

STP Exemption Request
Request for Additional Information RAI M-1
March 25, 2022

DRAFT

Provide additional information to demonstrate that the stress reduction factor used in the stress analysis for HI-STORM FW multipurpose canister (MPC) adequately bounds the possible weld flaws in the unexamined section of MPC shell to baseplate weld.

The applicant proposed to use a joint efficiency factor from the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel (B&PV) Code, Section VIII, Division 1. However, the joint efficiency factor from ASME Section VIII, Division 1, is not applicable to the HI-STORM FW MPC, which is designed and constructed using ASME Section III, Division I, Subsection NB, with NRC approved ASME B&PV code alternatives.

Subsequently, the applicant re-evaluated calculations of bounding load cases for the MPC using a stress reduction factor described in NRC's interim staff guidance (ISG) -15, Materials Evaluation (NRC ADAMS Accession Number ML010100170). However, the stress reduction factor of 0.8 from ISG-15 is applicable for a lid to shell weld with multiple penetrant testing (PT) in lieu of a volumetric examination. Therefore, the applicant's proposed use of the stress reduction factor of 0.8 as a design criterion was not supported by a justification that demonstrates it was appropriate for the analyses of the possible weld flaws in the unexamined section of the repaired MPC shell to baseplate weld. While the stress reduction factor of 0.8 may be adequate to bound possible weld flaws as a result of the unexamined section of the repaired MPC to shell baseplate weld, the applicant did not provide an analysis or supporting information to justify the value of the stress reduction factor used in the re-evaluated calculations of the bounding load cases.

This information is needed to determine compliance with 10 CFR 72.236(b) and (l).