



South Texas Project Electric Generating Station 4000 Avenue F – Suite A Bay City, Texas 77414

October 5, 2009
U7-C-STP-NRC-090160

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

Attached is the response to the NRC staff question included in Request for Additional Information (RAI) letter number 214 related to Combined License Application (COLA) Part 2, Tier 2, Section 3.8. This submittal completes the response to this RAI letter. Attachment 1 addresses the response to the RAI question RAI 03.08.04-15.

Also attached is a supplemental response to RAI 03.10-1. During a telephone conference with the NRC Staff on August 18, 2009, STPNOC agreed to supplement the initial response to RAI 03.10-1 with additional information regarding the planned method(s) of dynamic qualification for safety-related, seismic category I, equipment types listed in COLA Part 2, Tier 2, Table 3.2-1, and milestone dates for when the Vendor's Qualification Reports would be available for NRC audit. Attachment 2 addresses the response to RAI 03.10-1, Supplement 1.

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.

STI 32540275

D091
NRC

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

Executed on 10/5/09



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

jep

Attachments:

1. RAI 03.08.04-15
2. RAI 03.10-1, Supplement 1

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

(electronic copy)

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RAI 03.08.04-15**QUESTION:**

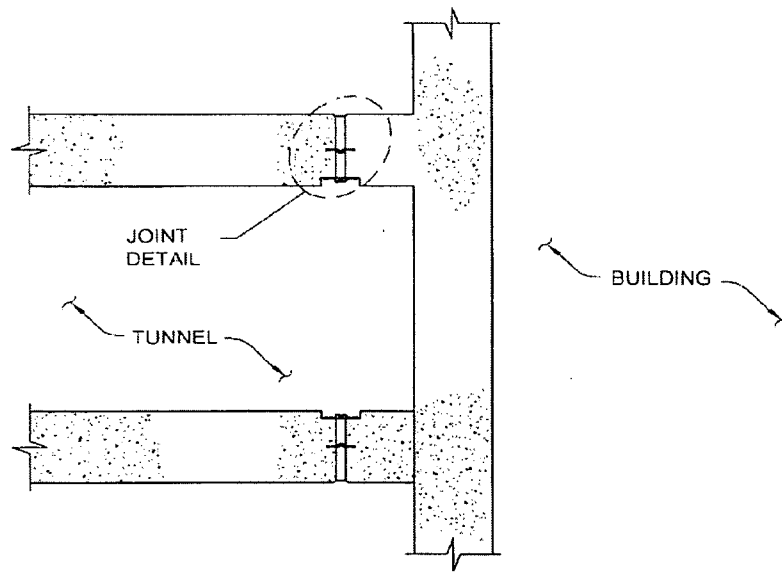
In FSAR Section 3H.6.3.4, "Reactor Service Water Piping Tunnels," the applicant stated that "The interfaces between the tunnels and the pump houses and control buildings are configured to allow relative movement between the tunnels and structures." Please provide a description of the interface configuration between the tunnels and the pump houses and the control buildings. Please also describe the analysis and design methodology for the interface including the loadings and load combinations used, and the amount of relative movement considered in the design along with technical basis, and demonstrate that the flexible connection used at the interface is adequate for the design loads and deformations.

RESPONSE:

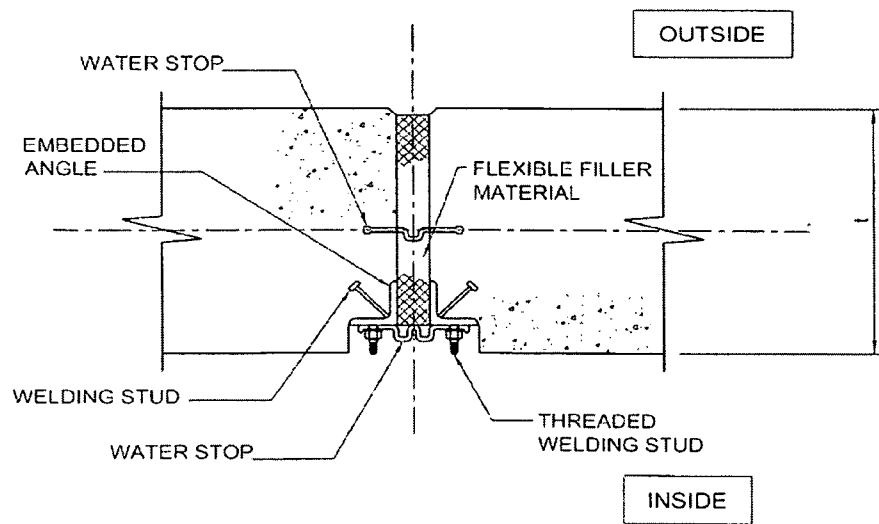
A conceptual detail of the interface between the Reactor Service Water (RSW) Piping Tunnels and the RSW Pump Houses and the Control Buildings is shown in the attached Figure 03.08.04-15A. This detail allows the flexibility to accommodate the relative movements between the buildings and the tunnels. The gap between the tunnels and the buildings is specified to accommodate the calculated relative movements due to seismic displacements and differential settlement. The interfaces will be designed to the applicable loads and loading combinations described in COLA Part 2, Tier 2, Section 3H.6.4.3. The calculations and design of the interface will be finalized as part of the detailed design.

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

FIGURE 03-08-04-15A
CONCEPTUAL SKETCH ON INTERFACE BETWEEN THE RSW PIPING TUNNEL
AND BUILDING



PLAN



JOINT DETAIL

RAI 03.10-1, Supplement 1**QUESTION:**

RG 1.206 Sections C.I.3.10.4 and C.II.3.10.4 state that the applicant should provide results of tests and analysis to demonstrate adequate seismic qualification of equipment. Verification of this aspect of plant construction is necessary to allow the Commission to find that the plant is built and will operate in accordance with the regulations. However, RG 1.206 acknowledges that this level of detail may not be available and provides the alternative of provision of an implementation plan including milestones and completion dates.

The STP Units 3 and 4 FSAR does not provide either the results of qualification or an implementation plan. This information is necessary for the staff to make a safety finding that the equipment will perform its safety function when subjected to dynamic conditions. The information included in this plan should address those planning details not addressed in the DCD, including for example, a listing of equipment to be qualified, the method of qualification, and dates that vendor's qualification reports are expected to be available for NRC audit, prior to equipment installation. Therefore, the applicant is requested to provide an implementation plan that includes the level of detail that will be completed prior to procurement, and the schedule for having qualification reports available for NRC inspection prior to installation, or justify a different approach.

RESPONSE:

By letter U7-C-STP-NRC-090088 dated July 30, 2009, STPNOC provided a response to RAI 03.10-1. During a telephone conference with the NRC Staff on August 18, 2009, STPNOC agreed to supplement the response with additional information regarding the planned method(s) of dynamic qualification for safety-related, seismic category I, equipment types listed in COLA Part 2, Tier 2, Table 3.2-1, and milestone dates for when the Vendor's Qualification Reports would be available for NRC audit. Table 1 provides a listing of safety related, seismic category I equipment by system and type, based on those listed in COLA Part 2, Tier 2, Table 3.2-1, along with the planned method of Qualification.

To facilitate the NRC Staff audit of the dynamic qualification reports, Table 1 also shows the current schedule dates when the Vendor's Qualification Reports will be approved. Table 1 is based on the current project schedule. The NRC Staff will be kept aware of the schedule through periodic issuance of the project schedule to the NRC.

As stated in the response to RAI 03.10-1 (see letter U7-C-STP-NRC-090088), "FSAR Subsection 3.10.5.1 addresses COL License Information Item 3.37, Equipment Qualification. This COLA Part 2, Tier 2 subsection will be revised to indicate that the equipment dynamic qualification records, including reports, will be available prior to installation of equipment."

No COLA change, other than the change proposed with the original response, is required for this supplement

**Table 1 Safety Related Equipment Requiring Dynamic Qualification (DQ)
Method of DQ and Schedule for DQ Completion**

Equipment Name	Method of Dynamic Qualification			Milestones
	Analysis	Test	Combination or Either	Vendor's Report on DQ Approved
Reactor Pressure Vessel System				
1. Reactor pressure vessel (RPV)	X			Q4-10
2. Reactor vessel support skirt and stabilizer	X			Q2-12
3. RPV appurtenances – reactor coolant pressure boundary portions (RCPB)	X			Q4-13
4. Lateral supports for CRD housing and in-core housing	X			Q1-14
5. Reactor internal structures—spargers for feedwater, RHR shutdown cooling low pressure flooders, and high pressure core flooders systems	X			Q3-13
6. Reactor internal structures—safety related components (except spargers) including core support structures	X			Q3-13
7. Reactor Internal Pump Motor Casing	X			Q3-11
Nuclear Boiler System				
1. Vessels – level instrumentation condensing chambers			X	Q4-13
2. Vessel – nitrogen accumulators (for ADS and SRVs)	X			Q4-10
3. Valves			X	Q2-11
4. Electrical modules with safety-related function		X		Q2-11
Reactor Recirculation System				
1. Valves– Purge System, heat exchanger and primary side of recirculation motor cooling system (RMCS)			X	Q4-11
2. Pump motor cover, bolts and nuts	X			Q1-12
CRD System				
1. Hydraulic control unit			X	Q1-12
2. Control Rod Drive			X	Q3-13
3. Electrical Modules with safety-related function		X		Q2-11
Standby Liquid Control System				
1. Standby liquid control tank including supports	X			Q4-10
2. Pump including supports	X			Q3-10
3. Pump motor			X	Q3-10
4. Valves			X	Q4-11
5. Electrical equipment and devices		X		Q2-11
Neutron Monitoring System				
1. Electrical modules – SRNM, LPRM and APRM		X		Q1-12
2. Detector and tube assembly			X	Q3-13
Remote Shutdown System				
1. Electrical modules with safety-related functions		X		Q2-11

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Equipment Name	Method of Dynamic Qualification			Milestones
	Analysis	Test	Combination or Either	Vendor's Report on DQ Approved
Reactor Trip and Isolation System				
1. Electrical modules with safety-related functions		X		Q2-11
ESF Logic and Control System				
			X	Q3-11
Process Radiation Monitoring System (includes gaseous and liquid effluent monitoring)				
1. Electrical modules-with safety-related functions (including monitors)		X		Q2-11
Containment Atmospheric Monitoring System				
1. Component with safety-related function			X	Q4-11
RHR System				
1. Heat exchangers – primary side	X			Q3-10
2. Main Pumps including supports	X			Q4-10
3. Main Pump motors			X	Q4-10
4. Valves			X	Q4-11
5. Jockey pumps and motors including supports			X	Q4-10
High Pressure Core Flooder System				
1. Main Pump	X			Q4-10
2. Main Pump Motor			X	Q4-10
3. Valves			X	Q4-11
4. Electrical modules with safety-related functions		X		Q2-11
Leak Detection and Isolation System				
1. Isolation valves		X		Q4-11
2. Electrical modules		X		Q2-11
RCIC System				
1. RCIC Turbine – Pump			X	Q4-10
2. Valves			X	Q4-11
3. Electrical modules with safety-related functions		X		Q2-11
Reactor Water Cleanup System				
1. Valves			X	Q4-11
2. Electrical modules for isolation valves		X		Q2-11
Fuel Pool Cooling and Cleanup System				
1. Valves			X	Q4-11
Suppression Pool Cleanup System				
1. Valves			X	Q4-11
2. Electrical modules for isolation valves		X		Q2-11
Main Control Room Panels				
1. Electrical Modules with safety-related functions		X		Q2-11
Control Room Back Panels				
1. Electrical modules with safety-related function		X		Q2-11
Local Control Panels				
1. Panels and racks			X	Q2-11

**Table 1 Safety Related Equipment Requiring Dynamic Qualification (DQ)
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Equipment Name	Method of Dynamic Qualification			Milestones
	Analysis	Test	Combination or Either	Vendor's Report on DQ Approved
2. Electrical modules with safety-related functions		X		Q2-11
Multiplexing System				
1. Electrical module with safety-related functions (Essential)			X	Q2-11
Local Control Boxes				
1. Electrical modules with safety-related functions		X		Q2-11
Radwaste System				
1. Valves forming part of containment boundary			X	Q1-11
2. Control Building high water level sensors		X		Q4-10
3. Electrical modules with safety-related functions		X		Q2-11
Makeup Water System (Purified)				
1. Valves forming part of containment boundary			X	Q4-11
Makeup Water System (Condensate)				
1. Condensate header – level instrumentation and valves			X	Q4-11
Reactor Building Cooling Water System				
1. Valves forming part of containment boundary			X	Q4-11
2. Other safety-related pumps and valves			X	Q4-10
3. Electrical modules with safety-related functions		X		Q2-11
HVAC Normal Cooling Water System				
1. Valves forming part of containment boundary			X	Q1-11
HVAC Emergency Cooling Water System				
1. Chillers			X	Q2-11
2. Pumps			X	Q4-10
3. Valves			X	Q4-11
4. Electrical modules with safety-related functions		X		Q2-11
Reactor Service Water System				
1. Valves			X	Q4-11
2. Pumps			X	Q4-10
3. Strainers			X	Q4-10
4. Cooling tower fans	X			Q4-10
5. Fan motors and controls			X	Q4-10
6. Electrical modules with safety-related functions		X		Q2-11
Station Service Air System				
1. Containment isolation valves			X	Q4-11
Instrument Air Service				
1. Containment isolation valves			X	Q4-11
High Pressure Nitrogen Gas Supply Systems				
1. Containment isolation valves			X	Q4-11
2. Gas bottles and valves with safety-related functions			X	Q4-11
3. Electrical modules with safety-related functions		X		Q2-11
Breathing Air System				
1. Containment Isolation valves			X	Q4-11

**Table 1 Safety Related Equipment Requiring Dynamic Qualification (DQ)
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Equipment Name	Method of Dynamic Qualification			Milestones
	Analysis	Test	Combination or Either	Vendor's Report on DQ Approved
Electrical Power Distribution System				
1. 120 VAC safety-related distribution equipment including inverters		X		Q2-11
2. Safety-related protective relays and control panels			X	Q2-11
Unit Auxiliary Transformers				
1. Safety-related transformers			X	Q2-11
Metalclad Switchgear				
1. Safety-related 4160 Volt switchgear			X	Q2-11
Power Center				
1. Safety-related 480 Volt power centers		X		Q2-11
Motor Control Center				
1. Safety-related 480 Volt motor control centers		X		Q2-11
Safety-related Electrical Wiring Penetrations				
Safety-related Direct Current Power Supply				
1. 125 Volt batteries, battery racks, battery chargers and distribution equipment			X	Q3-11
2. Protective relays and control panels			X	Q2-11
Emergency Diesel Generator System				
1. Starting air receiver tanks	X			Q3-10
2. Starting air compressors			X	Q3-10
3. Combustion air intake and exhaust system	X			Q3-10
4. Safety-related valves			X	Q3-10
5. Diesel generators			X	Q3-10
6. Mechanical and electrical modules with safety-related functions			X	Q2-11
Safety-related Vital AC Power Supply				
Safety-related instrument and control power supply				
Primary Containment System				
1. Suppression chamber/drywell vacuum breakers			X	Q4-10
Primary Containment Vessel				
1. PCV penetrations	X			Q4-11
2. Drywell Head	X			Q2-12
Standby Gas Treatment System				
1. All equipment except deluge valves			X	Q4-11
Atmospheric Control System				
1. Valves			X	Q4-11
2. Electrical modules with safety-related functions		X		Q2-11
Suppression Pool Temperature Monitoring System				
1. Electrical modules with safety-related functions		X		Q2-11
Heating Ventilation and Air Conditioning –Safety-related equipment				
1. Fan-coil cooling units			X	Q2-11
2. Heating units – electrical or water		X		Q2-11

**Table 1 Safety Related Equipment Requiring Dynamic Qualification (DQ)
Method of DQ and Schedule for DQ Completion**

Equipment Name	Method of Dynamic Qualification			Milestones
	Analysis	Test	Combination or Either	Vendor's Report on DQ Approved
3. Blowers – Air supply or			X	Q2-11
5. Filters – Equipment areas	X			Q2-11
6. HEPA Filters, Charcoal Adsorbers – Control Rooms and Secondary Containment	X			Q2-11
7. Valves and Dampers – secondary containment isolation			X	Q2-11
8. Other safety-related valves and dampers			X	Q2-11
9. Electrical modules with safety-related functions		X		Q2-11
Diesel Generator Fuel Oil Storage and Transfer System			X	Q4-10