

Date: September 12, 2017

Subject: **Request for Proposals – Design Build Contract with a GMP**  
West Campus Steam Plant  
Combined Heat and Power Expansion  
University Park  
Project # 0004966

To: AECOM  
A/Z Corporation with PWI  
Burns & McDonnell  
Cogen Power Technologies with Bette & Cring, LLC  
Frank Lill & Son, Inc. with Concord Engineering  
Haskell with ICT  
McGough with KFI  
Poole & Kent Corporation with AEI  
Waldron Engineering & Construction, Inc.  
Whiting- Turner with Vanderweil  
Z&F Consulting, Inc.

## A. INTRODUCTION

The Screening Committee will review responses to this Request for Proposal, which is due in my office at **Noon on September 29, 2017**. The Screening Committee will identify a short list of three teams to be interviewed **between October 30 and November 6, 2017**.

Participation in this selection process by submitting firms shall be at no cost or obligation to The Pennsylvania State University (PSU). The University reserves the right to waive any informality in any or all Proposals, and to reject or accept any Proposal or portion thereof. Additionally, the University may also hold all proposals for up to 45 days and to reject all proposals or to award on the basis of technical merit and the best interests of the University.

## B. PROJECT OVERVIEW AND PROGRAM OF REQUIREMENTS

The Pennsylvania State University intends to add a Combined Heat and Power (CHP) unit at the West Campus Steam Plant (WCSP). The purpose of this project is to address continued campus growth and associated steam demand.

An [Engineering Study](#) has been completed to identify a CHP system that will best fit the parameters of our thermal and electrical demands. A 7 Mega-Watt combustion turbine has been identified as the system best suited. This capacity may be re-evaluated during program validation.

The project objectives include:

1. Design and Build a nominal 7 MW CHP System, including but not limited to a combustion turbine, waste heat recovery boiler, duct burner, new stack, and natural gas compressor.
2. Include Black Start capability for the CHP system incorporating into or modifying the existing utility systems.
3. Replace the oldest steam source (Boiler 8).
4. Demolish Boiler 6, all associated appurtenances, and existing coal handling equipment.
5. Reduce greenhouse gas emissions by meeting or exceeding 16,000 MTCO<sub>2</sub>e.

The Design-Build with a Guaranteed Maximum Price (DB/GMP) delivery method has been selected for this project. The initial phase for preconstruction/design will include the professional design services, CM preconstruction services and the preparation and submission of the GMP. This will be followed by the construction phase for actual construction work. Construction GMP will be established via a change order to the Design-Build agreement when the design is complete. Early involvement of key Design-Assist trade contractors is encouraged. Construction trade packages will be required to be competitively bid unless approved by the owner. Trade contractors identified as critical and included in your team's proposal will ultimately be required to provide detailed breakdown pricing and participate in third party review of pricing. If agreement on pricing is not reached, PSU will require competitively bid package(s). If you plan to self-perform any of the construction work please note this in your submission. Final confirmation of basis of design will be needed once a design-build team is selected.

Certain additional engineering analysis is expected to be included in the scope of work. This includes emissions modeling, noise/sound studies, and energy modeling. The design-build team will be required to prepare and submit all permitting documentation and applications for this project. This includes meeting the requirements of state and local regulatory agencies. The team shall lead the project through public meetings that may be required by regulatory agencies. The team will lead the project through an environmental justice process that may be required by specific permitting agencies. A stack height variance may be required through the local municipality. The University will require the team to complete our environmental checklist at certain points in the design process. It is expected that all designs will be completed using 3D modeling/BIM/VR. Penn State will be an integral part of this team effort and will participate in each of these activities. The DB will lead the initiatives.

The WCSP must be kept fully operational during design and construction.

Plant Controls and Integration: The drinking water, wastewater, and steam utility systems have invested in Delta V controls for plants and system wide integration. The investment includes training of employee and technicians operating the systems. It is the intent of the utility engineers and operators to require Delta V controls for this project. ECI is a trusted partner in integrating and maintenance. Sole source GMP negotiations with ECI is an option. PSU is open to other solutions.

The total project budget, including all equipment and soft costs is \$35.0M. The budget is based on \$26.7M in construction costs, \$3.1M in design-build team soft costs, \$900,000 in owner soft costs, \$2.8M in owner contingency and \$1.5M in escalation/design-build team contingency.

Improvements to the project schedule are anticipated but quality design and installation will remain a priority. Final project schedule will be coordinated with the selected design-build team.

### C. PROJECT DELIVERY INFORMATION

1. Design Build: The design build delivery process was selected to capitalize on early contractor involvement, reduce project schedule, and maximize the owner opportunity for design input. PSU will issue a preconstruction services contract for design phase services and fix an agreed upon GMP % markup. A single GMP change order or phased GMP change orders will be issued to the design-build team as needed for project milestones. Fee proposals will be requested of the three selected short list firms.
2. Procurement: PSU will entertain self-performance on this project. PSU will also entertain key contractors as part of your initial team. If a contractor is part of your submitted team please be clear on their scope of work and reason for selection. All other construction trade packages will be required to be competitively bid unless approved by the owner. Trade contractors identified as critical and included in your team's proposal will ultimately be required to provide detailed breakdown pricing and participate in third party review of pricing. If agreement on pricing is not reached, PSU will require competitively bid package(s). This project will be subject to Pennsylvania Prevailing Wages.
3. Contract Information: PSU has recently adopted a modified version of the Consensus Document Design Build Contract. A draft version of the agreement is provided, 1-DB Contract. In submitting a response to this request the Professional is acknowledging that they concur with, without exception, the terms, conditions, and provisions as contained in the University's 1-DB Contract. By submission, you are confirming that you are able to meet all insurance and bonding requirements for the project. Design Build teams should review this contract in detail and provide exceptions to the PSU Project Manager during the selection process.
4. Substantial Completion: The 1-DB Contract contains draft Substantial Completion language. The final acceptance and confirmation of emissions testing will be part of the final turn over. The complexity of warranties and the definition final Substantial Completion will be included in the GMP contract negotiations. The Design Phase contract agreement will include anticipated start of construction and final completion dates to frame understanding of scope of work. Start-up activities and completion of will be linked to substantial completion.
5. Adherence to Schedule: Once established by contract, the project schedule will be critical. The project team shall make every effort to maintain the substantial and final completion dates. The Owner expects to be generating electricity for campus use on the substantial completion date. Costs associated with not meeting the schedule can be calculated in dollars per day of actual financial impact to the Owner. Liquidated damages will be determined in the contract negotiations but the team can expect the cost impacts to be in the range of \$7,200 to \$12,000 per day during certain times of the year. During peak summer days, short range cost impacts could exceed \$50,000 per day. The Owner also recognizes that superior performance should be

rewarded and a performance based incentive program will be developed during the contract negotiations. Specific performance measures will be developed, including but not limited to schedule milestones. These measures will be scored and will be used to determine potential incentives

6. **Owner Representation:** The Penn State Physical Plant staffing will include a project manager, utility engineer, and plant representative that can provide one, sometimes two days per week, to the project delivery. It is the intent that the selected design build team will work with the owner to identify scope and participate in selection of an appropriate third party firm to provide project quality assurance review and inspection.
7. **Scope of Services:** The scope of services are generally outlined in the design build agreement referenced above. Scope of services will be further outlined in the project approach in the design build team's proposal. The project delivery process will require weekly and monthly executive level reports for distribution to PSU stakeholders as well as coordination with the PSU project manager for materials to be presented to the Project Decision Review Board.
8. **Owner Review:** The Owner will formally review the project documents at Schematic Design, Design Development and Construction Document phases. The project will also be presented to the Project Decision Review Board (PDRB) at least two times before construction may start. The deliverables for this PDRB presentation will require a current budget and schedule provided by the project team. The Owner's project leader will prepare the presentation with assistance from the project team. Penn State implements a front-end loaded style of project delivery by encouraging early planning phases. The materials needed for this presentation are needed roughly one month before the proposed meeting date. The PDRB typically meets the month before the Board of Trustee meetings.
9. **Construction Documents:** The selected project team will work with the owner to identify construction document delivery requirements as related to necessary project restraints. PSU may choose to award GMP(s) at 60% CD completion to meet the schedule, however, the owner will be due final 100% project drawings for review prior to agreed upon construction milestones. Upon close out complete as built documents, active dwg files, and 3D models as applies will be due to the owner for close out. Along with operations and maintenance documentation these deliverables will be tied to the payment schedule of values.
10. **Project Close Out:** The owner will work with the selected design build team to determine appropriate performance testing parameters and warranty durations. The phasing of the project to maintain operation of the plant at all times will make it probable that there will be interim and final performance testing requirements.
11. **Building Information Modeling:** Building Information Modeling requirements are detailed in the building design standards of the [www.opp.psu.edu](http://www.opp.psu.edu) website. Penn State believes in the value of 3D modeling and integration of information management with operational turn over. The unique nature of this capital project may dictate reliable usage of this technology in the wastewater

market. The Submission Requirements asks for additional details on proposed scope of BIM for this project.

12. Permitting: It is the responsibility of the design build team to assist in identification and procurement of all DEP, L&I, E&S, and all other identified permit requirements and regulatory approvals. Design-build teams or their representatives **SHOULD NOT** contact DEP, L&I or any other permitting or governmental entity as part of this selection process. Penn State demands direct representation at all DEP interactions and notification of other contacts of this type.
13. Design Standards: It is the responsibility of the design team to comply with the posted design standards on the Penn State OPP website; [www.opp.psu.edu](http://www.opp.psu.edu). If exceptions should be made to meet the project goals or objectives the design team must notify PSU during the design review process. It is understood that this is a unique capital project, however it does not exclude the team's responsibility to comply with building quality, operational safety, and energy efficiency standards.
14. Education and Research: The Pennsylvania State University's mission is delivered via integrated programs of teaching, research, and service. The Plant has been integrated into this large and diverse system for decades. The renovation of the plant could negatively or positively impact this relationship. It is goal of this project to maintain, and if possible, improve this integration.
15. Collaboration: PSU believes that excellent communication and early involvement by critical trade contractors increases the quality and value in construction project delivery. The selected design build team is expected to be a partner in creating a collaborative environment; increasing the quality of the project, the environment of the project site, and the value to PSU. The application of lean design and construction principles is important to PSU.
16. Quality Control: The quality design and construction of the project is critical for project success. PSU anticipates working with the team to create and execute a comprehensive quality control process as proposed and managed by the design-build team.

#### D. SELECTION AND IMPLEMENTATION MILESTONES

- RFP Issued: September 12, 2017
- **Submission of Proposals: Noon, September 29, 2017**
- Shortlist Selections: October 13, 2017
- **Shortlisted team workshop at PSU: Afternoon of October 24, 25 or 27, 2017**
- Interviews: Between October 30 and November 6, 2017
- **Board of Trustees Selection of Team + Post Results: November 10, 2017**
- Contract Award / Letter of Intent: December 20, 2017
- **Construction start date: November 2019**
- Project Completion Date: October 2021

## E. PROPOSAL REQUIREMENTS

Deliver Ten (10) hard copies of your proposal and one (1) digital copy on a thumb drive to:

Greg Kufner, University Architect  
The Pennsylvania State University  
206 Physical Plant Building  
University Park, PA 16802

814-865-8177  
Email: [gak21@psu.edu](mailto:gak21@psu.edu)

Hard copies of the Proposals are due September 29, 2017 at Noon, Eastern Standard Time. A PDF version of your proposal should be included on a thumb drive within your submission. Proposals received after this date and time can be automatically rejected. Proposals shall be provided in an 8.5" x 11" format. Limit submission to thirty (30) single-sided pages maximum (15 double-sided). Double-sided printing is strongly encouraged.

*If you have any questions regarding this request please contact Greg Kufner ([gak21@psu.edu](mailto:gak21@psu.edu)) or Jeff Spackman, the Project Manager at [djs47@psu.edu](mailto:djs47@psu.edu).*

**A cover letter shall be provided from the proposed leader(s) of the Candidate Team submitting.** The cover letter should be one page maximum. The cover letter should include the following:

- A. This letter should establish the contact information (address, phone, and e-mail) for your team's main point of contact
- B. Primary office location of the submitting lead team member
- C. A concise summary as to why your team is best suited for this project
- D. Statement of certification that all information provided in your submittal is accurate

### **Collate and bind proposals according to the following four (4) Sections:**

*(Proposals shall follow the below format, in the order stated to ensure that all pertinent information necessary for evaluation is included and easily comparable by Selection Committee. The cover letter, table of contents, and divider pages will not count towards the RFP page limitation. OPP encourages you to be as brief as possible without sacrificing accuracy and completeness.)*

### **Section 1.0 –TEAM STRUCTURE**

- A. Identify prime firm and key partner firms, size of prime firm, each firm's role on this project, and each firm's qualification and experience on similar projects. Identify past collaboration between prime firm and key partners.
- B. Provide team organizational chart. Include prime and key partners, and provide the name and role of key team members. Include all identified partner companies, sub-consultants, to be

determined team members, and PSU. Provide specific names of personnel when possible.

- C. Provide resumes of key team members identified in the organizational chart. Include registrations/ certifications, educational background, years of experience, relevant project experience and their respective role on each project. By submission of proposal your firm commits to the Owner that the proposed team members will be those who will be assigned to the project.
- D. Indicate any Lean Design and Construction experience of the key team members and identify the specific lean principles you intend to apply to this project.
- E. Briefly describe your proposed approach to comply with our Diverse Business Enterprise Program (DBE) and maximize firm participation within your proposed team. Highlight DBE representation on your team and proposed staff diversity. DBE program requirements can be found on this link: <https://opp.psu.edu/planningdesignconstruction/diverse-business-enterprise-program-dbe>

### **Section 2.0 – TEAM QUALIFICATIONS**

- A. Provide a summary of qualifications and expertise of the proposed staff with specific emphasis on:
  - 1. Distinguishing factors of team differentiation
  - 2. Experience delivering projects of a similar scope, scale, and complexity
  - 3. Expertise in the planning, design, and delivery of combustion turbine/HRSNG projects
- B. Identify a maximum of five (5) example projects within the last ten (10) years, which BEST exemplify qualifications and expertise listed above for the proposed team. Please be clear on their involvement on the projects listed. Include the following for each project at a minimum: Owner, year completed, construction volume, services provided (including the contractual delivery method), and MBE/WBE % achieved. Clearly indicate projects that more than one of the proposed key personnel have previously worked together.

Develop a matrix that illustrates the similarities between the example projects to the West Campus Steam Plant project.

In matrix form, show the participation of individuals from the proposed team on the identified projects. List team member's respective role on each of the example projects.

- C. List errors and omissions insurance coverage limits of the lead design entity of the candidate team. Provide information on errors and omissions claims in the last (7) seven years.
- D. Provide historic breakdown of project performance. Include history of project budgets compared to completed construction cost, history of change orders, average response time to RFIs, and other key firm profiles.
- E. References: Provide two (2) recent client letters of reference, for the Design-Build Team, for projects of similar type and scope; please make sure that their email and telephone numbers within their signature are still accurate. In addition, please include at least one (1) recent letter of reference for the named project superintendent.

### **Section 3.0 – PROJECT APPROACH AND SCHEDULE**

- A. Demonstrate your understanding of the project program by highlighting the key design issues and outlining your preferred specific tasks/approach in the first 100 days of your engagement as the successful design build team.
- B. Identify and discuss any additional design issues that, in your opinion, are the key drivers of this project that may have been overlooked or inadequately addressed in this RFP and Attachments.
- C. Scope of Services
  - 1. Briefly outline your project specific Design-Build approach and processes.
  - 2. Highlight any unique qualities, innovations, practices, and/or techniques that make your firm particularly suited for this project.
  - 3. How will you utilize technology on this project and what value will it bring to the project?
  - 4. Outline your initial plan on acquiring the necessary permits for this project.
  - 5. Provide evidence of the team's commitment to sustainable design that is relevant to this type of project.
  - 6. Be clear on the procurement approach including the major equipment components. Penn State will entertain opportunities for self-performing work and inclusion of key trade contractors as part of your team. Clearly indicate the scope you propose to self-perform and the scope of work for any key trade partners included on your team.
- D. Project Delivery Controls
  - 1. Outline the estimating and cost control methodology you plan to implement on this project. Give us your impression of the proposed project budget.
  - 2. Provide a proposed design and construction schedule for this project in graphic form allowing three weeks for any necessary Penn State University reviews. Design is expected to start upon execution of the pre-construction contract (November 2017). Construction completion is expected by October 2021. The target date of November, 2019 has been established for Board of Trustees approval to commence construction. Highlight any innovative thoughts on the schedule including acceleration.
  - 3. Clearly communicate the quality control strategies and processes that will be implemented during design and construction.
  - 4. Provide a brief description of your approach to project safety (please include your current EMR). How will your team plan to utilize any Prevention through Design (PtD) techniques to improve both construction and building operation?
  - 5. Provide a draft site logistics plan for the project. Include a narrative to assist with our understanding of how you intend to control and access the project site during construction.
  - 6. Provide a short narrative on your plan to work in an operating plant without causing any disruption or unplanned outages.

E. Project Environment

1. How will your firm ensure a truly collaborative Project Team environment and describe the integrated processes you plan to employ on this project?
2. How will you integrate the design team, subcontractors, and trades into a lean design and construction process?

**Section 4.0 – PROJECT-SPECIFIC KEY DRIVERS AND IDEAS**

- A. What are the biggest risks/challenges that you feel you will face on this project? Relatedly, what is your plan-of-action to mitigate those risks?
- B. How would you define value on this project?
- C. Describe your approach to dealing with the community. Has your team presented projects in front of activists and unfriendly audiences?
- D. What level of air dispersion modeling do you expect to be required?
- E. Describe your process to address noise related issues on this project.
- F. Briefly describe your preferred procurement process of the long lead and high dollar equipment on this project. How will you figure total cost of ownership into the selection equation?
- G. Describe any innovative ideas your team can bring to this project.

Thank you for your anticipated participation in this RFP process. The Pennsylvania State University looks forward to reviewing your responsive proposal for this important project.

Attachments:

Project Delivery Review Board Presentation, June 2017  
Sample 1-DB Contract  
West Campus Steam Plant Feasibility Study  
Project Delivery System Chart