



## ENG-033 - FDRS - FDR SUMMARY

# Final Design Review Summary - HTP and HTT Water and Helium Interconnection Lines

*NSTXU\_1-1-3-3\_FDRS\_101*

Work Planning #:

Effective Date:

**12/19/2019**

Prepared By:

**William R. Blanchard**

<b>Reviewed By</b>	William R. Blanchard, Design Review Chair	12/19/2019 15:00:50 PM
<b>Approved By</b>	Dang Cai, Cognizant Individual	12/19/2019 15:04:38 PM



**DESIGN REVIEW DOCUMENTATION – RESULTS – No:**

**Title:** HTP and HTT Water and Helium Interconnection Lines - SBS 1.1.3.3.9 (HTP) & 1.1.3.3.10 (HTT)

**CAT:** ☐A1 ☒A2 ☐A3

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

**Cognizant Individual:** D. Cai \_\_\_\_\_ **Date of Review:** 12/17/19

---

**Review Board Members:**

W. Blanchard, Chairperson  
J. Petrella, Cooling and Bakeout RE  
R. Ellis, Chief Engineer  
S. Gerhardt, System Integration  
P. Titus, Analysis TA  
T. Stevenson, Operations  
S. Raftopoulos, Construction Manager  
Y. Zhai, Project Engineer  
H. Wetzel, ES&H  
M. Ramos, QA

**Presenters / Attendees**

P. Dugan  
H. Zhang  
R. Hawryluk  
G. Swider  
M. Cropper  
D. Reneau

---

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"/>	_____
Reg. compliance incl. USI/USID and NEPA	<input checked="" type="checkbox"/>	<input type="checkbox"/>	NEPA 1631 _____
Disposition of CHITS from previous reviews	<input type="checkbox"/>	<input type="checkbox"/>	N/A _____
Cost objectives	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
Other review objectives addressed	<input type="checkbox"/>	<input type="checkbox"/>	_____

**SUMMARY OF RESULTS:**

The purpose of this FDR was to review the design of the water and helium line and connections between the delivery manifolds and the Heat Transfer Plate (HTP) and Heat transfer Tube (HTT). P. Dugan reviewed the requirements for the system and H. Zhang reviewed the thermal, EM and disruption analysis for the helium lines. D. Cai reviewed in detail the design of the water and helium lines, supports and insulation. He also reviewed the fabrication, installation testing and cost and schedule to complete the project. There were six chits generated during the review. Two chits pertained to documenting calculations and requirements, two dealt with the use of microtherm as insulation, one concerned the lateral displacement during disruptions and one with changing the categorization of the project to A1. The review committee concurred with five chits and to consider the re-categorization of the project. The review committee deemed the FDR to be successful pending resolution of the chits.

**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 Engineering, QA, ES&H, Security, Requesting & Performing Dept. Head