



ENG-033 - FDRS - FDR SUMMARY

Design Review Summary for the Wire Seal Flange Repairs

NSTXU_1-4-1-22-3_FDRS_100

Work Planning #: **3063**
Effective Date: **01/09/2020**
Prepared By: **William R. Blanchard**

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|--------------------|--|---------------------------|
| Reviewed By | William R. Blanchard, Design Review Chair | 01/09/2020 08:11:45 AM |
| Approved By | Robert A. Ellis, Cognizant Individual | 01/09/2020 08:21:12 AM |



DESIGN REVIEW DOCUMENTATION – RESULTS – No:

Title: Wire Seal Flange Repairs (WP# 3063, WBS# 1.04.01.05)_____

CAT: ☒A1 ☐A2 ☐A3

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

Cognizant Individual: J. Bradley_____ **Date of Review:** 1/7/20

| Review Board Members: | Other Attendees |
|---|-----------------|
| W. Blanchard, Chairperson | D. Kidd |
| R. Ellis, Diagnostics RE | R. Hawryluk |
| D. Cai, Vacuum and Fueling RE | L. Hill |
| S. Raftopoulos, VVIH RE | N. Santoro |
| M. Kalish, Mechanical TA | W. Gattoni |
| P. Titus, Analysis TA | M. Cropper |
| W. Slavin, Industrial Hygiene TA and Safety | J. Galayda |
| J. Winston, Machine Assembly SME | A. Indelicato |
| T. Stevenson, Alt. CE | D. Niemenski |
| Y. Zhai, Project Engineer | |
| A. Castaneda, QA | |

| 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 1128 _____ |
| Disposition of CHITS from previous reviews | <input checked="" type="checkbox"/> | <input type="checkbox"/> | _____ |
| Cost objectives | <input checked="" type="checkbox"/> | <input type="checkbox"/> | _____ |
| Other review objectives addressed | <input type="checkbox"/> | <input type="checkbox"/> | _____ |

SUMMARY OF RESULTS:

During the 2016 run of NSTX-U, large vacuum leaks were identified at three of the 27” midplane wire seal flanges (Bays I, H and F). J. Bradley reviewed the design of the fixtures and methodology for removing the three flanges, welding new flanges on the nozzles and leak checking the welds. He further reviewed the resolution to the CDR chits, the loading analysis on the leak check fixture, FMECA and the cost and schedule. There were eight chits generated during the review of which the review committee concurred with all but one. Most of the chits concerned documentation and updating and completing drawings. One chit pertained to reviewing the merits of MIG vs TIG welding and one with the scheduling and order of flange repairs, especially with respect to Bay H (to allow NB armor work to be completed in a timely manner). 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 Engineer, Attendees, QA, ES&H, Security, Requesting & Performing Dept. Head

Approved 01/09/2020

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