Machine Instrumentation Design Review Report

FDR summary: NSTXU_1-7-3-4_FDRs_100

REVISION 0

November 6, 2019

PREPARED BY:	**Peter Dugan**	11/4/2019 3:14:44 PM
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REVIEWED BY:	**Christopher Freeman**	11/6/2019 8:34:25 AM
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APPROVED BY:	**Peter Dugan**	11/6/2019 1:45:38 PM
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DESIGN REVIEW DOCUMENTATION – RESULTS – **No: 1.7.3.4 #**

Title: Machine Instrumentation **CAT:** ☐A1 ☒A2 ☐A3

Type of Review: ☐ Peer ☐ CDR ☐ PDR ☒ FDR

Cognizant Individual: Chris Freeman **Date of Review:** _____

Review Board Members:	**Invited Attendees:**	**Other Attendees:**
Chairperson P. Dugan	S. Gerhardt	J. Galayda
RE: R. Ellis	G. Tchilinguiran	T. Jernigan
TA (Diagnostics): B. Stratton	S. Raftopoulous	S. Gifford
TA (CI&C): P. Sichta	T. Stevenson (Chief Engineer)	A. Indelicato
TA (Analysis): P. Titus	R. Rozenblatt	R. Upcavage
QA A. Castaneda	G. Zimmer	J. Mitchell
ESH: B. Slavin	Y. Zhai	S. Weidner
	G. Smalley	

Regulatory Compliance N/A

Items Reviewed:	**Sat.**	**Unsat.**	**Comments or n/a if not applicable**
Appropriate requirements identified	☐	☐	Detailed review of RD
Development plans and schedules	☐	☐	Requires BCP - CDE-3B scope
Reg. compliance incl. USI/USID and NEPA	☐	☐	Presented in the presentation
Disposition of CHITS from previous reviews	☐	☐	Reviewed not signed at FDR
Calculations (all listed are signed and filed)	☐	☐	N/A
Cost objectives	☐	☐	Presented in the presentation
Other review objectives addressed	☐	☐	N/A

SUMMARY OF RESULTS:

The review provided a review of the requirements document (RD-08) that provided a detailed description of requirements as well as instrumentation locations. The technical characteristics for the Fiber-Bragg Grating and Fabry-Perot sensor technologies were described. This includes the results of prototyping testing. Then each implementation was discussed OH Pre-load, PF4 and PF5 Slides, TFOL and Trusses, Spoked Lid, Halo Current Side Loads (lateral supports), and TF Bundle Twist. The details regarding the fiber routing, penetrations, and fiber trays were presented. Lastly software design including MDS+ and daemon processing was presented.

The Chit Resolution Report presented was reviewed but not signed. It has now been signed and filed. There was one schedule issue that requires a Baseline Change proposal to align to the CDE-3B decision.

Disposition: [check one]

_____ **Acceptable**

__X__ **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