

I. OVERVIEW / SIGNATURES

Facility: Waterford 3 Steam Electric Station

Documents Reviewed: EC-M88-021, Rev 2, "Station Blackout (SBO): Condensate (EFW) Water Requirements", (DRN 03-2204); EC-E89-016, Rev 2, "Station Blackout Response for Waterford 3", (DRN 04-651); ER-W3-2004-0520-000, "FSAR Changes Due to DRN 03-2204 for Calculation EC-M88-021"

Change/Rev.: As Noted

System Designator(s)/Description: N/A

Description of Proposed Change

The changes to EC-M88-021 (DRN 03-2204) and to EC-E89-016 (DRN 04-651) update the calculations to account for (1) additional condensate water requirements that will exist after a scheduled power uprate from 3390 MWth to 3716 MWth to be implemented starting in Cycle 14 in accordance with ER-W3-2001-1149-000 and, (2) additional condensate water requirements to address cooldown of the Reactor Coolant System to 400 °F during the four-hour coping period of a Station Blackout (SBO) event as allowed in OP-902-005, "Station Blackout Recovery", and discussed in CR-WF3-2003-02452. The FSAR is potentially impacted by these changes since the inventory of condensate required to remove decay heat in a SBO event is presented in FSAR Appendix 8.1A.

Check the applicable review(s): (Only the sections indicated must be included in the Review.)

<input type="checkbox"/>	EDITORIAL CHANGE of a Licensing Basis Document	Section I
<input type="checkbox"/>	SCREENING	Sections I and II required
<input type="checkbox"/>	50.59 EVALUATION EXEMPTION	Sections I, II, and III required
<input checked="" type="checkbox"/>	50.59 EVALUATION (#: <u>04007</u>)	Sections I, II, and IV required

Preparer: P.M. Melancon / *PM Mel* / EOI / W3 Nuclear Engineering / 11-10-04
 Name (print) / Signature / Company / Department / Date

Reviewer: E.G. Wiegert / *E.G. Wiegert* / EOI / W3 Nuclear Engineering / 11-10-04
 Name (print) / Signature / Company / Department / Date

OSRC: Richard J. Madjerek / *Richard J. Madjerek* / 11-10-04
 Chairman's Name (print) / Signature / Date
 [Required only for Programmatic Exclusion Screenings (see Section 5.8) and 50.59 Evaluations.]

II. SCREENINGS

A. Licensing Basis Document Review

1. Does the proposed activity impact the facility or a procedure as described in any of the following Licensing Basis Documents?

Operating License	YES	NO	CHANGE # and/or SECTIONS IMPACTED
Operating License	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
TS	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
NRC Orders	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

If "YES", obtain NRC approval prior to implementing the change by initiating an LBD change in accordance with NMM LI-113. (See Section 5.2[13] for exceptions.)

LBDs controlled under 50.59	YES	NO	CHANGE # (if applicable) and/or SECTIONS IMPACTED
FSAR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Appendix 8.1A (ER-W3-2004-0520-000, DRN 04-1680)
TS Bases	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Technical Requirements Manual	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Core Operating Limits Report	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
NRC Safety Evaluation Report and supplements for the initial FSAR ¹	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
NRC Safety Evaluations for amendments to the Operating License ¹	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Section 2.2.1 of the SE for the Station Blackout Rule (Ref. ILN92-0035 dated 1/15/92); Section 3.7.2.4 of the SE for Amendment 183 to the OL for Appendix K Margin Recovery (Ref. ILN02-0055 dated 3/29/02)

If "YES", perform an Exemption Review per Section III OR perform a 50.59 Evaluation per Section IV OR obtain NRC approval prior to implementing the change. If obtaining NRC approval, document the LBD change in Section II.A.5; no further 50.59 review is required. However, the change cannot be implemented until approved by the NRC. AND initiate an LBD change in accordance with NMM LI-113.

LBDs controlled under other regulations	YES	NO	CHANGE # (if applicable) and/or SECTIONS IMPACTED
Quality Assurance Program Manual ²	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Emergency Plan ^{2, 3}	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Fire Protection Program ^{3, 4} (includes the Fire Hazards Analysis)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Offsite Dose Calculations Manual ^{3, 4}	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

If "YES", evaluate any changes in accordance with the appropriate regulation AND initiate an LBD change in accordance with NMM LI-113. No further 50.59 review is required.

¹ If "YES," see Section 5.2[5]. No LBD change is required.

² If "YES," notify the responsible department and ensure a 50.54 Evaluation is performed. Attach the 50.54 Review.

³ Changes to the Emergency Plan, Fire Protection Program, and Offsite Dose Calculation Manual must be approved by the OSRC in accordance with NMM OM-119.

⁴ If "YES," evaluate the change in accordance with the requirements of the facility's Operating License Condition or under 50.59, as appropriate.

2. Does the proposed activity involve a test or experiment not described in the FSAR? Yes
 No

If "yes," perform a 50.59 Evaluation per Section IV OR obtain NRC approval prior to implementing the change AND initiate an LBD change in accordance with NMM LI-113. If obtaining NRC approval, document the change in Section II.A.5; no further 50.59 review is required. However, the change cannot be implemented until approved by the NRC.

3. Basis

Explain why the proposed activity does or does not impact the Operating License/Technical Specifications and/or the FSAR and why the proposed activity does or does not involve a new test or experiment not previously described in the FSAR. Discuss other LBDs if impacted. Adequate basis must be provided within the Screening such that a third-party reviewer can reach the same conclusions. Simply stating that the change does not affect TS or the FSAR is not an acceptable basis. See EOI 50.59 Guidelines Section 5.3.2 for guidance.

Operating License/Technical Specifications/NRC Safety Evaluations

The Waterford 3 Operating License and Technical Specifications do not address the Station Blackout (SBO) event or associated coping requirements. In Section 2.2.1 of the Safety Evaluation for the Station Blackout Rule (Ref. ILN92-0035 dated 1/15/92), the NRC agreed that there is adequate condensate to cope with a four-hour SBO based on 80,000 gallons being required and 170,000 gallons being available. The current revision of the FSAR is consistent with the NRC's evaluation. Specifically, Item 1 in Section C of the "Discussion" in FSAR Appendix 8.1A (Condensate Inventory for Decay Heat Removal) reports that approximately 80,000 gallons of water are required for decay heat removal for the four-hour SBO and that the minimum permissible condensate storage tank level required by Technical Specifications exceeds the required quantity for coping. Section 3.7.2.4 of the Safety Evaluation for Amendment 183 to the Operating License for Appendix K Margin Recovery (Ref. ILN02-0055 dated 3/29/02) addressed the additional condensate water needed to cope with a four-hour SBO after implementation of a 1.5% increase in licensed power from 3390 to 3441 MWth. It was determined that the actual water required increased from 75,429 gallons to 76,557 gallons. The NRC concluded that this was acceptable since the quantity of water needed was still less than the minimum Technical Specification requirement of 170,000 gallons. In both NRC safety evaluations mentioned above, the basis for acceptability of the condensate water requirements for coping with a SBO event at Waterford was that the required quantity be less than the Technical Specification minimum requirement. Thus, the NRC's basis for approving Waterford's initial submittal on compliance with the Station Blackout Rule and its acknowledgement of continued acceptability as given in the safety evaluation for the Appendix K Margin Recovery are still valid. No changes are applicable to NRC safety evaluations as described in ENS-LI-101 Revision 4, Section 5.2 [5].

FSAR

Currently, FSAR Appendix 8.1A reports that 80,000 gallons of condensate inventory are required to cope with a four-hour duration SBO event. The changes being made to EC-M88-021 (DRN 03-2204) and EC-E89-016 (DRN 04-651) establish that approximately 106,300 gallons of condensate inventory are now required assuming decay heat based on a power level of 3716 MWth (extended power uprate to be implemented in Cycle 14) and incorporating the provision for a cooldown of the RCS as allowed in OP-902-005, "Station Blackout Recovery". The updated condensate water consumption still remains below the Technical Specification minimum requirement of 170,000 gallons. FSAR Appendix 8.1A will be revised to reflect the updated condensate requirements (ER-W3-2004-0520-000, DRN 04-1680).

Other LBDs

No other LBDs are impacted by the changes to required condensate inventory for SBO.

Tests or Experiments Considerations

The changes to EC-M88-021, EC-89-016, and FSAR Appendix 8.1-A are document changes only. No testing of any kind is being performed nor is any testing required by the changes. Therefore, the changes do not involve a new test or experiment not previously described in the FSAR.

4. References

Discuss the methodology for performing LBD searches. State the location of relevant licensing document information and explain the scope of the review such as electronic search criteria used (e.g., key words) or the general extent of manual searches per Section 5.4.1[5](d) of LI-101. **NOTE: Ensure that manual searches are performed using controlled copies of the documents. If you have any questions, contact your site Licensing department.**

LBDs/Documents reviewed via keyword search:

Autonomy was used to search the Licensing Research system. The Information Source used was the "50.59_Search" group.

Keywords:
"NUMARC 87-00" (2 hits)
"station blackout" (11 hits)
"SBO" (6 hits)
"blackout" (14 hits)
"condensate inventory" (3 hits)
"blackout" AND "condensate" (11 hits)
"SBO" AND "condensate" (3 hits)
"station blackout" AND "EFW" (10 hits)

LBDs/Documents reviewed manually:

FSAR Chapter 8 and Appendix 8.1A

The electronic search of the keywords and logical combinations shown above identified that the only LBD to be revised due to the changes to EC-M88-021 and EC-E89-016 is the FSAR. Specifically, Item 1 in Section C under "Discussion" in Appendix 8.1A (Condensate Inventory for Decay Heat Removal) reports that approximately 80,000 gallons of water are required for decay heat removal for the four-hour SBO. The updated calculations show that approximately 106,300 gallons are necessary.

5. **Is the validity of this Review dependent on any other change?** (See Section 5.3.4 of the EOI 10 CFR 50.59 Program Review Guidelines.) Yes No

If "YES", list the required changes/submittals. The changes covered by this 50.59 Review cannot be implemented without approval of the other identified changes (e.g., license amendment request). Establish an appropriate notification mechanism to ensure this action is completed.

N/A

B. ENVIRONMENTAL SCREENING

If any of the following questions is answered "yes," an Environmental Review must be performed in accordance with NMM Procedure EV-115, "Environmental Evaluations," and attached to this 50.59 Review. Consider both routine and non-routine (emergency) discharges when answering these questions.

Will the proposed Change being evaluated:

- | | <u>Yes</u> | <u>No</u> | |
|-----|--------------------------|-------------------------------------|--|
| 1. | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Involve a land disturbance of previously disturbed land areas in excess of one acre (i.e., grading activities, construction of buildings, excavations, reforestation, creation or removal of ponds)? |
| 2. | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Involve a land disturbance of undisturbed land areas (i.e., grading activities, construction, excavations, reforestation, creating, or removing ponds)? |
| 3. | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Involve dredging activities in a lake, river, pond, or stream? |
| 4. | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Increase the amount of thermal heat being discharged to the river or lake? |
| 5. | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Increase the concentration or quantity of chemicals being discharged to the river, lake, or air? |
| 6. | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Discharge any chemicals new or different from that previously discharged? |
| 7. | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Change the design or operation of the intake or discharge structures? |
| 8. | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Modify the design or operation of the cooling tower that will change water or air flow characteristics? |
| 9. | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Modify the design or operation of the plant that will change the path of an existing water discharge or that will result in a new water discharge? |
| 10. | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Modify existing stationary fuel burning equipment (i.e., diesel fuel oil, butane, gasoline, propane, and kerosene)? ¹ |
| 11. | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Involve the installation of stationary fuel burning equipment or use of portable fuel burning equipment (i.e., diesel fuel oil, butane, gasoline, propane, and kerosene)? ¹ |
| 12. | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Involve the installation or use of equipment that will result in a new or additional air emission discharge? |
| 13. | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Involve the installation or modification of a stationary or mobile tank? |
| 14. | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Involve the use or storage of oils or chemicals that could be directly released into the environment? |
| 15. | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Involve burial or placement of any solid wastes in the site area that may affect runoff, surface water, or groundwater? |

¹ See NMM Procedure EV-117, "Air Emissions Management Program," for guidance in answering this question.
LI-101-01, Rev. 4

C. SECURITY PLAN SCREENING

If any of the following questions is answered "yes," a Security Plan Review must be performed by the Security Department to determine actual impact to the Plan and the need for a change to the Plan.

Could the proposed activity being evaluated:

- | | <u>Yes</u> | <u>No</u> | |
|-----|--------------------------|-------------------------------------|--|
| 1. | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Add, delete, modify, or otherwise affect Security department responsibilities (e.g., including fire brigade, fire watch, and confined space rescue operations)? |
| 2. | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Result in a breach to any security barrier(s) (e.g., HVAC ductwork, fences, doors, walls, ceilings, floors, penetrations, and ballistic barriers)? |
| 3. | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Cause materials or equipment to be placed or installed within the Security Isolation Zone? |
| 4. | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Affect (block, move, or alter) security lighting by adding or deleting lights, structures, buildings, or temporary facilities? |
| 5. | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Modify or otherwise affect the intrusion detection systems (e.g., E-fields, microwave, fiber optics)? |
| 6. | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Modify or otherwise affect the operation or field of view of the security cameras? |
| 7. | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Modify or otherwise affect (block, move, or alter) installed access control equipment, intrusion detection equipment, or other security equipment? |
| 8. | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Modify or otherwise affect primary or secondary power supplies to access control equipment, intrusion detection equipment, other security equipment, or to the Central Alarm Station or the Secondary Alarm Station? |
| 9. | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Modify or otherwise affect the facility's security-related signage or land vehicle barriers, including access roadways? |
| 10. | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Modify or otherwise affect the facility's telephone or security radio systems? |

Documentation for accepting any "yes" statement for these reviews will be attached to this 50.59 Review or referenced below.

N/A

D. INDEPENDENT SPENT FUEL STORAGE INSTALLATION (ISFSI) SCREENING

If any of the following questions is answered "yes," an ISFSI Review must be performed in accordance with NMM Procedure LI-112, "72.48 Review," and attached to this Review.

Will the proposed Change being evaluated:

- | | <u>Yes</u> | <u>No</u> | |
|-----|--------------------------|-------------------------------------|--|
| 1. | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Any activity that directly impacts spent fuel cask storage or loading operations? |
| 2. | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Involve the Independent Spent Fuel Storage Installation (ISFSI) including the concrete pad, security fence, and lighting? |
| 3. | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Involve a change to the on-site transport equipment or path from the Fuel Building to the ISFSI? |
| 4. | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Involve a change to the design or operation of the Fuel Building fuel bridge including setpoints and limit switches? |
| 5. | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Involve a change to the Fuel Building or Control Room(s) radiation monitoring? |
| 6. | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Involve a change to the Fuel Building pools including pool levels, cask pool gates, cooling water sources, and water chemistry? |
| 7. | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Involve a change to the Fuel Building handling equipment (e.g., bridges and cask cranes, structures, load paths, lighting, auxiliary services, etc)? |
| 8. | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Involve a change to the Fuel Building electrical power? |
| 9. | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Involve a change to the Fuel Building ventilation? |
| 10. | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Involve a change to the ISFSI security? |
| 11. | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Involve a change to off-site radiological release projections from non-ISFSI sources? |
| 12. | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Involve a change to spent fuel characteristics? |
| 13. | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Redefine/change heavy load pathways? |
| 14. | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Fire and explosion protection near or in the on-site transport paths or near the ISFSI? |
| 15. | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Involve a change to the loading bay or supporting components? |
| 16. | <input type="checkbox"/> | <input checked="" type="checkbox"/> | New structures near the ISFSI? |
| 17. | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Modifications to any plant systems that support dry fuel storage activities? |
| 18. | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Involve a change to the nitrogen supply, service air, demineralized water or borated water system in the Fuel Building? |

III. 50.59 EVALUATION EXEMPTION

Enter this section only if a "yes" box was checked in Section II.A.1, above.

A. Check the applicable boxes below. If any of the boxes are checked, clearly document the basis in Section II.B, below. If none of the boxes are appropriate, perform a 50.59 Evaluation in accordance with Section IV. Provide supporting documentation or references as appropriate.

- The proposed activity meets all of the following criteria regarding design function per Section 5.5[1](a):

The proposed activity does not adversely affect the design function of an SSC as described in the FSAR; **AND**

The proposed activity does not adversely affect a method of performing or controlling a design function of an SSC as described in the FSAR; **AND**

The proposed activity does not adversely affect a method of evaluation that demonstrates intended design function(s) of an SSC described in the FSAR will be accomplished.

- An approved, valid 50.59 Review(s) covering associated aspects of the proposed activity already exists per Section 5.5[1](b). Reference 50.59 Evaluation # _____ (if applicable) or attach documentation. Verify the previous 50.59 Review remains valid.
- The NRC has approved the proposed activity or portions thereof per Section 5.5[1](c).
Reference: _____

B. Basis

Provide a clear, concise basis for determining the proposed activity may be exempted such that a third-party reviewer can reach the same conclusions. See Section 5.6.6 of the EOI 10 CFR 50.59 Review Program Guidelines for guidance.

NA

IV. 50.59 EVALUATION

License Amendment Determination

Does the proposed Change being evaluated represent a change to a method of evaluation Yes
ONLY? If "Yes," Questions 1 – 7 are not applicable; answer only Question 8. If "No," answer No
 all questions below.

Does the proposed Change:

1. Result in more than a minimal increase in the frequency of occurrence of an accident Yes
 previously evaluated in the FSAR? No

BASIS:

EC-M88-021 and EC-E89-016 are calculations which evaluate Waterford's ability to cope with a 4-hour Station Blackout (SBO) event. The changes to these calculations that are evaluated herein relate to new condensate inventory requirements resulting from an increase in decay heat (due to extended power uprate to be implemented in Cycle 14) and the addition of provisions for cooldown of the RCS to 400 °F as allowed in OP-902-005, "Station Blackout Recovery". The ability to use the available water is not affected in any way by the calculations or the changes to them. Neither of these calculations are used to operate the reactor, plant electrical systems, or connections to offsite power. Also, the results of the calculations are not used as the basis for setpoints or other plant parameters. Therefore, the changes to the calculations do not cause a change in the frequency of the SBO event or any other event previously evaluated in the FSAR.

2. Result in more than a minimal increase in the likelihood of occurrence of a malfunction of a Yes
 structure, system, or component important to safety previously evaluated in the FSAR? No

BASIS:

The changes to EC-M88-021 and EC-E89-016 are associated with condensate inventory requirements to cope with a 4-hour SBO. The results of the calculations are not used to modify plant systems or operating and maintenance procedures. Also, the results are not the basis for any setpoints used in plant equipment. Hence, the changes to the calculation evaluated herein will not impact any SSCs or cause an increase in the likelihood that they will malfunction.

3. Result in more than a minimal increase in the consequences of an accident previously Yes
 evaluated in the FSAR? No

BASIS:

The "accident" to be considered here is a 4-hour duration SBO event. The changes to EC-M88-021 and EC-E89-016 evaluated herein show that more condensate inventory must be available to cope with this event when accounting for extended power uprate and allowing for a primary system cooldown to 400 °F. However, since the quantity of condensate necessary (106,300 gallons) is still less than the minimum quantity required by Technical Specifications (170,000 gallons), an adequate quantity of water is available to remove decay heat and cool the primary (if desired) during a SBO event. Therefore, removal of decay heat and cooldown of the primary (if desired) will be accomplished in the same manner as it was before the calculations were changed. The only difference is that more water will be consumed. The ability to use the available water is not affected in any way by the calculations or the changes to them. Therefore, the consequences of the SBO event are not changed from what is evaluated in the FSAR.

4. Result in more than a minimal increase in the consequences of a malfunction of a structure, Yes
 system, or component important to safety previously evaluated in the FSAR? No

BASIS:

Calculations EC-M88-021 and EC-E89-016 and the changes to these calculations being evaluated do not have any interface with plant systems or equipment. The results of the calculations are not used to establish operating parameters or setpoints for equipment. Malfunctions of the SSCs previously considered are not affected by the inventory of condensate required to cope with a SBO event. Thus, since no SSCs are impacted by the calculations in any way, there is no increase in consequences of a malfunction of SSCs.

5. Create a possibility for an accident of a different type than any previously evaluated in the FSAR? Yes
 No

BASIS:

The changes to EC-M88-021 and EC-E89-016 which are being evaluated are associated with the amount of condensate inventory that is required to cope with a SBO event. These calculations are not used to operate plant equipment and results from the calculations are not used as the basis for setpoints or other plant parameters. The results of the changes to the calculations show that enough condensate will be available for Emergency Feedwater (EFW) as long as the plant is operated within its Technical Specifications. Therefore, removal of decay heat and cooldown of the primary (if desired) will be accomplished in the same manner as it was before the calculations were changed. The only difference is that more water will be consumed. The ability to use the available water is not affected in any way by the calculations or the changes to them. Therefore, making the changes to the calculations will not cause any accidents or create new ones not previously evaluated in the FSAR.

6. Create a possibility for a malfunction of a structure, system, or component important to safety with a different result than any previously evaluated in the FSAR? Yes
 No

BASIS:

As previously stated, the changes to EC-M88-021 and EC-E89-016 show that adequate condensate will still be available for use by the EFW System. No changes are being made to equipment or its setpoints and the capability of equipment is not changing. Making the changes to the calculations will not cause any equipment to be operated in a different manner than before. Hence, no SSCs will be affected by the changes and the results of malfunctions already evaluated in the FSAR will not change.

7. Result in a design basis limit for a fission product barrier as described in the FSAR being exceeded or altered? Yes
 No

BASIS:

The results of the changes to EC-M88-021 and EC-E89-016 show that enough condensate will be available for Emergency Feedwater (EFW) as long as the plant is operated within its Technical Specifications. The equipment in the EFW System and supporting systems is not impacted by the calculation changes. Therefore, removal of decay heat and cooldown of the primary (if desired) will be accomplished in the same manner as it was before the calculations were changed. The only difference is that more water will be consumed. Therefore, the performance of fission product barriers will not change as a result of the updated condensate requirements and no design limits for the barriers will be exceeded.

8. Result in a departure from a method of evaluation described in the FSAR used in establishing the design bases or in the safety analyses? Yes
 No

BASIS:

The method for calculating the condensate inventory required to cope with a SBO event is not explicitly described in the FSAR. However, FSAR Appendix 8.1A references NUMARC 87-00 which does provide a method for determining the condensate required for decay heat removal only, that is, without a primary system cooldown. NUMARC 87-00 is not prescriptive regarding how to determine the quantity of condensate required to cooldown.

The revision to FSAR Appendix 8.1A evaluated herein is based on the NUMARC method which includes an allowance for condensate required to cooldown. Since no methodology is given in NUMARC 87-00 for determining how much condensate is required for a cooldown, the results of EC-M88-021 are used. The change to EC-M88-021, as described in Section 1 of this evaluation, included both the impact of increased decay heat and the impact on water requirements from a cooldown to 400 °F. It should be noted that the actual quantity of condensate necessary to remove decay heat calculated in the change to EC-M88-021 is less than the quantity determined by the NUMARC method. Therefore, the value determined by the NUMARC method (and included in the revision to FSAR Appendix 8.1A) is conservative.

Based on the above, methods used to develop the changes evaluated herein do not result in a departure from methods described in the FSAR for establishing design bases of the SBO event.

If any of the above questions is checked "YES", obtain NRC approval prior to implementing the change by initiating a change to the Operating License in accordance with NMM Procedure ENS-LI-113.