



Procurement Readiness Review

S. Dixon

Cryogenics Plant Building PRR

22 August 2019

In partnership with:

India/DAE

Italy/INFN

UK/STFC

France/CEA/Irfu, CNRS/IN2P3

Agenda

- Charge
- System Design Review Plan Requirements
- Technical Requirements vs Design Crosswalk
- Summary

Charge

3. Review Charge Statement

The review committee is requested to review the drawings and specifications for the Cryogenic Plant Building to ensure alignment between the scientific goals and drivers, and functional and technical requirements.

This PRR will contain the following items and address:

- Final released drawings and specifications;
- Cost and schedule updates;
- Prevention through Design elements integrated into the design;
- Updated Risk Register;
- Review of lessons learned from similar procurements;
- Vendor evaluation methodology

The outcome of the review is to ensure that the documented technical requirements have been incorporated into the design at an appropriate level for this stage of the project development.

System Design Plan Requirements

Procurement Readiness Review	
121.06.03 Cryoplant Building	
REVIEW DELIVERABLES LIST	STATUS
Requirements	
Interfaces	
Interface Control Documents/Interface Specification Documents	100% ED0007698
Risk & Safety	
Updated Risk Assessment Document	100% ED0010288
Updated Prevention Through Design Table	100% ED0008373
Up-to-date Risk Register	100%
Project Documents	
Updated Basis of Estimates (BOE)	Pending PIP-II-doc-2106
Updated Resource Loaded Schedule	Pending
Design	
Final Drawings	100% ED0008373
Final Specifications	100% ED0008373
Estimate of Construction Cost	100%
Estimate of Construction Schedule	100%
List of materials that require exemption from the Buy American Act	100%
DOE Guiding Principles Compliance Documentation	100% ED0008373
Engineering Calculations	100% ED0008373
Storm Water Pollution Prevention Plan	100%
Signature/seal of design professionals following State of Illinois licensing requirements	100% ED0008373
Procurement/Production/Installation	

From PIP-II-doc-2587



System Design Plan Requirements

← Risk & Safety
← Design

- └ ED0008373-WBS 121.06.03 - Cryogenics Plant Building Documents
 - └ ED0008373
 - └ ED0008373--;1-WBS 121.06.03 - 40% Design Set
 - └ ED0008373-A;1-WBS 121.06.03 - 60% Design Set
 - └ ED0008373-B;1-WBS 121.06.03 - 90% Design Set
 - └ ED0008373-C;1-WBS 121.06.03 - 100% Design Set
 - └ ED0008373-C
 - └ ED0008373-C-AE Signature Letter(PDF) ← Design
 - └ ED0008373-C-Structural Calculations(PDF) ← Design
 - └ ED0008373-C-Basis of Design(PDF)
 - └ ED0008373-C-REVIT Models(Zip)
 - └ ED0008373-C-QAQC Report(PDF)
 - └ ED0008373-C-Civil Calculations(PDF) ← Design
 - └ ED0008373-C-Guiding Principles Analysis(PDF) ← Design
 - └ ED0008373-C-Project Manual Files(Zip)
 - └ ED0008373-C-Guiding Principles Files(Zip) ← Design
 - └ ED0008373-C-QAQC Files(Zip)
 - └ ED0008373-C-AutoCAD Drawings(Zip)
 - └ ED0008373-C-Electrical Calculations(Zip) ← Design
 - └ ED0008373-C-Drawings(PDF) ← Design
 - └ ED0008373-C-Mechanical Calculations(Zip) ← Design
 - └ ED0008373-C-Project Manual(PDF) ← Design
 - └ ED0008373-C-Safety By Design(MS ExcelX) ← Risk & Safety
 - └ ED0008373-C-Life Safety Review Letter(PDF)
 - └ eBOM
 - └ Alternate IDs

From Teamcenter ED0008373



Updated Risk Assessment Document

Lead Engineer: S. Dixon

Department: PIP-II

Date: July 24, 2019

Chapter		Engineering Risk Element							High Risk	Subtotal	Assessment
		A	B	C	D	E	F	G			
1	Requirements and Specifications	2	1				3		≥ 10	6	Standard Risk
3	Requirements and Specification Review	2	1		2	2	3		≥ 16	10	Standard Risk
4	System Design	2	1	2		2	3	1	≥ 19	11	Standard Risk
5	Engineering Design Review	2	1	2		2	3	1	≥ 19	11	Standard Risk
6	Procurement and Implementation		1		2	2	3	1	≥ 16	9	Standard Risk
7	Testing and Validation	2				2	3	1	≥ 13	8	Standard Risk
8	Release to Operations						3		≥ 4	3	Standard Risk
9	Final Documentation		1				3		≥ 7	4	Standard Risk
		Project Risk Element							High Risk	Subtotal	Assessment
		H	I	J	K	L	M	N			
		3	3	3	2	3	4	1	≥ 25	23	Standard Risk
Engineering Risk Elements									Project Risk Elements		
A	Technology								H	Schedule	
B	Environmental Impact								I	Interfaces	
C	Vendor Issues								J	Experience / Capability	
D	Resource Availability								K	Regulatory Requirements	
E	Safety								L	Project Funding	
F	Quality Requirements								M	Project Reporting Requirements	
G	Manufacturing Complexity								N	Public Impact	
									O	Project Cost	

From Teamcenter ED0010288



Lessons Learned From Similar Procurements

- Conventional construction can be accomplished with firm fixed price procurements
- Subcontractor outreach can increase bidding pool of potential vendors.
- Incorporate pacing milestones including connections to lab services/infrastructure
- Incorporate safety and quality requirements in subcontract documents



Lesson learned have been incorporated into the acquisition plan for the project

Vendor Evaluation Methodology

4 COMPETITION

4.1 HOW COMPETITION WILL BE SOUGHT, PROMOTED, AND SUSTAINED THROUGHOUT THE COURSE OF THE ACQUISITION

The goal of this procurement is to strive for competition. FRA will utilize FBO to maximize competition and, per Part B paragraph 3.1 of this Cryogenics Plant Acquisition Plan, Construction Contractors known to FRA (FRA Construction Bid List, Attachment A) will be alerted to the solicitation.

4.2 COMPETITIVE METHOD TO BE USED

Lowest Price Technically Acceptable (LPTA) source selection method in accordance with FAR 15.101-2 will be used. Past performance will be evaluated in accordance with FAR 15.305.

The lowest price technically acceptable source selection process is appropriate when best value is expected to result from selection of the technically acceptable proposal with the lowest evaluated price.

4.3 COMPETITION: MAJOR COMPONENTS OR SUBSYSTEMS

NOT APPLICABLE. Major components and subsystems will be furnished and installed by the Subcontractor.

4.4 COMPETITION: LOGISTICS, SPARES, AND REPAIR PARTS

NOT APPLICABLE

4.5 COMPETITION: LOWER TIER SUBCONTRACTS

NOT APPLICABLE. The Subcontractor is responsible for lower tier Subcontractors.

4.6 COMPETITION: FOLLOW-ON SUBCONTRACTS

NOT APPLICABLE

5 SOURCE SELECTION PROCEDURES

5.1 SOLICITATION PROCESS

FRA will post the RFP for the Cryogenics Plant Building by use of the FBO.gov website. Interested parties will be required to submit a response to mandatory technical requirements and provide a cost proposal.

The Procurement Specialist will serve as the sole point of contact for all solicitation-related inquiries from actual or prospective Offerors. During the evaluation, exchanges with industry may include clarifications, communications, and discussions. All such exchanges will be supervised and documented by the Procurement Specialist. Information will be equally available to all prospective Offerors.

5.2 EVALUATION PROCESS

The evaluation process will be conducted in accordance with the SEP that will be prepared and submitted with the RFP for DOE approval. Per FAR 15.101-2, evaluation factors and significant subfactors that establish the requirements of acceptability will be set forth in the solicitation. Scope will represent typical conventional civil construction with a well-defined set of drawings and specifications.

5.3 EVALUATION FACTORS

Interested vendors are required to submit a response to mandatory requirements, technical proposal, and cost proposal. Mandatory go/no go criteria will be created to evaluate all of the proposals. These criteria will focus on the following four main areas.

Scope: Offerors' experience and personnel to perform Cryogenics Plant construction.

Schedule: Offerors' project schedule management experience, ability to meet the project schedule, and availability of technical resources to complete the work within schedule constraints.

Budget: Offerors' budget planning, estimating, and management experience to deliver the project on-budget and to cost field change orders.

ESH&Q: Offerors' ESH&Q project experience.

5.4 The SEP and solicitation will specify award will be made on the basis of the lowest evaluated price of proposals meeting the acceptability standards for non-cost factors.

Selection Factor. The offeror who meets all of the non-price evaluation factors and has the lowest price will be selected.

5.5 RELATIONSHIP OF EVALUATION FACTORS TO THE ATTAINMENT OF THE ACQUISITION OBJECTIVES

Per FAR 15.101-2, the RFP will include evaluation factors that ensure the Offerors' ability to meet the scope. The evaluation factors will enable FRA to assess if the Offeror meets or exceeds acceptable standards to perform the type of work identified in the RFP documents.

5.6 SELECTION AND DECISION PROCESS

The Procurement Specialist is responsible for ensuring the selection and decision process is accomplished in accordance with the Acquisition Plan, Request for Proposal, and SEP.

6 ACQUISITION CONSIDERATIONS

6.1 PRODUCT OR SERVICE DESCRIPTIONS

NOT APPLICABLE



Vendor Evaluation Methodology

Section M - Evaluation Factors for Award

1.0 Basis for Subcontract Award

1.1 FRA expects to award a Subcontract to an Offeror who is deemed responsible, whose proposal conforms to this solicitation's requirements, and whose proposal is judged to represent the best value to FRA.

1.2 FRA will use a Lowest Price Technically Acceptable (LPTA) source selection process. The best value is expected to result from selection of the technically acceptable proposal with the lowest evaluated price. Tradeoffs between non-cost evaluation factors and cost/price are not permitted. FRA will evaluate proposals for acceptability but will not rank proposals using the non-cost/price factors. The non-cost evaluation factors that establish the requirements of technical acceptability are as shown below.

Non-Cost Factor 1 – Safety: Is the Offeror's cumulative Experience Modification Rating for the past 3 years ≤ 1 ?

Non-Cost Factor 2 – Safety: Is the Offeror's corporate Safety Plan in conformance with Section 013100 – Environmental, Safety, and Health Requirements?

Non-Cost Factor 3 – Quality: Is the Offeror's corporate Quality Plan in conformance with Section 014100 – Quality Requirements?

Non-Cost Factor 4 – Schedule: Does the Offeror's schedule align with the major milestones described in Section 010010 – General Requirements, PIP-II Cryogenics Plant Building?

Non-Cost Factor 5 – Past Performance: Does the Offeror's Past Performance demonstrate experience constructing similar buildings in a Davis-Bacon environment?

Non-Cost Factor 6 – Past Performance: Does the Offeror's Past Performance demonstrate successful experience constructing buildings that house complex process systems or industrial grade mechanical systems?

Non-Cost Factor 7 – Past Performance: Does the Offeror have any UCC Tax Liens?

Non-Cost Factor 8 – Davis-Bacon Act: Is the Offeror's plan to comply with the Davis-Bacon Act sufficient?

Non-Cost Factor 9 – Buy American Act: Is the Offeror's plan to comply with the Buy American Act sufficient?

Non-Cost Factor 10 – Small Business Plan: Is the Offeror's plan to comply with the requirements of FL-55 Small Business Subcontracting Plan sufficient?

Technical Requirements vs Design

T-121.06.03-B002	F-121.06.03-A001	The CPB shall be designed to accommodate safe access for maintenance and operation including roof access with minimal personal protective equipment.	See A-3 for stair access to roof and 42" high parapets
Cold Box Station			
T-121.06.03-C001	F-121.06.03-A004	The Cold Box Station (CBS) shall include an overhead bridge crane with the following criteria: <ul style="list-style-type: none"> Capacity of 25 tons (50,000 pounds); Hook limits to provide coverage for the major equipment and loading dock; Hook height of 27 feet above finished floor; 	25 ton capacity crane indicated. See SS-1 and Spec 412213
T-121.06.03-C002	F-121.06.03-A004	The CBS shall include at grade loading dock space to accommodate a standard 55-foot-long semi-trailer.	See A-2
T-121.06.03-C003	F-121.06.03-A004	The CBS shall include, as a minimum, a 16-foot-wide by 16-foot-tall overhead door;	See A-12 and Door Schedule on A-47
T-121.06.03-C004	F-121.06.03-A003	The flatness and levelness of the new floor slabs built as part of the conventional facilities shall be designed for normal construction tolerances and a ASTM E1155 floor flatness value of F(F) 25 and a floor levelness F(L) of 20.	See Structural Concrete Note 35, sheet S-1
T-121.06.03-C005	F-121.06.03-A003	The CBS shall provide space/infrastructure for one (1) Cold Box equipment with the following characteristics: <ul style="list-style-type: none"> 52 feet (15.8 m) long by 26.25 (8 m) wide by 23 feet (7.1 m) tall, which includes the cold box, control equipment and associated steel access platform and stairs; Weight: 165,347 pounds distributed on four (4) base plates (1.5 feet wide x 1.5 feet long) Electrical: <ul style="list-style-type: none"> 72 kW, 125A, 3PH @ 480 volts 5 kW, 20A @ 208 volts 10 kW, 20A, 1PH @ 120 volts with UPS back-up CHW: 42 gpm with a maximum 18F delta T; 43-145 psi supply pressure, 59-90 F supply temperature ICW: none Identifier: FEQ-01A 	See drawing A-2 for location of FEQ-01A
T-121.06.03-C006	F-121.06.03-A003	The CBS shall provide space/infrastructure for one (1) 4.5K Cold Box equipment with the following characteristics: <ul style="list-style-type: none"> 6.2 feet (1.9 m) long by 5.3 feet (1.6 m) wide by 15.7 feet (4.8 m) tall, which includes the cold box and associated equipment; Minimum envelope required with control cabinet is 430 square feet (40 m²) Weight: 6,266 pounds distributed equally over the footprint listed above Single largest piece for installation shall be 6,266 pounds Electrical: <ul style="list-style-type: none"> 72 kW at 480V, 125A, 3PH 10 kW at 120V, 20A, 1PH with UPS back-up 5 HP @ 208 volts CHW: 5.3 gpm with a maximum 18F delta T; 43-145 psi supply pressure, 59-90 F supply temperature ICW: none Identifier: FEQ-02 	See drawing A-2 for location of FEQ-02
T-121.06.03-C007	F-121.06.03-A003	The CBS shall provide space/infrastructure for one (1) Liquid Helium Storage Tank with the following characteristics: <ul style="list-style-type: none"> 12.1 feet (3.7m) diameter 16.4 feet (5m) tall, which includes storage tank and associated steel access platform and stairs; Weight: 8,000 pounds distributed on 1 continuous circular base plate with 11.15 feet (3.4 m) outside diameter and 10.15 feet (3.1 m) inside diameter. Electrical: 5 kW at 480V CHW: none ICW: none Identifier: FEQ-01B 	See drawing A-2 for location of FEQ-01B

Summary

- Final released drawings and specifications – ED0008373
- Cost and schedule updates – BCR in progress
- Prevention through Design elements integrated into the design – ED0008373
- Updated Risk Register - complete
- Review of lesson learned from similar procurements – incorporated into acquisition plan
- Vendor evaluation methodology – incorporated into procurement documents