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

July 29, 2009
NOC-AE-09002441
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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 Action Requirement for an Inoperable Control Room Envelope Boundary and to Revise the Application of Risk-Managed Technical Specifications to Technical Specification 3.7.7, "Control Room Makeup and Cleanup Filtration Systems"

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 26, 2007, from Charles T. Bowman, STPNOC, to NRC Document Control Desk, "Proposed Revision to Technical Specifications Regarding Control Room Envelope Habitability in Accordance with TSTF-448, Revision 3, Using the Consolidated Line Item Improvement Process" (ML071870252, NOC-AE-07002165, TAC Nos. MD5942 and MD5943)

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5. Letter dated July 29, 2008, from Jack N. Donohew, NRC, to Edward D. Halpin, STPNOC, "South Texas Project, Units 1 and 2 – Issuance of Amendments Re: Adoption of Technical Specifications Task Force (TSTF) Traveler No. 448, Revision 3, "Control Room Envelope Habitability"(ML082040595, ST-AE-NOC-08001787, TAC Nos. MD5942 and MD5943)"

The STP Nuclear Operating Company (STPNOC) is submitting this License Amendment Request to revise the application of Risk-Managed Technical Specifications (RMTS) by using a bounding analysis to apply the Configuration Risk Management Program (CRMP) to the dose mitigation function for Technical Specification (TS) 3.7.7, "Control Room Makeup and Cleanup Filtration System." This License Amendment Request also proposes to revise the action requirement for an inoperable Control Room Envelope (CRE) boundary.

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. 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, the Reference 1 letter 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 Reference 1 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.

This request is a change to how RMTS will apply to TS 3.7.7 from that described in References 1 and 3. The change uses a bounding analysis as part of the CRMP to demonstrate that the CRMP can be applied to both the dose mitigation function and the cooling function of the Control Room Makeup and Cleanup Filtration System. STPNOC is proposing this license amendment request to allow the CRMP to be applied to the CRHVAC dose mitigation function. Therefore, the change is proposing approval of the bases for applying the CRMP to Actions a, b, and c. There is no change proposed to the TS because the current wording allows for application of the CRMP to the three action statements. The change will allow the elimination of the current administrative restriction that STPNOC imposed on application of TS 3.7.7.

In Reference 4, STPNOC submitted a License Amendment Request to revise the TS regarding Control Room Envelope Habitability in accordance with TSTF-448, Revision 3. The request was approved by NRC on July 29, 2008 (Reference 5). The STPNOC application did not provide for shutdown actions if the required actions for an inoperable control room envelope boundary were not met. This is contrary to the TSTF. This License Amendment Request is submitted to correct this oversight.

This License Amendment Request also adds a note to the required action for an inoperable control room envelope boundary to clarify that the boundary is not a required system, subsystem,

train, component, or device that depends on a diesel generator as a source of emergency power. This change clarifies the application of TS action 3.8.1.1.d., "A.C. Sources, D.C. Sources, and Onsite Power Distribution," when the control room envelope boundary is inoperable.

The Enclosure to this letter provides an evaluation of the proposed change. The annotated Technical Specifications 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.

STPNOC requests approval of the proposed license amendment by July 30, 2010, 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 July 29, 2009.
Date

Charles T. Bowman
General Manager, Oversight

KJT

Enclosure:

Evaluation of the Proposed Change

cc:
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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.

The proposed change would allow the Configuration Risk Management Program (CRMP) to be applied to both the dose mitigation function and the cooling function of the Control Room Makeup and Cleanup Filtration System (referred to as CRHVAC hereafter). The change is based on a bounding analysis, as part of the Probabilistic Risk Analysis (PRA), to demonstrate that the dose mitigation function for Technical Specification (TS) 3.7.7, "Control Room Makeup and Cleanup Filtration Systems," does not impact the calculation of a risk-managed action time and a risk-informed completion time (RMAT/RICT). The loss of cooling function for the CRHVAC is currently modeled in the PRA. Therefore, the CRMP can be applied to both the dose mitigation function and the loss of cooling function of TS 3.7.7.

The proposed change also provides for shutdown actions if the required actions for an inoperable control room boundary are not met. This change will correct an oversight in a previous License Amendment Request (Reference 6.1). In addition, the proposed change adds a note to the required action for an inoperable control room envelope boundary to clarify that the boundary is not a required system, subsystem, train, component, or device that depends on a diesel generator as a source of emergency power.

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 Probabilistic Risk Assessment (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) or 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 6.2 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. (See Reference 6.3.) 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 required actions of TS 3.7.7 are shown below.

a. With one Control Room Makeup and Cleanup Filtration System inoperable, 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, 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, suspend all operations involving movement of spent fuel, and crane operation with loads over the spent fuel pool, and 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. Because the loss of more than one train does not provide adequate cooling to maintain the filter efficiency, STP administratively limits the use of RMTS to one train of CRHVAC inoperable for a loss of cooling.

This change is proposing approval of the bases for applying the CRMP to Actions a., b., and c. There is no change proposed to the TS because the current wording allows for application of the CRMP to the three actions statements. The change will allow the elimination of the current administrative restriction that STPNOC imposed on application of TS 3.7.7.

Subsequent to the imposition of the administrative limitations described above, a bounding analysis was performed and determined that the loss of the CRHVAC dose mitigation function does not impact Core Damage Frequency (CDF) or Large Early Release Frequency (LERF). The analysis concluded that the sources of risk resulting from the CRHVAC dose mitigation function are insignificant and may be neglected in the RMAT/RICT calculations. Therefore, the loss of the dose mitigation function has been determined to not affect the calculation of a RMAT/RICT and thus RMTS can be applied to more than one inoperable CRHVAC train for a loss of either or both the dose mitigation and the cooling function. After approval of this application, the TS Bases will be changed as follows:

ACTIONs a, b, and c include the option of calculating a risk-managed action time and a risk-informed completion time (RMAT/RICT) in accordance with the requirements of the CRMP. The loss of cooling is modeled in the PRA.

The loss of the dose mitigation function is not modeled in the PRA. However, a bounding analysis (Reference: PRA-09-011, Rev. 0) determined that the loss of the Control Room Makeup and Cleanup Filtration System dose mitigation function does not impact Core Damage Frequency (CDF) or Large Early Release Frequency (LERF). The sources of risk resulting from a loss of the Control Room Makeup and Cleanup Filtration System dose mitigation function have been shown to be insignificant and does not affect the RMAT/RICT calculations. Therefore, the CRMP may be applied to TS 3.7.7 for ACTIONS a, b, and c for train(s) inoperable due to degraded performance parameters associated with the cooling and/or the dose mitigation functions and some PRA functionality is maintained. The CRMP may not be applied to conditions where a complete loss of function (i.e. cooling and/or dose mitigation) occurs.

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

In Reference 6.1, STPNOC submitted a License Amendment Request to revise the TS regarding Control Room Envelope Habitability in accordance with TSTF-448, Revision 3. The request was approved by NRC on July 29, 2008 (Reference 6.4). The STPNOC application did not provide for shutdown actions if the required actions for an inoperable control room boundary were not met. This was contrary to the TSTF. Currently, TS 3.0.3 would apply if the action could not be met. This application proposes to add the shutdown action requirements to Action d. of TS 3.7.7.

In addition, the proposed change adds a note to the required action for an inoperable control room envelope boundary to clarify that the boundary is not a required system, subsystem, train, component, or device that depends on a diesel generator as a source of emergency power. This change will allow TS ACTION 3.8.1.1.d, "A.C. Sources, D.C. Sources, and Onsite Power Distribution," to be satisfied in that with one standby diesel generator inoperable, all required systems, subsystems, trains, components, and devices that depend on the remaining OPERABLE diesel generators as a source of emergency power are also be considered OPERABLE for the plant configuration where the CRHVAC Systems are inoperable only because the CRE boundary is inoperable. This prevents unnecessarily restricting plant operation where the subsystem (i.e Control Room Envelope boundary) does not depend on a diesel generator as a source of emergency power.

TS ACTION 3.8.1.1.d. states that:

d. With one standby diesel generator inoperable in addition to ACTION b. or c. above, verify that:

   1. All required systems, subsystems, trains, components, and devices that depend on the remaining OPERABLE diesel generators as a source of emergency power are also OPERABLE, and

   2. When in MODE 1, 2, or 3, the steam-driven auxiliary feedwater pump is OPERABLE.

If these conditions are not satisfied within 24 hours, 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.

Therefore, this change proposes to revise TS action 3.7.7.d as follows:

Note

The Control Room Envelope (CRE) boundary is not a required system, subsystem, train, component, or device that depends on a diesel generator as a source of emergency power. One or more Control Room Makeup and Cleanup Filtration Systems inoperable solely because the CRE boundary is inoperable can be considered otherwise OPERABLE as required systems, subsystems, trains, components, and devices that depend on the diesel generators as a source of emergency power.

d. One or more Control Room Makeup and Cleanup Filtration Systems inoperable due to an 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

OR

be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

A mark-up of the proposed change to TS 3.7.7 is provided in Attachment 1 to this Enclosure. A mark-up of the TS Bases Changes to TS 3.7.7 and TS 3.8.1.1 are provided in Attachment 2 to this Enclosure for information.

3.0 Technical Evaluation

3.1 Background

The CRHVAC room cooling function is modeled in the PRA and a RMAT/RICT can be calculated for an inoperable train(s) 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 direct quantifiable technical basis for calculating a RMAT/RICT for an inoperable condition involving the dose mitigation function.

The following industry guidance was approved by the NRC on May 17, 2007 (Reference 6.5):

Section 3.3.2 of NEI 06-09 (Reference 6.6) states:

> "Although the calculation of a RICT is quantitative, qualitative assessments are an important part of the RMTS process used, where appropriate, to supplement the quantification and develop appropriate compensatory risk management actions. Qualitative assessments may be applied to confirm that the aspects not comprehensively addressed in the quantitative assessment have negligible effect on the calculated RICT."

Section 4.1 of NEI 06-09 states:

> "PRA Attributes" states, "In general, the quantitative risk assessment (plant PRA for RMTS) should be based on the station Configuration Risk Management Program supported by the PRA calculations. At a minimum, the PRA applied in support of a RMTS program shall include a Level 1 PRA with LERF capability. The scope of this PRA shall include credible internal events, including internal flood and internal fires. Other external events should be considered in the development of the RMTS program to the extent these events impact RMTS decisions. It is preferred that these impacts be modeled such that they are explicitly included in the calculation of a RICT. However, where prior evaluation or alternative methods (e.g., bounding analyses) can demonstrate that one or more of the challenges are not significant to the site or the application, quantitative modeling may be omitted."

The following evaluation provides a basis for applying CRMP by qualitative risk assessment for the inoperable CRHVAC dose mitigation function by determining that the unavailability of this function has no significant impact on core damage or large early release frequency, and therefore, has negligible effect on the calculated RMAT/RICT.

3.2 Impact on CDF

Failure of the CRHVAC dose function does not cause a direct plant initiating event nor impact component failure rates of Systems, Structures, or Components (SSC). In addition, the failure of CRHVAC dose function does not impact defense-in-depth for key safety functions (e.g., decay heat removal, inventory control, electrical power, reactivity control, containment). The CRHVAC dose function is intended to protect the control room operators from sources of airborne radiation following design basis accidents. Since most PRA accident sequences credit operator action to reduce CDF, it is reasonable to consider that control room operator performance, and therefore operator human error probability, could be impacted by complete unavailability of the CRHVAC dose function.

In modeled CDF sequences where control room operator action is credited, the operator action is used to prevent or reduce the likelihood of core damage. At this point in the accident sequence, there is no significant dose to the operator because the onset of core damage has not yet occurred. Postulating that operators may be thinking about a completely failed CRHVAC dose function is not credible for scenarios in which core damage has not yet occurred. Due to

procedural requirements and licensed training, the control room operators will be focused on implementing the Emergency Operating Procedures to prevent core damage. For those "final" core damage mitigation actions, the operator will already be at a high stress level because of the potential for core damage. For these operator actions, the human error probability (HEP) quantification typically uses a high stress level to increase the base operator HEP value. Because the HEP is developed at a high stress level, adding another performance shaping factor for CRHVAC dose function will not change the HEP value (i.e., already at a high value).

The loss of CRHVAC dose function would have negligible impact on the human error probabilities for credited control room operator actions in core damage sequences. There would be no impact to accident sequence progression and no impact on the performance of the SSCs needed for event response. Therefore, the potential impact of the loss of CRHVAC dose function to CDF is negligible.

3.3 Impact on LERF

Control room operator actions can be credited to mitigate a radioactive release from containment after core damage, and it can be postulated that associated human error probabilities may be higher if the CRHVAC dose function is completely failed or unavailable. In the STP PRA, LERF is defined as a large early release of fission product inventory from containment after a core damage event and prior to effective implementation of emergency response protective actions. As modeled in the PRA, LERF is primarily phenomenological-based (e.g., induced SGTR containment failure mode). Control room operator actions after core damage are currently not credited in the STP PRA to reduce LERF; however, Severe Accident Mitigation Guidelines (SAMG) are available to provide plant strategies and mitigating actions (e.g., venting containment, maintaining SG secondary water level, and reducing primary-to-secondary differential pressure) that can reduce the likelihood of some containment failure modes.

After a core damage event, operator stress level will be high. Those postulated operator actions that occur after core damage events, and are intended to reduce the likelihood of LERF, assume that a significant release of radioactive fission products from containment has not yet occurred. The availability of the CRHVAC dose function is not expected to impact the LERF HEP values because the operator is already at a saturated, high stress level. The operator will be focused on actions to mitigate the release. The unavailability of control room dose mitigation would not significantly increase the HEP because the dependency analysis considers failure of previous operator actions so the conditional HEP would already be at high value.

During accident progression where the operator is now focused on mitigating a release, the SAMG are implemented. The implementation of the SAMG would involve support from the Emergency Plan Technical Support Center (TSC) such that errors of omission by control room operators relating to diagnosis and execution would be significantly reduced.

In summary, based on the above information, the loss of CRHVAC dose function would have negligible impact on the human error probabilities for potential LERF mitigation control room operator actions. The loss of CRHVAC dose function has no impact on containment failure

modes and no impact on the performance of SSCs needed for event response. Therefore, the potential impact of the loss of CRHVAC dose function to LERF is negligible.

3.4 Additional Considerations

For Steam Generator Tube Rupture (SGTR) events that could lead to a radiological release prior to core damage, the impact to operator response from loss of the CRHVAC dose function is negligible. The likelihood of steaming from the ruptured steam generator is very low. The operators will perform their SGTR Emergency Operating Procedure (EOP) actions without additional stress impact even with loss of the CRHVAC dose function.

The CRMP program required by RMAT/RMTS manages the increase in severe accident risk to low levels using incremental core damage probability (ICDP) and incremental large early release probability (ILERP) threshold limits. Although the CRHVAC dose function is not designed to protect the operator from severe accident radiological releases, the management of severe accident risk using CRMP also ensures that the likelihood of an accident that may lead to a significant radiological release and operator dose is maintained at low levels. Thus, the use of CRMP and associated risk thresholds provide a basis to manage CRHVAC dose function unavailability time.

3.5 Conclusion of Bounding Analysis

During a severe accident scenario where the probability of core damage and large early radiological releases is likely, control room operators will be at high stress levels and the loss of the CRHVAC dose function will not contribute to higher stress levels. The operators will be focused on preventing core damage by performing EOP actions. If a core damage event occurs, control room actions related to protecting the containment will be supported by TSC personnel. The CRHVAC dose mitigation function provides limited dose protection in a beyond design basis accident. Based on the above discussion, the unavailability of the CRHVAC dose function has negligible impact on operator response to a severe core damage accident. The capability to calculate the RMAT/RICT with appropriate consideration of all potentially significant sources of risk is not impacted. Therefore, the loss of the CRHVAC dose function does not impact CDF and LERF and thus has negligible effect on the calculated RMAT/RICT.

This qualitative assessment demonstrates that the loss of the dose mitigation function has a negligible effect on the calculated RMAT/RICT. Therefore, the loss of the dose mitigation function of the CRHVAC system will have no impact on applying the CRMP to a condition that makes the CRHVAC system inoperable. Therefore, the CRMP can be applied to both the dose mitigation function and the loss of cooling function of TS 3.7.7.

3.6 Application of the RMTS

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 also 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 (i.e., a RMAT/RICT) 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 RMAT/RICT for the new configuration until no components are in ACTIONS beyond the frontstop time.

STP's operating history has shown that the extension of the AOT beyond the frontstop has not be done for most TS actions, whether for planned or emergent work. Since approval of the amendment for the RMTS, STP has only applied the CRMP to exceed the frontstop on five occasions for planned maintenance and none for emergent work. The highest risk accrued for any of these activities was approximately 4.5E-07 incremental core damage probability (ICDP).

Approval of the proposed amendment will allow application of RMTS to one or more inoperable trains of CRHVAC for cooling or dose functions (i.e., ACTION a, b, & c). This will provide appropriate consistency among the TS to which the CRMP may be applied. For example, a condition that affects more than one train of ECW or EChW also affects the associated trains of CRHVAC. With this amendment, the RMAT/RICT calculated for ECW/EChW will not be artificially constrained by the more restrictive required action times of TS 3.7.7 for CRHVAC.

The calculated RICT for one inoperable CRHVAC train is well beyond 30 days. For this condition, TS 6.8.3.k, the administrative requirements for the CRMP, limits the completion time determined by the CRMP to no more than 30 days (i.e., the "backstop"). The calculated RICT for two inoperable CRHVAC trains is 390 hours (i.e. 16.25 days). The CRMP can not be applied for a complete loss of functionality. For the CRHVAC system, STP would treat dose mitigation function and the loss of cooling function as separate functions such that a complete loss of either function would not allow application of the CRMP to TS 3.7.7.

3.7. Technical Specification Change to be Consistent with TSTF 448

Adding shutdown actions to TS ACTION 3.7.7.d is consistent with TSTF–448 Revision 3. The availability of this TS improvement was published in the Federal Register on January 17, 2007 as part of the consolidated line item improvement process (CLIIP) (Reference 6.7). STPNOC has concluded that the justifications presented in the TSTF proposal and the safety evaluation prepared by the NRC staff are applicable to South Texas Project (STP) Units 1 and 2, and justify this request to change the STP TS.

3.8 Technical Specification Change to Clarify Control Room Envelope Boundary's Relationship to the Diesel Generators as a Source of Emergency Power.

The proposed change adds a note to the required action for an inoperable control room envelope boundary to clarify that the boundary is not a required system, subsystem, train, component, or device that depends on a diesel generator as a source of emergency power. This change will clarifies that TS ACTION 3.8.1.1.d is satisfied with one standby diesel generator inoperable, and all required systems, subsystems, trains, components, and devices that depend on the remaining OPERABLE diesel generators as sources of emergency power are OPERABLE, and the Control Room Makeup and Cleanup Filtration Systems are inoperable solely because the CRE boundary is inoperable.

TS ACTION 3.8.1.1.d provides assurance that a loss of offsite power during the period that a diesel generator is inoperable does not result in a complete loss of safety function of critical systems. TS ACTION 3.7.7.d requires that mitigating actions be taken to ensure CRE occupant exposures to radiological, chemical and smoke hazards do not exceed limits, thus, ensuring that the safety function is met. The restoration of the CRE boundary to this condition does not depend on the diesel generators as sources of emergency power. This change prevents unnecessarily restricting plant operation where the subsystem (i.e. CRE boundary) does not depend on a diesel generator as a source of emergency power.

4.0 Regulatory Evaluation

4.1 Applicable Regulatory Requirements/Criteria

10CFR50.36 requires that TS contain Limiting Conditions for Operations (LCO). 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 RMAT and a RICT 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 with the proposed CRMP.

STP TS currently allow the CRMP to be applied to more than one train of inoperable CRHVAC. The proposed TS Bases change clarifies that the CRMP can be applied to both the loss of the cooling function and the loss of the dose mitigation function.

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. This guidance is acceptable to the NRC for referencing proposals to amend TS to implement RMTS to the extent specified and under the limitations delineated in NEI 06-09 and the final safety evaluation in Reference 6.5.

The AOTs beyond the front-stop times for systems, structures 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 6.8)

NEI 06-09 states that where PRA models are not available, conservative or bounding analyses may be performed to quantify the risk impact and support the calculation of the RMAT/RICT. Sources of risk shown to be insignificant or unaffected by changes in plant configurations may be neglected in the RMAT/RICT calculations.

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.

The use of a bounding analysis in lieu of quantitative PRA models is allowed by NEI 06-09, Revision 0 and is part of the STP licensing basis. In the application for broad-scope risk-informed technical specifications, STPNOC did not propose to use any conservative or bounding analyses in lieu of quantitative PRA models. In addition, STPNOC stated in the application that the CRMP would only be applied to the cooling function of TS 3.7.7 and not to the dose mitigation function. Therefore, STP is proposes this license amendment to use a bounding analysis to allow the CRMP to be applied to the CRHVAC dose mitigation function.

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.

The NRC noticed TSTF–448 Revision 3 in the Federal Register on January 17, 2007 as being available as part of the consolidated line item improvement process (CLIIP).

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 6.9) STPNOC was the pilot plant for the application of RMTS. There is no precedence for applying a bounding analysis to RMTS.

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 the dose mitigation function for Technical Specification (TS) 3.7.7, "Control Room Makeup and Cleanup Filtration Systems" as part of the South Texas Project Risk Managed Technical Specifications. This allows the application of the Configuration Risk Management Program (CRMP) for multiple trains of inoperable Control Room Makeup and Cleanup Filtration Systems which are inoperable due to the dose mitigation function and/or the cooling function. This application of the CRMP 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 systems, structures, 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 systems, structures and components required to mitigate the consequences of an accident.

The proposed change to add the shutdown actions to TS ACTION 3.7.7.d is consistent with Nuclear Regulatory Commission (NRC) noticed Industry/Technical Specification Task Force (TSTF) Standard Technical Specification (STS) change TSTF–448 Revision 3 and has been approved by an NRC safety evaluation.

The proposed change to add a note to the required action for an inoperable control room envelope boundary does not change the design function of the Control Room Makeup and Cleanup Filtration Systems or the design function of the A.C. Sources, D.C. Sources, and Onsite Power Systems or how these systems operate. The change only clarifies that the Control Room Envelope boundary is not a required system, subsystem, train, component, or device that depends on a diesel generator as a source of emergency power.

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 the dose mitigation function for Technical Specification (TS) 3.7.7, "Control Room Makeup and Cleanup Filtration Systems," as part of the South Texas Project Risk Managed Technical Specifications. There are no new or different systems, structures, or components proposed by these changes.

The proposed change to add the shutdown actions to TS ACTION 3.7.7.d is consistent with Nuclear Regulatory Commission (NRC) noticed Industry/Technical Specification Task Force (TSTF) Standard Technical Specification (STS) change TSTF–448 Revision 3 and has been approved by an NRC safety evaluation.

The proposed change to add a note to the required action for an inoperable control room envelope boundary does not change the design of the Control Room Makeup and Cleanup Filtration Systems or the design function of the A.C. Sources, D.C. Sources, and Onsite Power Systems. The change only clarifies that the Control Room Envelope boundary is not a required system, subsystem, train, component, or device that depends on a diesel generator as a source of emergency power.

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 the dose mitigation function for Technical Specification (TS) 3.7.7, "Control Room Makeup and Cleanup Filtration Systems," as part of the South Texas Project Risk Managed Technical Specifications. This allows the application of the Configuration Risk Management Program (CRMP) for multiple trains of inoperable Control Room Makeup and Cleanup Filtration Systems. 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 is inoperable.

   The proposed change to add the shutdown actions to TS ACTION 3.7.7.d is consistent with Nuclear Regulatory Commission (NRC) noticed Industry/Technical Specification Task Force (TSTF) Standard Technical Specification (STS) change TSTF–448 Revision 3 and has been approved by an NRC safety evaluation.

   The proposed change to add a note to the required action for an inoperable control room envelope boundary does not change any safety margins associated with operation of the Control Room Makeup and Cleanup Filtration Systems or any safety margins associated with the A.C. Sources, D.C. Sources, and Onsite Power Systems. The change only clarifies that the Control Room Envelope boundary is not a required system, subsystem, train, component, or device that depends on a diesel generator as a source of emergency power.

   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 June 26, 2007, from Charles T. Bowman, STPNOC, to NRC Document Control Desk, "Proposed Revision to Technical Specifications Regarding Control Room Envelope Habitability in accordance with TSTF-448, Revision 3, Using the Consolidated Line Item Improvement Process (ML071870252, NOC-AE-07002165)

6.2 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)

6.3 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." (ML 081720133, NOC-AE-08002291)

6.4 Letter dated July 29, 2008, from Jack N. Donohew, NRC, to Edward D. Halpin, STPNOC, "South Texas Project, Units 1 and 2 – Issuance of Amendments Re: Adoption of Technical Specifications Task Force (TSTF) Traveler No. 448, Revision 3, "Control Room Envelope Habitability"(ML082040595, ST-AE-NOC-08001787, TAC Nos. MD5942 and MD5943)"

6.5 Letter dated May 17, 2007, from Jennifer M. Golder, NRC, to Biff Bradley, NEI, "Final Safety Evaluation for Nuclear Energy Institute (NEI) Topical Report (TR) NEI 06-09, "Risk-Informed Technical Specifications Initiative 4B, Risk-Managed Technical Specifications (RMTS) Guidelines" (TAC No. MD4995) (ML071200238).

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

6.7 Federal Register Notice, Volume 72, Pages 2022-2033, Technical Specification Improvement To Modify Requirements Regarding Control Room Envelope Habitability Using the Consolidated Line Item Improvement Process, dated January 17, 2007.

6.8 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.

6.9 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 (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.

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 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 in 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.

Note

The Control Room Envelope (CRE) boundary is not a required system, subsystem, train, component, or device that depends on a diesel generator as a source of emergency power. One or more Control Room Makeup and Cleanup Filtration Systems inoperable solely because the CRE boundary is inoperable can be considered otherwise OPERABLE as required systems, subsystems, trains, components, and devices that depend on the diesel generators as a source of emergency power.

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.

OR

be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

PLANT SYSTEMS

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;

PLANT SYSTEMS

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

(6 pages)

PLANT SYSTEMS

BASES

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 are required to remain operable during an accident to ensure that the system design function 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.

The time limits associated with the ACTIONS to restore an inoperable train 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.

PLANT SYSTEMS

BASES

ACTION c 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 d 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.

~~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 include the option of calculating a risk-managed action time and a risk-informed completion time (RMAT/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~~ The loss of cooling function is modeled in the PRA. ~~(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 not being applied to extend the allowed outage time to restore necessary redundancy for the required doses mitigation function. Therefore, application of the CRMP to TS 3.7.7 Action a for one inoperable train of CRHVAC is permissible.~~

The loss of the dose mitigation function is not modeled in the PRA. However, a bounding analysis (Reference: PRA-09-011, Rev. 0) determined that the loss of the Control Room Makeup and Cleanup Filtration System dose mitigation function does not impact Core Damage Frequency (CDF) or Large Early Release Frequency (LERF). The sources of risk resulting from a loss of the Control Room Makeup and Cleanup Filtration System dose mitigation function have been shown to be insignificant and does not affect the RMAT/RICT calculations. Therefore, the CRMP may be applied to TS 3.7.7 for ACTIONS a, b, and c for train(s) inoperable due to degraded performance parameters associated with the cooling and/or dose

PLANT SYSTEMS

BASES

mitigation functions and PRA functionality is maintained. The CRMP may not be applied to conditions where a complete loss of function (i.e. cooling and/or dose mitigation) occurs.
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 d:

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 d 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.

A note precedes ACTION d. For this condition, the Control Room Makeup and Cleanup Filtration Systems are inoperable only because the CRE boundary is inoperable. The note clarifies that the CRE boundary is not a required system, subsystem, train, component, or device that depends on a diesel generator as a source of emergency power. TS ACTION 3.8.1.1 d with one standby diesel generator inoperable is satisfied when all required systems, subsystems, trains, components, and devices that depend on the remaining OPERABLE diesel generators as a source of emergency power are OPERABLE and the Control Room Makeup and Cleanup Filtration Systems are inoperable solely because the CRE boundary is inoperable.

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.

PLANT SYSTEMS

BASES

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 d.(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 d.(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 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 must be entered. Action d 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. 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) 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.

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 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.

ELECTRICAL POWER SYSTEMS

BASES

A.C. SOURCES, D.C. SOURCES, and ONSITE POWER DISTRIBUTION (Continued)

TS 3.8.1.1 Action d.

This action provides assurance that a loss of offsite power, during the period that a diesel generator is inoperable, does not result in a complete loss of safety function of critical systems. In this condition the remaining OPERABLE diesel generators and offsite circuits are adequate to supply electrical power to the onsite Class 1E Distribution System. Thus, on a component basis, single failure protection for the required feature's function may be lost; however, function has not been lost. Discovering one required diesel generator inoperable coincident with one or more inoperable required support or supported features, or both, that are associated with the operable diesel generator, results in starting the completion time for the required action. If the required number of channels or trains for a function or component is less than the total number of channels or trains and the TS allow unlimited operation with less than the total number of channels or trains (e.g. some Remote Shutdown System functions), then as long as there is emergency power for at least the required number of channels or trains, the requirements of TS 3.8.1.1.d are met. Similarly, if only one Reactor Containment Fan Cooler, out of six available, is inoperable, then there are no restrictions applied on the diesel generators and Action statement 3.8.1.1(d) (1) can be met.

The Control Room Envelope boundary is not a required system, subsystem, train, component, or device that depends on a diesel generator as a source of emergency power. TS ACTION 3.8.1.1.d. with one standby diesel generator inoperable is satisfied when all required systems, subsystems, trains, components, and devices that depend on the remaining OPERABLE diesel generators as a source of emergency power are OPERABLE and the Control Room Makeup and Cleanup Filtration Systems are inoperable solely because the CRE boundary is inoperable.

"...required systems, subsystems, trains, components, and devices that depend on the remaining OPERABLE diesel generator as a source of emergency power" mean SSCs that are required by the Technical Specifications. TS 3.8.1.1.d. does not apply to non-TS SSCs that are governed by other documents (e.g. TRM).

The 24-hour completion time is based on the capability of the operable equipment to mitigate all but the most severe design basis accidents as described above and the extremely low probability of the occurrence of a design basis accident. The 24-hour completion time also allows a deliberate planned response that may allow the inoperable equipment to be restored.