Request for Proposals
Gun Lake Tribe

921,000 kWH/708 kW Solar Photovoltaic (PV) System

Project Location:
2872 Mission Drive
Shelbyville, MI 49344
Allegan County, MI

Issued on: June 20, 2025
RFP Due Date: July 20, 2025

Administered by: Gun Lake Tribe Environmental Department

Request for Proposal (RFP)

The Match-E-Be-Nash-She-Wish Band of Pottawatomi (Gun Lake Tribe) is soliciting proposals from a qualified contractor to design, fabricate, deliver, install and train Gun Lake Tribe staff on the maintenance of a ground mounted, grid tied, utility-Interactive 921,000 kWH/708 kW solar photovoltaic (PV) system. Proposals will be accepted until 5:00pm on July 20, 2025.

PROJECT IDENTIFICATION

1.1. Project: Ground Mounted and Grid Tied Photovoltaic System
1.2. Location: 2872 Mission Drive, Shelbyville MI 49344. See Appendix A for location
1.3. Submission date: July 20, 2025 at 5:00pm via email or mail
1.4 Bids emailed:
Elizabeth Binoniemi, Environmental Director
Subject: Gun Lake Tribe Gun Lake Tribe Photovoltaic (PV) System
elizabeth.binoniemi-smith@glt-nsn.gov or by mail by July 20, 2025, by 5:00pm

Bids by mail:
Gun Lake Tribe Environmental Department
Gun Lake Tribe Photovoltaic (PV) System
2872 Mission Drive
Shelbyville, MI 49344.

2. BACKGROUND

2.1. Objective.

Contractor shall provide a total “turnkey” project including all necessary equipment, materials, design, manufacturing and installation services for the installation of a ground mounted, grid tied interactive PV system that shall produce a minimum of 921,000 kWH/708 kW kWh AC per year at the point of interconnection (POI) of approximately 708 kW DC capacity. The contractor should prepare a summary detailing applicable equipment/size and predicted system energy production (kWh). This project shall meet all requirements of this Statement of Work and other specifications included in the RFP that apply.

2.2. Scope.

The contractor shall perform all professional services as necessary to provide Gun Lake Tribe with a complete design package including the requirements outlined in this Statement of Work. The contractor shall install the project such that it is operational and compliant with all applicable standards, building codes, Consumers Energy Distributed Generation Program requirements and State of Michigan requirements. The contractor

shall include specifications, calculations and drawings in the design package for Gun Lake Tribe. The awarded contractor shall apply for and manage the rebate funding through Consumers Energy and with any additional renewable energy certificates (RECs) paperwork.

This project is being funded by a Bureau of Indian Affairs (BIA) Tribal Climate Resilience grant award. The BIA requires State of Michigan stamped construction drawings and project must meet all Federal requirements compliances (Exhibit B).

2.2.1. Design Guidelines for Ground Mounted and Grid Tied PV

Design Guidelines for Ground Mounted PV. The contractor shall develop a design for a new PV system at 2872 Mission Drive Shelbyville, MI 49344. See (Exhibit A) drawings indicating available footprint for installation. It is the responsibility of the contractor to assess site topography and geotechnical attributes to estimate costs related to project installation. This will include ground penetrating radar for the electrical line from the array to buildings (Exhibit A).

- Mounting system shall be either directly anchored into the ground (driven piers, concrete footers, etc.) or ballasted on the surface without ground penetration. Mounting system design needs to meet applicable Tribal building code requirements with respect to snow, wind and earthquake factors.
- Panels' orientation or azimuth shall be within 20-30 degrees of due south.
- Panels' tilt shall be based on site latitude and wind conditions.
- Stormwater management and erosion control management plan shall be included in the proposal.
- All lines interconnecting PV arrays to POI shall be underground. Note: the interconnecting line from the PV arrays to POI is approximately 700 lf feet.

2.2.2. Performance Criteria. The following performance criteria shall be met for all arrays:

- Power provided shall be either 208V, 480V or 13.8 kV three phase compatible with the onsite distribution system. See drawings for options for connection voltage and location.
- Proposal shall provide estimated energy delivery for each month of the year and total for the year at the delivered voltage (208V, 480V or 13.8 kV). The estimated annual energy delivery for all arrays shall be a minimum of 921,000 kWh AC per year at POI.
- The STC-rated power value will be entered into PV Watts (http://pvwatts.nrel.gov/) using the nearest weather file to determine estimated energy delivery in kWh AC. A default value for the system losses of 14% shall be used.
- PV array shall mean one or more PV modules having that same orientation and on the same maximum power point tracking (MPPT) system. Every array with differing orientation shall have a separate MPPT system.

- All proposed/implemented PV array locations shall be shade free from 9:00 a.m. until 3:00 p.m. (solar time). Contractor shall provide documentation of shading calculations for exterior extents for each proposed array. These calculations may be modified for shading obstructions that will be removed and mitigated as part of the project. Suggested documentation would include sun path diagrams for exterior array locations or SunEye measurements.
- All PV hardware components shall be either stainless steel or aluminum. PV structural components shall be corrosion resistant (galvanized steel, stainless steel, composites or aluminum).
- The project, including supports and power conductors, shall not interfere with roof drains, water drainage, expansion joints, air intakes, existing electrical and mechanical equipment, existing antennas and planned areas for future installation of equipment shown on drawings.

2.2.3. Production Metering. The project shall have at least one production meter at POI.

2.2.4. Construction. Perform all construction necessary for the successful installation of the system based upon the design generated from 2.2.1., 2.2.2. and 2.2.3.

2.3. Technical Requirements and Reference Materials

2.3.1. Code Compliance.
Installation and equipment shall comply with applicable building, mechanical, fire, seismic, structural and electrical codes. Only products that are listed, tested, identified or labeled by UL, FM, ETL or another Nationally Recognized Testing Laboratory shall be used as components in the project. Non listed products are only permitted for use as project components when a comparable useable listed component does not exist. Non-listed products proposed for use as components must be identified as such in all submittals.

The contractor shall use project components that are to the greatest extent practicable American-made, and components are made of materials that are recyclable, contain recycled materials and that are EPA or Energy Star rated if they are available on the market.

The publications listed below form a part of this document and are hereby incorporated by reference:
- National Electrical Code (NEC)
- UL 1703 Flat – Plate PV Modules and Panels
- UL 1741 – Standard for Static Inverters and Charge Controllers for Use in Photovoltaic Power Systems
- FM Approved – Fire Protection Tests for Solar Component Products
- IEC 62446 Grid Connected Photovoltaic Systems- Minimum Requirements for System Documentation, Commissioning Tests, and Inspections

Other technical codes that shall apply include:

- ASME PTC 50 (solar PV performance)
- ANSI Z21.83 (solar PV performance and safety)
- NFPA 853 (solar PV systems near buildings)
- IEEE 1547 (interconnections)
- ASCE/ SEI-7 – American Society of Civil Engineers – “Minimum Design Loads for Buildings and Other Structures”.
- NRCA – National Roofing Contractors Association

2.4. Roles and Responsibilities.

2.4.1. Contractor. The contractor is required to provide:

- Design concepts
- Construction documents and engineering calculations that are signed and sealed by a licensed architect or engineer
- Submittals for permits, agreements, materials and products
- Construction materials, equipment and labor
- Design and construction supervision / contract management. A licensed engineer must be on site during construction (Exhibit B).
- Sub-contract penetrating radar for the electrical line from the array to POI
- Quality control plan (QCP)
- Safety plan
- Inspections and tests per QCP
- Manuals (design calculations, operation/maintenance, shop drawing, etc.)
- Commissioning of project
- Mentoring and training for staff for operation and maintenance
- Operation and Maintenance during first year and optional service plan after the first year
- Web-based monitoring system for 20 years

2.4.2. Gun Lake Tribe will:

- Review for approval design submittals and QCP
- Witness inspections and test witnesses to verify attainment of performance requirements
- Make progress payments for design / construction as agreed
- Complete all Gun Lake Tribe Permits

3. PROPOSAL CONCEPT DRAWINGS AND SPECIFICATIONS SUBMISSIONS

3.1. Concept Drawings.

The contractor shall provide Gun Lake Tribe with concept drawings with the proposal. The drawings must indicate the proposed location of the PV array(s) and access points along with a one-line electrical diagram showing inverters, transformers, meters and interconnection locations. All drawings shall be submitted with dimensions shown in English units. A Michigan-licensed professional engineer must sign and seal all final engineering drawings (Exhibit B).

3.2. Concept Information.

The proposal shall include major equipment information, proposed installation/interconnection information, applicable incentive information and performance characteristics of the system. Identify an appropriate location for the solar PV inverter equipment and its related components and environmental control systems that will meet the following criteria:

- Ease of maintenance and monitoring
- Efficient operation
- Low operating losses
- Secured location and hardware
- Compatibility with existing facilities
- Avoidance of flood-prone areas
- Visual harmony

All products shall comply with the technical requirements shown under Section 8, “Solar Electric Module Array.” At minimum, the proposed concept information shall include:

Equipment Information

- System description
- Layout of installation
- Selection of key equipment and layout of equipment
- Performance of equipment components and subsystems
- Specifications for equipment procurement and installation
- All engineering associated with structural and mounting details
- Controls, monitors and instrumentation
- Operation and maintenance service plan

Installation Interconnection Information

- Solar electric array orientation (degrees)
- Solar electric module tilt (degrees)
- Electrical grid interconnection requirements
- Integration of solar PV system with other power sources
- System type and mode of operation (utility interactive)

Performance Characteristics

- Shading calculation documentation
- Total system output

- Estimated kWh per month per array (shown over a 12-month period)
- Warranties and guarantees

Applicable Incentives
- Identify all applicable incentives

Interconnection Agreement
- Provide confirmation that the PV systems will be designed to comply with applicable Consumers Energy Distributed Generation Program requirements.

Cost
- Total bid price of project including operation and maintenance for the first year and optional service plan after the first year.

4. DESIGN SERVICES

Solar PV system shall be designed and engineered to maximize the solar energy resources, taking into consideration Gun Lake Tribe's electrical demand and load patterns, proposed installation site, available solar resources, existing site conditions, proposed future site improvements and other relevant factors.
Design services for this project shall require a schematic design submission, a design development submission, a check set submission and a construction document submission. A final set of as-built drawings shall also be provided to Gun Lake Tribe. These submissions shall be delivered to Gun Lake Tribe based on the project schedule submitted and approved by Gun Lake Tribe. The design package shall include the following details (4.1-4.6).

4.1. Timeline/Project Schedule. Contractor is required to provide an estimate on project timeline and schedule. The project must be online by July 1, 2026.

4.2. Post Award Meeting.

Within 21 calendar days after receipt of the contract award a Post Award Meeting will be held between Gun Lake Tribe staff and the contractor's personnel. At minimum, the prime contractor's project manager and foreman, the primary designer and a representative of any subcontractor performing over 25% of the work must attend. The meeting will be held at the project location. The purpose of the meeting will be to discuss the contractor's plan for completing the design and construction, including a construction schedule. A walk-through of the site will occur at the end of the meeting.

4.3. Specifications.

Specifications that express all information and demonstrate sufficient detail to direct the construction work outlined in this Statement of Work shall be required. The specifications package shall be coherent enough that any contractor not familiar with the project would be able to construct the project design. The specifications shall include all equipment information, proposed installation and interconnection information and performance characteristics of the system.

4.3.1. All drawings, estimates, calculations and specifications shall be in English units.

4.3.2. The contract shall take into account a construction plan producing a minimum disruption of day-to-day activities, utilities, services, etc.

4.4. Construction Drawings

4.4.1. Provide drawings for each discipline required (architectural, structural, electrical, etc.), with separate plans for new work and demolition.

4.4.2. Each drawing shall indicate project title, project number, array identification and location, engineering firm and address and/or phone number, contract number, drawing title, drawing type, drawing number and key plan. A cover sheet shall be provided and shall include a list of the drawings, legend, vicinity map and location map in addition to all items required for each drawing. Each engineering submission shall be clearly dated and labeled (e.g., 75% Design Development Submission, 100% Check Set Submission, Construction Document Submission, As-Built Drawings, etc.). Each drawing sheet submitted shall include a graphic scale in the lower right-hand portion of the sheet. The final set shall be stamped by a registered engineer and/or registered architect for the State of Michigan.
At a minimum, the following drawings are required:

- Site plan including utility locations and connections – shall show staging and phasing requirements.
- Electrical plans – including single line diagram an utility interconnection.
- Electrical details.
- .
- Array support and mounting details.
- Any drawings that may be required to install a complete project.
- Water proofing details

4.4.3. The contract documents shall sufficiently define the Statement of Work and shall stand on their own.

4.5. Calculations. The contractor will provide the following calculations.

4.5.1. System Electrical Calculations. Provide with design development and with 100% check set.

- PV Watts calculation
- System energy production calculation showing estimated monthly and yearly energy output for each array
- Energy value and project cash flow

4.5.2. OPTIONAL. Energy performance calculated by a detailed PV analysis program such as System Advisory Model (SAM: https://sam.nrel.gov/) or PVsyst using proposed specific PV modules and inverters.

4.6. Registration Seals. Each final working drawing and each submitted specification and calculation document shall be signed by, bear the seal of and show the Michigan certificate number of the architect and/or engineer who prepared the document and/or is responsible for its preparation.

5. DESIGN SUBMISSIONS

The awarded contractor will secure from governing agencies and the utility company all required rights, permits, approvals and interconnection agreements at no additional cost to Gun Lake Tribe. The awarded contractor will complete and submit in a timely manner all documentation required to qualify for available rebates and incentives.

5.1. Design Reviews. For each design / drawing submission, Gun Lake Tribe reserves the right to make comments and request changes after the receipt of the submission. Reviews will be made by Gun Lake Tribe staff. As part of its review, Gun Lake Tribe may offer submission reviews to local code officials. Gun Lake Tribe shall provide review comments within 14 calendar days of receipt of the 75% Design Development Submission and the 100% Check Set Submission.

5.2. Purpose. Gun Lake Tribe will review the contractor design submissions to verify adherence to contract requirements. Design reviews by Gun Lake Tribe are not to be interpreted as resulting in an approval of the contractor's apparent progress toward meeting contract requirements but are intended to discover any information that can be brought to the contractor's attention that might prevent errors, misdirection or rework later in the project. The contractor shall remain completely responsible for designing, constructing, operating and maintaining the project in accordance with the requirements of this Statement of Work.

5.3. Resolution of Comments. The contractor shall respond to all design review comments in writing, indicating one of the following: (1) adoption and action taken, (2) adoption with modifications and action taken, (3) alternative resolution and action taken or (4) rejection. In cases other than unqualified adoption, the contractor shall provide a statement as to why the reviewer's comment is inappropriate. If the contractor believes

that any Gun Lake Tribe design comments or requested changes will result in a change in the contract cost, they shall notify Gun Lake Tribe within seven calendar days of receiving the comment(s) and provide a detailed cost estimate of anticipated contract modifications. Rejection items shall not go forward to the construction phase until adequate resolution to the rejected item has been approved by Gun Lake Tribe. Design review comments shall not relieve the contractor from compliance with terms and conditions of this contract. The contractor's comment resolution shall be transmitted to Gun Lake Tribe within seven calendar days of comment receipt and incorporate discussions from the scheduled design comment review meetings.

6. UTILITY INTERCONNECTION AGREEMENT

6.1. The contractor shall coordinate with Consumers Energy to ensure that the project satisfies all Consumers Energy criteria for interconnection of the project to the Consumers Energy Distributed Generation Program. This includes completing and submitting forms, coordinating all negotiations, meeting with Consumers Energy, design reviews and participating in any needed interaction between Consumers Energy and Gun Lake Tribe.

6.2. The contractor is responsible for preparing required submissions for obtaining the Generator Interconnection Operating Agreement (GIOA) and interconnection agreement from the utility. Gun Lake Tribe will sign the GIOA and other agreements related to the Distributed Generation Program agreements, not the contractor.

6.3. The contractor shall manage interconnection and startup of project in coordination with the Site and Consumers Energy. The contractor shall at its own expense pay any interconnection, processing and other fees and expenses as may be required by Consumers Energy for interconnection and operation of the project.

7. Quality Control Plan

7.1. Content. For each performance and installation requirement, the QCP shall identify item/system to be tested, exact test(s) to be performed, measured parameters, inspection/testing organization and the stage of construction development when tests are to be performed. Each inspection/test shall be included in the overall construction schedule. The contractor is not relieved from required performance tests should these not be included in the plan.

The QCP is intended to document those inspections and tests necessary to assure Gun Lake Tribe that product delivery, quality and performance are as required. It also serves as an inspection coordination tool between the contractor and Gun Lake Tribe. An example of these inspections/tests is the final test/inspection for overall performance compliance of the system. Results from tests and inspections shall be submitted within 24 hours of performing the tests and inspections.

At a minimum, the QCP should conform to “IEC 62446 Grid Connected Photovoltaic Systems - Minimum Requirements for System Documentation, Commissioning Tests, and Inspections (2009)”.

Performance tests will be conducted at the final commissioning/acceptance testing, and one year after the acceptance date. Performance tests will include I-V curve traces for all PV strings. For project acceptance, measured performance at maximum power point must be at least 90% of expected performance, which will be adjusted for concurrently measured cell temperature and plane of array (POA) irradiance. This can be accomplished using a current industry standard I-V curve tracer with capability to compare measured PV string I-V curves with nameplate performance of PV string compensated for concurrent cell temperature and POA irradiance measurements. If performance is less than 90% at the one year performance tests (measured using the same method as for project acceptance), contractor shall promptly troubleshoot and correct any malfunction or issues as necessary to return project to 90% measured performance or better. The contractor shall supply Gun Lake Tribe with detailed documentation of malfunction or errors and all corrective actions taken.

7.2. Submissions. The QCP shall be prepared and submitted within 21 calendar days of the post award conference meeting and prior to any construction on-site. The QCP may be rejected as incomplete and returned for resubmission if there is any performance, condition or operating test that is not covered therein.

7.3. Updating. During construction, the contractor shall update QCP if any changes are necessary due to any changes or schedule constraints. Gun Lake Tribe shall be notified immediately of any schedule and/or procedural changes.

8. SOLAR ELECTRIC MODULE ARRAY

8.1. Photovoltaic Modules

8.1.1. PV modules shall be a commercial off-the-shelf product, shall be UL listed and shall be properly installed according to manufacturer’s instructions, NEC and as specified herein.

8.1.2. The PV modules shall be installed such that the maximum amount of sunlight available year-round on a daily basis should not be obstructed. At a minimum, all PV arrays shall be shade free from 9:00 a.m. until 3:00 p.m. (solar time). All projects must include documentation of the impact from any obstruction on the seasonal or annual performance of the solar electric array.

8.1.3. The solar electric system shall produce the minimum annual AC energy output. If the system is proposed to produce more than the minimum required energy output to

reduce the cost per delivered kWh then the system shall produce the “proposed” energy. The output will be adjusted if the actual yearly solar insulation received is less than that indicated by PVWatts. A normalizing calculation will be made to correct the output, so a contractor is not penalized for an extremely cloudy year.

8.1.4. System wiring shall be installed in accordance with the provisions of the NEC.

8.1.5. All modules installed in a series string shall be installed in the same plane/orientation.

8.1.6. PV modules shall have a at least a 25-year limited warranty that modules will generate no less than 80% of rated output under STC. PV modules that do not satisfy this warranty condition shall be replaced.

8.1.7. Panel installation design shall allow for the best ventilation possible of panels to avoid adverse performance impacts.

8.1.8. Warranty. Provide a panel manufacturer’s warranty as a minimum: No module will generate less than 90% of its specified minimum power when purchased. PV modules shall have at least a 25-year limited warranty guarantying a minimum performance of at least 80% of the original power for at least 25 years. Measurement made under actual installation and temperature will be normalized to standard test conditions using the temperature and coefficients published in the module specifications.

8.2. Inverter and Controls

8.2.1. Each inverter and associated controls shall be properly installed according to manufacturer’s instructions.

8.2.2. Inverters shall be commercial off-the-shelf product, listed to UL 1741 and IEEE 1547.

The inverter shall have at a minimum the following features:

- UL/ETL listed.
- Peak efficiency of 96% or higher.
- Inverter shall have operational indicators of performance and have built-in data acquisition and remote monitoring.
- The inverter shall be capable of parallel operation with the existing AC power. Each inverter shall automatically synchronize its output waveform with that of the utility upon restoration of utility power.

8.2.3. Warning labels shall be posted on the control panels and junction boxes indicating that the circuits are energized by an alternate power source independent of utility-provided power.

8.2.4. Operating instructions shall be posted on or near the system, and on file with facilities operation and maintenance documents.

8.2.5. Provide detailed lock out /tag out instructions for all equipment.

8.2.6. Power provided shall be compatible with onsite electric distribution systems.

- The inverters and control panels shall be installed in the most optimum locations with appropriate environmental protection. If inverters are mounted outside, they shall be shaded from direct sun from 10:00 a.m. to 6:00 p.m. from June to August and be able to be secured.

8.2.7. The inverter and system shall utilize an astronomical timer or other means to shut down the inverter during night time to avoid energy usage at night.

8.2.8. Warranty. A minimum of 10-year manufacturers' warranty shall be provided on all inverters.

8.3. Control Panel to Solar Electric Array Wire Runs

8.3.1. Areas where wiring passes through ceilings, walls or other areas of the building shall be properly restored, booted, sealed and returned to their original condition.

8.3.2. All field electrical devices shall have the capability to be locked as appropriate.

8.4. PV Monitoring

8.4.1. The PV systems installed shall provide for monitoring by Gun Lake Tribe on a vendor provided website.

8.4.2. Monitor by an IP addressable device and displayed graphically in a user-friendly manner the following parameters:

- AC energy
- Solar irradiance
- Show status of all equipment
- Provide electrical one line diagram showing operation and performance of all equipment

Data shall be available both in real time and archived in 15-minute averages. All monitoring hardware and monitoring equipment shall be provided by the contractor.

System shall also include metering for remote data collection and display on vendor-provided web site of system performance. System performance shall allow display during different monitoring periods from one hour to one year.

8.4.3. Provide networking equipment, engineering, programming, wiring and software to allow remote connection by Gun Lake Tribe to the local area network.

8.4.4. Meters utilized for the project shall be listed on CEC List of Eligible System Performance Meters per SB1 Guidelines, shall be UL listed and shall comply with Consumers Energy net energy metering requirements.

8.4.5. Meters shall be installed in the main distribution panel (MDP) when possible. Meters shall not be mounted to the transformer housing without prior approval when there is no other reasonable place to mount it.

8.5. Transformers

8.5.1. Stand-alone boost up transformers not incorporated into the inverters shall be National Electrical Manufactures Association (NEMA) premium efficiency. Exterior transformers shall be housed in a NEMA 3R enclosure and be pad mounted. They shall be located next to switchgear housings where indicated on drawings.

8.6. Structural Requirements

8.6.1. All structures, including array structures, shall be designed in accordance with all applicable codes and standards.

8.6.2. The contractor shall provide structural calculations, stamped by a licensed professional structural engineer in the State of Michigan.

8.6.3. All structural components shall be non-corrosive (galvanized steel, stainless steel or aluminum). All hardware shall be stainless steel or aluminum. All components shall be designed to obtain a minimum 40-year design life.

8.7. Lightning Protection. Provide surge protection on all electrical systems.

8.8. PV System Installation Warranty. The PV systems shall carry a minimum 10 year workmanship warranty by both the manufacturer and the installer including parts and labor.

9. DRAWINGS/PRODUCT DATA

9.1. Submissions. The Contractor shall submit shop drawings and product data/submittals, catalog cuts, etc. as stipulated herein. Shop drawing/product data submissions to Gun Lake Tribe shall be made after review and approval by the contractor. All approved product data and shop drawings shall be delivered to Gun Lake Tribe via one submission electronically.

The contractor shall combine all product data submission material into hard copy manuals for reference during all phases of construction. Shop drawings shall be bound with product data.

Also see Electronic Project Management requirements in Section 1, General Requirements.

9.2. Reviews. Reviews of shop drawings and product data by Gun Lake Tribe are not to be interpreted as an approval of the contractor's product selections. The contractor shall remain completely responsible for constructing the PV system in accordance with all contract performance requirements.

9.3. Products for Submission. The contractor shall provide shop drawings and product data for all systems, equipment and materials.

10. INSPECTIONS AND TESTS

10.1. General. The contractor shall perform inspections and tests throughout the construction process including existing conditions/needs assessments, construction installation placement/qualification measurements and final inspections/tests performance certification. Periodic “quality” inspections shall also be conducted to support progress payments as identified in the contractor’s QCP.

10.2. Gun Lake Tribe Witness. All inspections and tests to verify documented contract assumptions, to establish work accomplishment or to certify performance attainment shall be witnessed by Gun Lake Tribe and/or construction management (CM) and coordinated through the QCP.

10.3. Final Inspections and Tests. To ensure compliance with provisions of the NEC, an inspection by a licensed electrical inspector is mandatory after construction is complete. Unless otherwise identified, manufacturer recommendations shall be followed for all inspection and test procedures. The NEC inspection shall be conducted by an independent third-party electrical inspector familiar with PV systems. The contractor shall provide qualifications of the proposed third-party inspector for review and approval prior to conducting the NEC inspections.

Tests shall include a commissioning of the array. Commissioning tests shall conform with the requirements in Section 7 (QCP). Commissioning shall be performed for the

entire PV system. This data shall be used to confirm proper performance of the PV system.

10.4. Documentation. Inspections/tests required in the QCP shall result in a written record of data/observations. The contractor shall provide one hard and one electronic copy of documents containing all test reports/findings. Test results shall typically include item/system tested, location, date of test, test parameters/measured data, state of construction completion, operating mode, contractor inspector/ Gun Lake Tribe witness, test equipment description and measurement technique.

11. Project Closeout

11.1. Preparation for Final Inspection and Tests. The following steps shall be taken to assure the project is in a condition to receive inspections and tests.

Finalize record drawings and manuals, indicating all “as-built” conditions.

11.2. Record Drawings. The contractor shall maintain on site the working record drawings of all changes/deviations from the original design. Notations on record drawings shall be made in erasable red pencil or other color to correspond to different changes or categories of work. Marked-up drawings shall always be maintained at the contractor’s on-site construction office, available for Gun Lake Tribe and/or CM to review. Record drawings shall note related change order designations on impacted work. When shop drawings indicate significant variations over design drawings, shop drawings may be incorporated as part of record drawings. Review of record drawings may be required before monthly payments can be processed.

11.3. As-Built Drawings and Specifications. The contractor shall provide "as-built drawings" and documents based upon actual site installation. Should Gun Lake Tribe determine that variations exist between finished construction and the as-built drawings, the contractor shall correct drawings to the satisfaction of Gun Lake Tribe.

The contractor shall submit two) hard copies and one digital copy containing the “as-built” drawings and specifications as CAD, GIS and PDF files.

11.4. Warranties and Guarantees. Specific warranties and guarantees, final certifications and similar documents shall be submitted to Gun Lake Tribe upon substantial completion and prior to final payment. This shall include copies with the operations and maintenance manual. All warranties shall be signed by a principal of the contractor’s firm and sealed if the contractor is a corporation.

11.5. Maintenance Manual. A detailed operation and maintenance manual shall be provided including diagram of system components, description of normal operation, description of operational indicators and normal status of each, table of modes of

operation, safety considerations, preventative maintenance requirements, troubleshooting and corrective actions, sources of spare parts and cut-sheets for all components. The contractor shall prepare and submit to Gun Lake Tribe three hardcopies and one digital file containing the detailed Maintenance Manual.

11.6. Spare Parts. The contractor shall provide a recommend list of spare parts. At minimum, a set of combiner box fuses for each array shall be provided along with the required spare panels noted in Section 8.

11.7. Demonstration and Training. Provide Gun Lake Tribe approved training for designated personnel in the operation of the entire PV energy system, including operation and maintenance of inverter(s), transfer switches, panel board, disconnects and other features as requested by Gun Lake Tribe. Instruct the designated Gun Lake Tribe personnel in removal and installation of panels, including wiring and all connections. Provide Gun Lake Tribe with written instructions and procedures for shut-down and start-up activities for all components of the system. Gun Lake Tribe shall be permitted to video tape this training for official use.

12. Operations and Maintenance Service.

12.1. The contractor shall provide operation and maintenance of the solar array systems for one year. Work shall include all manufacturer recommended maintenance as well as a 12-month performance commissioning as outlined in Section 7.1 (QCP). Gun Lake Tribe shall be invited to witness all performance commissionings. A maintenance log shall be maintained to note dates, equipment and issues being resolved.

13. CONTRACT TERMS AND CONDITIONS

13.1. Proposals will be accepted from non-Native American as well as Native American-owned economic enterprises or organizations. Gun Lake Tribe will provide preference to all qualified Native American owned economic enterprises or organizations in accordance with applicable law.

13.2. Reasonable preference shall be given to certified Native American owned enterprises. Any bidder seeking Indian Preference, must be at least 51% Indian-owned and must contact the Chairperson of the Indian Preference Committee, Amanda Sprague Amanda.Sprague@glt-nsn.gov or 269.397.1630 to receive a prequalification packet.

13.3. Gun Lake Tribe reserves the right, in its own discretion, to accept or reject any and all responses, to waive any irregularity and/or informality in any response and to request and receive additional information from any contractor when such acceptance, rejection, waiver or request is in the best interest of Gun Lake Tribe.

13.4. Gun Lake Tribe will enter into a contract with the contractor that best preserves the sovereign immunity of Gun Lake Tribe.

13.5. Gun Lake Tribe reserves the right, despite the application of Native American Preference as noted above, to select the contractor with the proposal that Gun Lake Tribe believes, in its sole and absolute discretion, provides the greater benefit in light of the estimated cost.

13.6. Gun Lake Tribe reserves the right to decline to select a contractor for this project.

13.7. This project is being funded through a Department of Energy contract; all contract terms apply.

14. Scoring/Ranking RFP

Award of the contract resulting from this RFP will be based upon the most responsive and responsible company whose offer will be the most advantageous to the Tribe in terms of cost, functionality and other factors as specified below. This evaluation will be calculated in accordance with the following evaluation criteria and the respective point values assigned with 1 being low and 100 being high. Consideration of the award will be determined based on the accumulation of points.

Evaluation Criteria	Points
1. Cost	25
2. Similar Project Experience	10
3. Staff Qualifications	20
4. Work Plan and Procedures	20
5. Proposal Conforms with RFP	15
6. Indian preference	10
Total	100

List of Abbreviations and Acronyms

AC	alternate current
A/E	architects/engineers
ANSI	American National Standards Institute
ASCE	American Society of Civil Engineers
ASME	American Society of Mechanical Engineers

CDs	compact disks
CM	construction management
CSI	Construction Specifications Institute
DC	direct current
EPA	Environmental Protection Agency
ETL	ETL Testing Laboratories
FM	Factory Manual
IEC	International Electrotechnical Commission
IEEE	Institute of Electrical and Electronics Engineers
kWh	kilowatt-hour
kW	kilowatt
kV	Kilovolts
LED	light emitting diode
MDP	main distribution panel
MPPT	maximum power point tracking
NEC	National Electrical Code
NEMA	National Electrical Manufacturers Association
NFPA	National Fire Protection Association
NRCA	National Roofing Contractors Association
POA	plane of array
POI	point of interconnection
PV	photovoltaic
QCP	Quality Control Plan
RECs	renewable energy certificates
SB1	California Senate Bill 1
STC	standard test conditions
TRECs	tradable renewable energy certificates
UL	Underwriters Laboratories
WREGIS	Western Renewable Energy Generation Information System
V	volts