
REVISED RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

APR1400 Design Certification

Korea Electric Power Corporation / Korea Hydro & Nuclear Power Co., LTD

Docket No. 52-046

RAI No.: 452-8545
SRP Section: 10.03.06 – Steam and Feedwater System Materials
Application Section: 10.3.6
Date of RAI Issue: 03/28/2016

Question No. 10.03.06-21

In response to RAI 314-8378, Question 10.03.06-12 the applicant stated the following:

“Welding material specifications for ASME Class 2 and 3 components will be decided by the manufacturer or constructor in accordance with the ASME Section III NC-2400(Class 2) and ND-2400(Class 3).”

Subsequently the applicant stated that there was no change to the DCD. As written, the DCD would not require this information to be provided by a COL applicant.

Add a new COL item to have a COL applicant provide material specifications that will be utilized for ASME Section III components.

Response – (Rev.1)

DCD Tier 2, COL item 10.3(5) will be added as indicated in the attachment to clarify what is required of the COL applicant.

DCD Tier 2, Table 1.8-2, Subsection 10.3.6.3 and 10.3.7 will be revised to make a technical clarification to COL 10.3(6) by NRC feedback.

Impact on DCD

The changes that were proposed in the original response to this RAI have been incorporated into Revision 2 of the DCD; therefore, only the pages containing proposed changes as a result of Revision 1 of this response are included in the Attachment.

DCD Tier 2, Table 1.8-2, Subsection 10.3.6.3 and 10.3.7 will be revised as indicated in the Attachment.

Impact on PRA

There is no impact on the PRA.

Impact on Technical Specifications

There is no impact on Technical Specifications.

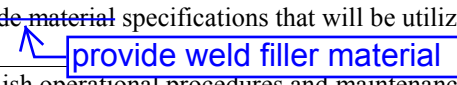
Impact on Technical/Topical/Environmental Reports

There is no impact on any Technical, Topical, or Environmental Report.

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Table 1.8-2 (23 of 39)

| Item No. | Description |
|--------------|--|
| COL 10.3(4) | The COL applicant is to provide the description about the material specifications for components between 1) the high pressure turbine and the moisture separator reheater and 2) the moisture separator reheater and the low pressure turbine when the T/G design is selected. The COL applicant is also to specify that the pipe thickness is adequate for the plant design life in terms of FAC in place of the components between 1) the high pressure turbine and the moisture separator reheater and 2) the moisture separator reheater and the low pressure turbine when the T/G design is selected. |
| COL 10.3(5) | The COL applicant is to provide a description of the FAC monitoring program. The description is to address consistency with GL 89-08 and NSAC-202L-R3 and provide a milestone schedule for implementation of the program. The program shall incorporate the conditions of 10 CFR 50.55a(b)(5) on ASME Code Case N-597-2. |
| COL 10.3(6) | The COL applicant is to provide material specifications that will be utilized for ASME Section III components.  |
| COL 10.4(1) | The COL applicant is to establish operational procedures and maintenance programs for leak detection and contamination control |
| COL 10.4(2) | The COL applicant is to maintain the complete documentation of system design, construction, design modifications, field changes, and operations |
| COL 10.4(3) | The COL applicant is to provide the location and design of the cooling tower, basin, and CW pump house, if used. |
| COL 10.4(4) | The COL applicant is to confirm that the water hammer events are bounded by the system design pressure value with a hydraulic transient analysis or otherwise demonstrate that the design is acceptable to satisfy GDC 4 in regard to the design provisions that are implemented to accommodate the effects of discharging water that could result from a malfunction or failure of a component or piping in the system. |
| COL 10.4(5) | The COL applicant is to provide elevation drawings |
| COL 10.4(6) | The COL applicant is to address the design features for the prevention of contamination |
| COL 10.4(7) | The COL applicant is responsible for provisions of temporary shielding, if required, and mobile equipment, including spent resin fill-head for packaging of the contaminated spent resin, provisions of temporary storage, and shipment of packaged contaminated CPS spent resin for off-site treatment and/or disposal. |
| COL 10.4(8) | The COL applicant is to provide operating and maintenance procedures in accordance with NUREG-0927 and a milestone schedule for implementation of the procedures. |
| COL 10.4(9) | The COL applicant is to describe the nitrogen or equivalent system design for SG drain mode. |
| COL 10.4(10) | The COL applicant is to prepare the Site Radiological Environmental Monitoring Program |
| COL 10.4(11) | The COL applicant is to develop procedures to perform periodic testing or maintenance, including independent verification in accordance with NUREG-0635. |
| COL 10.4(12) | The COL applicant is to determine the wet bulb temperature correction factor to account for potential interference and recirculation effects |

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pipng if necessary. The type of fluid, flow rates, fluid temperatures, and pressure of ASME Class 2 and 3 piping for steam and feedwater system are given in Table 10.3.2-5.

The COL applicant is to provide a description of the FAC monitoring program. The description is to address consistency with GL 89-08 and NSAC-202L-R3 and provide a milestone schedule for implementation of the program (COL 10.3(5)). The program shall incorporate the conditions of 10 CFR 50.55a(b)(5) on ASME Code Case N-597-2.

The COL applicant is to ~~provide material~~ ^{provide weld filler material} specifications that will be utilized for ASME Section III components (COL 10.3(6)).

10.3.7 Combined License Information

COL 10.3(1) The COL applicant is to provide operating and maintenance procedures in accordance with NUREG-0927 and a milestone schedule for implementation of the procedure.

COL 10.3(2) The COL applicant is to establish operational procedures and maintenance programs as related to leak detection and contamination control.

COL 10.3(3) The COL applicant is to provide secondary side water chemistry threshold values and recommended operator actions for chemistry excursions in compliance with the latest version of the EPRI PWR Secondary Water Chemistry Guidelines in effect at the time of COLA submittal. The COL applicant is to establish the operational water chemistry program six months before fuel load.

COL 10.3(4) The COL applicant is to provide the description about the material specifications for components between 1) the high pressure turbine and the moisture separator reheater and 2) the moisture separator reheater and the low pressure turbine when the T/G design is selected. The COL applicant is also to specify that the pipe thickness is adequate for the plant design life in terms of FAC in place of the components between 1) the high pressure turbine and the moisture separator reheater and 2) the moisture separator reheater and the low pressure turbine when the T/G design is selected.

COL 10.3(5) The COL applicant is to provide a description of the FAC monitoring program. The description is to address consistency with GL 89-08 and

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NSAC-202L-R3 and provide a milestone schedule for implementation of the program. The program shall incorporate the conditions of 10 CFR 50.55a(b)(5) on ASME Code Case N-597-2.

COL 10.3(6) The COL applicant is to ~~provide material~~ specifications that will be utilized for ASME Section III components.

provide weld filler material

10.3.8 References

1. Regulatory Guide 1.155, "Station Blackout," U.S. Nuclear Regulatory Commission, August 1988.
2. 10 CFR 50.63, "Loss of All Alternating Current Power," U.S. Nuclear Regulatory Commission.
3. Regulatory Guide 1.115, "Protection Against Turbine Missiles," Rev. 2, U.S. Nuclear Regulatory Commission, January 2012.
4. Regulatory Guide 1.117, "Tornado Design Classification," Rev. 1, U.S. Nuclear Regulatory Commission, April 1978.
5. Regulatory Guide 1.29, "Seismic Design Classification," Rev. 4, U.S. Nuclear Regulatory Commission, March 2007.
6. ANSI/ASME B31.1, "Power Piping," The American Society of Mechanical Engineers, 2010.
7. ASME Boiler and Pressure Vessel Code, Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," The American Society of Mechanical Engineers, the 2007 Edition with the 2008 Addenda.
8. 10 CFR 50.55a(f), "Inservice testing requirements," U.S. Nuclear Regulatory Commission.
9. Regulatory Guide 4.21, "Minimization of Contamination and Radioactive Waste Generation: Life-cycle Planning," U.S. Nuclear Regulatory Commission, June 2008.
10. ASME Boiler and Pressure Vessel Code, Section II, "Materials," The American Society of Mechanical Engineers, the 2007 Edition with the 2008 Addenda.