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Spec Item	**Title**	**Description**
1	General Information	The Contractor shall provide all labor, management, supervision, tools, material and equipment to continuously operate and maintain the Electrical Systems located at Joint Region Marianas, on the island of Guam.
1.1	Concept of Operations	The intent of 1602000 Electrical is to specify the requirements for the electrical power production and distribution systems. Operate, maintain, monitor and analyze the electrical power production and distribution systems and meet the electricity industry standards and applicable laws and regulations to maximize system availability, reliability and sustainability. Interface and coordinate work with customers, other contractors, Guam Power Authority (GPA) and DOD agencies. Interface and coordinate work with regulatory and other Government agencies through Naval Facilities Engineering Command Marianas (NFM) Guam Public Works Utilities Department. Collect and provide meter readings to facilitate determination of electricity consumption. Reduce line losses. Provide multi-discipline engineering, analysis and technical services to operate and maintain electrical power production, distribution systems and support equipment. Plan, prepare and perform emergency operations and measures. Continue to operate and maintain the electrical system during periods of contingencies and recovery operations. Coordinate operations with specific environmental compliance oversight, reporting and permit renewal requirements. Ensure that the Government is apprised of any situations of non-compliance. The Government will coordinate the interface with regulatory agencies. All Navy-owned electrical facilities and related infrastructure on Guam are included up to the points of demarcation as defined by Navy Facilities Asset Data (from iNFADS) provided in J-0200000-02 and NAVFAC P-603 Utilities Infrastructure Management Manual

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Spec Item	**Title**	**Description**
2	Management and Administration	
2.1	Definitions and Acronyms	Definitions and Acronyms are provided in J-0200000-01.
2.2	Personnel	The Contractor shall provide personnel with the qualifications, certifications, technical knowledge, experience and skills required to efficiently operate, and maintain the Electrical Power Distribution Systems. Primary and alternate points of contact (POCs) shall be available 24/7 (24 hours per day/7 days per week) in accordance with PWCGUAMOICCMARINST 1601.1C Engineering and technical support shall be accomplished under the responsibility of a registered professional engineer licensed by a U.S. State or Territory.
2.2.1	Certification, Training and Licensing	Cable Splicer/Terminator: The cable splicer shall have at least three (3) years' experience in splicing the type and rating of cables specified. Prior to making splices or terminations, the Contractor shall submit names, qualification and experience of the cable splicers to be employed. Documentation (including test results from a previously installed splice) to verify that the individual has completed a splice/termination of the type to be installed under this contract. Lineman Qualifications: High Voltage Electricians/Lineman shall be equivalent in all respects to United States Industry Journeyman Standards with at least 4 years and 4000 hours of experience. The remaining electricians shall be equivalent to United States Industrial Journeyman Standards or at least 2 years of apprenticeship. The Contractor shall provide qualified personnel to operate and maintain the electrical distribution system. Comply with OSHA 29 CFR 1910.399 definition of a qualified person. Training requirements that specifically apply to qualified person is in OSHA 29 CFR 1910.332(b) (3). Meter and Instrumentation: The Contractor shall provide qualified personnel to operate and maintain the electrical distribution metering, instrumentation, Supervisory Control and Data Acquisition (SCADA), and Human Machine Interface (HMI) system. The Contractor shall submit proof of all certification, training and licensing requirements per Annex 2. All required licenses and certifications will be kept current.
2.2.2	Key Personnel	
2.2.2.1	Power System Manager	The Contractor shall provide a Power System Manager who is a registered professional engineer licensed by a U.S. State or Territory with a minimum of five years' experience in power systems management, operations and maintenance; or has a Bachelor of Science degree in Engineering from a U.S. accredited college, university, or institution or an equivalent ABET-accredited college or university program with 10 years' minimum experience in power systems management, operations and maintenance; or has a minimum of 15 years' experience in power systems management, operations and maintenance.
2.2.2.2	Power System Supervisor	The Contractor shall provide a Power System Supervisor with at least three years' experience operating 3 phase/60 Hz diesel engine generators of 1000

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Spec Item	**Title**	**Description**
		kW or larger as well as electrical distribution systems. All power systems shall be at all times under the supervision of the Power System Supervisor.
2.3	Special Requirements	
2.3.1	Safety	All the safety requirements specified in the latest version of UFC 3-560-01 Electrical Safety O&M, 29 CFR, Electrical Safe Acts For Employees (ESAFE) standard operating procedures (SOP) Public Works Business Line procedures and NETOPS 29 for Ship to Shore Connect and Disconnect procedures are applicable to this specification in addition to the safety standards of 0200000 Management and Administration.
2.3.2	Power System	The standby generation plant shall comply with Environmental Protection Agency (EPA) certification.

2.4	Financial Requirements	The Contractor shall expend, track, and record costs in a manner that supports the NAVFACMAR Electrical Commodity cost schedule.
		
		Costs shall be broken down by labor and material in the following manner:
		
		POWER GENERATION
		- A/E Services
		- Operations
		- Maintenance
		  - Planned maintenance (PM)
		  - Repairs*
		  - Sustainment (ST)
		  - Restoration & Modernization (RM)
		
		DISTRIBUTION
		- A/E Services
		- Operations
		- Maintenance
		  - PM
		  - Repairs*
		  -ST
		  -RM
		
		EMERGENCY POWER
		- A/E Services
		- Operations
		- Maintenance
		  - PM
		  - Repairs*
		  -ST
		  -RM
		
		METERING
		- A/E Services
		- Reading
		- Maintenance
		  - Calibration
		  - Repairs*
		  -ST
		  -RM

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Spec Item	**Title**	**Description**
		*Note: The Contractor shall submit the monthly public voucher with costs separated in accordance with the above categories and shall also include the Project Abbreviation, Work Order Number and Job Order Number.
2.5	References and Technical Documents	References and Technical Documents are listed in J-0200000-04.

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Spec Item	**Title**	**Performance Objective**	**Related Information**	**Performance Standard**
3	Recurring Work	The Contractor shall efficiently operate, and maintain the Electrical Power Production and Distribution Systems to safely distribute reliable electrical power such that all electrical requirements are continually met.	The Electrical Systems Description is provided in J-1602000-01. The current MAXIMO Utilities Assets are provided in J-1601000-02. Navy Facilities Asset Data (from iNFADS) is provided in J-0200000-02. The Contractor shall operate and maintain the entire Electrical Power Production and Distribution Systems to provide continuous service 24 hours per day, seven days per week. The Contractor shall develop and submit a Plan of Action and Milestones (POA&M) outlining the strategy and schedule for implementation of each major process of operation and maintenance per Section F. The Contractor shall submit a Major Maintenance, Repair, and other Non-Routine Utility Project Status Report per Section F. The report shall include repairs accomplished and any repairs or maintenance deferred including any material delivery dates and reasons for deferral. The Contractor shall develop and provide System Performance Status Reports per Section F, including, but not limited to, management analyses and recommendations.	Electrical power is continuously and safely distributed and meets demand requirements.

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Spec Item	**Title**	**Performance Objective**	**Related Information**	**Performance Standard**
			The Contractor shall secure, restore, and perform operational checks on all equipment affected by both scheduled and unscheduled utility outages at no additional cost to the Government. The Contractor shall develop and implement an Annual and Monthly Monitoring Schedule. The Contractor shall establish a log and record date and time of monitoring, system condition and performance, the name of the individual performing the monitoring, and all comments, problems, and identification of reactive, preventive, predictive and proactive maintenance as a result of system operational deficiencies noted during scheduled PM or routine monitoring per Section F.	
3.1	Operation	The Contractor shall efficiently and safely operate the Electrical Power Production and Distribution Systems to provide electrical power to meet all demand requirements, 24 hours per day, seven days per week, throughout the contract period.	Operation consists of "watch-standing" or attendance type work by a sufficient staff of qualified persons during a specified time period to ensure safe, reliable, efficient production and distribution of electricity. Operation of the Electrical Power Production and Distribution Systems includes equipment and systems components, such as, generators, transformers, switchgear medium and low voltage distribution lines. Also includes tasks, such as, monitoring and regulation of equipment controls, maintaining operating records, logs, and reports, and examination, lubrication and minor adjustment of equipment and system components. Energized work requires approval of the Installation Commander.	Systems equipment and components are efficiently, safely and continuously operated per operating criteria to provide electrical power to meet demand. Unscheduled interruptions are minimized such that electrical power demand is met 99.9 percent of the time annually. Current monitored measurements confirm that balance is maintained on all distribution circuit phases.

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Spec Item	**Title**	**Performance Objective**	**Related Information**	**Performance Standard**
			Informational Notes: Components (such as facilities, equipment, and appurtenances) are considered critical if they do not have built-in redundancy or if redundancy has been compromised. Service cannot be provided at full capacity if a critical component is broken or compromised.	
3.1.1	Distribution Operations	The Contractor shall provide continuous operations of the electrical power distribution systems and operate standby power plant.	The Contractor shall operate and maintain the electrical distribution system. The Contractor shall respond during emergency and non-regular working hours to meet unusual requirements (e.g., ship arrivals after regular working hours, NSAA and NBGTS Guam support). The Contractor shall support waterfront electrical requirement as scheduled by Annex 6, Port Operations.	Provide primary electricity for lighting, power, ventilation, heating and cooling, and building equipment including electricity for lighting outdoor areas. No unscheduled power outages within the Contractor's control.
3.1.2	Power System Dispatcher	The Contractor shall monitor and control the electrical power generation and distribution systems. Enter utility outages in MAXIMO to enable automated reporting of the System Average Interruption Duration Index (SAIDI) and System Average Interruption Frequency Index (SAIFI) report from Government MAXIMO. The critical information for SAIDI/SAIFI will be in MAXIMO work	The Contractor shall receive work orders for power, schedule power outages, and coordinate power system with GPA, NSAA and NBGTS. The Contractor shall provide selective isolation switching beneficial to Government mission and critical buildings and structures, should circumstances occur where load shedding cannot be avoided. The Contractor shall report oil, fuel, and other hazardous material leaks. The Contractor shall operate continuously 24 hours per day, 7 days per week. Submit Power System Dispatcher Log readings (voltage, current, load by circuit), daily trouble-call report (status), daily major substation	Reports, data, records and documentation are provided on time, complete, accurate and legible.

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Spec Item	**Title**	**Performance Objective**	**Related Information**	**Performance Standard**
		order, not Duty Log, Mandatory fields are Outage Type, Outage Cause, Number of Buildings Affected, Outage Start and End Dates, and, Duration. Preface the outage data with J10 in the Master System field required for the Government COGNOS Reporting System.	check, generation report, hazardous spill report per Section F. Submit Unscheduled and Scheduled Outage Reports per Section F. The report shall include work order number, location, cause, customers affected, date and time of outage and restoration, outage duration and designation “planned” or “unplanned”. Submit an After Action Report for Unscheduled Outage for Navy and NSAA per Section F. Submit Monthly Report SAIDI and SAIFI per Section F via the Government COGNOS Reporting System.	
3.1.3	Roving Crew	Respond to trouble-calls, conduct visual inspections of major substations (daily station checks) and distribution lines.	The Contractor shall operate a "roving crew" as needed during non-regular working hours, or as directed by the Government. Station checks, exterior lighting survey and service-calls are provided by the After Dark Surveillance (roving crew) to the dispatcher and the dispatcher updates the electronic log at the end of the shift. Lighting service includes, but is not limited to, perimeter and fence-line for utilities infrastructure.	
3.1.4	Standby Power Plants	The Contractor shall provide emergency and backup power to support Government requirements. Maintain power generated within +/- 5% of the system voltage and +/- 0.5% of the system frequency at any steady state station load.	When authorized by the Government, the Contractor shall provide power production to support Guam Power Authority (GPA). Standard Operating Procedures (SOPs) provided per Specification 3.1.8 shall include instructions for startup, running, shut down, standby and lay-up for all equipment. SOPs to be on-site. The Contractor shall provide Standby Power Plant Operation and Maintenance Log (includes	All generator units are in a state of operational readiness at all times. No instance of failure due to missed or improper maintenance. Scheduled down time exempted. Zero instances of voltage variance exceeding +/-5% when loaded.

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Spec Item	**Title**	**Performance Objective**	**Related Information**	**Performance Standard**
			oil and water test results) per Section F. Maintain power plant data for a minimum of 5 years to be used for operation & maintenance trend analysis. The Contractor shall notify cognizant NFM PWO and CNM CDO when any power generating capability unit is unavailable for operation and update Standby Power Plant Status Report as directed per Section F. Fuel Accountability for the Stand-by Power Plants: Control and account for all fuel from delivery to the storage and service tanks up through the point of use. Informational Notes: Fuel for Contractor provided generators will be Government furnished. Standby power plants are the 19.8 MW (three 6.6MW units) Orote and generators supporting utilities including: B/608 Water Treatment Plant B/1284 Naval Magazine Booster Pump Stations Sewer Pump Stations NBGTS and Naval Hospital Standby Power Plants are NOT included in this requirement.	Zero instances of frequency variance exceeding +/- 0.5% when loaded. For Orote Power Plant, generators will be setup and fully operational within 2-1/2 hours of power outage during regular working hours and 4 hours all other times. Reports, data, records and documentation are provided on time, complete, accurate and legible.
3.1.5	Emergency Generators	The Contractor shall provide emergency and backup power to support the utilities systems.	The Contractor shall manually start-up and transfer power for generators without automatic controls. The Contractor shall transfer load to commercial power and restore generating equipment to stand-by. Standard Operating Procedures (SOPs) provided per Specification 3.1.8 shall include	All utility generator units are in a state of operational readiness at all times. No instance of failure due to missed or improper maintenance, scheduled down time exempted. Reports, data, records and

1602000 – Electrical				
Spec Item	**Title**	**Performance Objective**	**Related Information**	**Performance Standard**
			startup, running, shut down, standby and lay-up for all equipment. SOPs to be on-site. Fuel Accountability for the Emergency Power Generators: Control and account for all fuel from delivery to the storage and service tanks up through the point of use. Submit Emergency Generators Status Report (include fuel inventory) on-line per Section F. Informational Note: Fuel for Contractor provided generators will be Government furnished.	documentation are provided on time, complete, accurate and legible.
3.1.6	Supervisory Control and Data Acquisition (SCADA)	The Contractor shall operate, maintain, and monitor equipment and processes for electrical generation, distribution, and service, via SCADA system interfaces.	The Contractor shall comply with NAVFAC Marianas FRCS Cyber Security Requirements and perform Functional Administration requirements per Annex 2. The Contractor shall control and monitor power plant, substations and switching stations via human machine interface (HMI). Configure and trouble shoot settings and relay devices and meters for protection, metering and monitoring devices. The AMI minimum maintenance requirements are provided in J-1602000-03	All SCADA and Functional Administration requirements are continually met.
3.1.7	Operating Records, Logs, Reports and Procedures	The Contractor shall prepare, submit and maintain operating records, logs and reports for in-process tracking of electrical operation, maintenance and repairs of the system.	The Contractor shall establish a log and record date and time of monitoring, system condition and performance, the name of the individual performing the monitoring, and all comments, problems, and identification of reactive, preventive, predictive and proactive maintenance as a result of system operational deficiencies noted during scheduled PM or routine monitoring.	All required operating records, logs, reports and procedures are maintained current and complete and applicable copies provided to the KO and COR within the specified times.

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Spec Item	**Title**	**Performance Objective**	**Related Information**	**Performance Standard**
			The Contractor shall track and report changes to the default switching configuration of all underground and overhead distribution power circuits. Switching Configuration Reports shall include definition of alternate switching scheme and the return to the default configuration once maintenance action is completed. Submit per Section F. Operational Configuration Review: On a semi-annual basis the Contractor shall provide formal recommendations on changes to system operational configurations and relative cost of recommendation as well as cost savings by adopting recommendations. Submit per Section F. Evidence of current system inefficiencies or budgetary constraints precluding adoption of recommendations does not relieve the Contractor of performing maintenance as required. The Contractor shall submit a Ships Utility Connection Report per Section F. Reports shall list all vessel names, types, hull numbers, waterfront locations, power mound and outlets on the mound used, connect date and time and disconnect date and time for each utility, and number of days each vessel is connected to each utility. If vessel is a berthing barge, provide the ship name associated with the berthing barge. Monthly data shall be recorded in accordance with the UEM billing processing schedule (available upon request), and submitted per Section F.	
3.1.8	Standard Operating Procedures (SOPs)	The Contractor shall develop and	The Contractor shall develop and implement SOPs that	SOPs developed, updated and

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Spec Item	**Title**	**Performance Objective**	**Related Information**	**Performance Standard**
		implement SOPs for the primary electrical distribution system to ensure safe and continuous operation.	provide step-by-step instruction for all system work requirements identified in this section for operations and maintenance. SOPs shall contain, but not be limited to, written procedures to operate, maintain and troubleshoot basic system and equipment faults, including normal safe operating procedures for each piece of equipment. The SOP shall comply with the Operations and Maintenance (O & M) manuals, permits, statutes, regulations, instructions, and policies (including switching configuration) applicable to the utility systems. The Contractor shall provide SOPs at the site of operation for availability to the operators at all times.	maintained complete, accurate and current. SOPs are applicable and effective and procedures are followed.
3.2	Planned Maintenance (PM) Program	The Contractor shall develop and implement a PM program for the electrical power generation plant and transmission and distribution systems to ensure proper operation, to minimize breakdowns, and to maximize useful life.	The Contractor shall develop and submit a Planned Maintenance Plan and a Planned Maintenance Schedule, per Section F. Utility Workload Data is attached in Section J-1602000-02. Planned Maintenance shall include all equipment and components of the electrical generation and distribution systems (e.g., power plants, substations, transformers and transformer pads, switchgear, distribution line, manholes, structures and poles, advanced metering infrastructure (meter, radio, all connections and communication to the Data Acquisition Server (DAS) including meter firmware/software), electric meters, etc.). The PM program shall provide an economical approach manufacturers' recommended procedures, OEM standards,	Maintenance is accomplished in accordance with the Contractor's PM program and work schedule. Planned Maintenance (PM) is completed in accordance with manufacturers' recommended procedures and specifications, generally accepted industry practices, or a locally agreed upon PM schedule Systems and equipment are maintained to sustain a fully functional and operable condition. No unscheduled power outages

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Spec Item	**Title**	**Performance Objective**	**Related Information**	**Performance Standard**
			commercially accepted practices or related Government standards and maintenance required to satisfy equipment warranties and keep in normal working condition. Excessive or repeated system or equipment breakdowns or deficiencies may indicate the need to adjust or modify the Contractor's PM program. These changes will be made at no additional cost to the Government. The Contractor shall accomplish the maintenance in a manner that does not impede meeting the other objectives and requirements specified under this annex. The Contractor shall incorporate early detection methods to prevent equipment malfunction. Document and maintain records of Maintenance and Repair History per Section F. The Contractor shall attach identification tags or labels to major pieces of equipment per P-603. Identification tags will include a unique identification number consistent with MAXIMO input that can be used in the system inventory and any reports prepared for that piece of equipment. Calibration of testing equipment shall be in accordance with manufacturer's specifications and done by a certified testing laboratory. All system calibrations shall be performed by appropriate calibrated equipment. Informational Notes. Estimated Utility Maintenance and Repair	attributable to missed or improper maintenance. Maintain existing redundancy to electrical systems and recommend other redundancies needed. Reports, data, records and documentation are provided on time, complete, accurate and legible.

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Spec Item	**Title**	**Performance Objective**	**Related Information**	**Performance Standard**
			Workload is provided in Section J-1601000-03.	
3.3	Other Recurring Services			
3.3.1	Exercise Switches	The Contractor shall exercise switches to ensure proper operation.	The Contractor shall operate switches by opening and closing gang switches and pole switches annually. Ensure proper operation. Include this work in the Planned Maintenance Plan and establish schedule in the Planned Maintenance Schedule (Section F).	Switches are fully operational following scheduled maintenance.
3.3.2	SF-6 Switches	The Contractor shall check and refill SF-6 Switches to ensure proper gas level.	The Contractor shall check gas level in SF-6 switches annually and recharge if needed. Include this work in the Planned Maintenance Plan and establish schedule in the Planned Maintenance Schedule (Section F).	Switches are fully gassed following scheduled maintenance.
3.3.3	Substations	The Contractor shall inspect Substations condition and performance to ensure proper and efficient operation.	The Contractor shall inspect both interior and exterior of facilities and equipment at substations weekly. Establish and maintain a log at each substation and record date and time of inspection, substation condition and performance, the name of the individual performing the inspection and all comments and problems. Log all PM required or performed during inspections. The logbook data shall contain status of alarm on enunciator panel, battery charger status, including ground indication. The Contractor shall include infrared inspections and substation relay coordination in the Planned Maintenance Plan and establish schedule in the Planned Maintenance Schedule (Section F). Finished appearance shall match existing coating as near as possible.	Substation inspected weekly and fully operational.

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Spec Item	**Title**	**Performance Objective**	**Related Information**	**Performance Standard**
3.3.4	Manholes, Splice Cabinets and Transformers	The Contractor shall ensure Manhole, Splice Cabinets and Transformer Inspections are performed to identify condition and structural integrity of the manhole and equipment.	The Contractor shall perform (1) Manhole Visual Inspections of manholes in accordance with the references in Annex 2 including MO-200 Electrical Exterior Facilities and (2) Splice Cabinets and Transformers Visual Inspections per Section F. Include overall condition of equipment and structures in reports. The Contractor shall include these inspections in the Planned Maintenance Plan and establish schedule in the Planned Maintenance Schedule (Section F). Results of the inspections are compiled and used for Long-Range Maintenance Planning. This inspection shall not relieve the Contractor from establishing and implementing a continual inspection, or monitoring, program for the timely identification of repair work within the scope of the PM Plan. The Contractor shall provide an updated CAD and GIS drawing for each manhole identifying the circuits inside the manhole and their direction in and out of the manhole. The report shall also state the size and number of conduits along with any spares.	Manholes splice cabinets and transformers inspected and report submitted to the KO and COR.
3.3.5	Generators – Standby Power Plant	The Contractor shall perform maintenance to insure standby power plants are operable and kept in good condition. Power plants are maintained to prevent deterioration beyond normal wear and tear.	The Contractor shall submit electrical and load tests as part of the Standby Power Plant Operations and Maintenance Log report per Section F. Informational Note: Orote Point power plant prime movers are Stork-Wartsila Diesel Engines. The manuals required for Engine Type 16TM410, Engine Nos. 50900/51000/51100 are Government furnished.	Standby power plants are 100% operable at full capacity. Zero down time due to missed or improper maintenance. Reports, data, records and documentation are provided on time,

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Spec Item	**Title**	**Performance Objective**	**Related Information**	**Performance Standard**
				complete, accurate and legible.
3.3.6	Generators – Emergency	The Contractor shall perform inspection, testing, and maintenance in accordance with Annex 2 references including NFPA 110 to ensure emergency generators are operable and kept in good condition.	In the absence of manufacturer instructions or recommendations, the tools indicated by NFPA 110 can be used. The Contractor shall utilize backup portable emergency generator during scheduled downtime. Submit Emergency Generators Status Report to include startup (load) operational checkups, electrical, load and automatic start and load assumption test results, availability, material condition, work accomplished or planned in order to return to service, etc. on all units per Section F.	All emergency generators are in a state of readiness at all times. Zero down time due to missed or improper maintenance. Scheduled down time exempted. Reports, data, records and documentation are provided on time, complete, accurate and legible.
3.3.7	Distribution Systems	The Contractor shall perform maintenance to insure the medium voltage distribution system and its major components are continuously operable and kept in good condition.	The Contractor shall conduct visual inspections, electrical, mechanical and operational testing of the following major components and submit as noted per Section F. a) Direct current systems (battery charger and batteries). b) Switchgear, circuit breakers, waterfront power mounds and substation meters, instruments and relays. c) Overhead and underground distribution lines d) Transformers e) kWh meters The Contractor shall coordinate with Grounds Maintenance Contractor for access control. The Contractor shall provide as needed emergency vegetation control and tree trimming to restore or prevent Unscheduled interruption of Electrical Distribution services.	Planned maintenance (PM) is completed that is required by manufacturer's recommendations, generally accepted industry practices, or a locally agreed upon PM schedule. No unscheduled outages (zero down time) due to failed maintenance. Transformers continue to operate 100% of the time. Reports and amount of meters calibrated to be submitted on time. Substation ground grid shall be properly grounded 100% of the time. The resistance

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Spec Item	**Title**	**Performance Objective**	**Related Information**	**Performance Standard**
				between the substation ground grid and ground should be five (5.0) ohm or less. No unscheduled outages due to untimely or improper ground maintenance. Reports, data, records and documentation are provided on time, complete, accurate and legible.
3.3.8	Warranty/ Guarantee Certificate	The Contractor shall create and manage a program that ensures all warranties/guarantees in effect for existing or newly acquired equipment that the Contractor is provided are reviewed periodically and utilized until their expiration.	The Contractor shall provide warranty and guarantee certificate status report on all major equipment under warranty per Section F. Informational Note: Major equipment includes, but is not limited to, transformers, medium and low voltage switchgears, batteries and battery chargers, engines, generators/alternators (emergency generators), switchboards and circuit breakers, pumps/purifiers/centrifuges, radiator assemblies, air compressors, exhaust silencers/mufflers, electronic control system, fuel transfer, lube oil transfer and compressed air systems.	All equipment under warranty are properly operated, tracked, and maintained 100% of the time in accordance with manufacturer's recommendations. Maintenance records reflect that warranty requirements are met. Reports, data, records and documentation are provided on time, complete, accurate and legible.