

OCT 12 2000



LR-N000079
LCR H00-01

United States Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555

Gentlemen:

**REQUEST FOR CHANGE TO TECHNICAL SPECIFICATIONS
CHANGES TO VACUUM BREAKER REQUIREMENTS
HOPE CREEK GENERATING STATION
FACILITY OPERATING LICENSE NPF-57
DOCKET NO. 50-354**

In accordance with 10CFR50.90, PSEG Nuclear LLC hereby requests a revision to the Technical Specifications (TS) for the Hope Creek Generating Station. In accordance with 10CFR50.91(b)(1), a copy of this submittal has been sent to the State of New Jersey.

Implementation of the proposed changes contained in this submittal will modify the vacuum breaker requirements of TS 3.6.4.1 and TS 3.6.4.2 to be consistent with the improved standard TS (NUREG-1433). An editorial change to TS 3.6.2.1 is also proposed. The proposed changes have been evaluated in accordance with 10CFR50.91(a)(1), using the criteria in 10CFR50.92(c), and a determination has been made that this request involves no significant hazards considerations. The basis for the requested change is provided in Attachment 1 to this letter. A 10CFR50.92 evaluation, with a determination of no significant hazards consideration, is provided in Attachment 2. The marked up Technical Specification pages affected by the proposed changes are provided in Attachment 3.

Similar changes have been approved by the NRC for the Washington Public Power Supply System Nuclear Project No. 2 in License Amendment 149, dated March 4, 1997, and for the Duane Arnold Energy Center in License Amendment 223, dated May 22, 1998. NRC approval of these changes is requested by June 30, 2001. Upon NRC approval of the proposed changes, PSE&G requests that the amendment be made effective on the date of issuance but that an implementation period of sixty days be allowed to provide sufficient time for associated administrative activities.

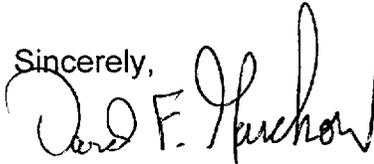
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Should you have any questions regarding this request, please contact Mr. James Priest at (856) 339-5434.

Sincerely,


David F. Garchow
Vice President – Technical Support

Affidavit
Attachments (3)

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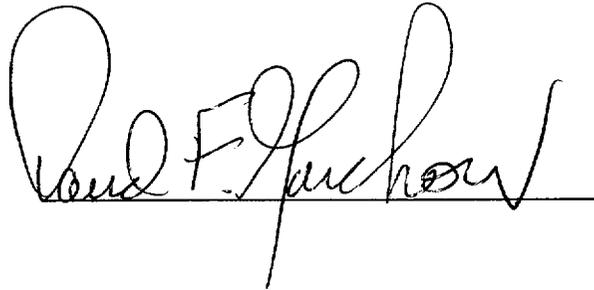
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REF: LR-N000079
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STATE OF NEW JERSEY)
COUNTY OF SALEM) SS.

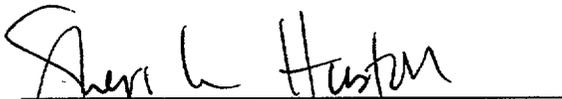
David F. Garchow, being duly sworn according to law deposes and says:

I am Vice President – Technical Support of PSEG Nuclear LLC, and as such, I find the matters set forth in the above referenced letter, concerning Hope Creek Generating Station, Unit 1, are true to the best of my knowledge, information and belief.



A handwritten signature in black ink, appearing to read "David F. Garchow", is written over a horizontal line.

Subscribed and Sworn to before me
this 12 day of Oct, 2000



A handwritten signature in black ink, appearing to read "Sheri L. Huston", is written over a horizontal line.

Notary Public of New Jersey

SHERI L. HUSTON
NOTARY PUBLIC OF NEW JERSEY
My Commission Expires 12/08/2003

My Commission expires on _____

**HOPE CREEK GENERATING STATION
FACILITY OPERATING LICENSE NPF-57
DOCKET NO. 50-354
REVISIONS TO THE TECHNICAL SPECIFICATIONS (TS)**

BASIS FOR REQUESTED CHANGE:

PSEG Nuclear LLC, under Facility Operating License No. NPF-57 for the Hope Creek Generating Station, requests that the Technical Specifications (TS) contained in Appendix A to the Operating License be amended as proposed herein to revise TS 3.6.4.1, TS 3.6.4.2, and the associated Bases. The proposed changes make the Hope Creek TS consistent with the improved standard TS (STS) contained in NUREG-1433. An editorial change to TS 3.6.2.1 is also proposed. The basis for each requested change is described in detail in the remaining sections of this attachment. To identify the nature of each particular change, administrative changes are designated as A1, A2, A3, etc., more restrictive changes are designated M1, M2, M3, etc., less restrictive changes are designated as L1, L2, L3, etc., and relocated requirements are designated as R1, R2 and R3, etc. The basis for concluding that no significant hazards consideration exists is provided in Attachment 2. The proposed changes are indicated on the marked-up TS pages contained in Attachment 3.

REQUESTED CHANGE, PURPOSE AND BACKGROUND:

Each of the proposed changes to TS 3.6.4.1 is described below.

1. Change A1: The phrase "and closed" is removed from the LCO. The requirement in the LCO that the vacuum breakers be operable is sufficient to convey the requirements for opening and for being closed. The details of vacuum breaker operability do not need to be included in the LCO and are adequately covered by the definition of operability. In addition, the requirement that the vacuum breakers be closed is required by the surveillance requirements. This change maintains consistency with the STS and is considered to be administrative in nature.
2. Change R1: The phrase "but known to be closed" is relocated from Action a to the Bases for Action a, since Action b serves as the compensatory measures for open vacuum breakers. In accordance with Hope Creek TS 3.0.1, if, at any time, a vacuum breaker is found or known to be open, Action b would be entered upon discovery. Action b provides adequate actions for vacuum breakers that are not closed. The phrase "but known to be closed" implies that verification that the inoperable vacuum breakers are closed is necessary. This level of detail is unnecessary in the action statement and may be relocated to the Bases. The relocated requirement is contained in the parenthetical phrase "(the vacuum

- breaker is not open and...). The change is therefore considered to be a relocation.
3. Change A2: The word "inoperable" is considered to be unnecessary and is deleted from Action a. If the vacuum breaker is being restored, the vacuum breaker is clearly inoperable. This change maintains consistency with the STS and is considered to be an editorial/administrative change.
 4. Change M1: The phrase "or more" is removed from Action b. This change is considered to be more restrictive than the current TS since only one vacuum breaker will be allowed to be open during the two-hour completion time for closure. This change maintains consistency with the STS and is considered to be a more restrictive change.
 5. Change A3: The word "open" is changed to the phrase "not closed" for consistency with the STS. This change maintains consistency with the STS and is considered to be an editorial/administrative change.
 6. Change L1: Action c regarding the vacuum breaker position indicators, and the associated surveillance requirements (SR 4.6.4.1.b.2 and 4.6.4.1.b.3.b) are deleted. Position indication does not necessarily relate directly to the respective system operability. NUREG-1433 does not specify indication only equipment to be operable to support operability of a system or component. Position indication instrumentation availability and compensatory activities for inoperable position indication are controlled by plant procedures and policies. Vacuum breaker position must be known to be able to satisfy proposed SR 4.6.4.1.a, SR 4.6.4.1.b.1, and SR 4.6.4.1.b.2. If position indication is not available and vacuum breaker position cannot be determined, the SR cannot be satisfied and actions must be taken for inoperable vacuum breakers in accordance with the applicable action statements. As a result, the requirements for vacuum breaker position indication are adequately addressed by the requirements of Specification 3/4.6.4.1. This change maintains consistency with the STS and is considered to be a less restrictive change.
 7. Change L2: The frequency of verifying that each vacuum breaker is closed is changed from once per 7 days to once per 14 days. For position verification of most other safety-related valves, including those that affect primary containment, the frequency is 31 days. Based on the longer interval for similar verification of similar components and the fact that the valves are normally found in the correct position, the 14-day interval is considered to be adequate. This change maintains consistency with the STS and is considered to be a less restrictive change.

8. Change A4: A footnote is added to SR 4.6.4.1.a to indicate that this surveillance requirement does not have to be met for vacuum breakers that are open during surveillances or that are performing their intended function. This change allows the vacuum breakers to be considered operable during surveillances or when performing their intended function and therefore prevents unnecessary entry into the actions statements. Since the vacuum breakers are clearly operable (capable of performing their intended function) during these conditions, this change is considered to be administrative in nature. This change establishes consistency with the STS.
9. Change L3: The time requirement to perform functional testing after any discharge of steam to the suppression chamber from the safety relief valves (SRVs) is changed from 2 hours to 12 hours. The operability of a vacuum breaker is not affected by an SRV lift. Increased humidity in the suppression chamber air space is the condition that is postulated to impact the operability of the vacuum breakers. Quenchers in the suppression pool ensure that steam is condensed, limiting the increase in humidity in the suppression chamber air space. In addition, this change is endorsed by Generic Letter 93-05, "Line-Item Technical Specifications Improvements to Reduce Surveillance Requirements for Testing During Power Operation," Item 8.4. Based on the above information, the extension in performance of the functional test following an SRV discharge is judged to be not safety significant. This change maintains consistency with the STS and is considered to be a less restrictive change.
10. Change A5: The phrase "cycling each vacuum breaker through at least one complete cycle of full travel" in SR 4.6.4.1.b.1 is replaced by the phrase "performing a functional test of each vacuum breaker." Both phrases are considered to require the same testing. This change is intended only for the purpose of making the TS wording consistent with the STS wording. As a result, the change is considered to be an administrative change.
11. Change A6: Surveillance Requirement 4.6.4.1.b.3.a is modified from "Verifying the opening setpoint, from the closed position, to be less than or equal to 0.20 psid" to "Verifying the opening setpoint of each vacuum breaker to be less than or equal to 0.20 psid." Both phrases are considered to require the same testing. This change is intended only for the purpose of making the TS wording consistent with the STS wording. As a result, the change is considered to be an administrative change.
12. Change to Bases: The Bases have been expanded to be consistent with the STS Bases.

Each of the proposed changes to TS 3.6.4.2 is described below.

1. Change A7: The word “both” is changed to “each” in the LCO and in SR 4.6.4.2. This change is intended only for the purpose of making the TS wording consistent with the STS wording and is editorial in nature.
2. Change A8: The phrase “and closed” is removed from the LCO. The requirement that the vacuum breaker assemblies be operable is sufficient to convey the requirements for opening and for being closed. The details of vacuum breaker assembly operability do not need to be included in the LCO and are adequately covered by the definition of operability. In addition, the requirement that the vacuum breaker assembly valves be closed is required by the surveillance requirements and need not be repeated in the LCO. This change is considered to be administrative in nature.
3. Change R2: The phrase “consisting of a vacuum breaker valve and butterfly isolation valve” is deleted from the LCO statement. As a result, the LCO statement simply requires that each vacuum breaker be operable. Details concerning vacuum breaker design are included in the Bases. This change is considered to be a relocation of information to the Bases.
4. Change L4: Action a is modified to include the condition in which both valves in one vacuum breaker assembly are inoperable for opening. The existing action includes only the condition in which one valve in an assembly is inoperable for opening. The change recognizes that there are two valves in series in each of two vacuum breaker assemblies between the reactor building and suppression chamber. If one vacuum breaker assembly valve will not open, the vacuum breaker assembly is inoperable to perform its relief function, thus the consequences of the second inoperable vacuum breaker assembly valve in the same assembly have no more effect than the first inoperable vacuum breaker valve (i.e., the vacuum breaker will not perform its relief function). If two vacuum breaker valves in one vacuum breaker assembly are inoperable but closed, containment integrity and venting capability are still maintained and 72 hours is provided to restore the redundant vacuum breaker assembly. This change is consistent with the STS and is considered to be a less restrictive change.
5. Change R3: The phrase “but known to be closed” is relocated from Action a to the Bases for Action a. The proposed Actions c and d serve as the compensatory measures for open vacuum breakers. In accordance with TS 3.0.1, if, at any time, one or two valves in one or two vacuum breaker assemblies is found or known to be open, the appropriate action (Action c or d) would be entered upon discovery. The proposed Actions c and d provide adequate actions for vacuum breaker valves that are not closed. The phrase “but known to

be closed” implies that verification that the inoperable vacuum breakers are closed is necessary. This level of detail is unnecessary in the action statement and may be relocated to the Bases. The relocated requirement is contained in the phrase “the leak tight containment boundary is intact.” The change is therefore considered to be a relocation.

6. Change A9: The word “inoperable” is considered to be unnecessary and is deleted from Action a. If the vacuum breaker is being restored, the vacuum breaker is clearly inoperable. This is considered to be an editorial/administrative change.
7. Change A10: A new Action b is added to cover the condition in which two vacuum breaker assemblies have one or two valves that are inoperable for opening. With these conditions, primary containment integrity requirements would not be met and Hope Creek would currently default to the action of TS 3.6.1.1 that allows 1 hour for restoration. This is the same completion time as for the proposed Action b. There is therefore no change in intent and this change is considered to be administrative.
8. Change A11: The existing Action b is re-lettered as Action c. This is considered to be an editorial/administrative change.
9. Change A12: The re-lettered Action c is modified to clarify that the action covers the condition in which one valve in each of the two vacuum breaker assemblies is not closed. This is consistent with the STS and is considered to be an administrative change to provide clarification.
10. Change A13: The phrase “verify the other vacuum breaker assembly valve in the line to be closed within 2 hours” is deleted from the re-lettered Action c. In accordance with TS 3.0.1, if, at any time, the other vacuum breaker assembly valve is found or known to be open, SR 4.6.4.2.a is not met and the new Action d would be entered for the upon discovery. The proposed Action d provides a more conservative action time (1 hour) than the action time in the deleted phrase (2 hours). As a result, the “verification” in the re-lettered Action c is implicitly included in the new Action d and is considered to be an administrative change.
11. Change A14: The phrase “restore the open vacuum breaker assembly valve(s) to the closed position” in re-lettered Action c is changed to the phrase “close the open vacuum breaker assembly valve(s).” Both phrases are considered to require the same action. This change is intended only for the purpose of making the TS wording consistent with the STS wording. As a result, the change is considered to be an administrative change.
12. Change L6: The existing old Action c regarding the vacuum breaker position indicators, and the associated surveillance requirements (SR 4.6.4.2.b.1.b and

SR 4.6.4.2.b.2.c) are deleted. Position indication does not necessarily relate directly to the respective system operability. NUREG-1433 does not specify indication only equipment to be operable to support operability of a system or component. Position indication instrumentation availability and compensatory activities for inoperable position indication are controlled by plant procedures and policies. Vacuum breaker position must be known to be able to satisfy proposed SR 4.6.4.2.a, SR 4.6.4.2.b.1, and SR 4.6.4.2.b.2. If position indication is not available and vacuum breaker position cannot be determined, the SRs cannot be satisfied and actions must be taken for inoperable vacuum breakers in accordance with the applicable action statements. As a result, the requirements for vacuum breaker position indication are adequately addressed by the requirements of Specification 3/4.6.4.2. This change maintains consistency with the STS and is considered to be a less restrictive change.

13. Change M2: A new Action d is added to cover the condition in which both valves in one or both assemblies are open. As noted above, when a vacuum breaker assembly valve is open, the current TS requires that the other assembly valve be verified closed within 2 hours. Implicit in this action is the requirement to close at least one of the valves in the subject assembly within the two-hour allowance if both valves in the assembly are found open. Otherwise, the plant must be shutdown. The new Action d decreases this time to 1 hour to be consistent with the time provided in Hope Creek TS 3.6.1.1 for primary containment integrity not maintained. The reduction in the completion time is considered to be a more restrictive change.
14. Change L7: The frequency of verifying that each vacuum breaker is closed is changed from once per 7 days to once per 14 days. For position verification of most other safety-related valves, including those that affect primary containment, the frequency is 31 days. Based on the longer interval for similar verification of similar components and the fact that the valves are normally found in the correct position, the 14-day interval is considered to be adequate. This change maintains consistency with the STS and is considered to be a less restrictive change.
15. Change A15: A footnote is added to SR 4.6.4.2.a to indicate that this surveillance requirement does not have to be met for vacuum breakers that are open during surveillances or that are performing their intended function. This change allows the vacuum breakers to be considered operable during surveillances or when performing their intended function and prevents unnecessary entry into the actions statements. Since the vacuum breakers are clearly operable (capable of performing their intended function) during these conditions, this change is considered to be administrative in nature.

16. Change A16: The phrase “Cycling each vacuum breaker through at least one complete cycle of full travel” in SR 4.6.4.2.b.1.a is replaced by the phrase “Performing a functional test of each vacuum breaker assembly valve.” Both phrases are considered to require the same testing. This change is intended only for the purpose of making the TS wording consistent with the STS wording. As a result, the change is considered to be an administrative change.
17. Change A17: Surveillance Requirement 4.6.4.2.b.2.a is modified from “Demonstrating the force required to open each vacuum breaker valve does not exceed the equivalent of 0.25 psid” to “Verifying the opening setpoint of each vacuum breaker assembly valve to be less than or equal to 0.25 psid.” Both phrases are considered to require the same testing. This change is intended only for the purpose of making the TS wording consistent with the STS wording. As a result, the change is considered to be an administrative change.
18. Change L8: Surveillance Requirement 4.6.4.2.b.2.b regarding visual inspection of the vacuum breaker assemblies is deleted. Details of visual inspections of the vacuum breaker assemblies are contained in plant procedures. These details are not necessary to ensure the operability of the vacuum breaker assemblies. The vacuum breaker assembly valves are still required to be cycled and their setpoint verified in accordance with SR 4.6.4.2.b.1.a and SR 4.6.4.2.b.2.a, respectively to ensure their operability. The requirements for the vacuum breaker visual inspection are adequately addressed by the requirements of TS 3.6.4.2 and the associated SRs, and the visual inspections are therefore deleted from the TS. This change maintains consistency with the STS and is considered to be a less restrictive change.
19. Change L9: Surveillance Requirement 4.6.4.2.b.2.d regarding verification of the instrument actuation system for the inboard isolation valve auto open control system operability by channel calibration is deleted. The requirement of SR 4.6.4.2.b.2.a to ensure that the vacuum breakers are full open at 0.25 psid is sufficient to demonstrate operability. Vacuum breaker actuation instrumentation is required to be operable to satisfy the setpoint verification surveillance requirement for the vacuum breakers. If the vacuum breaker actuation instrumentation is inoperable, the surveillance requirement cannot be satisfied and actions must be taken for inoperable vacuum breakers in accordance with the applicable action statements. As a result, the requirements for the vacuum actuation instrumentation are adequately addressed by the requirements of Specification 3/4.6.4.2. This change maintains consistency with the STS and is considered to be a less restrictive change.
20. Change to Bases: The Bases have been expanded to be consistent with the STS Bases.

The proposed change to TS 3.6.2.1 is described below.

Change A18: SR 4.6.2.1.b.2.c is being renumbered as SR 4.6.2.1.c. Suppression chamber/heat sink operability is contingent on volume and temperature. As long as the temperature is below 95°F and no testing adds heat to the pool is in progress, the monitoring frequency is once per 24 hours. Above 95°F, the monitoring frequency is increased in Operational Conditions 1 and 2 as well as in Operational Condition 3. As currently written, the surveillance requirement for Operational Condition 3 is embedded in the requirements for Operational Conditions 1 and 2. This change corrects the indentation of the Operational Condition 3 surveillance requirement and re-letters the subsequent items and is considered to be administrative in nature.

Discussion of significant differences between proposed changes and the STS for TS 3.6.4.1 and TS 3.6.4.2:

1. The surveillance frequency for SR 4.6.4.1.a includes only the fixed frequency of 14 days. The other NUREG-1433 frequencies that require the vacuum breakers to be verified closed after the vacuum breakers may have been opened (i.e., within 2 hours of any discharge of steam to the suppression chamber from the SRVs or any operation that causes the drywell-to-suppression chamber differential pressure to be reduced by a specified amount) are not included. These other surveillance frequencies are not part of the current Hope Creek TS (i.e., current licensing basis). Surveillances must be continually met (TS 3.0.1), therefore, if the vacuum breakers are open and the surveillance frequency is not yet due, the SR would be considered not met (except for conditions defined in the proposed note for SR 4.6.4.1.a and SR 4.6.4.2.a) and appropriate actions would be required to be taken. There are instances where other valves are required to be closed and verified closed on a periodic basis. If these other valves are cycled (e.g., ECCS valves), existing plant administrative controls ensure that the valves are left in the correct position; a "special surveillance frequency" is not required. In addition, these vacuum breakers have position indication in the control room and are continuously monitored by control room operators. If conditions exist for the vacuum breakers to be potentially opened, control room operators would be alert to the possibility and ensure that the vacuum breakers were closed at the completion of the evolution. As a result, existing control room indication of valve position should alert operators if a valve is incorrectly in an open position. Therefore, in accordance with SR 3.0.1, the proper LCO actions would be taken.
2. The surveillance frequency for SR 4.6.4.1.b.1 includes only the fixed frequency of 31 days and the event-driven frequency of within 12 hours after any discharge of steam to the suppression chamber from the SRVs. The other NUREG-1433 frequency that requires the vacuum breakers to be verified closed within 12

hours following an operation that causes any of the vacuum breakers to open is not included. This other surveillance frequency is not part of the current Hope Creek TS (i.e., current licensing basis). Since the vacuum breakers are designed to operate and assumed to function after a LOCA blowdown, operation of the vacuum breakers following a minor steam release from the SRVs should not raise any questions regarding immediate operability. Steam discharged to the suppression chamber, resulting in increased pressure and vacuum breaker opening, could pose a long-term equipment degradation issue, but not an immediate operability concern. The 12-hour frequency to perform a functional test following an operation that causes any of the vacuum breakers to open is meaningless for detecting long-term degradation. The issue of long-term degradation is adequately and more appropriately addressed by the 31 day SR.

3. The Hope Creek TS completion time convention for shutdown actions statements (i.e., be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours) is retained. Adopting the STS completion time convention (i.e., be in MODE 3 in 12 hours and in MODE 4 in 36 hours) would create inconsistencies with the other Hope Creek TS and could create confusion.
4. Hope Creek is retaining the terminology "vacuum breaker assembly" in the proposed changes. At Hope Creek, there are two vacuum breaker assemblies with each vacuum breaker assembly containing two vacuum breaker valves (an air-operated butterfly valve and a check valve).

JUSTIFICATION OF REQUESTED CHANGES:

The changes make the Hope Creek Technical Specifications more consistent with the STS and do not alter the manner in which the containment responds to design basis events. Detailed justification for each change is provided in the section above.

ENVIRONMENTAL IMPACT:

The proposed TS changes were reviewed against the criteria of 10CFR51.22 for environmental considerations. The proposed changes do not involve a significant hazards consideration, a significant increase in the amounts of effluents that may be released offsite, or a significant increase in the individual or cumulative occupational radiation exposures. Based on the foregoing, PSE&G concludes that the proposed TS changes meet the criteria given in 10CFR51.22(c)(9) for a categorical exclusion from the requirements for an Environmental Impact Statement.

HOPE CREEK GENERATING STATION
FACILITY OPERATING LICENSE NPF-57
DOCKET NO. 50-354
REVISIONS TO THE TECHNICAL SPECIFICATIONS (TS)

ADMINISTRATIVE CHANGES

10CFR50.92 EVALUATION

PSEG Nuclear LLC has concluded that the proposed changes to the Hope Creek Generating Station Technical Specifications (TS) do not involve a significant hazards consideration. In support of this determination, an evaluation of each of the three standards set forth in 10CFR50.92 is provided below.

REQUESTED CHANGES

Various administrative changes are proposed for TS 3.6.4.1, 3.6.4.2, and 3.6.2.1. These administrative changes are addressed by the evaluation provided below.

BASIS

1. ***The proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.***

The proposed changes are administrative in nature and do not involve any technical changes. These changes to the Hope Creek TS are being made in order to provide consistency between the Hope Creek TS and the improved standard TS (NUREG-1433). Being administrative in nature, these changes do not impact accident initiators, analyzed events, or the mitigation of accidents or transients. Therefore, the proposed changes will not involve a significant increase in the probability or consequences of any accident previously evaluated.

2. ***The proposed change does not create the possibility of a new or different kind of accident from any accident previously analyzed.***

The proposed changes do not involve a physical alteration of the plant (no new or different type of equipment will be installed) or a change in the methods governing plant operation. The proposed changes will not impose any new or different requirements or eliminate any existing requirements. Therefore the changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. ***The proposed change does not involve a significant reduction in a margin of safety.***

The proposed changes do not involve a physical alteration of the plant (no new or different type of equipment will be installed) or a change in the methods governing plant operation. The proposed changes will not impose any new or different requirements or eliminate any existing requirements. Therefore, the changes do not involve a significant reduction in a margin of safety.

CONCLUSION

Based on the above, PSEG Nuclear has determined that the proposed changes do not involve a significant hazards consideration.

MORE RESTRICTIVE CHANGES

10CFR50.92 EVALUATION

PSEG Nuclear LLC has concluded that the proposed changes to the Hope Creek Generating Station Technical Specifications (TS) do not involve a significant hazards consideration. In support of this determination, an evaluation of each of the three standards set forth in 10CFR50.92 is provided below.

REQUESTED CHANGE

Various more restrictive changes are proposed for TS 3.6.4.1 and 3.6.4.2. These more restrictive changes are addressed by the evaluation provided below.

BASIS

1. ***The proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.***

The proposed changes provide more restrictive requirements than previously existed in the TS. The more restrictive requirements will not result in operation that will increase the probability of initiating an analyzed event. The new requirements either do not change or, in some instances, may decrease the probability or consequences of an analyzed event. These changes will not invalidate assumptions relative to mitigation of an accident or transient event. These changes have been reviewed to ensure that no previous accident evaluations have been adversely impacted. Therefore, the proposed changes will not involve a significant increase in the probability or consequences of any accident previously evaluated.

2. ***The proposed change does not create the possibility of a new or different kind of accident from any accident previously analyzed.***

The more restrictive requirements imposed by the proposed changes do not involve a physical alteration of the plant (no new or different type of equipment will be installed). Any resulting changes in the methods governing plant operation will be consistent with assumptions made in the safety analyses. Therefore the changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. ***The proposed change does not involve a significant reduction in a margin of safety.***

The more restrictive requirements imposed by the proposed changes either increase or do not affect the margin of safety. In addition, the proposed changes do not impact any safety analysis assumptions. Therefore, the changes do not involve a significant reduction in a margin of safety.

CONCLUSION

Based on the above, PSEG Nuclear has determined that the proposed changes do not involve a significant hazards consideration.

CHANGES INVOLVING RELOCATION OF REQUIREMENTS

10CFR50.92 EVALUATION

PSEG Nuclear LLC has concluded that the proposed changes to the Hope Creek Generating Station Technical Specifications (TS) do not involve a significant hazards consideration. In support of this determination, an evaluation of each of the three standards set forth in 10CFR50.92 is provided below.

REQUESTED CHANGES

The proposed changes relocate requirements from TS 3.6.4.1 and 3.6.4.2 to licensee-controlled documents. These changes that involve relocation of requirements are addressed by the evaluation provided below.

BASIS

1. ***The proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.***

The proposed changes relocate requirements from the TS to licensee-controlled documents. Any future changes to the licensee-controlled documents containing relocated requirements will be evaluated in accordance with the PSEG Nuclear 10CFR50.59 program. Since any changes to licensee-controlled documents will be evaluated in accordance with the PSEG Nuclear 10CFR50.59 program, no increase in the probability or consequences of an accident previously evaluated will be allowed without prior NRC approval. Therefore, the proposed changes will not involve a significant increase in the probability or consequences of any accident previously evaluated.

2. ***The proposed change does not create the possibility of a new or different kind of accident from any accident previously analyzed.***

The proposed changes relocate requirements from the TS to licensee-controlled documents. The proposed changes do not involve a physical alteration of the plant (no new or different type of equipment will be installed) or a change in the methods governing plant operation. The proposed changes will not impose any new or different requirements or eliminate any existing requirements. Adequate control of these requirements will be maintained. These changes will not alter assumptions made in the safety analysis or licensing basis. Therefore the changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. ***The proposed change does not involve a significant reduction in a margin of safety.***

The proposed changes relocate requirements from the TS to licensee-controlled documents. The proposed changes will not reduce a margin of safety since the changes have no impact on any safety analysis assumptions. The proposed changes will not impose any new or different requirements or eliminate any existing requirements. Since any changes to licensee-controlled documents will be evaluated in accordance with the PSEG Nuclear 10CFR50.59 program, no reduction in a margin of safety will be allowed without prior NRC approval. Therefore, the changes do not involve a significant reduction in a margin of safety.

CONCLUSION

Based on the above, PSEG Nuclear has determined that the proposed changes do not involve a significant hazards consideration.

CHANGES INVOLVING DELETION OF POSITION INDICATION AND ACTUATION SYSTEM REQUIREMENTS

10CFR50.92 EVALUATION

PSEG Nuclear LLC has concluded that the proposed changes to the Hope Creek Generating Station Technical Specifications (TS) do not involve a significant hazards consideration. In support of this determination, an evaluation of each of the three standards set forth in 10CFR50.92 is provided below.

REQUESTED CHANGES

Deletion of Hope Creek TS 3.6.4.1 Action c and TS 3.6.4.2 Action c regarding the vacuum breaker position indicators, and the associated surveillance requirements (SR 4.6.4.1.b.2, 4.6.4.1.b.3.b, 4.6.4.2.b.1.b, and 4.6.4.2.b.2.c) is proposed. Deletion of SR 4.6.4.2.b.2.d regarding verification of the instrument actuation system for the inboard isolation valve auto open control system operability by channel calibration is also proposed. These changes are addressed by the evaluation provided below.

BASIS

1. ***The proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.***

The proposed changes do not result in any hardware or operating procedure changes. The vacuum breaker position indication or actuation system instrumentation are not assumed in the initiation of any analyzed event. The requirements for the vacuum breaker position indication or actuation system instrumentation do not need to be explicitly stated in the TS. The capability to determine vacuum breaker position and the vacuum breaker actuation instrumentation must be available to perform the verifications and tests required for the surveillance requirements of the TS. If the capability to determine vacuum breaker position is not available, these verifications and tests cannot be satisfied and the appropriate actions must be taken for inoperable vacuum breakers in accordance with the actions of the TS. As a result, accident consequences are unaffected by the proposed change. Therefore, the proposed changes will not involve a significant increase in the probability or consequences of any accident previously evaluated.

2. ***The proposed change does not create the possibility of a new or different kind of accident from any accident previously analyzed.***

The proposed changes do not introduce any new modes of plant operation or involve a physical alteration of the plant. Therefore the changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. ***The proposed change does not involve a significant reduction in a margin of safety.***

The proposed deletion of the vacuum breaker position indication and actuation instrumentation requirements from the TS does not impact a margin of safety. The requirements for the vacuum breaker position indication and actuation instrumentation do not need to be explicitly stated in the TS. The capability to determine vacuum breaker position and the vacuum breaker actuation instrumentation must be available to perform the verifications and tests required for the surveillance requirements of the TS. If the capability to determine vacuum breaker position and the vacuum breaker actuation instrumentation is not available, these verifications and tests cannot be satisfied and the appropriate actions must be taken for inoperable vacuum breakers in accordance with the actions of the TS. Therefore, the changes do not involve a significant reduction in a margin of safety.

CONCLUSION

Based on the above, PSEG Nuclear has determined that the proposed changes do not involve a significant hazards consideration.

CHANGES INVOLVING REDUCTION IN FREQUENCY OF CLOSED POSITION VERIFICATION

10CFR50.92 EVALUATION

PSEG Nuclear LLC has concluded that the proposed changes to the Hope Creek Generating Station Technical Specifications (TS) do not involve a significant hazards consideration. In support of this determination, an evaluation of each of the three standards set forth in 10CFR50.92 is provided below.

REQUESTED CHANGES

The frequency of verifying that each vacuum breaker is closed is changed from once per 7 days to once per 14 days in Surveillance Requirements 4.6.4.1.a and 4.6.4.2.a. These changes are addressed by the evaluation provided below.

BASIS

1. ***The proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.***

The proposed changes would decrease the surveillance frequency of the vacuum breaker position verification from once per 7 days to once per 14 days. The proposed change does not affect the vacuum breaker valve design or function. A failure of a vacuum breaker valve is not identified as an initiator of any event. Therefore, the proposed change does not involve an increase in the probability of an accident previously evaluated. Since the change impacts only the frequency of verification and does not result in any change in the response of the equipment to an accident, the change does not increase the consequences of any previously analyzed accident. Therefore, the proposed changes will not involve a significant increase in the probability or consequences of any accident previously evaluated.

2. ***The proposed change does not create the possibility of a new or different kind of accident from any accident previously analyzed.***

The proposed changes do not result in any changes to the equipment design or capabilities or to the operation of the plant. The proposed changes impact only the frequency of verification of vacuum breaker position and do not result in any change in the response of equipment to an accident. Therefore the changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. ***The proposed change does not involve a significant reduction in a margin of safety.***

The proposed changes impact only the frequency of verification of the vacuum breaker position. Hope Creek experience has shown that a change to 14 days to verify that a vacuum breaker is closed is not a significant change in operating practice and that the proposed frequency is acceptable. Therefore, the changes do not involve a significant reduction in a margin of safety.

CONCLUSION

Based on the above, PSEG Nuclear has determined that the proposed changes do not involve a significant hazards consideration.

CHANGES INVOLVING EXTENSION OF TIME FOR PERFORMING FUNCTIONAL TESTING FOLLOWING STEAM DISCHARGE

10CFR50.92 EVALUATION

PSEG Nuclear LLC has concluded that the proposed changes to the Hope Creek Generating Station Technical Specifications (TS) do not involve a significant hazards consideration. In support of this determination, an evaluation of each of the three standards set forth in 10CFR50.92 is provided below.

REQUESTED CHANGES

The time requirement to perform functional testing after any discharge of steam to the suppression chamber from the safety relief valves (SRVs) is changed from 2 hours to 12 hours. This change is addressed by the evaluation provided below.

BASIS

1. ***The proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.***

The proposed change extends the requirement to cycle the vacuum breakers after an SRV lift from 2 hours to 12 hours. Since the vacuum breakers are not assumed to be an initiator of any previously analyzed accident, the change will not significantly increase the probability of a previously analyzed accident. Since sufficient vacuum breakers will remain operable to mitigate the assumed accidents, the change will not increase the consequences of a previously analyzed accident. Therefore, the proposed changes will not involve a significant increase in the probability or consequences of any accident previously evaluated.

2. ***The proposed change does not create the possibility of a new or different kind of accident from any accident previously analyzed.***

The proposed change does not introduce a new mode of plant operation and does not involve physical modification to the plant. Therefore the changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. ***The proposed change does not involve a significant reduction in a margin of safety.***

The operability of the vacuum breakers is not adversely affected by an SRV lift. Since the vacuum breakers are designed to operate and assumed to function after a LOCA blowdown, operation of the vacuum breakers following a minor steam release from the SRVs should not raise any questions regarding immediate operability. Steam discharged to the suppression chamber, resulting in increased pressure and vacuum breaker opening, could pose a long-term equipment degradation issue, but not an immediate operability concern, therefore the potential impact from the proposed ten hour increase is minimal. In addition, the basis for this extension is also supported by NRC Generic Letter 93-05, Item 8.4. Therefore, the changes do not involve a significant reduction in a margin of safety.

CONCLUSION

Based on the above, PSEG Nuclear has determined that the proposed changes do not involve a significant hazards consideration.

**INCLUSION OF CONDITION GOVERNING BOTH VALVES IN A REACTOR
BUILDING –SUPPRESSION CHAMBER VACUUM BREAKER ASSEMBLY BEING
INOPERABLE FOR OPENING**

10CFR50.92 EVALUATION

PSEG Nuclear LLC has concluded that the proposed changes to the Hope Creek Generating Station Technical Specifications (TS) do not involve a significant hazards consideration. In support of this determination, an evaluation of each of the three standards set forth in 10CFR50.92 is provided below.

REQUESTED CHANGES

Action statement 3.6.4.2.a is modified to include the condition in which both valves in one vacuum breaker assembly are inoperable for opening. These changes are addressed by the evaluation provided below.

BASIS

1. ***The proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.***

The existing action includes only the condition in which one valve in an assembly is inoperable for opening, while the proposed change recognizes that there are two valves in series in each of two vacuum breaker assemblies between the reactor building and suppression chamber. The proposed change will make a distinction between loss of function (containment integrity and venting capability) that requires initiating action within one hour (both valves inoperable for opening) and loss of redundancy for a function that must be recovered within 72 hours (one valve in the assembly is inoperable for opening). The existing TS fails to make this distinction between loss of function and loss of redundancy. The probability of an accident is not increased because the vacuum breakers are not considered to be the initiators of any accidents previously evaluated. The consequences of an accident will not be increased because the proposed change will provide assurance that both the containment integrity and venting capability functions are available or restored within one hour. The proposed change could allow continued operation for up to 72 hours without redundant capability for these functions; however, the 72 hour completion time accounts for the redundant capability provided by the remaining vacuum breaker assembly, the fact that the operable assembly is closed, and the low probability of an event that would require the vacuum breaker valves to be operable during this period (consistent with the existing

action statement). Therefore, the proposed changes will not involve a significant increase in the probability or consequences of any accident previously evaluated.

2. ***The proposed change does not create the possibility of a new or different kind of accident from any accident previously analyzed.***

The proposed change does not result in any physical changes to plant systems, structures, or components (SSCs) or the manner in which these SSCs are operated, maintained, modified, tested, or inspected. Therefore the changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. ***The proposed change does not involve a significant reduction in a margin of safety.***

The proposed change will make a distinction between loss of function (containment integrity and venting capability) that requires initiating action within one hour and loss of redundancy for a function that must be recovered within 72 hours. The existing TS fails to make this distinction between loss of function and loss of redundancy. The proposed change will provide assurance that both the containment integrity and venting capability functions are available or restored within one hour. The change does not affect the current analysis assumptions. Therefore, the changes do not involve a significant reduction in a margin of safety.

CONCLUSION

Based on the above, PSEG Nuclear has determined that the proposed changes do not involve a significant hazards consideration.

DELETION OF SURVEILLANCE REGARDING VISUAL INSPECTION OF VACUUM BREAKERS

10CFR50.92 EVALUATION

PSEG Nuclear LLC has concluded that the proposed changes to the Hope Creek Generating Station Technical Specifications (TS) do not involve a significant hazards consideration. In support of this determination, an evaluation of each of the three standards set forth in 10CFR50.92 is provided below.

REQUESTED CHANGES

Surveillance Requirement 4.6.4.2.b.2.b regarding visual inspection of the vacuum breaker assemblies is deleted. This change is addressed by the evaluation provided below.

BASIS

1. ***The proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.***

The proposed change does not result in any hardware or operating procedure changes. The vacuum breakers are not assumed in the initiation of any analyzed event. The requirements for the vacuum breaker visual inspections do not need to be explicitly stated in the TS. The performance of the verifications and tests required for the Surveillance Requirements of this TS and the proposed SR 4.6.2.1.f ensures the operability of the vacuum breakers. As a result, accident consequences are unaffected by this change. Therefore, the proposed changes will not involve a significant increase in the probability or consequences of any accident previously evaluated.

2. ***The proposed change does not create the possibility of a new or different kind of accident from any accident previously analyzed.***

The proposed change does not introduce a new mode of plant operation and does not involve physical modification to the plant. Therefore the changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. ***The proposed change does not involve a significant reduction in a margin of safety.***

The requirements for the vacuum breaker visual inspections do not need to be explicitly stated in the TS. The performance of the verifications and tests required for the Surveillance Requirements of this TS and the proposed SR 4.6.2.1.f ensures the operability of the vacuum breakers. As a result, operability of the vacuum breakers will be maintained without the need for explicit visual inspection requirements. Therefore, the changes do not involve a significant reduction in a margin of safety.

CONCLUSION

Based on the above, PSE&G has determined that the proposed changes do not involve a significant hazards consideration.

**HOPE CREEK GENERATING STATION
FACILITY OPERATING LICENSE NPF-57
DOCKET NO. 50-354
REVISIONS TO THE TECHNICAL SPECIFICATIONS (TS)**

TECHNICAL SPECIFICATION PAGES WITH PROPOSED CHANGES

The following Technical Specifications for Facility Operating License No. NPF-57 are affected by this change request:

<u>Technical Specification</u>	<u>Page</u>
4.6.2.1	3/4 6-13 and 3/4 6-14
3/4.6.4.1	3/4 6-43 and 3/4 6-44
3/4.6.4.2	3/4 6-45 and 3/4 6-46
Bases 3/4.6.4	B 3/4 6-5

CONTAINMENT SYSTEMS

LIMITING CONDITION FOR OPERATION (Continued)

ACTION: (Continued)

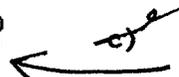
3. With the suppression chamber average water temperature greater than 120°F, depressurize the reactor pressure vessel to less than 200 psig within 12 hours.
- c. With the drywell-to-suppression chamber bypass leakage in excess of the limit, restore the bypass leakage to within the limit prior to increasing reactor coolant temperature above 200°F.

SURVEILLANCE REQUIREMENTS

4.6.2.1 The suppression chamber shall be demonstrated OPERABLE:

- a. By verifying the suppression chamber water volume to be within the limits at least once per 24 hours.
- b. At least once per 24 hours in OPERATIONAL CONDITION 1 or 2 by verifying the suppression chamber average water temperature to be less than or equal to 95°F, except:
 1. At least once per 5 minutes during testing which adds heat to the suppression chamber, by verifying the suppression chamber average water temperature less than or equal to 105°F.
 2. At least once per hour when suppression chamber average water temperature is greater than 95°F, by verifying:
 - a) Suppression chamber average water temperature to be less than or equal to 110°F, and
 - b) THERMAL POWER to be less than or equal to 1% of RATED THERMAL POWER.

C.



At least once per 30 minutes in OPERATIONAL CONDITION 3 following a scram with suppression chamber average water temperature greater than 95°F, by verifying suppression chamber average water temperature less than or equal to 120°F.

d.

By an external visual examination of the suppression chamber after safety/relief valve operation with the suppression chamber average water temperature greater than or equal to 177°F and reactor coolant system pressure greater than 100 psig.

e.

At least once per 18 months by a visual inspection of the accessible interior and exterior of the suppression chamber.

CONTAINMENT SYSTEMS

LIMITING CONDITION FOR OPERATION (Continued)

f. e.

At least once per 18 months by conducting a drywell-to-suppression chamber bypass leak test at an initial differential pressure of 0.80 psi and verifying that the differential pressure does not decrease by more than 0.24 inch of water per minute for a period of 10 minutes. If any drywell-to-suppression chamber bypass leak test fails to meet the specified limit, the test schedule for subsequent tests shall be reviewed and approved by the Commission. If two consecutive tests fail to meet the specified limit, a test shall be performed at least every 9 months until two consecutive tests meet the specified limit, at which time the 18 month test schedule may be resumed.

CONTAINMENT SYSTEMS

3/4.6.4 VACUUM RELIEF

SUPPRESSION CHAMBER - DRYWELL VACUUM BREAKERS

LIMITING CONDITION FOR OPERATION

3.6.4.1 All suppression chamber - drywell vacuum breakers shall be OPERABLE and ~~closed~~.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2 and 3.

ACTION:

a. With one of the above vacuum breakers inoperable for opening but known ~~to be closed~~, restore the inoperable vacuum breaker to OPERABLE status within 72 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

b. With one ~~or more~~ suppression chamber - drywell vacuum breaker(s) ~~open~~, close the open vacuum breaker(s) ^{Not closed} within 2 hours; or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

c. With one of the position indicators of any suppression chamber - drywell vacuum breaker inoperable:

1. Verify the other position indicator in the pair to be OPERABLE within 2 hours and at least once per 14 days thereafter, or
2. Verify the vacuum breaker(s) with the inoperable position indicator to be closed by conducting a test which demonstrates that the ΔP is maintained at greater than or equal to 0.5 psi for one hour without makeup within 24 hours and at least once per 14 days thereafter.

Otherwise, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS

4.6.4.1 Each suppression chamber - drywell vacuum breaker shall be:

a. Verified closed at least once per ¹⁴ days. *

b. Demonstrated OPERABLE:

1. At least once per 31 days and within 2 hours after any discharge of steam to the suppression chamber from the safety-relief valves, by ~~cycling each vacuum breaker through at least one complete cycle of full travel.~~

~~2. At least once per 31 days by verifying both position indicators OPERABLE by observing expected valve movement during the cycling test.~~

² 3. At least once per 18 months by ⁶

a) ~~Verifying the opening setpoint from the closed position, to be less than or equal to 0.20 psid, and~~

b) ~~Verifying both position indicators OPERABLE by performance of a CHANNEL CALIBRATION.~~

performing a functional test of each vacuum breaker.

of each vacuum breaker

* Not required to be met for vacuum breaker assembly valves that are open during surveillances or that are open when performing their intended function

CONTAINMENT SYSTEMS

REACTOR BUILDING - SUPPRESSION CHAMBER VACUUM BREAKERS

LIMITING CONDITION FOR OPERATION

3.6.4.2 ^{EACH} Both reactor building - suppression chamber vacuum breaker assemblies ⁴ consisting of a vacuum breaker valve and a butterfly isolation valve shall be OPERABLE and closed.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2 and 3.

ACTION:

a. With one valve of a reactor building - suppression chamber vacuum breaker assembly inoperable for opening but known to be closed, restore the inoperable vacuum breaker assembly valve to OPERABLE status within 72 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

With one or two valves

Insert A

b. With one valve of a reactor building - suppression chamber vacuum breaker assembly open, verify the other vacuum breaker assembly valve in the line to be closed within 2 hours; restore the open vacuum breaker assembly valve to the closed position within 72 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

With one valve not closed

C.

c. With the position indicator of any reactor building - suppression chamber vacuum breaker assembly valve inoperable, restore the inoperable position indicator to OPERABLE status within 14 days or verify the affected vacuum breaker assembly valve to be closed at least once per 24 hours by a visual inspection. Otherwise, declare the vacuum breaker assembly valve inoperable or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

Insert B

SURVEILLANCE REQUIREMENTS

4.6.4.2 ^{Each} Both reactor building - suppression chamber vacuum breaker assemblies shall be:

a. Verified closed at least once per 7 days.

*

b. Demonstrated OPERABLE:

14

Performing a functional test of each vacuum breaker assembly valve.

1. At least once per 31 days by:

a) ~~Cycling each vacuum breaker assembly valve through at least one complete cycle of full travel~~

b) ~~Verifying the position indicators on each assembly valve OPERABLE by observing expected valve movement during the cycling test.~~

2. At least once per 18 months by: ^{Verifying the opening setpoint of}

a) ~~Demonstrating that the force required to open each vacuum breaker valve does not exceed the equivalent of 0.25 psid.~~

b) Visual inspection.

to be less than or equal to

assembly

HOPE CREEK

3/4 6-45

* Not required to be met for vacuum breaker assembly valves that are open during surveillances or that open when performing their intended function.

Insert A

- b. With two reactor building - suppression chamber vacuum breaker assemblies with one or two valves inoperable for opening, restore both valves in one vacuum breaker assembly to OPERABLE status within 1 hour or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

Insert B

- d. With two valves in one or two reactor building – suppression chamber vacuum breaker assemblies not closed, close one open vacuum breaker assembly valve in each affected assembly within 1 hour or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- c) Verifying the position indicators on each assembly valve OPERABLE by performance of a CHANNEL CALIBRATION.
- d) Verifying the instrument actuation system for the inboard isolation valve auto open control system OPERABLE by performance of a CHANNEL CALIBRATION.

CONTAINMENT SYSTEMS

BASES

3/4.6.3 PRIMARY CONTAINMENT ISOLATION VALVES

The OPERABILITY of the primary containment isolation valves ensures that the containment atmosphere will be isolated from the outside environment in the event of a release of radioactive material to the containment atmosphere or pressurization of the containment and is consistent with the requirements of GDC 54 through 57 of Appendix A of 10 CFR 50. Containment isolation within the time limits specified for those isolation valves designed to close automatically ensures that the release of radioactive material to the environment will be consistent with the assumptions used in the analyses for a LOCA.

3/4.6.4 VACUUM RELIEF

*W325 x
C* → ~~Vacuum relief breakers are provided to equalize the pressure between the suppression chamber and drywell and between the Reactor Building and suppression chamber. This system will maintain the structural integrity of the primary containment under conditions of large differential pressures.~~

~~The vacuum breakers between the suppression chamber and the drywell must not be inoperable in the open position since this would allow bypassing of the suppression pool in case of an accident.~~

3/4.6.5 SECONDARY CONTAINMENT

Secondary containment is designed to minimize any ground level release of radioactive material which may result from an accident. The Reactor Building and associated structures provide secondary containment during normal operation when the drywell is sealed and in service. At other times the drywell may be open and, when required, secondary containment integrity is specified.

Establishing and maintaining a 0.25 inch water gage vacuum in the reactor building with the filtration recirculation and ventilation system (FRVS) once per 18 months, along with the surveillance of the doors, hatches, dampers and valves, is adequate to ensure that there are no violations of the integrity of the secondary containment.

The OPERABILITY of the FRVS ensures that sufficient iodine removal capability will be available in the event of a LOCA. The reduction in containment iodine inventory reduces the resulting site boundary radiation doses associated with containment leakage. The operation of this system and resultant iodine removal capacity are consistent with the assumptions used in the LOCA analyses and with the drawdown analysis. Continuous operation of the system with the heaters and humidity control instruments OPERABLE for 10 hours during each 31 day period is sufficient to reduce the buildup of moisture on the adsorbers and HEPA filters.

Insert C

Suppression Chamber-to-Drywell Vacuum Breakers

BACKGROUND: The function of the suppression-chamber-to-drywell vacuum breakers is to relieve vacuum in the drywell. There are eight internal vacuum breakers located on the vent header of the vent system between the drywell and the suppression chamber that allow air and steam flow from the suppression chamber to the drywell when the drywell is at a negative pressure with respect to the suppression chamber. Therefore, suppression chamber-to-drywell vacuum breakers prevent an excessive negative differential pressure across the wetwell-drywell boundary. Each vacuum breaker is a self-actuating valve, similar to a check valve, which can be remotely operated for testing purposes.

A negative differential pressure across the drywell wall is caused by rapid depressurization of the drywell. Events that cause this rapid depressurization are cooling cycles, inadvertent drywell spray actuation, and steam condensation from sprays or subcooled water reflood of a break in the event of a primary system rupture. Cooling cycles result in minor pressure transients in the drywell that occur slowly and are normally controlled by heating and ventilation equipment. Spray actuation or spill of subcooled water out of a break results in more significant pressure transients and becomes important in sizing the internal vacuum breakers.

In the event of a primary system rupture, steam condensation within the drywell results in the most severe pressure transient. Following a primary system rupture, air in the drywell is purged into the suppression chamber free airspace, leaving the drywell full of steam. Subsequent condensation of the steam can be caused by Emergency Core Cooling Systems flow from a recirculation line or main steam line break, or drywell spray actuation following a loss of coolant accident (LOCA).

In addition, the waterleg in the Mark I Vent System downcomer is controlled by the drywell-to-suppression chamber differential pressure. If the drywell pressure is less than the suppression chamber pressure, there will be an increase in the vent waterleg. This will result in an increase in the water clearing inertia in the event of a postulated LOCA, resulting in an increase in the peak drywell pressure. This in turn will result in an increase in the pool swell dynamic loads. The internal vacuum breakers limit the height of the waterleg in the vent system during normal operation.

APPLICABLE SAFETY ANALYSES: Analytical methods and assumptions involving the suppression chamber-to-drywell vacuum breakers are presented in Section 6.2 and Appendix 6A of the Hope Creek UFSAR as part of the accident response of the primary containment systems. Internal (suppression chamber-to-drywell) and external (reactor building- to-suppression chamber) vacuum breakers are provided as part of the primary

containment to limit the negative differential pressure across the drywell and suppression chamber walls that form part of the primary containment boundary.

The safety analyses assume that the internal vacuum breakers are closed initially and are fully open at a differential pressure of 0.20 psid. Additionally, one of the eight internal vacuum breakers is assumed to fail in a closed position. The results of the analyses show that the design pressure limits are not exceeded even under the worst case accident scenario. The vacuum breaker opening differential pressure setpoint and the requirement that all eight vacuum breakers be OPERABLE are a result of the requirement placed on the vacuum breakers to limit the vent system waterleg height. The vacuum relief capacity between the drywell and suppression chamber should be 1/16 of the total main vent cross sectional area, with the valves set to operate at 0.20 psid differential pressure. Design Basis Accident (DBA) analyses require the vacuum breakers to be closed initially and to remain closed and leak tight.

The suppression chamber-to-drywell vacuum breakers satisfy Criterion 3 of the NRC Policy Statement.

LCO: All eight vacuum breakers must be OPERABLE for opening and closed (except during testing or when the vacuum breakers are performing their intended design function). The vacuum breaker OPERABILITY requirement provides assurance that the drywell-to-suppression chamber negative differential pressure remains below the design value. The requirement that the vacuum breakers be closed ensures that there is no excessive bypass leakage should a LOCA occur.

APPLICABILITY: In OPERATIONAL CONDITIONS 1, 2, and 3, the Suppression Pool Spray System is required to be OPERABLE to mitigate the effects of a DBA. Excessive negative pressure inside the drywell could occur due to inadvertent actuation of this system. The vacuum breakers, therefore, are required to be OPERABLE in OPERATIONAL CONDITIONS 1, 2, and 3, when the Suppression Pool Spray System is required to be OPERABLE, to mitigate the effects of inadvertent actuation of the Suppression Pool Spray System.

Also, in OPERATIONAL CONDITIONS 1, 2, and 3, a DBA could result in excessive negative differential pressure across the drywell wall, caused by the rapid depressurization of the drywell. The event that results in the limiting rapid depressurization of the drywell is the primary system rupture that purges the drywell of air and fills the drywell free airspace with steam. Subsequent condensation of the steam would result in depressurization of the drywell. The limiting pressure and temperature of the primary system prior to a DBA occur in OPERATIONAL CONDITIONS 1, 2, and 3.

In OPERATIONAL CONDITIONS 4 and 5, the probability and consequences of these events are reduced by the pressure and temperature limitations in these

OPERATIONAL CONDITIONS; therefore, maintaining suppression chamber-to-drywell vacuum breakers OPERABLE is not required in OPERATIONAL CONDITION 4 or 5.

ACTIONS: With one of the required vacuum breakers inoperable for opening (e.g., the vacuum breaker is not open and may be stuck closed or not within its opening setpoint limit, so that it would not function as designed during an event that depressurized the drywell), the remaining seven OPERABLE vacuum breakers are capable of providing the vacuum relief function. However, overall system reliability is reduced because a single failure in one of the remaining vacuum breakers could result in an excessive suppression chamber-to-drywell differential pressure during a DBA. Therefore, with one of the eight required vacuum breakers inoperable, 72 hours is allowed to restore at least one of the inoperable vacuum breakers to OPERABLE status so that plant conditions are consistent with those assumed for the design basis analysis. The 72 hour Completion Time is considered acceptable due to the low probability of an event and the adequacy of the remaining vacuum breaker capability.

An open vacuum breaker allows communication between the drywell and suppression chamber airspace, and, as a result, there is the potential for suppression chamber overpressurization due to this bypass leakage if a LOCA were to occur. Therefore, the open vacuum breaker must be closed. A short time is allowed to close the vacuum breaker due to the low probability of an event that would pressurize primary containment. If vacuum breaker position indication is not reliable, an alternate method of verifying that the vacuum breakers are closed is to verify that a differential pressure of 0.5 psid between the suppression chamber and drywell is maintained for 1 hour without makeup. The required 2 hour Completion Time is considered adequate to perform this test.

If the inoperable suppression chamber-to-drywell vacuum breaker cannot be closed or restored to OPERABLE status within the required Completion Time, the plant must be brought to an OPERATIONAL CONDITION in which the LCO does not apply. To achieve this status, the plant must be brought to at least OPERATIONAL CONDITION 3 within 12 hours and to OPERATIONAL CONDITION 4 within the following 24 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

SURVEILLANCE REQUIREMENTS: Each vacuum breaker is verified closed to ensure that this potential large bypass leakage path is not present. This Surveillance is performed by observing the vacuum breaker position indication or by verifying that a differential pressure of 0.5 psid between the suppression chamber and drywell is maintained for 1 hour without makeup. The 14 day Frequency is based on engineering judgment, is considered adequate in view of other indications of vacuum breaker status available to operations personnel, and has been shown to be acceptable through operating experience.

A Note is added to this SR that allows suppression chamber-to-drywell vacuum breakers opened in conjunction with the performance of a Surveillance to not be considered as failing this SR. These periods of opening vacuum breakers are controlled by plant procedures and do not represent inoperable vacuum breakers.

Each required vacuum breaker must be cycled to ensure that it opens adequately to perform its design function and returns to the fully closed position. This ensures that the safety analysis assumptions are valid. The 31-day Frequency of this SR was developed, based on Inservice Testing Program requirements to perform valve testing at least once every 92 days. A 31-day Frequency was chosen to provide additional assurance that the vacuum breakers are OPERABLE, since they are located in a harsh environment (the suppression chamber airspace). In addition, this functional test is required within 12 hours after a discharge of steam to the suppression chamber from the safety/relief valves.

Verification of the vacuum breaker opening setpoint is necessary to ensure that the safety analysis assumption regarding vacuum breaker full open differential pressure of 0.20 psid is valid. The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. For this facility, the 18-month Frequency has been shown to be acceptable, based on operating experience, and is further justified because of other surveillances performed at shorter Frequencies that convey the proper functioning status of each vacuum breaker.

Reactor Building-to-Suppression Chamber Vacuum Breakers

BACKGROUND: The function of the reactor building-to-suppression chamber vacuum breakers is to relieve vacuum when primary containment depressurizes below reactor building pressure. If the drywell depressurizes below reactor building pressure, the negative differential pressure is mitigated by flow through the reactor building-to-suppression chamber vacuum breakers and through the suppression-chamber-to-drywell vacuum breakers. The design of the external (reactor building-to-suppression chamber) vacuum relief provisions consists of two vacuum breakers (a check type vacuum relief valve and an air operated butterfly valve located in series) in each of two lines from the reactor building to

the suppression chamber airspace. The butterfly valve is actuated by differential pressure. The vacuum breaker is self-actuating and can be remotely operated for testing purposes. The two vacuum breakers in series must be closed to maintain a leak tight primary containment boundary.

A negative differential pressure across the drywell wall is caused by rapid depressurization of the drywell. Events that cause this rapid depressurization are cooling cycles, inadvertent primary containment spray actuation, and steam condensation in the event of a primary system rupture. Reactor building-to-suppression chamber vacuum breakers prevent an excessive negative differential pressure across the primary containment boundary. Cooling cycles result in minor pressure transients in the drywell, which occur slowly and are normally controlled by heating and ventilation equipment. Inadvertent spray actuation results in a more significant pressure transient and becomes important in sizing the external (reactor building-to-suppression chamber) vacuum breakers.

The external vacuum breakers are sized on the basis of the air flow from the secondary containment that is required to mitigate the depressurization transient and limit the maximum negative containment (drywell and suppression chamber) pressure to within design limits. The maximum depressurization rate is a function of the primary containment spray flow rate and temperature and the assumed initial conditions of the primary containment atmosphere. Low spray temperatures and atmospheric conditions that yield the minimum amount of contained noncondensable gases are assumed for conservatism.

APPLICABLE SAFETY ANALYSES: Analytical methods and assumptions involving the reactor building-to-suppression chamber vacuum breakers are presented in Section 6.2 and Appendix 6A of the Hope Creek UFSAR as part of the accident response of the containment systems. Internal (suppression-chamber-to-drywell) and external (reactor building-to-suppression chamber) vacuum breakers are provided as part of the primary containment to limit the negative differential pressure across the drywell and suppression chamber walls, which form part of the primary containment boundary.

The safety analyses assume the external vacuum breakers to be closed initially and to be fully open at 0.25 psid. Additionally, of the two reactor building-to-suppression chamber vacuum breakers, one is assumed to fail in a closed position to satisfy the single active failure criterion. Design Basis Accident (DBA) analyses require the vacuum breakers to be closed initially and to remain closed and leak tight with positive primary containment pressure.

The reactor building-to-suppression chamber vacuum breakers satisfy Criterion 3 of the NRC Policy Statement.

LCO: All reactor building-to-suppression chamber vacuum breakers are required to be OPERABLE to satisfy the assumptions used in the safety analyses. The requirement ensures that the two vacuum breakers (vacuum breaker and air operated butterfly valve) in each of the two lines from the reactor building to the suppression chamber airspace are closed (except during testing or when performing their intended function). Also, the requirement ensures both vacuum breakers in each line will open to relieve a negative pressure in the suppression chamber.

APPLICABILITY: In OPERATIONAL CONDITIONS 1, 2, and 3, a DBA could cause pressurization of primary containment. In OPERATIONAL CONDITIONS 1, 2, and 3, the Suppression Pool Spray System is required to be OPERABLE to mitigate the effects of a DBA. Excessive negative pressure inside primary containment could occur due to inadvertent initiation of this system. Therefore, the vacuum breakers are required to be OPERABLE in OPERATIONAL CONDITIONS 1, 2, and 3, when the Suppression Pool Spray System is required to be OPERABLE, to mitigate the effects of inadvertent actuation of the Suppression Pool Spray System.

Also, in OPERATIONAL CONDITIONS 1, 2, and 3, a DBA could result in excessive negative differential pressure across the drywell wall caused by the rapid depressurization of the drywell. The event that results in the limiting rapid depressurization of the drywell is the primary system rupture, which purges the drywell of air and fills the drywell free airspace with steam. Subsequent condensation of the steam would result in depressurization of the drywell. The limiting pressure and temperature of the primary system prior to a DBA occur in OPERATIONAL CONDITIONS 1, 2, and 3.

In OPERATIONAL CONDITIONS 4 and 5, the probability and consequences of these events are reduced due to the pressure and temperature limitations in these OPERATIONAL CONDITIONS. Therefore, maintaining reactor building-to-suppression chamber vacuum breakers OPERABLE is not required in OPERATIONAL CONDITION 4 or 5.

ACTIONS: Action a: With one vacuum breaker assembly with one or two valves inoperable for opening, the leak tight primary containment boundary is intact. The ability to mitigate an event that causes a containment depressurization is threatened, however, if both vacuum breakers in at least one vacuum breaker assembly are not OPERABLE. Therefore, the inoperable vacuum breaker must be restored to OPERABLE status within 72 hours. This is consistent with the Completion Time for Action c and the fact that the leak tight primary containment boundary is being maintained.

Action b: With two vacuum breaker assemblies with one or more vacuum breakers inoperable for opening, the primary containment boundary is intact. However, in the event of a containment depressurization, the function of the vacuum breakers is lost.

Therefore, both valves in one assembly must be restored to OPERABLE status within 1 hour. This Completion Time is consistent with the ACTIONS of LCO 3.6.1.1, which requires that primary containment be restored to OPERABLE status within 1 hour.

Action c: With one or more vacuum breaker assemblies with one valve not closed, the leak tight primary containment boundary may be threatened. Therefore, the inoperable valves must be restored to OPERABLE status or the open vacuum breaker assembly valve closed within 72 hours. The 72 hour Completion Time is consistent with requirements for inoperable suppression-chamber-to-drywell vacuum breakers in LCO 3.6.4.1, "Suppression-Chamber-to-Drywell Vacuum Breakers." The 72 hour Completion Time takes into account the redundant capability afforded by the remaining valves, the fact that an OPERABLE valve in each of the assemblies is closed, and the low probability of an event occurring that would require the valves to be OPERABLE during this period.

Action d: With one or more vacuum breaker assemblies with two valves not closed, primary containment integrity is not maintained. Therefore, one open valve in each affected assembly must be closed within 1 hour. This Completion Time is consistent with the ACTIONS of LCO 3.6.1.1, "Primary Containment," which requires that primary containment be restored to OPERABLE status within 1 hour.

If all the valves in a vacuum breaker assembly cannot be closed or restored to OPERABLE status within the required Completion Time, the plant must be brought to an OPERATIONAL CONDITION in which the LCO does not apply. To achieve this status, the plant must be brought to at least OPERATIONAL CONDITION 3 within 12 hours and to OPERATIONAL CONDITION 4 within the following 24 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

SURVEILLANCE REQUIREMENTS: Each vacuum breaker is verified to be closed to ensure that a potential breach in the primary containment boundary is not present. This Surveillance is performed by observing local or control room indications of vacuum breaker position. The 14 day Frequency is based on engineering judgment, is considered adequate in view of other indications of vacuum breaker status available to operations personnel, and has been shown to be acceptable through operating experience.

A Note is added to this SR. The first part of the Note allows reactor-to-suppression chamber vacuum breakers opened in conjunction with the performance of a Surveillance to not be considered as failing this SR. These periods of opening vacuum breakers are controlled by plant procedures and do not represent inoperable vacuum breakers. The second part of the Note is

included to clarify that vacuum breakers open due to an actual differential pressure are not considered as failing this SR.

Each vacuum breaker must be cycled to ensure that it opens properly to perform its design function and returns to its fully closed position. This ensures that the safety analysis assumptions are valid. The 31 day Frequency of this SR was developed based upon Inservice Testing Program requirements to perform valve testing at least once every 31 days.

Demonstration of vacuum breaker opening setpoint is necessary to ensure that the safety analysis assumption regarding vacuum breaker full open differential pressure of 0.25 psid is valid. The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. For this unit, the 18 month Frequency has been shown to be acceptable, based on operating experience, and is further justified because of other surveillances performed at shorter Frequencies that convey the proper functioning status of each vacuum breaker.