

**Title: Center Stack First Wall and Angled Section Tile Peer Review****CAT:** ☒A1 ☐A2 ☐A3**Type of Review:** ☐ Peer ☐ CDR ☐ PDR ☐ FDR**Cognizant Individual:** J. Klabacha \_\_\_\_\_ **Date of Review:** May 1, 2019 \_\_\_\_\_

<b>Review Board Members:</b>	<b>Invited Attendees:</b>	<b>Other Attendees:</b>
Chairperson _C. Neumeyer_____	_____M. Safabakhsh_____	_____A. Indelicato_____
RE + Mech TA _D. Loesser_____	_____B. Linn_____	_____W. Gattoni_____
TA (Vacuum) D. Cai_____	_____A. Jariwala_____	_____S. Horst_____
P. Dugan_____	_____	_____E. Lawrence_____
R. Ellis_____	_____	_____L. Hill_____
S. Gerhardt_____	_____	_____
P. Titus_____	_____	_____
M. Smith__(absent)_____	_____	_____
M. Viola__(absent)_____	_____	_____
Y. Zhai_____	_____	_____
QA_A. Castenada_____	_____	_____
ESH_____I. Iwuoha_____	_____	_____
Regulatory Compliance _____	_____	_____

<b>Items Reviewed:</b>	<b>Sat.</b>	<b>Unsat.</b>	<b>Comments or n/a if not applicable</b>
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"/>	n/a _____
Disposition of CHITS from previous reviews	<input checked="" type="checkbox"/>	<input type="checkbox"/>	n/a _____
Cost objectives	<input checked="" type="checkbox"/>	<input type="checkbox"/>	n/a _____
Other review objectives addressed	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Some calculations incomplete, others complete but not checked _____

**SUMMARY OF RESULTS:**

The scope was subject to a Final Design Review 9/28/18. However, various post-FDR changes driven by Center Stack Casing (CSC) changes became necessary and were the subject of this review. The primary topic was the geometric change that arose from the increase in the radius of the CSC on which the tiles are mounted. Some additional PFC issues driven by CSC changes and findings, that took place after the PFC FDR, were also addressed. Following this review, and the resolution of all chits, the Design Approval Form can be signed and the drawings can be released.

Several committee members were absent, including intended Chair and others with strong interfaces. One committee member was on Zoom but had no audio (had to communicate via chat box). From this point of view, planning and arrangements were not adequate.

The main topics that arose from post-FDR discoveries were 1) effect of CSC deformation from EM forces and 2) high stress regions in the T-bar slots of the CS angled tiles. Regarding both of these additional topics, since the analysis and checking is incomplete, there is a risk that additional design changes may be necessary but this is unknown at the present time. Any issues related to 1) can be mitigated by minor reductions in the tile dimensions to increase the tile-to-tile gaps. Issues related to 2) might be mitigated by further optimization of the T-bar slot geometry. Should additional changes are found to be necessary, another follow-on review will be required.

Six chits were submitted per the following table and the DR committee concurred in all cases.

1	Update the SRD to be consistent w/ regard to the new nominal radius of the tile surface given the growth of the casing FW radius	Concur
2	Revisit tolerances: Some of the non-critical tolerances appear to be too tight. Revisit the tolerances.	Concur
3	List of all relevant calculations to be included on Design Approval Form, and all calculation checking to be complete prior to submittal of Design Approval Form	Concur
4	Verify the mounting surface of the angled sections accommodates the 0.030" offset requirement	Concur
5	2 belleville washers stacked for 360lb preload might not be necessary. Please find out if one washer can give you the 360 lb preload.	Concur
6	On the calculation of Tile shear pin hole slide, the peak stress from FEA exceeds allowable, Please check using analytical approach to extract local peak stress to resolve this issue (i.e., the Peterson's stress concentration factor).	Concur

Prior to submittal of the Design Approval Form for this work scope:

- All calculations to be completed and checked
- Chit resolution report to be completed and approved

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**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** \_\_\_\_\_ C. Neumeyer \_\_\_\_\_ **Date:** \_\_\_\_\_

**Cognizant Individual Acceptance** \_\_\_\_\_ J. Klabacha \_\_\_\_\_ **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

Revised 8/10/18