

Primary Electrical Maintenance Service

Scope of Work

Reviewed By: _____

Approved By: _____

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Electrical High Voltage Maintenance

BACKGROUND

The Integrated Service Provider's program will provide superior on-site equipment, service, technology, application expertise, process knowledge, monitoring techniques, effective service project management, overall process excellence and cost control in support of the OWNER's mission to be a world class manufacturer of automotive engines

Service Philosophy and Objectives

The Electrical Maintenance Integrated Service Provider will provide the OWNER Operations with State of the art equipment and off sight servicing thus contributing to the OWNER's immediate production support performance goals. This will allow FSSP support and the OWNER production personnel to operate worry free of material transportation concerns.

Pillars of the Program

- The Electrical Integrated Service Provider shall ensure all work is performed in accordance with all applicable Federal, State and Local building codes, mechanical codes, electrical codes and regulations applicable to this service and shall be responsible for all costs associated with any fees required to meet said codes and regulations.
- The Electrical Integrated Service Provider shall be responsible for all Permits and Inspections required by law and all associated costs.
- THE OWNER will, within six months, undergo an ISO audit with the goal of immediate certification. The Electrical Service Integrated Service Provider must prepare and initiate a quality system to support this goal.

Definitions

- *FSSP* – Refers to Facility System Service Provider.
- *Integrated Service Provider* shall be defined as the contract service provider awarded the contract to support the OWNER facility.
- *THE OWNER*, Global Engineering Manufacturing Alliance is the Company created by DaimlerChrysler, Mitsubishi Motors, and Hyundai Motors to Produce World Class engines for all three Companies at the Facility.

Electrical Distribution – All Labor to maintain the following

4. Electrical

Power Distribution

1. Maintenance of Manufacturing Building electrical systems and associated electrical systems on the Trestle complete with related accessories, including but not limited to the following:

1. Bonded grounding systems for the Building, the cable tray distribution systems, and the unit substations located on mezzanines.
2. 13.8kv power with cable tray distribution from 15kv Switch House via Trestle to low voltage substations in the Manufacturing Building.
3. 480v secondary substations with harmonic filters and capacitors for Manufacturing Building lighting, power and process equipment power.
4. 480v power with cable tray from the Manufacturing Building via Trestle to the Compressor Building.
5. Secondary power with feeders for bus ducts, gallery power distribution panels (PDP), Electrical top units (RTU), lighting panels, and column mounted receptacle panels and dry type transformers.

Sub Size

Primary

- () Main Transformers
- () Control House
- () Underground duct banks

Secondary

- ___ line up at 15KV w/ vacume breakers
- ___ DC Power panel
- Unit Substaions**
- ___ Double ended 4MvA – 480 V-13.8KV/480v
- ___ power factor connector/harmonic filters
- ___ 8 MVA – 5 KV

Emergency Power

- a. Emergency stand-by generators rated at 100 kVA as specified in Division 16 Section “Packaged Engine Generators Purchase.” Quantity of 2.
- b. Automatic transfer switches as specified in Division 16 Section “Transfer Switches Purchase.” Quantity of 2.

Computer UPS

- c. On-line static type uninterruptible power supply (UPS) system for Plant Lighting.
- d. On-line static type uninterruptible power supply (UPS) system for Data Center.

Energy Management System

Buss Bldg - () 16000 amp/480V w/3ot-4w cable
 Process - () 1600 amp/480V w. 30t-4w cable

B. Emergency Power

UPS system for emergency and exit lights.

C. Lighting

General interior lighting, night lights/emergency lights, exit lighting and exterior lighting

D. Emergency Lighting

E. Information Systems (Andon Boards, Message Boards)

F. OUT-BUILDINGS Electrical

1. Compressor Building

Maintenance for the Compressor Building electrical power distribution systems and associated electrical systems on the Trestle complete with related accessories, including but not limited to the following:

- 1) Installation of Owner-furnished products as specified.
 - a) 4160 volt Substation (2 X 5000 KVA)
 - b) Switchboard type power distribution panel (PDP).
 - c) Motor Control Center
 - d) Grounding system for Building, electrical service system, substation, and power distribution equipment.

- e) 13.8kv power with cable tray distribution from 15kv Switch House via Trestle to 4160Y substation in the Compressor Building.
- 2) Secondary power feeders for motor control center and PDP's.
- b. 15kv Switch House installation and related systems for grounding, power distribution and relay coordination.

On the Trestle, conduit for communication and control systems

Plant Overview

- Electrical Distribution is divided into 3 layers of Service. Site Gear, Primary and Secondary. The Site Gear is an in the "Switch House" is controlled by two contractors. The FSSP will only coordinate one of these Suppliers. The following are the areas and single source suppliers
 - Reference exhibits L, & M.
 - Infra-red analysis done annually

Lighting and Power

- Scheduled inspection and planned maintenance of the electrical system shall be required for safety, cost efficiencies and reliability. Maintenance programs shall be in place for all electrical system components with replacements and repairs as required.
- Exterior lighting is essential for the safety of building occupants. Replacement of exterior lighting near entrances will be considered a priority. Replacement or repair will be completed within twelve (48) hours following notice. Exterior lighting should be regulated by time clock or photo cell.
- Inspect annually. Replace bulbs when lighting has diminished by 10% or 15% of fixtures in a bay are burned out. Foot-candles will be measured by lighting measuring device.
- Maintain grounding systems for the Building, the cable tray distribution system.
- Maintain 480v power with cable tray from the Manufacturing Building Substation 2S, to the Materials Building bus duct BD-OE11.
- Maintain Secondary power with feeders for bus ducts, Electrical top units (RTU), lighting panel, and column mounted receptacle panel and dry type transformer.

- Maintain general interior lighting, night lights/emergency lights, exit lights, wall mounted exterior lights and parapet mounted exterior floodlights.
- Maintain Secondary power for loading dock levelers, doors, and door heaters. Interlock of dock equipment and doors will be by others.
- Reference exhibit “M” for Manufacturers recommended maintenance.

Communication Systems

- Inspect and clean electrical cabinets annually.

Special Electrical Systems

- EMS
 - Not in Contract
- UPS
 - All maintenance will be by GEMA Service Provider
Contact Tim Dwyer
- Emergency Lighting
 - Test per NFPA Code. Replace as required.
- Generator
 - Inspect, clean and test quarterly. Repair as required.
 - Reference exhibit “Y” Manufacturers Recommended Maintenance
- Fire Alarm
 - Reference exhibit “N” – NFPA code (certified)

Management of Program

Supplier shall retain a Service Manager for the duration of the contract. It is expected that the Service Manager shall be accountable for all daily activities of the Snow and Ice Removal program

- Program Operation
 - Continuously benchmark all service functions; recommending alternative, innovative products and technologies for continuous improvement.
 - Provide superior inventory management and control.
 - Initiate continuous improvement project activities.
 - The Electrical Maintenance Integrated Service Provider is to apply its service application expertise to recognize, suggest, and jointly implement cost reduction projects. All project activities must include business plans which define, prioritize, and detail key implementation steps. Project expectations and priorities shall be jointly prepared with the FSSP team. Each cost reduction project activity should be

captured using written living documents, complete with financial justification and expected results. The Service Manager shall maintain and update quarterly a list of specific continuous improvement plans (CIP's) to be jointly implemented during the life of the contract. These CIP's will include strategies for improving plant operations, timetables, estimates of resources and savings, along with priorities.

The Integrated Service Provider Snow & Ice Removal Manager shall participate as a working partner in designated FSSP and the OWNER committees and meetings.

- Authorization

The Purchase Order does not authorize the Integrated Service Provider or any of its employees to act on behalf of or to obligate FSSP in any way without prior written approval. The Purchase Order is only intended to transfer the day-to-day operating responsibility for supplying and managing the program at the OWNER facility.

- Problem Resolution Process

- The Integrated Service Provider Service Manager shall work with the FSSP personnel in resolving service related problems. Documentation and notification of service related problems should be included in the periodic reports distributed to FSSP personnel.
- Thefts are handled by reports to the OWNER Security and Integrated Service Provider's own Insurance. For any incidents, the Service Manager will submit written notification, with copy of Security Report, to FSSP.

System Concepts

- Provision by Integrated Service Provider of all necessary physical and personnel resources to manage the Snow and Ice Removal providing the deliverables outlined herein. The manager shall ensure that all maintenance and repairs to the are scheduled and performed in accordance with the appropriate OEM's requirements for safe and properly functioning equipment, and that these are met in a timely fashion. The manager will also coordinate replacements, rentals, and disposals and will take steps to recommend the optimum composition, size and utilization.
- The Integrated Service Provider shall also provide any temporary equipment on sight needed from time to time and will charge back based upon an agreed daily amount.

Tasks and Requirements

The Service Partner will be required to support the following systems;

- You may be required to use the OWNER and/or FSSP systems for data collections and documentation.
- Provide periodic progress reports. This report will be presented to FSSP by a manager of the Vendor Provider other than the on-site manager or supervisor.
- Participate in functional teams and/or committees designed to ensure the OWNER goals on reliability, quality benchmarking, and safety.
- Introduce new systems & organizational concepts to the FSSP and/ or the OWNER.
- Create and maintain a service charge back process to support special request.
- Provide well trained, dependable staff to meet the needs of the department as described in this document.
- All employees of the service partner must pass a criminal background check. See definition for complete explanation of Criminal Background requirements
- All employees serving the OWNER, facility, must present the employee's information to the FSSP for approval prior to allowing said employee on site.
- Document and maintain all processes for this operation.
- Training programs must be designed, administered and monitored for effectiveness.
- The OWNER and/or FSSP reserve the right to approve all prices, price changes, and product changes.
- Show evidence of insurance coverage in effect for:
 - Workmen's Compensation and Occupational Disease,
 - Comprehensive General Liability including Broad Form Contractual, and Products Liability of at least \$1,000,000.00.
 - Automobile Liability Insurance with limits equal to those required under Comprehensive General Liability.

Factors Affecting the Truck Repair Organization

- Space

The OWNER shall provide the Integrated Service Provider with the necessary site on the OWNER's premises agreed to by the parties from which Integrated Service Provider will conduct salt storage and large equipment storage. The Integrated Service Provider shall be responsible for maintaining proper housekeeping of the agreed upon Area.

Inspections of Vehicles, Property

- All vehicles, tool boxes, lunch boxes, and other containers are subject to inspection on entrance, exit, or at any other time while on the OWNER sight, including truck compartments and automobile trunks.
- Materials being removed from the premises which could be mistaken for the OWNER or one of the other Partner's property, could cause unnecessary delay while the item is being questioned. Persons carrying such items must document their possession and intent to remove in advance with appropriate the OWNER or Security Personnel in order to minimize this inconvenience.

Parking

- The Integrated Service Provider shall have an electronic record of all registration plate numbers of all company-owned or employee-owned vehicles which may park on the OWNER property.
- All personnel utilizing the facility lots and roadways will follow all posted speed limits and regulations governing their use. Failure to do so may result in this privilege being suspended and/or disciplinary action taken.
- Prohibited Items

The following items may not be brought into the OWNER facilities, used on the OWNER property, or removed from the OWNER property without specific prior approval of appropriate the OWNER personnel or the Security Department. Violations will cause the item to be confiscated and the offender could face other consequences such as being barred from re-entering the OWNER property or even prosecution.

Prohibited items:

- Explosives
- Cameras
- Recording devices of any type
- Firearms
- Alcoholic beverages
- Drugs of abuse

Hazardous Materials
Other items deemed non-appropriate by the OWNER
personnel

Customer Relations

The Integrated Service Provider will be an integral part of all teams and will be treated as a team member. FSSP and the OWNER expect nothing less in return from the Integrated Service Provider. The interaction between FSSP and the service provider will be based on standard procedures to insure mutual benefit. The vendor provider will support all the OWNER production activities as a full team member with the best interest of the facility in mind.

Interfaces with Production and Support Organizations

The Integrated Service Provider will participate in all identified committees whether production, facilities, or support services giving valuable input into decisions effecting all the OWNER operations.

Requirements

- Maintain a vehicle deterioration rate to measure and predict failure so that planned maintenance can be scheduled in advance.
- Provide 24 hour change out of all other non critical equipment.
- There shall be no equipment or supplies provided by the OWNER.
- Space for charging equipment and staging of production critical change out equipment will be provided by the OWNER.
- Equipment shall have installed all appropriate safety systems as identified by the safety department.

Reference Documents:

Site Priority Plan

Service Report