## I. OVERVIEW / SIGNATURES

**Facility:** Waterford 3

**Document Reviewed:** *ER-W3-2004-0331-000* **Change/Rev.:** *0*

**System Designator(s)/Description:** Reactor Cavity Cooling System (RCCS), Containment Building (CB)

**Description of Proposed Change:**

CR-WF3-2004-01335 identified licensing and design basis document discrepancies regarding the design temperature of the reactor cavity. Calculation 6W12RB4Q, Rev. 1 originally contained an ambient temperature of 120°F and was updated in 1977 to reflect a new ambient steady state design air temperature of 145°F for the upper reactor cavity and 135°F for the lower reactor cavity. However, FSAR Section 9.4.5.6.1and FSAR Section 3.8.3.3.1 were not identified as affected documents nor updated to reflect the design change. W3-DBD-010, section 3.2.2.1, when issued later, also reflected the lower reactor cavity primary shield wall temperature of 120°F.

The proposed Engineering Evaluation documented in ER-W3-2004-0331-000 will revise FSAR Section 9.4.5.6.1 to state: "The Reactor Cavity Cooling System is designed to ventilate the annular space between the reactor vessel and the concrete primary shield wall to maintain the ambient steady state air temperature from exceeding the maximum design basis air temperature of the reactor cavity during normal operations". Table 9.4-1 will be revised to include these design temperatures.

FSAR Section 3.8.3.3.1 a) Normal Loads will also be revised by ER-W3-2004-0331-000 to include clarification that the thermal load for the reactor cavity was analyzed with an ambient steady state air temperature of 145°F for the upper cavity and 135°F for the lower cavity.

Section 14.2.12.3.32.4 Acceptance Criteria will be revised to delete the "B." acceptance criteria as it is now captured in the "A" acceptance criteria that refers to Table 9.4-1.

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

| | | |
|---|---|---|
| ☐ | **EDITORIAL CHANGE of a Licensing Basis Document** | **Section I** |
| ☐ | **SCREENING** | **Sections I and II required** |
| ☐ | **50.59 EVALUATION EXEMPTION** | **Sections I, II, and III required** |
| ☒ | **50.59 EVALUATION (#: 05-026 )** | **Sections I, II, and IV required** |

**Preparer:** Albert Buford/ [signature] /ENS / MECH DESIGN / 11-09-05
Name (print) / Signature / Company / Department / Date

**Reviewer:** M.L. TOUNA / [signature] / ENS / DE-MECH / 11-9-05
Name (print) / Signature / Company / Department / Date

**OSRC:** R. A. Dodds III / [signature] 11/9/2005
Chairman's Name (print) / Signature / Date
[Required only for Programmatic Exclusion Screenings 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 | ☐ | ☒ | |
| TS | ☐ | ☒ | |
| NRC Orders | ☐ | ☒ | |
| **If "YES", obtain NRC approval prior to implementing the change by initiating an LBD change in accordance with NMM ENS-LI-113. (See Section 5.2[13] for exceptions.)** | | | |

| LBDs controlled under 50.59 | YES | NO | CHANGE # (if applicable) and/or SECTIONS IMPACTED |
|---|---|---|---|
| FSAR | ☒ | ☐ | DRN-05 -1480 FSAR 9.4.5.6.1<br>DRN-05-1534 FSAR 3.8.3.3.1<br>DRN-05-1545 FSAR 14.2.12.3.32.4 |
| TS Bases | ☐ | ☒ | |
| Technical Requirements Manual | ☐ | ☒ | |
| Core Operating Limits Report | ☐ | ☒ | |
| NRC Safety Evaluation Report and supplements for the initial FSAR[1] | ☐ | ☒ | |
| NRC Safety Evaluations for amendments to the Operating License[1] | ☐ | ☒ | |
| **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 ENS-LI-113.** | | | |

| LBDs controlled under other regulations | YES | NO | CHANGE # (if applicable) and/or SECTIONS IMPACTED |
|---|---|---|---|
| Quality Assurance Program Manual[2] | ☐ | ☒ | |
| Emergency Plan[2, 3] | ☐ | ☒ | |
| Fire Protection Program[3, 4] (includes the Fire Hazards Analysis) | ☐ | ☒ | |
| Offsite Dose Calculations Manual[3, 4] | ☐ | ☒ | |
| **If "YES", evaluate any changes in accordance with the appropriate regulation AND initiate an LBD change in accordance with NMM ENS-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.

**Operating License/Technical Specifications**

The change implemented by ER-W3-2004-0331-000 will not impact any Operating License/Technical Specifications (TS). TS 3.6.1.5 requires average Containment ambient temperature to be maintained below 120°F. This change will not affect the ability to maintain average containment ambient temperature less than 120°F, but clarifies that the reactor cavity contains elevated localized temperatures that can exceed 120°F. There is no other similar information in the Operating License / Technical Specifications

**FSAR**

The change implemented by ER-W3-2004-0331-000 will impact FSAR Section 9.4.5.6.1 and 3.8.3.3.1. The following sections were evaluated in this 50.59 Evaluation.

1. FSAR Section 9.4.5.6.1 Currently states:

   9.4.5.6 Reactor Cavity Cooling System

   9.4.5.6.1 Design Bases

   The Reactor Cavity Cooling System is designed to ventilate the annular space between the reactor vessel and the concrete primary shield wall to limit the concrete surface temperature to a maximum of 120°F. The system is not safety related, but the fans and portions of the ductwork are designed to seismic Category I requirements.

   Section 9.4.5.6.1 will be modified to state the following and is addressed in Section IV of this Evaluation:

   The Reactor Cavity Cooling System is designed to ventilate the annular space between the reactor vessel and the concrete primary shield wall to maintain the ambient steady state air temperature from exceeding the maximum design basis air temperature of the reactor cavity during normal operations.

   Table 9.4-1 will be revised to include the design temperatures of 145°F for the upper cavity and 135°F for the lower cavity.

2. Section 14.2.12.3.32.4 Acceptance Criteria will be revised to delete the "B." acceptance criteria as it is now captured in the "A" acceptance criteria that refers to Table 9.4-1 as noted above.

3. FSAR Section 3.8.3, CONCRETE AND STEEL INTERNAL STRUCTURES OF STEEL CONTAINMENT, 3.8.3.3.1 Loads states "All the major loads to be encountered or to be postulated are listed below.

   Thermal Load, T = These loads are caused by the expansion of the containment internal structure due to increased internal ambient temperature during normal operation. The temperature of all components of the internal structure is assumed to uniformly stabilize at the same temperature as the internal ambient. This is 120 °F; the as constructed temperature is assumed to be 70 °F. The thermal load due to neutron radiation within the primary shield wall is also considered."

This Section will be revised to include the following note:

"The Reactor Cavity Thermal Load was analyzed using an ambient steady state design air temperature of 145°F for the upper cavity and 135°F for the lower cavity. This is acceptable based on the results of the design basis calculation for Primary Shield Wall."

This clarification is added since the design ambient temperature of the reactor cavity is being allowed to reach a maximum ambient air temperature up to 145°F for the upper cavity and 135°F for the lower cavity. FSAR Section 3.8.3 defines the internal structures which includes compartments of the reactor cavity. Therefore, this clarification is added to prevent confusion and identify the correct analyzed thermal loads for the subject internal structure. This change is acceptable since the design basis calculation 6W12RB4Q, Rev. 1 supports these temperatures and determines that the thermal loads are acceptable and do not adversely affect the concrete.

**Test or Experiments**

The change is a documentation change only, and does not authorize any plant alterations or activities nor result in any changes to normal system operation. Therefore the change does not involve any test or experiments.

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 5.5.1[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 LRS Autonomy keyword search using 50.59 search criteria options:

**Keywords:** [120 NEAR10 concrete], [120 NEAR10 shield], ["Reactor Cavity" NEAR10 "concrete temperature"], ["Reactor Cavity" NEAR10 "concrete surface temperatures"], [ "concrete temperature"],["120"], ["heat sink" NEAR10 initial], ["heat sink" near10 temperature], ["ambient air temperature"], ["thermal load"] ["Steel Internal Structures"]

**LBDs/Documents reviewed manually:**

FSAR Section 3.8, Rev 13B
FSAR Section 14.2, Rev 12C
FSAR Section 3.9 Rev 13B
FSAR Section 6.2 Rev 13B
FSAR Section 9.4 Rev 13B
Technical Specifications Section 3/4.6
Technical Requirements Manual 3/4.6
CR-WF3-2004-1335 (Identified Condition and Operability Evaluation)
CDCC#40822 - Combustion Engineering Letter PSE-75-142, Reactor Vessel Cavity Reference Design
CN-CSE-01-37,
W3-DBD-10, Rev 2-3, Containment Cooling HVAC
W3-DBD-27, Rev 1, Nuclear Island and Containment Building
6W12RB4Q, Rev. 1, Primary Shield Wall
6W12DI1Q, Rev 4, Concrete Design Inputs
FSAR Question 022.1, Shield Wall Temperature Gradient

5. **Is the validity of this Review dependent on any other change?**

☐ **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.**

## B. ENVIRONMENTAL SCREENING

**If any of the following questions is answered "yes," an Environmental Review must be performed in accordance with NMM Procedure ENS-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:**

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

[1] See NMM Procedure ENS-EV-117, "Air Emissions Management Program," for guidance in answering this question.

## 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:**

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

## IV. 50.59 EVALUATION

**License Amendment Determination**

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

☐ Yes
☒ No

**Does the proposed Change:**

1. **Result in more than a minimal increase in the frequency of occurrence of an accident previously evaluated in the FSAR?**

☐ Yes
☒ No

**BASIS:**

Neither the primary shield wall nor the Reactor Cavity Cooling system is an accident initiator for any accidents evaluated in the FSAR. Additionally, allowing the reactor cavity ambient air temperature to increase above the 120°F ambient air design temperature, does not change the likelihood of an accident occurring. The proposed changes would result in increased thermal stresses, but these stresses were previously evaluated in calculation 6W12RB4Q, Rev. 1 and were determined to be acceptable as long as the ambient steady state air temperature is maintained under the design limit of 145°F for the upper cavity and 135° for the lower reactor cavity.

The Primary Shield Wall and the reactor support ring girder are safety related structures that could be potentially impacted by a temperature increase. However, these structures are designed for temperatures higher than the proposed changes. Calculation 6W12RB4Q, Rev. 1 evaluates the design temperatures for these structures which conclude that the proposed change would have no effect on these safety related structures.

Furthermore, the proposed changes have no impact on operator actions, operation complexity, or other human factors that could result in an accident initiation.

Therefore, this change will not result in more than a minimal increase in the frequency of occurrence of an accident previously evaluated in the FSAR.

2. **Result in more than a minimal increase in the likelihood of occurrence of a malfunction of a structure, system, or component important to safety previously evaluated in the FSAR?**

☐ Yes
☒ No

The FSAR states that the containment subcompartments are subject to pressure transients and jet impingement forces caused by the mass and energy releases from postulated high energy pipe ruptures within their boundaries. Subcompartments within which high energy ruptures are postulated include the reactor cavity, the pressurizer, and the steam generator. The reactor cavity is a heavily reinforced concrete structure that performs the dual function of providing reactor vessel support and radiation shielding. The two major pressure relief paths are the annular space around the upper vessel flange and the annular space around the six piping penetrations through the primary shield wall.

The evaluated change would not increase the probability of malfunction since the revised 145 °F for the upper cavity and 135°F for the lower cavity was determined to be within the thermal limits of the Reactor Cavity concrete without adversely affecting the concrete integrity. The reactor cavity will be capable of providing reactor vessel support and radiation shielding without increased probability of occurrence of a malfunction after the evaluated change is implemented.

The Reactor Cavity Cooling System is designed to maintain the temperature in the reactor vessel cavity such that the primary shield wall concrete temperature is maintained at a temperature below that which will cause dehydration of the primary shield wall concrete, the reactor support ring girder to be overstressed, or its thermal growth exceeded (Reference W3-DBD-10 Rev. 2-3). The Reactor Cavity Cooling System is not safety related and is not the subject of any Technical Specifications or Technical Requirements Manual.

The Primary Shield Wall and the reactor support ring girder are safety related structures. Waterford 3 Calculation 6W12RB4Q, Rev. 1 shows that the primary shield wall is designed for a maximum ambient steady state air temperature of 145°F for the upper cavity and 135°F for the lower cavity. This Calculation also includes an analysis of the Reactor Vessel Support Ring Girder and structural steel at the higher temperatures.

The proposed change does not involve any physical alteration to any supports or anchoring with regards to seismic specifications. However, these structures are designed for the temperatures in the proposed change as evaluated in Waterford 3 Calculation 6W12RB4Q, Rev. 1.

Therefore, this change will not Result in more than a minimal increase in the likelihood of occurrence of a malfunction of a structure, system, or component important to safety previously evaluated in the FSAR.

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

BASIS:

The change in the maximum concrete temperature of the primary shield wall and other changes caused by higher ambient air temperatures in the reactor cavity were analyzed in Waterford 3 calculation 6W12RB4Q Rev. 1 during original construction, demonstrating acceptable thermal stresses. The initial temperature of the passive heat sinks, that include the reactor cavity primary shield wall, assumed in the Post Accident Containment Pressure and temperature Analysis, ECM98-015, is 120°F. This value is based on the containment temperature limit of 120°F per Tech Spec 3.6.1.5. This analysis allows for elevated localized temperatures to exceed the 120 °F limit as long as the overall containment temperature is maintained below the 120 °F limit. TS 3.6.1.5 requires an average Containment ambient temperature to be below 120°F. This change will not affect the ability to maintain Containment ambient temperature below 120 F because this Tech Spec has been and is currently being met. The proposed change will not invalidate the results or methodology of the containment pressure and temperature response analysis. The proposed activity does not alter the passive heat analysis because the overall containment average temperature will not exceed the 120°F limit.

The evaluated change does not compromise the integrity of the Reactor Cavity concrete, and the consequences of containment pressure and temperature response analysis. The evaluated change was also determined to have no affect on the related components.

Therefore, this change will not result in more than a minimal increase in the consequences of an accident previously evaluated in the FSAR

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

BASIS:

The Reactor Cavity Cooling System is not a safety related system and is therefore not credited with mitigating any accident consequences. The change in the maximum concrete temperature of the primary shield wall and other changes caused by higher ambient steady state air temperatures in the reactor cavity were analyzed in Waterford 3 calculation 6W12RB4Q Rev. 1 during original construction, demonstrating acceptable thermal stresses.

The Reactor Cavity Cooling System (RCCS) is not a safety-related system. However, the fans and portions of the ductwork are designed and installed to satisfy seismic Category I requirements. Where the collapse of ductwork can cause damage of safety-related equipment located close to the duct, that portion of the ductwork is seismically qualified to remain intact in the event of a safe shutdown earthquake. The evaluated change will not impact the RCCS; however, the evaluated change will allow for a higher value for steady state design air temperature resulting in a higher concrete temperature in the reactor cavity and higher thermal stresses that are imposed on the concrete. These effects were considered when deriving the steady state design air temperature as determined in Waterford 3 calculation 6W12RB4Q, Rev. 1 which justifies that the thermal stresses would be insignificant and not challenge the structural integrity of the reactor cavity.

Review of the FSAR concludes that the containment integrity must be kept within a certain pressure and temperature to ensure proper function of the containment System, Structure, or Component (SSC). The maximum containment pressure will not be breached by the evaluated change. The containment temperature bounded by the FSAR is not a localized temperature, but a containment ambient temperature of 120 °F which allows for elevated localized temperatures as long as the average maximum average containment temperature is maintained. TS 3.6.1.5 requires average Containment ambient temperature to be below 120°F. This change will not affect the ability to maintain Containment ambient temperature.

Since the evaluated change does not compromise the integrity of the Reactor Cavity concrete, the consequences of a malfunction are not changed. The evaluated change was determined to have an insignificant affect related to increasing the consequences of a malfunction on all the related components; therefore, it can be concluded that all postulated design functions from the FSAR are still valid post implementation of the evaluated change. The reactor cavity will be capable of providing reactor vessel support and radiation shielding without increased probability of occurrence of a malfunction after the evaluated change is implemented.

Therefore, the change will not result in any increase in the consequences of a malfunction of a structure which are analyzed for more bounding severe design basis accident conditions (i.e. Loss Of Cooling Accident), system, or component important to safety previously evaluated in the FSAR.

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

BASIS:

The evaluated change does not create a possibility of an accident that has not been previously evaluated in the FSAR. An increase in the allowable steady state design air temperature to 145 °F for the upper cavity and 135°F for the lower cavity does not pose a threat to the integrity of the cavity or any components located within the cavity; therefore, there is no possibility of any additional, non-analyzed accident occurring. No new failures or failure modes of any structure, systems, or components are induced by this change.

Therefore, this change does not create a possibility for an accident of a different type than 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:

The Reactor Cavity Cooling System is not a safety related system and is therefore not credited with mitigating any accident consequences. The change in the maximum ambient steady state air temperature near the primary shield wall and other changes caused by higher ambient temperatures in the reactor cavity were analyzed in Waterford 3 calculation 6W12RB4Q Rev. 1 during original construction, demonstrating acceptable thermal stresses.

Since the evaluated change does not compromise the integrity of the Reactor Cavity concrete, the possibility of a malfunction as a result of these changes would not occur. The evaluated change was determined to have an insignificant affect related to creating the possibility of a malfunctions on all the related components; therefore, it can be concluded that all postulated design functions from the FSAR are still valid post implementation of the evaluated change. The reactor cavity will be capable of providing reactor vessel support and radiation shielding without increased probability of occurrence of a malfunction after the evaluated change is implemented.

Therefore, this change does not create a possibility for a malfunction of a structure, systems, or components important to safety with a different result than any previously evaluated in the FSAR.

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 evaluated change does not affect the design basis for the fuel cladding, RCS boundary, or the overall containment pressure. The evaluated change will only affect the design basis for the Reactor Cavity Cooling System and maximum design ambient air temperatures in the upper and lower cavity. The overall average maximum containment temperature will not change The Reactor Cavity is not part of the barriers that are subject to 10 CFR50.2 criterions, nor does it impact a fission product barrier.

Therefore this change will not result in a design basis limit for a fission product barrier as described in the FSAR being exceeded or altered.

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 Evaluated change is not a methodological change, and would only be considered a verified specification change for the Reactor Cavity concrete structural integrity justified by documented calculation results. The calculation 6W12RB4Q updated in 1977 was performed using the same manner as the original calculation, but with higher ambient air temperatures. The methodology currently described in the FSAR for establishing the design basis or safety analysis will not be altered. The current FSAR methodology allows for elevated localized temperatures that exceed the overall maximum containment average temperature of 120 $^{0}$F. The current change will only allow an increased localized temperature for the Reactor Cavity portion of containment. This is acceptable since the maximum average containment temperature of 120 $^{0}$F will not be exceeded because the increase in the reactor cavity area temperature will have negligible effect on the overall containment area temperature.

Therefore, this change does not result in a departure from a method of evaluation described in the FSAR used in establishing the design basis or in the safety analysis.

**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.**