

Request for Additional Information (RAI)
Docket No. 72-1042
Certificate of Compliance No. 1042
Amendment No. 4
NUHOMS® EOS System

RAI 4-18: Provide further justification for the code exception to ANSI/AISC N690 section N9.1.7b(b) regarding the fully-developed front wall opening design and detailing, and demonstrate how the current configuration provides the necessary structural capacities to meet the required demands on the front wall. Address the interior and exterior faces of the front wall of the top HSM section in the justification. This code exception and justification is cited in both UFSAR section 3.9.8.3 and technical specification (TS) section 4.4.4. Update the UFSAR and TS as necessary.

Although some aspects of the code requirements cited in ANSI/AISC N690-18 for fully-developed edges at the perimeter of openings (i.e., N9.1.7.b(b) for large, and N9.1.7a(b) for small) are incorporated in the EOS-HSM-SC design, they are not implemented at the interior and exterior wall faces. Although it is understood that the extent of flange requirements cited sections N9.1.7a(b)(4) is not deemed practical due to geometrical limitations, it appears that the additional ¼-inch thickness provided for the top front wall faceplate, intended to act as a flange, does not adhere to the requirements of that code section that it be the same thickness of the original ½-inch faceplate. Additionally, this increased plate thickness is not provided on both sides of the wall containing the opening, and it is not clear whether the weld between the faceplate and sleeve is a complete joint penetration weld, as required per code section N9.1.a(b)(4). Finally, it does not appear that sections 8.6.1 and 8.7.3 of calculation EOS01-0263, Revision 1, specifically address the load demands and capacities of the SC section configuration and faceplate welds, respectively, around the circumference of the top HSM section opening. The staff notes that demand-to-capacity ratios presented for the front wall in UFSAR Table 3.9.8-3 are increased to account for the presence of the additional faceplate thickness, but the rationale behind this inflation is also not clear.

This information is necessary to demonstrate compliance with 10 CFR 72.236(b) and (l).

TN's requested clarification and NRC discussion:

TN is proposing a 7/8" faceplate thickness (3/8" + 3/8" + 1/8"). TN states they only need 3/8" flange. NRC understands the proposed approach and explanation that TN intends to provide. NRC clarified that TN's approach applies to both faces of the wall (interior and exterior).

Regarding sections 8.6.1 and 8.7.3, TN has already provided SC wall demands and capacities in section 8.6.1 and does not believe that specific analyses are needed for load demands and capacities of the circumferential weld (full penetration) in section 8.7.3. NRC understands TN's assessment and proposed explanation.