REQUEST FOR PROPOSAL FOR JEA OWNER'S ENGINEERING SERVICES CONTRACTOR

Specification for JEA

Prepared by Enercon Services, Inc.

Rev	*Date*	*Revisions*	*Preparer*	*Reviewer*	*Approver*
0	*10/22/2024*	*Issue for Bid - ENERCON*	*SWM*	*TDN*	*KW*
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2	*01/27/2025*	*Evaluation Matrix Criteria moved to Appendix C*	*MB*	*MB*	*MB*

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SECTION 1: BACKGROUND AND REQUESTED SCOPE OF WORK

JEA is seeking the services of an Owner's Engineer (OE) contractor to provide engineering support on future projects. The OE contractor will be expected to specify technical and functional requirements for detailed design, engineering, procurement, construction, execution, and commissioning, as required relative to JEA self-build project(s). The OE contractor will also be expected to assist JEA in developing other potential Market-based options, such as providing financial evaluation, due diligence review and the full range of OE services relative to any Power Purchase Agreement (PPA), Build-Transfer Agreement (BTA), Asset Transfer Agreement (ATA) or Joint Ownership Agreement (JOA) that might arise. The OE contractor must be a firm with multidiscipline engineering, significant industry experience with projects similar in nature to JEA's proposed project(s), prior work history in Florida, and Professional Engineers registered in the State of Florida. Refer to the "General Requirements" section below for more details.

This Specification is not focused on providing OE services for a specific project, but on demonstrating Respondent's capability to perform multiple OE functions for a range of projects that might arise from JEA's present self-build project plans, the associated Market RFP for supply of capacity and energy (regulatory process), and from projects JEA determines are needed to support compliance with EPA's Greenhouse Gas Rule (GHG Rule) or to continue advancing toward JEA's clean energy goals.

Relative to the present self-build plan, OE contractor would provide owner's engineering support for the design and construction of a new combined cycle facility to achieve the required output, efficiency, reliability, and compliance with all applicable environmental regulations, at a minimum. Refer to "Attachment 1" for details of a combined cycle project that JEA is considering. Alternatively, if Market opportunities (PPA, BTA, ATA, JOA) were selected, OE services would include all services required to support JEA in development of those projects. Final analysis of the GHG rule, and continued support of existing clean energy goals may result in other projects such as solar PV or battery for which JEA will need OE services.

SECTION 2: RESPONSE REQUIREMENTS FOR JEA OWNER'S ENGINEER RFP

1.0 INFORMATION REQUIRED FROM BIDDERS

1.1 **Information with Bids -** The OE shall supply the following information with its bid to JEA:

Category	Item	Description/Reference
Company History and Experience Narrative	Provide a brief narrative of company history, experience, capabilities, and goals	Narrative of company history, years in business, experience (as an OE and overall), capabilities, and goals, including Domestic and Foreign markets. Maximum of (2) pages
Environmental Legislative and Regulatory Experience Narrative	Discuss relevant experience in Florida, particularly with all aspects of permitting units regulated under the Florida Power Plant Siting Act (PPSA) administered by the Florida Public Service Commission (PSC)	Discuss range of Environmental Permitting capabilities and support, including capabilities and experience for National Environmental Policy Act (NEPA) Review experience. Discuss relevant experience in Florida, particularly with all aspects of permitting units regulated under the Florida Power Plant Siting Act (PPSA) administered by the Florida Public Service Commission (PSC). Maximum of (2) pages
OE EPC Project Experience List	Provide a brief listing (without description) of the projects where Bidder served or is presently serving as the OE for power generation EPC contracts over the last 10 years or up to 25 projects	Include the COD year, power generation technology (i.e. CCGT, etc.), size (MW), fuel (i.e.natural gas, diesel etc.) and location (State/City). Provide Domestic experience first and supplement with Foreign Markets up to limit of 25 projects, if desired. Maximum of (1) page, listed from most recent to oldest
OE Supporting PPA, BTA, ATA or JOA Experience List	Provide a brief listing (without description) of the projects where Bidder served or is presently serving as the OE for power generation PPA, BTA, ATA or JOA contracts over the last 10 years or up to 25 projects	Include the COD year, power generation technology (i.e. CCCT, SCCT, etc.), size (MW), CT classification and model, primary and secondary fuel (i.e.natural gas, diesel, etc.) and location (State/City). Provide Domestic experience first and supplement with Foreign Markets up to limit of 25 projects, if desired. Maximum of (1) page, listed from most recent to oldest
Reference Projects	Provide (2) recent Domestic Reference Projects most representative of JEA's proposed advanced-class CCGT project where the Bidder served as the OE for power generation EPC contracts. Include Owner's Representative	• Include detailed descriptions of reference projects demonstrating the capabilities, experience and requirements listed in this Technical Specification. • Identify project technology and product class and vendor model • Listed projects must have been successfully completed on time

	name and contact information for follow-up.	and within budget or must describe why/how budget/schedule slipped, what was done to mitigate, and what the outcome was. Maximum of (2) pages per reference project
Quality Management Narrative	Discuss OE's Quality Management Program	Describe OE's Quality Management Program and supportive procedures pertaining to EPC contracts. Maximum of (2) pages
Resumes	Provide resumes for proposed project key personnel	Provide professional resumes for Key Personnel with office locations and addresses. Include resumes for the primary project lead, secondary project lead, lead mechanical, lead civil, lead structural, lead electrical, and lead I&C engineers. Include Professional Engineers licensure information for each key discipline. Maximum of (2) pages per resume
Preliminary Project Work Plan	Provide a proposed detailed work plan for the JEA CCCT project identified in Attachment 1	Provide a detailed work plan for JEA's proposed project described in Attachment 1. The plan must meet the following objectives at a minimum: • Demonstrate capabilities and the ability to successfully deliver services described in the Technical Specification. • Meet the budgetary goals, timelines, and objectives. • Ensure cost effectiveness of potential recommendations, creativity and innovation of proposed recommendations, and comprehensive utilization of proposed personnel to meet the deliverables. • Discuss in detail the considerations deemed critical to a successful project and the proposed means of addressing them. • Provide an itemized list and detailed description of proposed tasks and sub-tasks. • Comprehensive Resource Plan and Schedule • Discuss interface with JEA's existing engineering contractors supporting power island selection, regulatory activities, and permitting activities. • Discuss how Proposer is uniquely suited for this OE role and what

		proposer brings to the table that others may not be able to bring. • Discuss key issues with EPC scope development, EPC execution strategies, and the current EPC marketplace, and how Proposer might expect to address them. • Include organizational chart w Key Personnel with multidisciplinary Professional Engineers (mandatory Electrical, Mechanical and Civil) registered in the State of Florida Maximum of (4) pages + (1) page org chart
Litigation History	Prepare a description of any project situations that have resulted in litigation against the company in the past 7 years	Litigation history should include the following: • Include a description of the litigation and the drivers for the litigation • Include the outcome of the litigation • Include any measures employed to mitigate the issues that resulted in litigation Maximum of (2) pages

1.2 Reference Appendix C for an example of the criteria that will be evaluated for OE selection.

1.3 Additional Information Required with Bids

1.3.1 Proposals shall include a list of deliverables to JEA and an agreement that the OE understands and commits to the full scope of Services and all terms in this Specification.

1.3.1.1 Any contract award resulting from this Specification will incorporate all the provisions specified herein. The OE agrees to all the provisions of this Specification unless exceptions are specifically listed in the bid proposal and agreed to by JEA, in writing.

1.3.1.2 Exceptions shall be clearly denoted and listed out on the proposal, including a reason for taking exception and proposal of a reasonable alternative.

1.3.1.3 JEA encourages the Bidders to discuss any exceptions with the JEA contact prior to submitting a proposal.

1.3.1.4 Firms submitting proposals shall include the qualifications for and a general scope of work outline for the permitting support and NEPA review.

1.3.2 Proposal shall include a list of software that the OE uses and has experience with.

1.4 The OE Bidders may be expected to travel to JEA's offices in the Jacksonville, FL area to present their proposals during an "in-person" meeting/presentation for JEA stakeholders in this project. The proposal presentation should be no more than two to three hours, including a question-and-answer session. The Bidder is expected to bring key personnel that will be part of the project team to the presentation. JEA reserves the sole right to require or not require these presentations.

SECTION 3: GENERAL REQUIREMENTS FOR OWNER'S ENGINEER

1.0 SUMMARY

1.1 Location(s)

1.1.1 JEA

1.2 Summary of OE Capabilities and Requirements

1.2.1 The Owner's Engineer (OE) shall be capable of providing a complete scope of work and services as defined in this Specification and in accordance with general requirements described herein.

1.2.2 Scope of Services includes but is not limited to:

1.2.2.1 Project Cost Estimate Development and Support (Section 1.2.3)

1.2.2.2 Project Schedule Development and Support (Section 1.2.4)

1.2.2.3 Equipment Specification and Procurement Support (Section 1.2.6)

1.2.2.4 EPC Contractor Specification and Procurement Support (Section 1.2.7)

1.2.2.5 Document Management Support (Section 1.2.8)

1.2.2.6 Technical Review of Detailed Design Drawings and Documentation (Section 1.2.9)

1.2.2.7 Field Services, Inspection Services, and Contractor Management Support (Section 1.2.10)

1.2.2.8 Commissioning, Performance Testing Support including Guaranteed Performance Testing and Demonstration Testing (Section 1.2.10.4)

1.2.2.9 Other Technical Specification Support (Section 1.2.11)

1.2.2.10 Construction Support and Evaluation of Adherence to Specifications and Quality Assurance

1.2.2.11 Reference other OE expectations and requirements as stated throughout this specification.

1.2.3 Project Cost Estimate Development and Support

1.2.3.1 Develop estimates for scope of work. Estimates shall include equipment, commodities, materials, installation labor, design engineering, start-up and commissioning engineering support, and construction management/field engineering.

1.2.3.2 Estimates shall be developed to show overall project costs as well as the projected monthly cash flows for the life of projects.

1.2.3.3 Provide periodic updates to project estimates to help JEA with their cost forecasting efforts.

1.2.3.4 JEA will provide values for JEA's internal indirect, overhead, and engineering costs.

1.2.4 Project Schedule Development and Support

1.2.4.1 Develop and maintain a Project Schedule for the life of the project(s).

1.2.5 General Permit Support Capabilities

1.2.5.1 Coordinate with JEA in performing or supporting other JEA contractors in performing all work required to obtain site permits necessary for the life of the project construction and project closeout. This includes all water, wastewater, storm water, air and construction permits.

1.2.5.2 Air Emission Source Location Drawing for Permitting – Generate any general arrangement drawings as required showing project specific emission source locations to facilitate permitting support efforts also being provided as part of the OE scope of work as defined herein.

1.2.5.3 Develop a design basis document that defines basic plant configuration, site ambient conditions, controlled emission rates for nitrogen oxides (NOx), carbon monoxide (CO), Particulate Matter (PM), and volatile organic compounds (VOCs); anticipated control technologies (i.e., SCR and CO catalyst), method of inlet air cooling, gas fuel delivery condition assumptions, and cases to be evaluated.

1.2.5.4 Coordinate with the OEM(s) to generate and issue heat and mass balance calculations for the facility.

1.2.5.5 Provide technical support for Legislative and Regulatory activities required under the Florida Power Plant Siting Act.

1.2.6 Equipment Specification and Procurement Support

1.2.6.1 Develop equipment specifications based on previous experience and shall be developed with input from JEA, as required. This includes, but is not limited to, Power Island and Balance of Plant (BOP) equipment.

1.2.6.2 Equipment Contract Bid Process

Support JEA in the Equipment Contract Bid Process by:

- Assist in developing specifications into JEA bid documents, including integrating JEA procurement forms, standards, and Florida Sunshine Law requirements
- Attending the Pre-Bid Meeting
- Prepare and Issue Bid Addenda to the Technical Specification
- Manage and Provide Timely Responses to Requests for Information (RFI) During the Bid Process
- Develop Responses to Bidder’s Technical Inquiries
- Submit and Track Responses by Bidders
- Develop Evaluation Matrix Criteria

1.2.6.3 Equipment Bid Evaluation

Review and evaluate the commercial and technical proposals submitted by the Equipment Contract bidders to confirm the minimum requirements of the project are satisfied:

- Review the bidders’ commercial and technical proposals, including exceptions and clarifications, supporting documentation, drawings, and plans as presented in bidders’ proposals.
- Evaluate the bidders on the strengths of their QA/QC manual, fabrication/ manufacturing execution plan, and references.
- Work with JEA to determine which bidder clarifications and exceptions are acceptable.

- Solicit proposal clarifications and adjustments from the bidders to address incomplete or ambiguous proposal items and unacceptable exceptions.
- Develop bid tabulations comparing the commercial and technical offerings between short-listed bidders.
- Provide recommendations based on the technical offerings and any other requirements.

Work collaboratively with JEA on the bid review and evaluation tasks.

Engage JEA in the evaluation process that shall ensure a well-explained, detailed, and documented evaluation.

Confirm the technical specification for contract based off the final negotiations conducted by JEA and the successful bidder. The conformed specification shall incorporate the agreed upon changes to the bid specification.

1.2.7 EPC Contractor Specification and Procurement Support

1.2.7.1 Assist JEA in evaluating different EPC contracting and project execution strategies. Identify strengths, weaknesses and benefits associated with JEA's execution of each approach. Leverage current market experience to develop the most viable strategy for JEA.

1.2.7.2 Develop an EPC contractor specification based on previous similar project experience. The EPC contractor specification shall be developed with input from JEA. When developing EPC contractor specifications, the objective is to specify the appropriate amount of information required for JEA to obtain the desired facility without placing too many restrictions on the EPC contractor's ability to provide an innovative design for the project.

1.2.7.3 The specification for the selection of an EPC contractor shall address, as required, the following items:

- Project Description
- Site Data
- Applicable Industry Codes and Standards
- Equipment Contracts in Place
- Discipline Specific Balance-of-Plant (BOP) Requirements
- Civil/Structural/Architectural Requirements
- Mechanical Requirements
- Electrical and I&C Requirements
- Construction Management Requirements
- Health and Safety Requirements
- Equipment Access Requirements
- Requirements for Training Plan for JEA's Employees, Contractors, etc.
- Quality Control Plan Requirements
- Start Up and Commissioning Requirements
- Performance Testing Requirements
- Scheduling Requirements
- Documentation and Reporting Requirements
- Division of Responsibility (DOR)
- Terminal/Interface Points
- Approved Vendors/Suppliers/Subcontractors
- Drawing Standards/Tagging Conventions
- Data Pages/Forms
- Pricing Pages/Forms
- Exceptions and Clarifications Forms
- Compliance responsibilities for all applicable NERC GO/GOP requirements, and schedule with DOR for demonstrable compliance

1.2.7.4 Develop a Division of Responsibilities (DOR) matrix in the planning phase of the project and the DOR matrix shall be continually updated throughout the life of the project. The DOR shall be used to ensure that there are no gaps in scope between the equipment supplier(s), the EPC contractor, and any other contracts (such as gas supply, electrical interconnection, water supply, etc.).

1.2.7.5 EPC Contractor Bid Process

Support JEA in the EPC Contractor Bid Process by:

- Attending the Pre-Bid Meeting
- Assist JEA in determining the EPC approach for the project(s).
- Prepare and Issue Bid Addenda to the Technical Specification
- Manage and Provide Timely Responses to Requests for Information (RFI) During the Bid Process
- Develop Responses to Bidder's Technical Inquiries
- Submit and Track Responses by Bidders
- Develop Evaluation Matrix Criteria

1.2.7.6 EPC Contractor Bid Evaluation

Review and evaluate the technical proposals submitted by the EPC Contractor bidders to confirm the minimum requirements of the project are included:

- Assist JEA in determining best EPC contracting methodology (e.g. Open Book, Hybrid EPC, Lump Sum).
- Assist JEA in performing an initial higher-level screening of bidders from the total number of bidders to a short list of bidders.
- Assist JEA in project development including scope development and negotiation with EPC contractors.
- Assist JEA with interface between owner purchased major equipment suppliers and EPC contractor.
- Review the short-listed bidders' technical proposals, including exceptions and clarifications, supporting documentation, drawings, and plans as presented in bidders' proposals.
- Evaluate the bidders on the strengths of their safety manual and record, QA/QC manual, construction execution plan, subcontractors, and references.
- Work with JEA to determine which bidder clarifications and exceptions are acceptable.
- Solicit proposal clarifications and adjustments from the bidders to address incomplete or ambiguous proposal items and unacceptable exceptions.
- Develop bid tabulations comparing the technical offerings between short-listed bidders.
- Provide recommendations based on the technical offerings.

Work collaboratively with JEA on the bid review and evaluation tasks.

Engage JEA in the evaluation process that shall ensure a well-explained, detailed, and documented evaluation.

Conform the technical specification for contract based off the final negotiations conducted by JEA and the successful bidder. The conformed specification shall incorporate the agreed upon changes to the bid specification.

1.2.7.7 Information Required from EPC Contractor Bidders

The following information, as a minimum, shall be requested from the EPC Contractor Bidders as part of their bid submittals:

- Safety Statistics over the past 3 years (Including Statistics for Major Subcontractors, if applicable)
- Draft Safety Manual
- Draft Quality Assurance/Quality Control (QA/QC) Manual

- Draft Construction Execution Plan, Including Temporary Facilities (trailers, craft parking, laydown, power, water, sanitary, etc.)
- Preliminary Execution Schedule
- Planned Craft Loading
- Proposed Major Subcontractor(s), if applicable
- Project Organization Chart and Key Project Team Member Resumes
- Client References
- Draft RFI (Request for Information) Processing Plan
- Change Management Plan
- Design Control Program

1.2.8 Document Management Support

1.2.8.1 Work with JEA, the Equipment supplier(s), and the EPC Contractor to develop a JEA-approved documentation control plan and documentation control procedures to successfully control all documents generated during the project (including As-Built drawings). The document control plan shall identify the stakeholders and the methods to be used for processing documents. The document control plan shall include a document distribution matrix for the distribution of appropriate documents to the stakeholders.

The document control procedures shall provide specific details for document processing. The procedures shall include the method for submitting documents, commenting on documents, transmitting documents, and accessing current and previous document revisions.

Expedite the equipment supplier(s) and the EPC contractor to provide the required project documentation.

1.2.9 Technical Review of Detailed Design Drawings and Documentation

1.2.9.1 As part of the detailed design effort required for project execution, the supplier(s) and EPC contractor may be responsible for developing calculations, P&IDs, single-lines, system architecture, construction drawings, procurement specifications, system descriptions, testing procedures, controls narrative, and other technical information. The OE shall be capable of reviewing these engineered design documents. The reviews shall focus on verifying conformance with the contract requirements including scope, design adequacy, quality, compliance with applicable codes and standards, constructability, completeness, good engineering practice, and project technical specifications. The OE shall be capable of providing a Quality Assurance Plan, constructability reviews, and 30%/60%/90%/Issued for Construction milestone approvals as needed based on completed technical reviews.

Work with JEA to review the design documents that present aspects of plant operability and maintenance. This review process shall require periodic 3-D model-based design reviews with the EPC contractor during the engineering phase of the project to review the physical design and layout of the plant to ensure that adequate attention is being paid to operability and maintenance access.

1.2.10 Field Services, Inspection Services, and EPC Contractor Management Support

1.2.10.1 Kick-off and Status Update Meetings

Manage kick-off and status meeting conference calls. It is anticipated that meetings will be attended by JEA and the OE's home office and field staff, and that the meetings will focus on critical issues, EPC contractor and equipment supplier(s) document submittals, open action items, project schedule status, RFIs, and EPC contractor progress (actual and planned). Establish the meeting agendas, record, and distribute meeting minutes, lead the discussion of current issues, update JEA

on the status of drawing reviews, maintain an action item list, and perform all other tasks necessary to keep JEA well informed.

Periodically the Status Update Meetings shall be conducted as “in-person” meetings. The location and scheduling of the “in-person” meetings shall be mutually agreed upon by JEA and the OE.

Provide status reports documenting the tasks performed, tasks planned, detailed man-hour and cost accounting information, status of the overall project schedule review, and additional information needed to keep JEA well informed about the work being performed by the OE. The report shall detail the tasks performed for the current month and planned upcoming tasks. Also included shall be statistics that track progress on document reviews, RFI responses, vendor shop and field surveillances, and other information needed to keep JEA well informed.

1.2.10.2 Project Schedule Management

Review the supplier’s and the EPC contractor’s schedules for compliance with the specification requirements, for the proper integration with project milestones and work by others, and for reasonableness. Monitor their progress for all phases of the work, including verifying the actual progress versus the reported progress. In addition, the risks and critical paths associated with the schedule, schedule float, and schedule forecasts shall be monitored and maintained. Expedite the supplier and the EPC contractor, as needed, for the submittal and updates of their schedules.

If the supplier or the EPC contractor falls behind schedule, assist JEA in assessing the impacts and reviewing any recovery plans to determine whether they are likely to be effective.

1.2.10.3 Participation in Shop Inspections and Factory Acceptance Testing (FAT)

Upon the request of JEA, the OE may be requested to attend equipment manufacturing inspections, factory and user acceptance tests, site installation quality checks/audits, progress meetings and support punch list items.

The OE may be required to help prepare for FATs and user acceptance tests. Responsibilities may include, but are not limited to, determining and/or developing software use cases, test methods, criteria, and procedures.

Vendor surveillance is a prudent and necessary activity to manage the risk associated with vendor capability and performance. Develop an inspection program that is mutually acceptable to all project stakeholders. The inspection point program shall list the fabrication activities for the applicable equipment and materials. Certain critical operations shall be selected as witness points. The supplier, or vendor, would notify the OE as these critical operations are impending. The OE shall then arrange surveillance inspections at the fabrication source as specified by JEA.

Review supplier test, inspection, welding, and nondestructive examination procedures to support the surveillance inspection effort. Review and monitor the vendor/supplier’s compliance with the procurement documents as well as the applicable codes and standards.

Review the supplier’s and the EPC contractor’s quality procedures. Shop visits and surveillance shall be performed as necessary to ensure EPC contractor and supplier(s) compliance with the approved quality procedures as detailed in the specifications. Document and provide photographic records of shop visits and surveillance.

JEA reserves the right to attend any or all Factory Acceptance Testing (FAT’s) at JEA discretion.

1.2.10.4 Review and Oversight of Construction, Commissioning, Startup, and Performance Testing Plans and Procedures

Provide construction oversight and field implementation support as needed. Respond to and document RFIs from the EPC contractor during this phase of the project to ensure successful operational readiness and quality assurance. If needed, the OE may be required to supply supplemental staff for the JEA construction and project management team.

Review the comprehensive Commissioning Plan that will be prepared by the EPC contractor and suppliers to ensure that it complies with the minimum requirements of the contract. Monitor the EPC contractor's implementation of their plan and commissioning process to ensure successful operational readiness. This includes turnover of documentation and procedures.

Review the startup and test plan procedures developed by the EPC contractor, witness the tests, and review the test reports generated by the EPC contractor.

Develop specific Demonstration Test Plans which address functionality of the plant and/or components in the facility. These tests will include, but are not limited to, ramp rate testing, unit/plant trip testing and Steam Turbine bypass operation (1x0), purge credit validation, black start, dual fuel operations.

Determine baseline performance levels for individual major components that include, but are not limited to, Combustion Turbines, Steam Turbines, HRSGs, Condensers, Cooling Towers, and Heat Exchangers.

The contracts may require that certain guarantees are met, such as net power output, heat rate, emissions, and other key performance parameters. Compliance with these guarantees is demonstrated via specific performance tests. Review the overall testing plan and the detailed test protocols to ensure they meet the requirements and applicable industry guidelines. Witness the performance tests and review the test reports, and then provide a recommendation to JEA as to whether the guarantees have been successfully demonstrated.

1.2.11 Other Technical Specification Support

1.2.11.1 Provide an independent review of JEA's technical specifications and assumptions for the purchase of equipment as needed.

1.2.11.2 Develop training programs for plant operators and maintenance personnel for new equipment and systems as required. These procedures must be specified to ensure sustainable operation of the new facility(s).

1.2.11.3 Evaluate the requirements for black start capabilities.

1.2.11.4 Develop site-specific System descriptions as needed.

1.2.11.5 Develop site-specific Operations procedures as needed.

2.0 DRAWING REQUIREMENTS AND DOCUMENT CONTROL

2.1 The OE and JEA shall be capable of defining the requirements for document control.

2.1.1 An external site(s) managed by JEA and/or the OE shall be established for the following:

2.1.1.1 Drawing requests and other submittals

2.1.1.2 AutoCAD templates, borders, and blocks

2.1.1.3 Numbering of cables, instruments, equipment, valves, etc.

2.1.1.4 New JEA print drawing numbers

2.1.1.5 Drafting standards and guides

2.1.1.6 Electronic copies in JEA specified format of permit drawings, shop drawings, equipment details, installation details, operating and maintenance instructions, wiring diagrams, parts lists, cable termination sign-off sheets, etc.

2.2 Professional Engineering (PE) License Seals

2.2.1 Design documentation such as design drawings, specifications, and calculations shall, to the extent required by Law or as defined by JEA, have a PE seal applied, signed, and dated by the registered professional engineer(s).

2.2.2 The license shall be current, valid, and in good standing in Florida.

2.2.3 Professional seals are not required for review items (not to be constructed), sketches, samples, design control documents, operations manuals, engineered product drawings (not required for permitting) and such other documents approved by JEA.

2.2.4 Provide clarification for any Project-specific seal requirements.

2.3 Design Drawings and Documents

2.3.1 Electronic Drawing Computer Aided Design (CAD) Requirements

2.3.1.1 Specify drafting services to be provided as part of the project scope. All drawing deliverables shall include the latest AutoCAD file.

2.3.2 Design Drawing Requirements

2.3.2.1 Produce new JEA drawings or update existing JEA drawings necessary to support detailed design.

2.3.2.2 Work with JEA to identify design drawings to be created or edited. At a minimum, design milestones are required at 30%, 60%, 90%, and 100% (Final Design), with feasibility studies and/or constructability reviews commencing at the 60% milestone.

2.3.2.3 Develop a review and approval process, collect as-builts, and process drawings into the JEA database per JEA procedure.

2.3.2.4 Work with JEA Document Control to search and locate all affected design drawings to be modified.

2.3.2.4.1. In the event an existing drawing cannot be located for a particular site, the OE shall promptly bring it to JEA's attention so an alternative can be discussed.

2.3.2.5 Provide field verification for drawings to ensure accuracy at the request of JEA.

2.3.2.5.1. Provide field mark-ups (as-found drawings) to JEA and provide drafting services to incorporate the mark-ups.

2.3.2.6 All drawing deliverables shall be submitted in AutoCAD and PDF format along with four (4) hard copies of 11x17 prints.

2.3.3 Vendor, Manufacturer and Engineering Drawings

2.3.3.1 Review all Vendor, Manufacturer, or Engineering drawings for JEA-purchased equipment and services. The OE may be required to incorporate these drawings into JEA's drawings as required.

2.3.3.2 New or revised JEA drawings shall be included in the scope as necessary to support a fully functional design.

2.3.3.3 The OE is allowed to take electronic vendor supplied drawings and place them into a new or revised JEA drawing, with certain conditions:

2.3.3.3.1. All symbols, equipment/device names, tags, etc. shall be conformed to JEA drawing standards.

2.3.3.3.2. Vendor terms and drawing methodologies shall be conformed to JEA practices (e.g. P&ID or schematic diagram layouts).

2.3.3.3.3. Provide reference to new vendor drawings on the new/revised JEA drawings.

2.3.4 Vendor and Manufacturer O&M Manuals

2.3.4.1 Review, collect, and upload O&M manuals per JEA's approved process.

2.3.4.2 Develop a list of new and revised Preventative Maintenance procedures per new O&M manuals as required.

2.3.4.3 Develop recommended spare parts lists for new equipment as required.

3.0 QUALITY REQUIREMENTS

3.1 The OE quality management program and supportive procedures are subject to JEA review and audit.

3.2 The OE shall provide a copy of the quality management program and supportive procedures with the bid submittal.

3.3 The OE shall be capable of developing and providing to JEA a 'Project Specific Quality Management Plan'.

3.4 At no additional cost, JEA will be allowed to make quality inspections at the OE's facilities. JEA will be allowed to view the OE's quality procedures and procedure generated records and documents.

3.5 The OE shall be capable of reviewing the equipment suppliers' and the EPC contractor's quality procedures. Shop and site visits shall be performed as necessary to ensure EPC contractor and supplier(s) compliance with the approved quality procedures as detailed in the specifications.

4.0 PROJECT MANAGEMENT

4.1 OE Project Management

4.1.1 Provide one direct individual responsible for overall communication between JEA and the OE's design team.

4.1.1.1 Depending on the size and scale of the project, multiple contacts may be allowed for different engineering disciplines, with a project manager for centralized communication.

4.1.2 Provide to JEA the following project management plans, as requested (to be determined and agreed upon):

4.1.2.1 Project Plan (at minimum including cost tracking, change management, Project controls, scheduling requirements and other relevant Project management topics).

4.1.2.2 Communication Plan

4.1.2.3 Quality Plan

4.1.2.4 Risk Management Plan (the OE shall maintain a risk register throughout the project).

4.1.2.5 A plan detailing how the OE will manage formal requests for information (RFIs) from JEA and/or third parties such as contractors or vendors.

4.1.2.6 Health and Safety Plan

4.1.2.7 Environmental Management Plan

4.1.2.8 Change Management Plan

4.1.3 A scope and cost change control plan shall be in place which dictates how the OE addresses proposed changes to scope. This shall always be implemented either stand alone on all projects, or it also may be implemented as part of the OE's project plan on larger projects.

4.1.3.1 Changes in scope to a project shall be formally identified and documented in a change order. The OE shall not proceed with any additional scope of work without approval in writing from JEA.

4.1.3.2 Any costs incurred by the OE for pursuing additional work without the written consent of JEA will not be reimbursed.

4.1.3.3 A revised purchase order or a Change Order shall be issued authorizing the OE to proceed with work that will require any additional costs.

4.1.4 Provide a milestone schedule (at minimum) and adhere to the dates set forth in that schedule. Larger and more complex projects may require greater detail in scheduling, as required by JEA.

4.1.4.1 Submit a preliminary project plan to define the project management program the OE's employees shall follow for the scope of Services.

4.1.4.2 JEA's preferred scheduling tool is **Primavera P6** and shall be required upon request of JEA to meet the needs of the specific project scope of work.

4.1.4.3 Schedule updates shall be performed once per month or at more frequent intervals depending on the needs of the project.

4.1.4.4 Schedule changes shall be handled as part of the OE's change management plan.

4.1.4.4.1. Any changes in schedule shall be communicated to JEA at the earliest opportunity.

4.1.4.4.2. A slip in schedule shall be followed up with a mitigation plan by the OE to address how the slip occurred and mitigating actions to try to compensate for it.

4.1.5 Provide and maintain a project organizational chart and shall submit as part of each project proposal and upon changes and include resumes for all personnel on the proposed project team for review by JEA. Submit a preliminary project plan to define the project management program the OE's employees shall follow.

4.1.5.1 Provide professional resumes to JEA for review upon request.

4.1.5.2 The organizational chart shall be a "top-down" structure and shall include all personnel working on or expected to work on the project, along with level of commitment.

4.1.5.2.1. Key personnel shall not be rotated on and off the project unless agreed upon up front by JEA.

4.1.5.2.2. JEA reserves the right (at any time during the project) to deny certain personnel from taking part in the project. Normally this would be a “last resort” to address unacceptable performance when all other means have been ineffective.

4.1.5.2.2.1. Provide a suitable alternative to still meet the contractual obligations.

4.1.6 Subcontractors

4.1.6.1 Note the use of any and all subcontractors in project proposals, along with detailed scope of work. Any additions or changes to the list of subcontractors (as approved in the initial proposal) shall be approved by JEA.

4.1.6.1.1. Subcontractors shall be transparent to JEA. OE agrees to duly administer and monitor its Subcontractors to ensure all expectations of the contract and this specification are fully met.

4.2 Progress Reports

4.2.1 Deliver progress reports to JEA in addition to meeting minutes. Upon request by JEA, this frequency may be extended or compressed.

4.2.1.1 Progress reports shall contain the following items, at a minimum: project stage, cost, schedule, quality, safety risk, number of contractors on site, and upcoming week or month plan.

4.2.2 In addition to other reports submitted by the OE, unless otherwise determined by JEA, the OE shall submit a progress report which includes all items required by JEA. On request by the OE, JEA will provide a list of required items which the OE must include in its progress reports.

4.2.2.1 Reports shall be formal in nature and preferably submitted electronically to all stakeholders per the approved project communication plan.

4.2.3 Progress meetings shall be scheduled to review and discuss progress reports at the same frequency.

4.2.3.1 The OE shall travel to JEA sites for progress meeting as required.

4.2.3.2 The OE shall create and publish formal meeting minutes from each progress meeting that includes action items (with due dates) and summary of significant items as necessary.

5.0 DELIVERABLES

5.1 Work with JEA to define the required deliverables milestones from the EPC contractors and vendors. The OE will be expected to be involved in the design review process for all milestone submittals.

5.1.1 All design deliverables shall be delivered to JEA. Deliverables typically include but are not limited to:

5.1.1.1 Material Specifications

5.1.1.2 Construction Specifications

5.1.1.3 Scope of Work Documents

5.1.1.4 Engineering Calculations

5.1.1.5 Computer Models

5.2 JEA shall be given 2 work weeks to review and comment on each deliverable for each stage of submittal.

5.2.1 Include time and be available for design review meetings, at minimum for all design deliverables.

5.2.1.1 Location for design review meetings shall be as agreed upon by JEA and the OE and may require travel by one or both parties.

5.2.2 Comments submitted by JEA do not release the OE from obligation or liability for a complete functional design or change in scope of services.

5.2.2.1 Conflicts and matters of scope change must be handled in writing and resolved with JEA.

5.2.3 Create and publish formal meeting minutes from each design review meeting that includes action items (with due dates) and summary of significant items as necessary.

6.0 SPECIFICATION REQUIREMENTS

6.1 Define specification requirements for the EPC contractor and equipment suppliers.

6.2 Provide and review specifications as required to meet the scope of work.

6.2.1 Work with JEA to provide complete specifications in correct templates and meet requirements as listed in the procedure.

6.2.2 Insert relevant JEA standards along with terms and conditions into specifications produced on behalf of JEA, as directed by the JEA.

6.2.3 JEA may provide the OE with standard specifications or examples of past specifications.

6.2.3.1 Standards and example specifications from other projects shall not be edited and re-issued by the OE. Relevant portions shall be copied into an appropriate template for the project.

6.2.3.2 All specifications shall be independently reviewed and approved by the OE as required by the procedure.

6.3 Support JEA during specification issue, bid, award, and administration phases.

6.3.1 Assemble a bid package for each specification to include the Specification, drawings, attachments, appendices, and all relevant items.

6.3.1.1 Upon request of JEA, provide reproductions/copies of bid materials and send to JEA or directly to the bidders.

6.3.2 Attend pre-bid meetings onsite at JEA locations as requested.

6.3.3 Be available to answer questions of a technical nature as pertains to its scope of work.

6.3.4 Support bid evaluations by reviewing bidder proposals and making recommendations.

6.3.5 Upon the request of JEA, attend equipment manufacturing inspections, factory acceptance tests, site construction quality checks/audits, progress meetings and support punch list items.

7.0 ENGINEERING STUDIES AND CALCULATIONS

7.1 Engineering Calculations

7.1.1 All calculations shall be independently reviewed and approved by the OE as required by the procedure.

7.2 Engineering Studies

7.2.1 Engineering studies shall be issued in both electronic format and, upon request, bound report format with all necessary attachments and appendices listed and included within it.

7.2.2 Include the following items in the formal report, at a minimum:

7.2.2.1 Objectives

7.2.2.2 Design basis

7.2.2.3 Design and calculation methodologies

7.2.2.4 Assumptions and risks

7.2.2.5 Alternatives and options

7.2.2.6 Conclusions and recommendations

7.2.2.7 Cost estimates (for each alternative) if the study results in a project or scope of work

7.2.2.8 All supporting documentation such as:

7.2.2.8.1. Calculations sheets

7.2.2.8.2. Drawings

7.2.2.8.3. Sketches

7.2.2.8.4. Computer modeling data/reports

7.2.2.8.5. 3D Modeling

7.2.2.8.6. References such as standards or industry practices

7.2.3 Submit copies of the study to JEA for review, as specified in the Deliverables portion of this Specification.

7.2.4 All engineering studies by Others shall be independently reviewed and approved by the OE as required by the procedures.

8.0 DESIGN CONTROL

8.1 JEA Design Change

8.1.1 Design deliverables shall be in the form of a design change package to be issued with direction from JEA.

8.1.2 Include adequate time to perform all necessary independent reviews and produce all documentation required to meet the intent of the procedure.

8.1.3 The OE must have a documented design control program. These procedures shall be made available for review and audit upon request of JEA.

8.2 Independent Review

8.2.1 Independent reviewers may be an employee of the OE but not an employee who was involved with the development of the design or deliverables.

8.2.1.1 Qualified Subcontractor independent reviewers are allowed per the OE's preference.

8.2.1.2 The OE shall be accountable for errors and omissions in its design documents and shall correct designs at no additional cost to JEA.

8.2.1.2.1. Errors and omissions discovered in design review documents shall be noted in comments or "red-lined" as appropriate for correction by the next revision cycle.

8.2.1.2.2. Errors and omissions discovered in documents already issued for bids, fabrication, or construction shall be addressed immediately upon discovery.

8.2.1.2.3. The OE shall notify JEA immediately if an error is discovered in design documents being used in active construction, especially if the issue may result in a safety or operational risk.

8.2.1.2.4. The OE shall fix errors and omissions discovered during the design warranty period.

8.2.1.2.5. The OE shall advise JEA how to proceed with alternative solutions to support the needs of the project. This includes alternative designs, and substitutions.

9.0 GENERAL CIVIL/STRUCTURAL ENGINEERING DESIGN REQUIREMENTS

9.1 General

9.1.1 This section contains general OE requirements for civil and structural engineering design.

9.1.2 Define civil and structural engineering design requirements and appropriate codes and standards, as required.

9.2 Design Deliverables

9.2.1 Produce calculations as required to support the design of the project.

9.2.2 Produce specifications as part of the project scope, as required per the scope of work.

9.2.3 Overall Site Layout Drawings –Specify, update, or develop new general arrangement drawing(s), as required, based on JEA provided comments and updated OEM layout information.

9.2.4 Geotechnical Specification –Review the available subsurface information and pile test reports for the site to determine if and where additional information is required. The OE shall be capable of providing an appropriate specification so that any additional borings may be obtained from a third party by JEA. The specification shall include requirements for borings, rock coring, cross-hole seismic survey to determine soil properties for dynamic foundation design, soil resistivity for electrical grounding, and soil thermal resistivity for underground electrical design. The borings and rock coring information shall be utilized to determine bearing capacity for shallow foundations, deep pile foundation design, and information concerning the integrity of the underlying rock. The OE shall review the draft and final geotechnical investigation reports for compliance with the specification.

9.2.4.1 Utilize the results from the subsurface investigation program to develop the allowable bearing capacity for shallow foundations and determine the allowable bearing capacity for any deep foundations (piles) required to support heavily

loaded and settlement sensitive structures. Other design soil parameters shall also be developed as required for foundation design.

9.2.4.2 When applicable for sites requiring stormwater management facilities, the geotechnical specification must also provide soil profiles and/or ground infiltration rate testing to satisfy regulatory criteria necessary for design and permitting activities. Work under this sub-task may require follow-up site assessments and reporting after designs for stormwater facilities and known outfall locations are determined for testing during engineering design.

9.3 Computer Modeling and Simulation

9.3.1 All software shall be defined by the OE and approved by JEA for use.

10.0 GENERAL MECHANICAL ENGINEERING DESIGN REQUIREMENTS

10.1 General

10.1.1 This section contains general OE requirements for mechanical engineering design.

10.1.2 Define mechanical engineering design requirements and appropriate codes and standards, as required.

10.2 Design Deliverables

10.2.1 For mechanical engineering design, the OE shall be capable of specifying and/or performing the following, at minimum:

10.2.1.1 Heat Balances – Heat and mass balances shall be developed to assist in the development of the conceptual design details and the overall cost estimate. Previously developed heat balances shall be reviewed and updated by the OE as necessary.

10.2.1.2 Water Balances – Develop conceptual water balances and wastewater discharge amounts with and without duct firing. The OE shall review the water balances generated with the OEMs.

10.2.1.3 Overall Site Layout Drawings – Reference Civil Engineering Requirements

10.2.2 Produce calculations as required to support the design of the project.

10.2.3 Produce specifications as part of the project scope, as required per the scope of work.

10.3 Computer Modeling and Simulation

10.3.1 All software shall be defined by the OE and approved by JEA for use.

10.3.2 Include time to provide field verification as necessary for any existing assets to be modeled.

11.0 GENERAL ELECTRICAL ENGINEERING DESIGN REQUIREMENTS

11.1 General

11.1.1 This section contains general OE requirements for electrical engineering design.

11.1.2 Define electrical engineering design requirements and appropriate codes and standards, as required.

11.2 Design Deliverables

11.2.1 Define detailed design drawing deliverable requirements for the project, as required.

11.2.2 Produce or provide specifications as part of the project scope, as required per the scope of work.

11.3 Computer Modeling and Simulation

11.3.1 All software shall be defined by the OE and approved by JEA for use.

11.3.2 Specify or perform electrical power studies. JEA requires all electrical power studies such as load flow, arc flash, short circuit, protection coordination, breaker/relay settings and motor starting analyses to be performed in a project defined power system study software suite.

11.3.2.1 These studies shall only be performed in approved power system analysis software(s) (not converted or re-performed from unapproved software). All studies shall be done in “native” format.

11.3.2.2 JEA and the OE shall agree upon the level of detail to include in the model, per the needs of the project and JEA specifications.

11.3.3 Include time to provide field verification as necessary for any existing assets to be modeled.

11.4 General JEA Generation Electrical Power Design Requirements

11.4.1 Define generation electrical power design requirements, as required. This includes any power system studies and design criteria.

11.5 Relay/Breaker Protection and Control

11.5.1 Define the design requirements for relay and breaker protection and control.

11.5.2 All coordination studies shall be combined with arc flash results to ensure the arc flash energy values are within acceptable limits.

11.5.3 JEA and the OE will review and approve all settings prior to implementation.

11.6 Bus Work, Cabling and Raceway

11.6.1 Specify the design requirements for a complete cable schedule to support the scope of work using JEA’s standard cable schedule template/spreadsheet. This includes the following items at a minimum:

11.6.1.1 Cable Name/Tag

11.6.1.2 Size and number of conductors, including number of spares.

11.6.1.3 Insulation voltage and type, shield type if applicable.

11.6.1.4 Length (not including pull slack)

11.6.1.5 Routing using raceway names/tags (unless routes are to be determined by Engineer, as agreed upon by the JEA point of contact).

11.6.1.6 To/From Drawings (both wiring and physical)

11.6.1.7 Purpose of cable and equipment name/number if applicable.

11.6.2 Cables shall be specified per standard JEA cable specifications.

11.6.3 Cables shall be shielded as required.

11.7 Hazardous Locations

11.7.1 Work with the project team (EPC contractor, equipment suppliers, JEA engineering representatives, and JEA) to determine classification of hazardous area locations and applicability to the project scope.

11.7.2 Hazardous areas throughout JEA Generation facilities and designs must accommodate safe and reliable installations within those areas.

11.8 Lightning & Surge Protection Systems

11.8.1 Specify the requirements for all specifications, designs, plan layouts, details, and supporting calculations for providing proper lightning and surge protection of all major electrical equipment and electrical distribution system.

12.0 GENERAL INSTRUMENT AND CONTROL ENGINEERING DESIGN REQUIREMENTS

12.1 General

12.1.1 This section contains general OE requirements for instrument and control engineering design.

12.1.2 Define instrument and control engineering design requirements and appropriate codes and standards, as required.

12.2 Design Deliverables

12.2.1 Produce specifications as part of the project scope, as required per the detailed scope of work.

12.3 Automation System Standards

12.3.1 Work with JEA, the EPC contractor, and equipment suppliers to specify the appropriate automation system platform to be utilized for the project.

13.0 GENERAL NETWORK ENGINEERING DESIGN REQUIREMENTS

13.1 General

13.1.1 This section contains general OE requirements for network engineering design.

13.1.2 Define network engineering design requirements and appropriate codes and standards, as required.

13.1.2.1 Separate networks for corporate and control systems are required.

13.1.2.2 Network designs must be NERC-CIP compliant.

13.1.3 All network designs shall be reviewed and approved by the OE and JEA's network engineering representative.

13.1.4 Design elements shall be specified in coordination with the JEA's Operations Technology network engineering representative. This includes:

13.1.4.1 IP Address Assignments

13.1.4.2 Device Names

13.1.4.3 Default Gateway, Subnet, and VLAN assignments

13.1.4.4 Switch and Firewall Configurations

13.1.4.5 VPN encryption keys and associated configuration for remote access.

13.1.5 Data Flow Diagrams shall be reviewed and approved during each phase of the design review process.

13.2 Field Implementation Services

13.2.1 Specify requirements for the use of devices when connecting to a JEA network or control system.

14.0 ENGINEERS AT JEA FACILITIES

14.1 Engineers shall follow all site requirements listed in the supplemental conditions for on-site services provided by JEA.

14.2 Site Safety

14.2.1 Per the requirements of the project scope of work, it may be necessary to have the OE's employees visit JEA sites and perform design verification, attend meetings, provide site services, such as commissioning, or perform general design work on site.

14.2.1.1 The OE shall become familiar with and adhere to JEA safety practices for each site. JEA will provide guidance as necessary upon entry into sites.

14.2.1.2 The OE shall meet JEA safety training requirements prior to entry into sites. JEA will provide training requirements prior to site visits.

14.2.1.3 The OE shall be prepared to act in a safe, conservative, and responsible manner around all equipment. The OE's employees shall speak with JEA representatives if there are any questions concerning site safety.

14.2.2 The OE shall be responsible for providing its employees with all necessary Personal Protective Equipment (PPE) prior to coming on site.

14.2.2.1 At minimum, this includes safety shoes (steel toe, leather), hard hat, and safety glasses.

14.2.2.2 Fire Retardant (FR) clothing may be required if the OE's employee is expected to enter areas with electrical equipment. The OE shall provide employees with appropriate FR gear. JEA will advise on what PPE is required should the need arise.

14.2.2.3 At the option of the OE, hearing protection can be provided by JEA (and is readily available at most sites).

ATTACHMENT 1 – TECHNICAL INFORMATION FOR PROPOSED PROJECT

General Project and Scope Information

JEA is developing and obtaining regulatory approval and environmental permits for a nominal 650 MW Advanced-Class Combined Cycle Combustion Turbine (CCCT) power plant using a proposed 1x1 advanced-class turbine configuration. The OE contractor shall provide engineering support for the development, design, and management of the EPC contract for this facility to achieve the required output, efficiency, reliability, and compliance with all applicable environmental regulations, at a minimum. Note that this project and the below information is preliminary and subject to change.

Proposed Location

- The former St. John's River Power Park, in Jacksonville, FL. (Duval County, FL)

Project Details

- Natural Gas - Onsite gas compression is expected.
- Electrical Transmission Tie-In
    - OE scope will include evaluation of transmission voltage, switchyard conditions, and capacity for the 650 MW generation. Will need to address Generator Step-Up (GSU)Transformers and construction of new substation.
- Heat Sink - Wet mechanical draft cooling tower.
- Intermediate usage Combined Cycle.
    - May see a significant number of starts per year.
- Plant turndown desired is low as possible.
- Ramp Rate desired is 60 MW per min from the gas turbine.
- Startup Time for Rapid Response in minutes with purge credit.
- Triple pressure HRSG Drum Type.
    - Steam Turbine to be reheat with three sections – High Pressure, Intermediate Pressure and Low Pressure
- Gas and Steam Generators – Cooling technology to be used is Hydrogen.
- Auxiliary Boiler for the Steam Turbine is desired for startup.
- Black start capability (incremental and/or leverage existing).
- The main Instrumentation and Controls system for the Plant is expected be supplied by the EPC.
- The gas turbine will be dual fuel with sufficient on-site fuel and DI water storage/production for up to 5 days of oil firing.

Existing Project Contractor Support

- Black & Veatch and nFront Consulting have been engaged to develop and perform a Market Test, to develop, submit, and defend an Application for Determination of Need, and to develop and support a Site Certification Application for permitting. B&V and nFront will remain in these roles through completion of the permitting phase activities.
- Black & Veatch has been retained to provide limited OE services required for making a Power Island technology selection to support the development of a market test, regulatory submittals, and permitting. Black & Veatch will continue to support this scope of work.
- Successful Proposer will interface with B&V relative to Power Island selection and regulatory and permitting processes.