



ENG-033 - FDRS - FDR SUMMARY

CCS FDR Design Review Report

NSTXU_1-7-3-8_FDRS_100

Work Planning #: **3032**
Effective Date: **02/18/2020**
Prepared By: **Joseph Petrella**

Reviewed By	Joseph Petrella, Cognizant Individual	02/18/2020 15:05:12 PM
Approved By	John Dellas, Design Review Chair	02/18/2020 15:24:22 PM

**DESIGN REVIEW DOCUMENTATION – RESULTS – No: _____ #****Title:** Centralized Control System (CCS)**CAT:** ☐ A1 ☐ A2 ☒ A3**Type of Review:** ☐ Peer ☐ CDR ☐ PDR ☒ FDR**Cognizant Individual:** Joseph Petrella **Date of Review:** 1/14/2020

Review Board Members:	Invited Attendees:	Other Attendees:
Chairperson <u>J Dellas</u>	<u>S Gerhardt</u>	<u>M D'Agostino</u>
RE <u>T Stevenson</u>	<u>G Tchilinguirian</u>	<u>C Hines</u>
TA (<i>Elect</i>) <u>R Camp</u>	<u>M Cropper</u>	<u>P Dugan</u>
TA (<i>Control and Data</i>) <u>P Sichta</u>	<u>J Corl</u>	<u>A Indelicato</u>
	<u>W Blanchard</u>	<u>S Kampel</u>
	<u>S Depasquale</u>	<u>J Hirsch</u>
QA <u>K Cortes</u>	<u>B Smith</u>	
ESH <u>W Slavin</u>		
Regulatory Compliance _____	<u>P Dugan</u>	

Items Reviewed:	Sat.	Unsat.	Comments or n/a if not applicable
Appropriate requirements identified	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Development plans and schedules	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>Interfaced to SIS and TKS</u>
Reg. compliance incl. USI/USID and NEPA	<input type="checkbox"/>	<input type="checkbox"/>	<u>N/A</u>
Disposition of CHITS from previous reviews	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Calculations (all listed are signed and filed)	<input type="checkbox"/>	<input type="checkbox"/>	<u>N/A</u>
Cost objectives	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>Integrated with Personnel Safety System</u>
Other review objectives addressed	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>Plans developed to satisfactory FDR level</u>

SUMMARY OF RESULTS:

This review presented the final design for the Centralized Control System (CCS), which receives status input from the PSS Safety Instrumented System (SIS) and the Trapped Key System (TKS). The fundamental part of the design is replacement of the contents of the electromechanical relay based COE (Chief Operating Engineer) station with a modern PLC system including an updated front panel physical key and button interface and associated touch screen, monitor-based HMI.

Significant areas of discussion included the chit resolution from the PDR on the separation of ECH-PI from RF, with its own enable and arm permissives, rather than combining with RF.

There was discussion on whether using the term "Loop Set" for CCS has a different meaning from how it is used in PSS and that "No Access" might be a more accurate term for the CCS usage. This was captured in a chit.

It was clarified that old legacy systems (e-stops, ACAMS) will not be abandoned in place in the test cell but will be removed.

A concern was expressed to avoid the undesirable feature of fast closing the SDS ground switches under normal switching operations, which could happen if configure mode is not implemented prior. It was agreed to investigate PLC logic to prevent states which would create fast close under normal switching operations.

There was a discussion on the need for a dedicated Allen Bradley Ethernet switch for CCS as opposed to just connecting into a PPPL IT-managed switch.



A need was expressed to have audible tones to inform the COE of change of state.

It is noted that organizing the supporting documentation for the review into a digital design book facilitated the understanding of the design and scope.

There were a total of seven chits generated. The review board recommendation was to concur with all seven.

Disposition: [check one]

☐ **Acceptable**

☒ **Acceptable pending resolution of concerns-** CHITS identified above must be resolved prior to installation.

☐ **Incomplete** - Additional design work is required prior to another design review.

☐ **Unsuccessful** – Corrective actions must be taken and another review process must be initiated.

Design Review Chair Person _____ **Date:** _____

Cognizant Individual Acceptance _____ **Date:** _____

Distribution: Review Board Members, Operations Center, Responsible Engineer (RE), Cognizant Individuals, Project Manager, Project Director, relevant Technical Authorities (TAs), Chief Engineer (CE), Fire Protection Engineer, Attendees, QA, ES&H, Security, Requesting & Performing Dept. Head