



# UNIVERSITY OF KENTUCKY Purchasing Division

## REQUEST FOR PROPOSALS

UK-2203-22

ADDENDUM # 1

10/15/2021

**ATTENTION: This is not an order. Read all instructions, terms and conditions carefully.**

**IMPORTANT: OFFER AND ADDENDUM MUST BE RECEIVED BY 10/22/2021 @ 3:00 P.M. LEXINGTON, KY TIME**

Offeror must acknowledge receipt of this and any addendum as stated in the Request for Proposal.

1. Please refer to and incorporate within the offer, the attached documents for Addendum #1.

- Answers to Written Questions
- Updated Insurance Requirements
- UK Supplier Diversity Initiative

**OFFICIAL APPROVAL**  
**UNIVERSITY OF KENTUCKY**

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Procurement Manager / (859) 323-5405

**SIGNATURE**

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Typed or Printed Name

University of Kentucky  
Purchasing Division  
322 Peterson Service Building  
Lexington, KY 40506-0005



# UNIVERSITY OF KENTUCKY

## Purchasing Division

### Written Questions and Answers

UK-2203-22

PEMS for CUP Boilers 2 and 3

No.	Question	Answer
1.	<b>PEMS Protocol for Review and Approval by the State of Kentucky.</b> Prior to the start of any PEMS project, it is typical to submit a detailed test plan (protocol for operations monitoring to predict NOx emissions" as required by 40 CFR 60, Subpart Db. One needs to explain to the regulators how you plan to do the testing to ensure that there are no deficiencies. With that being said, could you confirm that this protocol is required by all bidders as part of the project scope?	Yes, the test protocol is required to be submitted to UK for review 10 days before required submittal to the State. UK will finalize and submit to the State.
2.	<b>Concurrent Testing</b> -- When two boilers are involved, it is most cost effective to perform concurrent testing of both boilers at the same time. Will this be allowed?	UK will make every attempt to run the boilers simultaneously but cannot guarantee due to the load fluctuation per boiler required for testing versus the load demands of UK.
3.	<b>Boiler Operations</b> -- Will UK provide a boiler operator that could operate the boilers in accordance with the PEMS data collection schedule during the first few days of data collection? Both fuels would need to be included during this period.	Yes, UK has on-site operators available and involved to adjust load and fuels during data collection for PEMS model development.
4..	<b>Oil Fired Operations</b> -- Could you identify the approximate number of oil-fired operating hours per year per boiler on oil fuel? Is it a backup fuel?	Historically, boilers have operated less than 48 hours per year as a backup fuel. However, a recent permit revision allows the boilers to be co-fired instead of using oil as a backup fuel, so this run time may increase.

5.	<p><b>Data Collection Duration</b> -- Does UK have a minimum number of days expected for the PEMS data collection? Typically, a valid PEMS data collection program would utilize a week of data collection covering all operating loads, followed by two additional weeks of normal operation across various loads to provide a robust model. During this period, the boilers would also need to include a shutdown and startup event in order to determine emissions during these transient events.</p>	<p>UK will work with the vendor to provide necessary boiler operations for the PEMS required development time. UK expects each offeror to detail the timeline based on its experience and applicable regulatory requirements.</p>
6.	<p><b>Certification Test Report</b> -- Can you confirm that these boilers require FULL compliance with the EPA's Performance Specification Test (PS-16), found in <a href="https://www.epa.gov/emc/performance-specification-16-predictive-emissions-monitoring-systems">https://www.epa.gov/emc/performance-specification-16-predictive-emissions-monitoring-systems</a>. Further, can you confirm that all testing required for PEMS PS-16 compliance including Sensor Validation, Relative Accuracy Test Audits (RATA testing) at three loads, and all statistical analyses are required for this RFP?</p>	<p>Full compliance with EPA PS-16 is required by KY DEP and EPA. As a result, the corresponding requisite analyses are within the scope of the RFP.</p>
7.	<p><b>Vendor Access to PEMS Computer</b> -- Can UK confirm that authorized vendor users will be granted ID's to login to the UK server or computer system to load PEMS software and finish the configuration, data downloading, report development, and provide system support?</p>	<p>Yes, UK will provide necessary access to a server and/or IP address containing the computer system to install and support the PEMS.</p>
8.	<p><b>Boiler Ultra Low Load PILOT firing</b> -- Will the boilers require any type of analysis of pilot firing (ultra low load) as part of the PEMS project? What is the expected load range for normal boiler operation?</p>	<p>Yes, the PEMS should collect and analyze data from ultra-low load with the ability to edit data, e.g., a false signal that should be coded as downtime instead of in operation. Normal operation is 30-40% capacity.</p>
9.	<p><b>Startup/Shutdown Emissions</b> -- Can you confirm that all bidders must include an evaluation and methodology to address transient emissions during startups and shutdowns until the boilers reach the "normal" operating range of the boilers. Some PEMS systems ignore operation below a minimum operating load.</p>	<p>PEMS system must include an evaluation and methodology during transient operations. System must also have the ability to edit data, e.g., a false signal that should be coded as downtime instead of in operation.</p>

10.	<p><b>PEMS Prediction Methodology</b> -- Can you confirm that UK will require a working stand-alone PEMS model for QA purposes to periodically check the PEMS calculations based on manual input of boiler data? USEPA requires that PEMS systems be able to prove that the model that was certified to PS-16 remains in place during all subsequent testing of the boiler.</p>	<p>Yes, the PEMS model must satisfy all applicable KY DEP and EPA requirements, including those for quality assurance.</p>
11.	<p><b>Boiler Signals</b> -- Can UK provide a list of boiler signals available for both boilers in the Tridium building automation system? We would need access to boiler operating data. As a minimum, we would need fuel flow (gas, oil), steam flow, steam pressure, in situ Boiler oxygen level (wet basis), air flow signal(s), and flue gas recirculation. There may be other signals required depending on the type of FGR system, and air supply.</p>	<p>Below are the signals known to exist for Boilers #2 and #3. While others may be available for connection to Tridium, it should not be assumed they are currently pulled in:</p>

Photo 1: Boiler #2 Points

Photo 2: Boiler #3 Points

Database		Database	
Name	Out	Name	Out
<b>N</b> Econ_Ent_Temp	221.6 °F {ok}	<b>N</b> Econ_Ent_Temp	249.7 °F {ok}
<b>N</b> Econ_LVG_Temp	273.0 °F {ok}	<b>N</b> Econ_LVG_Temp	226.9 °F {ok}
<b>N</b> NG_FLOW_CFH_x10_IN	4276.00 cfh {ok}	<b>N</b> NG_FLOW_CFH_x10_In	-6.92 cfh {ok}
<b>N</b> OIL_FLOW	-1.0 gal/hr {ok}	<b>N</b> OIL_FLOW	-7.8 gal/hr {ok}
<b>N</b> Steam_F	38843.2 lb/hr {ok}	<b>N</b> Steam_F	33.9 lb/hr {ok}
<b>N</b> Feedwater_F	10488.0 gal/min {ok}	<b>N</b> Feedwater_F	70.2 gal/min {ok}
<b>B</b> Blowdown_Vlv	Active {ok} @ def	<b>B</b> Blowdown_Vlv	Active {ok} @ def
<b>B</b> Feedwater_Vlv	Active {ok} @ def	<b>B</b> Feedwater_Vlv	Active {ok} @ def
<b>B</b> Chem_Feed_Pmp_S	Off {ok}	<b>B</b> Chem_Feed_Pmp_S	Off {ok}
<b>B</b> Status	ON {ok}	<b>B</b> Status	OFF {ok}

	Item	Value	Description
	BLR1 B1F-F	0.0 per ho...	Blr 1 Fuel Flow
	BLR1 B1FW-F	-31.6 gpm	Blr 1 Feedwater Flow
	BLR2 B2FW-F	10,488.0 ...	Blr Feedwater Flow
	BLR2 B2STM-F	40,501.9	Blr Steam Flow
	BLR2 HEIN-T	220.8 deg...	HE Econ Feedwtr In Temp
	BLR2 HEOUT-T	273.9 deg...	HE Econ Feedwtr Out Temp
	BLR3 B3FW-F	29.0 gpm	Blr Feedwater Flow
	BLR3 B3STM-F	38.8	Blr Steam Flow
	BLR3 HEIN-T	222.8 deg...	HE Econ Feedwtr In Temp
	BLR3 HEOUT-T	203.3 deg...	HE Econ Feedwtr Out Temp
	CR CRTP-P	41.1	Cond Recvr Tran Pu Pres
	CR CRTPS-T	142.4 deg...	Cond Recvr Tran Pu Sup
	CR CST-F	90.2 gpm	Cond Recvr Tank Flow
	CR CSTS-T	82.8 deg F	Cond Storage Tank Supply
	CR CTS-P	43.3 psiG	Cond Recvr Tank Sup Pres
	DA2 DA2FW-F	16.0 gpm	DA2 Feedwater Flow
	DA2 DA2FW-P	250.0 psiG	DA2 Feedwater Pressure
	DA2 DA2FWS-T	226.7 deg...	DA2 Feedwater Sup Temp
	MISC_BLR BLR1-F	0.0 per ho...	Feed to Aarell
	MISC_BLR STM-P	150.5 psiG	Main Steam Pressure
	MISC_BLR BLR1-F	0.0 gpm	BLR1 Flow
	MISC_BLR BLR1-P	0.0 psiG	
	BLR1 B1CFP-S	Off	Blr 1 Chem Feed Pmp Stat
	BLR2 B2CFP-S	Off	Blr Chem Feed Pmp Stat
	BLR3 B3CFP-S	Off	Blr Chem Feed Pmp Stat
	CR CR1-HL	Normal	Cond Rec 1 High Level
	CR CR1-LL	Normal	Cond Rec 1 Low Level
	CR CR1P1-S	Off	Cond Rec 1 Pump 1 Staus
	CR CR1P2-S	On	Cond Rec 1 Pump 2 Staus
	CR CR1P3-S	Off	Cond Rec 1 Pump 3 Staus
	CR CR1P4-S	Off	Cond Rec 1 Pump 4 Staus
	CR CR-HL	Normal	Cond Return High Limit
	CR CRP1-S	Off	Cond Return Pump 1 Sta
	CR CRP2-S	Off	Cond Return Pump 2 Sta
	CR CRP3-S	Off	Cond Return Pump 3 Sta
	DA2 DA2-HL	Normal	DA 2 High Level
	DA2 DA2-LL	Normal	DA 2 Low Level
	DA2 DA2P1-A	Normal	DA 2 Pump 1 Alarm
	DA2 DA2P1-S	Off	DA 2 Pump 1 Status
	DA2 DA2P2-A	Normal	DA 2 Pump 2 Alarm
	DA2 DA2P2-S	On	DA 2 Pump 2 Status
	DA2 DA2P3-A	Normal	DA 2 Pump 3 Alarm
	DA2 DA2P3-S	Off	DA 2 Pump 3 Status
	WS UW-T	83.0 deg F	Utility Supply H2O Temp
	WS WSI-P	51.9 psiG	Water Softner Inlet Pres
	WS WSO-P	43.6 psiG	Water Softner Out Pres
	WS WS-F	68.0 gpm	Water Softner Flow
	WS P1-S	On	Water Softener Blow Down Heat Rec Unit Pump1 Status
	WS P1-C	On	Water Softener Blow Down Heat Rec Unit Pump1 Cmd
	WS BDHRS-T	83.9 deg F	Blowdown Heat Rec In
	WS BDHRR-T	81.0 deg F	Blowdown Heat Rec Out
	WS WSZ1-REG	Off	Wtr Sftnr Zoelite 1 Reg
	WS WSZ1-S	On	Wtr Sftnr Zoelite 1 Stat
	WS WSZ2-REG	On	Wtr Sftnr Zoelite 2 Reg

	WS WSZ2-REG	On	Wtr Sftnr Zoelite 2 Reg
	WS WSZ2-S	Off	Wtr Sftnr Zoelite 2 Stat
	WS WSZ3-REG	On	Wtr Sftnr Zoelite 3 Reg
	WS WSZ3-S	Off	Wtr Sftnr Zoelite 3 Stat
	MISC_BLR FLS-A	Normal	Fuel Leak Sys Alarm
	MISC_BLR FOP-A	Normal	Fuel Oil Pump Alarm
	MISC_BLR FOS-RDY	Off	Fuel Oil Sys Ready Stat
	MISC_BLR FTS-A	Normal	Fuel Transfer Sys Alarm
	BLR2 B2BD-VLV	Active	Blr Blowdown Valve
	BLR2 B2FW-VLV	Active	Blr Feedwater Valve
	BLR3 B3BD-VLV	Active	Blr Blowdown Valve
	BLR3 B3FW-VLV	Active	Blr Feedwater Valve
	CR CR-VLV	Active	Cond Rec 1 Valve
	DA DA-VLV	Active	Deaerator Valve
	DA2 DA-VLV	Active	Deaerator Valve
	MISC_BLR FOS-EN	Off	Fuel Oil System Enable

## ARTICLE 41 INSURANCE

41.1 Employers' Liability Insurance. The General Contractor shall acquire and maintain Employers' Liability insurance with at least \$500,000/\$500,000/\$500,000 limits of liability for all employees who will be working at the Project site.

41.2.1 Commercial General Liability Insurance. If the work involved requires the use of helicopters, a separate aviation liability policy with limits of liability of \$100,000,000 will be required. If cranes and rigging are involved, a separate inland marine policy with liability limits of \$100,000,000 will be required.

41.2.1.1 The limits of liability shall not be less than \$2,000,000 each occurrence combined single limits for bodily injury and property damage.

41.2.2 Comprehensive Automobile Liability Insurance. Policy limits shall not be less than \$1,000,000 for combined single limits for bodily injury and property damage for each occurrence

41.2.3 Excess or Umbrella Liability Insurance. This policy shall have a minimum of \$1,000,000 combined single limits for bodily injury and property damage for each occurrence in excess of the applicable limits in the primary policies.

41.2.4 Workers' Compensation - Statutory Requirements (Kentucky)

41.2.5 Cyber Liability - \$5,000,000 each occurrence



**University of Kentucky Supplier Diversity Initiative Addendum**

Thank you for your interest in partnering with the University of Kentucky to create great spaces and safe environments for our students, staff, and community. Diversity, equity, and inclusion (DEI) are important components of our strategic mission and vision. In 2020, UK created 17 working committees dedicated to moving DEI initiatives forward. Your efforts in working with diverse suppliers is key to reaching our goals. As you know, supplier diversity is a critical component of economic development. We want to work with companies like yours that share our values.

**University of Kentucky Strategic Vision:** As Kentucky's indispensable institution, we transform lives through diversity and inclusion, discovery, research and creativity, promotion of health and deep community engagement.

**Mission:** The University plays a critical leadership role by promoting diversity, inclusion, economic development, and human well-being. As the flagship institution in Kentucky, UK plays a critical leadership role for the Commonwealth by contributing to the economic development and quality of life within Kentucky's borders and beyond. The University nurtures a diverse community characterized by fairness and equal opportunity. We will diligently seek and work with companies that share our vision, mission, and values.

**Goals:** We are committed to increasing the purchasing of goods and services from minority, women, veteran, and disabled-owned businesses to a **minimum of ten percent** with an aspirational goal that equals and surpasses the diversity on our campus and in the communities we serve. In addition, UK supports non-profit work centers for the blind and disabled. All contractors are expected to support and actively work toward achieving these goals.

Bidders utilizing minority, women, veteran, and disabled-owned businesses are requested to identify these contractors and suppliers in required UK Bids and Proposals.

**For assistance in identifying diverse businesses and contractors to work on this project, please contact Marilyn Clark, Supplier Diversity Manager, University of Kentucky at [mcl256@uky.edu](mailto:mcl256@uky.edu)**

Regards,  
Marilyn Clark  
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411 South Limestone  
Lexington, KY 40506  
859-218-5612  
<https://purchasing.uky.edu/bid-and-proposal-opportunities>