

November 19, 2009

Mr. Scott Head, Manager
Regulatory Affairs
STP Nuclear Operating Company
P. O. Box 289
Wadsworth, TX 77483

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 291 RELATED TO
SRP SECTIONS 12.02, 12.03-12.04, and 12.05 FOR THE SOUTH TEXAS
PROJECT COMBINED LICENSE APPLICATION

Dear Mr. Head

By letter dated September 20, 2007, STP Nuclear Operating Company (STP) submitted for approval a combined license application pursuant to 10 CFR Part 52. The U. S. Nuclear Regulatory Commission (NRC) staff is performing a detailed review of this application to enable the staff to reach a conclusion on the safety of the proposed application.

The NRC staff has identified that additional information is needed to continue portions of the review. The staff's request for additional information (RAI) is contained in the enclosure to this letter.

To support the review schedule, you are requested to respond within **30** days of the date of this letter. If changes are needed to the safety analysis report, the staff requests that the RAI response include the proposed wording changes.

S. Head

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If you have any questions or comments concerning this matter, I can be reached at 301-415-3104 or by e-mail at Michael.Eudy@nrc.gov or you may contact George Wunder at 301-415-1494 or by e-mail at George.Wunder@nrc.gov.

Sincerely,

/RA/

Michael Eudy, Project Manager
ABWR Projects Branch
Division of New Reactor Licensing
Office of New Reactors

Docket Nos. 52-012
52-013

eRAI Tracking Nos. 3854, 3855, 3856, and 3857

Enclosure:
Request for Additional Information

cc: William Mookhoek
Scot Stephens

S. Head

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OFFICE	CHPB/TR	CHPB/BC	NGE2/PM	NGE2/L-PM
NAME	RKellner	TFrye	MEudy	GWunder
DATE	10/19/09	11/3/09	11/19/09	11/10/09

***Approval captured electronically in the electronic RAI system.**
OFFICIAL RECORD COPY

Request for Additional Information No. 3854 Revision 3

**South Texas Project Units 3 and 4
South Texas Project Nuclear Operating Co
Docket No. 52-012 and 52-013
SRP Section: 12.02 - Radiation Sources
Application Section: 12.2**

QUESTIONS for Health Physics Branch (CHPB)

12.02-13

NRC Staff agrees with the STP response to RAI 12.02-6 (Letter U7-C-STP-NRC-090113, ADAMS Document Number ML092360170) that ABWR DCD Section 12.2.1.2.9 "Other Radioactive Sources" is incorporated by reference in the STP COLA. However, STP is also requesting special nuclear material, by-product, and source material licenses under 10 CFR Parts 30, 40, and 70 which will allow the licensee to: (1) 'receive, possess, and use, at any time, any byproduct, source, and special nuclear material as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required; and (2) 'receive, possess, and use in amounts as required, any byproduct, source, or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components'. Since the above mentioned radioactive sources are not identified in the ABWR DCD, supplemental information is needed in the FSAR that describes the sources.

In order to make a determination of reasonable assurance that all of the radiation sources that will be utilized at STP 3 & 4 have been fully described, the staff requests that the applicant provide the following additional information concerning radiation sources:

1. Describe any radiation sources containing byproduct, or special nuclear material exceeding 3.7×10^9 Bq (100 millicuries) that may be required to perform STP 3 & 4 radiation detection instrumentation calibration activities including; isotope, quantity, form, and use of the sources.
2. Revise the STP 3 & 4 FSAR to include the information provided in the response to item 1 above, and provide a markup of the proposed FSAR changes in the response.

Enclosure

Request for Additional Information No. 3855 Revision 3

**South Texas Project Units 3 and 4
South Texas Project Nuclear Operating Co**

Docket No. 52-012 and 52-013

SRP Section: 12.03-12.04 - Radiation Protection Design Features

Application Section: 12.3

QUESTIONS for Health Physics Branch (CHPB)

12.03-12.04-11

In the response to RAI 12.03-12.04-3 questions 1 and 2 (Letter U7-C-STP-NRC-090121, ADAMS Document Number ML092430071), STP stated that 10 CFR 20.1406 was issued after the ABWR Design Certification Rule in 1997 and that 10 CFR 20.1406(b) is not applicable to the ABWR DCD. NRC staff agrees that STP does not need to address 10 CFR 20.1406(b) through licensing action for the ABWR DCD. However, 10 CFR 20.1406(a) requires that "Applicants for licenses, other than early site permits and manufacturing licenses under part 52 of this chapter and renewals, whose applications are submitted after August 20, 1997, shall describe in the application how facility design and procedures for operation will minimize, to the extent practicable, contamination of the facility and the environment, facilitate eventual decommissioning, and minimize, to the extent practicable, the generation of radioactive waste." In addition, 10 CFR 52.79(a)(45) requires that 'The information required by 10 CFR 20.1406' be included in the FSAR in sufficient detail to enable the commission to reach a final conclusion.

In the response to RAI 12.03-12.04-3 question 3, STP provided a discussion of how the STP 3 & 4 radwaste system departures will address the requirements of 20.1406, noting that NEI 08-08, "Generic FSAR Template Guidance for Life-Cycle Minimization of Contamination" provides guidance on developing operational programs to address 20.1406 and stating that NEI 08-08 guidance will be used, to the extent practicable, when the STP 3 & 4 program and procedures are developed. In addition, the response states that all piping will be located in pipe tunnels or accessible surface trenches and that FSAR Subsection 11.2.1.2.4 will be revised to clarify that there is no piping buried in soils.

In order to make a determination of reasonable assurance that STP 3 & 4 will comply with the requirements of 10 CFR 20.1406, the staff requests that the applicant provide supplemental information to the response to RAI 12.03-12.04-3 to address the following:

1. Provide a complete description of the operational programs and operating procedures that STP 3 & 4 will utilize to address the requirements of 10 CFR 20.1406 in Chapter 12.3 of the FSAR. At a minimum the program description shall include the elements identified in Regulatory Positions C.1 thru C.4 of Regulatory Guide 4.21, including an initial evaluation of structures, systems, and components (SSC) and facility design features important to radiological safety that address the requirements of 10 CFR 20.1406 and form the basis of the operational programs and operating procedures that will be implemented. For reference, RG 4.21, Appendix A also contains numerous examples of measures that can be considered to address the requirements of 10 CFR 20.1406.
2. Include a summary in the FSAR Chapter 12.3 program description that discusses how STP 3 & 4 plans to address the requirements of 10 CFR 20.1406, including a cross reference to any applicable FSAR sections that already include discussions of design features or operational programs that are recognized in the 10 CFR 20.1406 operational programs and operating procedures.

3. Clarify whether the statement included in the response to RAI 12.03-12.04-3 concerning piping being located in tunnels or accessible surface trenches is applicable only to liquid radwaste system piping, or if it applies to all STP 3 & 4 piping.
4. If the statement concerning piping being located in tunnels or accessible surface trenches is applicable to all piping, provide appropriate reference(s) in FSAR chapter 12.3 to the applicable FSAR section(s) that contains or describes the design objective or criteria.
5. Provide a markup of the proposed FSAR changes in the response.

Request for Additional Information No. 3857 Revision 3

**South Texas Project Units 3 and 4
South Texas Project Nuclear Operating Co**

Docket No. 52-012 and 52-013

SRP Section: 12.03-12.04 - Radiation Protection Design Features

Application Section: 12.3

QUESTIONS for Health Physics Branch (CHPB)

12.03-12.04-12

In the response to RAI 12.03-12.04-7 (Letter U7-C-STP-NRC-090122, ADAMS Document Number ML092430136), STP stated that STD DEP 12.3-2 will be deleted and the Reactor Water Cleanup (CUW) System description in Subsection 12.3.1.4.1 of the FSAR will be updated, in a future COLA revision, to include the charcoal filter on the CUW Backwash Tank vent line. However, there is no commitment to include equivalent information about the CUW Backwash Tank vent line charcoal filter in other FSAR Subsections (e.g. 5.4.8, Reactor Water Cleanup System, 9.4.5, Reactor Building HVAC System, and 11.4, Solid Waste Management System), or to update the system drawing(s) to include the charcoal filter. The basis for STD DEP 12.3-2 in the COLA was because "A review of the system diagrams for the CUW system show no such filter as part of the approved design.". Including requirements for the CUW Backwash Tank vent line charcoal filter in FSAR sections, other than Section 12.3, will ensure it is not removed during future design changes.

In order to make a determination of reasonable assurance that the CUW Backwash Tank vent line charcoal filter will be installed as described in the response to RAI question 12.03-12.04-7, the staff requests that the applicant provide supplemental information to address the following:

1. Identification of the appropriate FSAR Subsection(s) within which a description of the CUW Backwash Tank vent line charcoal filter should be included.
2. Identification of the appropriate system drawing(s) within which the CUW Backwash Tank vent line charcoal filter should be included.
3. Provide a markup of the proposed FSAR changes in the response.

Request for Additional Information No. 3856 Revision 3

**South Texas Project Units 3 and 4
South Texas Project Nuclear Operating Co
Docket No. 52-012 and 52-013
SRP Section: 12.05 - Operational Radiation Protection Program
Application Section: 12.5**

QUESTIONS for Health Physics Branch (CHPB)

12.05-5

In the response to RAI 12.05-1 (Letter U7-C-STP-NRC-090103, ADAMS Document Number ML092260582) STP stated that the anticipated frequency of entry into the Very High Radiation Areas listed in FSAR Section 12.5S.4.4 will be seldom, if ever. The response also included discussion of the physical barriers included in the ABWR plant design to preclude access to the identified Very High Radiation Areas and stated that no revision to the COLA is required as a result of this response.

As noted in section 12.5.4.4 of NEI 07-03A, the supplemental information that should be included in the FSAR for access control of each Very High Radiation Areas are:

- Description of the area, including the reason for accessing the area, and reference to its location on plant layout diagrams.
- Anticipated frequency of accessing the area and description of the administrative controls for restricting access to the area as required by 10 CFR 20.1602 and consistent with RG 8.38.
- Detailed drawings that indicate physical barriers that completely enclose the respective area in a manner that is sufficient to thwart undetected entry into the area. Alternatively, if such detailed drawings are not available, describe how such barriers will be verified in the final design of the facility.

In order to make a determination of reasonable assurance that the FSAR contains sufficient detail of the physical barriers included in the ABWR plant design to preclude access to identified Very High Radiation Areas, and access control requirements for Very High Radiation Areas, the staff requests that the applicant include the following supplemental information in Section 12.5 or 12.5S.4.4 of the STP 3 & 4 FSAR:

1. Reason(s) for, and the anticipated frequency of, entry into the Very High Radiation Areas listed in FSAR Section 12.5S.4.4.
2. Discussion of the physical barriers included in the plant design that will preclude access to the identified Very High Radiation Areas.
3. Provide a markup of the proposed FSAR changes in the response.