



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

September 9, 2009
U7-C-STP-NRC-090132

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 numbers 193, 206, 207, 208, 209, and 300, related to Combined License Application (COLA) Part 2, Tier 2, Sections 11.3 and 11.5. This submittal completes the response to the letters listed. Attachments 1 through 6 contain responses to the RAI questions listed below:

11.03-6	11-05-4
11.05-2	11.05-5
11.05-3	11.05-6

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.

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.

STI 32531635

DO91
NR10

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

Executed on 9/9/09



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

scs

Attachments:

1. Question 11.03-6
2. Question 11.05-2
3. Question 11.05-3
4. Question 11.05-4
5. Question 11.05-5
6. Question 11.05-6

cc: w/o attachment except*
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RAI 11.03-6**QUESTION:**

STP responses to RAI 02.03.05-8 and RAI 02.03.04-5 indicate changes to the χ/Q and D/Q dispersion factors. These factors are used in calculating the gaseous effluent doses to the MEI and the gaseous effluent doses for normal gaseous releases. FSAR section 12.2.3.1 states, "Using site-specific parameters, the average annual liquid releases and the average annual airborne releases to the environment have been computed and are shown in Tables 12.2-20 through 12.2-23."

The applicant is requested to address and resolve the following: Since these dispersion factors have changed as indicated in RAI 02.03.05-8 & RAI 02.03.04-5, have the related gaseous effluent doses in Tables 12.2-20 through 12.2-23 been re-evaluated?

RESPONSE:

As discussed in the response to RAI 02.03.04-5, Revision 1 (Letter U7-C-STP-NRC-090082, dated July 30, 2009), the effects of the revisions to χ/Q and D/Q on FSAR Section 12.2.2.1 are being evaluated and will be provided in a supplemental response by September 25, 2009. As noted in FSAR Section 12.2.2.1, Table 12.2-20 provides the resulting airborne concentrations, and as stated in FSAR Section 12.2.2.2, Table 12.2-21 provides the gaseous pathway dose results. Thus, Tables 12.2-20 and 12.2-21 will be addressed in the supplemental response to RAI 02.03.04-5.

COLA Rev. 2, FSAR Tables 12.2-22 and 12.2-23 address liquid dispersant coefficients; therefore, the changes to χ/Q do not affect these tables.

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

RAI 11.05-2**QUESTION:**

COLA Part 7: Departures Report, Chapter 3.0, STD DEP 7.1-1, "References to Setpoints and Allowable Values," states in part that the setpoints for high radiation levels are in accordance with the Offsite Dose Calculation Manual (ODCM). In Part 2: FSAR Tier 2, Section 11.5.1.2.2, "Radiation Monitors Required for Plant Operation," (Departure STD DEP 7.1-1) the reference to Technical Specifications is replaced with reference to the ODCM as a basis for operation limits (setpoints) for radiation monitors. However, in Section 11.5.3.4, "Setpoints", it is stated that the trip setpoints are, "based on calculations developed in accordance with controlled plant procedures." Also, the FSAR Section 11.5 identifies STD DEP 7.1-1 as applying to Table 11.5-1. In Table 11.5-1, "Process and Effluent Radiation Monitoring Systems," under the column "ACF Trip" reference is made to, "Based on setpoint calculations" without a specific reference to the ODCM. Clarify and correct these apparent discrepancies.

RESPONSE:

COLA Part 2 Tier 2 Subsection 11.5.3.4 and Table 11.5-1, and COLA Part 7 Chapter 3.0, STD DEP 7.1-1 will be changed to clarify that when calculating radiation instrument setpoints, the Offsite Dose Calculation Manual (ODCM) applies to instruments pertaining to gaseous and liquid releases included in the scope of the ODCM. Changes to COLA Rev. 2 are shown below in gray highlighting.

11.5.3.4 Setpoints

The trip setpoints that initiate automatic isolation functions are ~~specified in the plant Technical Specifications Instrument Setpoint Summary Report as indicated in Table 11.5-1.~~ based on calculations developed in accordance with controlled plant procedures or, if pertaining to gaseous or liquid releases within the scope of the Offsite Dose Calculation Manual (ODCM), in accordance with the ODCM.

Table 11.5-1 Process and Effluent Radiation Monitoring Systems

Monitored Process	No. of Channels	Sample Line or Detector Location	Channel Range*	Setpoint ACF Trip	Scale
A. Safety-Related Monitors					
Main steamline tunnel area	4	Immediately down-stream of plant main steamline isolation valve	1E ⁻² to 1E ⁻⁴ mSv/h	Instrument Setpoint Summary Report	6 dec. log
Reactor Building vent exhaust	4	Exhaust duct upstream of exhaust ventilation isolation valve	1E ⁻⁴ to 1 mSv/h	Instrument Setpoint Summary ReportBased on setpoint calculation Offsite Dose Calculation Manual	4 dec. log
Control Building air intake	8 [†]	Intake duct upstream of intake ventilation isolation valve	1E ⁻² to 1 mSv/h	Instrument Setpoint Summary ReportBased on setpoint calculation	4 dec. log
Drywell sump discharge	2	Drain line from LCW & HCW sumps	1E ⁻² to 1E ⁻⁴ mSv/h	Instrument Setpoint Summary ReportBased on setpoint calculation	6 dec. log
Fuel handling area air vent exhaust	4	Locally above operating floor	4E ⁻⁴ to 1 mSv/h10 ⁻³ to 10 mCy/h mSv/h	Instrument Setpoint Summary ReportBased on setpoint calculation Offsite Dose Calculation Manual	4 dec. log
B. Monitors Required for Plant Operation					
Main steamline tunnel area	4	Immediately down- stream of plant main steamline isolation valve	1E ⁻² to 1E ⁻⁴ mSv/h	Based on setpoint calculation	6 dec. log
Radwaste liquid discharge	1	Sample line	10 ⁻¹ to 10 ⁴ cpm	Instrument Setpoint Summary ReportBased on setpoint calculation Offsite Dose Calculation Manual	5 dec. log
ACF – Automatic Control Function†					

STD DEP 7.1-1, References to Setpoints and Allowable Values**Description**

The Technical Specifications (TS) for STP 3 & 4 include the allowable values in accordance with NUREG-1434, Rev 3. This NUREG provides a detailed discussion on the specifics regarding the new Allowable Value (AV) single column format that it adopts. The purpose of this departure is to clarify in the FSAR that wherever the TS are referenced for setpoints or margins, the correct reference is to the methods for calculating the setpoints and margins as described in the TS Bases. Setpoints for high radiation levels on instruments pertaining to gaseous and liquid releases included in the scope of the Offsite Dose Calculation Manual are in accordance with the Offsite Dose Calculation Manual. Also references to the TS are deleted if not necessary or if they need to be replaced with another proper reference.

RAI 11.05-3**QUESTION:**

In COLA Part 2: FSAR, Subsection 11.5.2.1.5, "Drywell Sumps Discharge Radiation Monitoring," (departure STD DEP 11.5-1) the departure retains the location of the radiation monitor as in the control room for display, recording, and annunciation. In other subsections of 11.5 the departure has deleted the specific location of the radiation monitors. Both SRP 11.5 and RG 1.206 provide guidance that implies the system description should include the location of the equipment. Provide the location of all radiation monitors to provide sufficient specific information for the staff to complete the evaluation or justify the deletion of the radiation monitor location.

RESPONSE:

STD DEP 11.5-1 revised the text to remove the words "in the control room" because the text as written implied that the monitors are in the control room, which they are not. The locations of the radiation monitors are provided in Table 11.5-1. The intent of the text was to explain that indication and annunciation is provided in the control room. Consistent with the other Subsections in 11.5.2.1, Subsection 11.5.2.1.5 will also be revised to remove those words from the text. In addition, Table 11.5-1 will be modified to add a footnote to clarify that the radiation monitors provide indication and annunciation in the control room.

Changes to the COLA are provided below. Changes to the COLA Rev. 2 text are highlighted in gray shading.

11.5.2.1.5 Drywell Sumps Discharge Radiation Monitoring

This subsystem monitors the radiation level in the liquid waste transferred in the drain line from the drywell LCW and HCW sumps to the Radwaste System. One monitoring channel is provided in each sump drain line. Each channel uses an ionization chamber which detector is located on the drain line from the sump just downstream from the outboard isolation valve. The output from each ~~sensor~~ detector is fed to a radiation monitor in the control room for display, recording and annunciation.

Table 11.5-1 Process and Effluent Radiation Monitoring Systems

Monitored Process†	No. of Channels	Sample Line or Detector Location	Channel Range*	Setpoint	
				ACF Trip	Scale

* The channel range specified in this table is the equipment measuring or display of the indicated parameter. Refer to Tables 11.5-2 and 11.5-3 for the dynamic detection range of the monitoring channel expressed as concentration in units of megabecquerels per cubic centimeter, referenced to a specific nuclide. These channel ranges are estimated based on existing plants.

† 4 Channels for each air intake

‡ The alarms and indication for these radiation detectors are displayed locally and in the main control room.

RAI 11.05-4**QUESTION:**

In COLA Part 2: FSAR Tier 2, Subsection 11.5.2.2.4, "Plant Stack Discharge Radiation Monitor," the departure (STD DEP 11.5-1) adds the statement, "These trip outputs are alarmed in the main control inoperative room." Identify where the "main control inoperative room" is located or correct text.

RESPONSE:

Part 2 Tier 2 of the COLA will revise the sentence in Subsection 11.5.2.2.4, "Plant Stack Discharge Radiation Monitoring," to remove the word 'inoperative' to change the phrase from 'main control inoperative room' to 'main control room.' Changes to COLA Rev. 2 are shown in gray highlighting.

11.5.2.2.4 Plant Stack Discharge Radiation Monitoring

The radiation monitor ~~initiates trips~~ has three trip circuits: ~~for alarm indications on two upscale (high-high, high), and one low downscale/inoperative radiation from each detector assembly.~~ These trip outputs are alarmed in the main control ~~inoperative~~ room. Also, the sampled line is monitored for high or low flow indications and alarming.

RAI 11.05-5

QUESTION:

COLA Part 2: FSAR Tier 2, Section 11.5.7, Supplement 11.5.7S stated that an NRC approved Offsite Dose Calculation Manual (ODCM) exist for STP 1 & 2, nuclear power units on the same site and that the ODCM for STP 3 & 4 would be integrated into the STP 1 & 2 ODCM, taking into account the appropriate differences between the existing and new units. Provide additional details on the integration and whether this is to be completed prior to fuel load of STP 3 & 4.

RESPONSE:

See the response to RAI 11.05-1, submitted in letter U7-C-STP-NRC 090125, dated September 3, 2009.

RAI 11.05-6**QUESTION:**

The STP 3 and 4 COLA Revision 2 Departure STD DEP T1 3.4-1, "Safety-related I&C Architecture," does not appear to be appropriately applied to Section 11.5. Part 7: Departures Report, indicates the departure STD DEP T1 3.4-1 can be characterized into five primary changes. STD DEP T1 3.4-1 is identified in only Subsections 11.5.2.2.6, 11.5.2.2.8, and 11.5.2.2.9 apparently keying off "multiplexed". Provide justification for the application of STD DEP T1 3.4-1 in only STP 3 and 4 Section 11.5.2.2.6, 11.5.2.2.8, and 11.5.2.2.9 and why STD DEP 11.5-1 is not sufficient.

RESPONSE:

As noted in the question and cited in COLA Revision 2, STD DEP T1 3.4-1, this departure is characterized into five primary changes. The first of these changes, in part, eliminates references to the Essential Multiplexer system (EMS) and the Non-Essential Multiplexer system (NEMS) and replaces them with separate and independent system level data communication capabilities. This is the basis for the changes in FSAR Revision 2 to Sections 11.5.2.2.6, 11.5.2.2.8 and 11.5.2.2.9, which deletes the statements whereby the output signal is multiplexed and fed into the radiation monitor, and replaces it with a statement whereby the output signal is sent to/processed at the radiation monitor. Therefore, reference to STD DEP T1 3.4-1 for these sections is appropriate. There are no other subsections in Section 11.5 of the DCD that describe data communication at a level to which this departure would be required. Thus, FSAR Sections 11.5.2.2.6, 11.5.2.2.8, and 11.5.2.2.9 are the only sections in FSAR Section 11.5 for which STD DEP T1 3.4-1 is appropriately and correctly applied.

A review of COLA Revision 2 Part 7 description for STD DEP 11.5-1 shows that the changes cited in STD DEP T1 3.4-1, as described in the paragraph above, are not included in STD DEP 11.5-1, and therefore these changes are outside the scope of STD DEP 11.5-1.

There are no COLA changes required as a result of this response.