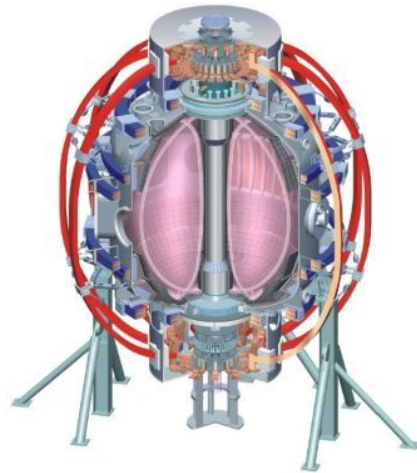


CD-1 Readiness

Erik Perry

**NSTX Upgrade Project
Conceptual Design Review
LSB, B318
October 28-29, 2009**

College W&M
Colorado Sch Mines
Columbia U
CompX
General Atomics
INEL
Johns Hopkins U
LANL
LLNL
Lodestar
MIT
Nova Photonics
New York U
Old Dominion U
ORNL
PPPL
PSI
Princeton U
Purdue U
SNL
Think Tank, Inc.
UC Davis
UC Irvine
UCLA
UCSD
U Colorado
U Illinois
U Maryland
U Rochester
U Washington
U Wisconsin



Culham Sci Ctr
U St. Andrews
York U
Chubu U
Fukui U
Hiroshima U
Hyogo U
Kyoto U
Kyushu U
Kyushu Tokai U
NIFS
Niigata U
U Tokyo
JAEA
Hebrew U
Ioffe Inst
RRC Kurchatov Inst
TRINITI
KBSI
KAIST
POSTECH
ASIPP
ENEA, Frascati
CEA, Cadarache
IPP, Jülich
IPP, Garching
ASCR, Czech Rep
U Quebec

CD-1 Documentation Preparations

- Plan to get to CD-1 was developed in conjunction with local DOE office
- Plan covers documentation specified by DOE Order 413.3
- On track for having all documentation ready in time to request CD-1 in December

CD-1 Preparations Checklist

NSTX CD-1 Preparation

Requirement (Upcoming in next 5 days)	Due Date	Owner	Status/Remarks
Management			
Integrated Project Team			
Appoint FPD	Done	Faul	
IPT Charter	Done	Makiel	
IPT Membership List	Done	Makiel	
Commence IPT Meetings	Done	Makiel	
NBI Technical Peer Review			
CSU Technical Peer Review	Done	Dudek	
Conceptual Design Review PU/PPPL			
Assemble team members and establish date	Done	Williams	
Draft Charge & Agenda	Done	Williams	
PU/PPPL CDR Dry Run	10/12/09	Williams	
Post Materials for PU/PPPL CDR	10/19/09	Perry	
PU/PPPL CDR	10/28/09	Perry	
Issue report	11/12/09	Perry	
Disposition Chits	11/17/09	Perry	
Conceptual Design Lehman Review CD-1			
Assemble team members and establish date	Done	Makiel	
Draft Charge & Agenda	Done	Makiel	Draft letter for OFES AD signature
Lehman Review Dry Run	11/11/09	Williams	
Post materials for Lehman Review	11/23/09	Perry	
Lehman CDR Review (CD-1)	12/15/09	Perry	
Issue report	1/7/10	Lehman	
Disposition Chits	1/7/10	Perry	
Prepare and submit CD-1 Package for DOE Approval	1/9/10	Perry	
CD-1 Approval	1/21/10	Dehmer	
Deliverables			
WBS Dictionary & Structure			
Centerstack Upgrade	draft	Simmons	
2nd NBI	draft	Simmons	
Cost & Schedule			
WAF's	Done	Strykowski	
CSU draft	Done	Dudek	Most jobs received
CSU Internal Review	Done	Williams	Reviews in progress
CSU Posted	Done	Strykowski	Posting of prelim wafs on P drive. Will also post on the NSTX Upgrade web site.
2nd NBI draft	Done	Stevenson	
2nd NBI internal review	Done	Williams	Reviews in progress
2nd NBI Posted	Done	Strykowski	Posting of prelim wafs on P drive. Will also post on the NSTX Upgrade web site.
Contingency methodology	draft	Strykowski	
Basis of cost & schedule	draft	Strykowski	
Resource Loaded Schedule	draft	Strykowski	Draft available. Being iterated for budget
Critical path	draft	Strykowski	Draft available. Being iterated for budget
Level 2 CD milestones (high & low range)	draft	Strykowski	Draft available. Being iterated for budget
Contingency estimate (cost and schedule)	draft	Strykowski	Draft available. Being iterated for budget
Cost range by WBS (CS, 2nd NBI & Mngmnt)	draft	Strykowski	Draft available. Being iterated for budget
Budget profile (by FY high & low range)	draft	Strykowski	Draft available. Being iterated for budget
Preliminary Project Execution Plan (PEP)			
1. Introduction	draft	Perry	
2. Project Execution Plan Elements			
- Mission Needs			
- Acquisition Strategy			
- Scope Description			
- Project Organization, Roles and Responsibilities			
- Performance Baseline and Key Parameters			
- Resource Requirements			
- Procurement and Contracting			
- Integrated Safety Management			
- Systems Engineering/Value Management			
- Risk Management Plan			
- Quality Assurance			
- Research and Development, Test and Evaluation,			

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NSTX CD-1 Preparation

Requirement (Upcoming in next 5 days)	Due Date	Owner	Status/Remarks
- Design/Design Reviews			
- Work Breakdown Structure and Dictionary			
- Performance Measurement, Reporting and Forecasting			
- Life Cycle Cost			
- Cost Control			
- Funding			
- Environmental, Licensing and Permitting Strategy			
- Site Development/Temporary Facility and Service Plan			
- Safeguards and Security			
- Configuration Control			
- Document and Record Management			
- Inspection, Test, Evaluation, Turnover/Acceptance,			
- Procedures/Procedure Development			
3. Approvals			
CD-1 Approve Alternative Selection and Cost Range	Done	Masa Ono	
- Purpose			
- Mission Need			
- Project Preliminary Scope Baseline			
- Project Preliminary Cost and Schedule Baseline			
- Acquisition Strategy			
- Environmental Strategy			
- Risk Management			
Acquisition Strategy	10/19/09	Perry	
Desired Outcome and Requirements Definition			
- Cost and Schedule Range			
- Major Applicable Conditions			
- Risk and Alternatives			
- Business and Acquisition Approach			
- Management and Structure Approach			
Begin NEPA Process	Done	Levine	CX approved - no further NEPA work req'd
Preliminary Hazard Analysis Plan			
Prepare Table	Done	Levine	Provide input to prelim PEP
ACC Review (validate below Cat 3)	Done	Gentile	
Security Vulnerability Analysis	Done	Samtmann	1. Request letter (Makiel to Samtmann) - done 2. Reply letter (Samtmann to Makiel) - on schedule 3. Provide input to prelim PEP
Identify Long Lead Procurements			
I.D items (what, why & how much)	11/2/09	Dudek	Prepare a slide
Draft CD-1 approval memo for OFES signature	11/20/09	Makiel	Letter will include long lead authorization
ISM Plan	Done	Levine	1. Use "ES&H Aspects of NCSX" as template 2. Prepare slides 3. Provide input to prelim PEP
Ensure QA/QC System is in place	Done	Malsbury	1. Email Request (Makiel to Malsbury) - done 2. Prepare slides (for backup as req'd) 3. Provided input to prelim PEP
Develop GRD			
Centerstack Upgrade	Done	Dudek	
2nd NBI	Done	Von Halle	
Risk Registry			
Centerstack Upgrade (QTY=1)	Done	Perry	
2nd NBI (QTY=8)	Done	Perry	
NSTX Upgrade Website			
Establish Website for CD-1	Done	Simmons	

Revised:
10/14/09

TEXT: Required by 413.3A
TEXT: PPPL/DOE internal item
Open item
Completed item

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Management

- Integrated Project Team – established
- NB2 Technical Peer Review- completed
- Centerstack Technical Peer Review – completed
- Conceptual Design Review – October 28 – 29
- Conceptual Design Lehman Review – December 15 - 16

Documentation for CD-1

- General Requirements Documents - complete
- Work Planning Forms - complete
- Work Breakdown Structure - complete
- Cost and Schedule Estimates - complete
- Risk Registry – generated (active management tool)

Documentation for CD-1 ^{cont.}

- NEPA Process – complete
- Preliminary Hazard Analysis Plan - complete
- Security Vulnerability Analysis – complete
- Identify long lead procurements – complete
- ISM Plan – complete
- Ensure QA/QC system in place - complete

Documentation for CD-1 ^{cont.}

- CD-1 Approve Alternate Selection and Cost Range Document – draft, sign-off after CDR
- Preliminary Project Execution Plan – draft, sign-off after CDR
- Acquisition Strategy – draft, sign-off after CDR

Status of Charge Questions

- Have the requirements in the GRDs been addressed?
 - Yes, both the Centerstack and the Second Neutral Beam have very successfully going through technical peer reviews
- Does the CDR satisfy the objectives of PPPL Procedure ENG-033?
 - Yes, successful technical reviews completed; ES&H is being addressed in designs; bottom-up cost and schedule details for all jobs
- Have risks been appropriately identified and handled?
 - Yes, the risks identified at CD-0, such as the design for the TF flex joint, are being addressed and retired. The Risk Registry is tracking all identified risks.
- Are ES&H issues properly addressed?
 - Yes, the Preliminary Hazard Analysis is based on current plans using the hazard analysis summary in the NSTX Safety Assessment Document.

Status of Charge Questions

- Is the proposed cost range and schedule adequate/realistic (for CD-1)?
 - Yes, a well detailed resource loaded schedule exists and provides the basis for all cost and schedule estimates
- Is the project organization/staffing appropriate?
 - Yes, as part of performing the conceptual design, we have brought on the staff that will be needed for the next phase of the project
- Is the project ready for CD-1 per DOE Order 413.3A?
 - Yes, documents have been prepared ... a few, such as the Preliminary Project Execution Plan, will be circulated for sign-off following the CDR