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

November 22, 2010
NOC-AE-10002605
10CFR50.90

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
One White Flint North
11555 Rockville Pike
Rockville, MD 20852-2738

South Texas Project
Units 1 and 2
Docket Nos. STN 50-498, STN 50-499
License Amendment Request to Revise the Application
of Risk-Managed Technical Specifications to
Technical Specification 3.7.7, "Control Room Makeup and Cleanup Filtration System"

References:
1. Letter dated December 28, 2006, from David W. Rencurrel, STPNOC, to NRC Document Control Desk, "Revised Broad Scope Risk-Informed Technical Specification Amendment Request." (ML070040247, NOC-AE-06002036, TAC Nos. MD2341 & MD2342)

2. Letter dated July 13, 2007, from Mohan C. Thadani, NRC, to James J. Sheppard, STPNOC, "South Texas Project, Units 1 and 2 – Issuance of Amendments Re: Broad-Scope Risk-Informed Technical Specifications Amendments." (ML071780186, ML071780191, ST-AE-NOC-07001652, TAC Nos. MD2341 and MD2342)

3. Letter dated May 28, 2008, from Scott M. Head, STPNOC, to NRC Document Control Desk, "Clarification of the Applicability of Risk Managed Technical Specifications to Technical Specification 3.7.7." (ML081720133, NOC-AE-08002291)

4. Letter dated June 28, 2010, from Charles T. Bowman, STPNOC, to NRC Document Control Desk, "License Amendment Request to Revise the Action Requirement for an Inoperable Control Room Envelope Boundary to Technical Specification 3.7.7, "Control Room Makeup and Cleanup Filtration Systems.'"(ML102170470, NOC-AE-10002538, TAC Nos. ME4198 and ME4199)

A102
NRR

STI: 32755223

The STP Nuclear Operating Company (STPNOC) is submitting this License Amendment Request to revise the application of Risk-Managed Technical Specifications (RMTS) to Technical Specification (TS) 3.7.7, "Control Room Makeup and Cleanup Filtration System." This change will correct a misapplication of the Configuration Risk Management Program (CRMP) that is currently allowed by the Specification.

In Reference 1, STPNOC submitted a revised License Amendment Request for a broad scope risk-informed set of Technical Specification (TS) changes. The proposed amendment was approved in Reference 2 with the issuance of Amendment 179 and Amendment 166 to the STP Unit 1 and Unit 2 Operating Licenses, respectively. Amendments 179 and 166 approved the use of the STP CRMP for calculating a risk-informed completion time only in Mode 1 and Mode 2 for specified TS Limiting Condition for Operations.

In Reference 1, STPNOC stated that the CRMP would only be applied to the cooling function of TS 3.7.7 and not to the dose mitigation function. In addition, Reference 1 stated that the dose mitigation function of the Control Room Makeup and Cleanup Filtration System (CRHVAC) is not dependent on the cooling function. In Reference 3, STPNOC submitted a letter to correct this statement in that the dose mitigation function is dependent on the cooling function. The Reference 3 letter clarified how the RMTS would be applied to TS 3.7.7 by administratively restricting the application of the CRMP to Action a only, for one inoperable CRHVAC system due to a loss of cooling function.

This request changes how RMTS will apply to TS 3.7.7. The change describes how the CRMP will be applied to address the loss of cooling function of the CRHVAC. The change will allow the elimination of the current administrative restriction that STPNOC imposed on application of TS 3.7.7.

The Enclosure to this letter provides an evaluation of the proposed change. The annotated Technical Specification pages are provided as Attachment 1 to the Enclosure. Although there are no changes proposed to the TS on the second and third pages, all three TS pages will need to be part of the approved amendment because some specifications from each preceding page moved to the succeeding page as a result of the proposed change on the first page.

By Reference 4, STP proposed another change to TS 3.7.7 that does not impact the bases and conclusions of this license amendment request. Conversely, this license amendment request does not impact the bases and conclusions in the amendment request provided in Reference 4. The numbering scheme of the approved TS change for both amendment requests may require some coordination to ensure that the approval of one request does not unintentionally result in an incorrect numbering scheme for the second request, when approved.

STPNOC requests approval of the proposed license amendment by November 30, 2011, with a 60-day implementation period to provide time to revise STP licensing documents.

This letter contains no regulatory commitments.

In accordance with 10 CFR 50.91(b), STPNOC is notifying the State of Texas of this request for license amendment by providing a copy of this letter and its attachments.

If you should have any questions regarding this submittal, please contact Ken Taplett at (361) 972-8416 or me at (361) 972-7454.

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

Executed on November 22, 2010
Date

Charles T. Bowman
General Manager,
Nuclear Safety Assurance

KJT

Enclosure: Evaluation of the Proposed Change

cc:
(paper copy)

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Enclosure

Evaluation of the Proposed Change

Subject: License Amendment Request for Revision to Technical Specification 3.7.7

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Attachments:

1. Annotated Technical Specification Page
2. Annotated Technical Specification Bases Changes

Description of Change and Safety Evaluation

1.0 Summary Description

This evaluation supports a request to amend Operating Licenses NPF-76 and NPF-80 for the South Texas Project (STP), Units 1 and 2.

License Amendment 179 and Amendment 166 to the STP Unit 1 and Unit 2 Operating Licenses, respectively, approved a broad scope risk-informed set of Technical Specification (TS) changes. The amendments approved the use of the STP Configuration Risk Management Program (CRMP) for calculating a risk-informed completion time only in Mode 1 and Mode 2 for specified TS Limiting Condition for Operations.

This proposed change allows the CRMP to be applied to the loss of the cooling function of the Control Room Makeup and Cleanup Filtration System (referred to as CRHVAC hereafter) as specified in the proposed Limiting Conditions for Operations Action requirements. The change is based on a calculation that shows the impact of the loss of cooling function on the dose mitigation function for Technical Specification (TS) 3.7.7, "Control Room Makeup and Cleanup Filtration Systems." The loss of cooling function for the CRHVAC is currently modeled in the STP Probabilistic Risk Assessment (PRA).

2.0 Detailed Description

On July 13, 2007, License Amendments 179 and 166 approved the Risk Managed Technical Specification (RMTS) to allow the CRMP to be applied to various STP TS for determining allowed outage times (AOT) for inoperable trains. The amendments permitted the CRMP to be applied to TS 3.7.7 on a limited basis.

The CRHVAC includes a recirculation and filtration function that maintains the design basis accident radiation dose to the operators within the limits of General Design Criterion 19. The system also provides required room cooling for the operators and equipment. The dose mitigation function is not modeled in the STP PRA because it does not have an impact on the likelihood of a core damaging event, and thus has no impact on core damage frequency (CDF) and large early release frequency (LERF), which are the metrics for application of RMTS. The cooling function of CRHVAC is modeled in the PRA. Based on discussion with the NRC reviewers, it was determined during the license amendment application review for the original RMTS that the dose mitigation function could not be included in the scope of RMTS because it is not modeled in the PRA.

At the time the amendment was approved, STPNOC believed the dose mitigation function was independent of the cooling function and the CRMP could be applied to TS 3.7.7 for conditions where only the cooling function is affected. The "limited" basis approved in the license amendment allowed the CRMP to apply to conditions where only the cooling function of the CRHVAC is affected. The cooling function is provided by Essential Chilled Water (EchW) supported by Essential Cooling Water (ECW). Reference 6.1 addressed this by stating that the wording below would be included in the TS Bases for TS 3.7.7, and the TS Bases were changed as follows:

> The dose mitigation function governed by TS 3.7.7 does not depend on the cooling function governed by TS 3.7.7 that is supported by TS 3.7.14 for EchW. Therefore, if a TS 3.7.7 action applies because EchW is not available or the cooling coil for CRHVAC is not operable, the provision to apply the CRMP may be used.

During a review of the basis for application of RMTS in February 2008, STPNOC determined that at least one train of EchW supported by ECW is required to maintain humidity levels to support achieving the filter efficiency assumed in the accident dose analysis. (Reference 6.2) Based on this information, the dose mitigation function governed by TS 3.7.7 has some dependence on the cooling function.

Administrative restrictions were put in place to limit the use of RMTS for CRHVAC for Action a only.

STP TS 3.7.7 requires the operability of three independent trains of CRHVAC. The current TS required actions of TS 3.7.7 are shown below.

a. With one Control Room Makeup and Cleanup Filtration System inoperable for reasons other than condition d, within 7 days restore the inoperable system to OPERABLE status or apply the requirements of the CRMP, or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

b. With two Control Room Makeup and Cleanup Filtration Systems inoperable for reasons other than condition d, within 72 hours restore at least two systems to OPERABLE status or apply the requirements of the CRMP, or be at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

c. With three Control Room Makeup and Cleanup Filtration Systems inoperable for reasons other than condition d, within 12 hours restore at least one system to OPERABLE status or apply the requirements of the CRMP, or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

d. One or more Control Room Makeup and Cleanup Filtration Systems inoperable due to inoperable Control Room Envelope (CRE) boundary perform the following:

1) immediately initiate action to implement mitigating actions, and
2) within 24 hours verify mitigating actions ensure CRE occupant exposures to radiological, chemical and smoke hazards will not exceed limits, and
3) within 90 days restore CRE boundary to OPERABLE status

Note that the CRMP is not applied to Action d where the CRHVAC is inoperable due to an inoperable CRE boundary.

An engineering calculation determined that two trains of CRHVAC pressurization (fans) with one train of cooling are adequate for the dose mitigation function based on maintaining the required control room envelope positive pressure and maintaining the relative humidity of the control room air below the 70% acceptance criterion required to support design basis assumptions for carbon filter efficiency. The calculation shows that with one train of CRHVAC inoperable for a loss of cooling (i.e., the associated train of ECW or EChW is inoperable), either of the two operable trains of CRHVAC provides adequate cooling to maintain the filter efficiency for the CRHVAC system to perform its design function to mitigate dose.

This change proposes the following:

- A new Action b is proposed for the condition where one train of CRHVAC is inoperable only due to unavailability of cooling. The new Action allows the application of the CRMP because at least two trains of the CRHVAC cooling function remain operable where only one train of the cooling function is required to meet the safety function. The new Action is proposed to read as follows:

  b. With one Control Room Makeup and Cleanup Filtration System inoperable only due to unavailability of cooling, within 7 days restore the inoperable system to OPERABLE status or apply the requirements of the CRMP, or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

- A new Action d is proposed for the condition where two trains of CRHVAC are inoperable only due to unavailability of cooling. While the Action does not allow the application of the CRMP, it does extend the previous time to restore at least two systems to OPERABLE status from 72 hours to 7 days. This is because with one remaining CRHVAC train of cooling available, failure of the remaining train's cooling capability would not support the safety function . This condition is comparable to that allowed by Action a where one CRHVAC train is inoperable for dose mitigation reasons. The new Action is proposed to read as follows:

d. With two Control Room Makeup and Cleanup Filtration Systems inoperable only due to unavailability of cooling, within 7 days restore the inoperable system to OPERABLE status, or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

- Action a is modified to separate the Action required for a loss of dose mitigation function from the Action required for a loss of only the cooling function and from the Action for a loss of only the Control Room Envelope boundary. The option to apply the requirements of the CRMP is deleted. The modified Action is proposed to read as follows:

  a. With one Control Room Makeup and Cleanup Filtration System inoperable for reasons other than condition b or condition f, within 7 days restore the inoperable system to OPERABLE status, or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

- The current Action b is moved to Action c and modified to separate the Action required for a loss of dose mitigation function from the Action required for a loss of only the cooling function and from the Action for a loss of only the Control Room Envelope boundary. The option to apply the requirements of the CRMP is deleted. The modified Action is proposed to read as follows:

  c. With two Control Room Makeup and Cleanup Filtration Systems inoperable for reasons other than condition d or condition f, within 72 hours restore at least two systems to OPERABLE status, or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

- The current Action c is moved to new Action e. The option to apply the requirements of the CRMP is deleted.

- The current Action d is renumbered as new Action f. No other changes are made to the Action requirements.

The proposed change only allows the CRMP to be applied where one Control Room Makeup and Cleanup Filtration System is inoperable only due to unavailability of cooling. All other options to apply the requirements of the CRMP to TS 3.7.7 are deleted.

The proposed changes are provided in Attachment 1 to this Enclosure.

A mark-up of the affected Bases pages to TS 3.7.7 is provided in Attachment 2 to this Enclosure for information.

3.0 Technical Evaluation

3.1 Evaluation of the Application of the CRMP

The CRHVAC is comprised of three 50-percent redundant trains that share a common intake plenum and exhaust plenum. Each train is comprised of a makeup fan, a makeup filtration unit, a cleanup filtration unit, a cleanup fan, a control room air handling unit, a supply fan, a return fan, and associated ductwork and dampers. Two of the three 50% design capacity trains with one train of cooling are required during an accident to ensure that the system design function to maintain control room habitability is met.

The CRHVAC ensures that: (1) the ambient air temperature does not exceed the allowable temperature for continuous-duty rating for the equipment and instrumentation cooled by this system, and (2) the control room will remain habitable for operations personnel during and following design-basis accident conditions. The CRHVAC maintains the design-basis accident radiation dose to the operators within the limits of General Design Criterion 19.

The CRHVAC also provides required room cooling for the operators and equipment. An engineering calculation determined that two trains of CRHVAC pressurization (fans) with one train of cooling are adequate for the dose mitigation function based on maintaining the required control room envelope positive pressure and maintaining the relative humidity of the control room air below the 70% acceptance criterion required to support design-basis assumptions for carbon filter efficiency. The calculation shows that with one train of CRHVAC inoperable for a loss of cooling (i.e., the associated train of ECW or EChW is inoperable), either of the two operable trains of CRHVAC provides adequate cooling to maintain the filter efficiency for the CRHVAC system to perform its design function to mitigate dose.

Postulation of a single failure while in the action statement is used to demonstrate that the CRMP is being applied for the cooling function and is not being applied to extend the allowed outage time to restore necessary redundancy for the required dose mitigation function. Therefore, application of the CRMP to TS 3.7.7 Action b for one inoperable train of CRHVAC is permissible.

For those TS where application of the CRMP is allowed, the operator has the option of using the existing TS AOT for routine plant activities and emergent conditions that would not be expected to require an extension of the AOT. This existing AOT is referred to as the "frontstop" time. The frontstop time provides the operator sufficient time to determine and apply an appropriate extended time from the application of the CRMP for those situations where it is determined that an extended AOT, as allowed by the RMTS, is necessary. Once the CRMP is applied and a component has exceeded its frontstop time, the CRMP is applied to all subsequent inoperable TS components within the scope of the CRMP to determine the time of the extended AOT for the new configuration until no components are in ACTIONS beyond the frontstop time.

The CRHVAC room cooling function is modeled in the PRA. An extended AOT can be calculated for one inoperable train of CRHVAC cooling. Therefore, the CRMP can be applied for the condition of a single train of CRHVAC inoperable only due to the unavailability of cooling.

The dose mitigation function is not modeled in the PRA because it has no effect on core damage frequency or large early release frequency. Consequently, there is no direct quantifiable technical basis for calculating an extended AOT for an inoperable condition involving the dose mitigation function. Therefore, the CRMP can not be applied to the condition of inoperable CRHVAC train(s) where the dose mitigation function is adversely impacted.

3.2 Evaluation of the Loss of Redundancy

The CRHVAC is comprised of three 50-percent redundant trains that share a common intake plenum and exhaust plenum. Two of the three 50% design capacity trains with one train of cooling are required during an accident to ensure that the system design function to maintain control room habitability is met.

During the condition where one train of CRHVAC is inoperable due to an adverse impact on the dose mitigation capability, TS AOT requirements limit operation during this condition for up to 7 days, followed by shutdown to COLD SHUTDOWN conditions. This is because the accident analysis assumes a single failure of one of the remaining OPERABLE trains so that the safety function would not be met. This allowance is acceptable because of the low probability of a design basis accident while the affected train is out of service.

During the condition where one train of CRHVAC is inoperable only due to unavailability of cooling, sufficient redundancy remains since either of the two operable trains of CRHVAC provides adequate cooling to maintain the filter efficiency for the CRHVAC system to perform its design function to mitigate dose. When two trains of CRHVAC are inoperable only due to unavailability of cooling, the redundancy no longer exists. Therefore, a failure of the remaining train's cooling capability would not support the safety function. The condition where two trains of CRHVAC are inoperable only due to unavailability of cooling is analogous to the condition where one train of CRHVAC is inoperable due to an adverse impact on the dose mitigation capability. The condition where two trains of cooling are unavailable does not make the design basis accident any more probable. Therefore, it is reasonable to limit operation when two trains of CRHVAC are inoperable only due to unavailability of cooling for up to 7 days as well.

3.3 Conclusion

Two trains of CRHVAC pressurization (fans) with one train of cooling are adequate for the dose mitigation function based on maintaining the required control room envelope positive pressure and maintaining the relative humidity of the control room air below the 70% acceptance criterion required to support design basis assumptions for carbon filter efficiency. The CRHVAC room cooling function is modeled in the PRA. An extended AOT can be calculated for one inoperable train of CRHVAC cooling. Therefore, the CRMP can be applied for the condition of a single

train of CRHVAC inoperable only due to the unavailability of cooling and a risk-informed completion time can be calculated.

The condition where two trains of CRHVAC are inoperable only due to unavailability of cooling is analogous to the condition where one train of CRHVAC is inoperable due to an adverse impact on the dose mitigation capability. The condition does not make the design-basis accident any more probable. Therefore, it is reasonable to limit operation when two trains of CRHVAC are inoperable only due to unavailability of cooling for up to 7 days as well.

4.0 Regulatory Evaluation

4.1 Applicable Regulatory Requirements/Criteria

This change reduces the scope of applying the CRMP to TS 3.7.7.

10CFR50.36 requires that TS contain Limiting Conditions for Operations. 10CFR50.36 requires that: "When a limiting condition for operation of a nuclear reactor is not met, the licensee shall shut down the reactor or follow any remedial action permitted by the technical specifications until the condition can be met." The STP TS allow for a risk-informed process for determining required remedial actions. A CRMP for determining required actions and AOTs based on a risk-managed action time (RMAT[1]) and a risk-informed completion time (RICT[2]) up to a 30-day limit is allowed. Individual LCOs will indicate if the CRMP is applicable. Consequently, the provisions of 10CFR50.36 are met for the CRMP application to TS 3.7.7.

The implementation of the STP RMTS for the identified scope of TS LCO action requirements is consistent with the guidance of NEI 06-09, Revision 0. (Reference 6.4)

The AOTs beyond the front-stop times for structures, systems, or components in TS are controlled by the CRMP. The CRMP methodology for assessing the risk impact of extending AOTs is accomplished by using a full-scope PRA model of sufficient technical adequacy as described in NEI 06-09, Revision 0, and based on consistency with the guidance of NRC RG 1.200, Revision 1. (Reference 6.3)

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[1] The time interval from the discovery of a condition requiring entry into a Technical Specification Action for a system, structure or component (SSC) within the scope of the RMTS and which results in a plant configuration other than the zero maintenance state until the 1.00E-6 incremental core damage probability (ICDP) or 1.00E-7 incremental large early release probability (ILERP) risk-managed action threshold is reached, whichever is the shorter duration (i.e., the threshold where additional actions should be taken to manage risk).

[2] The SSC plant configuration completion time or AOT calculated based on maintaining plant operation within allowed risk thresholds or limits and applying the CRMP and associated PRA.

The CRMP used to determine the AOT of the TS also meets the requirement of 10CFR50.65(a)(4) for performing a risk assessment for equipment removed from service for maintenance.

Based on the discussion above, STPNOC concludes that the proposed change will ensure that application of the CRMP to TS 3.7.7 is in compliance with regulatory requirements.

4.2 Precedent

A broad scope risk-informed set of Technical Specification (TS) changes was approved with the issuance of Amendment 179 and Amendment 166 to the STP Unit 1 and Unit 2 Operating Licenses, respectively. (Reference 6.5)

4.3 Significant Hazards Consideration

STPNOC has evaluated whether or not a significant hazards consideration is involved with the proposed amendments by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment," as discussed below:

1. Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

   Response: No

   The proposed change allows the Configuration Risk Management Program (CRMP) to be applied to Technical Specification (TS) 3.7.7, "Control Room Makeup and Cleanup Filtration Systems" for the condition where one train of CRHVAC is inoperable only due to the unavailability of cooling. The proposed change extends the AOT from 72 hours to 7 days for the condition where two trains of CRHVAC are inoperable only due to the unavailability of cooling. The CRMP can not be applied to the loss of two trains of cooling.

   The change does not involve a significant increase in the probability of an accident previously evaluated because the change does not involve a change to the plant or its modes of operation. In addition, the risk-informed configuration management program will be applied to effectively manage the availability of required structures, systems, and components to assure there is no significant increase in the probability of an accident.

   This proposed change does not increase the consequences of an accident because the design-basis mitigation function of the affected systems is not changed and the risk-informed configuration management program will be applied to effectively manage the availability of structures, systems, and components required to mitigate the consequences of an accident.

Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

   Response: No

   The proposed change allows the Configuration Risk Management Program (CRMP) to be applied to Technical Specification (TS) 3.7.7, "Control Room Makeup and Cleanup Filtration Systems" for the condition where one train of CRHVAC is inoperable only due to the unavailability of cooling. The proposed change extends the AOT from 72 hours to 7 days for the condition where two trains of CRHVAC are inoperable only due to the unavailability of cooling. The CRMP can not be applied to the loss of two trains of cooling.

   The proposed change will not alter the plant configuration (no new or different type of equipment will be installed) or require any unusual operator actions. The proposed change will not alter the way any structure, system, or component functions, and will not significantly alter the manner in which the plant is operated. The response of the plant and the operators following an accident will not be different. In addition, the proposed change does not introduce any new failure modes.

   Therefore, the proposed change does not create the possibility of a new or different kind of accident from any previously evaluated.

3. Does the proposed change involve a significant reduction to a margin of safety?

   Response No

   The proposed change allows the Configuration Risk Management Program (CRMP) to be applied to Technical Specification (TS) 3.7.7, "Control Room Makeup and Cleanup Filtration Systems" for the condition where one train of CRHVAC is inoperable only due to the unavailability of cooling. The proposed change extends the AOT from 72 hours to 7 days for the condition where two trains of CRHVAC are inoperable only due to the unavailability of cooling. The CRMP can not be applied to the loss of two trains of cooling.

   The CRMP implements a risk-informed configuration risk management program in a manner to assure that adequate margins of safety are maintained. Application of the configuration risk management program to TS 3.7.7 complements the risk assessment required by the Maintenance Rule and effectively manages the risk for limiting condition for operation when the Control Room Makeup and Cleanup Filtration Systems are inoperable.

   The condition where two trains of CRHVAC are inoperable only due to unavailability of cooling is analogous to the condition where one train of CRHVAC is inoperable due to an

adverse impact on the dose mitigation capability. The condition does not make the design basis accident any more probable. The safety function can still be achieved assuming no single failure during the AOT should a low probability DBA occur. Therefore, the extension of the AOT for the loss of two cooling trains to the same AOT as that for the loss of one train impacting the dose mitigation function does not significantly reduce the margin of safety.

Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Based on the above, STPNOC concludes that the proposed amendments do not involve a significant hazards consideration under the standards set forth in 10 CFR 50.92(c) and, accordingly, a finding of "no significant hazards consideration" is justified.

4.4 Conclusion

Based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

5.0 Environmental Consideration

STPNOC has reviewed the proposed amendment and determined that it does not involve (1) a significant hazards consideration, (2) a significant change in the types or significant increase in the amounts of any effluents that may be released offsite, or (3) a significant increase in the individual or cumulative occupational exposure. Accordingly, the proposed changes meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment.

6.0 References

6.1 Letter dated December 28, 2006, from David W. Rencurrel, STPNOC, to NRC Document Control Desk, "Revised Broad Scope Risk-Informed Technical Specification Amendment Request." (ML070040247, NOC-AE-06002036, TAC Nos. MD2341 & MD2342)

6.2 Letter dated May 28, 2008, from Scott M. Head, STPNOC, to NRC Document Control Desk, "Clarification of the Applicability of Risk Managed Technical Specifications to Technical Specification 3.7.7." (ML081720133, NOC-AE-08002291)

6.3 Nuclear Regulatory Commission Regulatory Guide 1.200, Revision 1, "An Approach for Determining the Technical Adequacy of Probabilistic Assessment Results for Risk-Informed Activities," dated January 2007.

6.4 NEI 06-09 (Revision 0) – A, "Risk-Informed Technical Specifications Initiative 4b, Risk-Managed Technical Specifications (RMTS) Guidelines, Industry Guidance Document," November 2006.

6.5 Letter dated July13, 2007, from Mohan C. Thadani, NRC, to James J. Sheppard, STPNOC, "South Texas Project, Units 1 and 2 – Issuance of Amendments Re: Broad-Scope Risk-Informed Technical Specifications Amendments (ML071780186, ML071780191, ST-AE-NOC-07001652, TAC Nos. MD2341 and MD2342)"

Enclosure, Attachment 1

Annotated Technical Specification Page

Technical Specification 3/4.7.7

Control Room Makeup and Cleanup Filtration System

Note: Although there are no proposed changes on TS pages 3/4 7-17 and 3/4 7-18, specifications from the preceding page moved to these succeeding pages so that an approved amendment would need to include TS pages 3/4 7-16 through 3/4 7-18.

Note: By Reference 4 (see cover letter to this Enclosure), STP proposed another change to TS 3.7.7. The numbering scheme of the approved TS change for both amendment requests may require some coordination to ensure that the approval of one request does not unintentionally result in an incorrect numbering scheme for the second request, when approved.

PLANT SYSTEMS

3/4.7.7 CONTROL ROOM MAKEUP AND CLEANUP FILTRATION SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.7 Three independent Control Room Makeup and Cleanup Filtration Systems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4:

ACTION:

a. With one Control Room Makeup and Cleanup Filtration System inoperable for reasons other than **condition b or** condition ~~d~~ **f**, within 7 days restore the inoperable system to OPERABLE status ~~or apply the requirements of the CRMP~~, or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

b. With one Control Room Makeup and Cleanup Filtration System inoperable only due to unavailability of cooling, within 7 days restore the inoperable system to OPERABLE status or apply the requirements of the CRMP, or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

c. With two Control Room Makeup and Cleanup Filtration Systems inoperable for reasons other than condition d **or condition f**, within 72 hours restore at least two systems to OPERABLE status ~~or apply the requirements of the CRMP~~, or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

d. With two Control Room Makeup and Cleanup Filtration Systems inoperable only due to unavailability of cooling, within 7 days restore the inoperable system to OPERABLE status, or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

e. With three Control Room Makeup and Cleanup Filtration Systems inoperable for reasons other than condition ~~d~~**f**, within 12 hours restore at least one system to OPERABLE status ~~or apply the requirements of the CRMP~~, or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

f. One or more Control Room Makeup and Cleanup Filtration Systems inoperable due to inoperable Control Room Envelope (CRE) boundary perform the following:

1) immediately initiate action to implement mitigating actions, and
2) within 24 hours verify mitigating actions ensure CRE occupant exposures to radiological, chemical and smoke hazards will not exceed limits, and
3) within 90 days restore CRE boundary to OPERABLE status.

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SURVEILLANCE REQUIREMENTS

4.7.7 Each Control Room Makeup and Cleanup Filtration System shall be demonstrated OPERABLE:

a. At a frequency in accordance with the Surveillance Frequency Control Program by verifying that the control room air temperature is less than or equal to 78°F;

b. At a frequency in accordance with the Surveillance Frequency Control Program by initiating, from the control room, flow through the HEPA filters and charcoal adsorbers of the makeup and cleanup air filter units and verifying that the system operates for at least 10 continuous hours with the makeup filter unit heaters operating;

c. At a frequency in accordance with the Surveillance Frequency Control Program or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following painting, fire, or chemical release in any ventilation zone communicating with the system by:

1) Verifying that the makeup and cleanup systems satisfy the in-place penetration and bypass leakage testing acceptance criteria of less than 0.05% for HEPA filter banks and 0.10% for charcoal adsorber banks and uses the test procedure guidance in Regulatory Positions C.5.a, C.5.c, and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978, and the system flow rate is 6000 cfm ± 10% for the cleanup units and 1000 cfm ± 10% for the makeup units;

2) Verifying, within 31 days after removal, that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, meets the laboratory testing criteria of ASTM D3803-1989, "Standard Test Method for Nuclear-Grade Activated Carbon," for a methyl iodide penetration of less than 1.0% when tested at a temperature of 30°C and a relative humidity of 70%; and

3) Verifying a system flow rate of 6000 cfm ± 10% for the cleanup units and 1000 cfm ± 10% for the makeup units during system operation when tested in accordance with ANSI N510-1980.

d. After every 720 hours of charcoal adsorber operation, by verifying, within 31 days after removal, that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, meets the laboratory testing criteria of ASTM D3803-1989 for a methyl iodide penetration of less than 1.0% when tested at a temperature of 30°C and a relative humidity of 70%.

e. At a frequency in accordance with the Surveillance Frequency Control Program by:

1) Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 6.1 inches Water Gauge for the makeup units and 6.0 inches Water Gauge for the cleanup units while operating the system at a flow rate of 6000 cfm ± 10% for the cleanup units and 1000 cfm ± 10% for the makeup units;

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SURVEILLANCE REQUIREMENTS (Continued)

2) Verifying that on a control room emergency ventilation test signal (High Radiation and/or Safety Injection test signal), the system automatically switches into a recirculation and makeup air filtration mode of operation with flow through the HEPA filters and charcoal adsorber banks of the cleanup and makeup units;

3) Perform required CRE unfiltered air inleakage testing in accordance with the Control Room Envelope Habitability Program; and

4) Verifying that the makeup filter unit heaters dissipate 4.5 ± 0.45 kW when tested in accordance with ANSI N510-1980.

f. After each complete or partial replacement of a HEPA filter bank, by verifying that the HEPA filter bank satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 0.05% in accordance with ANSI N510-1980 for a DOP test aerosol while operating the system at a flow rate of 6000 cfm ± 10% for the cleanup units and 1000 cfm ± 10% for the makeup units; and

g. After each complete or partial replacement of a charcoal adsorber bank, by verifying that the charcoal adsorber bank satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 0.10% in accordance with ANSI N510-1980 for a halogenated hydrocarbon refrigerant test gas while operating the system at a flow rate of 6000 cfm ± 10% for the cleanup units and 1000 cfm ± 10% for the makeup units.

Enclosure, Attachment 2

Annotated Technical Specification Bases Changes

For Information

(5 pages)

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3/4.7.7 CONTROL ROOM MAKEUP AND CLEANUP FILTRATION SYSTEM

The Control Room Makeup and Filtration System is comprised of three 50-percent redundant systems (trains) that share a common intake plenum and exhaust plenum. Each system/train is comprised of a makeup fan, a makeup filtration unit, a cleanup filtration unit, a cleanup fan, a control room air handling unit, a supply fan, a return fan, and associated ductwork and dampers. Two of the three 50% design capacity trains **with one train of cooling** are required to remain operable during an accident to ensure that the system design function **to maintain control room habitability** is met. The toilet kitchen exhaust (excluding exhaust dampers), heating, and computer room HVAC Subsystem associated with the Control Room Makeup and Filtration System are non safety-related and not required for operability.

The OPERABILITY of the Control Room Makeup and Cleanup Filtration System ensures that: (1) the ambient air temperature does not exceed the allowable temperature for continuous-duty rating for the equipment and instrumentation cooled by this system, and (2) the control room will remain habitable for operations personnel during and following most credible accident conditions. Operation of the system with the heaters operating for at least 10 continuous hours in a 92-day period is sufficient to reduce the buildup of moisture on the adsorbers and HEPA filters. The OPERABILITY of this system in conjunction with control room design provisions is based on limiting the radiation exposure to personnel occupying the control room to 5 rem total effective dose equivalent (TEDE). This limitation is consistent with the requirements of General Design Criterion 19 of Appendix A, 10 CFR Part 50. ANSI N510-1980 will be used as a procedural guide for surveillance testing.

There is no automatic actuation or Surveillance Requirements of the Control Room Makeup and Cleanup Filtration System for toxic gas or smoke because the analysis for the South Texas Project has determined no actuation is required.

The accidents postulated to occur during core alterations, in addition to the fuel handling accident, are: inadvertent criticality (due to a control rod removal error or continuous rod withdrawal error during refueling or boron dilution) and the inadvertent loading of, and subsequent operation with, a fuel assembly in an improper location. These events are not postulated to result in fuel cladding integrity damage. Since the only accident to occur during CORE ALTERATIONS that results in a significant radioactive release is the fuel handling accident and the accident mitigation features of the Control Room Makeup and Cleanup Filtration System are not credited in the accident analysis for a fuel handling accident, there are no OPERABILITY requirements for this system in MODES 5 and 6.

ACTION a, b, ~~and~~ c, **d, and e**.

The time limits associated with the ACTIONS to restore an inoperable train**(s)** to OPERABLE status are consistent with the redundancy and capability of the system and the low probability of a design basis accident while the affected train(s) is out of service

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~~The TS 3.7.7 cooling function is modeled in the PRA and a RICT can be calculated for an inoperable train of CRHVAC cooling. The dose mitigation function is not modeled in the PRA because it has no effect on core damage frequency or large early release frequency. Consequently, there is no technical basis for calculating a RICT for an inoperable condition involving the dose mitigation function and the basis for application of the CRMP to TS 3.7.7 is that it will only be applied to the cooling function.~~

~~Although ACTIONs a, b, and c all include the option of calculating a risk-informed completion time (RICT) in accordance with the requirements of the CRMP, application of the CRMP is currently permitted only for ACTION a because STPNOC determined that application of the CRMP to TS 3.7.7 ACTION b or ACTION c would be to extend the time to restore the required redundancy for the dose mitigation function, which would not be permitted under the licensing basis. STPNOC evaluations show that with a train of CRHVAC in TS 3.7.7 Action a for loss of cooling (associated train of EW or EChW is inoperable), the system is capable of meeting its dose mitigation function, including the ability to withstand a single failure of a train providing pressurization/filtration or a train providing cooling in support of filter efficiency despite the unavailability of the train in maintenance. Postulation of a single failure while in the action statement is used to demonstrate that the CRMP is being applied for the cooling function and is not being applied to extend the allowed outage time to restore necessary redundancy for the required dose mitigation function. Therefore, application of the CRMP to TS 3.7.7 Action a for one inoperable train of CRHVAC is permissible.~~

~~The option to apply the CRMP to TS 3.7.7 ACTION a applies only to the cooling function of the system supported by the Essential Chilled Water System (EchW) (TS 3.7.14) and may not be applied for conditions that affect the operability of the system with respect to dose mitigation (i.e. CRHVAC train inoperable due to inoperable fan or damper). In cases where both functions are affected (e.g., an inoperable damper or Make-up, Clean-up, Supply, or Return Fan) the dose mitigation function determines compliance and the "frontstop" completion time may not be exceeded.~~

Action b

Engineering calculation MC-6504 determined that two trains of CRHVAC (same as Control Room Makeup and Cleanup Filtration System) pressurization (fans) with one train of cooling are adequate for the dose mitigation function based on maintaining the required control room envelope positive pressure and maintaining the relative humidity of the control room air below the 70% acceptance criterion required to support design basis assumptions for carbon filter efficiency. The calculation shows that with one train of CRHVAC inoperable for a loss of cooling (i.e., the associated train of essential cooling water (ECW) or essential chilled water (EChW) is inoperable), either of the two operable trains of CRHVAC provides adequate cooling to maintain the filter efficiency for the CRHVAC system to perform its design function to mitigate dose.

The TS 3.7.7 cooling function is modeled in the Probabilistic Risk Assessment (PRA) and a risk-informed completion time (RICT) can be calculated for an inoperable train of CRHVAC cooling. The dose mitigation function is not modeled in the PRA because it has no effect on core damage frequency or large early release frequency. Consequently, there is no technical basis for calculating a RICT for an inoperable condition involving the dose mitigation function and the basis for application of the CRMP to TS 3.7.7 is that it will only be applied to the cooling function.

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ACTION b allows for calculating a RICT in accordance with the requirements of the CRMP. STPNOC evaluations show that with a train of CRHVAC in TS 3.7.7 Action b inoperable for a loss of cooling (associated train of EW or EChW is inoperable), the system is capable of performing its dose mitigation function, including the ability to withstand a single failure of a train providing pressurization/filtration or a train providing cooling in support of filter efficiency. Postulation of a single failure while in the action statement is used to demonstrate that the CRMP is being applied for the cooling function and is not being applied to extend the allowed outage time to restore necessary redundancy for the required dose mitigation function. Therefore, application of the CRMP to TS 3.7.7 Action b for one inoperable train of CRHVAC is permissible.

Action d

Action d allows for two inoperable trains of CRHVAC due to a loss of cooling up to 7 days. This condition is similar to the condition of one inoperable train of CRHVAC used to provide for control room envelope positive pressure allowed by Action a. The application of the CRMP for this condition is not allowed for reasons stated above.

Action e

ACTION ~~e~~**e** allows all three trains of Control Room Makeup and Filtration System to be inoperable for a period of 12 hours. Although not all possible configurations can be anticipated, this ACTION is expected to occur when:

- An inoperable component is identified common to all three trains, or
- All three train fans are rendered inoperable by placing the fans in PULL-TO-LOCK to allow a material condition to be corrected that may be in a common ventilation plenum.

  Note: If the ventilation plenum is required to be breached, then ACTION ~~f~~**f** is also entered because the Control Room Makeup and Filtration Systems become inoperable due to an inoperable Control Room Envelope (CRE) boundary.

The Containment Spray System can be used as a compensatory measure to reduce the potential for radioactive material release under accident conditions when multiple trains of Control Room Makeup and Filtrations Systems are out of service. Procedures will preclude intentionally removing multiple trains of Control Room Makeup and Filtration Systems from service if Containment Spray is not functional or intentionally making a train of Containment Spray unavailable when multiple trains of Control Room Makeup and Filtration Systems are out of service. For purposes of this compensatory action, Containment Spray is considered functional if at least one train can be manually or automatically initiated.

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Action ~~d~~f:

If the unfiltered in-leakage of potentially contaminated air past the CRE boundary and into the CRE can result in CRE occupant radiological dose greater than the calculated dose of the licensing basis analyses of DBA consequences (allowed to be up to 5 rem total effective dose equivalent (TEDE)), or inadequate protection of CRE occupants from hazardous chemicals or smoke, the CRE boundary is inoperable. Actions must be taken to restore an OPERABLE CRE boundary within 90 days.

An inoperable CRE boundary results in making one or more Control Room Makeup and Cleanup Filtration Systems inoperable. However, absent of an additional condition that results in the System(s) being inoperable other than for an inoperable boundary, only entry into ACTION df is required.

During the period that the CRE boundary is considered inoperable, action must be initiated to implement mitigating actions to lessen the effect on CRE occupants from the potential hazards of a radiological or chemical event or a challenge from smoke. 0PGP03-ZE-0030, "Control Room Envelope Habitability Program" discusses appropriate mitigating actions.

As stated in 0PGP03-ZE-0030, the mitigating actions are verified to ensure that CRE occupant radiological exposures will not exceed the calculated dose of the licensing basis analyses of DBA consequences, and that CRE occupants are protected from hazardous chemicals and smoke. These mitigating actions (i.e., actions that are taken to offset the consequences of the inoperable CRE boundary) should be preplanned for implementation upon entry into the condition, regardless of whether entry is intentional or unintentional. The 24 hour Completion Time for implementation of the mitigating actions is reasonable based on the low probability of a DBA occurring during this time period, and the use of the mitigating actions. The 90 day Completion Time is reasonable based on the determination that the mitigating actions will ensure protection of CRE occupants within analyzed limits while limiting the probability that CRE occupants will have to implement protective measures that may adversely affect their ability to control the reactor and maintain it in a safe shutdown condition in the event of a DBA. In addition, the 90 day Completion Time is a reasonable time to diagnose, plan and possibly repair, and test most problems with the CRE boundary.

For purposes of the compensatory measure, described above when multiple trains of Control Room Makeup and Cleanup Filtration Systems and Containment Spray are affected, the purpose of the compensatory measure is met when the mitigating actions of Action df.(2) are in place. If multiple trains of Control Room Makeup and Cleanup Filtration System are inoperable solely because the CRE boundary is inoperable, then the affected trains can be considered to be in service when Action df.(2) is met and there are no restrictions in making a train (i.e. multiple trains are not allowed) of Containment Spray unavailable unless the mitigating actions require all Containment Spray Systems to be functional. Similarly, there are no restrictions on making multiple trains of Control Room Makeup and Cleanup Filtration Systems inoperable solely because the CRE boundary is inoperable if or when Containment Spray is not functional.

Surveillance Requirement 4.7.7.e.3 verifies the OPERABILITY of the CRE boundary by testing for unfiltered air in-leakage past the CRE boundary and into the CRE. The details of the testing are specified in the Control Room Envelope Habitability Program. The CRE is considered habitable when the radiological dose to CRE occupants calculated in the licensing basis analyses of DBA consequences is no more than 5 rem total effective dose equivalent (TEDE) and the CRE occupants

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are protected from hazardous chemicals and smoke. This SR verifies that the unfiltered air in-leakage into the CRE is no greater than the flow rate assumed in the licensing basis analyses of DBA consequences. When unfiltered air in-leakage is greater than the assumed flow rate in MODES 1, 2, 3, and 4, Action ~~d~~**f** must be entered. Action ~~d~~**f** allows time to restore the CRE boundary to OPERABLE status provided mitigating actions can ensure that the CRE remains within the licensing basis habitability limits for the occupants following an accident.

Compensatory measures are discussed in Regulatory Guide 1.196, Section C.2.7.3, which endorses, with exceptions, NEI 99-03, Section 8.4 and Appendix F. These compensatory measures may also be used as mitigating actions as required by Action ~~d~~**f**. Temporary analytical methods may also be used as compensatory measures to restore OPERABILITY. Options for restoring the CRE boundary to OPERABLE status include changing the licensing basis DBA consequence analysis, repairing the CRE boundary, or a combination of these actions.

Compensatory actions (in support of Action ~~d~~**f**) also include administrative controls on coordinating opening or breaching the CRE boundary such that appropriate communication is established with the control room to assure timely closing of the boundary if necessary. Extended opening of the boundary is coordinated with the control room with appropriate plans for closure and communication.

Since the Control Room Envelope boundary integrity also affects operability of the overall system, entry and exit is administratively controlled. Administrative control of entry and exit through doors is performed by the persons entering or exiting the area. Entry and exit through doors under administrative controls does not require entry into Action ~~d~~**f**.

Depending upon the nature of the problem and the corrective action, a full scope in-leakage test may not be necessary to establish that the CRE boundary has been restored to OPERABLE status.

There is no ~~CRMCFS~~**Control Room Makeup and Cleanup Filtration System** actuation for hazardous chemical releases or smoke and there are no surveillance requirements that verify operability for hazardous chemical or smoke. The hazardous chemical analyses for the South Texas Project do not assume any control room isolation and assumes air enters at normal makeup ventilation flow rates. No in-leakage test is required to determine unfiltered in-leakage from toxic gas since this would be a value much less than that currently assumed in the toxic gas analyses. There is no regulatory limit on the amount of smoke allowed in the control room. The plant's ability to manage smoke infiltration was assessed qualitatively. The conclusion is that the operator maintains the ability to safely shutdown the plant during a smoke event originating inside or outside the control room. Therefore, no in-leakage test is required to be conducted to measure the amount of smoke that could infiltrate into the control room.