DGS-30-456
(Rev. 06/17)

Construction Management at Risk
Procurement Review Submittal Form

General Project Information

Agency Name:	207 (University of Virginia)	
Is the agency a covered institution per §2.2-4379?		yes
Project Name:	UVA Main Heat Plant New Boiler 6 Installation	
Project Number:	207-B1262-000 (UVA PO4696)	

Other Project Information

Advising A/E Name:	Jacobs	License Number:	407002534
COV Sections: §2.2-4380.B.2, §2.2-4381.C.2			
Attach written determination for use of CM at Risk.			
COV Sections: §2.2-4380.C.2, §2.2-4380.B.1; §2.2-4381.D.2, §2.2-4381.C.1			
Is the procurement process proposed a two-step process?			Yes
COV Sections: §2.2-4380.C.2, §2.2-4380.B.7; §2.2-4381.D.2, §2.2-4381.C.7			

Agency Reasons for Use of CM at Risk

Construction Cost (COV Sections: §2.2-4381.B.1, §2.2-4380.C.3, §2.2-4381.D.3)	Yes
Building Use (COV Sections: §2.2-4381.B.1, §2.2-4380.C.3, §2.2-4381.D.3)	Yes
Project Timeline (COV Sections: §2.2-4381.B.1, §2.2-4380.C.3, §2.2-4381.D.3)	Yes
Need for Project Phasing (COV Sections: §2.2-4380.C.5, §2.2-4381.D.5)	Yes
Project Complexity (COV Sections: §2.2-4381.B.1, §2.2-4380.C.4, §2.2-4381.D.4)	Yes
Value Eng. and/or Constructability Analysis Concurrent with Design (COV Sections: §2.2-4381.A)	Yes
Need for Quality Control/Vendor Prequalification (COV Sections: §2.2-4380.C.5, §2.2-4381.D.5)	Yes
Need for Cost/Design Contol (COV Sections: §2.2-4380.C.5, §2.2-4381.D.5)	Yes

Supporting Information for Procurement Method Selection

Project Use (i.e. lab, classroom, office, etc.): (COV Sections: §2.2-4380.C.3; §2.2-4381.D.3)

This is a stand-alone project to expand the current heating capacity of the existing University of Virginia's Central Utility Heat Plant in support of ongoing facility growth. It is not part of a phased upgrade. The Plant supplies steam and hot water to the Medical Center buildings and associated facilities. Scope includes the purchase and installation of one or more new hot water boiler(s), associated auxiliary system upgrades, and architectural and structural improvements to the existing facility, which was designed with a bay for future boiler installation. The CM will need to modify this bay to accommodate this new boiler(s). In addition the CM will need to make tie-ins/ upgrades to, or replace a number of auxiliaries which will include, but not be limited to: feed water pumps, deaerators, water treatment systems, forced or induced draft fans, air compressors, natural gas and distillate fuel systems, motor control center, electrical, plumbing, pollution controls, boiler controls, modifications to the existing stack, modifications to the existing continuous emissions monitoring system, and similar work.

Construction Cost:	$7,600,000	(COV Sections: §2.2-4380.C.3; §2.2-4381.D.3)

Project schedule: (COV Sections: §2.2-4380.C.3; §2.2-4381.D.3)	Design Start Date	11/2/2017	Design Compl. Date	6/26/2018
	Const. Start Date	6/27/2018	Const. Compl. Date	9/9/2019
	Attach bar chart schedule to illustrate fast tracking or other schedule complexities. (COV Sections: §2.2-4380.C.3, §2.2-4380.C.4; §2.2-4381.D.3, §2.2-4381.D.4)			

Additional description to highlight key attributes that affect the project complexity, need for value engineering/constuctabilitiy analysis, qualitiy control/vendor prequalification, and cost/design control as indicated by "Yes" answers above:

1. The complexity of incorporating a one-of-a-kind boiler(s) into an existing, operational utility plant which includes coordination with the manufacturer during both design and construction for continuity of service including factory involvement in the assembly of the boiler(s), which will arrive in pieces and will need to be assembled in the field involves significant schedule and quality risks. Having a CM under contract early in the design phase is critical to managing that risk.
2. This coordination includes the logistics of parts delivery and installation (both of the components of the boiler itself and other work required for tie-in).
3. As the schedule for this project has a domino effect on other projects (including the hospital) that need the additional boiler plant capacity to ensure uninterrupted service, a CM procurement provides opportunities for early releases beyond the boiler release to accommodate manufacturing delays, partial shipments, and other potential delays.
4. The CM can provide value management options early during design with respect to the design of the boiler and other components to facilitate the most efficient installation methods and limit disruption to the operations of the existing plant.
5. To ensure that the installation is completed utilizing the most qualified personnel, the CM can prequalify subcontractors for the critical trades. In addition, during the preconstruction phase, the CM can coordinate with both the A/E and the boiler manufacturer to establish appropriate procedures for ensuring timely, complete inspections, cleaning, and commissioning of the boiler.

(COV Sections: §2.2-4380.C.4; §2.2-4381.D.4)

Submitted by: Don Sundgren Date: 10/4/2017

Signature:

Title:

(Agency Head or Authorized Representative)

Donald E. Sundgren
Associate Vice President and Chief Facilities Officer

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Based upon the information provided by the Agency, the use of Construction Management at Risk IS recommended for this project.

Recommended by: W. M. Coppa 10/6/17

W. Michael Coppa, RA
Acting Director, Division of Engineering and Buildings

This is a stand-alone project to expand the current heating capacity of the existing University of Virginia's Central Heating Plant in support of ongoing facility growth. It is not part of a phased upgrade.

Scope includes the purchase and installation of one or more new hot water boiler(s), associated auxiliary system upgrades, and architectural and structural improvements to the existing facility, which was designed with a bay for future boiler installation. The CM will need to modify this bay to accommodate this new boiler(s). In addition the CM will need to make tie-ins/ upgrades to, or replace a number of auxiliaries which will include, but not be limited to: feed water pumps, deaerators, water treatment systems, forced or induced draft fans, air compressors, natural gas and distillate fuel systems, motor control center, electrical, plumbing, pollution controls, boiler controls, modifications to the existing stack, modifications to the existing continuous emissions monitoring system, and similar work.

The boiler(s) for this plant is not likely to be a packaged item. The equipment fabricator will ship it in many pieces for construction in the field. Contracting for the procurement of this equipment by the CM is critical for a number of reasons: 1) It is best to have one entity (i.e. the CM) solely responsible for any disputes between the equipment fabricator and the boiler construction labor crews; 2) On-time delivery of components may need to be coordinated due to laydown or storage space constraints; 3) If corrosion is found on any components temporarily stored outside, UVA does not want to be at fault for improper scheduling of deliveries with the equipment fabricator; 4) The CM will be responsible for the significant risk related to potential construction schedule delays related to shipping, delivery, and coordination, and any final quality concerns when they purchase this equipment; and 5) The CM will coordinate and have responsibility for the procured equipment so that all aspects of installation are considered.

Project success will require close coordination/ continuity between the CM and the design team throughout the design and construction process for many reasons, which include:

1) Final product specific design details will require a full understanding of the make and type of boiler equipment for the CM to install. This level of detail can only be provided with the CM's assistance once the performance specifications have been developed and competitively bid and an early purchase contract for the boiler(s) released;

2) Given the level of complexity with field-erected boilers – quality control and quality assurance needs to be continuous and closely coordinated. UVA intends to provide quality control through a highly qualified CM, as provided by technically competent and correct installation the first time. The CM will ensure this by on-site supervision. The CM provides an additional layer of quality control, since the CM is also responsible for making corrections to any deficient materials or craftsmanship provided. UVA will provide quality assurance through special inspections. Bringing the CM on board during design will establish/ ensure means and methods to incorporate quality control and performance into the project early on. For maximum efficiency, the CM will assist in developing the methodology in advance for testing for the critical fabrication of field-erected components (i.e. welds and pressure ratings);

3) Modification of existing systems will require detailed advance coordination to ensure uninterrupted service of the existing plant to the University and Hospital during the construction period and commissioning process;

4) A highly qualified CM must have experience with and knowledge of boiler installations, and use that knowledge to assist the project team in evaluating constructability and value management/ cost control options during the design phase;

5) The project schedule is driven by and being expedited for the Central Heating Plant's need to increase capacity prior to bringing on new loads including, but not limited to the new University Hospital Expansion project. This can only be accomplished with an early release and purchase of the boiler(s) by the CM; and

6) Pre-qualified bidding would not provide the CM design phase services that UVA requires for this project. It is essential to project success that we have a CM on board early during the design phase for input so we can engineer cost savings and schedule enhancements into the design and construction process. The Central Heating Plant is in continuous operation. Developing a design with the CM and exploring means and methods throughout will result in a more cohesive design, minimize impacts and interruption to existing systems, and allow for improved space efficiencies. The CM will be responsible for delivering a fully commissioned and functional plant assembly. If the project requires other specialty contractors, such as firms that provide cleaning and passivation of equipment and pipe systems after construction and prior to start-up, it will be the responsibility of the CM to ensure that all such scope and cost is adequately included in the project planning.