

Alternatives to ASME Code Section III Design/Construction Requirements under Part 52

- Issue identified from Vogtle construction lessons learned
- 10 CFR 50.55a(a)(3) allows alternatives to codes and standards incorporated by reference in 50.55a (i.e., ASME Boiler and Pressure Vessel Code, ASME OM Code, and IEEE-603)
- NRO has authorized three alternatives to ASME Code Section III requirements to date.
 - reactor vessel flow skirt weld (8/30/2012)
 - use of ASME Certification Mark ((11/29/2012)
 - use of later edition/addenda of ASME Code Section XI for PSI (3/18/2013)
- Legal questions were raised on the potential need for an exemption from Tier 1 requirements when a COL holder requests an alternative to ASME Code Section III requirements.
- Example of reactor vessel ITAAC (See attached - AP1000 DCD Tier 1 Table 2.1.3-2, Item 3)
- Application of Codes and Standards Rule (10 CFR 50.55a) under Part 52 [SOC for August 28, 2007 final rule on Part 52 (and conforming changes)] (72 FR 49438)
 - Exemption is not required for an alternative; only need to satisfy the criteria in 10 CFR 50.55a(a)(3)
 - If an alternative involves a departure from the DCD, it is also governed by Section VIII of the DCR and exemptions (e.g., Tier 1 changes)
- To avoid potential issues in the future, it was recommended to add language in Tier 1 definitions to clarify that meeting ASME Code requirements means meeting ASME Code rules and alternatives authorized by the NRC. The staff-recommended text proposed to be added in the Tier 1 description for all design certification applications is:

“ASME Code” means Section III of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code. Some Tier 1 ITAAC design commitments in the ESBWR DCD specify that structures, systems, and components be designed and constructed in accordance with ASME Code Section III requirements. When this language is used, it indicates that the ITAAC for that design commitment will be met by satisfying the edition and addenda of the ASME Boiler and Pressure Vessel Code, Section III as specified in the DCD and as incorporated by reference in 10 CFR 50.55a subject to the conditions listed in 10 CFR 50.55a(b), or in accordance with alternatives to paragraphs (b), (c), (d), or (e) of 10 CFR 50.55a as authorized by the NRC pursuant to 10 CFR 50.55a(a)(3).