

Moderator & Reflector System -Preliminary Design review

ORNL is managed by UT-Battelle LLC for the US Department of Energy

Participants

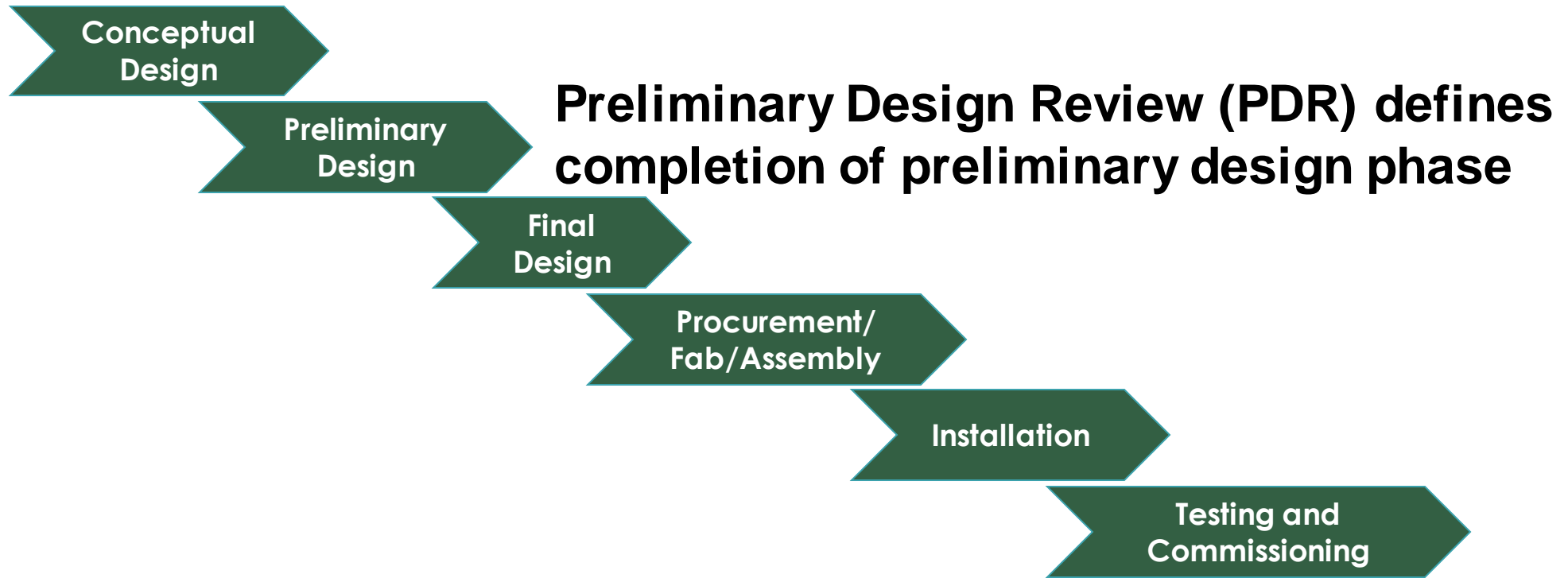
Project Team

- **Jim Janney – Lead Engineer MRA**
- **Bill Goosie – Designer**
- **Min-Tsung Kao – CFD**
- **Thomas Mcmanamy – FEM**
- Steve Schrick – Lead Engineer Remote Handling
- Igor Remec - Neutronics
- Lukas Zavorka - Neutronics
- Steven Trotter – Safety and ESH
- Daniel Lyngh – Group Leader

Reviewers

- **Drew Winder – SNS (Chair)**
- **Franz Gallmeier – SNS**
- **Jacob Platfoot – SNS**
- **Zvonko Lazic – STS Instruments**

Phases of Projects



PDR Deliverables

- The purpose of this Preliminary Design Review is to assess whether the design has progressed far enough (is “mature” enough) to support the proposed technical and performance management baseline and is ready to proceed to the detailed/final design phase, in line with STS S01020500-PCD10000



System / Subsystem Deliverable	Conceptual Design Review	Preliminary Design Review	Final Design Review
CAD models, sketches and other design expression tools	N	N	U
related items on risk registry*	N	U	U
Interface Control Documents / Interface Sheets		N	U
System Requirements Document		N	U
Design Description Document		N	U
configuration level determination		N	U
QA Level Determination Form		N	U
System Safety Classification†		N	U
Design Analysis Calculations (DACs)‡		N	N
Safety Basis Document‡‡		N	U
acquisition strategy*		N	U
manufacturing / fabrication strategy*		N	U
installation plan*		N	U
System Verification Plan†††		N	U
Drawings†††			N
Technical Specifications†††			N
P&ID			N
Acceptance Criteria List			N

Charge Questions

Specific questions that the committee should address are as follows:

1. Have system requirements been defined, and are they complete and adequate to ensure acceptable system performance?
2. Is the proposed design expected to meet the functional and performance requirements, and are interfaces properly identified and defined?
3. Have appropriate options and alternatives been considered in selecting the design approach?
4. Is the proposed design sufficiently mature to proceed to final design?
5. Have major project risks and safety hazards been appropriately identified, characterized, and mitigated?
6. Does the project execution according to the acquisition plan and manufacturing plan seem reasonable and adequate?

Review Output

Committee Comments and Recommendations

Summary:

Brief summary statement...

Responses to specific charge items:

...followed by brief responses to the six charge items.

Detailed committee feedback

- Findings, observations for emphasis. Such as good achievements, risk mitigation or assessments etc.
- Comments, identified things that the project team could assess at own judgement.
- Recommendations, identified actions that the committee recommends the project team to act on, these should preferably include a timeline/deadline.

(Recommendations will go into the project action tracker)

Agenda Day 1

Tuesday, March 26 th , 2024 – Building 2040 Room E278		
8:30 – 9:00a.m.	Introduction	Daniel Lyngh
9:00 – 10:00 a.m.	STS/Target Systems Overview	Peter Rosenblad
10:00 – 10:30 a.m.	MRA Project	Jim Janney
10:30 – 11:30 a.m.	MRA Topology and MRA Neutronics Optimization	Jim Janney Igor Remec
11:30 a.m. – 12:00 p.m.	Break	
12:00 – 1:00 p.m.	MRA Requirements/Interfaces	Jim Janney
1:00 – 2:00 p.m.	MRA Overview	Jim Janney
2:00 – 2:15 p.m.	Break	
2:15 – 3:15 p.m.	MRA Neutronics Analysis	Lukas Zavorka
3:15 – 4:00 p.m.	MRA Thermal Hydraulic Analysis	Min-Tsung Kao
4:00 – 5:00 p.m.	MRA Structural Analysis	Jim Janney Thomas McManamy

Agenda Day 2

Wednesday, March 27 th , 2024 – Building 2040 Room E278		
8:30 – 9:30a.m.	MRA Remote Handling	Steve Schrick
9:30 – 10:00 a.m.	MRA Installation	Jim Janney
10:00 – 10:30 a.m.	MRA R&D	Jim Janney
10:30 – 11:30 a.m.	MRA Fabrication/ Acquisition	Jim Janney
11:30 a.m. – 12:00 p.m.	Break	
12:00 – 3:00 p.m.	Q/A, Committee Session, Closeout Prep	
3:00 p.m.	Closeout	