I. OVERVIEW / SIGNATURES

Facility: Waterford 3 Steam Electric Station

Document Reviewed: ER-W3-2004-0137-000 **Change/Rev.:** 0

System Designator(s)/Description: INI-Incore Nuclear Instrumentation System

Description of Proposed Change

Westinghouse Advisory letter NSAL-01-7 identified In-Core Instrumentation (ICI) thimbles may experience growth which can create unanticipated loads on, and prevent re-assembly of the instrumentation nozzle pressure boundary connection. To address this irradiation-induced growth of zircaloy incore instrumentation thimbles associated with the reactor vessel, Westinghouse designed support and location pin extension assemblies will be installed under the ICI Thimble Support Plate (TSP). These spacers are designed to raise the ICI thimbles and the ICI TSP by 2.9" which will conservatively allow for two more cycles of thimble growth during cycles 14 and 15. These extension pins will be removed in RF-15 and shorter thimbles will be installed. With the installation of the extension pins, longer Quickloc Upper Flanges and longer Hold down Tracks in the Instrumentation Support Assemblies in the seal plate assembly are necessary to accommodate the new Quickloc stalk elevations. These modifications eliminate the loads on the ICI thimbles and enable them to hang as they were originally designed.

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 (#: 05-003)**	**Sections I, II, and IV required**

Preparer: Randall L. Neeb / Randall L. Neeb / S&L / Mechanical / 11-22-04 / Donald E. Marpe / Donald E. Marpe / Project Manager / 1-27-05 / ~~1/22/05~~ EOI
Name (print) / Signature / Company / Department / Date

Reviewer: Clint L. Alday / Clint L. Alday / EOI / 1-27-05
Name (print) / Signature / Company / Department / Date

OSRC: R. A. Dodds / R. A. Dodds / 1/27/2005 / 01-20-05
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	☐	☒	
TS	☐	☒	
NRC Orders	☐	☒	
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	☒	☐	DRN 04-1958; FSAR Figure 1.9A-5; DRN 04-1959 FSAR Figure 3.9-17; DRN 04-1959 FSAR Figure 3.9-18
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 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 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.

The Waterford-3 License Research System (LRS) Entergy Fulfind electronic search and Autonomy (WF3) electronic search systems were utilized for the License Basis Document applicability determination as detailed in the references in Section C below. The proposed change recommended by Westinghouse to add extensions to the Thimble Support Plate (TSP) Locating and Support Pins will eliminate the interference between the upper internals and the reactor head instrumentation ICI thimbles. These extensions will elevate the thimbles which are mounted on the TSP by 2.9". The upper Quickloc flanges will be lengthened by 2.7". The Quickloc flange determines the top fixed point of the ICI detector. The installation of longer Quickloc upper flanges will therefore raise the elevation of the ICIs by 2.7".

FSAR

This modified arrangement will be annotated on FSAR Figure 3.9-1.7 "In-Core Instrument Support Assembly", FSAR 1.9A-5 "HJTC Sensor Axial Locations", and FSAR Figure 3.9-17 " In-Core Instrument Support Assembly". The longer Quickloc Upper Flanges will be annotated on FSAR Figure 3.9-18 "In-Core Instrument Nozzle". FSAR Section 7.7.1.7 "In-Core Instrumentation System" describes the number of detectors, the planned uses of the in-core data, and minimum operability requirements. The proposed modification will have no impact on this criteria/information. The proposed elevation change to the TSP and the Quickloc flanges will not adversely impact any component 's ability to perform an intended design function.

The Safety Evaluation Report, Technical Specifications and Technical Requirements Manual were reviewed and found unaffected.

Operating License/Technical Specifications

The LCOs, surveillances and other controls in the OL/TSs do not cover areas that are being impacted by the proposed change.

Tests or Experiments Considerations

No special tests or experiments other than the normal post refuel initial service leak tests and ICI operability tests are required. This change is a permanent plant modification and any testing will be conducted per existing plant test procedures.

The Waterford-3 facility currently has no provisions for dry fuel storage.

The change in location of ICIs might possibly affect several systems or components described in the FSAR: Core Exit Thermocouples (CETs), Heated Junction Thermocouples (HJTCs), Fixed In-Core Detectors (FIDs), Core Operating Limits Supervisory System (COLSS), and Combustion Engineering Core Operating Report (CECOR), as described in Section 1 Description of Proposed Change. As a result, these systems/components require further evaluation to determine the impact of the proposed change.

The document searches detailed in the following section describe the FSAR Sections and LDBs reviewed for impact by the proposed change.

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:	Keywords:
LBDS_50_59, Final_Safety_Analysis_Reports, Safety_Evaluation_Reports	"in-core detector", "in core detector", "ICI", "in-core instrument", "in core instrument", "in core", FID, COLSS, CECOR, CET, HJTC, Instrument Nozzle, Quickloc, "thimble", "thimble support plate", "TSP", "Core Exit Thermocouple", Heated Junction Thermocouple", "ICCI", "Inadequate Core Cooling"

LBDs/Documents reviewed manually:

FSAR Table 1.7-1

FSAR Section 3.9.5, Reactor Pressure Vessel Internals

FSAR Section 4.3.2.2.1

FSAR Section 15.4.3.1.2.1

FSAR Sections 14.2.12.2.57 & 58, Section 14.2.12.3.3, Section 14.2.12.27 & 28

FSAR Section 7.7.1.5 Core Operating Limit Supervisory System

FSAR Section 7.7.1.7, In-Core Instrumentation System

FSAR Figures 3.9-1 through 3.9-20

FSAR Figure 15.4-98

FSAR Sections 9.1.4.2.2.7 & 9.1.4.2.3.3

FSAR Section 1.9A.3.3

FSAR Appendix 1.9A

FSAR Figures 1.9A-1 through 1.9A-11

Technical Specification Section 3 /4.3, Instrumentation

Technical Requirements Manual Section 3 /4.3.3.2, Incore Detectors

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

Both COLSS and CECOR will be updated to reflect the changed geometry of the incore detectors. These changes are incorporated in the setpoints utilized for Cycle 14 for COLSS and the core geometry file for CECOR. Since CECOR will be updated before its use in startup testing or core monitoring to model the actual ICI positions after the addition of the extension pins, it will be able to accurately calculate power distribution. The 50.59 for the Cycle 14 reload will address the impact of raising the incore instrumentation and associated affects. The validity of the 50.59 review for ER-W3-2004-0137-000 is not dependent on any of these other changes.

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 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 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.

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:

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

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:

   This change does not directly affect any structure, system, or component that is an accident initiator in the FSAR. The only effects of the change in ICI positions that could in any way be related to the accident initiators evaluated in the FSAR are the effects on COLSS or on the Core Protection Calculators (CPC) azimuthal tilt calculation. However, COLSS and CPC are not accident initiators. As described in more detail in Question 2, the COLSS/CPC tilt has been modified to accurately calculate core power distribution for the modified ICI positions. The expected thermal margin without the ICI TSP elevation change modification is in the range of 10-11%. These values were all determined as part of the Core Reload Analysis.

   Since COLSS only provides assistance to the operators in maintaining the thermal margin-related Technical Specification LCOs, a reduction in margin is not a malfunction of COLSS (it still conservatively performs its design function). The reduction in thermal margin due to this modification was not explicitly calculated due to its small magnitude when compared to available margin. This reduction in thermal margin potentially causes a minimal impact on the likelihood of a simple reactor trip as a result of operating closer to reactor trip setpoints. This small change in thermal margin is translated into the CPCs during post-refueling startup testing when the All Rods Out (ARO) peaking factor surveillance is performed. The changed incore detector location may result in slightly more limiting radial peaking factor being installed in COLSS and CPCs. This could raise the likelihood of a reactor trip if abnormal operating conditions occurred.

   A simple reactor trip, however, is not an accident described in the FSAR. Therefore, the proposed change does 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

BASIS:

The proposed activity does not adversely affect the design function of an SSC as described in the FSAR. The following is the basis for concluding that the proposed change will not affect the FSAR-described design functions of ICI assemblies, CETs, HJTCs, COLSS, and CECOR. A modification of the Thimble Support Plate (TSP) guide pins will be implemented to accommodate possible excessive ICI thimble growth. This modification will consist of adding 2.9" extension assemblies to the locating and support pins for the TSP. The impact of this modification is that the TSP is raised 2.9" which will provide more bottom clearance to accommodate ICI thimble growth. With the addition of the TSP spacers, longer Quickloc upper flanges and longer hold down tracks in the Quickloc Seal Plate Assemblies will be installed to accommodate the elevation increase in the Quick Stalks. The new Quickloc upper flanges will be 2.7 inches longer than the original designed flanges. Since the Quickloc flanges determine the top fixed point of the ICI detectors, the impact of this modification on the instruments is that they are 2.7 inches higher than original design. The instrument assemblies perform a passive safety function by providing an RCS pressure boundary.

The modified configuration will still meet the original design and ASME Section III Class I requirements. The installation of these changes will ensure that the original design function of the RCS pressure boundary and the ICI thimbles is maintained. Therefore, this change will have no impact on the design function of the assembly.

The increase in the vertical height of the ICIs does not affect the other design functions as described in the FSAR or other License Basis Documents (LBDs). The function of CETs is not affected by this change per Westinghouse DAR-ME-04-3. The ICI and CET sensors within the ICI thimbles will be raised an equal distance with the addition of the TSP pin extensions and the longer Quickloc Upper Flanges. Maintaining the thimble relative to the CET location at an elevation raised about 2.9 inches would not significantly affect the mix of coolant substantially at core exit conditions with fuel assembly bypass flow for the CET measurement. During normal operation there is no consequence identified. In natural circulation conditions, it is concluded that since core bypass flow is essentially non-existent, the CET indication will be a reasonable representation of the core exit temperature. The change in CET elevation also will not have an effect on operator actions in the Emergency Procedure Guidelines nor the accuracy required to evaluate operating limits in the Emergency Procedure Guidelines. The HJTCs are used by the operators during an accident to determine level in the upper plenum and head. Raising the elevation of the HJTCs by 2.7 inches results in a differential between indicated and actual levels which is insignificant and conservative. The ability of the instrument to trend level changes will not be affected.

Therefore, the axial shift of the ICIs, CETs and HJTCs will not cause more than a minimal increase in the likelihood of malfunction of a structure, system or component important to safety previously evaluated in the FSAR.

Both COLSS and CECOR will be updated to reflect the changed geometry of the FIDs (incore detectors). This will ensure that these programs continue to accurately represent the core and perform their intended function. The ICI position changes will be included in the penalties assigned for the upcoming cycle for instrument inaccuracies. Since CECOR has been updated to model the actual ICI positions after the addition of the extension pins before its use in startup testing or core monitoring, it will be able to accurately calculate power distribution. The 50.59 for the reload analysis will address the impact of the FID relocation and the affects on COLSS and CECOR.

The change in the elevation of the CETs, HJTCs and FIDs will not effect how the system is operated.

3. Result in more than a minimal increase in the consequences of an accident previously evaluated in the FSAR?

☐ Yes
☒ No

BASIS:

An impact on the consequences (radiological dose) of an accident would require a change the way the plant responded to an accident initiator. Most of the impact of the proposed addition of the ICI TSP extension is related to COLSS thermal margin, and as stated in Question 2 will be addressed in the 50.59 for the reload analysis. Since thermal margin is only related to maintenance of certain tech spec LCO conditions, pre-accident, changes in thermal margin could only affect accident consequences if the reactor protection system were unable to perform its design function in response to an accident initiator. However, COLSS has been adjusted as part of the reload set point calculations. The penalty factors will ensure that the tech spec LCO is maintained, and thus, by definition, the reactor protection system will be able to provide its design function and there will be no impact on accident consequences. In addition, the increase in the vertical height of ICIs does not significantly affect the design function of the inadequate core cooling instruments (ICCI), i.e., CETs, HJTCs, and saturation margin. As described in Question 2, the instruments will still perform their design function of providing information to the operators to guide their response to an accident within the context of the emergency operating procedures. Therefore, the change in the axial location of the ICCI components will not affect the consequences of an accident.

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 proposed changes do not affect any structures, systems, or components the failure of which would affect the consequences of an accident. The main effect of the proposed change is to conservatively reduce the thermal margin during power operation. As discussed for Question 2, the design function of systems affected by the change is maintained, so there is no impact of the change on the consequences of a malfunction of a structure, 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:

As described in Question 1, the proposed change does not have the potential for any initiator related effect besides, possibly, to the reactor trip initiator. A reactor trip is not an accident nor transient of a different type 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 described in Question 2, all design functions of the structures, systems, or components potentially affected by the change continue to be met. Structurally, the modification to the ASME pressure boundary continues to meet ASME Code requirements. The systems and components i.e. the CETs, FIDs and HJTCs continue to perform their design functions. There is also no change to the way the system is operated. Therefore, the proposed change can not create a possibility for a malfunction 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:

Since the proposed change does not affect the consequences of an accident (see question 3), it can not result in exceeding or altering a design limit for a fission product barrier. All modifications are being made to either vessel internals or the vessel instrument nozzle pressure boundary.

The Quickloc Upper Flange is a part of the vessel pressure boundary. This change to the vessel instrument nozzle pressure boundary continues to meet the requirements of the ASME Boiler and Pressure Vessel Code, and therefore, it has no effect on the integrity of this fission product barrier.

Another fission product barrier is fuel cladding. The ICIs provide input into the Core Operating Limits Supervisory System (COLSS). COLSS does not directly affect the response of the NSSS to an accident that could affect fuel cladding. COLSS is used to ensure that the core is operated with sufficient thermal margin that fuel cladding damage will not occur for anticipated operational occurrences, and that the degree of cladding damage in more severe events remains bounded by the safety analysis described in the FSAR. The addition of the COLSS penalty will ensure that the required thermal margin is maintained during operation to protect the fuel cladding as evaluated in the FSAR. Therefore, the addition of the COLSS penalty will not result in the cladding fission product barrier being affected. The change in elevation of the CETs and HJTCs does not impact their functionality. In addition, the changes will not have an effect on operator actions or impact the accuracy required to evaluate operating limits in the Emergency Procedure Guidelines. The 50.59 for the reload analysis will address the geometry changes in COLSS and the CPC adjustments.

The containment, another fission product barrier, is not impacted by this modification.

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:

None of the COLSS or CPC tilt adjustments that will be made represent a change to a methodology described in the FSAR. These adjustments are at a level of detail that is below what is described in the FSAR and are part of the normal process of incorporating instrument uncertainties into COLSS and CPC. The use of EPOL penalties is part of the current COLSS method of accounting for instrument uncertainty; the increased penalty is simply an application of this existing method to a larger instrument uncertainty resulting from the ICI axial position change.

CECOR, which provides key core monitoring information for COLSS and CPC adjustment (e.g., with respect to azimuthal tilt) will have its database constants adjusted to reflect the changed ICI geometry. This does not affect CECOR as described in the FSAR (the description in the FSAR is not to the level of detail of ICI geometry); the geometry change, moreover, is not a methodology-related change, but only a change in physical geometry input. (Although code input changes can be methodology changes under 50.59, input changes that represent changes to methodology are changes to such key inputs as heat transfer coefficients or DN correlation constants, and must be described in the FSAR.) Therefore, the proposed changes to COLSS or CECOR do not represent changes to a method of evaluation described in the FSAR.

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.