



ENG-033 - DRP - DESIGN REVIEW PLAN

NSTX-U Midplane Flange Seal Repair Design Review Plan

NSTXU_1-4-1-22-3_DRP_100

Work Planning #: **3063**
Effective Date: **01/09/2020**
Prepared By: **Justin Bradley**

Reviewed By	Justin Bradley, Cognizant Individual	01/08/2020 14:55:05 PM
Reviewed By	Robert A. Ellis, Responsible Engineer	01/08/2020 18:35:37 PM
Reviewed By	Leslie Hill, Project Manager	01/09/2020 10:34:11 AM
Approved By	Timothy N. Stevenson, Chief Engineer	01/09/2020 14:52:38 PM



Design Review Plan No: 1.4.1.22.3 #

Revision No: 0# Category: A-1.

Scope being reviewed:

The Wire-Seal Flange Bays I, H, and F within the NSTX vacuum vessel have been identified as sources of vacuum leaks. The proposed conceptual design consists of (1) diagnosing the causes of the leaks in each Bay and (2) repairing or replacing the wire-seal flanges accordingly. The purpose of the Conceptual Design Review (CDR) is to review the conceptual approach of the diagnosing of vacuum leaks and the proposed solutions to restore and verify vacuum sealing capabilities for each flange bay.

List of relevant Technical Authorities:

TA - Mechanical, TA - Industrial Hygiene

List of Interfaces:

N/A. Repair of existing Diagnostic Port systems.

Conceptual Design Review:

	Required?	Filing No:
Waiver		
OR		
Minutes of underlying peer reviews	N	
Chit closure report underlying peer reviews	N	
Requirements	Y	GRD, SRD-004
Interfaces	N/A	
Implementation options	Y	Repair/Replacement TBD per Bay.
Feasibility study (initial)	Y	Repair/Replacement based on Metrology Results.
Resource, schedule, and cost considerations	Y	WAF to be completed still.
FMEA considerations	N	Repair/Replacement of existing flanges. Replacement flanges would be exact same design.
SAD/ASE considerations	Y	Chart to be completed for CDR.
Design Review Results	After	
...		

Preliminary Design Review:

	Required?	Filing No:
Waiver	Y	
OR		
Minutes of underlying peer reviews		
Chit closure report underlying peer reviews and CDR		
Requirements (final)		
Interfaces (final)		
Design and development plan		N/A
Feasibility study (incl. manufacturability)		N/A
Resource, schedule, and cost plan (final)		N/A
Procurement plan		N/A
Testing plan (initial)		
Approved On: 09/26/20	NSTXU 1-4-1-22-3	DRP 100
Comparison with Working Systems		

Approved On: 09/26/20



Checked Calculations: List items if any required ...		
FMEA considerations		N/A
SAD/ASE considerations		N/A
Design Review Results	After	
...		



Final Design Review:

	Required?	Filing No:
Minutes of underlying peer reviews	Y	
Chit closure report underlying peer reviews, CDR and PDR	Y	
Design report	Y	N/A
Drawings	Y	Update as built in the field.
Technical Specification	N	Commercial Product.
Statements of Work	N	Commercial Product.
Procurement plan	Y	Commercial Product, Qualified Vendor.
Test Plans	Y	Leak-Checking Fixture.
Prototype Results	N	
Comparison with Working Systems	Y	Using existing design and system drawings.
Checked Calculations: List items required ...	Y	Structural Analysis of Leak-Checking Fixture.
FMEA	Y	N/A
SAD/ASE review	Y	N/A
USI determinations	Y	N/A
Design Review Results	After	
...		

Cognizant Individual: Justin Bradley _____ (sign and date)

Responsible Engineer: Robert Ellis _____ (sign and date)

Project Manager: Les Hill _____ (sign and date)

(A-1 only) Chief Engineer: Tim Stevenson _____ (sign and date)

