Nuclear Operating Company
South Texas Project Electric Generating Station P.O. Box 289 Wadsworth, Texas 77483

May 3, 2010
U7-C-STP-NRC-100101

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
Responses to Requests for Additional Information

Attached are the responses to the NRC staff questions in Request for Additional Information (RAI) letter numbers 311, 328, 329 and 331 as indicated below. This completes the response to these letters excepting letter number 329 which will require a supplement to RAI 09.01.01-5 as explained in Attachment 3. The Attachments provide the responses to the RAI questions listed below:

Letter number 311	Letter number 328	Letter number 331	Letter number 331
09.01.01-3	09.04.05-1	10.04.03-4	10.04.07-3
Letter number 329			
09.01.01-4			
09.01.01-5			

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

There are no commitments in this letter.

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

D091
NRO

STI 32668552

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

Executed on 5/3/10

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

jaa

Attachments:

1. RAI 09.01.01-3 Response
2. RAI 09.01.01-4 Response
3. RAI 09.01.01-5 Response
4. RAI 09.04.05-1 Response
5. RAI 10.04.03-4 Response
6. RAI 10.04.07-3 Response

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RAI 09.01.01-3

QUESTION:

In response to RAI 2558 (Question 09.01.01-1), the applicant states that the confirmatory criticality analyses will be included in ITAAC 2.5.6.2 along with other items.

The staff does not agree that a future analysis in an ITAAC fulfill the requirements of ABWR COL License Information Items 9.1.6.1 and 9.1.6.3 as described in the response to 09.01.01-1. The staff has issued RAI 4032 (Question 09.01.01-2) requesting the applicant to meet COL Information Items 9.1.6.1 and 9.1.6.3. In addition, the staff is also requesting the applicant to provide the deliverables in COL Information Items 9.1.6.2 and 9.1.6.4 in order for the staff to perform it's safety review.

RESPONSE:

To address this request, a criticality analysis covering both the New Fuel Storage Racks (COL Item 9.1.6.1) and the Spent Fuel Storage Racks (COL Item 9.1.6.3) is being performed based on a baseline rack design using a representative fuel type. A report, WCAP-17246-P, "South Texas Project Units 3 & 4 Fuel Storage Racks Criticality Safety Report," which details the methodology, describes the analysis, and summarizes calculation results, will be provided by June 11, 2010 to support the NRC safety finding.

Similarly, an analysis covering the New Fuel Rack Dynamic and Impact Analyses (COL Item 9.1.6.2) and Spent Fuel Rack Load Drop Analysis (COL Item 9.1.6.4) is being performed. A report, WCAP-17244-P, "South Texas Project Units 3 & 4 Fuel Storage Racks Design Report," describing the analysis and summarizing the calculation results, will be provided by the end of September 2010. This analysis will also be based on a baseline rack design using a representative fuel type.

As a result of this RAI response, COLA Part 2, Tier 2, Subsections 9.1.6.1, 9.1.6.2, 9.1.6.3, and 9.1.6.4 will be revised. A new section 9.1.7S, "References," will be added. Changes from COLA Rev. 3 are indicated with grey shading as follows:

9.1.6.1 New Fuel Storage Racks Criticality Analysis

The following standard supplement addresses COL License Information Item 9.1.

The COL applicant shall provide the NRC a confirmatory criticality analysis for the inadvertent placement of a fuel assembly in other that prescribed locations as required by Subsection 9.1.1.1.1. A confirmatory The criticality analysis for new fuel storage, which addresses the inadvertent placement of a fuel assembly in other than prescribed locations is provided in WCAP-17246-P. will be prepared and verified in accordance with ITAAC 2.5.6.1, 2.5.6.2 and 2.5.6.3.

The analysis will document:

(1) Assumptions and input parameters (i.e. number of racks, fuel capacity, rack material, neutron poison content, fuel center to center distances). Assumptions include highest reactivity fuel and optimum moderators under normal and accident conditions.

(2) The highest reactivity fuel storage array is maintained subcritical ($k_{eff} \leq 0.95$) when fully loaded under varying moderator conditions up to optimum (dry to flooded with fire extinguishing aerosols or non borated water).

(3) Rack design precludes inadvertent placement of fuel in other than design locations.

(4) Failure of non-safety related structures in vicinity of new fuel storage or fuel load drop will not increase $k_{eff} > 0.95$.

(5) Maximum uplift forces from fuel handling equipment will not increase $k_{eff} > 0.95$ for fuel array.

9.1.6.2 Dynamic and Impact Analyses of New Fuel Storage Racks

The following standard supplement addresses COL License Information Item 9.2.

The COL applicant shall provide the NRC confirmatory dynamic and impact analyses of the new fuel storage racks, as requested by Subsection 9.1.1.1.6. These analyses are dependent on a vendor specific design and the as-built configuration of new fuel storage racks. A description of tThe structural analysis, including dynamic and Iimpact (load drop) analyses, for the new fuel storage racks confirmatory analyses will be is provided in WCAP-17244-P. an FSAR amendment in accordance with 10 CFR 50.71(e) prior to receipt of fuel. (COM 9.1-1)

Structural integrity of the racks will be demonstrated for the load combinations described in SRP 3.8.4 appendix D.

The dynamic analysis will utilize the input excitation provided in Section 3A.10.2 for a SSE. The fuel storage vault and racks meet Seismic Category 1 requirements.

The impact analysis will confirm that keff≤ 0.95 for a load drop of one fuel assembly and its associated handling tool from a height of 1.8 m above the new fuel racks.

9.1.6.3 Spent Fuel Storage Racks Criticality Analysis

The following standard supplement addresses COL License Information Item 9.3.

The COL applicant shall provide the NRC a confirmatory critically analysis for the inadvertent placement of a fuel assembly in other than prescribed locations, as required by Subsection 9.1.2.3.1. A confirmatory The criticality analysis for spent fuel storage, which addresses the inadvertent placement of a fuel assembly in other than prescribed locations is provided in WCAP-17246-P.. will be prepared and verified in accordance with ITAAC 2.5.6-1, 2.5.6.2 and 2.5.6.3.

The analysis will document:

(1) Assumptions and input parameters (i.e. number of racks, fuel capacity, rack material, neutron poison content, fuel center to center distances). Assumptions include highest reactivity fuel assembly (based on minimum burnup) and optimum moderator under normal and accident conditions.

(2) The highest reactivity fuel storage array is maintained subcritical ($k_{eff} \leq 0.95$) when fully loaded under optimum moderator condition (non-borated water).

(3) Maximum uplift forces from fuel handling equipment will not increase $k_{eff} > 0.95$ for fuel array.

(4) Failure of non-safety-related structures in vicinity of spent fuel storage, fuel load drop or missiles generated by surrounding equipment will not increase $k_{eff} > 0.95$

~~(5) Rack design precludes inadvertent placement of fuel in other than design locations.~~

9.1.6.4 Spent Fuel Racks Load Drop Analysis

The following standard supplement addresses COL License Information Item 9.4.

The COL applicant shall provide the NRC a confirmatory load drop analysis, as required by Subsection 9.1.4.3. ~~This analysis is dependent on a vendor specific design and the as-built configuration of spent fuel storage racks. A description of t~~The ~~confirmatory~~ structural analysis, including load drop analysis, for the spent fuel storage racks ~~will be~~ is provided in WCAP-17244-P. ~~an FSAR amendment in accordance with 10 CFR 50.71(e) prior to receipt of fuel. (COM 9.1-2)~~

~~The load drop analysis will confirm that $k_{eff} \leq 0.95$ for a drop of one fuel assembly and its associated handling tool from a height of 1.8 m above the spent fuel racks.~~

9.1.7S References

9.1-1 WCAP-17244-P, "South Texas Project Units 3 & 4 Fuel Storage Racks Design Report," Westinghouse Electric Company, LLC.

9.1-2 WCAP-17246-P, "South Texas Project Units 3 & 4 Fuel Storage Racks Criticality Safety Report," Westinghouse Electric Company, LLC.

RAI 09.01.01-4

QUESTION:

Spent Fuel Racks Structural Evaluation

To address COL License Information Item 9.7, the applicant stated in FSAR Section 9.1.6.7 that a confirmatory structural evaluation of the racks will be provided in an FSAR amendment in accordance with 10 CFR 50.71(e) prior to receipt of fuel. Since structural integrity of the racks must be demonstrated under all postulated loading conditions for providing protection to the spent fuel from mechanical damage, the applicant is requested to provide details of analysis and design of the spent fuel racks using the guidance in SRP 3.8.4, Appendix D, in order for the staff to assess structural adequacy of the spent fuel racks.

RESPONSE:

The technical report (WCAP-17244-P, "South Texas Project Units 3 & 4 Fuel Storage Racks Design Report"), referenced in RAI 09.01.01-3 which covers the COL Items 9.1.6.2 and 9.1.6.4, will also cover the Spent Fuel Racks Structural Evaluation (COL Item 9.1.6.7). It will describe details of the analysis and design of the spent fuel racks using the guidance in SRP 3.8.4, Appendix D. This analysis will be based on a baseline rack design using a representative fuel type. The report will be provided by the end of September 2010.

As a result of this RAI response, COLA Part 2, Tier 2, Subsection 9.1.6.7 will be revised. Changes from COLA Rev. 3 are indicated with grey shading as follows:

9.1.6.7 Spent Fuel Racks Structural Evaluation

The following standard supplement addresses COL License Information Item 9.7.

The COL applicant shall provide the NRC a confirmatory structural evaluation of the spent fuel racks, as outlined in Subsection 9.1.2.1.3. ~~This evaluation is dependent on a vendor specific design and the as-built configuration of spent fuel storage racks. A description of t~~The ~~confirmatory~~ structural evaluation of the spent fuel racks ~~will be~~ is described ~~provided~~ in WCAP-17244-P. ~~an FSAR amendment in accordance with 10 CFR 50.71(e) prior to receipt of fuel. (COM 9.1-4)~~

~~Structural integrity of the racks will be demonstrated for the load combinations described in SRP 3.8.4 appendix D. The fuel storage racks meet Seismic Category 1 requirements.~~

RAI 09.01.01-5

QUESTION:

New Fuel Inspection Stand Seismic Capability

To address COL License Information Item 9.5, the applicant stated in FSAR Section 9.1.6.5 that the risk of dumping personnel or the fuel inspection stand into the spent fuel pool during an SSE was addressed by a modified design for the New Fuel Inspection Stand (NFIS). In FSAR Section 9.1.4.2.3.2 the applicant stated that the modified NFIS is anchored into a pit on the refueling floor, and will retain the fuel assembly and maintain structural integrity during an SSE. The applicant removed ABWR DCD Figure 9.1-4 showing the NFIS included in the DCD. However, no similar Figure was included in the FSAR to replace the DCD Figure. Further, the description of the NFIS and its anchoring included in the FSAR is not sufficient for the staff to assess structural integrity of the stand or the anchorage during an SSE. Therefore, the applicant is requested to include in the FSAR diagrams showing primary structural elements of the modified NFIS and its anchorage, and describe how structural adequacy of the stand and its anchorage was determined in order to adequately address COL License Information Item 9.5.

RESPONSE:

A sketch of the New Fuel Inspection Stand design and anchorage details will be developed and available by September 2010. At that time, COLA Part 2, Tier 2, Subsection 9.1.4.2.3.2 will be revised to describe the stand design and its anchorage details. The supplemental response to this RAI will include a replacement for Figure 9.1-4. The supplemental response will be provided by September 30, 2010.

RAI 09.04.05-1

QUESTION:

The proposed departure STP DEP T1 2.15-2 RBSRDG HVAC revises DCD Tier 1 Subsection 2.15.5, and increases the maximum air temperature limit inside the Reactor Building Safety-Related Diesel Generator (DG) engine room during the DG operation, from 50°C (122°F) to 60°C (140°F). Please address the following:

1. Identify any safety-related equipment/instrumentation and cables located in the DG room, and document in the FSAR that they are qualified to reliably operate at the increased 140°F temperature environment;

2. Describe, if any, safety functions in the DG room that are required to be performed by the operator(s);

3. Provide assurance in the FSAR that the Diesel Generator room would be habitable enough to allow the operator's safe entry and access inside the 140°F and 90% relative humidity environment for any activities required;

4. Identify any additional provisions made to offset the high heat stresses on humans inside the DG room's elevated temperature environment. The provisions should duly account for the 90% design relative humidity in addition to 140° F dry-bulb temperature inside the DG room.

RESPONSE:

The specific responses to questions 1 through 4 above are provided below. As a general preface to these responses, it is noted that the higher environmental qualification (EQ) temperature envelope for the emergency diesel generator (DG) rooms is based on DG operation at full rated power, coincident with the existence of the zero % exceedance environmental conditions for outside temperature and humidity. It would be a very unusual circumstance for a diesel to be running at full load with outside ambient conditions at the 0% exceedance values. Daytime temperatures rarely approach the zero % exceedance ambient temperatures, and post-maintenance and Technical Specification surveillance testing would typically have sufficient scheduling flexibility to avoid test performance during peak daytime temperatures. It would be very rare to receive valid auto start (and load) signals due to an accident, coincident with the zero % exceedance ambient outside temperatures.

1. There will be safety related equipment, power cables, instruments and instrument cables in the DG rooms. Vendor selection to supply the DGs has only recently been made and detailed design has not progressed to the point that all such equipment can be itemized. However, all safety related equipment in the DG rooms will be qualified to be functional in a harsh environment, which includes the increased temperature of 60°C (140°F). The Equipment Qualification Program Document (7A10-0301-0025, Rev. 3) classifies the DG rooms as

"Harsh" (temperature only) based on the temperature threshold criterion of 125°F (52°C). Thus, all safety related components including instrumentation and control (I&C) items are required to be appropriately qualified to the required conditions. EQ requirements for the subject components are delineated in the above referenced program document. It should also be noted that the procurement specifications for these components include the qualification requirements.

Mechanical and electrical equipment EQ is addressed by FSAR section 3.11, Environmental Qualification of Safety-Related Mechanical and Electrical Equipment. FSAR subsection 3.11.1 requires that the list of mechanical and electrical equipment requiring qualification be documented in the Environmental Qualification Document (EQD) as addressed by COL Item 3.11.6.1. The EQD will be available for NRC review as part of the ITAAC for basic configuration of systems, as provided in the reference ABWR DCD Tier 1 Section 1.2.

EQ for I&C equipment is addressed by Tier 1 Section 3.4.B, I&C Development and Qualification Processes. ITAAC Table 3.4, Instrumentation and Control, Item 14, requires that the list of qualified safety-related I&C equipment be recorded in the "product qualification files" and STPNOC intends for these to be part of the EQD as discussed above for the list of qualified mechanical and electrical equipment. The DCD does not require that the list of qualified equipment contained in the EQD be duplicated in the FSAR.

Also see the response to RAI 08.03.01-12, Revision 1, provided in STPNOC Letter No. U7-C-STP-NRC-100067 dated April 1, 2010 for additional discussion of the safety-related equipment to be installed in the DG rooms.

2. The diesel generators are designed to automatically start and load without operator action, and the accident analysis does not credit operator actions to recover a diesel generator that fails to start or fails to run. There are no safety functions in the DG room that are required to be performed by the operators and the rooms do not require a permanent watch-stander during accident conditions. Local DG control panels are located outside and above the rooms containing the diesel engines (see Tier 1 Figures 2.15.10j, k and l). With the DGs running in an accident scenario, the rooms may be entered briefly to monitor for fluid leaks or other obvious signs of trouble as a good operating practice. However this monitoring is not mandatory and may be deferred if room temperatures are excessive.

   Although not a factor for the DG rooms as explained above, emergency operating procedure (EOP) development for STP 3&4 requires incorporation of applicable lessons learned discussed in NUREG-1358-Suppl. 1 "Lessons Learned from the Special Inspection Program for Emergency Operating Procedures". One of those lessons learned identified in Section 2.2.2 of this NUREG is to ensure that adequate analysis is performed to assess the feasibility of performing actions at component locations in areas that would have high radiation or high temperature levels during emergency situations. NUREG-1358, Supplement 1, is directly referenced for EOP development in FSAR subsection 13.5.3.2(2) and therefore provides the FSAR assurance that environmental factors are properly considered in performance of the EOPs.

3. The DG rooms are essentially not habitable at 60°C (140°F) and 90% relative humidity. Even with special protective equipment, room entry would likely be permitted for only a few minutes. To a lesser extent, this also applies to the original DCD qualification temperature of 50°C (120°F). STPNOC's procedure for heat stress (0PGP03-ZI-0033 Industrial Hygiene) provides preapproved stay times only up to 115°F. Beyond this temperature, a planned entry could only be made on the basis of a situation-specific assessment using the procedure's Heat Stress Checklist. However, as discussed above in Item 2, this has no impact on DG operations during an accident, and as discussed in the preface to this response and in Item 4 below, any potential impact during routine testing can be minimized.

4. As noted in the response to Item 2, there are no safety functions required to be performed by operators in the DG rooms. During normal plant operations, the only time heat in the DG rooms would be an issue is when the machines are running loaded during summertime extreme temperature conditions. This scenario can typically be avoided by test scheduling to avoid periods of extreme outside temperatures. Routine Technical Specification testing requiring loaded DGs occurs at frequencies of 31 days and 18 months. The 31 day frequency testing requires diesel loading for only 1 hour and can be scheduled on back shifts whenever daytime peak temperatures are extreme. Loaded DG testing for extended periods normally occurs at frequencies of 18 months and provides the flexibility to avoid testing during the hottest summer months.

   As in any operating power plant or other large industrial complex, unanticipated situations occasionally develop requiring work in extreme high temperature environments. Should this situation arise in a DG room, heat stress exposure analysis would be conducted for the operators' safe entry in accordance with OSHA guidelines and industrial safety and hygiene practices.

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

RAI 10.04.03-4

QUESTION:

This question applies to STD DEP 10.4-1:

In response to **RAI 10.04.03-3 (eRAI 117)**, the applicant submitted a letter dated May 20, 2008 (ML081440107), and provided a markup of Figure 10.4-2 and additional information. The applicant stated that some of the changes made in the COL application were due to the revised Toshiba design of the Turbine Gland Seal System (TGSS). The staff evaluated the applicant's responses and concluded that the applicant has provided adequate clarifications for most of items raised in the RAI. However for the following three items, the staff determined that the applicant should provide additional information:

(1) Item 1 (loop seal) - The applicant stated that the loop seal between the turbine building ventilation exhaust and the condensate drain tank has been deleted in the Toshiba design. Instead, the blower drain line is connected to the U-seal at the bottom of the gland steam condenser. The applicant provided a markup of the Figure 10.4-2 in this regard. The staff's review found that the applicant's response did not explain how this modification to the certified design would not impact the TGSS. Therefore, the applicant is requested to provide additional information and clarify how this modification will not adversely impact the TGSS.

(2) Item 2 (pressure switch) - The applicant stated that the pressure switch between the exhaust blowers and the condensate storage and transfer line is not needed in the Toshiba design. In the certified design, the standby blower starts on a pressure signal. In the Toshiba design, the standby blower is started manually. Because the unit relies on an operational blower to maintain a vacuum, the applicant is requested to explain why this modification in the TGSS design does not adversely affect the gland steam condenser and prevent it from performing its intended function.

(3) Item 6 (check valve deletion) - The applicant stated that the valve depiction in COL application Revision 1 is incorrect, and it will be revised as shown in the markup of Figure 10.4-2. The auxiliary steam valve sequence was altered in STP COL FSAR Revision 1 compared to ABWR DCD Revision 0. The valve configuration in the revised Figure 10.4-2 deleted a check valve between the motor-driven and regulating valves. The check valves, in general, prevent backflow in the system. Therefore, the applicant is requested to justify the deletion of this check valve.

RESPONSE:

The responses to items (1), (2) and (3) above are as follows:

Item 1 (loop seal) – Exhaust blowers for the gland steam condenser (GSC) are designed to remove non-condensable gases. However, the design accounts for moisture carryover, which may occur while assuring that the non-condensable gasses are directed to the plant vent stack.

Industry practice is to use loop seals between process lines and drain lines to act as a barrier (to avoid leaking gas/vapor from process lines to the drain lines, which are typically connected to floor drains, to collection tanks, or to the condenser). Loop seals are typically designed as a trap, with sufficient length such that the static head of the column of the condensed fluid in both loop legs is greater than the pressure difference expected between the process lines and the drain lines.

In the ABWR DCD design, Tier 2 Figure 10.4-2 indicates that moisture removal is accomplished in the exhaust blower discharge line. A single drain from the blowers combined discharge line is connected to the GSC drain line, which is then routed to the condensate drain tank (condensate return tank). Loop seals are provided for each drain.

In the COLA design, blower casing drains are utilized for the gland steam exhaust blowers. The drains from each blower are combined and routed to the GSC loop seal prior to its discharge to the Condensate Return Tank (thus eliminating the loop seal at the blower discharge drain line). One may note that the blower's drain connection is at a point in the loop where fluid isolation is achieved with the condensate column in both legs of the loop. Each leg of the seal loop will be of sufficient length to compensate for the pressure difference between each process line and the drain line to the condensate return tank.

The loop seal at the GSC drain provides the two main functions provided in the DCD. This change does not adversely affect the function provided in the DCD. Namely, it allows for drainage and provides a leakage trap to prevent vapor/gas from escaping to the GSC drain line.

Item 2 (pressure switch) – There are two full-capacity gland steam exhaust blowers. Only one of them is in operation at one time.

In the DCD design, a pressure switch senses the pressure difference between the main turbine gland discharge and the suction of the exhaust blowers. Its function is to start the standby blower when the operating blower trips (the gland discharge line will build up pressure when the exhaust blower trips and non-condensable gases accumulate in the GSC, i.e. no negative pressure is created).

In the COLA design, the pressure switch is eliminated because the standby blower is intended to be started manually. Should the operating blower trip, operators in the control room are alerted to this condition and can start the backup blower. This is consistent with the Design Description contained in ABWR DCD Tier 1 Subsection 2.10.9 which states, "The TGS System has displays for gland seal condenser and steam seal header pressure in the main control room."

In addition, the COLA design incorporates a gland steam evaporator (GSE), which supplies relatively clean steam for gland seals. On high pressure in the GSC, or when a blower trips, relatively clean steam may leak from the turbine glands. As stated above, operations personnel will have sufficient time to investigate the cause and take corrective action by adjusting blower suction valves or manually starting the backup blower from the control room.

Item 6 (check valve deletion) – There are three sources of Turbine Gland Seal System (TGSS) steam mentioned in the DCD: auxiliary steam, feed water heater (FWH) drain tank vent, and main steam. The first two have check valves indicated. As noted in this RAI, this was probably to prevent backflow into the other systems due to the higher pressure of the main steam.

STD DEP 10.4-1 incorporated an intermediate GSE between the steam seal header (SSH) and two of the three sources of steam for the TGSS (crossaround steam and main Steam). Steam discharged from the GSE is at a lower pressure than either of those sources. The other source of steam feeding the SSH is auxiliary steam (which comes from the house boiler). STD DEP 10.4-1 isolated this supply with a normally closed MOV (start up gland steam stop valve).

With the introduction of the intermediate GSE there are only two lines going to the SSH. The operating pressure in the GSE discharge is lower than that of auxiliary steam. Therefore, installing a check valve is not required in the auxiliary steam supply line to prevent backflow. In addition, the start up gland steam stop valve will be closed when GSE steam begins to be supplied during startup; thus isolating the auxiliary steam when the house boiler is not supplying the TGSS.

No COLA change is required as a result of this RAI response.

RAI 10.04.07-3 Response

QUESTION:

10 CFR 52 requires that applicants submit ITAAC that are necessary and sufficient to provide a reasonable assurance that the facility has been constructed and will operate as designed (§ 52.80(a)). It is also stated in section 52.80(a)(2), that "if the applicant reference a standard design certification, the ITAAC contained in the certified design must apply to those portions of the facility design which are approved in the design certification."

The staff previously issued RAI 10.04.07-1 (Question 359) requesting STP to provide justification as to why the information in Tier 1, Section 2.10.2 regarding the Condensate and Feedwater System (CFS) description and ITAAC was not updated to reflect design changes to the system as a result of departure STP DEP 10.4-5. In it's response the applicant indicated that "the CFS alters the specific design, but does not modify the functional arrangement," and that "detailed design drawings, which will expand the basic configuration to include the condensate booster pumps along with other refinements perform these inspections." The staff found this response unacceptable since the Tier 1 design in the DCD is not consistent with the STP CFS design, and since the Tier 1 CFS information incorporated by reference is no longer reflective of the STP design.

The STP application incorporates by reference the design description, functional arrangement, and ITAAC for the CFS standard design included in ABWR DCD Tier 1, Section 2.10.2. In the STP COLA, the applicant departs from the standard design, and incorporates into the CFS additional significant SSC's. Because the COL design differs significantly from the design certified in the DCD, the ABWR ITAAC in the DCD, which confirms the certified design, is not applicable to the STP design. Provide an update to the referenced CFS design (design description and/or functional arrangement) in Tier 1, Section 2.10.2, so that the referenced ITAAC in Tier 1 Table 2.10.2a is applicable to the CFS design being licensed in the STP COLA.

RESPONSE:

The evaluation of Standard Departure (STD DEP) 10.4-5 is provided in Combined License Application (COLA) Part 7, Chapter 2, indicating this change required NRC review and approval because certain parts of the change had an impact on the plant Technical Specifications (TS). Those aspects of STD DEP 10.4-5 not having an impact on the TS, including specifically the addition of condensate booster pumps, were evaluated in accordance with 10CFR52, Appendix A, Section VIII.B.5 and concluded that there was no impact on any Tier 1 or Tier 2* portions of the ABWR Design Control Document (DCD).

In reviewing this prior evaluation of STD DEP 10.4-5 for the condensate booster pumps, STPNOC revisited the potential impact of this change on Tier 1 of the DCD by specifically comparing the change to the following defined terms in Section 1.1 Definitions of the DCD:

> **Acceptance Criteria** means the performance, physical condition, or analysis results for a structure, system, or component that demonstrates the Design Commitment is met.
>
> **Basic Configuration (for a System)**– means the functional arrangement of structures, systems, and components specified in the Design Description; and verifications for that system as specified in Section 1.2.
>
> **Design Commitment** means that portion of the Design Description that is verified by ITAAC.
>
> **Inspect or Inspection** means visual observations, physical examinations, or review of records based on visual observation or physical examination that compare the structure, system, or component condition to one or more Design Commitments. Examples include walkdowns, configuration checks, measurements of dimensions, and nondestructive examinations.
>
> **Test** means the actuation or operation, or establishment of specified conditions, to evaluate the performance or integrity of as-built structures, systems, or components, unless explicitly stated otherwise.

Based on this comparison, STPNOC finds that the addition of condensate booster pumps is wholly consistent with the Basic Configuration, Design Commitments, Inspections, Tests and Acceptance Criteria for the Condensate and Feedwater System as described in Tier 1 Section 2.10.2.

STPNOC also evaluated whether the objectives of Tier 1 would be better served by adding additional detail to the simplified schematic representation of Tier 1 Figure 2.10.2a, Condensate and Feedwater System, and concluded that they would not. STPNOC notes that this figure is extremely simplified and omits many details that existed in Tier 2 of the DCD at the time of DCD certification/approval. For example, the figure utilizes a single symbol to represent a multiplicity of Tier 2 components that may be arranged in series, in parallel, or in parallel strings of multiple series components. It is only by referring to the more detailed Tier 2 figures that the specific arrangement of components represented by a single Tier 1 drawing symbol may be ascertained. STD DEP 10.4-5 revises Tier 2 Figure 10.4-5, Condensate System, to show the new condensate booster pumps.

Finally, STPNOC notes that the Tier 1 definition discussed above for "**Basic Configuration (for a System),**" refers to Tier 1 Section **1.2 General Provisions** that are applicable to the Design Descriptions and associated ITAAC. Section 1.2 includes the following discussion:

> **Treatment of Individual Items** (states in part):
>
> The absence of any discussion or depiction of an item in the Design Description or accompanying figures shall not be construed as prohibiting a licensee from utilizing such an item, unless it would prevent an item from performing its safety functions as discussed or depicted in the Design Description or accompanying figures.
>
> **Interpretation of Figures** (states in part):
>
> In particular, the as-built attributes of structures, systems, and components may vary from the attributes depicted on these figures, provided that those safety functions discussed in the Design Description pertaining to the figure are not adversely affected.

STPNOC notes that the Condensate and Feedwater System performs no safety function described in Tier 1 Section 2.10.2 of the DCD and therefore considers this discussion of "Treatment of Individual Items" and "Interpretation of Figures" to specifically address the concerns raised by this RAI.

In conclusion, the Tier 1 ITAAC described in Table 2.10.2a applicable to the condensate pumps are also applicable to the condensate booster pumps.

No COLA change is required as a result of this RAI response.