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HEALTH AND SAFETY **PLAN**

Mitigation & System Hardening Activities

for

St. Thomas, St. Croix, USVI
Water and Power Authority
WAPA


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1.0 Scope of Work

Haugland Virgin Islands will serve as the General Contractor for electrical mitigations and system hardening work on St. Thomas and St. Croix, USVI. This work involves both new construction and rebuild as needed on distribution, transmission, underground and substation activities as needed. Haugland Virgin Island will provide labor and equipment to safely and efficiently perform all work and will strive for **Zero Incidents** and **No** unplanned customer interruptions.

Standard voltage circuits on the islands consist of 13.8, 25, 34.5 and 69Kv.

The Contractor shall furnish labor, equipment, supervision, supplies, and other facilities, except as specifically noted in the Contract Documents and shall perform work necessary. The Contractor shall perform the work in strict accordance with the Contract Documents and to the satisfaction and approval of the Owner.

2.1 Project Personnel

2.2 Roles and Responsibilities:

Project Manager – Steve O’Halloran: 516-265-4678

The Project Manager will have the responsibility for monitoring and enforcing the Owner’s safety requirements. The Project Manager has full authority to immediately correct any safety hazard as he deems appropriate. The Project Manager shall:


- ✓ Ensure that the project is meeting the schedule dates, and that the appropriate resources & equipment are being used for the scheduled tasks so that it can be performed in a safe manner.
- ✓ Verify & coordinate to ensure that the correct material, PPE, and equipment is available to maintain the efficient & safe flow of work on the jobsite.
- ✓ Walk the job site weekly to ensure that work is performed in accordance with the company work procedures, the owner requirements and the Health and Safety Plan.
- ✓ Where hazards are observed, take prompt corrective action.
- ✓ Have the authority to order a work stoppage in the event of a serious safety issue.

A Competent Person shall be the Project Manager, Superintendent, General Foreman, Foreman, or any other employee designated by the Project Manager and Safety Manager. The Competent Person is defined by OSHA as an individual who can identify hazards and has the authority to take prompt corrective action. Competent Person supervision is necessary for activities such as, lockout procedures, live circuit work, and welding/hot work.

Project Safety Director Bill Leonard: 917-584-2674

Project Safety Lead – St. Croix Mike Roberts: 516-384-8815

Safety Lead- St. Thomas: Mark Brady 352-210-6972

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The Project Safety Manager will have the responsibility for monitoring and enforcing Federal, client, and owner safety requirements. The project safety manager has full authority to immediately correct and safety hazard as appropriate. The project safety manager duties include but are not necessarily limited to:


- Charge of the day-to-day details of this project safety plan;
- Investigates, analysis and documents safety related incidents.
- Performs site visits and conducts safety audits providing corrective measures and training as needed to remediate and non-compliant conditions discovered.
- Consults and advises operations with ongoing project concerns.
- Conducts equipment audits
- Provides company new hire orientations as needed
- Provides medical first aid and treatment as needed
- Ensures that an adequate of safety related items are available.

Superintendent- St. Croix Tony Jalbert: 516-554-7796
Superintendent- St. Thomas Domonick DeDominicis: 516-591-9443

- Serve as the Competent Person and delegate other qualified employees as necessary to serve as a Competent Person;
- Walk the job site each day to ensure a safe environment;
- Where hazards are observed, take prompt corrective action;
- Be in charge of the day-to-day details of this project-specific safety plan.
- Have the authority to order a work stoppage.
- Walk the site with the foreman to investigate potential safety hazards.
- Meet with the foremen to review the specific tasks of the workers.
- Direct supervision for the work being performed, and ensure it is done in a safe and efficient manner and in accordance with WAPA Construction Standards


Employees and Sub-Contractors:

- Haugland Virgin Islands employees and all sub-contractor employees are responsible for following all safety requirements outlined in this plan.
- Each Haugland Virgin Islands employee is responsible for reporting to supervision any incidents including near-miss incidents.
- Each employee has the authority to refuse to work, or, to request that others stop work if that employee believes the conditions to be unsafe.
- All employees are responsible for following the safety requirements outlined by WAPA.

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2.2 Qualifications:

- All work will be performed by qualified IBEW workers and/or apprentices who have been trained to Haugland Energy and WAPA standards.
- Any work on or near energized lines/equipment will be performed by qualified journeyman rated electrical workers. Apprentices working on energized equipment will be under the direct supervision of qualified journeyman electrical workers.
- Employees required to operate lifting equipment and/or excavating equipment must be properly trained and qualified. Operators of cable hoisting equipment shall possess National Crane Operator certification for the class of equipment they are operating.
- **GC employees and all sub-contractor employees are required to have Electrical Hazard Awareness Training. Training records or other documentation of this training will be kept on file and available for review upon request. Sub- Contractors must provide this documentation to the GC before they begin any work.**
- **There shall be at least two employees trained in CPR and First Aid on-site during working hours. [Note: This is an OSHA requirement for working around voltages above 50 volts as specified in 29 CFR 1910.269.]**
- All employees on the line crew are required to be qualified in rescue training procedures and CPR training.

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3.1 Hazard Identification and Risk Assessment

3.2 Initial Assessment

The table below identifies major trade/task areas, the primary hazards and proposed mitigation steps. Mitigation steps shall be reviewed as necessary to reflect project changes.

Standard, minimum PPE attire in the designated construction work area shall include safety glasses with side shields, issued, approved hard hat and protective toed footwear, Reflective/Hi-Visibility vests and task specific gloves.

(Fall protection is required where the height or depth from one level to another is 6ft. or greater).

MAD – Minimum Approach Distances for the qualified person applies to the distance from your fully extended arm to the exposed live part.

See Minimum Approach Distance (MAD) table for qualified and unqualified personnel.


The Daily Job Briefing shall be conducted at the job site. This is required by our safety rules as well as OSHA 1910.269c. The Job Briefing shall cover at a minimum: job hazards, work procedures, special precautions, energy source controls and PPE requirements.

Visitors to the job site will be required to read, acknowledge the contents and sign the daily job brief. If a visitor refuses to sign the job brief, the person in charge will note that on the job brief and may not allow the visitor to enter the work area.

Any visitors to work sites where live line work is being performed will require the appropriate PPE, including FR clothing. **FR clothing must have a minimum 8 cal rating.**

If work is being performed where there is a potential for persons or equipment to come in contact with energized equipment, a Safety Observer **will** be appointed by Haugland Virgin Islands.

Class 2 Rubber Gloves and Sleeves required for gloving below 15 kV, Class 3 15kV to 25kV, Class 4 25kV to 35 kV. Additional FR PPE will be determined based on the Arc Flash value of each individual circuit to be worked on while energized.


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Hazard Identification and Risk Assessment Worksheet


Overhead Distribution

This list may not include of all the risks that workers may be exposed to, but, is an attempt to address the obvious ones. **NOTE: When working 34.5 kV all equipment Shall be Grounded and Barricaded & Safety Observer will be utilized. ** BE AWARE OF POTENTIAL BACKFEED FROM SECONDARY SOURCES**


Activity:	Demolish, repair, and construct distribution, transmission, underground and substation electrical systems	Overall Risk Rank: 5	Low Medium High
Major Task	Hazard	Risk Ranking	Controls/Mitigation Steps: Engineering; Administrative; PPE
Material handling	Contact with overhead energized lines/equipment	5	Maintain MAD, ground equipment, Wear rubber gloves, when required use protective cover-up. Disable reclosing controls if needed
	Slips / trips / falls		Keep work area clear. Use situational awareness at all times
Installing and removing poles and anchors near energized conductors	Contact with overhead energized lines/equipment	5	Maintain MAD , ground equipment, Wear required Class Rubber Gloves and Sleeves, FR Clothing and use protective cover-up. Disable reclosing controls if needed. Maintain MAD. Obtain valid Dig-Safe . Use safety observer if necessary. Possess a valid hoisting license
Required Traffic Protection / Highway crossings)	Oncoming Vehicle, heavy equipment and public safety distractions.	5	Warning signs, cones, flags, barricades, Flaggers or police details, as required. Hi-visibility vest. If necessary, provide TMP to State for approval which conforms to latest MUTCD.
Relocate and /or transfer energized conductors	Contact with overhead energized lines/equipment	5	Disable reclosing controls if needed. Wear all required PPE Rubber Gloves and Sleeves, FR Clothing, Maintain MAD

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<p align="center">Hazard Identification and Risk Assessment Worksheet</p> <p align="center">Overhead Distribution/Composite Poles</p> <p>This list may not include of all the risks that workers may be exposed to, but, is an attempt to address the obvious ones. NOTE: When working 34.5 kV all equipment Shall be Grounded and Barricaded & Safety Observer will be utilized. ** BE AWARE OF POTENTIAL BACKFEED FROM SECONDARY SOURCES</p>			
Activity:	Demolish, repair, and construct distribution, transmission, underground and substation electrical systems	Overall Risk Rank: 5	Low Medium <u>High</u>
Major Task	Hazard	Risk Ranking	Controls/Mitigation Steps: Engineering; Administrative; PPE
Composite Pole Movement: 1, 2, or 3 piece pole moved with Telescoping Fork Truck.	Swing radius, suspended load.	5	Designate work area and use spotter. Do not work under suspended load.
Assembling Composite Poles:	Pinch Points		Watch hand placement. Wear work gloves
Drilling Composite Pole: 1. Carbide or Diamond tipped bits, hole saws with mandrels 2. Drill pilot holes 3. Use pilot holes when installing screws (no self tappers) 4. Recommended low speed drills (1000 rpm or less)	Fiberglass dust and fragments	5	Long sleeve shirt and gloves. Paper filter mask. Spray bottle of water to keep dust mitigated. Safety glasses/goggles or face shield.
Framing Composite Poles: RS manufacture-Bolts should be only hand tight with pile nut backup.	Pinch Points Cracking of fiberglass	5	Hand Placement Wear work gloves Don't use power tools on bolts
Framing Composite Poles: Trident Poles recommended bolt torque not to exceed 50 ft-lbs	Pinch Points Drawing hardware into pole	5	Hand Placement Wear work gloves Use Torque wrench

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<p align="center">Hazard Identification and Risk Assessment Worksheet</p> <p align="center">Overhead Distribution/Composite Poles</p> <p>This list may not include of all the risks that workers may be exposed to, but, is an attempt to address the obvious ones. NOTE: When working 34.5 kV all equipment Shall be Grounded and Barricaded & Safety Observer will be utilized. ** BE AWARE OF POTENTIAL BACKFEED FROM SECONDARY SOURCES</p>			
Activity:	Demolish, repair, and construct distribution, transmission, underground and substation electrical systems	Overall Risk Rank: 5	Low Medium <u>High</u>
Major Task	Hazard	Risk Ranking	Controls/Mitigation Steps: Engineering; Administrative; PPE
Storage Completed Composite Poles: 1. Always use wood on ground 2. Always use wood between poles	Pinch Points Caught between	5	Hand Placement Awareness Always wear work gloves Always stay in view of operator, use proper hand signals
Loading Composite poles: 1. Use a telescoping fork truck 2. Use of Digger Derrick nylon straps required 3. Spacing between layers of poles...wood required	Pinch Points Suspended load	5	Stay out of bite, situational awareness. Eye contact with operator, avoid being under any load.
Handling of Composite Poles: 1. Do not drag poles 2. Do not use chains, cable or other metal rigging 3. Protect UV surface	Damage to finished product Warranty issues	5	Proper Equipment used. Handling only with nylon straps Never drag poles
Pole Foam Back Fill	Skin irritation	5	Always mix foam wearing gloves


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Hazard Identification and Risk Assessment Worksheet


Underground

This list may not include all of the risks that workers may be exposed to. It is an attempt to address
The obvious ones.


Install/remove transformers, regulators, capacitor banks, Pad-mount transformers and/or re-closers.	Contact with overhead energized lines/ equipment	5	Wear all PPE, FR Clothing, Required Class Rubber Gloves and Sleeves. Use protective cover-up. Maintain MAD. Disable reclosing controls if
Install/remove cut-outs, arresters, pole mounted switches	Contact with overhead energized lines/ equipment	5	Wear all PPE, FR Clothing, Required Class Rubber Gloves, and Sleeves. Use protective cover-up. Disable reclosing controls if needed
Operate / open , close cut-outs and pole mounted switches	Contact with overhead energized Lines/ equipment Arc flash, flying debris.	5	Wear all PPE, FR Clothing, Required Class Rubber Gloves, Sleeves, face shield, hearing protection and appropriate hot stick. Use protective cover-up. Disable reclosing controls if needed
Install/Transfer URD cable risers.	Contact with overhead energized Lines / equipment	5	Wear all PPE, Required Class Rubber Gloves, Sleeves, FR Clothing. Use protective cover-up. Disable reclosing controls if needed.
Bonding Overhead Equipment	Contact with energized lines and equipment	5	Wear all PPE, Rubber Gloves, Sleeves, FR Clothing. Use protective cover-up where necessary. Disable reclosing Controls if necessary.
Climbing Poles/Working at Heights	Falls from heights, pole falling over	5	Wear 100% Fall Protection – Inspect pole at ground line. Brace pole if necessary

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Hazard Identification and Risk Assessment Worksheet Underground This list may not include all of the risks that workers may be exposed to, but, is an attempt to Address the obvious ones.			
Activity (con't)	Demolish, repair, and construct distribution, transmission, underground and substation electrical systems	Overall Risk Ranking 4	Low Medium High
Major Tasks	Hazard	Risk Ranking	Engineering Controls/Mitigation Steps;; Administrative; PPE
General work area setup.	Slips, trips, falls or strains From walking along uneven or muddy surfaces.	3	Pre-plan and identify hazards of Work area. Remove hazards as applicable. Wear PPE, work gloves.
	Loss of control of vehicles And equipment due to improper operation on uneven and dangerous terrain.		Possess proper license or Certification to operate equipment.
	Negative environmental Impact.		Become familiar with proper Environmental procedures for work on R/W's.
Securing Loads	Equipment or materials falling from trucks or trailers Causing damage and injury to personnel or the public.	3	Use redundant safeties where able. Follow acceptable rigging Practices. Secure all loads per DOT standards. Install side and rear barriers on vehicles.
Excavations	Dig-ins and dangers Associated with unmarked utilities.	3	Use proper methodology and Pre-plan your work to identify and mitigate known
	Cave-ins of wet excavations.		All spoils keep back 2 feet from Edge of excavation. Barricade and cover unattended excavations. Obtain valid Dig-Safe.
	Rollover of equipment.		Set up with outriggers on flat, Solid surface.
State Highway and Other road	Struck by vehicle when Working adjacent to highways and other roads.	5	Utilize signs, cones, high Visibility vests, etc. Install barriers.

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Hazard and Significance	Risk Ranking Matrix				
	1	2	3	4	5
Severity of Exposure	Minimal	First aid required	Moderate injuries, i.e.: stitches, sprained ankle	Hospitalization. Severe burns, internal bleeding, etc.	Death; potential for system wide impact; added controls needed
Likelihood of Exposure	Very unlikely, under normal conditions	Occurs during abnormal/ emergency conditions	May occur during routine activities	Occurs during normal operating conditions	Likely to occur during activities
Frequency of Exposure	Slight<1hr/day	Infrequent<8hrs/week	Moderate exposure 1-2 day/wk.	Frequent exposure 3-4 day/wk., <8 hrs./day	Daily exposure Continuous, 8 hrs./day
Severity + Likelihood + Frequency = ____/3 = Risk Rating _____ Less than 2 = Low Risk; Greater than 2 but less than 4 = Medium Risk; 4 and above = High Risk					

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Minimum Approach Distances (MAD)

Minimum Approach Distances for Qualified and Unqualified Electrical Workers

No employee shall approach or take any conductive object closer to exposed, energized parts than the distances listed below: (For phase to ground and phase to phase clearance.)

Minimum Approach Distance: The closest point of approach to energized lines or equipment by a qualified employee, or by any other conductive object, without the use of insulating gloves, sleeves or portable protective devices, shall be in accordance with the table below.

Reaching Distance: The distance that an employee's hand or any other body part and the end of any uninsulated tool being handled, can reach energized apparatus. Minimum Approach distance is measured from the end of the employees reaching distance plus the length of any uninsulated tool or equipment that they may be handling.

<u>Nominal Voltage¹</u>	<u>Qualified Workers Phase to Ground²</u>	<u>Qualified Workers Phase to Phase</u>	<u>Unqualified Workers Phase to Ground</u>
0.50 - 0.300 kV	Avoid contact	Avoid contact	Avoid Contact
5.1 - 15.0 kV	2.12 feet	2.24 feet	10 Feet
15.1-36.0 kV	2 .53 feet	2.92 feet	10 Feet
36.1- 46.0 kV	2.76 feet	3.22 feet	10 Feet
46.1 - 72.5 kV	3.29 feet	3.94 feet	10 Feet 8 inches
72.6 – 121 kV	3.71 feet	4.66 feet	12 Feet 4 inches
121.1 – 145 kV	4.27 feet	5.38 feet	13 Feet 4 inches
145.1 – 169 kV	4.79 feet	6.36 feet	14 Feet
169.1 – 242 kV	6.59 feet	10.10 feet	16 Feet
242.1 – 362 kV	11.19 feet	18.11 feet	20 Feet


¹ Nominal voltage in kilovolts – The above table taken in part from OSHA 29 CFR 1910.269, Table R-6. & R7

²The minimum approach distances listed above are phase to ground clearances for the protection of personnel working on or near energized equipment, e.g. when testing dead or the application of protective grounds. Note: Greater distances may be required for phase to phase exposure.

³From 0-15,000 volts, work may be performed on or within reaching distance of energized circuits and equipment while employees are wearing appropriate, approved rubber goods and/or using portable insulating protective equipment as necessary.

Employers may use the minimum approach distances in this table provided the worksite is at an elevation of 900 meters (3,000 feet) or less. If employees will be working at elevations greater than 900 meters (3,000 feet) above mean sea level, the employer shall determine minimum approach distances by multiplying the distances in this table by the correction factor in Table R-5 corresponding to the altitude of the work


All unqualified personnel must stay a minimum of 10 feet from apparatus energized at 50 kV or less. Minimum approach distance to energized 115 kV apparatus by unqualified personnel is 12 ft. 4 in. Minimum approach distance to energized 345 kV apparatus by unqualified personnel is 20 feet.

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3.3 Project-Specific Hazard Identification, Risk Assessment and Controls.


A Pre-Job Briefing shall be conducted to discuss the hazards listed below.

Project Specific Hazard Identification and Risk Assessment Worksheet		
Location: USVI WAPA Project		DATE: September 18, 2018
TASK	HAZARD	MITIGATION
3.2.1. Material Handling		
01. Loading/Unloading vehicles	Contact with overhead lines/equipment	Off load/load vehicles clear of Overhead lines. Maintain MAD to energized equipment. Ground equipment-Barricade work area- Use Safety Observer when needed.-
	Cuts, abrasions	Wear PPE – work gloves
	Struck by vehicles	Signs, cones flags, Hi-Visibility vest
	Poor visibility	Establish area lighting if required.
02. Mechanical Lifting equipment / Stability of equipment	Contact with overhead lines/equipment	Maintain MAD to energized Equipment. Wear PPE- class 2 rubber gloves- FR clothes
	Lifting equipment failures	Inspect all lifting and rigging Equipment before use. Use properly rated slings, and lifting equipment. Set up with Outriggers on flat, Solid surface.
03. Manual handling	Back strains / slips / trips / falls	Use proper lifting techniques. Keep walkways clear Wear PPE – work gloves
04. Required traffic protection	Oncoming vehicular traffic and Public safety hazards. Extreme weather conditions	Warning signs, cones , flags, Barricades, police details, Hi-visibility vest. If necessary, provide TMP to State for approval which conforms to latest MUTCD. Utilize signs, cones, high visibility vests, etc. Install barriers


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TASK	HAZARD	MITIGATION
3.2.2 Splice UG Cable/ Services		
01. Make Terminations, cable splices and transition joints.	Accidental energizations	Use protective cover-up Equipment. Wear PPE class 2 rubber gloves –FR clothes. Ground cables and equipment.
	Burns - fumes	Maintain First Aid and Burn kits.
	Hand injuries-Working with Sharp tools.	Wear PPE and cut resistant gloves. Follow manufacturer's instructions.
	Falls from heights.	Wear fall arrest equipment – Harness, lanyard.
	Health hazards	Test manhole atmosphere. Use Blowers to ventilate manhole. Wear tether in manhole Use manhole rescue equipment.
	Unknown condition of existing energized splices/ connections	Test existing splices with heat gun.


3.2.3. Install/Remove Station Equipment		
01. Install/Remove Transformers, Switches and Capacitors	Contact with energized parts. - Unknown structural condition of manhole.	Wear all PPE Install protective cover-up. Check equipment nameplates for proper voltage ratings. Test/identify equipment to be removed. Be aware of potential back feed from secondary sources
	Contact with energized lines/ equipment	Disable reclosing control where Required.
	Cable failures	Install blast blankets.
	Construction equipment- Tools, equipment, & mechanical failures.	Inspect Tools and equipment
	Struck by vehicles, traffic hazards	Establish work area protection.
	Enclosed Space Health Hazards.	Wear tether in trenches if required Use manhole rescue equipment.
	Possible exposure to oil, Asbestos and lead hazards	Evaluate manhole/vault for lead/oil/asbestos hazards,
	Falling objects	Secure loose material- use hand Line. Use proper rigging equipment.

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	Slips/ falls/ tripping hazards	Keep work area clear
	Muscle and/or back strain.	Use proper lifting techniques
02. Mechanical Lifting equipment, man lifts, cranes, derricks, buckets and excavators. Insure stability of equipment when digging, installing and removing structural steel, circuit breakers, circuit switchers and transformers.	Contact with overhead lines/equipment	Maintain MAD to energized Equipment.
	Lifting equipment failures	Inspect all lifting and rigging Equipment before use. Use properly rated slings, and lifting equipment. Set up with outriggers on flat, solid Surface. Wear PPE
03. Install/Remove U.G. cable in duct lines and trenches.	Contact with energized lines/ equipment - Cable failures	Ground wire pullers and trailers When required. Reel attendants wear Rubber gloves. Install protective cover-up. Install blast blankets. Maintain communications between puller and reel trailer via radio or hand signals. Use proper cable lubrication substance. Disable reclosing control where required.
	Construction equipment- Tools, equipment, & mechanical failures.	Inspect all tools and pulling Equipment- kelling grips.
	Struck by vehicles, traffic hazards	Establish work area protection.
	Enclosed Space Health Hazards.	Maintain first aid / burn kits. Wear All PPE.
	Unknown structural condition.	Wear tether in trenches if required.
	Unknown condition of existing energized splices/ connections	Test existing splices with heat gun. Test cable and use spike tool before cutting existing cable.
	Possible exposure to oil, Asbestos and lead hazards	Evaluate for lead/oil/asbestos Hazards- wear PPE- Practice personal hygiene.
04. Working on overhead structures.	Working at heights –	Use harness and 100% fall protection equipment. Wear all required PPE- work gloves, appropriate rubber gloves and

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Install / remove U.G. cable – risers	<p>Falls from structures or Aerial lift equipment.</p> <p>Falls from ladders</p>	<p>Sleeves class 2/3 when required.</p> <p>Secure ladders- belt into ladders with safety belts. Extend ladders 3 feet above the top of the structure when climbing from the ladder onto a structure.</p> <p>Take proper precautions when structures that have ice or snow on Them.</p>
05. Excavate holes for foundations with Mechanical Digging Equipment.	<p>Contact with overhead Lines/equipment.</p> <p>Contact with U.G. Utilities.</p>	<p>Ground equipment. Obtain and Record a valid Dig Safe and water/sewer/gas line mark out. Use Safety Observer. Maintain Dig Safe markings. Hand dig near U/G utilities. Use CL2 Rubber Gloves when digging near UG Electric utilities.</p> <p>Wear all required PPE.</p>
	Open holes - Slips/falls/tripping Hazards.	<p>Barricade work area. Back fill Holes properly. Keep work area clear. Place and secure covers over Open holes until ready to set. For large excavations, the use of a Harness and retractable lanyard may be necessary. Attach retractable lanyard to a secure anchor point Such as a crane mat or other unmovable object. “Look and Lock all” double locking snaps into the D-ring to ensure proper connection A Safety Observer shall keep all Others away from the excavation. Upon completion backfill and tamp.</p> <p>Excavations must be inspected and recorded by a competent person daily</p>
3.2.4. Identify/Test U.G. Cable Substation		
01. Test UG cable. Identify phase markings.	<p>Contact with energized parts. Accidental energizations.</p>	<p>Wear PPE – FR clothes –Class 2 Rubber gloves. Use protective cover-up equipment. Barricade test area.</p> <p>Notify workers test in progress. Ground cables and equipment.</p>
	Incorrect readings	Calibrate test equipment

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	Hand injuries-Working with sharp Tools.	Follow Manufacturer's operating Instructions. Wear cut resistant gloves.
	Falls from heights.	Wear fall arrest equipment – Harness, lanyard.
	Manhole Health Hazards	Test manhole atmosphere. Use Blowers to ventilate manhole. Wear tether in manhole Use manhole rescue equipment.
	Unknown condition of existing energized splices/ connections	Test existing splices with heat gun.
02.Substation Electrical Construction	Construction activities in close Proximity to energized conductors and equipment.	Maintain MAD to energized Equipment. Wear appropriate PPE for task. Use Safety Observer when needed.
	Remove and install switches, plus all associated equipment including structures,	Barricade work area.
	Perform grounding of equipment.	Proper grounding of bus work and Equipment, including lift equipment.
	Perform Hoisting and Rigging Work adjacent to energized apparatus.	Use proper slings and rated lifting Equipment. Inspect all lifting and rigging equipment before use.
03. Wiring control panels. Install pulling line, pull cable, plug ducts	Contact with energized parts. electric shock from equipment	Maintain clearances. Use appropriate class rubber gloves and FR clothing. Use insulated tools and /or protective cover up equipment. Use Safety Observer
	Chemical hazards – Pulling Soap/lubrication.	Wear PPE – Use protective Skinning gloves.
	Manual repetitive motion (crimping, cutting) handling, heavy lifting	Watch for “pinch-points”. , proper Handling, work gloves, use proper lifting techniques.
3.2.5. Install / Remove Poles and Anchors		
01. Load/Haul poles	Contact with O.H. lines /	See Task #1 Material Handling Maintain MAD to energized equipment.
	Lifting equipment failures.	Hoisting License required to operate Lifting equipment
	Unsecured loads.	Load and secure poles per DOT Requirements.
	Contact with vehicles/ pedestrians.	Barricade Area

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02. Excavate holes for poles and anchors with Mechanical Digging Equipment	Contact with overhead Lines/equipment.	Wear all PPE including Class Rubber Gloves & Sleeves 2/3 or 4 as required And FR clothes.
	Contact with U.G. lines	Ground equipment if required Obtain and record a valid Dig Safe and water/ sewer line mark out. Maintain Dig Safe markings. Hand dig near U.G. utilities
	Open pole holes- Slips / falls/ tripping hazards	Barricade work area. Back fill holes properly Keep work area clear
	Noise hazards	Hearing protection
03. Required traffic protection	Oncoming vehicular traffic and Public safety hazards.	If necessary, provide TMP to State for approval which conforms to latest MUTCD. Utilize signs, cones, high visibility vests, etc. Install barriers.
04. Erect poles with mechanical equipment Lash new and old poles together	Contact with overhead lines/equipment	Ground vehicle- barricade work Area. Wear PPE –FR clothes and Class 2/3 or 4 Rubber Gloves & Sleeves as required Use Protective Cover -up equipment on poles and conductors. Do not leave new poles up against energized conductors. Disable reclosing controls if needed.
	Lifting equipment failures	See Task #1 Material Handling
	Falls from heights	Use 100% fall arrest equipment- Harness, lanyards, stop fall safety straps
05. Install anchors	Contact with overhead lines/equipment	Maintain MAD- ground truck if Needed. Wear PPE – FR clothes and Class 2/3 or 4 as required Rubber Gloves & Sleeve

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	Contact with U.G. lines	See par.02 for excavations.
	Equipment failures	Inspect mechanical equipment. Set up properly - Do not side load the boom. Use proper rated Kelly bar and drive tool.
3.2.6. Install / Remove Conductors - Primary / Secondary. NOTE: When working 34.5 kV all equipment Shall be Grounded and Barricaded & Safety Observer will be utilized.		
Relocate existing energized conductors. Make Ready work Pole Framing	Contact with overhead lines/equipment	Disable reclosing controls if Needed. Wear all required PPE, FR clothes Class 2/3 or 4 as required Use protective cover-up equipment. Maintain positive control of conductors. Frame pole per Standards –maintain clearances. Use link sticks on jib winch lines when lifting energized conductors.
	Falls from heights	Use 100% fall protection equipment -harness/lanyard- Stop fall safety straps
Install arms/brackets	Contact with overhead lines/equipment	Wear PPE- FR clothes and Class 2/3 or 4 as required Rubber Gloves & Sleeves Use protective cover-up. Disable reclosing controls if needed.
Install running blocks and pull lines	Contact with overhead lines/equipment	Maintain clearances, Ground Rope Puller machines. Wear PPE- FR clothes and Class 2/3 or 4 as required Rubber Gloves & Sleeves
Install/Remove/ Transfer open wire primary and/or secondary	Contact with overhead Lines/equipment.	Maintain clearances, Wear PPE- Wear PPE- FR clothes and Class 2/3 or 4 as required Rubber Gloves & Sleeves Inspect equipment and pulling grips. Disable reclosing control.
	Mechanical failures	Maintain positive control of wire Being transferred removed. Lower with hand line.
	Lack of communications	Maintain communications.
Required traffic protection	Oncoming vehicular traffic and Public safety hazards.	If necessary, provide TMP to State for approval which conforms to latest MUTCD. Utilize signs, cones, high visibility vests, etc. Install barriers.

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Install/Remove Overhead Services	Contact with energized lines/equipment	Maintain MAD to energized Equipment. Use protective cover-up equipment- Wear PPE- FR clothes and Class 2/3 or 4 Rubber Gloves & Sleeves as required. ** BE AWARE OF BACKFEED FROMS ECONDARY SOURCES
	Low clearance over roadways	Maintain clearance over roadway-minimum 16 feet
	Improper voltage to customers	Check voltage with voltmeter- Proper voltage is 114v to 126v.
	Grounds/ short circuits in meter Socket.	Inspect and test meter socket
Loading and transporting wire and equipment	Public safety hazards Mechanical failures Strains/slips/falls	See Task 1-1 Material handling Secure trailers to pulling vehicles Per DOT regulations.
Working with multiple circuits on same pole line.	Contact with overhead energized lines/equipment	Identify circuit to be worked on. Disable reclosing controls if needed. Wear all required PPE, FR clothing and Class 2/3 or 4 Rubber Gloves & Sleeve as required Maintain MAD. Use protective Cover-up equipment. ** BE AWARE OF BACKFEED FROM SECONDARY SOURCES
Working on overhead structures. Climbing Poles	Working at heights	Use harness and fall protection Equipment. Wear PPE- FR clothing and Class 2/3 or 4 Rubber Gloves & Sleeve as
	Falls from structures or Aerial lift equipment.	Do not stand on mail boxes, Signs, fire alarm boxes or other foreign equipment. Climb on the High side of a pole that is raked or leaning. Avoid grasping pins, brackets, cross arms, braces or other Attachments that might pull loose. Take proper precautions when Climbing poles that have ice or snow on them.

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	Falls from ladders	Secure ladders- belt into ladders With safety belts. Extend ladders 3 feet above the top of the structure when climbing from the
	Pole falling down while climbing	Inspect all wood poles before Climbing – Brace or support unsafe or condemned poles. Sound with hammer and prod pole with screwdriver at ground level. Take precautions to avoid cracks, checks, knots, nails, etc. to prevent gaffs from cutting out.
3.2.7. Install / Transfer Cutouts /Switches / Arrestors NOTE: When working 34.5 kV all equipment Shall be Grounded and Barricaded & Safety Observer will be utilized.		
Install/Remove Cutouts - Solid blade Load Break Switches	Contact with overhead lines/equipment	Wear PPE- FR clothing and Class 2/3 or 4 Rubber Gloves & Sleeve as required Use protective cover-up. Disable Reclosing control if needed.
Operate / open , close cut-outs and pole mounted switches	Improper /Defective equipment	Inspect switching devices/ Arrestors carefully- check voltage ratings. Test for leakage current. Inspect mechanical jumpers- communicate when using jumpers Do not use homemade jumpers.
	Contact with energized lines / equipment, Arc flash flying debris	Wear PPE- FR clothes and Class 2/3 or 4 as required Rubber Gloves & Sleeves face shield, hearing protection And appropriate hot stick. Test for leakage current. Use protective cover-up. Disable reclosing controls if needed
Install/Remove Lightning Arrestors	Contact with overhead lines/equipment	See par.01 for cutouts/switches
	Improper/Defective equipment	Inspect arrestors carefully- check Voltage ratings. Use hot stick to make arrestor connection to line or use arrestor Covers.
Bonding Miscellaneous Overhead	Contact with overhead Lines/equipment.	Maintain MAD.

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Equipment	Improper/Defective equipment	Inspect the integrity of all Equipment carefully before applying bonds.
3.2.8. Installation / Removal / Transfer of Electrical Equipment: Transformers, Regulators, Capacitors, Re-closers, Regulators NOTE: When working 34.5 kV all equipment Shall be Grounded And Barricaded & Safety Observer will be utilized.		
Mechanical lifting equipment	Contact with overhead lines/equipment	Maintain MAD to energized Equipment. Ground equipment - Wear PPE- FR clothes and Class 2/3 or 4 as required Rubber Gloves & Sleeves
	Lifting equipment failures. Hoisting and rigging	Barricade work area. Inspect and use properly rated rigging equipment.
	Poor visibility	Establish area lighting
	Noise hazards	Use hearing protection
Install /Remove transformers, re-closers.	Contact with energized lines/ Equipment.	Wear PPE- FR clothing and Class 2/3 or 4 Rubber Gloves & Sleeve as required. Maintain clearances. Use insulated tools and /or protective cover up equipment. Check Name plates for voltage ratings.-Disable reclosing control.
	Lifting equipment failures. Hoisting and rigging	See par.01 for lifting equipment.
	Exposure to Dielectric Oil	Transport/store leaking transformers in proper plastic bags/ containers
Install/remove capacitors	Contact with energized lines/ Equipment.	Wait 5 min after disconnecting - Discharge capacitor - Short terminals together.
	Lifting equipment failures. Hoisting and rigging	See par.01 for lifting equipment.
	Leaking/defective capacitor units	Visually inspect capacitor unit for leaks/bulges Transport/store leaking capacitors in proper plastic bags/containers.
Install/remove voltage regulators	Contact with energized lines/ Equipment.	Wear PPE- FR clothing and Class 2/3 or 4 Rubber Gloves & Sleeve as required. Maintain clearances. Use insulated tools and /or protective cover up equipment.
	Lifting equipment failures. Hoisting and rigging	See par.01 for lifting equipment.


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	Defective regulator	<p>Check Name plates for voltage Ratings.</p> <p>Place controls in the neutral, manual, non-auto position.</p> <p>Read mfg. operating instructions To operate regulator and by-pass switch.</p> <p>Inspect by-pass switch.</p> <p>Visually inspect regulator for damage/blown L.A.- burnt smell</p>
Required traffic protection	Oncoming vehicular traffic and Public safety hazards.	Utilize signs, cones, high visibility vests, etc. Install barriers.
	Traffic hazard-crossing over state Highway.	If necessary, provide TMP to State For approval which conforms to latest MUTCD.
	Extreme weather conditions-snow rain, ice.	Additional warning devices-warning lights if needed
Transporting electrical equipment-transformers, capacitors, etc....	Unsecured loads.	Secure loads properly per DOT Requirements.


3.2.9. Transfer Over Head Conductors/Construction

NOTE: When working 34.5 kV all equipment Shall be Grounded and Barricaded & Safety Observer will be Utilized.


<p>Transfer energized primary / secondary conductors, open wire, spacer cable, triplex cable, services, street lights, guy wires</p> <p>Transfer cross-arms/brackets</p> <p>Cut top of poles</p>	Contact with energized lines/equipment.	<p>Disable reclosing controls if needed. Bond guys and brackets. Wear PPE- FR clothing and Class 2/3 or 4 Rubber Gloves & Sleeve as required</p> <p>Maintain MAD. Use Cover-up equipment.</p> <p>Use link stick on jib line when lifting energized conductors.</p> <p>Inspect and use proper size mechanical jumper.</p> <p>Establish work area protection – signs, cones, flags, police details or flaggers.</p>
	Equipment failures	Use proper rigging equipment. Inspect equipment / rigging equipment.
	Clearances	Maintain clearances from other parts and over roadways.
	Falls from Heights	Wear 100% fall protection equipment – harness, lanyard, stop fall safety strap. (See 1-3 #09 on page 13)

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		Chain saw hazards	Use chainsaw properly- use chaps on ground.
		Noise hazards	Use hearing protection.
Required traffic protection		Oncoming vehicular traffic and public safety hazards.	Utilize signs, cones, high visibility vests, etc. Install barriers.
		Traffic hazard-crossing over state highway.	If necessary, provide TMP to State for approval which conforms to latest MUTCD.
		Extreme weather conditions-snow rain, ice	Additional warning devices-warning lights
Cut slack in or out of energized conductors.		Contact with energized lines/equipment.	See par.01 above for transfer of conductors.
		Equipment failures	Use proper rated mechanical jumper. Inspect strap hoist and jumper before use- clean jumper head.
3.3.0 – Meter Inspections			
Accessing individual meters.		Slips, trips, falls or strains from walking along uneven or muddy surfaces.	Pre-plan and identify hazards of work area. Remove hazards as applicable. Wear PPE, work gloves.
Working near cement meter structures		Tipping Hazard of pedestal due to lack of ground support	Do not place ladder against pedestal. Do not climb on pedestal.
Accessing fenced in premises.		Trip or fall over fence. Dog Bite	Enter premises only through open gates Receive Canine Awareness training. Utilize defensive measures for example: air horn, pepper spray, umbrella
Accessing weather head on concrete pedestals.		Tipping Hazard of pedestal due to lack of ground support	Do not place ladder against pedestal. Do not climb on pedestal. Utilize areal lift device to access.
Accessing materials on ground or in brush.		Exposure to poisonous and injurious plants.	Wear long sleeve shirts Be aware of which plants are poisonous and/or injurious and avoid.

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Project Specific Hazard Identification and Risk Assessment Worksheet		
Revised / Prepared by: Mark Brady		Date: September 18, 2018
Location: St. Thomas / St. Croix / Water Island USVI WAPA		
TASK	HAZARD	MITIGATION
4.0 – COMPOSITE POLE INSTALLATION		
01. Loading / Transporting / Unloading Poles	Unsecured loads.	Secure loads properly per DOT requirements.
	Contact with overhead lines/equipment	Load / Off load clear of overhead lines. Maintain MAD to energized equipment. Ground equipment-Barricade work area- Use Safety Observer when needed.-
	Cuts, abrasions	Wear PPE – work gloves
	Struck by vehicles	Signs, cones flags, Hi-Visibility vest
	Poor visibility	Establish area lighting if required.
02. Mechanical Lifting equipment / Stability of equipment	Contact with overhead lines/equipment	Maintain MAD to energized equipment. Wear PPE- class 2 rubber gloves- FR clothes
	Lifting equipment failures	Inspect all lifting and rigging equipment before use. Use properly rated slings, and lifting equipment. Set up with outriggers on flat, Solid surface.
03. Manual handling	Back strains / slips / trips / falls	Use proper lifting techniques. Keep walkways clear Wear PPE – work gloves
04. Required traffic protection	Oncoming vehicular traffic and Public safety hazards. Extreme weather conditions	Warning signs, cones , flags, barricades, police details, Hi-visibility vest. If necessary, provide TMP to State for approval, which conforms to latest MUTCD. Utilize signs, cones, high visibility vests, etc. Install barriers
Installing Stabilization Hardware	Contact with / inhalation of fiberglass particles	Wear long sleeve shirts to protect arms. Wear PPE – work gloves. Wear masks to cover mouth and nose to prevent accidental inhalation.
	Cuts, abrasions – Improper use of drilling tool.	Test tools prior to use. Wear PPE – work gloves
Setting / Erecting Poles	Abrasions on pole surfaces / compromising integrity of fiberglass poles	Use guards on claws to prevent direct contact with claw arm.


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Backfilling composite pole sets	Contact with hazardous chemical compositions.	Wear long sleeved shirts and work gloves. Immediately wash the affected area. Refer to the GHS for instructions on mitigating contact with hazardous chemicals. Contact your Safety Representative immediately following exposure.
5.0 – Environmental Exposures		
Indigenous Plant Life	<p>Allergic reactions to exposure</p> <p>Staff / Mersa Infections</p>	<p>Immediately clean the affected area. Report the exposure as soon as possible. Follow instructions as prescribed by the attending physicians.</p> <p>IMMEDIATELY report any signs of infection. Medical treatment is mandatory!</p>
Sun Exposure	<p>Sun Burn</p> <p>Heat Stress / Exhaustion</p>	<p>Wear sunscreen, use hardhat visors, and wear long sleeved shirts to protect against sunburns.</p> <p>Drink plenty of fluids. Take periodic breaks. Continue to monitor one another for signs of heat stress or exhaustion.</p>

Any significant changes to the scope of work, work practices and/or site conditions shall be evaluated for new hazards and the associated risks. As necessary, new controls will be identified and documented. This safety plan will be amended for site-specific, significant changes. Any changes to the job will be reviewed and documented in a job brief. Document any changes or any additional tasks, hazards and mitigations in the table below.

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3.4

34.5 kV Gloving PPE Requirements

Personal Protective Equipment:


Mitigation steps shall be revised as necessary to reflect project changes. **Standard, minimum PPE attire in the designated construction work area shall include safety glasses with side-shields, hard hat, safety-toe EH rated footwear and FR clothing HRC2 minimum ATPV of 10 cal /cm². A Pre-Job Briefing shall be conducted to discuss the hazards. Ground to Ground Rubber Gloves and Sleeves are required on all voltages. Class 2 gloves and sleeves required for gloving below 15 kV. Class 3 15kV to 25kV. Class 4 25kV to 35 kV. Additional FR PPE will be determined based on the Arc Flash value of each individual circuit to be worked on while energized.**

1. Less than 9 calories /cm² FR Clothing Rated at 10 calories /cm²
2. Greater than 9 calories /cm² to less than 13 calories /cm² FR Clothing Rated at 10 calories /cm² plus Coverall rate at 12.4 calories /cm² for a total of 22.4 calories /cm² in addition an ARC Flash Face Shield is required.
3. Greater than 13 calories /cm² FR Clothing Rated at 10 calories /cm² plus Coverall rate at 12.4 calories /cm² for a total of 22.4 calories /cm² in addition an ARC Flash Face Shield and Hood is required.
4. Class 4 Rubber Gloves and Sleeves with the sleeve inside the Rubber Gloves. Rubber gloves must have 4 inches of rubber exposed above the rubber glove protector.

(NOTE) - Not all pants meet the FR Clothing Rating of 10 calories /cm²

Transitioning From Class 4 Rubber Gloves and Sleeves:

1. After all work is completed in the 34.5 kV work area and all protective cover up has been removed. The line workers Shall descend to the ground and have an additional Job briefing to determine the appropriate Rubber Gloves and Sleeves to be worn for the completion of work at a lesser voltage level.
2. FR clothing require Shall be determined based on the ARC Flash Values of the energized conductors to be worked. (See Above)

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4.1. Communication

- ✓ Work crews will be provided with cell phones and /or 2-way communication, truck to truck and / or individual to individual when required.
- ✓ Communication will be maintained between Haugland Virgin Islands and WAPA as needed or required.
- ✓ **Refer to Appendix A for the Emergency Contact List of names and telephone numbers.**

4.1 Emergencies

Methods of communicating life-threatening emergencies must be determined and communication devices tested before the start of a job. The location and directions to the job site must be readily available at the job site and at the office that may be communicating the emergency to responders. The location and directions to the closest emergency medical facility must also be available on site.

Refer to Appendix A for the emergency contact names and telephone numbers.

Refer to the attached map and directions to the nearest Hospital


FOR SERIOUS INJURIES / CONDITIONS, THE FIRST RESPONDER SHALL CALL 911 TO NOTIFY THE EMS SYSTEM TO GET HELP ON THE WAY AND THEN BEGIN CPR/FIRST AID. THE HAUGLAND VIRGIN ISLANDS SUPERVISION SHALL BE NOTIFIED AS SOON AS POSSIBLE.

4.2 Incident Reporting and Analysis

- ✓ **The contractor will report and investigate WAPA work-related incidents, including near miss incidents, injuries/illnesses, vehicle damage, switching errors, incidents that may result in adverse public impact, property damage, system interruption, and any hazardous conditions that may be observed.**
- ✓ An incident includes any near miss, injury, vehicle damage, switching error, adverse public impact, or any other property damage.
- ✓ The GC shall report all incidents to the WAPA incident reporting system
- ✓ For incidents, the GC shall complete an Incident Analysis report.

4.3 Safety Meetings and Job Briefings:

- ✓ The GC shall have regular safety meetings with their employees and subcontractors sufficient to communicate safety issues.
- ✓ The foreman on the job will conduct and document the weekly Tail Gate Talk session and discuss the topic selected for that week.
- ✓ Each crew shall conduct job safety briefs prior to each day's work; when there are changes to the work order or plan, and when a new worker joins the crew additional briefs are required. Each worker must have the opportunity to voice concern. The work cannot begin until each worker signs off on the job brief stating that they have discussed the work and agree with the plan. Both safety meetings and job briefs shall be documented in writing. Written job briefs shall be available at the job site for inspection and retained for 30 days after the job is completed.

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4.4 Safety and Health Plan Review Requirements.

The contents of the Safety and Health Plan must be reviewed with the work crews at a minimum, before the start of the project, whenever there is a significant change, or when new workers join the crew. The review should focus on the work tasks and associated hazards, risks and control measures.

5.1 WAPA Technical Safety Requirements


- ✓ All Haugland Virgin Islands Employees are required to participate in a substance abuse program that includes, pre hire testing, reasonable suspicion, and post incident testing.
- ✓ Before working on WAPA projects, all employees are required to have Electrical Hazard Awareness Training. They are also required to have WAPA Contractor Safety Orientation. Documentation of this training will be kept on file for review.
- ✓ Specific requirements for PPE are listed on the Project Specific Hazard Assessment page.

6.1 Safety Compliance


- ✓ The Foreman and General Foreman will perform daily inspections of the work site.
- ✓ All employees are required to wear PPE when in the designated construction area and when they are exposed to any hazards. FR Clothing is required while inside the substation footprint
- ✓ Any employee found to be in violation will be required to leave the worksite for the remainder of the day. A second violation will result in permanent removal from the job site.
- ✓ Haugland Virgin Islands and its subcontractors shall participate in *Safety Inspections* as required.
- ✓ General Contractor and sub-contractor employees who observe potential safety noncompliance issues shall immediately notify their supervisor.
- ✓ The supervisor shall take corrective actions to eliminate the hazard.
- ✓ Supervision shall identify and remove from WAPA property any contractor personnel who habitually violate safety rules.
- ✓ If an individual is observed to be operating in a manner that creates an imminent danger to persons or property, it is the responsibility of any employee observing the hazard to stop the job or that portion of the job impacted until the issue has been resolved to the satisfaction of the Project Manager or other designated Competent Person.

7.1 Environmental Compliance

- ✓ The GC will ensure compliance with all environmental regulations, permit conditions and restrictions.
- ✓ Haugland Virgin Islands will adhere to all standards set forth to protect and promote the proper stewardship to the environment.
- ✓ Spill Protection Kits will be maintained on site.
- ✓ Any work performed that presents a potential of resulting in a negative environmental impact shall be performed in strict compliance with the pre-established work procedures agreed upon in advance with WAPA.
- ✓ Water shall be utilized to minimize and eliminate dust when performing concrete cutting operations. Any slurry created from this operation must be collected and disposed of properly to eliminate Silica exposure.

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- Other dust containment methods shall be utilized during other significant dust producing operations to protect the existing station equipment and the environment surrounding the work location.
- Hazardous materials shall be handled according to OSHA 29 CFR 1910.120.
- Disposal of hazardous materials shall be conducted by an EPA certified hazardous waste remover contractor and shipped to an approved hazardous waste storage site and said contractor shall be responsible for all permits, manifests and all other associated documentation which shall be kept on file for review.

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Appendix A – Emergency Contact Information


SAFETY AND HEALTH PLAN **EMERGENCY CONTACT INFORMATION**

Job Number:	<u>Location</u> USVI – St. Thomas, St. Croix
Circuit Number: Various	Project Manager: Mike Repetti Phone: 347-804-5178
Description of Work: The electrical system was significantly damaged during a recent hurricane. The work consist of mitigation, rebuild, and system hardening. Standard voltage circuits on the islands consist of 13.8, 25, 34.5 and 69Kv	
EMERGENCY CONTACT INFORMATION	
CONTACT NAME	TELEPHONE NUMBER
Police- EMERGENCY	
St. Thomas	340-776-8311
St. Croix	340-772-9111
Local Fire Emergency	St. Thomas: 911 St. Croix: 340-772-9111
Local Medical Services	St. Thomas: 911 St. Croix: 340-772-9111
<u>Medical Facilities</u>	
St. Thomas Roy L. Schneider Hospital 9048 Sugar Estate Rd St. Thomas USVI	340-774-9000
St. Croix Gov Juan F. Luis Hospital 4007 Est Diamond Ruby Christianstead USVI	340-778-6311
Haugland Safety Director: Bill Leonard	917-584-2674
Haugland Energy USVI Safety Manager: Mark Brady	207-228-3435
Haugland Energy USVI Safety Leads: St. Thomas – Mark Brady St. Croix – Mike Roberts	207-228-3435 516-384-8815
Haugland Energy Superintendents: St. Thomas – Domonick DeDominicis St. Croix – Steve O’Hallorhan Tony Jalbert	516-591-9443 516-265-4678 207-956-1881

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Appendix B – General Project Work Plan

The Project Work Plan shall be discussed with the crew members before work is started and referred to as needed. The hazards and mitigations associated with the work procedures are outlined in the Risk Assessment section.

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APPENDIX C – Haugland Virgin Islands Requirements

The Company safety rules are outlined in the Haugland Virgin Islands Health and Safety manual. Some specific requirements are listed below.

Safety Requirements:


- ✓ All work will be performed with complete regard for the safety of the workers and the public.
- ✓ All work will be performed as required to adhere or exceed the expectations of WAPA.
- ✓ All work will be performed within the standards required by WAPA
- ✓ Haugland Virgin Islands Safety Dept. Management and Labor will actively promote, recognize and train to provide a safe working environment.
- ✓ Each individual employee and sub-contractor is responsible for their safety.
- ✓ Flame Retardant Clothing shall be worn when workers are exposed to an electric arc or flame hazards.
- ✓ All workers on the job site will wear all the basic personal protective equipment Such as; hard hat worn properly, safety glasses with side shields, and safety toe EH- Rated Footwear, high visibility vests. FR clothing is required when working within the substation footprint.
- ✓ Properly rated Rubber gloves and rubber sleeves will be worn when working within the Minimum approach distance to energized conductors.

Grounding - When grounding of lines and equipment is required:

- ✓ **No work will be performed upon the line until the Customer/Contract or “Tag” is received from the WAPA representative.**
- ✓ After the “clearance for work” is received from the WAPA representative, the line will be tested and the “Grounds” will be installed, as per WAPA specifications (Note- Rubber Gloves are required).
- ✓ Personal grounds will be installed as needed and required to establish an equipotential zone.
- ✓ Use of an “Equipotential” **step, insulated platform** or a **grounding mat** is required for access and egress from a crane or any other equipment that may be contacted or bonded to the conductors. Also, for any insulated aerial device where the boom rating is less than the phase to ground voltage of the circuit, the above equipment shall be used.
- ✓ All vehicles must be grounded and barricaded per standard.
- ✓ Proper clearances will be maintained from the adjacent energized lines at all times.
- ✓ Use of proper tooling (insulated) to be utilized per standard.
- ✓ At the end of each day, grounds will be removed and the WAPA representative will be notified that all personnel are “clear” of the line.


Site preparation:

- ✓ Visually inspect the poles and structures, trenches and open pits before work is started. Communicate any defects or hazardous conditions to the WAPA FCC as necessary.
- ✓ Inspect tools and vehicles (equipment) prior to use, note all deficiencies and report them to the Haugland Virgin Islands supervisor.

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1. Driving on the Left:

- A. Management / Safety Department will be responsible for providing defensive driving awareness training for all new employees to the islands. Periodic retraining will be provided to help in maintaining an awareness of the hazards present with driving in an unfamiliar way (on the left).
- B. Maintain a defensive approach when traveling around the islands. Slow down at intersections to provide enough time to plan your next move. Beware of drivers exiting driveways and parking lots. Keep your eyes on the road. Refrain from engaging in distracted driving (texting, cell phone use, eating, or any activity that takes your eyes off the road). Pedestrians have right of way at all times.
- C. Use a spotter when backing equipment and company vehicles; even when backing in or around parking lots.
- D. Report all motor vehicle incidents to your supervisor and safety representatives.

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APPENDIX D

Fire Prevention

- Each employee is responsible for recognizing fire hazards, eliminating the fire hazards when possible, and reporting those over which the employee has no control to the person in charge.
- Each employee is responsible for knowing what action to take in case of fire, including whom to notify, where and how to sound available alarms and what firefighting equipment to use.
- Open flames or spark-producing tools shall not be used in any area where combustible gas vapors or dust may exist, unless proper precautions are taken in accordance with departmental procedures.
- Fire extinguishers that have been discharged, even partially, shall not be placed back in service, but shall be promptly tagged and removed from service. The discharged extinguisher shall be replaced with a fully charged unit.
- Haugland Energy provides at a minimum (1) 5# ABC portable fire extinguishers on all field equipment.
- Haugland Energy does not require any of its employees to fight fire. If a fire does erupt, employees should sound the alarm and evacuate to a muster area or safe location away from the fire.
- If fighting the fire is necessary, employees should utilize the **PASS** method:
 - o Pull the pin on the extinguisher.
 - o Aim the extinguisher at the base of the fire.
 - o Squeeze the handle.
 - o Sweep the extinguisher back and forth.

Working on substation property


In the event of fire call **911**

Do not refuel equipment which is hot. Allow equipment to cool before refueling.

Fire extinguishing equipment

Dry chemical fire extinguishers

Shovel and rake

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APPENDIX E- Emergency Action Plan

Purpose:

To establish the policy, procedures regarding the management's and employee's response to various emergency situations that may be particular to a job site.

PRIMARY EMERGENCY COORDINATOR: **St. Thomas – Dmonick DeDominicis**
St. Croix – Stephen O'Halloran

All emergencies will be reported to the primary emergency coordinator.

- Responsible for notifying all employees of emergency.
- Survey personnel at assembly point for head count.
- Meet Emergency Responders upon arrival.
- Communicate potential issues to Emergency Responders.

SECONDARY EMERGENCY COORDINATOR: **St. Thomas- Mark Brady**
St. Croix- Mike Roberts

- Assist Primary Emergency Coordinator with the execution of this Plan.
- Assume Primary role if the primary is not present.


Overview:

The procedures cover the following topics:

1. Employee Injury
2. Pedestrian Injury
3. Fire Reporting and Response
4. Active Shooter
5. Evacuation: Coordinator Warning Route
6. First Aid
7. Hazardous Material Spill
8. Public Demonstration
9. Robbery
10. Weather Conditions (i.e. thunderstorms/lighting, tornados & hurricanes)

Policy:

Haugland Energy has developed plans that address emergency situations that may arise in Haugland locations and which may threaten human health and safety, and damages Haugland assets. Management is responsible for implementing the Emergency Action Plans. Remembering the highest priority is the safety of you, co-workers and others. These Emergency Action Plans will meet the following objectives:

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1. Provide a means of notifying employees, and local authorities of an emergency situation.
2. Provide for a safe and orderly method of evacuation of persons from the Substation or other facilities under Haugland control.
3. Account for all employees who occupied the Substation or premises under Haugland control.
4. Provide emergency first aid treatment or summon emergency medical assistance for injured individuals.
5. Provide training and needed information to those employees responsible for taking action in the event of an emergency.

Signs as required by ordinance, regulation, or law will identify emergency exits. Employees are required to be familiar with the location(s) of fire extinguishers, first aid kits and emergency exits. Training on Emergency Action Plans will take place during new employee orientation, when changes occur in the action plans, and periodically as coordinated by the Safety and Health Representative. If hazardous materials are involved, disposal must be done in compliance with federal, state, and local regulations.

Training:

- Before implementing the EAP, the Emergency Coordinator and Supervisors shall train employees in the contents and provisions of the EAP.
- The EAP must be reviewed with all employees at the following times: Employees new to the location, initially when the plan is developed, whenever the employee's responsibilities or designated action under the plan change, and whenever the plan is changed.
- All training must be documented in writing and copies sent to the Haugland Corporate Safety Director


EAP Plan Review:

- The EAP will be reviewed during routine safety inspections by the Safety Representative and Project Management
- The EAP will be maintained by the Emergency Coordinator and made available to all employees.

Procedures:

2. Employee Injury:

In the event an employee is seriously injured, activate the emergency action plan, conduct First aid and call emergency medical services immediately. **If the employee is ambulatory and the injury is not severe, contact the project safety representative for guidance.** Should further offsite first aid and or medical treatment be required, an employee, preferably a supervisor will accompany the individual to the non – emergency care clinic.

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3. Pedestrian Injury:

In the event of a pedestrian injury emergency, call 911 and after rendering the scene safe, administer first aid within your scope of training.

4. Fire Reporting and Procedure:


- The supervisor at the fire location shall assure all personnel are accounted for and shall execute an orderly evacuation.
- The supervisor shall notify other crews in the area of the fire emergency and status of the fire and any extinguishing or evacuation efforts under way.
- The supervisor shall notify the client representative as soon as practicable following the safety steps to protect the local employees.

Firefighting is not a required activity in the presence of a fire emergency. If the supervisor and crew decides to attempt to gain control of a fire they shall do so voluntarily if they are confident they have the knowledge, skill and equipment necessary to successfully attack the fire and that they can do so with a minimum of risk.

Note: Employees should never attempt to control a fire, which endangers their health. They must immediately evacuate the area when it becomes apparent that the fire cannot be controlled or when conditions become more hazardous.

5. Active Shooter, Violent or Threatening Actors:

- If you see a person with displaying a weapon in a threatening manner call 911.
- If you can do so without being targeted, flee the area in the opposite direction to put space between you and the threat. Warn co-workers as you move.
- If you cannot flee, take cover. Conceal yourself and remain quiet. In the best of conditions you would be able to monitor the threat but do not expose yourself to do so.
 - ☞ If you are discovered and confronted fight. Throw things at the assailant such as bolts, washers, bottles, yell, charge the assailant as you throw things. Disrupt their ability to act. Throw, or when you are up close swing anything you can put your hands on as a weapon.
 - ☞ If you encounter Law Enforcement personnel, if you are crouched remain in that position. Show your hands, if possible raise your hands and make yourself known to them. Remain calm, listen carefully and follow their instructions closely
- When you are out of danger follow the instructions of first responders who will have a site plan for assembly of all persons affected by the incident

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6. Evacuation:

A. On-scene Coordinators

Evacuation Procedure

Evacuation warning for this project shall involve, verbal communications, radio communications.

- The EAP Coordinator notifies the respective emergency agencies through 911 or as provided for in the HASP Emergency Planning.
- The EAP coordinator notifies all supervisory personnel of the nature of the emergency and status of evacuation and actions in effect.
- Supervisors shall notify all persons under his charge and execute an orderly evacuation of their respective areas to the planned muster location.
- Supervisors account for all persons and personnel under their charge on their site.
- Supervisors report the status of their evacuation and head count as soon as practicable to the EAP coordinator

Note: Employees are not to re-enter buildings or hazard areas to search for persons considered unaccounted for or missing. Management will notify the ranking fire or other emergency response official on the scene of a potentially trapped person and their approximate whereabouts. At the meeting designation, there will be a head count conducted to assure everyone is safely out of harm's way. The General Foreman will contact the local emergency response authorities and updated information will be relayed to the response team as conditions change.

B. Evacuation Route/Mustering Locations

Due to the fluid nature of the work evacuation routes and mustering locations will be identified daily by the supervisors.


7. First Aid:

First aid is rendered as an initial reaction to minor wounds. In some occasions First Aid may be the initial response to provide critical initial support for an injured person while waiting for advanced medical care such as Fire Rescue for serious injury incident. See EAP 1 for procedures in a serious injury incident.

Site supervision shall ensure the appropriate response, dependent on the nature of the injury is activated. Management is to provide for the employee in accordance with the Haugland policy and site specific procedures.

Site Supervisors are responsible for the care of minor injured employees and shall ensure that:

- In the case of serious injuries 911 is activated.
- Wounds are cleaned and protected following First Aid procedures within the supervisor's capability and training.
- Management is notified that a First Aid event has occurred.
- The injured person is transported to the appropriate care facility for evaluation by the on staff medical provider.

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- That on-going are protocols for continued care indicated by care givers is followed.
- Provides report and updates on the condition of treatment to management.
- Follows up with treated employees on a daily basis until the injury is completely healed.

8. Hazardous Material Spill:

Management will respond to incidental releases of hazardous substances when the substance can be absorbed, neutralized, or otherwise controlled at the time of release by employees in the immediate area or by maintenance personnel. If a large spill or fire occurs that is not controllable, Management will contact the appropriate local authorities, such as the Fire Department.

9. Public Demonstration:

In the event of public demonstrations, lock all gates and contact your supervisor who will contact the proper authorities. If on the right-of-way stay as far away from the demonstration as possible contact your supervisor who will contact the proper authorities.

10. Weather Conditions:


A. THUNDERSTORMS/LIGHTNING

No place is absolutely safe from lightning; however, some places are much safer than others. The SAFEST location during lighting activity is a large enclosed building. The second location is an enclosed metal vehicle, truck, van, etc. but not under a tree, under equipment or on equipment. Follow the plan for determination of lightning hazards. At a minimum:

- ✓ When storms threaten, General Foreman will be responsible for checking the weather and advising the supervision regarding lightning risks and recommended actions to keep crews safe.
- ✓ If lightning is detected, crew supervisors should stop work and make an evaluation of risk and coordinate a response with employees and others under his charge.
- ✓ During a thunderstorm warning, if you are in a motor vehicle stay there. Do not attempt to leave your vehicle.
- ✓ Supervisors who detect lightning risks should contact the General Foreman for an up to date weather report.
- ✓ Stay away from isolated power poles, trees and isolated metal objects, such as fences, poles, umbrellas. Dangerous currents can be conducted into the ground by these isolated structures and endanger persons standing nearby.

B. TORNADOES

- ✓ If a Tornado is spotted seek shelter immediately. If you do not have time to get to a shelter, get in a ditch. Call 911 and then contact the Electrical Supervisor.
- ✓ If you are in a vehicle, leave immediately for a sturdy structure. If you are trapped by a close storm and must stay in your vehicle, fasten your seatbelt securely. If there are blankets or padding available cradle it in your crossed arms across your chest and bury you face in the padding. Car cockpits are strong structures designed to be a survivable space in a collision and may offer more protection than being out in the open.
- ✓ If a Tornado warning is issued for a work area it will be the responsibility of the General

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Foreman to notify the affected crews so they can put a response plan in place.

- Construction offices are not considered sufficiently strong spaces for tornado threats and should be abandoned for safer facilities or protected areas.

11. Poisonous Plant Life:

- a) Employees, who suspect they have been exposed to a poisonous plant, will immediately report the exposure to their supervisor and safety department. Medical treatment will be sought through an urgent care facility or local emergency room. Employees have received orientation on identifying plants that pose hazards. Included in APPENDIX E is photo documentation for identification purposes.

Safety and Health Work Plan

Casha Tree Found in drier areas along the coastline, adjacent to trails or on hillsides. These common trees can reach heights of 30 feet and have dozens of spines along the branches.



Symptoms: Deep puncture wounds, redness, painful swelling, localized pain and infection.
Remedy: If infection develops seek medical attention.

Jump-Up-Cactus or Prickly Pear

Common in dry forests, is covered by dozens of long, sharp, barbed spines and grows in dense low-growing clumps. Spines easily penetrate clothing and can become imbedded in skin.
Symptoms: Localized pain, inflammation, irritation and rash.
Remedy: Remove spines carefully to alleviate pain.



Pineapple or Tube Pineapple Introduced to the Virgin Islands during the plantation era to serve as a natural fence line. It forms dense and impenetrable patches and thickets and has long, slender, bright green leaves with spiny edges and tips. Typically found adjacent to ruins or historic structures and along open trails.



Symptoms: Scratches, cuts and shallow puncture wounds.
Remedy: Wash wounds, apply antibiotic ointment or cream.



Catch & Keep A common weed that forms dense thickets of vine-like vegetation. It is found throughout the island. Covered in hundreds of hooked spines, *catch and keep* is aptly named for its ability to hook into and hold anything.

Symptoms: Barbed spines can penetrate skin causing lacerations, irritation, redness, swelling and infection.
Remedy: Wash wounds, apply antibiotic ointment or cream.

Jimson Weed, Prickly Burr or Deadly Nightshade (extremely toxic)

These herbaceous, poisonous plants are found along roadsides and disturbed areas.



Distinguished by their umbrella-shaped flowers and round prickly seed capsules they can grow to a height of five feet, preferring to grow in full sunlight.
Symptoms: Delirium, increased heart rate, rapid breathing, amnesia and even **Death!**
Remedy: Seek immediate medical attention.

Jumble Bean, Crab's Eye or Rosary (extremely toxic)

A slender vine commonly found in moist, well-drained wooded areas, adjacent to clearings or disturbed areas and along roadsides. The bright red seeds have been used to make jewelry and percussion instruments.
Symptoms: Nausea, vomiting, convulsions, liver failure, **death**.
Remedy: If ingested seek medical attention immediately.



Pencil Euphorbia or Milk Bush (extremely toxic)

A small shrub-like tree used as an ornamental plant. Distinguished by hundreds of bright green pencil-thin cylindrical branches, it secretes a milky sap when cut or damaged.
Symptoms: Skin irritation, severe rash and blisters, blindness if it gets in the eyes.
Remedy: Wash affected area immediately with soap and water. Seek immediate medical attention for eye or mouth exposure.



To prevent contact with hazardous plants, please stay on trails and roadways.

Manchineel or Death Apple (extremely toxic)

Found near and on coastal beaches, has shiny heart-shaped leaves with yellow veins. Ingestion of the small green apple-like fruit can cause **Death!**



Symptoms: Severe burning and blistering of the skin, temporary blindness.
Remedy: Wash with soap and water; if severe reaction, seek medical treatment.

Enjoy the Beautiful Trails of Virgin Islands National Park

"Look But Don't Touch!"

Help us protect park resources include:

- Remove all trash when you leave.
- Campfires are prohibited.
- Press off trash or on branches are prohibited.
- Do not collect or rocks.

For your Safety

- Do not leave valuables unattended.
- Always wear reef safe sunscreen.
- Vehicles parked on roadway will be ticketed/towed.
- Do not eat any fruits or berries.

Respect Others

- No smoking on beaches.
- Lead music is prohibited.
- Stuffy is prohibited

National Park Service
U.S. Department of the Interior
Virgin Islands National Park



Plants to Avoid while Hiking

Virgin Islands National Park offers a variety of hiking adventures for the entire family and for all skill and ability levels.

This brochure, which describes plants to be avoided while hiking as well as precautions and remedies should you come in contact with any of them, will help you know your surroundings for a safe and enjoyable trail time.

Should you wish to learn more, a simple Internet search will provide a wealth of information.

Christmas Bush A small shrub that is found in open canopies and along trails. It has dark green leaves that can have a reddish hue. It resembles holly.

Symptoms: Burning, itching skin, swelling, irritation and rash that can last up to several weeks.
Remedy: Possible use of anti-itch creams or ointments.



Stinging Nettle A twining vine that has stinging nettle hairs. Typically found in disturbed areas, along trails and in moist forests.

Symptoms: Instant pain and burning, rash and sometimes blisters.
Remedy: Possible use of anti-itch creams or ointments.



National Park Service
U.S. Department of the Interior

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In case of EMERGENCY DIAL 911
From Cell Phone DIAL (340) 776-9110