PMSTPCOL PEmails

From: Price John E [jeprice@STPEGS.COM]
Sent: Wednesday, May 13, 2009 10:44 AM
To: Muniz, Adrian; Sosa, Belkys; Wunder, George; Plisco, Loren; Anand, Raj; Foster, Rocky; Joseph, Stacy; Govan, Tekia; Tai, Tom
Subject: RAI Responses for Letter 93, 94, and 104
Attachments: U7-C-STP-NRC-090045 RAI Response(SIGNED).pdf

Attached is a courtesy copy of the letter answering the NRC's Requests for Additional Information related to COLA Part 2, Tier 2, Section 3.4 and extension schedules for Chapter 7.0. The official paper copies were sent via UPS according to the letter addressee lists.

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

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May 13, 2009
U7-C-STP-NRC-090045

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
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Rockville, MD 20852-2738

South Texas Project
Units 3 and 4
Docket Nos. 52-012 and 52-013
Response to Request for Additional Information

Attached are responses to NRC staff questions included in Request for Additional Information (RAI) letter numbers 93 and 94 related to Combined License Application (COLA) Part 2, Tier 2, Section 3.4. This submittal completes the response to these RAI letters.

Attachments 1 and 2 are responses to the RAI questions listed below:

RAI 03.04.01-6
RAI 03.04.01-7

When a change to the COLA is indicated, the change will be incorporated into the next routine revision of the COLA following NRC acceptance of the RAI response.

Attachment 3 identifies questions from RAI letter number 104 that require extensions and includes the reasons for extension and the date by which each response is expected to be submitted to the NRC staff.

There are no commitments in this letter.

If you have any questions regarding these responses, please contact me at (361) 972-7206, or Bill Mookhoek at (361) 972-7274.

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

Executed on MAY 13, 2009

MA McBurnett

Mark A. McBurnett
Vice President, Oversight and Regulatory Affairs
South Texas Project Units 3 & 4

jep

Attachments:

1. Question 03.04.01-6
2. Question 03.04.01-7
3. Response Date Extensions for RAI Questions

cc: w/o attachment except*
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RAI 03.04.01-6:

QUESTION:

Revision 2 of STP COL Sections 3.4.3.3, 19R.1, and 19R.4.2.4, states that the access between divisions in the reactor service water (RSW) pump house will be a watertight design. STP COL Section 19R.4.2.4 describes methods for remotely and locally monitoring door positions and the status of door latches.

However, the STP COL does not describe other important aspects associated with the functionality of these watertight doors, for example door seals, aging degradation, testing, and maintenance procedure requirements for the door seals. In accordance with SRP 3.4.1, Item III.2, the adequacy of techniques used to prevent flooding should be assessed.

Describe how the functionality of these watertight doors is assured. Specifically address the means used to determine and assure integrity of door seals, aging degradation, testing, and maintenance procedure requirements for the door seals. Include this information in the FSAR and provide a markup in your response.

RESPONSE:

The functionality of the RSW Pump House watertight doors is assured by pre-installation testing and preventive maintenance measures under the Reliability Assurance Program as described in Appendix 19K of the FSAR and under the Maintenance Rule Program during plant operation. Specifically, all watertight doors are tested by the door vendor for their acceptability to perform their intended function prior to installation. Following installation, the inspection and maintenance of the door and door parts are performed in accordance with the Preventive Maintenance Program.

Control and Reactor Building, RSW Pump House, and Emergency Core Cooling System Room watertight doors are identified as requiring inspection yearly and after any major maintenance. Since these structures, systems and components are included under the Maintenance Rule and Reliability Assurance Program, the maintenance requirements would be adjusted based on performance over time.

Typically such inspections would be performed using the Preventive Maintenance Program, which would specify the acceptance criteria for the door, door seals, and seating surface. Failure to meet the acceptance criteria will require corrective actions, such as increased frequency of inspection or corrective maintenance to restore acceptable conditions.

Based on FSAR Table 13.4S-1, Item 17, Maintenance Rule, the program must be in place prior to “Fuel load authorization per 10 CFR 52.103(g).” However, FSAR Section 13.5.3.3.2(4)

requires maintenance procedures to be prepared and issued six months prior to the commencement of Pre-Operational Test Program.

No COLA revision is required as a result of this response.

RAI 03.04.01-7:

QUESTION:

Table 3.4.1 of FSAR Section 3.4 should be revised in consideration of the following: (1) Include flood protection parameters for safety-related Cooling Towers and Reactor Service Water Powerhouse, or explain why they were excluded in the table; (2) the units in the table should be mm msl or ft msl (mean sea level); (3) How were the design flood levels provided in Table 3.4-1 in the 1st row assigned? Explain why design flood levels for the Service Building, Radwaste Building, and Turbine Building are lower than the estimated maximum external flooding level; (4) explain why the design ground water level for the Ultimate heat Sink is lower than those for other buildings; (5) what is the definition of "reference plant grade" and how does it differ from the actual plant grade; (6) check and correct the signs (+ or -) of some parameters values if they are incorrect; and (7) on the last row, why are the access openings of the Radwaste Building and the Ultimate Heat Sink listed as "None."

RESPONSE:

1. The safety-related cooling towers and the Reactor Service Water (RSW) Pump House are contiguous with the Ultimate Heat Sink (UHS) and are included under the Ultimate Heat Sink column in Table 3.4-1. The column header has been renamed in, and a new Note 8 has been added to, the revised Table 3.4-1 (see attached) to clarify this. In the following responses, the contiguous UHS and RSW Pump House structures are stated as UHS/RSW Pump House.
2. A new Note 9 has been added to the attached revised Table 3.4-1 to indicate that all elevations shown in mm and ft are with reference to mean sea level (MSL).
3. The design flood levels provided in the first row of Table 3.4-1 are assigned based on the safety classification of the structures. Specifically, the design flood level for the safety-related structures (Reactor and Control Buildings, and UHS/RSW Pump House) is 40 feet MSL, which is based on the maximum flood height due to the Main Cooling Reservoir (MCR) dike breach (for details see the COLA mark-up submitted with STP letter U7-C-STP-NRC-090012, dated February 23, 2009). The flood elevation specified in Table 3.4-1 for the non-safety-related structures (Radwaste, Turbine, and Service Buildings) is 33 feet MSL, one foot below the grade level, based on the DCD Tier 1 Table 5.0 and Tier 2 Table 3.4-1. The non-safety-related structures, including the Turbine Building and Service Building, must also comply with the state and local building codes, and are, therefore, subject to the provisions of ASCE 7-05 for establishing design flood elevations. Similarly, the Radwaste Building is subject to the provisions of ASCE 7-95 per Regulatory Guide 1.143, Revision 2. The flood level determined from ASCE 7 for these non safety-related buildings is bounded by the flood levels included in the DCD Table 5.0 and Tier 2 Table 3.4-1.

Note 7 is amended to clarify references to ASCE 7 for these three non safety-related buildings.

4. The UHS/RSW Pump House are site-specific structures, which are designed for the site-specific conditions. The maximum observed ground water level for the STP 3 & 4 site is 25.5 feet MSL, as stated in FSAR Section 2.5S.4.6.1. The design groundwater level of 28 feet MSL shown in Table 3.4-1 is conservatively selected based on the field observations. It should be noted that this number was inadvertently revised in the COLA mark-up submitted with STP letter U7-C-STP-NRC-090012, dated February 23, 2009. This has been corrected to 28 feet MSL as shown in the attached revised Table 3.4-1.
5. The reference plant grade is used to determine the reference building elevations of the structures. The actual grade varies from 32 to 36 feet MSL in the power block area to allow for proper drainage. Table 3.4-1 has been revised to state the variable actual grade level.
6. The negative signs for the two parameters in the row designated as "Reference Plant Grade" have been removed in the attached revised Table 3.4-1.
7. The pipes in the UHS are routed in the RSW tunnel and are protected inside the waterproof tunnel from being exposed to flooding. No access opening in the UHS is located below the flood elevation. The flood level for the Radwaste Building is below grade, so access openings do not have to be protected from flooding.

COLA will be revised to include the revised Table 3.4-1, attached herewith.

Table 3.4-1 Structures, Penetrations, and Access Openings Designed for Flood Protection (Note 9)

Structure	**Reactor Building**	**Service Building**	**Control Building**	**Radwaste Building**	**Turbine Building**	**Ultimate Heat Sink / RSW Pump House (Note 8)**
Design Flood Level ~~(mm)~~	~~11,695~~ **~~14,783 mm~~** **12,192 mm** **~~(48.5 ft)~~** **(40 ft)**	~~11,695~~ 10058 mm (33 ft) **(Note 7)**	~~11,695~~ **~~14,783 mm~~** **12,192 mm** **~~(48.5 ft)~~** **(40 ft)**	~~11,695~~ 10058 mm (33 ft) **(Note 7)**	~~11,695~~ 10058 mm (33 ft) **(Note 7)**	**~~14,783 mm~~** **12,192 mm** **~~(48.5 ft)~~** **(40 ft)**
Design Ground Water Level ~~(mm)~~	~~11,390~~ 9,753 mm (32 ft)	~~11,390~~ 9,753 mm (32 ft)	~~11,390~~ 9,753 mm (32 ft)	~~11,390~~ 9,753 mm (32 ft)	~~11,390~~ 9,753 mm (32 ft)	8,534 mm (28.0 ft)
Reference Plant Grade ~~(mm)~~	~~12,000~~ 10,363 mm (34 ft)	~~12,000~~ 10,363 mm (34 ft)	~~12,000~~ 10,363 mm (34 ft)	~~12,000~~ **~~-10,363 mm~~** **10,363 mm** (34 ft)	~~12,000~~ **~~-10,363 mm~~** **10,363 mm** (34 ft)	10,363 mm (34 ft)
Top of Base Slab ~~(mm)~~	~~-8,200~~ -9,837 mm (-32.27 ft)	~~-2,150 & 3,500~~ -3,787 mm **~~&~~** **~~1,863 mm~~** (-12.42 ft **~~& 6.11 ft~~**)	~~-8,200~~ -9,837 mm (-32.27 ft)	~~-1,500~~ **~~-3,137 mm~~** **-3,353 mm** **~~(-10.29 ft)~~** **(-11 ft)**	~~5,300~~ **~~3,663 mm~~** **~~(12.02 ft)~~** **-4,840 mm** **(-15.88 ft)**	4,267 mm **(UHS),** **-5,486 mm (RSW Pump House)** (14 ft**, UHS)** **(-18 ft, RSW Pump House)**
Actual Plant Grade ~~(mm)~~	~~12,000~~ **~~10,363 mm~~** **~~(34 ft)~~** **Varies between 9,753 mm (32 ft) and 10,973 mm (36 ft)**	~~12,000~~ **~~10,363 mm~~** **~~(34 ft)~~** **Varies between 9,753 mm (32 ft) and 10,973 mm (36 ft)**	~~12,000~~ **~~10,363 mm~~** **~~(34 ft)~~** **Varies between 9,753 mm (32 ft) and 10,973 mm (36 ft)**	~~12,000~~ **~~10,363 mm~~** **~~(34 ft)~~** **Varies between 9,753 mm (32 ft) and 10,973 mm (36 ft)**	~~12,000~~ **~~10,363 mm~~** **~~(34 ft)~~** **Varies between 9,753 mm (32 ft) and 10,973 mm (36 ft)**	**~~10,363 mm~~** **~~(34 ft))~~** **Varies between 9,753 mm (32 ft) and 10,973 mm (36 ft)**
~~*Building Height (mm)*~~	~~49,700~~	~~22,200~~	~~22,200~~	~~28,000~~	~~54,300~~	

Table 3.4-1 Structures, Penetrations, and Access Openings Designed for Flood Protection (continued)

Structure	Reactor Building	Service Building	Control Building	Radwaste Building	Turbine Building	Ultimate Heat Sink / RSW Pump House (Note 8)
Penetrations Below Design Flood Level (Notes 1 through 4)	Refer to Table 6.2-9	None	RCW, RSW and miscellaneous lines, and electrical penetrations	None, except radwaste piping	Radwaste piping	RSW piping and electric cables
Access Openings Below Design Flood Level (Notes 5 and 6)	Access ways to outside and from S/B and C/B (**Ref. Fig.** 1.2-4 through 1.2-8) ~~*@ 4,800 mm*~~	Access ways from R/B, C/B and T/B. (Fig. 1.2-17 through 1.2-20) ~~*@ 3,500 mm, (Fig. 1.2-18)*~~ ~~*Area access ways from C/B @ -2,150 mm, 3,500 mm, and 7,900 mm (Fig. 1.2-19)*~~ ~~*Area access way from T/B @ 3,500 mm (Fig. 1.2-24)*~~	~~Hx area access from S/B @ -2,150 mm, (Fig. 1.2-15)~~ ~~Area access from S/B @ 3,500 (See Fig. 1.2-18~~ ~~Area access way from S/B @ 7,900 mm, (See Fig. 1.2-15)~~ Access ways to outside, S/B, R/B, and RW/B (See Fig 1.2-17 through 1.2-20)	None	Access ways from S/B ~~*@ 5,300 mm,*~~ (Fig 1.2-18)	None

Notes:

1 *Watertight penetrations will be provided for all Reactor, ~~and~~ Control, Turbine and Radwaste Building~~s~~ penetrations that are below ~~grade~~ design flood level.*

2 *The safety-related and non-safety-related tunnels prevent the lines running through them from being exposed to outside ground flooding.*

3 *Penetrations below design flood level will be sealed against any hydrostatic head resulting from the design basis flood, or from a moderate energy pipe failure in the tunnel or inside a connecting building.*

4 *Waterproof sealant applied to the building exterior walls below flood level will also be extended a minimum of 150 mm along the penetration surfaces.*

5 *Watertight doors (bulkhead type) are provided at all Reactor and Control Building access ways that are below ~~grade~~* design flood level.

6 The figure shown best depicts the indicated access.

7 **~~Per FEMA's Flood Maps, STP 3&4 is not located in flood prone region, therefore per ASCE 7 Chapter 5 Non-Safety-Related buildings do not need to be designed for flood.~~**
The Turbine Building and Service Building shall also meet the flood design requirements of ASCE 7-05. The Radwaste Building shall also meet the flood design requirements of ASCE 7-95.

8 UHS includes safety-related cooling towers and RSW Pumphouse, which are contiguous to the UHS.

9 All elevations in this table correspond to mean sea level (msl).

Response Date Extensions for RAI Questions

RAI Question	Reason for Extension	Extended Response Date
07.01-1	Additional time is needed to complete response based on discussions with NRC on May 7, 2009	June 15, 2009
07.01-2	Additional time is needed to complete response based on discussions with NRC on May 7, 2009	June 15, 2009
07.01-3	Additional time is needed to complete response based on discussions with NRC on May 7, 2009	June 15, 2009
07.01-4	Additional time is needed to complete response based on discussions with NRC on May 7, 2009	June 15, 2009
07.02-1	Additional time is needed to complete response based on discussions with NRC on May 7, 2009	June 15, 2009
07.03-1	Additional time is needed to complete response based on discussions with NRC on May 7, 2009	June 30, 2009
07.07-1	Additional time is needed to complete response based on discussions with NRC on May 7, 2009	June 15, 2009