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August 28, 2009
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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 is the response to the NRC staff question included in Request for Additional Information (RAI) letter number 200 related to Combined License Application (COLA) Part 2, Tier 2, Section 9.3. This submittal completes the response to this RAI letter.

The attachment to this letter addresses the response to RAI 09.03.03-5.

A change to the COLA is not required by this 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.

STI 32527601

DO91
NRC

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

Executed on 8/28/09



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

jaa

Attachment:
RAI 9.03.03-5

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

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RAI 09.03.03-5**QUESTION:**

9.3.3.2.3 states, "The non-radioactive drain system collects waste water from plant buildings (Reactor, Turbine, Control, Service, and other buildings). A system composed of collection piping, curbs, and pumps is provided. Non-radioactive waste water from the Turbine Building, Reactor Building, hot machine shop and the Control Building is routed to a dedicated oil/water separator where oil and settled solids are removed for off-site disposal. The non-oily, nonradioactive effluent is sent to dual settling basins. Nonradioactive waste water from the Service Building and other buildings is sent directly to the dual settling basins. Means are provided to perform any required tests or analyses required by the discharge permit. The non-radioactive liquid effluent is discharged to the Main Cooling Reservoir through permitted outfall(s). If radioactivity levels exceed the limits for discharge, the flow from the nonradioactive drains has the capability to be diverted to the radioactive effluent portion of the radwaste system. Normally, if low levels of radioactivity are detected, it is quantified and discharged via the normal outfall. Higher levels of radioactivity may require a permitted "batch" discharge via the radwaste effluent radiation monitor. The non-radioactive drainage system is illustrated in Figure 9.3-12."

This drain system has the potential to carry radioactive contamination to the environment. Please describe in detail how the applicant intends to comply with 10 CFR 20.1501, 10 CFR 50.34a, 10 CFR 50.36a, and GDC 60, 64 and 10 CFR 50 Appendix I for this system. This description should include:

- a.) How will radioactive effluent release quantities and criteria be determined?
- b.) How will non-radioactive waste water and radioactive waste water be segregated in these potentially contaminated areas, e.g., Hot Machine Shop, Reactor Building, etc., listed in the FSAR?
- c.) How is the discharge permit related to the Offsite Dose Calculation Manual (ODCM) when any levels of radioactivity are detected? How is the associated dose and quantities of radioactive material accounted for in accordance with 10 CFR 20 and 10 CFR 50 Appendix I?
- d.) How is the radiation monitor, shown on drawing 9.3-12, calibrated, and set points established? Is this a required radiation monitor?
- e.) What are the means to collect samples to perform any required tests or analyses for the discharge permit? How will samples for radioactive analyses be obtained for any effluent releases?
- f.) Please describe the analyses to be performed prior to releasing any radioactive materials to the environment. Are these analyses required?
- g.) How will radioactive "batch" discharges to the environment be performed?
- h.) What are the radioactivity levels that exceed the "limits for discharge"? What are the limits for discharge that are needed to divert the radioactivity levels to the radwaste system for treatment?

RESPONSE:

- a) If an off-normal event occurs as identified by the radiation monitor alarm and is a confirmed activity (verified above a 95% confidence level) then the effluent release quantities will be determined by radio-analysis of a representative sample from the basin. The volume discharged will be determined using the equipment provided to monitor and report for the Texas Pollution Discharge Elimination System (TPDES) discharge permit.
- b.) The plumbing and drainage (P&D) system provides a method of collecting radioactive and non-radioactive waste water from plant equipment, building floor drains, process fluids, and system flushing wastes prior to processing and subsequent discharge to the environment. This system is segregated according to the type of waste. Liquid wastes are classified and segregated for collection as either radioactive, non-radioactive or chemical and detergent liquid waste.

Segregation of radioactive and non-radioactive waste is accomplished by physical arrangement of the drain systems. The non-radioactive drain lines are configured and located to preclude mixing with water in a radiation controlled area. The radioactive drain lines are generally not located in a non-radiation controlled area. However, in the event that it is not possible to provide such separation, a leak tight structure such as a double-walled pipe is provided for the drain line. In the event that a leak from the inner piping occurs, provisions are made to drain any radioactive fluid to liquid radwaste or other controlled area for handling radioactive fluids. High radioactivity drain lines are connected to designated sumps or tanks directly without connecting to other piping, including piping containing non-radioactive fluids. Drain lines which contain radioactive fluids are not located in an area whose radiation level is less than 0.6 mrem/hr.

The water which falls into the floor inside a radioactive controlled area is normally collected at the floor drain funnel of the High Conductivity Water (HCW) drainage system. This water is collected at the floor drain funnel of the radioactive storm drain (SD) drainage system in an area with little possibility of flowing into a non-radioactive controlled area. The water which flows into the floor inside a non-radioactive controlled area is normally collected at the floor drain funnel of the non-radioactive storm drain (NSD) drainage system. The floor drain inside the service water heat exchange area is collected by the Service Water Storm Drain (SWSD) drainage system.

In summary, drainage from the radioactive and non-radioactive water systems is collected separately by independent systems, and radioactive drainage system water is not mixed with nonradioactive drainage system water.

- c) The TPDES permit limits and TPDES batch release requirements are still required to be met should an off-normal event occur. In addition, the radioactive quantities, and associated dose are accounted for by ODCM and Regulatory Guide 1.21 implementing procedures. The

Units 3&4 procedures will mirror the procedures presently used for a similar system (Non Radioactive Chemical Waste) in Units 1&2.

- d) The radiation monitor on the non-radioactive drainage system as shown on Figure 9.3-12 is an effluent monitor and is utilized to ensure that this system, which does not normally contain radioactive water, can be easily monitored in accordance with the site IEN 80-10 program. As noted in the response to sub-item b in this response, provisions are made in the design to preclude mixing of radioactive and non-radioactive drain water. As also noted in the response to sub-item e, grab samples can also be taken of the non-radioactive drain system water and analyzed for radioactivity. The monitor will be calibrated and setpoints established to alarm at a level above background level and sufficiently low enough to establish the presence of radioactivity.
- e) Non-radioactive waste water from the non-radioactive drain transfer system is routed to the in-service "receiving" basin of the dual settling basins. A grab sample is collected from the other full, but input isolated basin, and analyzed for those parameters specified in the TPDES discharge permit (typically pH, oil and grease, and TSS etc.) The non-radioactive liquid effluent is discharged to the Main Cooling Reservoir.
- f) See the response to Question a above.
- g) If the very unlikely off-normal event occurred in which this non radioactive system contains higher levels of confirmed radioactivity, for instance above the high alarm of the radiation monitor, then the liquid may be batch released via the radwaste effluent monitor using the same batch release controls, sampling, procedures and approvals as are utilized for a batch release from the radwaste system sample tanks.
- h) The limits for discharge that determine whether the non-radioactive drain effluent needs to be diverted through the radioactive effluent system are based on the need to achieve the same dilution factors as achieved at the radioactive waste processing system effluent discharge point.

There is no change to the COLA as a result of this response.