



# **CRR\_CHITID - CHIT RESOLUTION REPORT**

## **CHIT RESOLUTION REPORT FOR PERSONNEL SAFETY SYSTEM**

*NSTXU\_1-7-3-1\_CRR\_100*

*Rev. 1*

Work Planning #:  
Effective Date: **01/21/2020**  
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Approved By Kathleen Lukazik, Preparer 01/21/2020  
13:21:37 PM





















**DVVR**

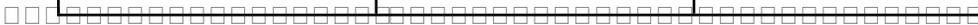
Chit Resolution Number	Description	Chit Number	Status
CR-OSS-05	E-Stops	TCACS02,	Closed
CR-OSS-07	Configuration	TCACS05	Closed
CR-OSS-09	Design	TCACS01	Closed
CR-OSS-12	E-Loop	TCACS04	Closed

**NTC Shielding PDR**

Chit Resolution Number	Description	Chit Number	Status
CR-OSS-05	E-Stops	NTCSHIELDPDR01	Closed
CR-OSS-06	Search and Secure	NTCSHIELDPDR08	Closed
CR-OSS-07	Configuration	NTCSHIELDPDR07	Closed

**Conceptual Design Review**

Chit Resolution Number	Description	Chit Number	Status
CR-OSS-01	Safety Integrity Level	PSSCDR01, PSSCDR04	Closed
CR-OSS-02	Hazards	PSSCDR02, PSSCDR03, PSSCDR05	Closed
CR-OSS-03	Requirements	PSSCDR06, PSSCDR07, PSSCDR08, PSSCDR09, PSSCDR11, PSSCDR15, PSSCDR17, PSSCDR20, PSSCDR28, PSSCDR29,	Closed



















our cyber security requirements specifically calls out IEC 62443, entitled “Security for industrial process measurement and control –Network and system security.” as one of the resources used to develop the guide. Further alignment with IEC 62443 those requirements will be reviewed as the software requirements are created.

Review	ID	Chit
CDR	PSSCDR44	Ensure that SIS PLC Configuration conforms to IEC 61131

**Closed:** We will ensure conformance with IEC61131 through our PSS Software requirements and Software Quality Assurance (SQA) software management plan. This plan is required per PPPL’s QA028 procedure outlining requirements for SQA.

Review	ID	Chit
CDR	PSSCDR36	1. Should Quality Assurance requirements (e.g. Order 414) be identified as a driver for PSS design, installation, operations, maintenance, etc? Is there a driver for a QA Plan that would address Credited Controls including the PSS?

**Closed:** The PPPL QAPD describes implementation of, and compliance with, DOE O 414 at PPPL. The PSS is identified as an A-1 system per ENG-032, in accordance with the PPPL QAPD and has had the applicable quality controls applied to it. PSS-SIS has been identified as a Credited Control system. Management of Credited Controls will be described in the NSTX-U SAD, which is currently undergoing substantial revision to comply with DOE O 420.2C.

## CR-OSS-05 - E-Stops

Review	ID	Chit
CDR	PSSCDR10	"Equipment-specific local E-Stop push buttons must be functionally segregated from the PSS E-STOP". Make sure they are not mistaken with PSS E-Stops.

**Closed:** NSTX-U PSS E-Stops have been designed to be visually unique and are clearly labeled. NSTX-U PSS E-Stops are installed on Search & Secure Stations, including those for control and status. These stations have “NSTX-U E-STOP” engraved in large bold letters, and the boxes are easily identifiable; their front panels are marked with a white on purple color scheme unique to PSS and have a multicolor indicator beacon on top.







R, if a critical component requires change that is not like-for-like an engineering change notice (ECN) will be generated. Since the design is ongoing his chit will remain open and be formally closed at FDR.

Review	ID	Chit
Test Cell DVVR	TCACS05	Some drawings related to the HIS may not be fully up to date (I am told). Since this is a human safety system, it seems to me like this may be one place where we need to ensure fully up to date documentation.
NTC Shielding PDR	NTCSHIELD PDR07	While this NTC updates HIS drawings where touched, a broader surveyed assessment of HIS drawing existence and accuracy is needed for the project

**Closed:** Drawings are being updated as needed to reflect PSS systems updates.

### CR-OSS-08 – Cost/Risk Reduction

Review	ID	Chit
CDR	PSSCDR31	Add cost to develop SRSs & SIF test procedures to estimate.

**Closed:** These costs have been included in the revised WAF and were previously included in the FDR planning package.

Review	ID	Chit
CDR	PSSCDR34	Consider Basic Control System for Risk Reduction Credit.

**Closed:** It is acknowledged that IEC61511 permits applying a maximum Risk Reduction Credit of 10 to basic control systems. For conservatism the quantitative LOPA performed for PDR did not incorporate this Risk Reduction Credit in the generation of SIF performance requirements. However, this Risk Reduction Credit may be incorporated into the system performance calculations that will be performed for FDR. Accordingly the design team has considered, and will deploy if necessary, the allowed basic control system Risk Reduction Credit as part of the system performance calculations.

### CR-OSS-09 –Design

Review	ID	Chit
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