Office of the Vice President
and Chief Financial Officer
Procurement Services
https://procurement.ufl.edu/

971 Elmore Drive
PO Box 115250
Gainesville, FL 32611-5250
(352) 392-1331 Fax 352-392-8837

September 30, 2020

ADDENDUM #2 to the University of Florida ITN21KO-113, Combustion Turbine Generator for Central Energy Plant, scheduled to be opened on **October 16, 2020 at 3:00 PM** at the University of Florida, Elmore Hall Conference Room, 971 Elmore Drive, Gainesville, Florida.

This addendum shall be considered part of the Contract Documents for the above mentioned **ITN21KO-113** as though it had been issued at the same time and incorporated integrally therewith. Where provisions of the following supplementary data differ from those of the original document, this addendum shall govern and take precedence. All other terms, conditions, and regulations will apply.

This addendum consists of:

- Responses to questions and requests for clarifications.
- Revision to Item 4.1.1, Response Format, in the ITN Document. Add the following:

  Tab 10: Provide an itemized list of any exceptions to the Technical Specifications.
- Revised Exhibit A – Technical Specifications (Specification Section 481123). Exhibit A is being re-issued in its entirety to provide direction in response to vendor questions. Changes are indicated by red, underlined text.
- Reminder: Proposals are due no later than October 16, 2020 at 3:00PM. See Addendum 1, Q2/A2, for revised requirements. Opening of proposals will be held remotely by Zoom. A link to the meeting will be posted on the Schedule of Bids webpage prior to the proposal opening date and time.

Sincerely,

Karen Olitsky

Karen Olitsky, Procurement Agent III
Procurement Services

Please acknowledge receipt of Addendum #2 by signing below and returning this addendum with your proposal. Failure to include addendum with your proposal may result in rejection.

_____ _____

Signature Company Name

_____ _____

Company Address City/State/Zip

Questions and Responses

Q1. Page 3 / Section 3.3-3.5. For the purpose of providing Installation, Commissioning, Startup and Testing Supervision, please provide a top level project schedule with the below major project milestones at a minimum:
- Equipment arrival at site (GT/ST/HRSG)
- Foundation ready for equipment installation
- Building construction start / substantial completion
- Cold commissioning
- Hot commissioning
- Performance test
- Commercial operation date

A1. The Construction Manager will be selected in the next two to three months and dates will be finalized then. See below for a list of high-level milestone dates we can assume as of now.
- *Construction Start: August 2022*
- *Equipment Delivery: March 2023*
- *Commissioning Start: March 2025*
- *Commissioning End: July 2025*
- *Commercial Operation Date: November 2025*

Q2. Page 7, Section 8-j, the electrical and steam demand profiles were based on historical data. Can you share actual and expected demand profile (hourly, daily, monthly, etc.)? Any additional information would help.

A2. See Addendum 2, Attachment 10.

Q3. Page 7, Section 8-l, the power demand over what can be generated will be purchased at current utility rates. Please provide expected average electric rate and its fluctuation for evaluation purposes. Furthermore, in case additional power is generated, will the utility purchase power back and at what expected rate?

A3. Refer to Duke Energy Florida GSDT-1 and SS-1 rate schedules using transmission voltage. Intent is to limit power production to prevent export of power. Utility will not allow power export to the grid.

Q4. Page 10, Section 3.0 Schedule of Events, due to the limited time from the date we have received a copy of this ITN (9/16), we would like to request an extension of 1 week to Oct 16 for submission of the proposal.

A4. Requested noted and confirmed.

Q5. Pg 16, Section 2.2, Paragraph A-19, per minimum indoor temperature requirement of 45 F in Attachment 1 “Anti-Icing” will not be required for our equipment.

A5. Proposal should clearly identify method of anti-icing, if required based on site conditions. Please note that 45F is the indoor temperature. The combustion air intake will be outdoors.

Q6. Pg 17, Section 2.3, Paragraph B-1, what are the required guaranteed emissions for the complete power plant system as this will impact the turbine offered and its emissions guarantee.

A6. Emissions targets will be defined at a later date, after vendor selection. Combustion turbine vendors are to meet the requirements specified such that final emissions may be determined. Post combustion emissions control will be included by others, after vendor selection.

Q7. Pg 17, Section 2.3 Paragraph B-1, NOx emissions shall not exceed 25 ppmv conflicts requirement in Attachment 2 (< 15ppm)

A7. 25ppmv is to be used.

Q8. Pg 20, Section 2.4, Paragraph A-7, same as above, per minimum indoor temperature requirement of 45 F in Attachment 1 "Anti-Icing" will not be required for our equipment.

A8. See previous response to Q5 on this subject.

Q9. Pg 20, Section 2.4, Paragraph A-8, we would like to take exception to furnishing lube oil for first fill and subsequent initial operation

A9. Exceptions should be clearly stated in Tab 10 of the proposal.

Q10. Pg 21, Sect 2.4-B, please clarify the reason for requirement of a highly engineered Fuel Gas Conditioning skid with "full-flow-capacity relief valves" and "double-wall, vented waste drain tank"? Per our experience with pipeline NG in the area, a simple particle fuel filter should be sufficient. We would like to know the provided fuel pressure and temperature that will be on the inlet side of this skid, and if possible, any history of fuel problems in the past (quality, consistency, cleanliness, pressure, etc).

A10. The intent is that the Vendor determine the filtration requirements to meet the Vendor's fuel specifications.

Q11. Pg 22, Sect 2.4-C, we would like to request an exception to the TEWAC generator as the 32 MWe can be met with an air-cooled enclosure design for the generator?

A11. TEWAC is required based on current design criteria since the unit will be installed indoors. Exceptions should be clearly stated in Tab 10 of the proposal and will be reviewed.

Q12. 1.6 Application, E. (the targeted range of electrical output). Targeted range of electrical output 32,000 - 40,000kWe net is understood for CTG. What is the targeted range for Combined Cycle?

A12. There isn't a specific target range for the combined cycle configuration. The steam turbine capacity will be sized to utilize excess steam in the summer for supplemental power generation. Excess steam will depend on the heat recovery potential for the selected gas turbine. Refer to the campus load profiles provided in Addendum 2, Attachment 10.

Q13. 1.6 Application, E. (the targeted range of electrical output). The targeted range of steam production from the available heat of the CTG exhaust to the HRSG which in no more than 95-105 kpph at 450 psig/600°F is understood for CTG exhaust only. According to Attachment 5, the high pressure steam from HRSG is fed to STG and low pressure steam is extracted from steam turbine and fed to header. In order to assume combined cycle performance based on the CTG the Vendor will offer, we would like to know low pressure steam volume (max. and variation), temperature and pressure that would be fed to LP steam header.

A13. Extraction pressure will be approximately 75psig. Refer to the campus load profiles provided in Addendum 2, Attachment 10.

Q14. 1.6 Application, E. (the targeted range of electrical output). Duct burner is shown in Flow Diagram of HRSG. We understand that duct burners are applied if necessary, but not a requisite condition. Is this correct?

A14. The duct burner will be used for supplemental steam production when the unfired capacity is not sufficient to meet campus demand and/or the minimum steam turbine exhaust flow.

Q15. 2.3 PERFORMANCE GUARANTEES, A. Capacity and Fuel Consumption. 1. “Guaranteed Power” which is defined as the 100 percent power output of the CTG, as measured at the generator breaker, expressed in kilowatts, net of package-driven pumps, exciters and other auxiliaries, based on site specific factors, at guarantee ambient conditions and specified fuels. Confirm the location of the generator breaker in the one line diagram, as well as the procedure for measurement of the Guarantee Power at the generator breaker.

A15. Provide revenue grade metering in the TCP to measure power output at the Generator line-side cubicle utilizing VTs and CTs provided with unit. Guarantee will be on the low side of the GSU.

Q16. 2.3 PERFORMANCE GUARANTEES, B. CTG Emissions. Please, confirm that NOx emissions guarantees shall be as per section 2.3 B, 25ppm for NOx and CO, and not as per Attachment #2.

A16. Correct. 25ppm NOX.

Q17. 2.3 PERFORMANCE GUARATEES, B. CTG Emissions. Please confirm that exhaust emissions guarantee shall be as per section 2.3 B (from 75-100 percent guaranteed power output) and not as per follows;

1. Attachment #2
2. 2.4 DESIGN REQUIREMENTS/A. Turbine Package
    1. CTG shall be designed for continuous operation at base load (100 percent), and shall also be capable of load-following operation between 15 percent and 100 percent load.
    Is it possible to change the emission compliance load range from "75%-100%" in to "90%-100%"?

A17. No. Emissions should be guaranteed from 50-100%. Exceptions to be clearly stated in Tab 10 of the proposal.

Q18. 2.4 DESIGN REQUIREMENTS, A. Turbine Package, 4. Turbine performance mapping system shall allow continuous, real-time thermodynamic modeling of CTG for purposes of optimizing

performance. Parameters to be monitored include: Please explain "Turbine performance mapping system."

A18. The Vendor's turbine control system should monitor the points identified. Points should be available for communication to Owner's Plant Control System.

Q19. 2.4 DESIGN REQUIREMENTS, D. Generator control and protection, F. Combustion Turbine-Generator Control System. Confirm the location of the generator protection panel (GPP) with a synchronizing system to be installed.

A19. Provide primary generator protection and synchronization integral to the TCP. Back-up generator protection by others.

Q20. Attachment 2 – GENERAL INFORMATION CTG PERFORMANCE TABLES. For the case of 25F ambient temperature, please define the temperature of WB or RH.

A20. 95% RH

Q21. Attachment 2 – GENERAL INFORMATION CTG PERFORMANCE TABLES. Please confirm that for the performance guarantee point at 70F and 45% RH the OEM shall not consider inlet chilling (without inlet chiller or any inlet cooling arrangement).

A21. Effects of inlet chilling should not be applied to guarantee.

Q22. Attachment 7 - FUEL SAMPLE ANALYSIS – NATURAL GAS. Attachment 7 includes several days of gas analysis, OEM proposes to use standard fuel composition as per tab FG Composition as shown on Tab FG Composition. If this is not possible, please clarify which fuel composition to consider amongst the provided data.

A22. Refer to Addendum 1, Q17/A17.

Q23. Attachment 8 - CENTRAL ENERGY PLANT (CEP) TAG NUMBERING REQUIREMENTS. Please confirm that attachment 8 is only guidance and that KKS numbering system can be as per OEM standard.

A23. Tag numbering as shown in Attachment 8 is preferred.

Q24. LTSA. Will the building design include overhead crane with the capacity to lift GT, and Generator during outages?

A24. That is the intent. However, Vendors should clearly identify requirements for major component removal.

Q25. LTSA. How many starts is UF planning per year?

A25. Plant is to be base loaded year-round. The University plans for one outage per year. Any additional outages required for water wash or other maintenance activities should be clearly identified by the Vendor.

Q26. 2.1 Method of Award, Evaluation Criteria. 6. Physical Arrangement/Space Requirements: -Please provide dimensions (WxLxH) of the allocated site area.

A26. Drawings are provided for Vendor evaluation in Addendum 2, Attachment 4.

Q27. 2.1 Method of Award, Evaluation Criteria. 8. Life Cycle Cost Analysis. Please also clarify whether or not higher output than the maximum demand will be positively evaluated, and lower output than the maximum demand will be negatively evaluated.

A27. Refer to load profiles. The plant capacity will be evaluated for best fit. Excess power will not be exported to the grid.

Q28. 2.1 Method of Award, Evaluation Criteria. 8. Life Cycle Cost Analysis. Please clarify the performance used for the energy produced (line item "l"). Will this be based on a single or multiple point performance at certain ambient temperatures and will these be used with Chillers on or off.

A28. Energy production will vary based on ambient temperatures as well as campus steam demand. Inlet chilling will be incorporated to maintain approximately 50°F combustion air temperature. Refer to load profiles and flow diagrams provided in Addendum 2, Attachment 10.