needed Basis

4) # of Years with the Firm: 3

5) # of Years Experience with Job Order Contracting: 3

6) Client Type Experience & # of Years Experience: Years 14

Public Works Aviation Port Other: Residential/ Commercial se

7) Experience: (Check ALL boxes that apply)

- Interior Renovation Mechanical Upgrades Electrical Upgrades Concrete Floor
- Medical Center Exterior / Interior painting Roofing Replacement/Repair Boiler Replacement
- Bituminous Paving Concrete Masonry Exterior Facade Security Camera Installation
- Canopy Replacement/Repair Elevator Repair/Replacement Escalator Repair/Replacement
- Duct bank repair / installation Outdoor light installation Fire Suppression System Installation
- Steel Erection Landscaping Fencing Earthwork / Site Work Other (Attach Additional Sheet)

8) **ATTACH RESUME** Yes

9) Licenses, Training, and Industry Recognized Certifications. List any and all State and County Licenses, Specialty Training, and Industry Recognized Certifications

Osha 30 hours

Scaffold Scissors

Authorized Climber (comtrain)

Aerial and Boom lift

FDOT MOT advanced

Scaffold Suspended Swingstage

JOC Estimating software trained (4Clicks-Gordian)

Safety Scaffold and Fall Protection

CPR

Summary Sheet – Vendor's Submittal

Solicitation Name: PNC2119543R1, Job Order Contract

Vendor should complete below form and submit with the solicitation response. If not submitted with solicitation response, it must be submitted within three business days of County's request. Failure to timely submit may affect Vendor's evaluation.

Firm Name: MEJIA INTERNATIONAL GROUP CORP

In accordance with RFQ No. PNC2119543R1, Job Order Contract, Broward County is seeking to shortlist qualified contractors for a Job Order Contract Program. A Job Order Contract is an indefinite quantity construction contract pursuant to which the Contractor may perform an ongoing series of individual projects at different locations throughout the County.

This is Step One of a Two-Step procurement. In Step One, the County will qualify (shortlist) contractors by group. In Step Two, the County will issue bids to shortlisted contractors; recommended contractors for award will be based on low responsive, responsible bids by group, up to the recommended number of contracts by group. The County anticipates awarding separate contracts for Public Works, Aviation, and Port Everglades Departments.

Refer to solicitation for additional detail by group and any requirements.

Check below what areas your firm is submitting qualifications for Step One: (Vendor may select more than one based on submitted experience and certifications).

Aviation:

SBE CBE CBE Reserve Goals

Port Everglades:

SBE CBE CBE Reserve Goals

Public Works:

SBE CBE CBE Reserve Goals

Note – the Office of Economic and Small Business Development will verify certification status for SBE and CBE contracts (for responsibility requirements).

Vendor Reference Verification Form

Vendor is required to submit completed Reference Verification Forms for previous projects referenced in its submittal. Vendor should provide the **Vendor Reference Verification Form** to its reference organization/firm to complete and return to the Vendor's attention. Vendor should submit the completed Vendor Reference Form with its response by the solicitation's deadline. The County will verify references provided as part of the review process. Provide a minimum of three (3) non-Broward County Board of County Commissioners' references.



Vendor Reference Verification Form

Broward County Solicitation No. and Title:

PNC2119543R1 - Request For Qualifications - Job Order Contract

Reference for: **Mejia International Group Corp**

Organization/Firm Name providing reference:

Federal Aviation Administration

Contact Name: **Kamili Hitchmon**

Title: **Civil Engineer**

Reference date:

Contact Email: **Kamili.Hitchmon@faa.gov**

Contact Phone: **404-3057248**

Name of Referenced Project: **Orlando-Tampa LLWAS installation**

Contract No.

Date Services Provided:

Project Amount:

DTFAEN-15-D-00008/0003

06/06/2016

to

01/31/2017

\$ 464,891.90

Vendor's role in Project: Prime Vendor Subconsultant/Subcontractor

Would you use this vendor again? Yes No If No, please specify in Additional Comments (below).

Description of services provided by Vendor:

Install LLWAS poles at TPA and MCO locations for air traffic control. Work included repairs and upgrades to the system too.

Please rate your experience with the referenced Vendor:

Needs Improvement Satisfactory Excellent Not Applicable

	Needs Improvement	Satisfactory	Excellent	Not Applicable
1. Vendor's Quality of Service				
a. Responsive	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Accuracy	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Deliverables	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Vendor's Organization:				
a. Staff expertise	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Professionalism	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Turnover	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Timeliness of:				
a. Project	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Deliverables	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4. Project completed within budget	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5. Cooperation with:				
a. Your Firm	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Subcontractor(s)/Subconsultant(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Regulatory Agency(ies)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Additional Comments: (provide on additional sheet if needed)

THIS SECTION FOR COUNTY USE ONLY

Verified via: EMAIL VERBAL Verified by: _____ Division: _____ Date: _____

Vendor Reference Verification Form

Vendor is required to submit completed Reference Verification Forms for previous projects referenced in its submittal. Vendor should provide the **Vendor Reference Verification Form** to its reference organization/firm to complete and return to the Vendor's attention. Vendor should submit the completed Vendor Reference Form with its response by the solicitation's deadline. The County will verify references provided as part of the review process. Provide a minimum of three (3) non-Broward County Board of County Commissioners' references.



Vendor Reference Verification Form

Broward County Solicitation No. and Title:

PNC2119543R1 - Request For Qualifications - Job Order Contract

Reference for: Mejia International Group Corp

Organization/Firm Name providing reference:

Federal Aviation Administration

Contact Name: Michael Eadon Title: Contracting Officer Reference date: 11/18/2019

Contact Email: michael.eadon@faa.gov Contact Phone: (404) 305-5981

Name of Referenced Project: St Augustine Towers

Contract No. 697DCK-18-F-00018 Date Services Provided: 10/22/2018 to 05/30/2019 Project Amount: \$ 300,551.62

Vendor's role in Project: Prime Vendor Subconsultant/Subcontractor

Would you use this vendor again? Yes No If No, please specify in Additional Comments (below).

Description of services provided by Vendor:

Installed 4 x 70ft towers supplied by FAA. Contractor did conduits, grounding, foundations, towers erections, civil works. Removal and demolition of existing structures.

Please rate your experience with the referenced Vendor:

Needs Improvement Satisfactory Excellent Not Applicable

	Needs Improvement	Satisfactory	Excellent	Not Applicable
1. Vendor's Quality of Service				
a. Responsive	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Accuracy	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Deliverables	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Vendor's Organization:				
a. Staff expertise	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Professionalism	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Turnover	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Timeliness of:				
a. Project	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Deliverables	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4. Project completed within budget	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5. Cooperation with:				
a. Your Firm	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Subcontractor(s)/Subconsultant(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Regulatory Agency(ies)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Additional Comments: (provide on additional sheet if needed)

Mejia International Group Corps have performed several construction contract requirements for the FAA, under the rating Contracting Officer, Michael Eadon and have performed/completed them successfully with favorable performance ratings/comments. Some contracts may be pending final payment and/or contract closeout.

THIS SECTION FOR COUNTY USE ONLY

Verified via: EMAIL VERBAL Verified by: _____ Division: _____ Date: _____

Vendor Reference Verification Form

Vendor is required to submit completed Reference Verification Forms for previous projects referenced in its submittal. Vendor should provide the **Vendor Reference Verification Form** to its reference organization/firm to complete and return to the Vendor's attention. Vendor should submit the completed Vendor Reference Form with its response by the solicitation's deadline. The County will verify references provided as part of the review process. Provide a minimum of three (3) non-Broward County Board of County Commissioners' references.



Vendor Reference Verification Form

Broward County Solicitation No. and Title:

PNC2119543R1 - Request For Qualifications - Job Order Contract

Reference for: **Mejia International Group Corp**

Organization/Firm Name providing reference:
Federal Aviation Administration

Contact Name: **Marc LeMay** Title: **Contracting Officer** Reference date: **11/14/2019**

Contact Email: **marc.lemay@faa.gov** Contact Phone: **404-305-5745**

Name of Referenced Project: **JOC - HVAC Aguadilla PR**

Contract No. **DTFAEN-15-D-00010/697D** Date Services Provided: **10/29/2018** to **12/06/2018** Project Amount: **\$ 232,774.62**

Vendor's role in Project: Prime Vendor Subconsultant/Subcontractor

Would you use this vendor again? Yes No If No, please specify in Additional Comments (below).

Description of services provided by Vendor:

The demo and replacement of 2 – 20 ton Condenser Units, and total replacement of 2 each 1 ton mini-split systems

Please rate your experience with the referenced Vendor:

Needs Improvement Satisfactory Excellent Not Applicable

	Needs Improvement	Satisfactory	Excellent	Not Applicable
1. Vendor's Quality of Service				
a. Responsive	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Accuracy	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Deliverables	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Vendor's Organization:				
a. Staff expertise	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Professionalism	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Turnover	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Timeliness of:				
a. Project	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Deliverables	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4. Project completed within budget	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5. Cooperation with:				
a. Your Firm	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Subcontractor(s)/Subconsultant(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Regulatory Agency(ies)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Additional Comments: (provide on additional sheet if needed)

Mejia International Group Corp. has performed several projects for the FAA with stellar results and I HIGHLY recommend this company. I cannot say enough praise about this company; all their employees from top to bottom are dedicated to producing high quality results. Mejia International Group Corp. is a fantastic company. They exemplify integrity and selflessness while offering competitive rates.

THIS SECTION FOR COUNTY USE ONLY

Verified via: EMAIL VERBAL Verified by: _____ Division: _____ Date: _____



OFFICE OF ECONOMIC AND SMALL BUSINESS DEVELOPMENT

Governmental Center Annex

115 S. Andrews Avenue, Room A680 • Fort Lauderdale, Florida 33301 • 954-357-6400 • FAX 954-357-5674

May 2, 2019

Mr. Diego Mejia
MEJIA INTERNATIONAL GROUP CORP.
 P.O. Box 8504
 Coral Springs, Florida 33075

Dear Mr. Mejia:

The Broward County Office of Economic and Small Business Development (OESBD) is pleased to announce that your firm's **County Business Enterprise (CBE)** and **Small Business Enterprise (SBE)** certifications have been renewed.

Your firm's certifications are continuing from your anniversary date but are contingent upon the firm verifying its eligibility annually through this office. You will be notified in advance of your obligation to continue eligibility in a timely fashion. However, the responsibility to ensure continued certification is yours. Failure to document your firm's continued eligibility for the CBE and SBE programs within **thirty (30) days** from your anniversary may result in the expiration of your firm's certifications. Should you continue to be interested in certification after it has expired, you will need to submit a new application, and all required supporting documentation for review.

To review current Broward County Government bid opportunities, visit: www.broward.org/Purchasing and click on "Current Solicitations and Results." Also, from this website, you can log into your firm's profile in BidSync to ensure you have added all appropriate classification codes. Bid opportunities over \$3,500 will be advertised to vendors via e-mail and according to classification codes, so please ensure that both the Purchasing Division and OESBD are apprised of your current e-mail address.

Your primary certification group is: **Construction Services**. This is also how your listing in our directory will read. You may access your firm's listing by visiting the Office of Economic and Small Business Development Directory, located on the internet at: www.broward.org/EconDev and click on "Certified Firm Directories."

Your firm may compete for, and perform work on Broward County projects in the following areas:

NAICS CODE: 236116, 236210, 236220, 237110, 237130, 237990

We look forward to working with you to achieve greater opportunities for your business through county procurement.

Sincerely,

A handwritten signature in blue ink, appearing to read "Sandy-Michael McDonald".

Sandy-Michael McDonald, Director
 Office of Economic and Small Business Development

Cert Agency: BC-CBE SBE
ANNIVERSARY DATE: June 19th

Supplier: **MEJIA INTERNATIONAL GROUP CORP**

**Standard Instructions to Vendors
Request for Proposals, Request for Qualifications, or Request for Letters of Interest**

Vendors are instructed to read and follow the instructions carefully, as any misinterpretation or failure to comply with instructions may lead to a Vendor's submittal being rejected.

Vendor MUST submit its solicitation response electronically and MUST confirm its submittal in order for the County to receive a valid response through BidSync. Refer to the [Purchasing Division website](#) or contact BidSync for submittal instructions.

A. Responsiveness Criteria:

In accordance with Broward County Procurement Code Section 21.8.b.65, a Responsive Bidder [Vendor] means a person who has submitted a proposal which conforms in all material respects to a solicitation. The solicitation submittal of a responsive Vendor must be submitted on the required forms, which contain all required information, signatures, notarizations, insurance, bonding, security, or other mandated requirements required by the solicitation documents to be submitted at the time of proposal opening.

Failure to provide the information required below at the time of submittal opening may result in a recommendation Vendor is non-responsive by the Director of Purchasing. The Selection or Evaluation Committee will determine whether the firm is responsive to the requirements specified herein. The County reserves the right to waive minor technicalities or irregularities as is in the best interest of the County in accordance with Section 21.30.f.1(c) of the Broward County Procurement Code.

Below are standard responsiveness criteria; refer to **Special Instructions to Vendors**, for Additional Responsiveness Criteria requirement(s).

1. Lobbyist Registration Requirement Certification

Refer to **Lobbyist Registration Requirement Certification**. The completed form should be submitted with the solicitation response but must be submitted within three business days of County's request. Vendor may be deemed non-responsive for failure to fully comply within stated timeframes.

2. Addenda

The County reserves the right to amend this solicitation prior to the due date. Any change(s) to this solicitation will be conveyed through the written addenda process. Only written addenda will be binding. If a "must" addendum is issued, Vendor must follow instructions and submit required information, forms, or acknowledge addendum, as instructed therein. It is the responsibility of all potential Vendors to monitor the solicitation for any changing information, prior to submitting their response.

B. Responsibility Criteria:

Definition of a Responsible Vendor: In accordance with Section 21.8.b.64 of the Broward County Procurement Code, a Responsible Vendor means a Vendor who has the capability in all respects to perform the contract requirements, and the integrity and reliability which will assure good faith performance.

The Selection or Evaluation Committee will recommend to the awarding authority a determination of

a Vendor's responsibility. At any time prior to award, the awarding authority may find that a Vendor is not responsible to receive a particular award.

Failure to provide any of this required information and in the manner required may result in a recommendation by the Director of Purchasing that the Vendor is non-responsive.

Below are standard responsibility criteria; refer to **Special Instructions to Vendors**, for Additional Responsibility Criteria requirement(s).

1. **Litigation History**

- a. All Vendors are required to disclose to the County all "material" cases filed, pending, or resolved during the last three (3) years prior to the solicitation response due date, whether such cases were brought by or against the Vendor, any parent or subsidiary of the Vendor, or any predecessor organization. Additionally, all Vendors are required to disclose to the County all "material" cases filed, pending, or resolved against any principal of Vendor, regardless of whether the principal was associated with Vendor at the time of the "material" cases against the principal, during the last three (3) years prior to the solicitation response. A case is considered to be "material" if it relates, in whole or in part, to any of the following:
 - i. A similar type of work that the vendor is seeking to perform for the County under the current solicitation;
 - ii. An allegation of fraud, negligence, error or omissions, or malpractice against the vendor or any of its principals or agents who would be performing work under the current solicitation;
 - iii. A vendor's default, termination, suspension, failure to perform, or improper performance in connection with any contract;
 - iv. The financial condition of the vendor, including any bankruptcy petition (voluntary and involuntary) or receivership; or
 - v. A criminal proceeding or hearing concerning business-related offenses in which the vendor or its principals (including officers) were/are defendants.
- b. For each material case, the Vendor is required to provide all information identified in the **Litigation History Form**. Additionally, the Vendor shall provide a copy of any judgment or settlement of any material case during the last three (3) years prior to the solicitation response. Redactions of any confidential portions of the settlement agreement are only permitted upon a certification by Vendor that all redactions are required under the express terms of a pre-existing confidentiality agreement or provision.
- c. The County will consider a Vendor's litigation history information in its review and determination of responsibility.
- d. If the Vendor is a joint venture, the information provided should encompass the joint venture and each of the entities forming the joint venture.
- e. A vendor is required to disclose to the County any and all cases(s) that exist between the County and any of the Vendor's subcontractors/subconsultants proposed to work on this project during the last five (5) years prior to the solicitation response.
- f. Failure to disclose any material case, including all requested information in connection with each such case, as well as failure to disclose the Vendor's subcontractors/subconsultants litigation history against the County, may result in the Vendor being deemed non-responsive.

2. **Financial Information**

- a. All Vendors are required to provide the Vendor's financial statements at the time of submittal

in order to demonstrate the Vendor's financial capabilities.

- b. Each Vendor shall submit its most recent two years of financial statements for review. The financial statements are not required to be audited financial statements. The annual financial statements will be in the form of:
 - i. Balance sheets, income statements and annual reports; or
 - ii. Tax returns; or
 - iii. SEC filings.

If tax returns are submitted, ensure it does not include any personal information (as defined under Florida Statutes Section 501.171, Florida Statutes), such as social security numbers, bank account or credit card numbers, or any personal pin numbers. If any personal information data is part of financial statements, redact information prior to submitting a response the County.

- c. If a Vendor has been in business for less than the number of years of required financial statements, then the Vendor must disclose all years that the Vendor has been in business, including any partial year-to-date financial statements.
- d. The County may consider the unavailability of the most recent year's financial statements and whether the Vendor acted in good faith in disclosing the financial documents in its evaluation.
- e. Any claim of confidentiality on financial statements should be asserted at the time of submittal. Refer to **Standard Instructions to Vendors**, Confidential Material/ Public Records and Exemptions for instructions on submitting confidential financial statements. The Vendor's failure to provide the information as instructed may lead to the information becoming public.
- f. Although the review of a Vendor's financial information is an issue of responsibility, the failure to either provide the financial documentation or correctly assert a confidentiality claim pursuant the Florida Public Records Law and the solicitation requirements (Confidential Material/ Public Records and Exemptions section) may result in a recommendation of non-responsiveness by the Director of Purchasing.

3. Authority to Conduct Business in Florida

- a. A Vendor must have the authority to transact business in the State of Florida and be in good standing with the Florida Secretary of State. For further information, contact the Florida Department of State, Division of Corporations.
- b. The County will review the Vendor's business status based on the information provided in response to this solicitation.
- c. It is the Vendor's responsibility to comply with all state and local business requirements.
- d. Vendor should list its active Florida Department of State Division of Corporations Document Number (or Registration No. for fictitious names) in the **Vendor Questionnaire**, Question No. 10.
- e. If a Vendor is an out-of-state or foreign corporation or partnership, the Vendor must obtain the authority to transact business in the State of Florida or show evidence of application for the authority to transact business in the State of Florida, upon request of the County.
- f. A Vendor that is not in good standing with the Florida Secretary of State at the time of a

submission to this solicitation may be deemed non-responsible.

- g. If successful in obtaining a contract award under this solicitation, the Vendor must remain in good standing throughout the contractual period of performance.

4. Affiliated Entities of the Principal(s)

- a. All Vendors are required to disclose the names and addresses of “affiliated entities” of the Vendor’s principal(s) over the last five (5) years (from the solicitation opening deadline) that have acted as a prime Vendor with the County. The Vendor is required to provide all information required on the **Affiliated Entities of the Principal(s) Certification Form**.
- b. The County will review all affiliated entities of the Vendor’s principal(s) for contract performance evaluations and the compliance history with the County’s Small Business Program, including CBE, DBE and SBE goal attainment requirements. “Affiliated entities” of the principal(s) are those entities related to the Vendor by the sharing of stock or other means of control, including but not limited to a subsidiary, parent or sibling entity.
- c. The County will consider the contract performance evaluations and the compliance history of the affiliated entities of the Vendor’s principals in its review and determination of responsibility.

5. Insurance Requirements

The **Insurance Requirement Form** reflects the insurance requirements deemed necessary for this project. It is not necessary to have this level of insurance in effect at the time of submittal, but it is necessary to submit certificates indicating that the Vendor currently carries the insurance or to submit a letter from the carrier indicating it can provide insurance coverages.

C. Additional Information and Certifications

The following forms and supporting information (if applicable) should be returned with Vendor’s submittal. If not provided with submittal, the Vendor must submit within three business days of County’s request. Failure to timely submit may affect Vendor’s evaluation.

1. Vendor Questionnaire

Vendor is required to submit detailed information on their firm. Refer to the **Vendor Questionnaire** and submit as instructed.

2. Standard Certifications

Vendor is required to certify to the below requirements. Refer to the **Standard Certifications** and submit as instructed.

- a. **Cone of Silence Requirement Certification**
- b. **Drug-Free Workplace Certification**
- c. **Non-Collusion Certification**
- d. **Public Entities Crimes Certification**
- e. **Scrutinized Companies List Certification**

3. Subcontractors/Subconsultants/Suppliers Requirement

The Vendor shall submit a listing of all subcontractors, subconsultants, and major material suppliers, if any, and the portion of the contract they will perform. Vendors must follow the instructions included on the **Subcontractors/Subconsultants/Suppliers Information Form** and submit as instructed.

D. Standard Agreement Language Requirements

1. The acceptance of or any exceptions taken to the terms and conditions of the County's Agreement shall be considered a part of a Vendor's submittal and will be considered by the Selection or Evaluation Committee.
2. The applicable Agreement terms and conditions for this solicitation are indicated in the **Special Instructions to Vendors**.
3. Vendors are required to review the applicable terms and conditions and submit the **Agreement Exception Form**. If the **Agreement Exception Form** is not provided with the submittal, it shall be deemed an affirmation by the Vendor that it accepts the Agreement terms and conditions as disclosed in the solicitation.
4. If exceptions are taken, the Vendor must specifically identify each term and condition with which it is taking an exception. Any exception not specifically listed is deemed waived. Simply identifying a section or article number is not sufficient to state an exception. Provide either a redlined version of the specific change(s) or specific proposed alternative language. Additionally, a brief justification specifically addressing each provision to which an exception is taken should be provided.
5. Submission of any exceptions to the Agreement does not denote acceptance by the County. Furthermore, taking exceptions to the County's terms and conditions may be viewed unfavorably by the Selection or Evaluation Committee and ultimately may impact the overall evaluation of a Vendor's submittal.

E. Evaluation Criteria

1. The Selection or Evaluation Committee will evaluate Vendors as per the **Evaluation Criteria**. The County reserves the right to obtain additional information from a Vendor.
2. Vendor has a continuing obligation to inform the County in writing of any material changes to the information it has previously submitted. The County reserves the right to request additional information from Vendor at any time.
3. For Request for Proposals, the following shall apply:
 - a. The Director of Purchasing may recommend to the Evaluation Committee to short list the most qualified firms prior to the Final Evaluation.
 - b. The Evaluation Criteria identifies points available; a total of 100 points is available.
 - c. If the Evaluation Criteria includes a request for pricing, the total points awarded for price is determined by applying the following formula:
$$\frac{(\text{Lowest Proposed Price}/\text{Vendor's Price}) \times (\text{Maximum Number of Points for Price})}{\text{Price Score}}$$
 - d. After completion of scoring, the County may negotiate pricing as in its best interest.
4. For Requests for Letters of Interest or Request for Qualifications, the following shall apply:
 - a. The Selection or Evaluation Committee will create a short list of the most qualified firms.
 - b. The Selection or Evaluation Committee will either:

- i. Rank shortlisted firms; or
- ii. If the solicitation is part of a two-step procurement, shortlisted firms will be requested to submit a response to the Step Two procurement.

F. Demonstrations

If applicable, as indicated in Special Instructions to Vendors, Vendors will be required to demonstrate the nature of their offered solution. After receipt of submittals, all Vendors will receive a description of, and arrangements for, the desired demonstration. In accordance with Section 286.0113 of the Florida Statutes and pursuant to the direction of the Broward County Board of Commissioners, demonstrations are closed to only the vendor team and County staff.

G. Presentations

Vendors that are found to be both responsive and responsible to the requirements of the solicitation and/or shortlisted (if applicable) will have an opportunity to make an oral presentation to the Selection or Evaluation Committee on the Vendor's approach to this project and the Vendor's ability to perform. The committee may provide a list of subject matter for the discussion. All Vendor's will have equal time to present but the question-and-answer time may vary. In accordance with Section 286.0113 of the Florida Statutes and the direction of the Broward County Board of Commissioners, presentations during Selection or Evaluation Committee Meetings are closed. Only the Selection or Evaluation Committee members, County staff and the vendor and their team scheduled for that presentation will be present in the Meeting Room during the presentation and subsequent question and answer period.

H. Public Art and Design Program

If indicated in **Special Instructions to Vendors**, Public Art and Design Program, Section 1-88, Broward County Code of Ordinances, applies to this project. It is the intent of the County to functionally integrate art, when applicable, into capital projects and integrate artists' design concepts into this improvement project. The Vendor may be required to collaborate with the artist(s) on design development within the scope of this request. Artist(s) shall be selected by Broward County through an independent process. For additional information, contact the Broward County Cultural Division.

I. Committee Appointment

The Cone of Silence shall be in effect for County staff at the time of the Selection or Evaluation Committee appointment and for County Commissioners and Commission staff at the time of the Shortlist Meeting of the Selection Committee or the Initial Evaluation Meeting of the Evaluation Committee. The committee members appointed for this solicitation are available on the Purchasing Division's website under [Committee Appointment](#).

J. Committee Questions, Request for Clarifications, Additional Information

At any committee meeting, the Selection or Evaluation Committee members may ask questions, request clarification, or require additional information of any Vendor's submittal or proposal. It is highly recommended Vendors attend to answer any committee questions (if requested), including a Vendor representative that has the authority to bind.

Vendor's answers may impact evaluation (and scoring, if applicable). Upon written request to the Purchasing Agent prior to the meeting, a conference call number will be made available for Vendor participation via teleconference. Only Vendors that are found to be both responsive and responsible to the requirements of the solicitation and/or shortlisted (if applicable) are requested to participate in a final (or presentation) Selection or Evaluation committee meeting.

K. Vendor Questions

The County provides a specified time for Vendors to ask questions and seek clarification regarding solicitation requirements. All questions or clarification inquiries must be submitted through BidSync by the date and time referenced in the solicitation document (including any addenda). The County will respond to questions via Bid Sync.

L. Confidential Material/ Public Records and Exemptions

1. Broward County is a public agency subject to Chapter 119, Florida Statutes. Upon receipt, all submittals become "public records" and shall be subject to public disclosure consistent with Chapter 119, Florida Statutes. Submittals may be posted on the County's public website or included in a public records request response, unless there is a declaration of "confidentiality" pursuant to the public records law and in accordance with the procedures in this section.
2. Any confidential material(s) the Vendor asserts is exempt from public disclosure under Florida Statutes must be labeled as "Confidential", and marked with the specific statute and subsection asserting exemption from Public Records.
3. To submit confidential material, three hardcopies must be submitted in a sealed envelope, labeled with the solicitation number, title, date and the time of solicitation opening to:

Broward County Purchasing Division
115 South Andrews Avenue, Room 212
Fort Lauderdale, FL 33301

4. Material will not be treated as confidential if the Vendor does not cite the applicable Florida Statute (s) allowing the document to be treated as confidential.
5. Any materials that the Vendor claims to be confidential and exempt from public records must be marked and separated from the submittal. If the Vendor does not comply with these instructions, the Vendor's claim for confidentiality will be deemed as waived.
6. Submitting confidential material may impact full discussion of your submittal by the Selection or Evaluation Committee because the Committee will be unable to discuss the details contained in the documents cloaked as confidential at the publicly noticed Committee meeting.

M. Copyrighted Materials

Copyrighted material is not exempt from the Public Records Law, Chapter 119, Florida Statutes. Submission of copyrighted material in response to any solicitation will constitute a license and permission for the County to make copies (including electronic copies) as reasonably necessary for the use by County staff and agents, as well as to make the materials available for inspection or production pursuant to Public Records Law, Chapter 119, Florida Statutes.

N. State and Local Preferences

If the solicitation involves a federally funded project where the fund requirements prohibit the use of state and/or local preferences, such preferences contained in the Local Preference Ordinance and Broward County Procurement Code will not be applied in the procurement process.

O. Local Preference

Except where otherwise prohibited by federal or state law or other funding source restrictions, a local Vendor whose submittal is within 5% of the highest total ranked Vendor outside of the preference area will become the Vendor with whom the County will proceed with negotiations for a

final contract. Refer to **Local Vendor Certification Form (Preference and Tiebreaker)** for further information.

P. Tiebreaker Criteria

In accordance with Section 21.31.d of the Broward County Procurement Code, the tiebreaker criteria shall be applied based upon the information provided in the Vendor's response to the solicitation. In order to receive credit for any tiebreaker criterion, complete and accurate information must be contained in the Vendor's submittal.

1. **Local Vendor Certification Form (Preference and Tiebreaker);**
2. **Domestic Partnership Act Certification (Requirement and Tiebreaker);**
3. **Tiebreaker Criteria Form: Volume of Work Over Five Years**

Q. Posting of Solicitation Results and Recommendations

The Broward County Purchasing Division's [website](#) is the location for the County's posting of all solicitations and contract award results. It is the obligation of each Vendor to monitor the website in order to obtain complete and timely information.

R. Review and Evaluation of Responses

A Selection or Evaluation Committee is responsible for recommending the most qualified Vendor(s). The process for this procurement may proceed in the following manner:

1. The Purchasing Division delivers the solicitation submittals to agency staff for summarization for the committee members. Agency staff prepares a report, including a matrix of responses submitted by the Vendors. This may include a technical review, if applicable.
2. Staff identifies any incomplete responses. The Director of Purchasing reviews the information and makes a recommendation to the Selection or Evaluation Committee as to each Vendor's responsiveness to the requirements of the solicitation. The final determination of responsiveness rests solely on the decision of the committee.
3. At any time prior to award, the awarding authority may find that a Vendor is not responsible to receive a particular award. The awarding authority may consider the following factors, without limitation: debarment or removal from the authorized Vendors list or a final decree, declaration or order by a court or administrative hearing officer or tribunal of competent jurisdiction that the Vendor has breached or failed to perform a contract, claims history of the Vendor, performance history on a County contract(s), an unresolved concern, or any other cause under this code and Florida law for evaluating the responsibility of a Vendor.

S. Vendor Protest

Sections 21.118 and 21.120 of the Broward County Procurement Code set forth procedural requirements that apply if a Vendor intends to protest a solicitation or proposed award of a contract and state in part the following:

1. Any protest concerning the solicitation or other solicitation specifications or requirements must be made and received by the County within seven business days from the posting of the solicitation or addendum on the Purchasing Division's website. Such protest must be made in writing to the Director of Purchasing. Failure to timely protest solicitation specifications or requirements is a waiver of the ability to protest the specifications or requirements.

2. Any protest concerning a solicitation or proposed award above the award authority of the Director of Purchasing, after the RLI or RFP opening, shall be submitted in writing and received by the Director of Purchasing within five business days from the posting of the recommendation of award for Invitation to Bids or the final recommendation of ranking for Request for Letters of Interest and Request for Proposals on the Purchasing Division's website.
3. Any actual or prospective Vendor who has a substantial interest in and is aggrieved in connection with the proposed award of a contract that does not exceed the amount of the award authority of the Director of Purchasing, may protest to the Director of Purchasing. The protest shall be submitted in writing and received within three (3) business days from the posting of the recommendation of award for Invitation to Bids or the final recommendation of ranking for Request for Letters of Interest and Request for Proposals on the Purchasing Division's website.
4. For purposes of this section, a business day is defined as Monday through Friday between 8:30 a.m. and 5:00 p.m. Failure to timely file a protest within the time prescribed for a proposed contract award shall be a waiver of the Vendor's right to protest.
5. As a condition of initiating any protest, the protestor shall present the Director of Purchasing a nonrefundable filing fee in accordance with the table below.

<u>Estimated Contract Amount</u>	<u>Filing Fee</u>
\$30,000 - \$250,000	\$ 500
\$250,001 - \$500,000	\$1,000
\$500,001 - \$5 million	\$3,000
Over \$5 million	5,000

If no contract proposal amount was submitted, the estimated contract amount shall be the County's estimated contract price for the project. The County may accept cash, money order, certified check, or cashier's check, payable to Broward County Board of Commissioners.

T. Right of Appeal

Pursuant to Section 21.83.d of the Broward County Procurement Code, any Vendor that has a substantial interest in the matter and is dissatisfied or aggrieved in connection with the Selection or Evaluation Committee's determination of responsiveness may appeal the determination pursuant to Section 21.120 of the Broward County Procurement Code.

1. The appeal must be in writing and sent to the Director of Purchasing within ten (10) calendar days of the determination by the Selection or Evaluation Committee to be deemed timely.
2. As required by Section 21.120, the appeal must be accompanied by an appeal bond by a Vendor having standing to protest and must comply with all other requirements of this section.
3. The institution and filing of an appeal is an administrative remedy to be employed prior to the institution and filing of any civil action against the County concerning the subject matter of the appeal.

U. Rejection of Responses

The Selection or Evaluation Committee may recommend rejecting all submittals as in the best interests of the County. The rejection shall be made by the Director of Purchasing, except when a solicitation was approved by the Board, in which case the rejection shall be made by the Board.

V. Negotiations

The County intends to conduct the first negotiation meeting no later than two weeks after approval of the final ranking as recommended by the Selection or Evaluation Committee. At least one of the representatives for the Vendor participating in negotiations with the County must be authorized to bind the Vendor. In the event that the negotiations are not successful within a reasonable timeframe (notification will be provided to the Vendor) an impasse will be declared and negotiations with the first-ranked Vendor will cease. Negotiations will begin with the next ranked Vendor, etc. until such time that all requirements of Broward County Procurement Code have been met. In accordance with Section 286.0113 of the Florida Statutes and the direction of the Broward County Board of Commissioners, negotiations resulting from Selection or Evaluation Committee Meetings are closed. Only County staff and the selected vendor and their team will be present during negotiations.

W. Submittal Instructions:

1. Broward County does not require any personal information (as defined under Section 501.171, Florida Statutes), such as social security numbers, driver license numbers, passport, military ID, bank account or credit card numbers, or any personal pin numbers, in order to submit a response for ANY Broward County solicitation. **DO NOT INCLUDE** any personal information data in any document submitted to the County. If any personal information data is part of a submittal, this information must be redacted prior to submitting a response to the County.
2. **Vendor MUST submit its solicitation response electronically and MUST confirm its submittal in order for the County to receive a valid response through BidSync.** It is the Vendor's sole responsibility to assure its response is submitted and received through BidSync by the date and time specified in the solicitation.
3. The County will not consider solicitation responses received by other means. Vendors are encouraged to submit their responses in advance of the due date and time specified in the solicitation document. In the event that the Vendor is having difficulty submitting the solicitation document through Bid Sync, immediately notify the Purchasing Agent and then contact BidSync for technical assistance.
4. Vendor must view, submit, and/or accept each of the documents in BidSync. Web-fillable forms can be filled out and submitted through BidSync.
5. After all documents are viewed, submitted, and/or accepted in BidSync, the Vendor must upload additional information requested by the solicitation (i.e. Evaluation Criteria and Financials Statements) in the Item Response Form in BidSync, under line one (regardless if pricing requested).
6. Vendor should upload responses to Evaluation Criteria in Microsoft Word or Excel format.
7. If the Vendor is declaring any material confidential and exempt from Public Records, refer to Confidential Material/ Public Records and Exemptions for instructions on submitting confidential material.
8. After all files are uploaded, Vendor must submit and **CONFIRM** its offer (by entering password) for offer to be received through BidSync.

9. If a solicitation requires an original Proposal Bond (per Special Instructions to Vendors), Vendor must submit in a sealed envelope, labeled with the solicitation number, title, date and the time of solicitation opening to:

Broward County Purchasing Division
115 South Andrews Avenue, Room 212
Fort Lauderdale, FL 33301

A copy of the Proposal Bond should also be uploaded into Bid Sync; this does not replace the requirement to have an original proposal bond. Vendors must submit the original Proposal Bond, by the solicitation due date and time.

Supplier: **MEJIA INTERNATIONAL GROUP CORP**

VENDOR QUESTIONNAIRE AND STANDARD CERTIFICATIONS
Request for Proposals, Request for Qualifications, or Request for Letters of Interest

Vendor should complete questionnaire and complete and acknowledge the standard certifications and submit with the solicitation response. If not submitted with solicitation response, it must be submitted within three business days of County's request. Failure to timely submit may affect Vendor's evaluation.

If a response requires additional information, the Vendor should upload a written detailed response with submittal; each response should be numbered to match the question number. The completed questionnaire and attached responses will become part of the procurement record. It is imperative that the person completing the Vendor Questionnaire be knowledgeable about the proposing Vendor's business and operations.

1. Legal business name:**MEJIA INTERNATIONAL GROUP CORP**
2. Doing Business As/ Fictitious Name (if applicable):
3. Federal Employer I.D. no. (FEIN):**263013168**
4. Dun and Bradstreet No.:**847681991**
5. Website address (if applicable): **www.mejiainternational.com**
6. Principal place of business address: **5752 NW 119th Dr, Coral Springs, FL 33076**
7. Office location responsible for this project: **5752 NW 119th Dr, Coral Springs, FL 33076**
8. Telephone no.:**954-6752652** Fax no.:
9. Type of business (check appropriate box):
 - Corporation (specify the state of incorporation):**Florida**
 - Sole Proprietor
 - Limited Liability Company (LLC)
 - Limited Partnership
 - General Partnership (State and County Filed In)
 - Other - Specify
10. List Florida Department of State, Division of Corporations document number (or registration number if fictitious name): **P08000065675**
11. List name and title of each principal, owner, officer, and major shareholder:
 - a) **Cesar I. Mejia**
 - b) **Diego Mejia**
 - c)
 - d)
12. AUTHORIZED CONTACT(S) FOR YOUR FIRM:

Name: **Diego Mejia**

Title: **Vicepresident**

E-mail: **dmejia@mejiatelecom.com**

Telephone No.: **954-6752652**

Name: **Cesar Mejia**

Title: **President**

E-mail: **cmejia@mejiatelecom.com**

Telephone No.: **954-5915519**

13. Has your firm, its principals, officers or predecessor organization(s) been debarred or suspended by any government entity within the last three years? If yes, specify details in an attached written response. Yes No
14. Has your firm, its principals, officers or predecessor organization(s) ever been debarred or suspended by any government entity? If yes, specify details in an attached written response, including the reinstatement date, if granted. Yes No
15. Has your firm ever failed to complete any services and/or delivery of products during the last three (3) years? If yes, specify details in an attached written response. Yes No
16. Is your firm or any of its principals or officers currently principals or officers of another organization? If yes, specify details in an attached written response. Yes No
17. Have any voluntary or involuntary bankruptcy petitions been filed by or against your firm, its parent or subsidiaries or predecessor organizations during the last three years? If yes, specify details in an attached written response. Yes No
18. Has your firm's surety ever intervened to assist in the completion of a contract or have Performance and/or Payment Bond claims been made to your firm or its predecessor's sureties during the last three years? If yes, specify details in an attached written response, including contact information for owner and surety. Yes No
19. Has your firm ever failed to complete any work awarded to you, services and/or delivery of products during the last three (3) years? If yes, specify details in an attached written response. Yes No
20. Has your firm ever been terminated from a contract within the last three years? If yes, specify details in an attached written response. Yes No
21. Living Wage solicitations only: In determining what, if any, fiscal impacts(s) are a result of the Ordinance for this solicitation, provide the following for informational purposes only. Response is not considered in determining the award of this contract.
Living Wage had an effect on the pricing. Yes No
 N/A
- If yes, Living Wage increased the pricing by% or decreased the pricing by%.

Cone of Silence Requirement Certification:

The Cone of Silence Ordinance, Section 1-266, Broward County Code of Ordinances prohibits certain communications among Vendors, Commissioners, County staff, and Selection or Evaluation Committee members. Identify on a separate sheet any violations of this Ordinance by any members of the responding firm or its joint ventures. After the application of the Cone of Silence, inquiries regarding this solicitation should be directed to the Director of Purchasing or designee. The Cone of Silence terminates when the County Commission or other awarding authority takes action which ends the solicitation.

The Vendor hereby certifies that: (check each box)

- The Vendor has read Cone of Silence Ordinance, Section 1-266, Broward County Code of Ordinances; and
- The Vendor understands that the Cone of Silence for this competitive solicitation shall be in effect beginning upon the appointment of the Selection or Evaluation Committee, for communication regarding this

solicitation with the County Administrator, Deputy County Administrator, Assistant County Administrators, and Assistants to the County Administrator and their respective support staff or any person, including Evaluation or Selection Committee members, appointed to evaluate or recommend selection in this RFP/RLI process. For Communication with County Commissioners and Commission staff, the Cone of Silence allows communication until the initial Evaluation or Selection Committee Meeting.

- The Vendor agrees to comply with the requirements of the Cone of Silence Ordinance.

Drug-Free Workplace Requirements Certification:

Section 21.31.a. of the Broward County Procurement Code requires awards of all competitive solicitations requiring Board award be made only to firms certifying the establishment of a drug free workplace program. The program must consist of:

1. Publishing a statement notifying its employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the offeror's workplace, and specifying the actions that will be taken against employees for violations of such prohibition;
2. Establishing a continuing drug-free awareness program to inform its employees about:
 - a. The dangers of drug abuse in the workplace;
 - b. The offeror's policy of maintaining a drug-free workplace;
 - c. Any available drug counseling, rehabilitation, and employee assistance programs; and
 - d. The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;
3. Giving all employees engaged in performance of the contract a copy of the statement required by subparagraph 1;
4. Notifying all employees, in writing, of the statement required by subparagraph 1, that as a condition of employment on a covered contract, the employee shall:
 - a. Abide by the terms of the statement; and
 - b. Notify the employer in writing of the employee's conviction of, or plea of guilty or nolo contendere to, any violation of Chapter 893 or of any controlled substance law of the United States or of any state, for a violation occurring in the workplace NO later than five days after such conviction.
5. Notifying Broward County government in writing within 10 calendar days after receiving notice under subdivision 4.b above, from an employee or otherwise receiving actual notice of such conviction. The notice shall include the position title of the employee;
6. Within 30 calendar days after receiving notice under subparagraph 4 of a conviction, taking one of the following actions with respect to an employee who is convicted of a drug abuse violation occurring in the workplace:
 - a. Taking appropriate personnel action against such employee, up to and including termination; or
 - b. Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a federal, state, or local health, law enforcement, or other appropriate agency; and
7. Making a good faith effort to maintain a drug-free workplace program through implementation of subparagraphs 1 through 6.

The Vendor hereby certifies that: (check box)

- The Vendor certifies that it has established a drug free workplace program in accordance with the above requirements.

Non-Collusion Certification:

Vendor shall disclose, to their best knowledge, any Broward County officer or employee, or any relative of any such officer or employee as defined in Section 112.3135 (1) (c), Florida Statutes, who is an officer or director of, or has a material interest in, the Vendor's business, who is in a position to influence this procurement. Any Broward County officer or employee who has any input into the writing of specifications or requirements, solicitation of

offers, decision to award, evaluation of offers, or any other activity pertinent to this procurement is presumed, for purposes hereof, to be in a position to influence this procurement. Failure of a Vendor to disclose any relationship described herein shall be reason for debarment in accordance with the provisions of the Broward County Procurement Code.

The Vendor hereby certifies that: (select one)

- The Vendor certifies that this offer is made independently and free from collusion; or
- The Vendor is disclosing names of officers or employees who have a material interest in this procurement and is in a position to influence this procurement. Vendor must include a list of name(s), and relationship(s) with its submittal.

Public Entities Crimes Certification:

In accordance with Public Entity Crimes, Section 287.133, Florida Statutes, a person or affiliate placed on the convicted vendor list following a conviction for a public entity crime may not submit on a contract: to provide any goods or services; for construction or repair of a public building or public work; for leases of real property to a public entity; and may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity; and may not transact business with any public entity in excess of the threshold amount provided in s. 287.017 for Category Two for a period of 36 months following the date of being placed on the convicted vendor list.

The Vendor hereby certifies that: (check box)

- The Vendor certifies that no person or affiliates of the Vendor are currently on the convicted vendor list and/or has not been found to commit a public entity crime, as described in the statutes.

Scrutinized Companies List Certification:

Any company, principals, or owners on the Scrutinized Companies with Activities in Sudan List, the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or the Scrutinized Companies that Boycott Israel List is prohibited from submitting a response to a solicitation for goods or services in an amount equal to or greater than \$1 million.

The Vendor hereby certifies that: (check each box)

- The Vendor, owners, or principals are aware of the requirements of Sections 287.135, 215.473, and 215.4275, Florida Statutes, regarding Companies on the Scrutinized Companies with Activities in Sudan List the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or the Scrutinized Companies that Boycott Israel List; and
- The Vendor, owners, or principals, are eligible to participate in this solicitation and are not listed on either the Scrutinized Companies with Activities in Sudan List, the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or the Scrutinized Companies that Boycott Israel List; and
- If awarded the Contract, the Vendor, owners, or principals will immediately notify the County in writing if any of its principals are placed on the Scrutinized Companies with Activities in Sudan List, the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or the Scrutinized Companies that Boycott Israel List.

I hereby certify the information provided in the Vendor Questionnaire and Standard Certifications:

Diego Mejia	Vicepresident	11/14/2019
<hr/>	<hr/>	<hr/>
*AUTHORIZED SIGNATURE/NAME	TITLE	DATE

Vendor Name: **Mejia International Group Corp**

* I certify that I am authorized to sign this solicitation response on behalf of the Vendor as indicated in Certificate as to Corporate Principal, designation letter by Director/Corporate Officer, or other business authorization to bind on behalf of the Vendor. As the Vendor's authorized representative, I attest that any and all statements, oral, written or otherwise, made in support of the Vendor's response, are accurate, true and correct. I also acknowledge that inaccurate, untruthful, or incorrect statements made in support of the Vendor's response may be used by the County as a basis for rejection, rescission of the award, or termination of the contract and may also serve as the basis for debarment of Vendor pursuant to Section 21.119 of the Broward County Procurement Code. I certify that the Vendor's response is made without prior understanding, agreement, or connection with any corporation, firm or person submitting a response for the same items/services, and is in all respects fair and without collusion or fraud. I also certify that the Vendor agrees to abide by all terms and conditions of this solicitation, acknowledge and accept all of the solicitation pages as well as any special instructions sheet(s).

Supplier: MEJIA INTERNATIONAL GROUP CORP

LOBBYIST REGISTRATION REQUIREMENT CERTIFICATION FORM

The completed form should be submitted with the solicitation response but must be submitted within three business days of County's request. Vendor may be deemed non-responsive for failure to fully comply within stated timeframes.

The Vendor certifies that it understands if it has retained a lobbyist(s) to lobby in connection with a competitive solicitation, it shall be deemed non-responsive unless the firm, in responding to the competitive solicitation, certifies that each lobbyist retained has timely filed the registration or amended registration required under Broward County Lobbyist Registration Act, Section 1-262, Broward County Code of Ordinances; and it understands that if, after awarding a contract in connection with the solicitation, the County learns that the certification was erroneous, and upon investigation determines that the error was willful or intentional on the part of the Vendor, the County may, on that basis, exercise any contractual right to terminate the contract for convenience.

The Vendor hereby certifies that: (select one)

- It has not retained a lobbyist(s) to lobby in connection with this competitive solicitation; however, if retained after the solicitation, the County will be notified.
- It has retained a lobbyist(s) to lobby in connection with this competitive solicitation and certified that each lobbyist retained has timely filed the registration or amended registration required under Broward County Lobbyist Registration Act, Section 1-262, Broward County Code of Ordinances.

It is a requirement of this solicitation that the names of any and all lobbyists retained to lobby in connection with this solicitation be listed below:

Name of Lobbyist:

Lobbyist's Firm:

Phone:

E-mail:

Name of Lobbyist:

Lobbyist's Firm:

Phone:

E-mail:

Authorized Signature/Name: Diego Mejia Date: 11/14/2019

Title: Vicepresident

Vendor Name: Mejia International Group Corp

Supplier: MEJIA INTERNATIONAL GROUP CORP

Office of Economic and Small Business Requirements: Small Business Enterprises

- A. In accordance with the Broward County Business Opportunity Act of 2012, codified in Section 1-81 of the Broward County Code of Ordinances, as amended (the "Business Opportunity Act"), this solicitation is reserved for Small Business Enterprises (SBE).
- B. Only Vendors that are currently certified as SBEs or obtain SBE certification prior to the solicitation due date will be eligible for award of this contract award. Vendors are SBE-certified to provide goods and/or services to the County based on the Vendors' demonstration to the Office of Economic and Small Business Development (OESBD) that they provide such goods and/or services during the normal course of their respective businesses. Brokers are not eligible for certification.
- C. An SBE-certified Vendor must provide a commercially useful function for a project. A SBE-certified Vendor that seeks to act as a broker or does not provide a commercially useful function on a project shall be subject to decertification by OESBD.
- D. It is the Vendor's responsibility to ensure it is compliant with the Business Opportunity Act related requirements and solicitation deadlines by contacting OESBD to verify the Vendor's current SBE status or to obtain the applicable SBE certification.
- E. For detailed information regarding SBEs or to find the application for certification, contact OESBD at (954) 357-6400 or visit the website at: www.broward.org/EconDev/SmallBusiness.

Supplier: **MEJIA INTERNATIONAL GROUP CORP**

Office of Economic and Small Business Requirements: CBE Reserve

- A. In accordance with the Broward County Business Opportunity Act of 2012, Section 1-81, Code of Ordinances, as amended (the "Business Opportunity Act"), this solicitation is reserved for County Business Enterprise (CBE) firms (CBE Reserve).
- B. CBEs and nonCBEs may respond to the solicitation.
- C. The low, responsive and responsible, or the highest-ranked, responsive and responsible CBE, with capacity to perform, will be recommended for award, consistent with all applicable terms and conditions of Broward County's Procurement Code and subject to entering into an agreement acceptable to the County, as applicable. If no CBE is determined responsive and responsible, a non-CBE may be awarded the contract, with the establishment of at least a twenty-five percent (25%) CBE participation goal (unless the CBE goal is waived or otherwise modified by Board action), or the County may reject all responses submitted.
- D. It is the Vendor's responsibility to ensure compliance with the CBE requirements and adhere to solicitation deadlines. The Vendor must contact OESBD to verify current CBE status or to obtain CBE certification.
- E. The Work may only be performed by CBEs. The Vendor must perform one hundred percent (100%) of the Work as the prime Vendor or the prime Vendor may subcontract portions of Work to other CBEs. If the prime Vendor intends subcontract any portion of the Work, the Vendor must complete a Letter of Intent (refer to Section F below).
- F. CBE Program Requirements: Vendor should submit all required forms and information with its solicitation submittal as matter of responsibility. If the required forms and information are not provided with the Vendor's solicitation submittal, then Vendor must supply the required forms and information no later than three (3) business days after request by OESBD. Vendor may be deemed non-responsible for failure to fully comply with this solicitation and CBE Program Requirements within these stated timeframes.
1. Vendor should include in its solicitation submittal a **Letter of Intent Between Bidder/Offeror and County Business Enterprise (CBE) Subcontractor/Supplier (LOI)** for each CBE the Vendor intends to use to achieve the assigned reserve or CBE participation goal. If the Vendor is a CBE performing 100% of the work, an LOI should be submitted stating that 100% of the work will be completed by the CBE.
- The form is available at the following link:
<http://www.broward.org/EconDev/Documents/CBELetterOfIntent.pdf>
2. If Vendor is unable to attain the CBE participation goal or reserve, Vendor should include in its solicitation submittal an **Application for Evaluation of Good Faith Efforts** and all of the required supporting information.
- The form is available at the following link:
<http://www.broward.org/EconDev/WhatWeDo/Documents/GoodFaithEffortEval.pdf>
- G. A certified firm must provide a commercially useful function for the Project and may not act as a broker. A certified firm that seeks to act as a broker, or that does not provide a commercially useful function for the Project shall be subject to decertification by OESBD.
- H. Vendors are encouraged to purchase materials from certified CBE firms whenever possible.

- I. A joint venture is only eligible for award if all members of the joint venture are certified CBE firms.
- J. OESBD maintains an online directory of CBE firms. The online directory is available for use by Vendors at <https://webapps4.broward.org/smallbusiness/sbdirectory.aspx>.
- K. For detailed information regarding the CBE Program contact the OESBD at (954) 357-6400 or visit the office's website at: <http://www.broward.org/EconDev/SmallBusiness/>
- F. If awarded the contract, Vendor agrees to and shall comply with all applicable requirements of this solicitation, the Business Opportunity Act, and the CBE Program in the award and administration of the contract, including the following:
 1. No party to this contract may discriminate on the basis of race, color, sex, religion, national origin, disability, age, marital status, political affiliation, sexual orientation, pregnancy, or gender identity and expression in the performance of this contract.
 2. All entities that seek to conduct business with the County, including Vendor or any Prime Contractors, Subcontractors, and Bidders, shall conduct such business activities in a fair and reasonable manner, free from fraud, coercion, collusion, intimidation, or bad faith. Failure to do so may result in the cancellation of this solicitation, cessation of contract negotiations, revocation of CBE certification, and suspension or debarment from future contracts.
 3. If Vendor fails to meet or make Good Faith Efforts (as defined in the Business Opportunity Act) to meet the CBE participation commitment (the "Commitment"), including CBE reserve, then Vendor shall pay the County liquidated damages in an amount equal to fifty percent (50%) of the actual dollar amount by which Vendor failed to achieve the Commitment, up to a maximum amount of ten percent (10%) of the total contract amount, excluding costs and reimbursable expenses. An example of this calculation is stated in Section 1-81.7, Broward County Code of Ordinances.
 4. Vendor shall comply with all applicable requirements of the Business Opportunity Act in the award of this contract. Failure by Vendor to carry out any of these requirements shall constitute a material breach of the contract, which shall permit the County to terminate this contract or to exercise any other remedy provided under this contract, the Broward County Code of Ordinances, the Broward County Administrative Code, or other applicable laws, with all such remedies being cumulative.
 5. Vendor shall pay its CBE subcontractors and suppliers, within fifteen (15) days following receipt of payment from the County, for all completed subcontracted work and supplies. If Vendor withholds an amount from CBE subcontractors or suppliers as retainage, such retainage shall be released and paid within fifteen (15) days following receipt of payment of retained amounts from the County.
 6. Vendor understands that the County will monitor Vendor's compliance with the CBE Program requirements. All Vendors must provide OESBD with a Monthly Utilization Report (MUR) to confirm its compliance with the Commitment agreed to in the contract; timely submission of the MUR every month throughout the term of the contract, including amendment and extension terms, is a condition of the County's payment of Vendor under the contract.

This form is also available online at:

www.broward.org/econdev/SmallBusiness/Pages/compliance.aspx

Supplier: MEJIA INTERNATIONAL GROUP CORP

LITIGATION HISTORY FORM

The completed form(s) should be returned with the Vendor's submittal. If not provided with submittal, the Vendor must submit within three business days of County's request. Vendor may be deemed non-responsive for failure to fully comply within stated timeframes.

- There are no material cases for this Vendor; or
- Material Case(s) are disclosed below:

Is this for a: (check type) <input type="checkbox"/> Parent, <input type="checkbox"/> Subsidiary, or <input type="checkbox"/> Predecessor Firm?	If Yes, name of Parent/Subsidiary/Predecessor:
	Or No <input type="checkbox"/>
Party	
Case Number, Name, and Date Filed	
Name of Court or other tribunal	
Type of Case	Bankruptcy <input type="checkbox"/> Civil <input type="checkbox"/> Criminal <input type="checkbox"/> Administrative/Regulatory <input type="checkbox"/>
Claim or Cause of Action and Brief description of each Count	
Brief description of the Subject Matter and Project Involved	
Disposition of Case (Attach copy of any applicable Judgment, Settlement Agreement and Satisfaction of Judgment.)	Pending <input type="checkbox"/> Settled <input type="checkbox"/> Dismissed <input type="checkbox"/> Judgment Vendor's Favor <input type="checkbox"/> Judgment Against Vendor <input type="checkbox"/> If Judgment Against, is Judgment Satisfied? <input type="checkbox"/> Yes <input type="checkbox"/> No
Opposing Counsel	Name: Email: Telephone Number:

Vendor Name: Mejia International Group Corp

Supplier: **MEJIA INTERNATIONAL GROUP CORP**

AFFILIATED ENTITIES OF THE PRINCIPAL(S) CERTIFICATION FORM

The completed form should be submitted with the solicitation response but must be submitted within three business days of County's request. Vendor may be deemed non-responsive for failure to fully comply within stated timeframes.

- a. All Vendors are required to disclose the names and addresses of "affiliated entities" of the Vendor's principal(s) over the last five (5) years (from the solicitation opening deadline) that have acted as a prime Vendor with the County.
- b. The County will review all affiliated entities of the Vendor's principal(s) for contract performance evaluations and the compliance history with the County's Small Business Program, including CBE, DBE and SBE goal attainment requirements. "Affiliated entities" of the principal(s) are those entities related to the Vendor by the sharing of stock or other means of control, including but not limited to a subsidiary, parent or sibling entity.
- c. The County will consider the contract performance evaluations and the compliance history of the affiliated entities of the Vendor's principals in its review and determination of responsibility.

The Vendor hereby certifies that: (select one)

- No principal of the proposing Vendor has prior affiliations that meet the criteria defined as "Affiliated entities"
- Principal(s) listed below have prior affiliations that meet the criteria defined as "Affiliated entities"

Principal's Name: **Cesar I. Mejia**

Names of Affiliated Entities: **Mejia Capital LLC**

Principal's Name:

Names of Affiliated Entities:

Principal's Name:

Names of Affiliated Entities:

Authorized Signature Name: **Diego Mejia**

Title: **Vicepresident**

Vendor Name: **Mejia International Group Corp**

Date: **11/14/2019**

Supplier: MEJIA INTERNATIONAL GROUP CORP

DOMESTIC PARTNERSHIP ACT CERTIFICATION FORM (REQUIREMENT AND TIEBREAKER)

Refer to Special Instructions to identify if Domestic Partnership Act is a requirement of the solicitation or acts only as a tiebreaker. If Domestic Partnership is a requirement of the solicitation, the completed and signed form should be returned with the Vendor's submittal. If the form is not provided with submittal, the Vendor must submit within three business days of County's request. Vendor may be deemed non-responsive for failure to fully comply within stated timeframes. To qualify for the Domestic Partnership tiebreaker criterion, the Vendor must currently offer the Domestic Partnership benefit and the completed and signed form must be returned at time of solicitation submittal.

The Domestic Partnership Act, Section 16 ½ -157, Broward County Code of Ordinances, requires all Vendors contracting with the County, in an amount over \$100,000 provide benefits to Domestic Partners of its employees, on the same basis as it provides benefits to employees' spouses, with certain exceptions as provided by the Ordinance.

For all submittals over \$100,000.00, the Vendor, by virtue of the signature below, certifies that it is aware of the requirements of Broward County's Domestic Partnership Act, Section 16-½ -157, Broward County Code of Ordinances; and certifies the following: (check only one below).

- 1. The Vendor currently complies with the requirements of the County's Domestic Partnership Act and provides benefits to Domestic Partners of its employees on the same basis as it provides benefits to employees' spouses
- 2. The Vendor will comply with the requirements of the County's Domestic Partnership Act at time of contract award and provide benefits to Domestic Partners of its employees on the same basis as it provides benefits to employees' spouses.
- 3. The Vendor will not comply with the requirements of the County's Domestic Partnership Act at time of award.
- 4. The Vendor does not need to comply with the requirements of the County's Domestic Partnership Act at time of award because the following exception(s) applies: **(check only one below)**.
 - The Vendor is a governmental entity, not-for-profit corporation, or charitable organization.
 - The Vendor is a religious organization, association, society, or non-profit charitable or educational institution.
 - The Vendor provides an employee the cash equivalent of benefits. (Attach an affidavit in compliance with the Act stating the efforts taken to provide such benefits and the amount of the cash equivalent).
 - The Vendor cannot comply with the provisions of the Domestic Partnership Act because it would violate the laws, rules or regulations of federal or state law or would violate or be inconsistent with the terms or conditions of a grant or contract with the United States or State of Florida. Indicate the law, statute or regulation (State the law, statute or regulation and attach explanation of its applicability).

Diego Mejia	Vicepresident	Mejia International Group Corp	11/15/2019
Authorized Signature/Name	Title	Vendor Name	Date

Supplier: MEJIA INTERNATIONAL GROUP CORP

AGREEMENT EXCEPTION FORM

The completed form(s) should be returned with the Vendor's submittal. If not provided with submittal, it shall be deemed an affirmation by the Vendor that it accepts the terms and conditions of the County's Agreement as disclosed in the solicitation.

The Vendor must either provide specific proposed alternative language on the form below. Additionally, a brief justification specifically addressing each provision to which an exception is taken should be provided.

- There are no exceptions to the terms and conditions of the County Agreement as referenced in the solicitation; or
- The following exceptions are disclosed below: (use additional forms as needed; separate each Article/ Section number)

Term or Condition Article / Section	Insert version of exception or specific proposed alternative language	Provide brief justification for change

Vendor Name: Mejia International Group Corp

Supplier: MEJIA INTERNATIONAL GROUP CORP

RFP-RFQ-RLI LOCATION ATTESTATION FORM (EVALUATION CRITERIA)

The completed and signed form and supporting information (if applicable, for Joint Ventures) should be returned with the Vendor's submittal. If not provided with submittal, the Vendor must submit within three business days of County's request. Failure to timely submit this form and supporting information may affect the Vendor's evaluation. Provided information is subject to verification by the County.

A Vendor's principal place of business location (also known as the nerve center) within Broward County is considered in accordance with Evaluation Criteria. The County's definition of a principal place of business is:

1. As defined by the Broward County Local Preference Ordinance, "Principal place of business means the nerve center or center of overall direction, control and coordination of the activities of the bidder [Vendor]. If the bidder has only one (1) business location, such business location shall be considered its principal place of business."
2. A principal place of business refers to the place where a corporation's officers direct, control, and coordinate the corporation's day-to-day activities. It is the corporation's 'nerve center' and in practice it should normally be the place where the corporation maintains its headquarters; provided that the headquarters is the actual center of direction, control, and coordination, i.e., the 'nerve center', and not simply an office where the corporation holds its board meetings (for example, attended by directors and officers who have traveled there for the occasion).

The Vendor's principal place of business in Broward County shall be the Vendor's "Principal Address" as indicated with the Florida Department of State Division of Corporations, for at least six months prior to the solicitation's due date.

Check one of the following:

- The Vendor certifies that it has a principal place of business location (also known as the nerve center) within Broward County, as documented in Florida Department of State Division of Corporations (Sunbiz), and attests to the following statements:

1. Vendor's address listed in its submittal is its principal place of business as defined by Broward County;
2. Vendor's "Principal Address" listed with the Florida Department of State Division of Corporations is the same as the address listed in its submittal and the address was listed for at least six months prior to the solicitation's opening date. A copy of Florida Department of State Division of Corporations (Sunbiz) is attached as verification.
3. Vendor must be located at the listed "nerve center" address ("Principal Address") for at least six (6) months prior to the solicitation's opening date;
4. Vendor has not merged with another firm within the last six months that is not headquartered in Broward County and is not a wholly owned subsidiary or a holding company of another firm that is not headquartered in Broward County;
5. If awarded a contract, it is the intent of the Vendor to remain at the referenced address for the duration of the contract term, including any renewals, extensions or any approved

interim contracts for the services provided under this contract; and

- 6. The Vendor understands that if after contract award, the County learns that the attestation was erroneous, and upon investigation determines that the error was willful or intentional on the part of the Vendor, the County may, on that basis exercise any contractual right to terminate the contract. Further any misleading, inaccurate, false information or documentation submitted by any party affiliated with this procurement may lead to suspension and/or debarment from doing business with Broward County as outlined in the Procurement Code, Section 21.119.

If the Vendor is submitting a response as a Joint Venture, the following information is required to be submitted:

- a. Name of the Joint Venture Partnership
- b. Percentage of Equity for all Joint Venture Partners
- c. A copy of the executed Agreement(s) between the Joint Venture Partners

Vendor does not have a principal place of business location (also known as the nerve center) within Broward County.

Vendor Information:

Vendor Name: **Mejia International Group Corp**

Vendor's address listed in its submittal is:

**5752 NW 119th Dr
Coral Springs, FL 33076**

The signature below must be by an individual authorized to bind the Vendor. The signature below is an attestation that all information listed above and provided to Broward County is true and accurate.

Diego Mejia	Vicepresident	Mejia International Group Corp	11/14/2019
Authorized Signature/Name	Title	Vendor Name	Date

Supplier: MEJIA INTERNATIONAL GROUP CORP

RFP-RLI-RFQ LOCAL PREFERENCE AND TIE BREAKER CERTIFICATION FORM

The completed and signed form should be returned with the Vendor's submittal to determine Local Preference eligibility, however it must be returned at time of solicitation submittal to qualify for the Tie Break criteria. If not provided with submittal, the Vendor must submit within three business days of County's request for evaluation of Local Preference. Proof of a local business tax should be submitted with this form. Failure to timely submit this form or local business tax receipt may render the business ineligible for application of the Local Preference or Tie Break Criteria.

In accordance with Section 21.31.d. of the Broward County Procurement Code, to qualify for the Tie Break Criteria, the undersigned Vendor hereby certifies that (check box if applicable):

- The Vendor is a local Vendor in Broward County and:
 - a. has a valid Broward County local business tax receipt;
 - b. has been in existence for at least six-months prior to the solicitation opening;
 - c. at a business address physically located within Broward County;
 - d. in an area zoned for such business;
 - e. provides services from this location on a day-to-day basis, and
 - f. services provided from this location are a substantial component of the services offered in the Vendor's proposal.

In accordance with Local Preference, Section 1-74, et. seq., Broward County Code of Ordinances, a local business meeting the below requirements is eligible for Local Preference. To qualify for the Local Preference, the undersigned Vendor hereby certifies that (check box if applicable):

- The Vendor is a local Vendor in Broward and:
 - a. has a valid Broward County local business tax receipt issued at least one year prior to solicitation opening;
 - b. has been in existence for at least one-year prior to the solicitation opening;
 - c. provides services on a day-to-day basis, at a business address physically located within the Broward County limits in an area zoned for such business; and
 - d. the services provided from this location are a substantial component of the services offered in the Vendor's proposal.

Local Business Address: **5752 NW 119th Dr
Coral Springs, FL 33076**

Vendor does not qualify for Tie Break Criteria or Local Preference, in accordance with the above requirements. The undersigned Vendor hereby certifies that (check box if applicable): The Vendor is not a local Vendor in Broward County.

Diego Mejia	Vicepresident	Mejia International Group Corp	11/14/2019
AUTHORIZED SIGNATURE/NAME	TITLE	COMPANY	DATE

Supplier: MEJIA INTERNATIONAL GROUP CORP

VOLUME OF PREVIOUS WORK ATTESTATION FORM

The completed and signed form should be returned with the Vendor's submittal. If not provided with submittal, the Vendor must submit within three business days of County's request. Failure to provide timely may affect the Vendor's evaluation.

This completed form MUST be included with the Vendor's submittal at the time of the opening deadline to be considered for a Tie Breaker criterion (if applicable).

Points assigned for Volume of Previous Work will be based on the amount paid-to-date by the County to a prime Vendor **MINUS** the Vendor's confirmed payments paid-to-date to approved certified County Business Enterprise (CBE) firms performing services as Vendor's subcontractor/subconsultant to obtain the CBE goal commitment as confirmed by County's Office of Economic and Small Business Development. Reporting must be within five (5) years of the current solicitation's opening date.

Vendor must list all received payments paid-to-date by contract as a prime vendor from Broward County Board of County Commissioners. Reporting must be within five (5) years of the current solicitation's opening date.

Vendor must also list all total confirmed payments paid-to-date by contract, to approved certified CBE firms utilized to obtain the contract's CBE goal commitment. Reporting must be within five (5) years of the current solicitation's opening date.

In accordance with Section 21.31.d. of the Broward County Procurement Code, the Vendor with the lowest dollar volume of work previously paid by the County over a five-year period from the date of the submittal opening will receive the Tie Breaker.

The Vendor attests to the following:

Item No.	Project Title	Contract No.	Department/ Division	Date Awarded	Prime: Paid to Date	CBE: Paid to Date
1.						
2.						
3.						
4.						
5.						
6.						
7.						

Grand Total

Has the Vendor been a member/partner of a Joint Venture firm that was awarded a contract by the County?

Yes No

If Yes, Vendor must submit a **Joint Vendor Volume of Work Attestation Form**.

Vendor Name: Mejia International Group Corp

Diego Mejia
Authorized Signature/Name

Vicepresident
Title

11/15/2019
Date

VOLUME OF PREVIOUS WORK ATTESTATION JOINT VENTURE FORM

If applicable, this form and additional required documentation should be submitted with the Vendor's submittal. If not provided with submittal, the Vendor must submit within three business days of County's request. Failure to timely submit this form and supporting documentation may affect the Vendor's evaluation.

If a Joint Venture, the payments paid-to-date by contract provided must encompass the Joint Venture and each of the entities forming the Joint Venture. Points assigned for Volume of Previous Work will be based on the amount paid-to-date by contract to the Joint Venture firm **MINUS** all confirmed payments paid-to-date to approved certified CBE firms utilized to obtain the CBE goal commitment. Reporting must be within five (5) years of the current solicitation's opening date. Amount will then be multiplied by the member firm's equity percentage.

In accordance with Section 21.31.d. of the Broward County Procurement Code, the Vendor with the lowest dollar volume of work previously paid by the County over a five-year period from the date of the submittal opening will receive the Tie Breaker.

The Vendor attests to the following:

Item No.	Project Title	Contract No.	Department/ Division	Date Awarded	JV Equity Percent	Prime: Paid to Date	CBE: Paid to Date
1.							
2.							
3.							
4.							
5.							
6.							
7.							
8.							

Grand
Total

Vendor is required to submit an executed Joint Venture agreement(s) and any amendments for each project listed above. Each agreement must be executed prior to the opening date of this solicitation.

Vendor Name: Mejia International Group Corp

Diego Mejia
Authorized Signature/Name

Vicepresident
Title

11/15/2019
Date

Supplier: MEJIA INTERNATIONAL GROUP CORP

Insurance Requirements: (Refer to the Insurance Requirement Form)

- A. The insurance requirement designated in the **Insurance Requirement Form** indicates the minimum coverage required for the scope of work, as determined by the Risk Management Division. Vendor shall provide verification of compliance such as a Certificate of Insurance, or a letter of verification from the Vendor's insurance agent/broker, which states the ability of the Vendor to meet the requirements upon award. The verification must be submitted within three business days of County's request. Vendor may be deemed non-responsive for failure to fully comply within stated timeframes. Final award shall be subject to receipt and acceptance by the County of proof of meeting all insurance requirements of the bid.
- B. Without limiting any of the other obligations or liabilities of Vendor, Vendor shall provide, pay for, and maintain on a primary basis in force until all of its work to be performed under this Contract has been completed and accepted by County (or for such duration specified), at least the minimum insurance coverage and limits set forth in the Insurance Requirement Form under the following conditions listed below. If a limit or policy is not indicated on Insurance Requirement certificate by a checked box, it is not required as a condition of this contract.
1. Commercial General Liability with minimum limits per occurrence, combined single limit for bodily injury and property damage, and when indicated a minimum limit per aggregate. County is to be expressly included as an Additional Insured in the name of Broward County arising out of operations performed for the County, by or on behalf of Vendor, or acts or omissions of Vendor in connection with general supervision of such operation. If Vendor uses a subcontractor, then Vendor shall require that subcontractor names County as an Additional Insured.
 2. Business Automobile Liability with minimum limits per occurrence, combined single limit for bodily injury and property damage. Scheduled autos shall be listed on Vendor's certificate of insurance. County is to be named as an additional insured in the name of Broward County.

Note: Insurance requirements for Automobile Liability are not applicable where delivery will be made by a third party carrier. All vendors that will be making deliveries in their own vehicles are required to provide proof of insurance for Automobile Liability and other pertinent coverages as indicated on the Insurance Requirement certificate, prior to award. If deliveries are being made by a third party carrier, other pertinent coverages listed on the Insurance Requirement certificate are still required.

Vendor should indicate how product is being delivered:

Vendor Name: **MEJIA INTERNATIONAL GROUP CORP**

Company Vehicle: Yes or No

If Common Carrier (indicate carrier): **Economy Preferred (Auto)**

Other:

3. Workers' Compensation insurance to apply for all employees in compliance with Chapter 440, the "Workers' Compensation Law" of the State of Florida and all applicable federal

laws. The policy must include Employers' Liability with minimum limits each accident. If any operations are to be undertaken on or about navigable waters, coverage must be included for the U.S. Longshoremen & Harbor Workers Act and Jones Act.

4. Excess Liability/Umbrella Insurance may be used to satisfy the minimum liability limits required; however, the annual aggregate limit shall not be less than the highest "each occurrence" limit for the underlying liability policy. Vendor shall endorse County as an Additional Insured unless the policy provides coverage on a pure/true "Follow-form" basis.
5. Builder's Risk or equivalent coverage (such as Property Insurance or Installation Floater) is required as a condition precedent to the issuance of the Second Notice to Proceed for projects involving but not limited to: changes to a building's structural elements, work compromising the exterior of the building for any extended period of time, installation of a large single component, or remodeling where the cost of remodeling is 20% or more the value of the property. Coverage shall be, "All Risks" Completed Value form with a deductible not to exceed Ten Thousand Dollars (\$10,000.00) each claim for all perils except for wind and flood.
6. For the peril of wind, the Vendor shall maintain a deductible that is commercially feasible which does not exceed five percent (5%) of the value of the Contract price. Such Policy shall reflect Broward County as an additional loss payee.
7. For the peril of flood, coverage must be afforded for the lesser of the total insurable value of such buildings or structures, and the maximum amount of flood insurance coverage available under the National Flood Program. Vendor shall maintain a deductible that is commercially feasible and does not exceed five percent (5%) of the value of the Contract price. Such Policy shall reflect Broward County as an additional loss payee.
8. The County reserves the right to provide Property Insurance covering the Project, materials, equipment and supplies intended for specific installation in the Project while such materials, equipment and supplies are located at the Project site, in transit, or while temporarily located away from the Project site. This coverage will not cover any of the Vendor's or subcontractors' tools, equipment, machinery or provide any business interruption or time element coverage to the Vendor(s).
9. If the County decides to purchase Property Insurance or provide for coverage under its existing insurance policy for this Project, then the insurance required to be carried by the Vendor may be modified to account for the insurance being provided by the County. Such modification may also include execution of Waiver of Subrogation documentation.
10. In the event that a claim occurs for this Project and is made upon the County's insurance policy, for other than a windstorm, Vendor will pay at least Ten Thousand Dollars (\$10,000.00) of the deductible amount for such claim.
11. Waiver of Occupancy Clause or Warranty: Policy must be specifically endorsed to eliminate any "Occupancy Clause" or similar warranty or representation that the building (s), addition(s) or structure(s) in the course of construction shall not be occupied without specific endorsement of the policy. The Policy must be endorsed to provide that the Builder's Risk coverage will continue to apply until final acceptance by County.
12. Pollution Liability or Environmental Impairment Liability: including clean-up costs, with minimum limits per claim, subject to a maximum deductible per claim. Such policy shall remain in force for the minimum length of time indicated, include an annual policy aggregate and name Broward County as an Additional Insured. Vendor shall be responsible for all deductibles in the event of a claim.

13. Professional Liability Insurance with minimum limits for each claim, subject to a maximum deductible per claim. Such policy shall remain in force for the minimum length of time indicated. Vendor shall notify County in writing within thirty (30) days of any claim filed or made against its Professional Liability Insurance policy. Vendor shall be responsible for all deductibles in the event of a claim. The deductible shall be indicated on the Vendor's Certificate of Insurance.
- C. Coverage must be afforded on a form no more restrictive than the latest edition of the respective policy form as filed by the Insurance Services Office. If the initial insurance expires prior to the completion and acceptance of the Work, renewal certificates shall be furnished upon expiration. County reserves the right to obtain a certified copy of any insurance policy required by this Section within fifteen (15) calendar days of a written request by County.
 - D. Notice of Cancellation and/or Restriction: the policy(ies) must be endorsed to provide Broward County with at least thirty (30) days' notice of cancellation and/or restriction.
 - E. The official title of the Certificate Holder is Broward County. This official title shall be used in all insurance documentation.
 - F. Broward County's Risk Management Division reserves the right, but not the obligation, to review and revise any insurance requirements at the time of contract renewal and/or any amendments, not limited to deductibles, limits, coverages and endorsements based on insurance market conditions affecting the availability or affordability of coverage; or changes in the scope of work/specifications affecting the applicability of coverage.

Supplier: **MEJIA INTERNATIONAL GROUP CORP**

Workforce Investment Program Requirements:

- A. In accordance with Broward County Workforce Investment Program, Administrative Code, Section 19.211, the Workforce Investment Program (Program) this solicitation is a covered contract if the open-end contract award value exceeds \$500,000 per year or if the individual project value exceeds \$500,000 under a fixed-term contract. The Program encourages Vendors to utilize CareerSource Broward (CareerSource) and their contract partners as a first source for employment candidates for work on County-funded projects, and encourages investment in Broward County economic development through the hiring of economically disadvantaged or hard-to-hire individuals.
- B. Compliance with the Program, including compliance with First Source Referral and the Qualifying New Hires goals, is a matter of responsibility. Vendor should submit the **Workforce Investment Program Certification Form** with its response. If not provided with solicitation submittal, the Vendor must supply within three business days of County's request. Vendor may be deemed non-responsible for failure to comply within stated timeframes.
- C. The following is a summary of requirements contained in the Program. This summary is not all-inclusive of the requirements of the Program. If there is any conflict between the following summary and the language in the Program, the language in the Program shall prevail. In compliance with the Program, Vendor (and/or its subcontractors) shall agree to:
1. be bound to contractual obligations under the contract;
 2. use good faith efforts to meet First Source Referral goal for vacancies that result from award of this contract;
 3. publicly advertise any vacancies that are the direct result of this contract, exclusively with CareerSource for at least five (5) business days;
 4. review qualifications of CareerSource's Qualified Referrals and use good faith efforts to interview Qualified Referrals that appear to meet the required qualifications;
 5. use good faith efforts to hire Qualifying New Hires (as defined by the Program) for at least fifty percent (50%) of the vacancies (rounded up) that are the direct result of this contract;
 6. obtain a hired worker's written certification, attesting to a status as a Qualifying New Hire, Economically Disadvantaged Worker, or Hard-to-Hire worker (if applicable);
 7. retain records relating to Program requirements, including: records of all applicable vacancies; job order requests to CareerSource; qualified referral lists; and records of candidates interviewed and the outcome of the interviews.
 8. provide to the County any documents and records demonstrating Vendor's compliance and good faith efforts to comply with the Program;
 9. submit to the County an annual report by January 31st and within 30 days of contract completion or expiration; and

10. ensure that all of its subcontractors comply with the requirements of the Program.

- D. Further information about the Program, Vendor's obligations, and the Qualifying New Hire's certification form may be obtained on the Office of Economic and Small Business Development website:

broward.org/econdev/Pages/WorkforceInvestmentProgram.aspx. Vendor is responsible for reading and understanding requirements of the Program.

- E. Subcontractors: Vendor's subcontractors shall use good faith efforts to meet the First Source Referral and the Qualifying New Hires goals, in accordance with the Program. The Vendor shall include in any subcontracts a requirement that the all subcontractors comply with the Program requirements. The Vendor shall be responsible for compliance by any subcontractor with the Program as it applies to their subcontract.
- F. Reporting: Vendor shall maintain and make available to County upon request all records documenting Vendor's compliance and its subcontractors' compliance with the requirements of the Program, and shall submit the required reports to the Contract Administrator annually by January 31 and within thirty (30) days after the conclusion of this contract. Failure to timely comply with reporting requirements shall constitute a material breach of this contract.
- G. Evaluation: The Contract Administrator will document the Vendor's compliance and good faith efforts as part of the Vendor's Performance Evaluation.
- H. Failure to demonstrate good faith efforts to meet the First Source Referral and the Qualifying New Hires goal shall constitute a material breach of this contract.

WORKFORCE INVESTMENT PROGRAM CERTIFICATION FORM

This form(s) should be returned with the Vendor's submittal. If not provided with solicitation submittal, the Vendor must supply information within three business days of County's request. Vendor may be deemed non-responsible for failure to comply within stated timeframes.

In accordance with the Workforce Investment Program:

Mejia International Group Corp (Vendor) agrees to be bound to the contractual obligations of the Workforce Investment Program, Broward County Administrative Code Section 19.211, requiring our firm to use good faith efforts to meet the First Source Referral Goal and the Qualifying New Hires Goal.

The statement must be signed by an authorized signatory of the firm. Receipt of the signed statement from the Vendor is a matter of responsibility. A firm not offering an affirmative response in this regard will be found "non-responsible" to the solicitation and not eligible for further evaluation or award.

Diego Mejia
AUTHORIZED SIGNATURE/NAME

Vicepresident
TITLE

11/14/2019
DATE