PMSTPCOL PEmails

From: Tekia Govan
Sent: Monday, April 06, 2009 3:40 PM
To: STPCOL
Subject: FW: RAI Response on Section 4.5
Attachments: U7-C-STP-NRC-090027.pdf

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Sent: Monday, April 06, 2009 11:14 AM
To: Tekia Govan
Cc: Adrian Muniz; Belkys Sosa; George Wunder; Loren Plisco; Raj Anand; Rocky Foster; Stacy Joseph; Tom Tai
Subject: RAI Response on Section 4.5

Attached is a courtesy copy of the letter answering the NRC's Requests for Additional Information related to COLA Part 2, Tier 2, Section 4.5. The official paper copies were sent via UPS according to the letter addressee lists.

If you have any questions, please contact John Price at (361) 972-4748 or Bill Mookhoek at (361) 972-7274

Hearing Identifier: SouthTexas34Public_EX
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Nuclear Operating Company

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April 2, 2009
U7-C-STP-NRC-090027

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
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South Texas Project
Units 3 and 4
Docket Nos. 52-012 and 52-013
Response to Requests for Additional Information

Attached are responses to NRC staff questions included in Request for Additional Information (RAI) letter number 79 related to Combined License Application (COLA) Part 2, Tier 2, Section 4.5.

Attachments 1 through 3 address the responses to the RAI questions listed below.

RAI 04.05.02-1
RAI 04.05.02-2
RAI 04.05.02-3

There are no commitments in this letter.

If you have any questions regarding these responses, please contact me at (361) 972-7136, or Bill Mookhoek at (361) 972-7274.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on 4/2/09

Scott Head
Manager, Regulatory Affairs
South Texas Project Units 3 & 4

jep

Attachments:

1. Question 04.05.02-1
2. Question 04.05.02-2
3. Question 04.05.02-3

cc: w/o attachment except*
(paper copy)

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RAI 04.05.02-1:

QUESTION:

In FSAR Section 4.5.2.1, the alloy ASME SA-336/336M Grade F316L is listed for use in "Forgings" under the subheading entitled "Materials Employed in Shroud head and Separator Assembly and Steam Dryer Assembly". However, there is no F316L Grade of SA-336/336M listed in the ASME Code (Section II, Part A, SA-336/336M). Please revise the FSAR accordingly.

RESPONSE:

COLA Part 2 Tier 2 Table 1.8-21 indicates that the Code of Record is the ASME Boiler and Pressure Vessel Code, 1989 Edition with No Addenda. ASME Boiler and Pressure Vessel Code Section II Part A 1989 Edition with No Addenda provides specification ASME SA-336/336M. Grade (actually denoted as Class) F316L is included in this specification.

No COLA revisions are required as a result of this RAI response.

RAI 04.05.02-2:

QUESTION:

In FSAR Section 4.5.2.1, the alloy ASME SA-403/403M Grade WP316L is listed for use in "Tube" under the subheading entitled "Materials Employed in Shroud head and Separator Assembly and Steam Dryer Assembly". This alloy grade is not listed in Table 2A, 2B, or 4 of Section II, Part D, Subpart 1 of the ASME Code and therefore does not satisfy the requirements of NG-2120 of Section III, Division 1 of the Code. Please revise the FSAR accordingly.

RESPONSE:

COLA Part 2 Tier 2 Section 4.5.2.1 states, "All core support structures are fabricated from ASME specified materials, and designed in accordance with requirements of ASME Code Section III, Subsection NG. The other reactor internals are noncoded, and they are fabricated from ASTM or ASME specification materials or other equivalent specifications." Thus, ASME Code material is not required for components that are not used in core support structures like the shroud head and separator assembly or the steam dryer assembly.

As indicated in COLA Part 2 Tier 2 Table 1.8-21, the Code of Record for the ABWR is the ASME Boiler and Pressure Vessel (B&PV) Code, Section III, Division 1, 1989 Edition with No Addenda. In the 1989 Edition, Tables I-1.1 and I-1.2 of the Section III Division 1 Appendices are equivalent to Section II Part D Subpart 1 Table 2A of more recent ASME Code editions. ASME SA-403/403M Grade WP316L is listed in Section III, Appendix I, Table I-1.2 of the 1989 Edition of the ASME B&PV as approved for use in Class 1 applications.

No COLA revisions are required as a result of this RAI response.

RAI 04.05.02-3:

QUESTION:

In FSAR Section 4.5.2.1, Niobium modified Nickel-Chromium-Iron Alloy 600 is listed for use in "Shroud Support" under the subheading entitled "Materials Used for Core Support Structure". The FSAR states that the basis for use of this alloy is per Code Case No. N-580-2, however, this Code Case has not been approved by the NRC. Please justify the use of this Code Case.

RESPONSE:

Code Case N-580-2 is being used since it invokes actual production procedures currently in use for heat treatment conditions. Revision 2 of the Code Case has been reconciled with the Revision 1 version and found to meet or exceed the Revision 1 material property characteristics.

The current edition of Regulatory Guide 1.84 permits the use of ASME Boiler and Pressure Vessel Nuclear Code Case, N-580-1, "Use of Alloy 600 with Columbium Added, Section III, Division 1." Code Case N-580-2 revises the heat treatment temperature range of Alloy 600 with Columbium added from 1950°F-2000°F to 1875°F-2000°F. The revised code case was issued by the ASME Code Committee in January 2008. The revised code case is currently under NRC Staff review.

One of the material producers for Alloy 600 is Nippon Yakin of Kogyo, Japan. The heat treatment range of 1950°F-2000°F specified in Code Case N-580-1 was based on the data for materials as-forged, heated at 1050°C (1922°F) and at 1100°C (2012°F) produced by Nippon Yakin in 1986. These temperatures were not intended to be the minimum and the maximum of heat treatment temperature range respectively, but the average temperature applied to the specimens. However, these temperatures were misunderstood by the ASME Code Committee as the minimum and the maximum temperatures and were used to set the specification temperature range as 1950°F-2000°F. Test data indicates that the material properties and grain size for Alloy 600 heat treated at 1900°F are better than those properties at higher heat treatment temperatures. As a result, the ASME Code Committee revised the Code Case to be in line with the actual manufacturing process. Additionally, Japanese domestic projects adopted this proposed temperature range in 2003 and have had successful results.

No COLA revisions are required as a result of this RAI response.