Nuclear Operating Company

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

August 5, 2004
NOC-AE-04001758
10CFR50

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
One White Flint North
11555 Rockville Pike
Rockville, MD 20852

South Texas Project
Units 1 and 2
Docket Nos. STN 50-498 and STN 50-499
Response to Request for Information
On NRC Generic Letter 2003-01, "Control Room Habitability"

References:
1. NRC Generic Letter 2003-01, "Control Room Habitability", June 12, 2003
2. Letter from T. J. Jordan, STP Nuclear Operating Company, to the NRC Document Control Desk, dated August 11, 2003, (NOC-AE-03001565)
3. Letter from T. J. Jordan, STP Nuclear Operating Company, to the NRC Document Control Desk, dated December 9, 2003, (NOC-AE-03001635)

Nuclear Regulatory Commission (NRC) Generic Letter 2003-01 (Reference 1) requested that licensees submit information that demonstrates that the control room at each of their respective facilities complies with the current licensing and design bases, and applicable regulatory requirements, and that suitable design, maintenance and testing control measures are in place for maintaining this compliance. STP Nuclear Operating Company (STPNOC) provided a response to the generic letter in References 2 and 3.

In Reference 3, STPNOC committed to completing testing to confirm the control room inleakage assumption in its accident analyses by June 12, 2004, and to submit a summary report of the testing results within 90 days of test completion. Control room inleakage testing has been completed for both STPNOC units. Attachment 1 to this letter provides a summary of the test results.

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STI: 31767863

There is one new commitment in this letter. Commitments 1 and 2 described in Attachment 1 and made in Reference 3 are completed. Commitment 3 described in Attachment 1 and made in Reference 3 remains open. A new commitment is described in Attachment 2 to this letter.

If you have any questions or require additional information, please contact Ken Taplett at (361) 972-8416 or me at (361) 972-7902.

T. J. Jordan
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KJT/

Attachment:

1. Unit 1 and Unit 2 Control Room Inleakage Testing Results

2. List of Commitments

cc:

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# Unit 1 and Unit 2 Control Room Inleakage Testing Results

**Background:**

In Reference 1 submitted on December 9, 2003, the STP Nuclear Operating Company (STPNOC) made the following commitments to the Nuclear Regulatory Commission (NRC).

| Commitment | Due Date |
|---|---|
| 1. Complete testing to confirm the accident analyses control room inleakage assumption. Testing is scheduled for March 2004. | June 12, 2004 |
| 2. Submit a summary of control room inleakage test results to confirm the most limiting inleakage and identify those results that may modify previously submitted information. | Within 90 days of test completion |
| 3. STPNOC plans to submit a Technical Specification change to include periodic verification of control room inleakage. | Within 90 days after TSTF-448 is published in the Federal Register as available for use by licensees. |

Specifically, the following was stated in Reference 1 regarding control room inleakage testing.

> "STPNOC completed inleakage testing in both unit control rooms during 2002 and 2003 using the Component Test Method described in Appendix D of NEI 99-03, Revision 1 (March 2003), "Control Room Habitability Guidance". The differential pressure across the control room envelope boundary was measured at a total of 100 locations during each of three different control room ventilation configurations. At each location, the pressure was confirmed to be positive within the CRE with respect to adjacent areas. It was determined that the test points, in aggregate, tested the entire control room boundary with the exception of [the] concrete wall on the east side of the CRE and the concrete wall surrounding the Electrical Auxiliary Building supply riser. These walls are of poured concrete construction with a thickness greater than 12 inches. There are no penetrations through the walls into the CRE. The Electrical Auxiliary Building supply riser is a vertical ventilation shaft serving multiple levels and makes it impractical to perform a pressure measurement inside the riser. It was determined that these locations are not inleakage vulnerabilities based on the construction and the lack of penetrations.
>
> Plant assessment and pressure testing confirmed that there were no boundary locations where the pressure outside the CRE was positive with respect to inside the envelope. Therefore, no individual components were susceptible to inleakage and thus no individual component leakage testing was required. The results of these tests confirm STPNOC's safety analyses assumption that there is no unfiltered inleakage into either control room.

STPNOC believes that the Component Test Method for measuring control room inleakage has been demonstrated to be an acceptable stand-alone test. However to be responsive to Generic Letter 2003-01, STPNOC will perform component testing in concert with integrated testing discussed in Regulatory Position 1.1 of NRC Regulatory Guide 1.197 for one unit's control room. The characteristics of a CRE design described in NEI 99-03 that support the use of component testing are met by STPNOC's design. Peer reviews were used to identify inleakage vulnerabilities. The positive pressure measurement relied on quantitative test methods. Ventilation systems that could impact differential pressure conditions were operated consistent with the licensing basis.

The results from the two test methods are expected to meet the conditions specified in Regulatory Position 1.2 of NRC Regulatory Guide 1.197 for a component test to be acceptable. STPNOC would then take credit for the component test already performed in the second unit because the unit control room designs are essentially identical. The NRC staff indicated during an industry workshop on June 17-18, 2003 that this would be an acceptable benchmark of one control room design to another as described in Appendix D of NEI 99-03, Revision 1, "Control Room Habitability Guidance," March 2003.

An integrated test and component test for one unit's control room inleakage is planned for performance in March 2004. This is to justify use of component tests for subsequent testing and benchmarking the second STPNOC unit control room as stated above."

The following discussion provides a summary of the test results. In addition, a correction is provided to some of the Reference 1 information based on testing that was recently completed.

**Description of the control room ventilation system and control room envelope**

South Texas Project is a two-unit facility with a separate control room serving each unit. The control room envelope is located entirely within the confines of the Electrical Auxiliary Building (EAB) which is itself adjacent to the Mechanical Auxiliary Building (MAB) and the Reactor Containment Building (e.g., electrical penetration spaces). The control room envelope (CRE) is comprised of several adjacent rooms on the 35-ft. elevation (control room, relay room, hallways, computer room, restrooms, kitchen and various offices) and remote equipment rooms on 10-ft, 35-ft. and 60-ft. elevations. The equipment rooms are connected to the control room area on the 35-ft. level by concrete ventilation shafts. For the most part, each room is entirely contained inside of the EAB HVAC boundaries. Exceptions are the equipment rooms, control room, shift supervisor office, and men's restroom where each has an exterior wall(s). The men's bunkroom and hallway adjoins the MAB. The relay room and computer rooms are adjacent to the 35-ft elev. electrical penetration space.

In general the design philosophy for the MAB/EAB is to minimize exposure to people in the EAB by use of a vestibule between the buildings. This eliminates unfiltered inleakage due to door pumping action. The CRE itself is maintained positive preventing door traffic and other minor discrepancies such as door seals, leaking penetrations, etc., from causing an unfiltered in-leakage from the outside, EAB or MAB.

The Control Room Envelope (CRE) HVAC System is part of the Electrical Auxiliary Building (EAB) HVAC System. It consists of three 50-per-cent-capacity redundant equipment trains (A, B, & C) that are safety-related except for the toilet/kitchen exhaust, heating, and computer room HVAC Subsystem that are non safety-related. Each train includes a control room supply air handling unit (AHU), a return air fan, a makeup filter unit and a control room air cleanup filter unit.

Each control room supply air handling unit (AHU) consists of a pre-filter, a high efficiency air filter, a cooling coil and a fan. They are located at Elev. 10 ft., 35 ft. and 60 ft. and are within the control room envelope. Two leak tight isolation dampers in series are provided in the outside air ductwork for each control room supply AHU to isolate the control room envelope and stop normal outside air makeup in the event of radiation detection at the outside air intake. These two leak-tight isolation dampers are safety-related and are powered by separate class 1E power sources to satisfy the single failure criteria. Each makeup filter unit consists of a centrifugal fan, an electric heater, a pre-filter, two HEPA filters, and a carbon filter. They are located outside the control room envelope in separate rooms at the 86 ft. elev. at the southeast corner of the EAB. Each air cleanup filter unit consists of a pre-filter, two HEPA filters, a carbon filter and a centrifugal fan. The cleanup units are located in each control room supply AHU room at elev. 10 ft., 35 ft., and 60 ft.

A single exhaust air fan is provided to exhaust air from the toilets and the kitchen. The fan operates only during normal operation and has no safety function. Two leak tight isolation dampers are provided in the exhaust duct and automatically close during the control room ventilation emergency mode. These two leak-tight isolation dampers are safety-related and are powered by separate class 1E-power sources to satisfy the single failure criteria. The control room toilet and kitchen area exhaust fan is located outside the control room envelope in the EAB train B HVAC room at elev. 45'-6". The air supplied from the control room supply AHU pressurizes the computer room. Heating and cooling is provided by separate non safety-related AHUs located inside the computer room.

Instrumentation and controls are provided to detect abnormal conditions such as high radioactive concentrations in the makeup air. This instrumentation is redundant to meet the single failure criterion and is supplied from Class 1E power source. The redundant radiation detectors are located in the Room 501 intake plenum and the radiation monitors are located in the Room 510 south of the HVAC equipment rooms on the 86-ft. elevation.

In case of a safety injection (SI) signal or high radiation signal with or without LOOP the control room envelope HVAC system automatically transfers from normal to the emergency operating mode. In case of a SI signal alone, the train(s) operating previously continue to operate and the other train(s) is (are) started. In case of SI signal with LOOP, all three trains are de-energized and then started by the sequencer, and all safety-related components are provided with class 1E diesel power source. The operator can shutdown one of the three trains as deemed necessary. The non-safety related components of the CRE HVAC system are de-energized in the safe position to prevent inadvertent operation.

Upon transfer to the emergency operating mode, the two leak tight isolation dampers on the normal outside air makeup inlet to the control room envelope main AHU are closed. Approximately 1,000 cfm of makeup air is provided automatically via the makeup filter units and through the cleanup filter units (to provide a second filtering). Additionally, approximately 5000 cfm of return air is re-circulated through the cleanup filter unit from the return air fan and combined with the approximately 11,400 cfm that is re-circulated through the control room supply AHU. The filtered air from the cleanup unit is supplied to the control room supply AHU.

The control room toilet and kitchen area exhaust subsystem is automatically secured and isolated with two train-separated, leak-tight isolation dampers closed.

**Unit 1 control room testing**

Component Testing

Component testing in concert with integrated tracer gas testing was performed for the Unit 1 control room in March 2004.

During the week of March 1, 2004, Component Testing was conducted in Unit 1 to determine control room unfiltered inleakage. The test followed the guidance of Sections 5.3.2 and 5.4.2 of NEI 99-03 (Reference 2). The differential pressure across the control room envelope boundary was measured at 100 locations during each of three different control room ventilation configurations (total of 300 locations). The three configurations were (1) control room ventilation Trains A and B, (2) control room ventilation Trains A and C, and (3) control room ventilation Trains B and C with each train combination tested in the emergency makeup and cleanup filtration mode. At each location, the pressure was confirmed to be positive within the control room envelope (CRE) with respect to adjacent areas. The lowest differential pressure was 0.09 inches water gauge (in wg). The measuring instrument accuracy was +/- 0.02 in wg. A positive pressure of greater than instrument accuracy, within the CRE with respect to adjacent areas, was evaluated as zero unfiltered inleakage across these measured areas.

Prior to testing, a component was identified where the pressure within the CRE was not positive with respect to the component. It was determined that the Electrical Auxiliary Building supply ventilation riser located along the south wall of each control room heating, ventilation and air conditioning (HVAC) equipment room was at a higher pressure than the CRE, by design. The wall is of poured concrete construction with a thickness greater than 12 inches. Piping penetrations exist through this wall located in the Train A control room HVAC equipment room. In Reference 1, STPNOC had reported that there are no penetrations through the walls into the CRE and there were no boundary locations where the pressure outside the CRE was positive with respect to inside the envelope. This previous inaccurate information is corrected by this letter attachment. In addition, the concrete wall on the east of the CRE was reported in Reference 1 as not being tested. For clarification, the east wall of each control room HVAC equipment room and the north wall of the control room and toilet area on the 35-foot level are not tested. These walls are of poured concrete construction with a thickness greater than 12 inches. It was determined that these locations, with the exception of the penetrations into the Train A control room HVAC equipment room, are not inleakage vulnerabilities based on the construction so that the unfiltered inleakage at these locations was determined to be zero. The areas around the penetrations into the Train A control room HVAC equipment room were inspected for sources of inleakage. The inspection did not reveal any perceptible inleakage. Since inspection is not a quantitative method of determining inleakage and based on the integrated tracer gas test results reported below, it was decided to assume at least 10 scfm unfiltered inleakage in the accident analyses as a conservative measure. Finally, it was determined that component testing at South Texas took place in Unit 2 in early 2003 and not in 2002 as reported earlier in Reference 1.

In summary, the Component Test determined that control room inleakage is zero. As a conservative measure, at least 10 scfm unfiltered inleakage will be assumed in the accident analyses since one area was not tested, where inleakage was not perceptible by inspection.

Tracer Gas Testing

During the week of March 8, 2004, NUCON International, Inc. under the direction of STPNOC engineers performed an integrated tracer gas test of Unit 1 to determine the amount of unfiltered inleakage into the CRE. The test was performed using the test method described in ASTM E741 (Reference 3). The same train combinations and mode of operation were tested as those for the Component Test described above. A summary of the test results are provided in Table 1 below.

Table 1

| **Train Combination Tested** | **Unfiltered Inleakage** |
|---|---|
| Trains A and B | 9.4 +/- 50 scfm |
| Trains A and C | -27 +/- 50 scfm (determined ZERO) |
| Trains B and C | 1.9 +/- 25 scfm |
| Trains A and B, Retest | 83 +/- 30 scfm |

Note: scfm is standard cubic feet per minute.

The Trains A and B Retest was determined to be an invalid test. During this night of testing, access control of the CRE boundary was compromised when frequent ingress and egress became necessary to respond to an unrelated balance-of-plant condition.

The results (i.e., 9.4 scfm) of the first Trains A and B test were affected by excessive ingress and egress into the CRE to obtain test samples. The Trains A and C and Trains B and C tests were performed with minimal ingress and egress into the CRE for sample taking.

The large uncertainties in the test results were not included in the final determination of unfiltered inleakage because it was concluded that the uncertainty is an artifact of the calculation of determining inleakage, and therefore not representative of the CRE integrity. This conclusion is consistent with Regulatory Position of 1.4 of NRC Regulatory Guide 1.197 (Reference 4) for facilities that demonstrate a CRE inleakage of less than 100 cfm.

Based on the tracer gas test results and the contributing factors discussed above, STPNOC concluded that the unfiltered inleakage into the Unit 1 CRE is nearly zero.

As a conservative measure, it was decided to assume at least 10 scfm unfiltered inleakage in the accident analyses. This assumption bounds the largest valid test result (i.e., 9.4 scfm) although the actual unfiltered inleakage is considered to be less. The assumption of the 10 scfm unfiltered inleakage based in the tracer gas test results also accounts for results of the component test described above.

<u>Correlation of Test Methods</u>

The results of the two tests in Unit 1 were correlated so that a component test may be acceptable for subsequent CRE inleakage testing. For the two test methods (i.e., Tracer Gas Test and Component Test) to be correlated, the tests are expected to meet the conditions specified in Regulatory Position 1.2 of NRC Regulatory Guide 1.197 (Reference 4). Table 2 below demonstrates how correlation was met.

**Table 2**

| | **NRC RG 1.197 Condition, Regulatory Position 1.2** | **How Condition was met** |
|---|---|---|
| 1 | Section 5.3.2 of Appendix I to NEI 99-03 provides four characteristics of a CRE design that support the use of component testing. The NRC staff considers each of these characteristics as necessary for component testing to | The NEI document stated that these characteristics "support" the Component Test method. They were never intended to be "necessary" for component testing as the RG states. For example, if all adjacent areas or |

| | | |
|---|---|---|
| | be acceptable. However, on a case-by-case basis, the staff may approve a plant's use of a component test when a majority of the CRE heating, ventilation, and air conditioning (HVAC) equipment and associated ductwork is external to the CRE. To be considered for approval, the ductwork should be welded-seamed and the air handling units and the ventilation filtration units of similarly robust design | components are not positive, then the Component Test method allows for leak testing these areas.<br><br>STP meets the characteristics with the exception of the first "bulleted" characteristic in that all adjacent areas are not positive. All "measured" areas are positive. The east wall of each CRE HVAC equipment room and the north wall of the control room and toilet area on the 35-foot level are not measured. These walls are of poured concrete construction with a thickness greater than 12 inches and with no penetrations. The area outside these walls is the outside atmosphere of varying pressure conditions dependent on the weather. In addition, the concrete wall surrounding the Electrical Auxiliary Building supply riser in each CRE HVAC equipment room is not measured. These walls are also of poured concrete construction with a thickness greater than 12 inches. There are no penetrations in these walls with the exception of the Train A CRE HVAC equipment room. The EAB supply riser is designed to be at a higher pressure than the CRE. NEI 99-03 states that this component should be leak tested. The method of leak testing the boundary between the EAB supply riser and the Train A CRE HVAC equipment room is described in the component test results discussion of this attachment. |
| 2 | An integrated inleakage test, as described in Regulatory Position 1.1, is conducted in concert with the component test. This condition is necessary when subsequent CRE integrity tests are intended to be component tests. This condition | The integrated inleakage test (i.e, tracer gas test), as described in Regulatory Position 1.1 was performed during the week of March 8, 2004 and the component test was performed during the week of March 1, 2004 in Unit 1 |

| | | |
|---|---|---|
| | determines the overall inleakage of the CRE under circumstances similar to the component test. It is a prerequisite for conditions 3 and 4 below. | |
| 3 | The results of the integrated and component tests correlate. This condition is used to justify use of component tests in subsequent testing. A component test is deemed to be correlated to an integrated test if (1) the tests are conducted under similar conditions and within a reasonable time of each other and (2) the results of the two tests are comparable. The results need not be identical. | Both tests were conducted with the CRE HVAC system in the emergency pressurization and cleanup mode. The component test results were 0 cfm and the integrated test results were nearly zero. |
| 4 | The components tested should account for no less than 95% of the CRE inleakage as determined by the integrated inleakage test (Regulatory Position 1.1). This condition confirms the accuracy of the selection of components vulnerable to inleakage. This condition determines whether all the major sources of inleakage have been identified. It also confirms that the inleakage from CRE walls, ceilings, and floors is no more than 5% of the CRE's total inleakage. Since performance of subsequent component tests presumes that future increases in inleakage will be manifested in the components previously determined to be vulnerable, continual testing of components that account for 95% of the inleakage should capture most increases in inleakage. The selection of 95% is consistent with the confidence levels used in other design basis applications. However, it must be recognized that subsequent increases in inleakage may not always occur in the components identified via the correlation. There may be situations in which the performance of a test in | The 0 cfm inleakage determined by the component test is not "mathematically" 95% of the integrated inleakage test results. Note that the tracer gas tests varied from 9.4 to 0 cfm depending on the train combination tested. This 95% correlation is nearly impossible to achieve for low inleakage control rooms due to the uncertainty of tracer gas testing results. It is really intended for control rooms with inleakage of 100 cfm or higher. Both tests nearly confirmed zero or nearly zero inleakage. The results of the two tests in Unit 1 did confirm the accuracy of the selection of components vulnerable to inleakage, which is the purpose of this condition. Therefore, the intent of condition was met by the two tests. |

| | | |
|---|---|---|
| | accordance with Regulatory Position 1.1 is necessary to ensure the 95% correlation. | |
| 5 | Component testing should include peer reviews to identify inleakage vulnerabilities. | STP used two peers from other STARS facilities during a 2000 self-assessment to identify vulnerabilities. A second self-assessment was performed in 2003 and had a peer reviewer. |
| 6 | Component testing should include quantitative testing methods. | The component test was based on results of measuring pressure using a digital pressure instrument. |
| 7 | Component testing should include verification, prior to testing, of the consistency of air sources and ventilation system flow rates with the licensing basis. | The control room pressurization air flow was measured for each test. |

**Unit 2 control room testing**

Component testing

Component testing was performed for the Unit 2 control room in May 2004. The material condition of the control room envelope was improved using the lessons learned from the Unit 1 testing conducted in March. The test followed the guidance of Sections 5.3.2 and 5.4.2 of NEI 99-03 (Reference 2). The differential pressure across the control room envelope boundary was measured at a total of 84 locations (total of 252 locations) during each of three different control room ventilation configurations. The 100 locations in the Unit 1 test were reduced to 84 locations for this test because some points during the Unit 1 test duplicated test boundaries. Additionally, one test point was deleted because it represented a concrete wall of greater than 12 inches of construction with no penetrations.

Testing was conducted under the same three configurations and operating mode as in Unit 1. At each location, the pressure was confirmed to be positive within the control room envelope (CRE) with respect to adjacent areas. The lowest differential pressure was 0.20 inches water gauge (in wg). The measuring instrument accuracy was +/- 0.02 in wg. A positive pressure within the CRE with respect to adjacent areas was evaluated as zero unfiltered inleakage across these measured areas.

Since Unit 2 is constructed similar to Unit 1, the concrete walls in Unit 1 that were not tested were also not tested in Unit 2. The areas around the penetrations into the Train A control room HVAC equipment room were inspected for sources of inleakage. The inspection did not reveal any perceptible inleakage. Since inspection is not a quantitative method of determining inleakage and based on the integrated tracer gas test results in

Unit 1, it was decided to assume at least 10 scfm unfiltered inleakage in the accident analyses as a conservative measure.

In summary, the Component Test in Unit 2 determined that control room inleakage is zero with the exception of one area where inleakage was not perceptible by inspection. As a conservative measure, at least 10 scfm unfiltered inleakage will be assumed in the accident analyses to account for this component area.

Benchmarking Unit 2 to Unit 1

Correlation testing was not done in Unit 2 to validate the component test method. NEI 99-03, Revision 1 (Reference 5) states:

> "If licensees can benchmark their assessment method and design to a facility that has correlated the integrated component test method with the Integrated Tracer Gas Test Method, then the licensee can use the integrated component test method for baseline testing and any subsequent tests. Benchmarking a design, as used in this context, means that the facility design can be compared to a similar plant design that has already correlated the two test methods. Similar design implies that the design, construction and operation are sufficiently alike so as to assure comparable results between the two plants. Benchmarking the assessment method means that it was conducted in a systematic manner as described in Step 2 of this section. A peer reviewer from the benchmarked plant should be used to strengthen the assessment team and provide assurance of the implementation of a similar assessment per Appendix C. Although not required, a peer reviewer from the benchmarked plant is recommended to strengthen the assessment team and provide assurance of the implementation of a similar assessment method."

The NRC staff indicated during an industry workshop on June 17-18, 2003 that this would be an acceptable benchmark of one control room design to another as described in Appendix D of NEI 99-03, Revision 1, "Control Room Habitability Guidance," March 2003.

Component testing is acceptable as a baseline inleakage test in Unit 2 because:

- Unit 1 correlated the two test methods.
- The design, construction and operation for both units are sufficiently alike so that test results should be comparable.
- The assessment method performed in 2000 was conducted in a systematic manner as described in NEI 99-03.
- Two STARS peer reviewers were used in the 2000 assessment and one STARS peer reviewer was used in the 2003 assessment.

**Additional Unit 1 Testing:**

The material condition of the Unit 1 control room envelope was improved using the lessons learned from the testing conducted in March. In June 2004, differential pressure testing was conducted for the 3 train combinations in the emergency makeup and cleanup filtration mode. Differential pressure testing was performed for 84 test points in each train combination. The lowest differential pressure improved to 0.17 inches water gauge (in wg).

**Accident Analyses:**

South Texas Project accident analyses for control room operator dose currently assumes 10 cfm unfiltered inleakage (Reference 6). The 10 cfm unfiltered inleakage in the calculation is assumed due to ingress and egress from the control room during the accident. No other unfiltered inleakage is assumed.

Prior to control room inleakage testing, analyses were performed to determine the amount of unfiltered inleakage that could be tolerated and still meet the design function of the control room habitability system (i.e., meet the regulatory limits of 10CFR50, Appendix A, General Design Criterion 19). The results demonstrated that an additional 30 scfm unfiltered inleakage beyond the 10 scfm for ingress and egress could be tolerated and still meet regulatory limits. Since inleakage testing demonstrated that the unfiltered inleakage is less than 10 scfm, the control room makeup and cleanup filtration system remains operable.

The current unfiltered inleakage (i.e., the leakage in addition to the assumption for ingress and egress) assumption in the accident analyses was not positively confirmed to be 0 scfm by testing. Therefore, South Texas will be revising their control room dose accident analyses and updating the Final Safety Analysis Report. South Texas plans to make an alternate source term submittal pursuant to 10CFR50.67 to revise the analysis. The results of this analysis is expected to be submitted in December 2005. This condition is being tracked under the Corrective Action Program and is described as a regulatory commitment in Attachment 2.

**Technical Specification change:**

Commitment 3 described on page 1 of this attachment and made in Reference 1 remains outstanding pending the outcome of NRC's review and approval of TSTF-448 (Reference 7). The Technical Specifications Task Force submitted a response to a NRC request for additional information (RAI) regarding TSTF-448 on March 8, 2004. It is South Texas' understanding that the NRC intends to respond to the TSTF RAI response by August 18, 2004.

**Conclusions:**

1. The correlation testing in Unit 1 met the intent of NRC Regulatory Guide 1.197 (Reference 4) and is satisfactory for demonstrating inleakage.

2. Unit 2 can be benchmarked to Unit 1 so that component testing is a satisfactory test for demonstrating inleakage. The component test results in Unit 2 are comparable to the test results in Unit 1.

3. Inleakage testing demonstrated that the design function of the control room habitability system is met. Analyses conducted prior to testing demonstrated that an additional 30 scfm unfiltered inleakage beyond the 10 scfm for ingress and egress could be tolerated and still meet regulatory limits.

4. The current accident analyses control room inleakage assumption was not positively confirmed by testing. The testing demonstrated that the unfiltered inleakage (i.e., the leakage in addition to the assumption for ingress and egress) is nearly zero.

5. The control room dose accident analyses will be revised to reflect the results of the testing. The new analyses should reflect at least an additional 10 scfm unfiltered inleakage to account to the results of the recently performed inleakage testing. See the regulatory commitment described in Attachment 2.

**References:**

1. Letter from T. J. Jordan, STP Nuclear Operating Company, to the NRC Document Control Desk, dated December 9, 2003, (NOC-AE-03001635)
2. Nuclear Energy Institute NEI 99-03, "Control Room Habitability Assessment Guidance", June 2001
3. American Society for Testing and Materials, "Standard Test Method for Determining Air Change in a Single Zone by Means of a Tracer Gas Dilution", ASTM E741-00, 2000
4. NRC Regulatory Guide 1.197, "Demonstrating Control Room Envelope Integrity at Nuclear Power Reactors", May 2003
5. Nuclear Energy Institute NEI 99-03, Revision 1, "Control Room Habitability Guidance", March 2003
6. The South Texas Project Updated Final Safety Analysis, Revision 12, Section 6.4.4.1, Control Room Habitability Systems "Radiological Protection"
7. Technical Specification Task Force Improved Standard Technical Specification Change Traveler, BWOG-111, Rev. 0, TSTF-448, August 18, 2003

## LIST OF COMMITMENTS

The following table identifies those actions committed to by the STP Nuclear Operating Company in this document. Any statements in this submittal with the exception of those in the table below are provided for information purposes and are not considered commitments. Please direct questions regarding these commitments to Ken Taplett at (361) 972-8416.

| Commitment | Due Date |
|---|---|
| Complete testing to confirm the accident analyses control room inleakage assumption. Testing is scheduled for March 2004. | Completed |
| Submit a summary of control room inleakage test results to confirm the most limiting inleakage and identify those results that may modify previously submitted information. | Completed |
| STPNOC plans to submit a Technical Specification change to include periodic verification of control room inleakage. | Within 90 days after TSTF-448 is published in the Federal Register as available for use by licensees. |
| New: Revise the control room dose accident analyses to reflect the results of the control room inleakage testing. | December 31, 2005 |