

November 29, 2007

Mr. Mark McBurnett, Vice President
Regulatory Affairs
South Texas Project Nuclear Operating Company
P.O. Box 289
Wadsworth, TX 77483

SUBJECT: DOCKETING OF THE COMBINED LICENSE APPLICATION (COL) FOR SOUTH TEXAS PROJECT (STP), UNITS 3 AND 4

Dear Mr. McBurnett:

By letter dated September 20, 2007, the STP Nuclear Operating Company tendered a COL application to the U.S. Nuclear Regulatory Commission (NRC) to construct and operate two Advanced Boiling Water Reactors – STP Units 3 and 4. This letter is to inform you that the NRC staff has completed its acceptance review and has determined that your COL application is acceptable for docketing. We are, however, unable to establish a complete schedule for the technical review until we receive the information needed to resolve the issues set forth in Enclosure 1 to this letter. The Docket Numbers established for Units 3 and 4 are 52-012 and 52-013, respectively.

In many parts of your application, the information provided meets NRC regulations with respect to the level of detail necessary to begin the evaluation of the COL application. For these areas, the NRC staff will commence its technical review and projects completing phase 1 of the review by July 24, 2008. Phase 1 includes issuance of requests for additional information (RAIs). The staff has identified other areas, however, where the application has not provided, or not provided in sufficient detail, information that the staff will need in order to schedule and conduct its review properly. By letter dated November 16, 2007, we first provided you with a list of issues that the staff had developed during the course of its acceptance review. This issues list has been updated in response to supplemental information provided to the NRC staff and is provided as Enclosure 1 to this letter.

For COL applications that reference a certified design, the NRC's intent was to allow 30 months to complete its technical and environmental reviews. The items identified in Enclosure 1 introduce uncertainty into the review schedule that is difficult to quantify and that makes development of a complete schedule impractical. For example, the staff cannot begin its review for Items 1 - 4, 6, 8 and 9(a)-(d), until supplemental information is provided. Also, with regard to soil testing (Item 9(a)) and ecological monitoring (Item 12) the staff has expressed concerns regarding the lack of data and the methodology used to collect data, respectively. For soil testing the staff has noted that the data provided were not incorporated as part of the analysis set forth in the COL application. We understand that the remaining data will be available in the third-quarter of 2008. When this data is available, there is a significant possibility that STP will need to re-analyze several calculations that would result in significant changes to the COL application. With regard to ecological monitoring, the staff has noted that the monitoring points for the aquatic species monitoring program may not be appropriate. If they are indeed determined to be inappropriate, STP would need to change monitoring locations and begin anew collecting 12 months of data.

For the areas in Enclosure 1 on which the staff can begin its review, even with the limited level of detail provided, we will begin to resolve the issues through the RAI process. The amount of additional information we believe that we will require, however, is large enough to prevent development of a complete schedule at this time. Accordingly, we request that you inform us in writing within 30 days of the date of this letter of your plans to address the areas of your application detailed in Enclosure 1. The staff will review the supplemental information and provide you a complete schedule for the COL application review once we have all of the necessary information. If all the information is not provided in time to support completion of Phase 1 for the entire application by July 24, 2008, the schedule for the remainder of the COL application review will be impacted.

Enclosure 2 is a notice of acceptance for docketing. This notice is being forwarded to the Office of the Federal Register, and a separate notice will be published, in accordance with the provisions of 10 CFR 2.104, regarding the opportunity to file a petition for leave to intervene in the hearing required for this application.

Should you have any questions, please contact George Wunder, the lead project manager for the STP COL application, at (301) 415-1494 or gfw@nrc.gov.

Sincerely,

/RA/

David B. Matthews, Director
Division of New Reactor Licensing
Office of New Reactors

Docket Nos. 52-012
52-013

Enclosures:

1. Issues Identified in the Acceptance Review
2. Federal Register Notice

cc w/encl: See next page

For the areas in Enclosure 1 on which the staff can begin its review, even with the limited level of detail provided, we will begin to resolve the issues through the RAI process. The amount of additional information we believe that we will require, however, is large enough to prevent development of a complete schedule at this time. Accordingly, we request that you inform us in writing within 30 days of the date of this letter of your plans to address the areas of your application detailed in Enclosure 1. The staff will review the supplemental information and provide you a complete schedule for the COL application review once we have all of the necessary information. Note that if all the information is not provided in time to support completion of Phase 1 for the entire application by July 24, 2008, the schedule for the remainder of the COL application review will be impacted.

Enclosure 2 is a notice of acceptance for docketing. This notice is being forwarded to the Office of the Federal Register and a separate notice will be published, in accordance with the provisions of 10 CFR 2.104, regarding the opportunity to file a petition for leave to intervene in the hearing required for this application.

Should you have any questions, please contact George Wunder, the lead project manager for the STP COL application, at (301) 415-1494 or gfw@nrc.gov.

Sincerely,

/RA/

David B. Matthews, Director
Division of New Reactor Licensing
Office of New Reactors

Docket No. 52-012
52-013

Enclosures:

- 1. Issues Identified in the Acceptance Review
- 2. Federal Register Notice

cc w/encl: See next page

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**ISSUES IDENTIFIED IN THE ACCEPTANCE REVIEW
OF THE STP COL APPLICATION**

- 1) Digital Instrumentation and Control: Standard Departure STD DEP T1 3.4-1 addresses Tier 1, and Tier 2 safety-related instrumentation and control (I&C) architecture. This departure is not adequately described in that a) the justification for this departure does not provide a discussion of the compliance of the ABWR I&C architecture with current requirements (i.e., IEEE-603-1991) as required by 10 CFR 52.79(a)(41); b) the departure does not include a sufficient level of detail for the staff to reach its safety conclusion as required by 10 CFR 52.79(a)(5); and, c) the departure does not provide a plan and schedule for the implementation of the I&C design acceptance criteria (DAC) which, though not a regulatory requirement, was requested by Section C.III.5.1 of Regulatory Guide 1.206.
- 2) Structural: The staff found the following potential Tier 1 changes. These changes were not identified in the COL application, nor were exemptions sought under 10 CFR 52.63(b)(1).
 - a) the required shear wave velocity for the reactor building design was changed from a lower bound of 1000 ft/sec to an average shear wave velocity of greater than 1000 ft/sec.
 - b) the required shear wave velocity for the radwaste building design changed from a lower bound of 1000ft/sec to a minimum of 743 ft/sec; and
 - c) the peak ground acceleration for the radwaste building design changed from the required value of 0.3 g to 0.15 g.
- 3) Radwaste Building: Changes were identified as Tier 2 and not requiring prior NRC approval. STP did not appear to recognize the Tier 1 changes identified in 2 b) and c) above. STP did not provide the design detail of the radwaste building to the level of detail contained in the DCD.
- 4) Ultimate Heat Sink: The COL application did not provide a design for the ultimate heat sink, reactor service water pump houses, or reactor service water piping tunnel; therefore, COL information Items 3.3, 3.4, and 3.24 are left inadequately addressed, and the staff cannot determine whether or not your application is in conformance with 10 CFR 52.79(a)(5).
- 5) Hydrological Engineering: The COL application does not contain the information in the level of detail recommended by RG 1.206, Section C.I.2.4 in regard to a) effects of sediment deposition caused by main cooling reservoir breach, b) effects from tsunamis caused by potential marine landslides, or c) identification of potential critical groundwater pathways. Without this information, the staff cannot determine whether or not the requirements of 10 CFR Part 50, Appendix A, General Design Criterion 2; 10 CFR 52.17(a)(1)(vi); 10 CFR 100.20(c); and 10 CFR 100.23(d)(3) are met.
- 6) Technical Specifications: The COL application Technical Specification and Technical Specification Bases contain a large quantity of bracketed information and a significant

number of empty brackets. Though some of this information (e.g., that associated with design acceptance criteria) is not available, much of the bracketed information will be required before issuance of a COL. Without this information, the staff cannot determine whether or not the application meets the requirements of 10 CFR Part 52 Appendix A, IV.A.2.c for COL information Item 16-1, neither can we determine whether or not the Technical Specifications meet the requirements of 10 CFR 50.36.

- 7) Physical Security: The COL application did not contain all necessary information; for example, a physical security plan, training and qualification plan, and the safeguards contingency plan specific for Units 3 and 4. The Physical Security Plan should address the requirements of 10 CFR Parts 11 and 73.
- 8) Operational Program: The application does not fully describe the Inservice Inspection and Inservice Testing Programs for Pumps and Valves as required by 10 CFR 52.79(a). These operational programs are described in 10 CFR 50.55a(f) and (g). STP may fully describe these programs by addressing the items in RG 1.206, Section C. I. 3.9.6, "Functional Design, Qualification, and Inservice Testing Programs for Pumps, Valves, and Dynamic Restraints."
- 9) Seismology and Geotechnical Engineering: Without the following information, the staff cannot determine whether or not the application meets the requirements of 10 CFR 52.79(a)(1) and 10 CFR 100.23. STP may provide the necessary information by addressing the elements of RG 1.206, Section C. I. 2.5
 - (a) The COL application presented limited soil dynamic testing data, and did not incorporate this data as part of the soil amplification calculation. The limited data deviates from the generic soil degradation curves for soil modulus reduction and damping ratio used in the calculation. The COL application did not follow either RG 1.206 or the limited sampling option, (endorsed with comments through "NRC Staff Draft Interim Staff Guidance on Seismic Issues" dated August 15, 2007).
 - (b) No subsurface exploration (borings) was conducted at the proposed site for the Radwaste Building for STP Unit 4 or within the footprint of either of the UHS pump houses, which are all Category 1 structures, and are required to have subsurface exploration completed and submitted in the COL application.
 - (c) The application deviates from SRP 2.5.4.3 in that no boring logs or lab test data related to foundation interfaces were provided.
 - (d) Dewatering plans for the excavation were not provided.

For Items 9 (e), (f), and (g), STP provided information necessary for the staff to begin the technical review. However, the information submitted indicates that issues exist regarding site suitability and that these issues could become significant open items.

- (e) There is a discrepancy between the shear wave velocity cited in the ABWR Design Certification Document and that cited in the COL application. This was not identified by STP as a Tier 1 departure, and does not meet the

ABWR DCD site design parameter requirement for the minimum shear wave velocity of 1000 ft/s.

- (f) Settlement and differential settlement of Category 1 structures greatly exceed settlement criteria for this class of structure.
- (g) Bearing Capacity of several Category 1 structures does not appear to meet the minimum required 15 KSF in the ABWR DCD. For example, Unit 3 is 8.9 KSF with clay soil, or 14.3 KSF for sand. This appears to be a Tier 1 departure.

Environmental Report (ER): The staff found that some sections of the ER do not provide the detail (or tell the story) to understand the decision-making process that lead to the conclusions in the ER. The following paragraphs detail the sections of the ER in which the required level of detail has not yet been provided.

- 10) The discussion of the alternative site selection process is not sufficiently detailed to allow the staff to understand the decision-making process in accordance with Environmental SRP (ESRP) Section 9.3.
- 11) STP did not conduct an adequate cultural resources survey in accordance with ESRP Sections 2.5.3, 4.1.3, and 5.1.3. The ER relies heavily on the survey conducted in 1973 for existing Units 1 and 2, and did not provide the necessary information to bring this section current.
- 12) The ER provides information on aquatic species in the Colorado River before 1991. Current aquatic species can only be determined by way of an adequate aquatic monitoring program established in accordance with ESRP Sections 5.3.1.2 and 6.5.2, and RG 4.2, Part B, Section 6. The current program, begun in June of 2007, does not specify Colorado River intake and discharge structures as monitoring points; furthermore, it is unclear how many months of monitoring have been completed.

U.S. NUCLEAR REGULATORY COMMISSION
SOUTH TEXAS PROJECT NUCLEAR OPERATING COMPANY
ACCEPTANCE FOR DOCKETING OF AN APPLICATION FOR
COMBINED LICENSE FOR SOUTH TEXAS PROJECT UNITS 3 AND 4
DOCKET NOS. 52-012 AND 52-013

On September 27, 2007, the U.S. Nuclear Regulatory Commission (NRC, the Commission) received a combined license (COL) application from South Texas Project Nuclear Operating Company (STPNOC), dated September 20, 2007, as supplemented by letters dated September 26, 2007, October 15, 2007, October 18, 2007, November 8, 2007, November 12, 2007, November 13, 2007, and November 21, 2007, filed pursuant to Section 103 of the Atomic Energy Act and Subpart C, "Combined Licenses," of Title 10 of the *Code of Federal Regulations* (10 CFR), Part 52, "License Certifications and Approvals for Nuclear Power Plants." The site location is in Matagorda County, Texas and is identified as the South Texas Project Electrical Generating Station site. A notice of receipt and availability of this application was previously published in the *Federal Register* (72 FR 60394) on October 24, 2007.

The NRC staff has determined that STPNOC has submitted information in accordance with 10 CFR Part 2, "Rules of Practice for Domestic Licensing Proceedings and Issuance of Orders," and 10 CFR Part 52 that is acceptable for docketing. The docket numbers established for Units 3 and 4 are 52-012 and 52-013, respectively.

The NRC staff will perform a detailed technical review of the COL application. Docketing of the COL application does not preclude the NRC from requesting additional information from the applicant as the review proceeds, nor does it predict whether the Commission will grant or

deny the application. The Commission will conduct a hearing in accordance with Subpart L, "Informal Hearing Procedures for NRC Adjudications," of 10 CFR Part 2 and will receive a report on the COL application from the Advisory Committee on Reactor Safeguards in accordance with 10 CFR 52.87, "Referral to the Advisory Committee on Reactor Safeguards (ACRS)." If the Commission finds that the COL application meets the applicable standards of the Atomic Energy Act and the Commission's regulations, and that required notifications to other agencies and bodies have been made, the Commission will issue a COL, in the form and containing conditions and limitations that the Commission finds appropriate and necessary.

In accordance with 10 CFR Part 51, the Commission will also prepare an environmental impact statement for the proposed action. Pursuant to 10 CFR 51.26, and as part of the environmental scoping process, the staff intends to hold a public scoping meeting. Detailed information regarding this meeting will be included in a future Federal Register notice.

Finally, the Commission will announce in a future Federal Register notice, the opportunity to petition for leave to intervene in the hearing required for this application by 10 CFR 52.85.

Documents may be examined, and/or copied for a fee, at the NRC's Public Document Room (PDR), located at One White Flint North, Public File Area O1 F21, 11555 Rockville Pike (first floor), Rockville, Maryland 20852, and will be accessible electronically through the Agencywide Documents Access System (ADAMS) Public Electronic Reading Room link at the NRC Web site <http://www.nrc.gov/reading-rm/adams.html>. Persons who do not have access to ADAMS, or who encounter problems in accessing documents located in ADAMS should contact the NRC PDR Reference staff by telephone at 1-800-397-4209, 301-415-4737, or by e-mail to pdr@nrc.gov. The application is also available at <http://www.nrc.gov/reactors/new-licensing/col.html>.

Dated at Rockville, Maryland this 29th day of November 2007.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Thomas A. Bergman, Deputy Director
Division of New Reactor Licensing
Office of New Reactors

Dated at Rockville, Maryland this 29th day of November 2007.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Thomas A. Bergman, Deputy Director
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