PERFORMANCE WORK STATEMENT

INSTALLATION OF 350KW DIESEL GENERATOR BUILDING 1191

26 June, 2026

1. Purpose:

It is the Government's intent for the Contractor to provide a complete turnkey procurement, installation, integration, testing, commissioning, and operational acceptance of a new 350KW diesel (350 KW 277/480V 3 phase, 60 Hz.) emergency standby generator system supporting Building 1191, a 24-hour facility supporting continuous non-interruptible capabilities.

The Contractor shall furnish all labor, supervision, project management, engineering, permits, tools, equipment, cranes, rigging, transportation, materials, incidentals, startup services, testing, commissioning, warranties, documentation, and training necessary to provide a fully operational and code-compliant emergency power system.

The Contractor shall be solely responsible for ensuring the completed installation is fully operational, fully integrated with existing infrastructure, and capable of supporting uninterrupted facility operations during utility outages.

The Contractor shall field verify all existing conditions prior to bidding and installation. No additional compensation shall be provided for failure to properly investigate site conditions, utility routing, feeder conditions, structural pad capacity, operational constraints, or visible existing conditions shown in attached photographs.

2. Scope:

The Contractor shall furnish all labor, parts, tools, paint, equipment, appliances, transportation, materials, engineering, supervision, and incidentals necessary to procure, install, test, commission, and place into service a complete 350KW diesel emergency standby generator system.

All work shall be performed in accordance with this Performance Work Statement (PWS), attached photographs, associated specifications, drawings, manufacturer requirements, and all applicable international, federal, state, local, DoD, Air Force, UFC, NFPA, NEC, WBDG, IEEE, OSHA, AFMAN, EPA, TCEQ, and IBC requirements applicable at the time of installation.

The Contractor shall provide a complete turnkey installation including, but not limited to:

- Removal of existing generator infrastructure not compatible with replacement system
- Generator procurement and installation
- Structural evaluation of existing slab and generator pad
- Concrete pad extension/modification if required with testing
- Electrical integration and feeder tie-ins
- Automatic Transfer Switch (ATS) integration and testing
- Fuel system integration
- Grounding and bonding
- Startup and commissioning
- Load bank testing
- Temporary power coordination
- Fuel transfer coordination
- As-built documentation
- Operator training
- Warranty services

3. Period and Place of Performance:

3.1. Contractor shall perform all work on Ellington Field, in Houston Texas

3.2. Contractor shall coordinate material ordering and delivery schedule so that all work is completed no later than sixty (60) calendar days after receipt of order (ARO), excluding approved generator manufacturing lead times if applicable, including site cleanup, startup, testing, commissioning, training, and submission of all closeout documentation and letter of guarantee.

3.3 The Contractor shall provide a dedicated full-time onsite Superintendent/Project Manager during all active construction activities. The Superintendent/Project Manager shall remain onsite whenever construction activities are in progress and shall have full authority to coordinate subcontractors, schedule work, address safety concerns, coordinate outages, resolve construction conflicts, and communicate directly with the Government.

The Superintendent/Project Manager shall not be assigned as a working foreman or perform installation work while serving in this capacity. Replacement of the designated Superintendent shall require prior Government notification.

4. Background:

The 147th Operations Group operates 24-hours from Building 1191. Uninterrupted power is required to maintain operational readiness, communications systems, mission systems, and life safety support.

In the event of utility failure or severe weather conditions impacting base power, the standby generator system shall fully support building operational requirements.

The Contractor shall perform all work in a highly coordinated, professional, and tactful manner to minimize disruptions to ongoing operations.

No outages, shutdowns, tie-ins, or operational interruptions shall occur without prior Government approval and coordination.

5. Performance Objectives:

The contractor shall provide a turnkey solution for the following results and minimize disruptions to on-going operations:

5.1. Remove existing generator infrastructure which is not compatible with replacement equipment.

5.2. Install 350 KW diesel weatherproof/sound attenuated enclosure generator to meet all building power requirements as single-source of power in accordance with all Unified Facilities Criteria and applicable Air Force Regulations.

5.3. Provide full electrical tie-in to existing building distribution, including connection requirements and integration with existing systems.

5.4. Contractor to verify existing feeder capacity, conductor condition, and overall system with full integration with existing building distribution compatibility.

5.5. Contractor to ensure grounding and bonding requirements are in accordance with all applicable codes as of the date of installation, to include but not limited to AFMAN32-1065.

5.6. Contractor to verify compatibility of existing Automatic Transfer Switch (ATS) with new generator controls to include open/closed transition, bypass/isolation requirements and the sequence of operation in a narrative format.

5.7. Contractor to perform functional testing of ATS under load transfer conditions ensuring all NFPA standards are followed to include the NFPA 110 standard for the 4-hour load bank test.

5.8. Contractor to field verify existing concrete pad for adequacy, including dimensions, reinforcement, anchorage, and structural capacity to include wind load and anchorage design. If the existing concrete pad is extended, subgrade/subbase compaction and moisture testing shall be performed by an approved third-party testing laboratory. Contractor is responsible for ensuring the new generator loading meets the existing slab. All reports shall be submitted to the Government.

5.9. Contractor to comply with FAA crane requirements, including submission of FAA Form 7460-1 as applicable based on crane height and location upon award to meet FAA time criteria for approval.

5.10. Contractor to define battery type, capacity, and mounting configuration.

5.11. Contractor to perform all testing in accordance with applicable codes and standards, with all test reports submitted to the Government to include the full system commissioning plan, and the factory acceptance test (FAT).

5.12. Contractor to provide submittals to include shop drawings, product data with manufacturer specifications, wiring diagrams, control schematics, O&M manuals, warranties to include service response time requirements should they be required, electrical calculations, required testing procedures and results, as-built drawings, and a proposed training plan.

5.13. Ensure installed generator can maintain uninterrupted power, at full electrical load for a minimum period of 48-72 hours. The 48-72-hour runtime shall be calculated based on the building load, not the generator's full 350 kW rated output. Contractor shall perform and submit a load study and fuel runtime calculation based on the building's actual/maximum connected load. Final tank sizing shall support the required 48-72hour operation based on the approved load calculation.

5.14. Clean and prepare jobsite for pre final and final inspection. The contractor shall properly dispose of all waste materials off installation in accordance with city, county, state, and federal guidelines/codes.

5.15. Fuels system requirements will include fuel capacity with runtime sizing, design and materials, leak detection and the tank system will be provided with a sub-base double wall secondary containment internal system and be in compliance with NFPA 30 and 37.

5.16. Contractor shall coordinate with Government as it relates to Base Environmental.

5.17 Existing Generator Removal and Staging

The Contractor shall safely disconnect, remove, rig, lift, palletize, transport, stage, and protect the existing generator, Automatic Transfer Switch (ATS), and all associated equipment designated by the Government in accordance with the Contract Documents, applicable OSHA requirements, UFC, manufacturer recommendations, and all applicable Federal, State, and local regulations.

The existing generator and associated equipment shall remain Government property at all times, and title shall not transfer to the Contractor under any circumstances. The Contractor shall not dispose of, salvage, recycle, cannibalize, dismantle for parts.

Prior to removal, the Contractor shall coordinate all outage activities, rigging operations, lifting plans, transportation routes, staging locations, and storage requirements with the Government. The Contractor shall submit all required lift plans, Activity Hazard Analyses (AHAs), equipment handling procedures, and spill prevention measures for Government review and approval before beginning removal operations.

The Contractor shall stage the removed generator and associated equipment at a secure location on the installation designated by the Government, or at another Government-approved location if directed in writing. Equipment shall be palletized, blocked, secured, and protected from weather, moisture, corrosion, dust, vandalism, theft, accidental damage, fuel or oil leakage, environmental contamination, and unauthorized access throughout removal, transportation, staging, and temporary storage.

The Contractor shall exercise reasonable care to prevent damage to Government property during all handling operations and shall be fully responsible for any damage resulting from Contractor negligence. Any damage to Government property, facilities, utilities, pavements, structures, or equipment caused by the Contractor's operations shall be repaired or replaced by the Contractor at no additional cost to the Government.

The Contractor shall immediately notify the Government of any damage, equipment malfunction, fuel or oil spill, environmental release, accident, or other incident affecting Government property. The Contractor shall immediately implement appropriate containment, cleanup, corrective actions, and repairs in accordance with applicable environmental regulations and Government direction.

The Contractor shall maintain custody and accountability of all removed Government-owned equipment until final transfer to the Government at the designated staging location. Upon completion of staging, the Contractor shall provide a written inventory identifying all removed equipment, accessories, components, loose parts, and hardware transferred to the Government.

5.18 Generator Procurement Requirements

The Contractor shall procure one (1) complete diesel standby generator system and include all procurement coordination, shipping, delivery, unloading, staging, startup, commissioning, testing, and warranty requirements.

The Contractor shall coordinate all manufacturer lead times and delivery schedules and incorporate estimated manufacturer lead times incorporate into production schedules.

The Contractor shall immediately notify the Government of any procurement delays, manufacturing delays, shipping delays, or supply chain impacts affecting project schedule.

The Contractor shall submit procurement schedule and anticipated delivery timeline to the Government for review and coordination.

The Contractor shall not proceed with generator procurement until Government review of submitted equipment package is complete.

The Contractor shall provide complete submittal package prior to procurement including:

- Generator specifications
- Manufacturer product data
- Shop drawings
- Structural data
- Electrical data
- Fuel tank data
- Sound attenuation data
- Emissions compliance documentation
- Wind rating documentation
- Controller information
- Alternator information
- Warranty information

- Lead time information
- Equipment dimensions and weights
- Utility connection requirements
- Startup requirements
- Manufacturer installation requirements

5.19 Generator Installation Requirements

The Contractor shall install one (1) complete 350KW diesel standby generator system on the existing generator pad or modified/extended pad as required.

The Contractor shall field verify existing pad adequacy prior to installation.

The Contractor shall provide all required structural modifications, extensions, anchorage, vibration isolation, reinforcement, and restoration required for complete installation.

The Contractor shall provide complete electrical integration, grounding, bonding, fuel system integration, ATS integration, startup, testing, commissioning, and operational acceptance.

5.20 Generator Technical Requirements

- The Contractor shall furnish and install one (1) complete 350 kW diesel standby generator system. The generator system shall consist of, but not be limited to:
- 350 kW diesel engine-generator
- 277/480 Volt, 3-Phase, 60 Hz
- Tier 3 diesel engine
- UL 2200 Listed
- Weatherproof Level II sound-attenuated enclosure
- 200 MPH wind-rated enclosure
- Integral double-wall UL 142 sub-base fuel tank
- Integral leak detection
- Fuel level monitoring
- Critical-grade muffler
- Jacket water heater
- Battery charger
- Batteries and battery rack
- Flexible fuel, coolant, and oil connections
- Digital engine control system
- Factory startup services
- Emergency shutdown
- Remote monitoring capability. The existing remote annunciator located within the Building 1191 electrical room shall remain in service. The Contractor shall verify compatibility, wiring, alarms, monitoring functions, and proper operation with the new generator system during commissioning.
- Mainline circuit breaker
- The mainline circuit breaker shall be 100% rated and listed in accordance with UL 489 or UL 1066, as applicable.
- No specific manufacturer is required. Equivalent generator manufacturers are acceptable provided the equipment meets or exceeds all requirements of this Performance Work Statement.
- Equivalent factory-installed controllers furnished by manufacturers shall be acceptable provided the controller is fully compatible with:
- Existing or replacement ATS
- Monitoring points

- Alarm functions
- Shutdown logic
- Sequence of operation
- Generator controls
- Testing requirements
- Building monitoring systems
- The Contractor shall demonstrate full compatibility during commissioning.

Governing Criteria: UFC 3-540-01, UFC 3-520-01, NFPA 70, NFPA 110, UL 2200, UL 489, UL 1066, manufacturer requirements.

5.21 Electrical Integration

The Contractor shall provide complete electrical tie-in existing building distribution system and integration of the new generator system.

The Contractor shall field verify:

- Total connected building load
- Existing feeder sizes
- Existing conductor condition
- Existing conductor ampacity
- Existing breaker ratings
- Breaker trip settings
- ATS ratings
- Existing terminations
- Grounding and bonding
- Voltage
- Phase rotation
- Electrical compatibility
- The Contractor shall perform and submit:
- Short-circuit study
- Protective device coordination study
- Arc-flash hazard analysis
- Coordination study report
- Arc-flash labels where required
- All studies shall comply with IEEE 1584, NFPA 70E, UFC 3-520-01, UFC 3-540-01 and applicable WBDG electrical criteria.
- The Contractor shall coordinate all breaker setting changes with the Government prior to implementation.
- Where existing conductors are determined to be undersized or otherwise unsuitable, the Contractor shall immediately notify the Government and submit written recommendations before proceeding.
- The Contractor shall also perform VLF (Very Low Frequency) and Tan Delta testing on existing primary feeder cables where required to verify suitability for continued service.
- The Contractor shall ensure generator breaker settings and feeder configuration are fully compatible with the existing electrical distribution system.

The Contractor shall ensure grounding and bonding requirements comply with all applicable codes and AFMAN 32-1065 requirements.

5.22 Automatic Transfer Switch (ATS)

The Contractor shall provide complete electrical integration of the new generator system.
The Contractor shall field verify:

- Total connected building load

- The Contractor shall evaluate the existing Automatic Transfer Switch.
- Evaluation shall include:
- Withstand ratings
- Short-circuit ratings
- Bypass/isolation capability
- Transition type
- Controls
- Wiring
- Compatibility
- Sequence of operation

The Contractor shall perform a comprehensive evaluation of the existing Automatic Transfer Switch (ATS), including verification of compatibility, withstand and short-circuit ratings, bypass/isolation capability, transition type, controls, wiring, sequence of operation, monitoring points, alarms, and overall operational condition.

Based on the Contractor's field verification, engineering evaluation, and protective device coordination study, the Contractor shall determine whether the existing ATS is suitable for continued service with the new generator system.

If the existing ATS fully complies with the requirements of this Performance Work Statement and applicable UFC, NFPA, NEC, UL 1008, and manufacturer requirements, the existing ATS may remain in service. The Contractor shall verify and demonstrate proper operation during commissioning.

If the Contractor determines the existing ATS is not compatible, is undersized, has inadequate withstand or interrupting ratings, cannot safely coordinate with the new generator system, or otherwise fails to meet applicable codes or operational requirements, the Contractor shall immediately notify the Government and submit written engineering recommendations for review and approval prior to replacement.

No ATS replacement shall be performed without written Government approval.

Regardless of whether the ATS remains or is replaced, the Contractor shall provide complete functional testing, startup, commissioning, sequence-of-operation verification, alarm verification, transfer testing, re-transfer testing, and final operational acceptance in accordance with UFC 3-540-01, UFC 3-520-01, NFPA 70, NFPA 110, UL 1008, NFPA 70E, and applicable WBDG electrical criteria

Based upon coordination study findings and field verification, the Contractor shall determine whether the existing ATS may remain in service or requires replacement.

If replacement is required to provide a complete operational system meeting this Performance Work Statement, the Contractor shall furnish and install a new Automatic Transfer Switch meeting all applicable UFC, NFPA, UL 1008 and manufacturer requirements.

Regardless of whether the ATS remains or is replaced, the Contractor shall:
- Verify compatibility
- Test all controls
- Verify alarms
- Verify remote monitoring
- Verify sequence of operation
- Verify transfer operation
- Verify re-transfer operation
- Submit written sequence of operation
- Demonstrate satisfactory operation during commissioning

5.23 Existing Conduit Removal and Reuse Requirements

The Contractor shall:

- Verify all conduit routing and serviceability
- Verify existing light gray conduit serving the building
- Remove abandoned dark gray conduit identified as not in service
- Patch and seal abandoned penetrations
- Provide all required conduit supports, fittings, seals, grounding bushings, and weatherproofing

The Contractor shall field verify conduit routing, bends, conductor fill, and serviceability prior to installation.

5.24 Generator Pad / Structural Foundation Requirements

Existing slab dimensions are approximately:

- Length: 14’-0”
- Width: 79”

The Contractor shall perform structural verification of the existing generator foundation.

Where modifications are necessary, the Contractor shall ensure the completed foundation supports the final generator weight and all imposed dead, live, wind, seismic and operational loads. The existing generator weight is approximately 5,500 lbs dry engine weight. 7700 lbs-8200 total. Contractor shall field verify prior to removal, lifting, rigging, transport, or staging.

The Contractor shall include all excavation, doweling, reinforcement, forming, finishing, curing, anchorage, and restoration required for a complete installation.

5.25 Fuel System Requirements

The Contractor shall provide a complete UL 142 compliant double-wall fuel system.

- Fuel storage capacity shall provide a minimum 48-72 hours of generator operation based upon the building’s actual connected electrical load, not the generator’s full rated 350 kW output.
- The Contractor shall perform:
- Connected load study
- Fuel consumption calculations
- Runtime calculations
- Fuel tank sizing shall be based upon the approved load calculations submitted to the Government.
- If modifications to the generator pad are required to accommodate the final fuel tank, such work shall be included.
- Secondary containment
- Leak detection
- Fuel level monitoring
- Spill containment
- NFPA 30 compliance
- NFPA 37 compliance

Generator runtime shall meet UFC and AFMAN requirements.

5.26 Fuel Transfer and Fuel Testing Requirements

The Contractor shall:

- Coordinate all fuel transfer operations. Prior to any fuel transfer operations, the Contractor shall notify the 147 CES Environmental Office and Fire Department for inspection of the site and equipment prior to execution of the transfer.
- Safely transfer all existing diesel fuel from the existing generator to temporary storage or directly into the replacement generator as required.

- Test the existing diesel fuel prior to reuse in accordance with NFPA 110, NFPA 30, manufacturer recommendations, and all applicable federal, state, and local environmental regulations.
- Reuse the existing diesel fuel if testing determines the fuel is suitable for continued service.
- If the existing diesel fuel is determined to be unsuitable for reuse, the Contractor shall either recondition the fuel to acceptable operating standards or properly dispose of the contaminated fuel in accordance with EPA, TCEQ, and all applicable environmental regulations.
- Provide all temporary containment systems, spill prevention equipment, absorbent materials, spill kits, pumps, hoses, fittings, transfer equipment, and environmental protection measures necessary to safely perform the fuel transfer operation.
- Coordinate temporary storage tanks and fuel transfer equipment as required.
- Provide only the quantity of new diesel fuel necessary to complete startup, commissioning, operational testing, load bank testing, and final acceptance of the generator system.
- The Government will provide the final fuel fill following successful completion and acceptance of the project.
- Under no circumstances shall the Contractor allow the existing generator to run dry during fuel transfer operations. The Contractor shall maintain sufficient fuel throughout the transfer process to prevent engine damage, fuel system contamination, excessive downtime, or delays in commissioning.
- The Contractor shall be solely responsible for any damage to the existing generator, replacement generator, fuel system, or associated equipment resulting from improper fuel transfer procedures, contamination, spills, environmental violations, or failure to comply with these requirements.
- Governing Criteria: UFC 3-540-01, NFPA 30, NFPA 37, NFPA 110, EPA Regulations, TCEQ 30 TAC, AFMAN 32-1065, applicable Division 26 specifications, and manufacturer requirements.

The Contractor shall provide all temporary containment systems, absorbent materials, spill kits, pumps, hoses, fittings, and environmental protection measures.

5.27 Emissions Compliance

The Contractor shall provide emissions compliant generator system in accordance with:

- TCEQ 30 TAC 105.511
- EPA Tier requirements
- 40 CFR Part 63 Subpart

Contractor shall provide all certified engine and emissions compliance documentation.

5.28 FAA Requirements

The Contractor shall comply with all FAA crane and height notification requirements including submission of FAA Form 7460-1 as applicable.

5.29 Temporary Power and Operational Coordination

Building 1191 24-hour operational facility.

The Contractor shall:

- Coordinate all outages in advance 2-3 weeks in advance.
- Prevent interruption to ongoing operations
- Provide temporary power if required
- Coordinate all shutdowns with the Government
- Contractor shall provide temporary portable generator service, cabling, connections, protection, and coordination as required to maintain emergency backup power during construction.

No utility interruption shall occur without prior written Government approval.

6. TESTING AND COMMISSIONING REQUIREMENTS

The Contractor shall provide complete startup, testing, commissioning, and operational acceptance services for the generator system in accordance with all applicable WBDG, UFC, UFGS, NFPA, NEC, IEEE, manufacturer requirements, and governing codes and standards applicable at the time of installation.

All testing, inspections, commissioning, and acceptance activities shall comply with the latest editions of applicable codes, standards, manufacturer requirements, and Government criteria, including but not limited to:

- UFC 1-200-01 – General Building Requirements
- UFC 3-520-01 – Interior Electrical Systems
- UFC 3-540-01 – Engine-Driven Generator Systems
- UFC 3-550-01 – Exterior Electrical Power Distribution
- UFGS 01 45 00 – Quality Control
- UFGS 01 91 00 – Commissioning
- UFGS 26 32 13 – Engine Generator Set
- UFGS 26 36 23 – Automatic Transfer Switches
- NFPA 70 (NEC)
- NFPA 110 – Emergency and Standby Power Systems
- UL 2200 – Stationary Engine Generator Assemblies
- UL 1008 – Automatic Transfer Switches
- NETA ATS/MTS Acceptance Testing Standards
- IEEE 446, IEEE 242, IEEE 3007
- Applicable ASTM Standards
- Manufacturer's published installation, startup, testing, and commissioning requirements.

All testing shall be witnessed by the Government unless otherwise approved by the Contracting Officer. No portion of the emergency power system shall be considered complete or accepted until all testing, commissioning, corrective actions, documentation, and Government acceptance requirements have been successfully completed.

6.1 Factory Acceptance Testing (FAT)

Prior to shipment, the Contractor shall submit certified Factory Acceptance Test (FAT) documentation demonstrating successful manufacturer testing of the generator system.

Factory testing shall include, at a minimum:

- Generator operational testing
- Voltage regulation testing
- Frequency regulation testing
- Engine performance testing
- Alternator testing
- Protective device testing
- Control system testing
- Alarm verification
- Functional operational testing
- Manufacturer certifications
- Factory test reports

6.2 Installation Verification Testing

Following installation and prior to system startup, the Contractor shall verify the complete installation of the generator system.

Testing shall include, at a minimum:

- Equipment dimensions and clearances
- Concrete pad dimensions, elevation, and anchorage
- Conduit and cable routing
- Grounding and bonding verification
- Equipment labeling and nameplates
- Fuel system installation
- Exhaust system installation
- Cooling system installation
- Ventilation verification
- Battery installation
- Torque verification of all electrical terminations
- Cable continuity testing
- Insulation resistance (Megger) testing
- Ground resistance testing
- Phase rotation verification
- Voltage verification
- Frequency verification
- Breaker settings verification
- Neutral verification

6.3 Grounding and Electrical Acceptance Testing

The Contractor shall perform complete electrical acceptance testing in accordance with applicable UFC, UFGS, NFPA, IEEE, and NETA standards.

Testing shall include:

- Ground resistance testing
- Ground continuity testing
- Bonding verification
- Ground electrode testing
- Cable continuity testing
- Insulation resistance (Megger) testing
- Voltage verification
- Frequency verification
- Phase rotation verification
- Infrared thermographic scanning following energization
- Electrical termination torque verification
- Protective grounding verification

6.4 Automatic Transfer Switch (ATS) Testing

The Contractor shall perform complete functional testing of the Automatic Transfer Switch.

Testing shall include:

- Utility power loss simulation
- Generator startup verification
- Automatic transfer
- Automatic retransfer
- Manual transfer
- Manual retransfer
- Generator failure simulation
- Time delay verification
- Engine start signal verification

- Position indication verification
- Sequence of operation verification
- Alarm testing
- Exercise timer verification
- Mechanical interlock verification
- Control circuit testing
- Remote annunciation verification
- Open-transition verification
- Closed-transition verification (if applicable)

6.5 Functional Performance Testing

The Contractor shall demonstrate complete operational performance of the emergency power system. Testing shall include:

- Manual generator startup
- Automatic generator startup
- Remote generator startup
- Manual shutdown
- Emergency shutdown (E-Stop)
- Cold start testing
- Hot restart testing
- Cranking cycle verification
- Overcrank protection
- Generator cooldown cycle
- Voltage regulation
- Frequency regulation
- Governor operation
- Alternator operation
- Battery charger operation
- Simulated utility outages
- Automatic load transfer
- Utility restoration
- Automatic retransfer
- Multiple start/stop cycles
- Building operational testing under generator power
- Blackout simulation
- Integrated systems testing
- Functional sequence of operation verification

6.6 Generator Load Bank Testing

The Contractor shall perform load testing in accordance with NFPA 110 and manufacturer recommendations. Testing shall include:

- No-load operational testing
- Step-load testing at 25%, 50%, 75%, and 100% rated load
- Block-load testing
- Four-hour load bank testing
- Building load testing (where applicable)
- Voltage recovery testing
- Frequency stability testing
- Engine performance monitoring
- Alternator performance monitoring

- Fuel consumption monitoring
- Oil pressure monitoring
- Cooling system monitoring
- Exhaust temperature monitoring
- Battery charging verification
- Infrared thermography during load testing

6.7 Mechanical Systems Testing

The Contractor shall verify proper operation of all mechanical systems associated with the generator installation.
Testing shall include:

- Fuel tank leak testing
- Fuel piping leak testing
- Fuel transfer system testing
- Fuel level alarm verification
- High and low fuel alarm testing
- Fuel leak detection testing
- Fuel vent inspection
- Fuel sampling (when required)
- Radiator inspection
- Coolant level verification
- Coolant concentration verification
- Cooling fan operation
- High-temperature shutdown testing
- Exhaust leak inspection
- Exhaust support inspection
- Flexible connector inspection
- Rain cap operation
- Exhaust backpressure verification
- Exhaust insulation inspection
- Battery voltage testing
- Battery load testing
- Battery charger testing
- Battery disconnect verification
- Starting battery capacity verification

- **6.8 Controls, Protective Devices, and Communications Testing**

  The Contractor shall verify proper operation of all controls, protective devices, alarms, and communication interfaces.
  Testing shall include:
  - Generator controller operation
  - HMI/display functionality
  - Alarm history verification
  - Event log verification
  - Remote annunciator testing
  - BAS integration (where applicable)
  - SCADA integration (where applicable)
  - Dry contact verification
  - Remote monitoring verification
  - Network communication verification
  - Overcurrent protection

- Overvoltage protection
- Undervoltage protection
- Overfrequency protection
- Underfrequency protection
- Overspeed shutdown
- Low oil pressure shutdown
- High coolant temperature shutdown
- Low coolant shutdown
- Ground fault protection
- Battery failure alarm
- Battery charger failure alarm
- Emergency stop verification

6.9 Training Requirements

Upon successful completion of commissioning, the Contractor shall provide onsite operations and maintenance training for Government personnel.

Training shall include:

- Generator operation
- ATS operation
- Normal operating procedures
- Emergency operating procedures
- Alarm response procedures
- Preventive maintenance requirements
- Fuel system operation
- Battery maintenance
- Routine inspections
- Warranty requirements
- Manufacturer-recommended maintenance procedures

- **6.10 Final Documentation and Government Acceptance**
- The Contractor shall submit complete testing and commissioning documentation prior to final acceptance.
- Documentation shall include:
  - Factory Acceptance Test (FAT) reports
  - Startup reports
  - Electrical testing reports
  - Ground resistance testing reports
  - Megger testing reports
  - ATS testing reports
  - Load bank testing reports
  - Infrared thermography reports
  - Protective device testing reports
  - Fuel system testing reports
  - Commissioning reports
  - Corrective action reports
  - Deficiency resolution documentation
  - Third-party testing reports
  - Manufacturer certifications
  - Operation and Maintenance (O&M) manuals
  - As-built drawings
  - Warranty documentation

- Preventive maintenance schedules
- Spare parts lists
- Training attendance records

The Contractor shall correct all deficiencies identified during testing and commissioning at no additional cost to the Government. Final acceptance shall not occur until all deficiencies have been corrected, all required documentation has been submitted and approved, and the Government has successfully witnessed and accepted all required testing and commissioning activities.

7. SUBMITTALS

The Contractor shall provide complete submittal packages including:

- Shop drawings
- Product data
- Wiring diagrams
- Control schematics
- Structural calculations
- Electrical calculations
- Pad anchorage calculations
- Fuel system calculations
- O&M manuals
- Warranties
- Startup procedures
- Testing procedures
- Commissioning plans
- As-built drawings
- Training plans
- Safety plans
- Crane plans
- Emissions documentation

No material shall be installed prior to Government approval.

8. QUALITY CONTROL / QUALITY ASSURANCE

The Contractor shall provide a documented Quality Control Program including:

- Daily inspections
- Torque verification
- Electrical testing documentation
- Fuel system inspections
- Grounding verification
- Concrete inspection reports
- Photographic documentation
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The Contractor shall remain fully liable for:

- Improper installation
- Utility interruptions
- Fuel contamination
- Grounding failures
- Startup deficiencies
- Water intrusion
- Warranty deficiencies
- Operational deficiencies

The Government reserves the right to reject non-compliant work.

8. Critical Response and Contractor Liability Requirements

Building 1191 supports non-interruptible capabilities where any degradation of facility infrastructure presents an unacceptable risk

If any facility system, electrical infrastructure, emergency power component, feeder, ATS component, communication pathway, grounding system, utility service, or operational equipment is negatively impacted, disabled, damaged, interrupted, or rendered non-operational as a result of Contractor operations, the Contractor shall:

- Immediately notify the Government COR and affected personnel
- Immediately respond onsite with qualified personnel
- Expedite all corrective actions necessary to restore operations
- Provide all labor, materials, equipment, temporary systems, temporary power, supervision, and incidentals necessary to restore operational capability
- Maintain onsite support until systems are fully restored and operational

The Contractor shall remain fully responsible and liable for ensuring the facility remains operational and functional throughout the duration of the project.

Any outage, operational disruption, shutdown, damaged infrastructure, failed startup, failed transfer operation, grounding failure, utility interruption, or operational degradation resulting from Contractor operations shall be corrected immediately at no additional cost to the Government.

8.2 Damage to Government Infrastructure

The Contractor shall be solely responsible for protection of all existing Government infrastructure, systems, utilities, equipment, pavements, communications systems, security systems, grounding systems, conduits, feeders, structures, sidewalks, fencing, utilities, and adjacent facilities impacted by construction activities.

Any damage caused by the Contractor, subcontractors, suppliers, crane operations, delivery operations, excavation activities, fuel transfer operations, electrical tie-ins, demolition activities, or installation operations shall be repaired or replaced by the Contractor at no additional cost to the Government.

Repairs and replacements shall:

- Match existing conditions
- Meet all current code requirements
- Meet all UFC/UFGS requirements
- Be subject to Government inspection and approval

The Government reserves the right to require complete replacement of damaged systems or infrastructure if repairs are deemed unacceptable.

9. OPERATING CONSTRAINTS AND SECURITY REQUIREMENTS

9.1 Government Inspections

The Contractor shall request Government inspection prior to proceeding to major phases of work.

9.2 Installation Access Requirements

Contractor personnel and vehicles are subject to installation access procedures, inspections, and searches.

9.3 Security Requirements

The Government may prohibit installation access to any individual categorized as a security concern.

9.4 Personnel Conduct

Contractor employees shall comply with all installation safety, traffic, fire protection, and security requirements.

9.5 Additional Security, Citizenship, and Access Requirements

All contractor and subcontractor personnel shall:

- Be United States citizens
- Present valid proof of U.S. citizenship upon the first day of working the jobsite to 1191 security personnel

- Successfully pass all Security Forces screening requirements
- Maintain valid Government-issued identification while onsite

Acceptable proof of citizenship includes:

- Certified U.S. birth certificate
- Valid U.S. passport
- Certificate of Naturalization

Permanent residents, visa holders, foreign nationals, or individuals possessing only permanent resident documentation shall not be permitted to work within the vicinity of this project.

Failure to comply may result in:

- Removal from Government property
- Revocation of installation access
- Work stoppage
- Contract noncompliance actions

10. DELIVERABLES

The Contractor shall provide:

- Complete installed generator system
- Startup documentation
- Commissioning reports
- Load bank testing reports
- Warranty documentation
- O&M manuals
- As-built drawings
- Training documentation

11. PHOTO ATTACHMENTS / EXISTING CONDITIONS

Attachment A – Existing Generator Exterior Conditions

- Existing KATOLIGHT generator system
- Existing enclosure conditions
- Existing slab conditions

Attachment B – Existing Conduit Conditions

- Existing light gray conduit serving building
- Existing abandoned dark gray conduit requiring removal

Attachment C – Existing Generator Pad Dimensions

- Existing slab dimensions: 14’-0” length and 79” width

Attachment D – Existing Site Access Conditions

- Crane access
- Sidewalks
- Fence clearances
- Work area limitations

Attachment E – Existing Fuel System Conditions

- Existing fuel tank conditions
- Existing fuel transfer conditions
- Existing environmental conditions

Attachment F – Existing Electrical Infrastructure Conditions

- Existing electrical routing
- Existing feeder conditions
- Existing grounding conditions

Attachment G – Existing Operational Site Conditions

- Existing operational access
- Existing facility adjacency
- Existing area conditions

12.0 Security Requirements

The government may prohibit installation access to anyone categorized as a security concern. These concerns may include but are not limited to: record of criminal conduct (active arrest warrant), felony conviction, illegal drug involvement, personal conduct, registration on any sexual offender registry, record of convictions/charges stemming from disrespect for law, and non-us citizen without proper documentation. It is the contractor's responsibility to contact the Ellington Field Houston visitor control center to determine eligibility and any associated cost with obtaining installation access.

12.1. Unscheduled Gate Closures

Unscheduled gate closures by the Security Police may occur at any time causing all personnel to enter or exiting a closed installation to experience a delay. This cannot be predicted or prevented. Contractors are not compensated for unexpected closures or delays. Vehicles operated by contractor personnel are subject to search pursuant to applicable regulations. Any moving violation of any applicable motor vehicle regulation may result in the termination of the contractor employee's installation driving privileges.

12.2. Contractor Employee Conduct

The contractor's employees shall become familiar with and obey the regulations of the installation, including fire, traffic, safety and security regulations while on the installation. Contractor employees should only enter restricted areas when required to do so and only upon prior approval. All contractor employees shall carry proper identification with them at all times and shall be subject to such checks as may be deemed necessary. The contractor shall ensure compliance with all regulations and orders of the installation, which may affect performance. The Government reserves the right to direct the removal of an employee from Government property or revoke access to Government systems for misconduct, security reasons, or any overt evidence of communicable disease. Removal of contractor employees for reasons stated above does not relieve the Contractor from responsibility for total performance of this contract.

12.3. Recognized Holidays

The following are recognized United States (US) holidays. The contractor shall not perform services on these days:

- New Year's Day: January 1st
- Martin Luther King, Jr.'s Birthday
- President's Day
- Memorial Day
- Juneteenth National Independence Day: June 19th
- Independence Day: July 4th
- Labor Day
- Columbus Day
- Veteran's Day: November 11th
- Thanksgiving Day
- Christmas Day: December 25th

WORK HOURS: Tuesday – Friday. 0800-1600

12.4 Access and General Protection/Security Policy and Procedures

The contractor shall comply with all applicable installation/facility access and local security policies and procedures, which may be obtained from the Contracting Officer's Representative (COR). The contractor shall also provide all information required for background checks to meet installation access requirements to be accomplished by the

local installation's Security Forces, Director of Emergency Services or local Security Office. The contractor shall ensure compliance with all personal identity verification requirements as directed by DoD, Headquarters Air Force (HAF) and/or local policy. Should the Force Protection Condition (FPCON) change, the Government may require changes in contractor security matters or processes.

12.5 Base Identification and Vehicle Passes

The contractor shall obtain base identification, and vehicle passes, if required, for all contractor personnel who make frequent visits to or perform work on the Air Force installation(s) cited in the contract. Contractor personnel are required to wear or prominently display installation identification badges or contractor-furnished contractor identification badges while visiting or performing work on the installation.

12.6 147 ATKW Form 17

The contractor shall submit within three (3) business days the 147 ATKW Form 17 for base pass access to the COR with a valid driver's license. This form will be used for all contractors and subcontractors to gain base access.

12.7 Credential Management

During performance of the contract, the contractor shall be responsible for obtaining required identification for newly assigned personnel and for prompt return of credentials and vehicle passes for any employee who no longer requires access to the work site.

12.8 Return of Badges

Upon completion or termination of the contract or expiration of the identification passes, the prime contractor shall ensure that all base identification passes issued to employees and subcontractor employees are returned to the issuing office. Failure to comply with these requirements may result in withholding of final payment.

12.9 Physical Security

The contractor shall safeguard all Government property provided for contractor use. At the close of each work period, Government facilities, equipment and materials shall be secured.

12.10 DoD Facility Access Screening

For Contractors that do not require CAC but require access to a DoD Facility and/or Installation. Contractor and all associated sub-contractors employees shall comply with adjudication standards and procedures using the National Crime Information Center Interstate Identification Index (NCIC-III) and Terrorist Screening Database (TSDB) (Air Force Instruction (AFI) 10-245, AFI 31-101 and Air Force Manual (AFMAN) 31-113), applicable installation, facility and area commander installation/facility access and local security policies and procedures (provided by Government representative).

12.11 Antiterrorism Awareness Level I Training

Antiterrorism Awareness Level I Training (AT Level I). All contractor employees, to include subcontractor employees, requiring access to US Government installations, facilities and controlled access areas shall complete AT Level I training within 15 calendar days after contract start date or effective date of incorporation of this requirement into the contract, whichever is applicable. AT Level I may be accomplished by a Level I qualified instructor: completing the Force Protection computer-based training (CBT) course on the Advanced Distributed Learning System (ADLS) or Joint Knowledge Online at http://jko.jten.mil. Tracking for each contractor or subcontractor employee is the responsibility of the COR or unit AT Representative. The contractor shall submit certificates of completion for each affected contractor and subcontractor employee to the COR within 15 calendar days after completion of training by each employee or subcontractor personnel.

12.12 OSHA / AFOSH / Wing Safety

Adhere to all OSHA and AFOSH standards (91 series), submit safety plan to Wing Safety at kevin.ford.9@us.af.mil Follow on-base traffic policy, and obtain hot permit from Base Fire if required. Ensure contractor installs or connects grounding and bonding requirements in accordance with applicable codes AFMAN 32-1065. Provide initial test documentation. Ensure correct emergency numbers are accessible.

12.13 Safety Requirements

SAFETY REQUIREMENTS: The Contractor shall ensure that the employees are supplied and use proper safety equipment (i.e. gloves, safety glasses, boots, etc.) and follow work procedures, which protect Contractor employees and all personnel in vicinity of job site.

12.14 PPE

The Contractor shall wear appropriate Personal Protective Equipment (PPE) and utilize other protective resources when working on or near energized electrical parts and/or equipment as per OSHA requirements.

12.15 Work Area Safety Zone

The Contractor shall establish a safety zone around the work area and establish a safety system with warning markers and other devices to prevent injuries to pedestrians and others who may be on the site.

13. ATTACHED FIELD PHOTOGRAPHS

Photo 1 – Existing Generator / Site Condition

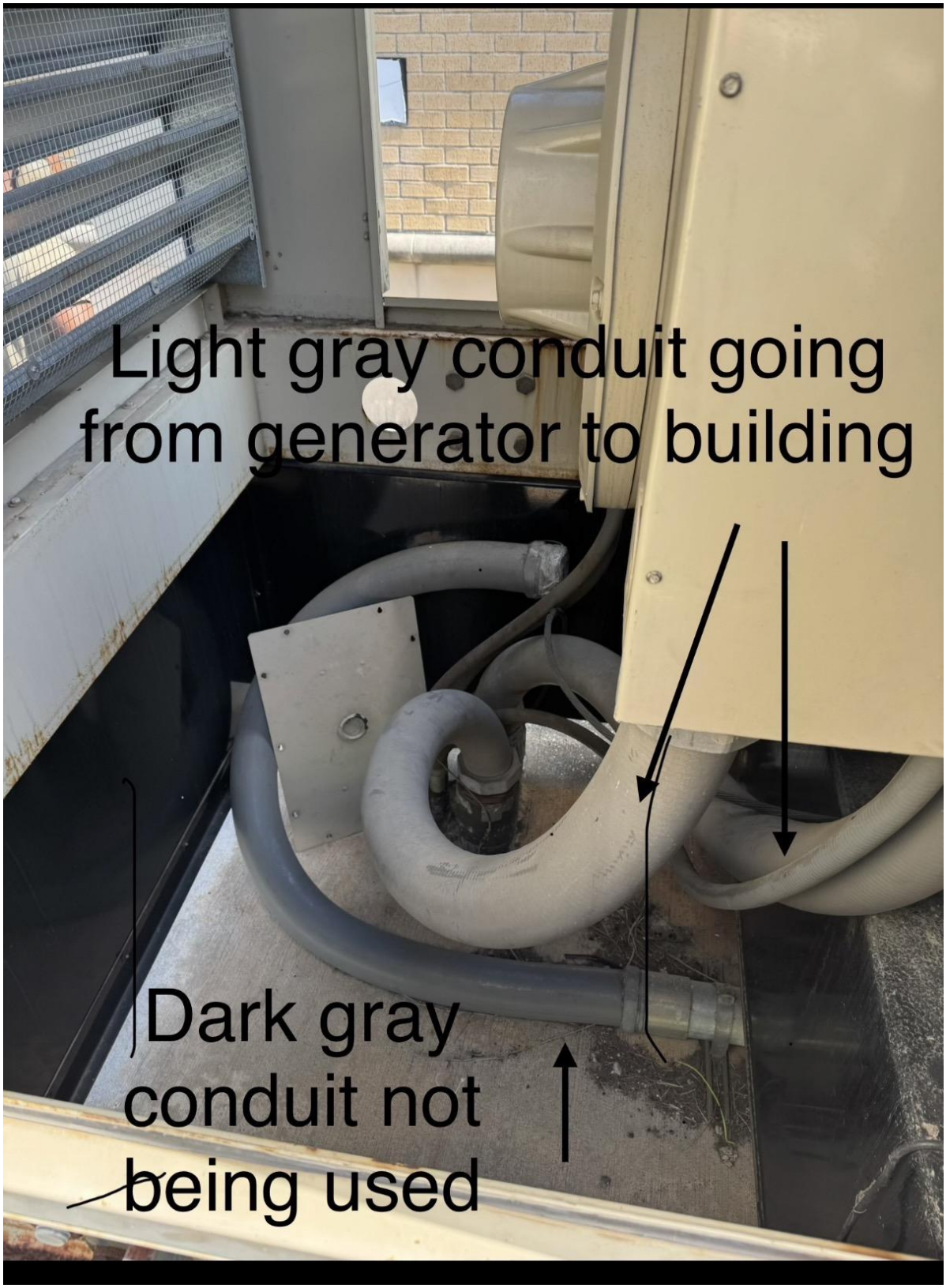


Photo 2 – Existing Generator / Conduit Condition

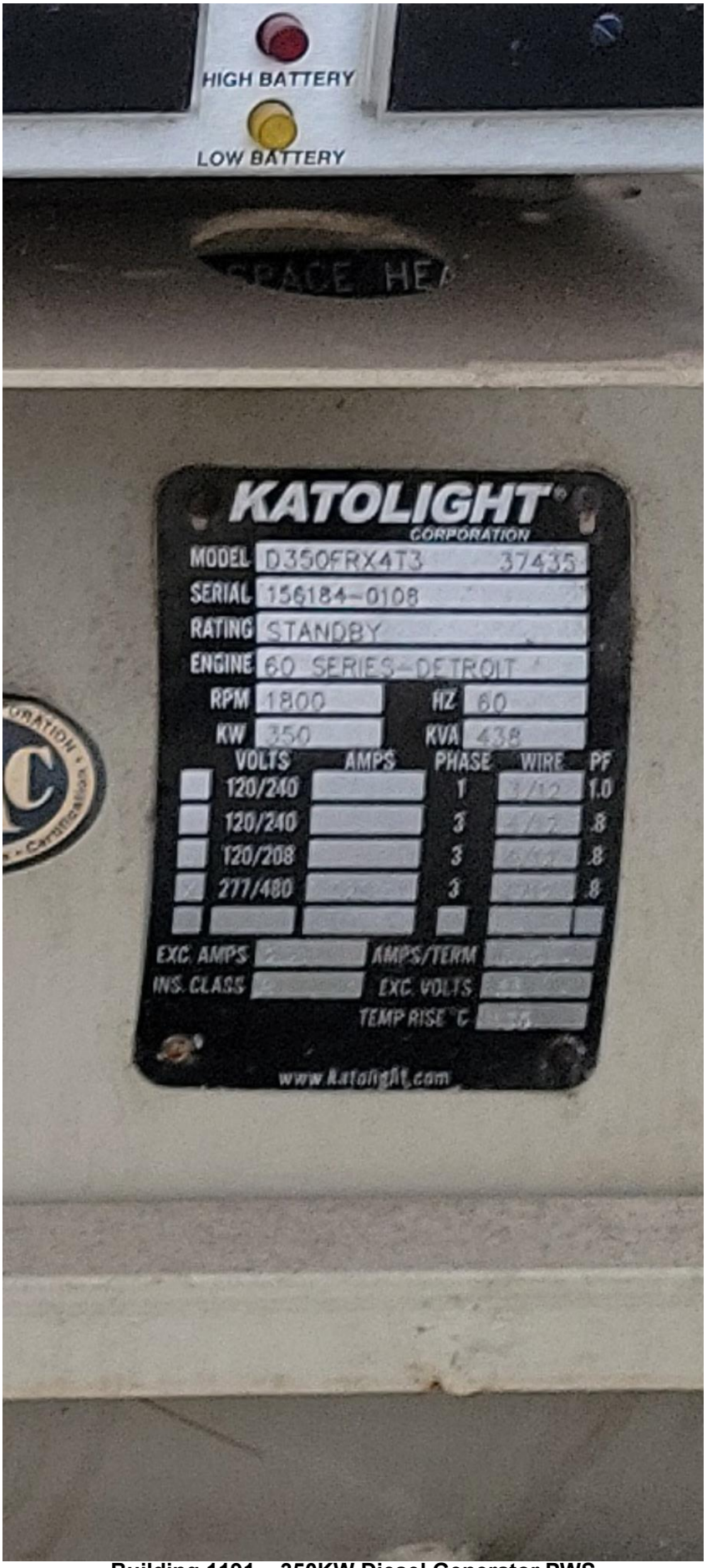
Photo 3 – Existing Generator / Pad Condition

Photo 4 – Existing Conduit / Field Condition

Photo 5 – Existing Slab / Dimension Reference

Photo 6 – Existing Slab / Dimension Reference

Photo 7 – Existing Equipment Nameplate / Reference



Building 1191 – 350KW Diesel Generator PWS