Entergy

Entergy Operations, Inc.
17265 River Road
Killona, LA 70066
Tel 504 739 6650

W3F1-2003-0085

November 19, 2003

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555-0001

Subject: Report of Facility Changes, Tests and Experiments and Commitment Changes
Waterford Steam Electric Station, Unit 3 (Waterford 3)
Docket No. 50-382
License No. NPF-38

Dear Sir or Madam:

Enclosed is the summary report of facility changes, tests and experiments for Waterford 3, which is submitted pursuant to 10CFR50.59. This report covers the period from June 1, 2002 through May 31, 2003. The report also includes the entire 10CFR50.59 Evaluation for each change.

Also enclosed is a summary report of Commitment Changes for the same time period. The report also includes the entire Commitment Change Evaluation Form for each commitment changed.

The enclosed documents are provided on CD-ROM. If you have any questions regarding this report, please contact Lisa Borel at (504) 739-6403.

There are no new commitments contained in this submittal.

Sincerely,

Gautam Sen

G. Sen
Manager, Licensing
Waterford Steam Electric Station, Unit 3

GS/LAB/cbh

Attachment(s)

IE47

cc: Mr. Thomas P. Gwynn
Acting Regional Administrator
U. S. Nuclear Regulatory Commission
Region IV
611 Ryan Plaza Drive, Suite 400
Arlington, TX 76011-8064

NRC Senior Resident Inspector
Waterford NPS
P.O. Box 822
Killona, LA 70066-0751

U. S. Nuclear Regulatory Commission
Attn: Mr. N. Kalyanam
Mail Stop 0-7 D1
Washington, DC 20555-0001

Wise, Carter, Child & Caraway
ATTN: J. Smith
P.O. Box 651
Jackson, MS 39205

Winston & Strawn
ATTN: N.S. Reynolds
1400 L Street, NW
Washington, DC 20005-3502

Platts Energy
ATTN: B. Lewis
1200 G. St., N.W. Suite 1000
Washington, DC 20005

Attachment 1

W3F1-2003-0085

Waterford 3 10CFR50.59 Summary Report

10CFR50.59 Evaluation Number	Initiating Document	Summary
00-049	ER-W3-1998-1079-000	Replace Radiation Monitoring System Computers
00-060	ER-W3-2000-0365-001	Block access through door
02-002-1	ER-W3-2001-1174-000	Deletion of Reactor Coolant Pump sprinkler and associated detection systems as a credited fire protection system
02-005-1	ER-W3-2001-1063-000	Revises Technical Requirements Manual 4.7.10.1.3a surveillance frequency for Diesel Fire Pump starting batteries.
02-014	ER-W3-2002-0352-000	Install auto vent capability for Low Pressure Safety Injection Train "A" discharge header
02-015	ER-W3-2001-1040-000	Change to Technical Requirements Manual 4.7.11.1b Surveillance frequency for visual inspection of fire dampers
02-016	ER-W3-2002-0373-000	8 Hour battery powered emergency lighting
02-017	ECF-00-026	Post Fire Safe Shutdown Analysis
02-018	ER-W3-2002-0499-000	Revises Technical Requirements Manual 3.6.1.5, Containment Air Temperature, Action statement and associated bases
02-019	ER-W3-2002-0352-002	Install auto vent capability downstream of vent valve SI-1402A
02-020	ER-W3-2002-0488-000	Adds new Technical Requirements Manual section 3/4.8.3 Onsite Power Distribution Systems for Static Uninterruptible Power Supply rectifiers
02-021	ER-W3-2002-0490-000	Revise Technical Requirements Manual 3.7.13 "Switchgear Area Ventilation System" and its basis
02-022	ER-W3-2002-0468-000	Modify Baseplate to accommodate Low Pressure Safety Injection void load increase

50.59 Number	Initiating Document	Summary
02-023	ER-W3-2001-1208-000, EC-M97-079, MN(Q)-6-27 and EC-M91-011	Revise Net Positive Suction Head values for High Pressure Safety Injection and Low Pressure Safety Injection Pumps
02-024	ER-W3-2000-0225-000	Inactivation of Boron Management System Flash Tank
02-025	ER-W3-2002-0489-000 and OP-100-014	Revise Technical Requirements Manual 3.7.14, "Essential Instrument Air" and its Bases
02-026	ER-W3-2002-0683-000	Revise Technical Requirements Manual 3.3.5 concerning Ultrasonic Flow Meters
03-002	ER-W3-2002-0663-001 and MM-006-119	Authorizes directing Yard Oil Separator to Circulating Water System
03-004	ER-W3-2002-0683-001	Revise Technical Requirements Manual 3.3.5 concerning Ultrasonic Flow Meters
03-005	ER-W3-2002-0603-000	Revises FSAR section 15.2.3.1, Feedwater System Pipe Break to make FSAR consistent with analysis methodology, inputs and assumptions, and results

50.59 EVALUATION

RECORD COPY

Facility: Waterford 3

Evaluation #: 00-049

I. SIGNATURES

Preparer: Teh-Chiun Su 8-23-00
Signature / Name (print) / Date

Reviewer: Michelle A. Groome 8-24-2000
Signature / Name (print) / Date

(PSRC): See PORC approval; sheet for signatures
Chairman's Signature / Name (print) / Date (May be documented on separate form.)

List of Assisting/Contributing Personnel:	
Name:	Scope of Assistance:
Clarence Kimble	Supervisor, Process Computer engineering
Deborah Bentzinger	Radiation Monitoring System Engineer
John Smith	Computer System Support

II. OVERVIEW

A. Reference Data

Document Evaluated: **ER-W3-98-1079-00-00**

EC-E91-121, Load Study for PDP384A, EC-E91-122, Load Study for PDP385B

EC-E91-179, Load Study for SUBS 3AB and Panels 3AB1, 3AB2, 396AB and 345AB

System designator(s): Radiation Monitoring System Computer

References: FSAR Chapter 3, 11.5.2.1.1, 11.5.3, 1.9.2.9, 12.5, 12.3.4, 12.5.2.2.5,13.5 and 7.5A, 7.7A, Table 3.2-1 and Reg. Guide 1.21

AFFECTS LBD?	YES	NO	N/A	CHANGE # and/or SECTIONS TO BE REVISED
UFSAR	■	□		FSAR 7.5.3,12.3.4 and figures 12.3-1 and 12.3-11
TS (includes OL and NRC Orders)	□	■		
TS Bases	□	■		
TRM	□	■		
COLR	□	■		
FHA	□	■		
SER	□	■	□	If "YES", see Section 5.1.19.
ODCM (GGNS only)	□	□	■	
PCP (GGNS only)	□	□	■	
QAP	□	■		

Emergency Plan	☐	■		

Is the validity of this Evaluation dependent on any non-LBD changes other than the change being evaluated? ☐ Yes ■ No

If "Yes", list the required changes.

N/A

B. Executive Summary (Serves as input to NRC summary report; send an electronic copy to NS&RA after PSRC approval, if available)

Brief description of change, test, or experiment

The Radiation Monitoring System (RMS) uses redundant RM-11 host computers to collect and process radiation data for the entire station. This modification will replace the existing RM-11 Digital Equipment Corporation PDP 11/34 computers and peripherals with redundant DEC Alpha computers and new peripherals and software supplied by Energy System Solutions Inc. The annunciator will be changed to initiate through the Plant Monitoring Computer

Reason for change, test, or experiment

The existing RM-11, Digital Equipment Corporation PDP 11/34 host computers have reached the end of their service life. Availability is reduced due to frequent failures and lack of spare parts. The new computer system is Y2K compliant.

50.59 Evaluation summary and conclusions

Summary: This evaluation addresses the potential effects of replacing the Radiation Monitoring System computers. The computers are not safety related and merely provide a means of collecting radiation data from the field radiation monitors and execute limited number of operator commands for the non-safety-related radiation monitors. The existing high voltage isolation devices for the separation of safety and non-safety related components are not within in the scope of this modification and are not affected or altered. The new computers will maintain the separation from the safety related loops of the RMS, and will not alter any aspects of the SR portion of the system. Components are supported to satisfy the II/I requirements where potential seismic interaction with surrounding plant component is possible. The existing seismic qualification of the CP-6 cabinet will be maintained after modification is implemented. The added mass is very insignificant for the floor loading and it will not compromise the structural integrity of the RAB floor system. This evaluation concludes that the proposed change will not degrade the functional capability of all the affected systems. The change will not create new system interactions with the exception of theannunciator initiation. There are no unreviewed safety questions and this change does not require any Technical Specification change.

III. UNREVIEWED SAFETY QUESTION DETERMINATION

Does the proposed change:

1. Increase the probability of occurrence of an accident previously evaluated in the SAR? ☐ Yes ■ No

BASIS:

For this design change, the failure modes during implementation and final design are the same and the discussions are applicable to both phases. This modification can be implemented during a refueling outage or during normal operation. For this modification, drilling and welding in the Control Room is not required.

The Radiation Monitoring System (RMS) computers are not safety related components and do not affect the accident analysis described in Chapter 15 of the FSAR. The computer system is non-seismic except the keyboard and the monitor installed in the Main Control Room panel CP-6. Upon a seismic event, the computers and peripherals are presumed to fail. However, the computer and other equipment located in CP-6 will not dislodge from their mounting and maintain II/I requirements and will not interact with the other plant components located nearby. The safety related radiation monitoring channels in the field maintain their functional capability. The RMS computers are used for collecting radiation data from the field monitors, providing alarms in the control room and executing a limited number of operator commands from the Main Control Room for the non-safety related only radiation monitors. The failure of the computers will not affect the accident analysis described in Chapter 15. Therefore, the probability of occurrence of an accident previously evaluated in the SAR will not be increased.

The existing work stations, one at the Main Control Room CP-6 and the other at –4 RAB, will be replaced with state-of-the-art MMI capability superior than the existing ones. No change will be made to the local Radiation Monitor functions that are carried out by the RM-80s and RM-23s.

2. Increase the consequences of an accident previously evaluated in the SAR? ☐ Yes ■ No

BASIS:

The radiation monitoring system computers are not safety related and are not relied upon to mitigate the consequences of accidents previously evaluated in the SAR. The Safety-Related radiation monitors do have their own safety-related indication in the Control Room for accident mitigation. The replacement of the RMS host computers and peripherals do not affect any of the barriers to the release of radiation. The offsite radiological releases and corresponding dose to station personnel in the Main Control Room, Health Physics east side check point, the computer room and the general public during accidents described in Chapter 15 are not changed as a result of this change.

There are Radiation Monitoring modules in field that communicate with the Radiation Monitoring computer through the high voltage isolation device. The isolation devise is not part of the work scope and their function remains unchanged. If the communication between the Radiation Monitoring computer and the field safety related radiation monitor were to do fail, the functions of the safety related radiation monitors in the field are not affected.

This change does not have any effect on the fire loading of the various locations in the Reactor Auxiliary Building where the computers and peripherals are being replaced. No new cable that will breach the fire barrier will be installed.

The radiation monitoring computers are not relied upon to mitigate the consequences of an accident and therefore, the failure of the computer has no effect to the consequences of an accident previously evaluated in the SAR and will not increase the consequences of an accident previously evaluated in the SAR.

3. Increase the probability of occurrence of a malfunction of equipment important to safety previously evaluated in the SAR? ☐ Yes ■ No

BASIS:

The radiation monitoring system computers are not safety related and are not relied upon to support the functions of equipment important to safety previously evaluated in the SAR.

The radiation monitoring system computers do receive radiation data from safety related radiation monitors through isolation buffers between the local microprocessors and the computers. The isolation buffers are not within the scope of the design change and the functions of the isolation buffers remain unchanged. Since the functions of the safety related channels are unaffected, the probability of occurrence of a malfunction of equipment important to safety previously evaluated in the SAR remains the same.

For the non-safety related radiation monitoring channels, the failure effect of the computer to the non-safety related channels remains the same. Since the non-safety related radiation monitoring channels performs no important to safety functions, the probability of occurrence of a malfunction of equipment important to safety previously evaluated in the SAR remains unchanged.

As described above the RMS host computers are non-seismic and non-safety related. However, the keyboard, the monitor, the bridge and the alarm speaker installed in the Main Control Room CP-6 panel will be seismically mounted to meet the requirements of RG 1.29 "Seismic Design Classification" Position C 2. The seismic requirement is due to 2 over 1 concern. The malfunction of equipment important to safe operation due to seismically generated missiles will not be any more probable as a result of this modification.

Therefore, the probability of a malfunction of equipment important to safety will not be increased as a result of this change.

4. Increase the consequences of a malfunction of equipment important to safety previously evaluated in the SAR? ☐ Yes ■ No

BASIS:

The replacement DEC Alpha computer has superior processing capabilities and reliability and will be located at the same location as the existing RM-11 computers. There are no important to safety equipment in the near vicinity of the computers.

The radiation monitoring system computers do receive radiation data from safety related radiation monitors through isolation buffers between the local microprocessors and the computers. The isolation buffers are not within the scope of the design change and the functions of the isolation buffers remain unchanged. Since the functions of the safety related channels are unaffected, the probability of occurrence of a malfunction of equipment important to safety previously evaluated in the SAR remains the same.
The work station at the –4 RAB is located in a separate room with no important to safety equipment in the vicinity. The work station at –4 RAB will be placed on a piece of furniture. The keyboard and monitor in the Main Control Room CP-6 are seismically mounted. All the components are located at nearly the exact same location as the existing system. Further, there is no equipment that provides barrier to the release of radiation in the vicinity of the design change. Therefore, there is no increase to the consequences of a malfunction of equipment important to safety evaluated previously due to this change.

5. Create the possibility of an accident of a different type than any previously evaluated in the SAR? ☐ Yes ■ No

BASIS:

The replacement of the new RMS host computers and peripherals does not create any new failure modes except the annunciator failure due to PMC. Both the existing RM-11 computer and the PMC are non-safety-related systems. However, the PMC system is a redundant and highly reliable system. The failure mode introduced by the annunciator initiation due to the failure of PMC is negligibly low and is no different than the failure mode due to the existing RMS computer system. Further, this computer replacement does not introduce failure modes that could cause an accident not identified in Chapter 15. Therefore, this modification does not create the possibility of an accident of a different type than previously evaluated in the SAR.

6. Create the possibility of a malfunction of equipment important to safety of a different type than any previously evaluated in the SAR? ☐ Yes ■ No

BASIS:

The RMS host computer replacement does not create any change that could cause a malfunction not covered in Chapter 15. The instrument loops of all safety related radiation monitors are properly isolated through high voltage isolation buffers. The high voltage isolation buffers are not within the scope of this change and will remain unchanged. This type of modification has been performed in two other domestic nuclear plants with no adverse effect to both the safety-related and non-safety related RM-80 field modules.

The keyboard, monitor and supporting components installed in the Control Room CP-6 panel will be seismically mounted. There is no equipment important to safety located in the near vicinity of either the computer room or the –4 RAB area. The non-safety related radiation monitors are not important to safety and high voltage isolation buffers are not needed as is the case with the existing design.

With the exception of the seismically mounted keyboard and monitor installed in the control room, there is no equipment important to safety located in the vicinity of the host computers and work station in –4 RAB. The possibility for the keyboard and monitor to cause a malfunction of equipment important to safety is the same as that of the existing keyboard and monitor. Therefore, this modification will not increase the possibility of occurrence of a malfunction of equipment important to safety of a different type than previously evaluated.

7. Reduce the margin of safety as defined in the basis for any Technical Specification? ☐ Yes ■ No

BASIS:

The RMS host computers are non-safety related equipment and the replacement system does not affect the functions performed by the safety related or non-safety related radiation monitors in the field. Technical Specifications LCO 3.3.3.1 are not affected by this design change. The design change is in compliance with The Technical Specification Bases 3/4 3. 3. 1 "Radiation Monitoring Instrumentation". Since this change does not affect the safety margin as defined in the Technical Specifications, the margin of safety as defined in the TS is not reduced.

IV. ENVIRONMENTAL EVALUATION APPLICABILITY REVIEW

IF ANY OF THE FOLLOWING QUESTIONS IS ANSWERED "YES", AN ENVIRONMENTAL EVALUATION MUST BE PERFORMED.

Will the Change being evaluated:

Yes	No	
☐	■	Disturb land that is beyond that initially disturbed during construction (i.e., new construction of buildings, creation or removal of ponds, or other terrestrial impact)?
☐	■	Increase thermal discharges to the river, lake or atmosphere?
☐	■	Increase concentration or quantity of chemicals discharged to the atmosphere, ground water, or surface water?
☐	■	Increase quantity of chemicals to cooling lake or atmosphere through discharge canal or tower?
☐	■	Modify the design or operation of cooling tower that will change flow characteristics?
☐	■	Install any new transmission lines leading offsite?
☐	■	Change the design or operation of the intake or discharge structures?
☐	■	Discharges any chemicals new or different from that previously discharged?
☐	■	Potentially cause a spill or unevaluated discharge that may effect neighboring soils, surface water or ground water?
☐	■	Involve burying or placement of any solid wastes in the site area that may effect runoff, surface water or ground water?
☐	■	Involve incineration or disposal of any potentially hazardous materials on the site?
☐	■	Result in a change to non-radiological effluents or licensed reactor power level?
☐	■	Potentially change the type or increase the amount of non-radiological air emissions from the site?

50.59 EVALUATION

Facility: WATERFORD 3 **Page 1 of**

Evaluation #: 00-060

I. SIGNATURES

Preparer: Sid Munshi 6/27/00
Signature / Name (print) / Date

Reviewer: John Burke John Burke 8-29-00
Signature / Name (print) / Date

(PSRC): see PORC coversheet
Chairman's Signature / Name (print) / Date (May be documented on separate form.)

List of Assisting/Contributing Personnel:

Name:	Scope of Assistance:
Alan Holder	NFPA REQUIREMENTS for Door D013

II. OVERVIEW

A. Reference Data

Document Evaluated: ER -W3-00-365-01-00 ;Physical Security Plan

System designator(s): None

References: _____

AFFECTS LBD?	YES	NO	N/A	CHANGE # and/or SECTIONS TO BE REVISED
UFSAR	■	□		Section 9.5.1.3.2 RAB 8C & General Arrangement Drawings G-127 & G-135
TS (includes OL and NRC Orders)	□	■		
TS Bases	□	■		
TRM	□	■		
COLR	□	■		
FHA	□	■		
SER	□	■	□	If "YES", see Section 5.1.19.
ODCM (GGNS only)	□	□	■	
PCP (GGNS only)	□	□	■	
QAP	□	■		
Emergency Plan	□	■		

Is the validity of this Evaluation dependent on any non-LBD changes other than the change being evaluated? ☐ Yes X No

If "Yes", list the required changes.

_____

_____

_____

_____

B. Executive Summary (Serves as input to NRC summary report; send an electronic copy to NS&RA after PSRC approval, if available)

Brief description of change, test, or experiment

This ER will install 2 1/2" grating panels on yard side of the Door No. D13. The door D13, manufactured by RV Harty is a type III, Safety related, Seismic Category I Tornado/Missile and Flood access door. This door will be blocked permanently due to placement of 2 1/2" grating to prohibit normal access through an unrestricted opening. However, the door, doorframe and hardware will not be modified to maintain its original design requirements. The grating panel will be placed on yard side of the door such that future use of the door will be permitted, if need arise due to change in the security defense strategies. The grating panels will be mounted on the steel frame, which will be secured to the concrete walls by using Hilti expansion anchors. The handrail on the concrete step off pad, located outside the door, will be modified to accommodate the installation of the 2 1/2" grating panel. The door swing for D20 will be reversed to accommodate it as an emergency exit door. The exit sign on the Door D13 will be changed to reflect "NO EXIT" and to direct the plant personnel through Door D20 in case of an emergency. Also, the BMS switch will be removed from door D20.

Reason for change, test, or experiment

Plant Security has initiated changes in its defensive strategies to enhance the defensive posture of the plant. This ER addresses part of the security enhancement project. Several other ERs address the complete security modification necessary to support the overall security improvement plan at W3. The opening in the RAB east wall for egress and exit to & from RAB to the yard area via Door D13 is determined vulnerable under certain circumstances.
Since the exterior door D13 is a fire exit, the interior door D20 will be used as an emergency exit to evacuate plant personnel. The door swing on the D20 will be reversed to use it as an emergency exit. Since door D20 is being reversed, the BMS switch located on the door will be removed. Security does not monitor door D20.

50.59 Evaluation summary and conclusions

NFPA-101 (4.5.3.1) requires that, two means of egress be provided in every building or structure, section, and area where size, occupancy, and arrangement endanger occupants attempting to use a single means of egress that is blocked by fire or smoke.

Because of this, the stairway enclosure located between column lines '11A' & '12A' and 'H' & 'J' must be considered a means of egress, specifically for the +7' Elevation of the RAB (Fire Area RAB-27). Normally, this would be uncomplicated by the use of door D13 at the +21' Elevation as the exit discharge to the outside yard area, at grade elevation. However, security needs will modify door D13 such that it's unrestricted opening will be eliminated. The alternative means of egress for this stairway enclosure will be through door D20 located immediately left of door D13 and through the north wall of the stairway. From here, the egress route will be northward via the "AB" Switchgear Room (Fire Area RAB-8C), through door D11, and final exit discharge at doors door D49 & door D52 to the yard area. Therefore, modification done via this ER will not eliminate required evacuation route and pose any

compromised due to modification proposed via ER-W3-00-0365-01-00. The door D13 will still function as a designed barrier as stipulated in the FSAR except an emergency exit.

III. UNREVIEWED SAFETY QUESTION DETERMINATION

Does the proposed change:

1. Increase the probability of occurrence of an accident previously evaluated in the SAR? ☐ Yes ■ No

   BASIS: THE MODIFICATION PROPOSED VIA THIS ER WILL NOT INCREASE THE PROBABILITY OF OCCURRENCE OF AN ACCIDENT PREVIOUSLY EVALUATED IN THE SAR. THE BLOCKING OF THE DOOR D13 WILL PROHIBIT EMERGENCY EXIT THRU THIS DOOR. HOWEVER, AN ALTERNATE EMERGENCY PATH IS STILL AVAILABLE TO THE PLANT PERSONNEL VIA DOOR D20. THIS ER DOES NOT ALTER THE SAFETY RELATED FUNCTIONALITY OF THE DOOR D13 IN ANY WAY. THE SAFETY FUNCTION OF DOOR D13 WILL NOT BE ALTERED AS A RESULT OF THIS MODIFICATION AND THEREFORE, THE PROBABILITY OF OCCURRENCE OF AN ACCIDENT PREVIOUSLY EVALUATED IN THE SAR WILL NOT BE INCREASED.

2. Increase the consequences of an accident previously evaluated in the SAR? ☐ Yes ■ No

   BASIS: THE MODIFICATION PROPOSED VIA THIS ER WILL NOT INCREASE THE CONSEQUENCES OF AN ACCIDENT PREVIOUSLY EVALUATED IN THE SAR. THE BLOCKING OF THE DOOR D13 WILL PROHIBIT EMERGENCY EXIT THRU THIS DOOR INCASE OF A FIRE ON +7 ELEVATION. HOWEVER, AN ALTERNATE EMERGENCY PATH IS STILL AVAILABLE TO THE PLANT PERSONNEL VIA DOOR D20 LOCATED IN THE SAME VESTIBULE. THIS ER DOES NOT ALTER THE SAFETY-RELATED FUNCTIONALITY OF THE DOOR D13 IN ANY WAY. THE CHANGE IN THE SWING OF THE DOOR D20 OR THE REMOVAL OF THE BMS SWITCH WILL NOT ALTER THE SAFETY-RELATED FUNCTIONALITY OF THE DOOR D20. THE SAFETY FUNCTION OF THE DOOR D13 WILL NOT BE ALTERED AS A RESULT OF THIS MODIFICATION.

3. Increase the probability of occurrence of a malfunction of equipment important to safety previously evaluated in the SAR? ☐ Yes ■ No

   BASIS: BLOCKING OF DOOR D13 AND CHANGING THE SWING DIRECTION FOR THE DOOR D20 WILL NOT INCREASE THE PROBABILITY OF OCCURRENCE OF A MALFUNCTION OF THE EQUIPMENT IMPORTANT TO SAFETY PREVIOUSLY EVALUATED IN THE SAR. THE CURRENTLY UNUSED BMS SWITCH AT DOOR D20 WILL BE REMOVED. THE SAFETY RELATED FUNCTIONALITY OF THE TWO AFFECTED DOORS WILL REMAIN SAME AS BEFORE. THE ONLY DIFFERENCE IS THAT THE PLANT PERSONNEL LOCATED ON THE +7 FT. FLOOR ELAVATION WILL HAVE TO USE ALTERNATE MEANS OF EXIT PATH IN CASE OF A FIRE ON THE +7 FT. FLOOR.

4. Increase the consequences of a malfunction of equipment important to safety previously evaluated in the SAR? ☐ Yes ■ No

   BASIS: BLOCKING OF DOOR D13 AND CHANGING THE SWING DIRECTION FOR THE DOOR D20 WILL NOT INCREASE THE CONSEQUENCES OF MALFUNCTION OF EQUIPMENT IMPORTANT TO SAFETY PREVIOUSLY EVALUATED IN THE SAR. THE SAFETY RELATED FUNCTIONALITY OF THE TWO AFFECTED

DOORS WOULD REMAIN SAME AS BEFORE. THE ONLY DIFFERENCE IS THAT THE PLANT PERSONNEL LOCATED ON THE +7 FT. FLOOR ELEVATION WILL HAVE TO USE ALTERNATE MEANS OF EXIT PATH IN CASE OF A FIRE ON THE +7 FT. FLOOR.

5. Create the possibility of an accident of a different type than any previously evaluated in the SAR? ☐ Yes ■ No

BASIS: THE DOOR D13 WILL BE BLOCKED FROM THE YARD SIDE BY PLACING 2 1/2" THICK GRATING PANELS. THE GRATING PANELS WILL BE ATTACHED TO THE STRUCTURAL FRAME, WHICH WILL BE SECURED TO THE CONCRETE WALL BY USING HILTI EXPANSION ANCHORS. THE GRATING IS DESIGNED TO RESIST 200 MILE PER HOUR WIND. THE GRATING BEING AN OPEN SECTION WILL RESIST THE TORNADIC SUCTION PRESSURE AND WILL NOT BECOME A MISSILE. THERE IS NO SAFETY RELATED PLANT COMPONENT LOCATED OUTSIDE DOOR D13 AND THEREFORE NO SEISMIC INTERACTION WILL BE CREATED DUE TO INSTALLATION OF THIS GRATING. THE DOOR PANEL AND HINGES WILL NOT BE PHYSICALLY ALTERED AND ENTIRE DOOR ASSEMBLY WILL MAINTAIN THE ORIGINAL DESIGN REQUIREMENTS. THEREFORE, THE POSSIBILITY OF AN ACCIDENT OF A DIFFERENT TYPE THAN ANY PREVIOUSLY EVALUATED IN THE SAR WILL NOT BE CREATED.

6. Create the possibility of a malfunction of equipment important to safety of a different type than any previously evaluated in the SAR? ☐ Yes ■ No

BASIS: THERE ARE NO EQUIPMENT AFFECTED. THE GRATING PANEL WILL BE INSTALLED ON THE YARD SIDE WHERE NO SAFETY RELATED PLANT COMPONENT IS LOCATED AND THEREFORE, THE POSSIBILITY OF A MALFUNCTION OF EQUIPMENT IMPORTANT TO SAFETY OF A DIFFERENT TYPE THAN ANY PREVIOUSLY EVALUATED IN THE SAR DOES NOT EXIST.

7. Reduce the margin of safety as defined in the basis for any Technical Specification? ☐ Yes ■ No

BASIS: THE MODIFICATION PROPOSED VIA THIS ER DOES NOT AFFECT ANY MARGIN OF SAFETY AS DEFINED IN THE BASIS FOR ANY TECHNICAL SPECIFICATION. THE DOOR D13 WILL BE BLOCKED PERMANENTLY TO PREVENT ADVERSARY FROM GAINING CONTROL OF THE NUCLEAR ISLAND THROUGH THIS OPENING. THIS IS PROPOSED BY SECURITY TO ENHANCE THE CURRENT SECURITY PLAN OF ACTION. THE EMERGENCY EXIT WILL BE BLOCKED BY THIS ER BUT AN ALTERNATE PATH VIA DOOR D20 WILL BE AVAILABLE TO THE PLANT PERSONNEL LOCATED ON THE +7 FT. FLOOR IN CASE OF A FIRE AT +7 FT. ELEVATION.

IV. ENVIRONMENTAL EVALUATION APPLICABILITY REVIEW

IF ANY OF THE FOLLOWING QUESTIONS IS ANSWERED "YES", AN ENVIRONMENTAL EVALUATION MUST BE PERFORMED.

Will the Change being evaluated:

Yes	No	
☐	■	Disturb land that is beyond that initially disturbed during construction (i.e., new construction of buildings, creation or removal of ponds, or other terrestrial impact)?
☐	■	Increase thermal discharges to the river, lake or atmosphere?
☐	■	Increase concentration or quantity of chemicals discharged to the atmosphere, ground water, or surface water?
☐	■	Increase quantity of chemicals to cooling lake or atmosphere through discharge canal or tower?
☐	■	Modify the design or operation of cooling tower that will change flow characteristics?
☐	■	Install any new transmission lines leading offsite?
☐	■	Change the design or operation of the intake or discharge structures?
☐	■	Discharges any chemicals new or different from that previously discharged?
☐	■	Potentially cause a spill or unevaluated discharge that may effect neighboring soils, surface water or ground water?
☐	■	Involve burying or placement of any solid wastes in the site area that may effect runoff, surface water or ground water?
☐	■	Involve incineration or disposal of any potentially hazardous materials on the site?
☐	■	Result in a change to non-radiological effluents or licensed reactor power level?
☐	■	Potentially change the type or increase the amount of non-radiological air emissions from the site?

IV. ENVIRONMENTAL EVALUATION APPLICABILITY REVIEW

IF ANY OF THE FOLLOWING QUESTIONS IS ANSWERED "YES", AN ENVIRONMENTAL EVALUATION MUST BE PERFORMED.

Will the Change being evaluated:

Yes	No	
☐	■	Disturb land that is beyond that initially disturbed during construction (i.e., new construction of buildings, creation or removal of ponds, or other terrestrial impact)?
☐	■	Increase thermal discharges to the river, lake or atmosphere?
☐	■	Increase concentration or quantity of chemicals discharged to the atmosphere, ground water, or surface water?
☐	■	Increase quantity of chemicals to cooling lake or atmosphere through discharge canal or tower?
☐	■	Modify the design or operation of cooling tower that will change flow characteristics?
☐	■	Install any new transmission lines leading offsite?
☐	■	Change the design or operation of the intake or discharge structures?
☐	■	Discharges any chemicals new or different from that previously discharged?
☐	■	Potentially cause a spill or unevaluated discharge that may effect neighboring soils, surface water or ground water?
☐	■	Involve burying or placement of any solid wastes in the site area that may effect runoff, surface water or ground water?
☐	■	Involve incineration or disposal of any potentially hazardous materials on the site?
☐	■	Result in a change to non-radiological effluents or licensed reactor power level?
☐	■	Potentially change the type or increase the amount of non-radiological air emissions from the site?

I. OVERVIEW / SIGNATURES

Facility: _____Waterford 3_____

Document Reviewed: _ ER-W3-01-1174-00-_____ **Change/Rev.** ____0___

System Designator(s)/Description: _____FP, FPD_____

Description of Proposed Change

ER-W3-01-1174-00-00 provides for the deletion of the Reactor Coolant Pump (RCP) sprinkler (and associated detection systems) as a credited fire protection system. This involves a change to TRM Table 3.3-11, TRM Table 3.7-2, TRM Section 3.7.10.2 and FSAR 9.5.1. This ER does not physically remove the sprinkler or detection systems. This ER removes credit for the sprinkler systems and eliminates any requirement to test and maintain the systems as a functioning fire suppression system. Included is the detection system because the detection system was originally designed and installed for actuation of the suppression system. The detection system design function is not for early warning fire notification. A Future ER will be required to remove the physical piping and detection system from each RCP, revise the fire system software and various plant documents. This ER only removes the system from the credited list of fire suppression systems. ***Upon approval of the ER the RCP sprinkler and detection systems are not required to be functional or operable. See Attachment 1 for a detailed discussion of this "change".***

If the proposed activity, in its entirety, involves any one of the criteria below, check the appropriate box, provide a justification/basis in the Description above, and forward to a Reviewer. No further 50.59 Review is required. If none of the criteria is applicable, continue with the 50.59 Review.

- ☐ The proposed activity is editorial/typographical as defined in Section 5.2.2.1.
- ☐ The proposed activity represents an "FSAR-only" change as allowed in Section 5.2.2.2_____. (Insert item # from Section 5.2.2.2).
- ☐ The proposed activity is controlled by another regulation per Section 5.2.2.3.

If further 50.59 Review is required, check the applicable review(s): (Only the sections indicated must be included in the Review.)

☐	**SCREENING**	**Sections I, II, and III required**
☐	**50.59 EVALUATION EXEMPTION**	**Sections I, II, III, and IV required**
X	50.59 EVALUATION (#: 02-002-01)	**Sections I, II, III, and V required**

Preparer: B. Collyer Engineering – Programs (Fire Protection) 10/10/02
Name (print) / Signature / Company / Department / Date

Reviewer: A. Holder Engineering – Programs (Fire Protection) 10/10/02
Name (print) / Signature / Company / Department / Date

OSRC: K Peters 10/16/02
Chairman's Name (print) / Signature / Date
[Required only for Programmatic Exclusion Screenings (see Section 5.8) and 50.59 Evaluations.]

List of Assisting/Contributing Personnel:

Name:	Scope of Assistance:
O. Pipkins	Participated in NRC meetings (Inspection) and various contacts with NRC in regards to appropriate method to address this issue.

II. SCREENING

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? (Check "N/A" for those documents that are not applicable to the facility.)

Operating License	YES	NO	N/A	CHANGE # and/or SECTIONS IMPACTED
Operating License	☐	X		
TS	☐	X		
NRC Orders	☐	☐	X	
If "YES", obtain NRC approval prior to implementing the change. (See Section 5.1.13 for exceptions.)				

LBDs controlled under 50.59	YES	NO	N/A	CHANGE # (if applicable) and/or SECTIONS IMPACTED
FSAR	X	☐		
TS Bases	☐	X		FSAR 9.5.1
Technical Requirements Manual	X	☐		Table 3.7-2, Table 3.3-11 and Section 3.7.10.2
Core Operating Limits Report	☐	X		
Offsite Dose Calculations Manual	☐	X		
NRC Safety Evaluation Reports[1]	X	☐		SSER 8 and NRC Letter of 8/17/98
If "YES", perform an Exemption Review per Section IV OR perform a 50.59 Evaluation per Section V.				

LBDs controlled under other regulations	YES	NO	N/A	CHANGE # (if applicable) and/or SECTIONS IMPACTED
Quality Assurance Program Manual[2]	☐	X		
Emergency Plan[2]	☐	X		
Security Plan[2,3]	☐	X		
Fire Protection Program[4] (includes the Fire Hazards Analysis)	X	☐	☐	ER provides appropriate evaluation
If "YES", evaluate/process any changes in accordance with the appropriate regulation.				

2. Does the proposed activity involve a test or experiment not described in the FSAR? ☐ Yes X No
If "yes," perform an Exemption Review per Section IV OR perform a 50.59 Evaluation per Section V.

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[1] If "YES," see Section 5.1.5.
[2] If "YES," notify the responsible department and ensure a 50.54 Evaluation is performed.
[3] The Security Plan is classified as safeguards and can only be reviewed by personnel with the appropriate security clearance. The Preparer should notify the security department of potential changes to the Security Plan.
[4] If "YES," evaluate the change in accordance with the requirements of the facility's Operating License Condition.

3. **Does the proposed activity potentially impact equipment, procedures, or facilities utilized for storing spent fuel at an Independent Spent Fuel Storage Installation?** ☐ Yes ☐ No X N/A
(Check "N/A" if dry fuel storage is not applicable to the facility.)
If "yes," perform a 72.48 Review in accordance with NMM Procedure LI-112.
(See Sections 1.5 and 5.3.1.5 of the EOI 10CFR50.59 Review Program Guidelines.)

B. Basis

(Provide a clear, concise basis for the answers given in the applicable sections above. 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.)

The change impacts the FSAR and TRM and is addressed by the ER and discussed in this safety evaluation.

C. References

Keyword on-line search as well as review of all applicable documents, exemption letters and SSERs

LBDs/Documents Reviewed:	Keywords:
FSAR 9.5.1, SSER 3, 5, 8, 9 and 10, Entergy Letters W3F1-97-0021, W3P84-0709, SM-1353, SM-3318, Generic Letter 86-10, 10CFR50 Appendix R Section III.O, NRC Inspection Report 50-382/97-08, ME-003-002, ME-003-012, ME-003-017, Drawing 5817-5520, TRM Table 3.7-2, Section 3.7.10.2 and Table 3.3-11, NRC Information Notice 94-58, W3 CR 98-1460, ANO CR 96-0567, ANO CR 96-0284, ANO CR 96-283, W3 CR 98-0849, W3 CR 95-0063, BTP APCSB9.5-1, DC-3268, Flooding calculation MN(Q) 3-5	"Oil", "Collection", "RCP", "Fire", "Appendix R", "Fire" and "detection"

D. **Is the validity of this Review dependent on any other change?** (See Section 5.3.4 of the EOI 10CFR50.59 Program Review Guidelines.) ☐ Yes X No

If "Yes," list the required changes.

_____
_____
_____
_____

III. 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.

Will the proposed Change being evaluated:

Yes	No	
☐	X	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)?
☐	X	Involve a land disturbance of undisturbed land areas (i.e., grading activities, construction, excavations, reforestation, creating, or removing ponds)?
☐	X	Involve dredging activities in a lake, river, pond, or stream?
☐	X	Increase the amount of thermal heat being discharged to the river or lake?
☐	X	Increase the concentration or quantity of chemicals being discharged to the river, lake, or air?
☐	X	Discharge any chemicals new or different from that previously discharged?
☐	X	Change the design or operation of the intake or discharge structures?
☐	X	Modify the design or operation of the cooling tower that will change water or air flow characteristics?
☐	X	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?
☐	X	Modify existing stationary fuel burning equipment (i.e., diesel fuel oil, butane, gasoline, propane, and kerosene)?[1]
☐	X	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]
☐	X	Involve the installation or use of equipment that will result in an air emission discharge?
☐	X	Involve the installation or modification of a stationary or mobile tank?
☐	X	Involve the use or storage of oils or chemicals?
☐	X	Involve burial or placement of any solid wastes in the site area that may effect runoff, surface water, or groundwater?

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

IV. 50.59 EVALUATION EXEMPTION

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

A. **Check the applicable boxes below. If any of the boxes are checked, a 50.59 Evaluation is not required. If none of the boxes are checked, perform a 50.59 Evaluation in accordance with Section V. Provide supporting documentation or references as appropriate.**

☐ The proposed activity meets all of the following criteria regarding design function per Section 5.5.1.1:

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 5.5.1.2. 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 5.5.1.3. 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 5.5.6 of the EOI 10CFR50.59 Review Program Guidelines for guidance.)

V. 50.59 EVALUATION

A. **Executive Summary** (Serves as input to NRC summary report. Limit to one page or less. Send an electronic copy to the site licensing department after OSRC approval, if available.)

Brief description of change, test, or experiment:

ER-W3-01-1174-00-00 provides for the deletion of the Reactor Coolant Pump (RCP) sprinkler (and associated detection system) as a credited fire protection system. This involves a change to TRM Table 3.3-11, TRM Table 3.7-2, TRM Section 3.7.10.2 and FSAR 9.5.1. The ER does not physically remove or alter the sprinkler or detection systems. The ER removes credit for the systems and eliminates requirements to test and maintain the systems as functional and operable systems

A future ER will be required to remove the physical piping and detection systems for each RCP, revise the fire system software and various plant documents. This ER removes the system from the credited list of fire suppression systems.

Reason for proposed Change:

NRC guidelines, standards and expectations do not require automatic sprinkler or detection systems on RCPs. The NRC requires an oil collection system. Originally the RCP sprinkler systems were installed to satisfy property insurer requirements. These requirements no longer exist. The existing sprinkler systems are hydraulically deficient and can not be restored to an adequate design within reasonable and justifiable costs.

50.59 Evaluation summary and conclusions

NRC guidelines and requirements do not require sprinkler/detection systems for the RCPs. The protection provided for the RCPs consist of an oil collection system as detailed in 10CFR50 Appendix R Section III.O. The oil collection system is adequate to address the hazards of the area and satisfies NRC requirements. NRC approval for removal of (or not crediting) RCP sprinkler/detection is not required.

B. 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
x 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
X No

BASIS:

The existence of a sprinkler/detection system has no impact on frequency of occurrence because it is not a direct feature of accident mitigation. The sprinkler system is not required because the accepted and prescribed method of fire accident mitigation is an oil collection system. An oil collection system is provided and is not impacted by this change.

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
X No

BASIS:

The sprinkler/detection system is a seismic system whose failure was analyzed upon initial design and installation. It is a non-safety system. Removal of the system will be via a separate ER and associated Safety Evaluation. The only change by this ER and Safety Evaluation is to remove credit for the system. There is no physical change to the plant. The sprinkler/detection system is not a structure, system or component important to safety and was originally provided to meet property insurer requirements. These requirements no longer exist. The required oil collection system is not impacted and its important to safety function is unchanged by this ER

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

☐ Yes
X No

BASIS:

This ER/Safety evaluation does not result in a physical change to the plant. The only "accident" is a fire event that is addressed by the oil collection system. The oil collection system is required by the NRC and remains unchanged by administrative changes to the RCP sprinkler/detection systems.

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
X No

BASIS:

The RCP sprinkler/detection systems are not provided for the mitigation of any nuclear accident. They are seismic designed systems. The sprinkler system piping is normally dry and as such pipe failure from an analyzed or unanalyzed source would not result in the discharge of water. The discharge of water through system damage or system actuation would not exceed that considered in flooding calculations. Thus even though the system is not physically changed by this ER, system failure could not have any impact on radioactive releases within the plant or to the public.

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

BASIS:

This ER does not physically remove the system and as such there is no impact to previous evaluations. Removal if the system in sections could result in a seismic issue (partial removal will require analysis) and as such will be addressed at the time physical changes to the plant are made.

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 X No

BASIS

The malfunction of a system that currently is installed and not physically changed by this ER can have no different result. Absence of maintenance or surveillance activities could have an impact on the reliability of a system to perform its original function. However this original function is not required due to the existence of the oil collection system. The oil collection system is the required fire mitigation system and is not impacted by this ER.

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

BASIS:

The RCP sprinkler/detection system is not a fission product barrier and has no impact on or connection to any fission product barriers. The RCP sprinkler/detection system is a non-safety system.

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 X No

BASIS:

There is no impact to any method of evaluation including mathematical models, computer program limits, uncertainty measurements, etc. The design basis of any safety system is not changed by the action of not crediting the RCP sprinkler and detection systems.

An oil collection system, in addition to sprinkler/detection systems, is provided for all four W3 RCPs. The original fire protection arrangement included the RCP sprinkler and detection systems as a credited feature in the Waterford 3 Fire Hazards Analysis (FSAR 9.5.1). This safety evaluation discusses a change because credit for these sprinkler/detection systems is no longer desired. This ER revises the TRM and FSAR to delete the RCP sprinkler and detection systems.

NRC guidelines, standards and expectations do not require automatic sprinkler systems on RCPs. The NRC requires an oil collection system. Originally the RCP sprinkler systems were installed to satisfy property insurer requirements (This requirement no longer exists). Credit for the sprinkler/detection systems was provided as one of the defense in depth features simply because they were already installed due to insurance requirements. Credit was provided for these systems to provide additional information to support oil collection system deviation requests related to 10CFR50 Appendix R Section III.O (Section III.O requires the oil collection system).

There are two existing approved Waterford 3 deviations from the requirements of Section III.O of Appendix R to 10CFR50. The request for the first of the two approved deviations was submitted to the NRC Staff on March 26, 1984 (LP&L letter W3P84-0709). That request sought and subsequently received relief from the requirement for the Reactor Coolant Pump (RCP) oil collection tank capacity to hold the entire lube oil system inventory of two RCPs. Waterford 3 has four RCPs and two lube oil collection tanks. Each tank is capable of holding the contents of either of the two RCPs associated with its respective Reactor Coolant System (RCS) loop. Acceptance of this deviation was documented in NUREG-0787 Supplemental Safety Evaluation Report (SSER) 8 dated December 1984. The request for the second approved deviation was submitted on February 19, 1997 (W3F1-97-0021). That request sought and subsequently received relief from the requirement to have an oil collection system under RCP lube oil system remote oil fill lines. The remote fill lines for the RCP lube oil reservoirs were installed in two phases of plant modifications (SM-1353 and DC-3318) initiated in 1986 and 1990 respectively. Acceptance of this deviation was documented in a NRC Staff letter dated August 17, 1998.

In both of the submittals the RCP sprinkler systems were among several plant attributes considered by the NRC Staff during approval of the deviations.

Recent computer based Hydraulic calculations discovered that the sprinkler systems for the RCPs were inadequately designed and required a significant expenditure of funds to restore design to an acceptable level. This prompted a detailed review related to the requirements to have these systems.

In late 2000 Entergy initiated preparation of a deviation request to the NRC for deletion of the RCP sprinkler systems and associated detection systems. A copy of the draft deviation request was reviewed by the NRC/NRR during the Baseline Fire Protection Inspection conducted in September 2000. This NRR/NRC review, as well as follow-up discussions, indicated that no deviation was required since the regulatory requirement is for an oil collection system. Deletion of the RCP sprinkler systems is allowable, without prior approval, subject to an acceptable Generic Letter 86-10 evaluation and supporting safety evaluation. This ER satisfies the requirements for a GL-86-10 evaluation.

Inoperable/deleted RCP suppression systems do not significantly impact previously accepted deviations from 10CFR50 Appendix R, Section III. O. The suppression systems were originally installed to meet insurance requirements and their unavailability does not impact the ability of the oil collection systems to perform their intended function. Therefore the reference to the suppression systems in the approval of the deviation is not material to the Staff's original basis for approval and as such the method of evaluation change (not crediting the sprinkler systems) for the fire hazards in the area is acceptable and does not require prior NRC approval. Specifically:

- The design of the Waterford 3 RCP lube oil collection system is such that it forms a complete enclosure over potential leakage points (with the exception of the remote oil fill lines), thus

effectively eliminating the possibility of any oil escaping from the confines of the collection system.

- The remote oil fill line is a normally empty line. Oil addition activities are administratively controlled such that, in the unlikely event of a fire, the response to the fire would be rapid and conclusive.

- The majority of hot RCP piping is insulated, thus further isolating potential ignition sources from any escaping lube oil.

- The lube oil collection system and the lube oil system are both seismically designed to preclude their failure during a Safe Shutdown Earthquake. Thus very limited quantities of escaping oil is postulated. A fire postulated for that condition would be characterized by the rapid consumption of the oil, if ignited by hot surfaces.

- Industry experience, that was not available at the time of the original deviation request (including NRC Information Notice 94-58), indicates that RCP lube oil fires are typically precluded by alarms associated with bearing temperatures and low oil levels. In addition, according to this data, these fires can be attributed to deficiencies in the design of the lube oil collection system. The Waterford 3 RCP Lube oil collection system was specifically field inspected by the NRC Staff during an inspection conducted April 6 through May 17, 1997. Inspection Report 50-382/97-08 documents the NRC Staff conclusion that "...The RCP lube oil drain and fill systems were well installed and maintained."

- The potential for the catastrophic total release of the entire lube oil inventory of two RCPs is very remote and would generally constitute an incredible multiple system failure. The existing lube oil tanks are sized for the inventory of one RCP.

Associated with this change are changes to procedures for the surveillance and maintenance of the RCP sprinkler/detection systems. This evaluation supports the revision of the following surveillance and maintenance procedures to delete activities associated with the RCP suppression/detection systems:

ME-003-002 (Fire Detection Supervisory Circuit Tests)
ME-003-017 (Thermal Fire Detector Testing)

In summary the RCP sprinkler and detection systems are not required for fire accident mitigation due to the NRC mandated oil collection system. The oil collection systems are adequate and their adequacy is not dependent on the existence of a sprinkler and/or detection system. It is not required to obtain prior NRC approval to not credit the RCP sprinkler/detection systems at Waterford 3 Nuclear Station.

I. OVERVIEW / SIGNATURES

Facility: WATERFORD 3 STEAM ELECTRIC STATION

Document Reviewed: ER-W3-2001-1063-000, TRM Changes **Change/Rev.** 0

System Designator(s)/Description: FP

Description of Proposed Change

Revision of TRM 4.7.10.1.3a surveillance frequency from once per 7 days to once per 31 days for the **Diesel Fire Pump Starting Batteries**. This change uses performance-based system / component history and guidance from Nuclear Electric Insurance Limited Loss Control Standards, "Performance Based Analysis for Testing and Maintenance" as an industry acceptable method for justification.

If the proposed activity, in its entirety, involves any one of the criteria below, check the appropriate box, provide a justification/basis in the Description above, and forward to a Reviewer. No further 50.59 Review is required. If none of the criteria is applicable, continue with the 50.59 Review.

- ☐ The proposed activity is editorial/typographical as defined in Section 5.2.2.1.
- ☐ The proposed activity represents an "FSAR-only" change as allowed in Section 5.2.2.2_____. (Insert item # from Section 5.2.2.2).
- ☐ The proposed activity is controlled by another regulation per Section 5.2.2.3.

If further 50.59 Review is required, check the applicable review(s): (Only the sections indicated must be included in the Review.)

☐	SCREENING	Sections I, II, and III required
☐	50.59 EVALUATION EXEMPTION	Sections I, II, III, and IV required
☒	50.59 EVALUATION (#: 02-005 (rev.1))	Sections I, II, III, and V required

Preparer: A.L. Holder, EOI, W3, Plant Programs Engineering 7/30/02
Name (print) / Signature / Company / Department / Date

Reviewer: B.C. Collyer, EOI, W3, Plant Programs Engineering 7-31-02
Name (print) / Signature / Company / Department / Date

OSRC: Terry Ridgel 8/21/02
Chairman's Name (print) / Signature / Date
[Required only for Programmatic Exclusion Screenings (see Section 5.8) and 50.59 Evaluations.]

I. OVERVIEW / SIGNATURES

Facility: WATERFORD 3 STEAM ELECTRIC STATION

Document Reviewed: ER-W3-2001-1063-000, TRM Changes **Change/Rev.** 0

System Designator(s)/Description: FP

Description of Proposed Change

Revision of TRM 4.7.10.1.3a surveillance frequency from once per 7 days to once per 31 days for the **Diesel Fire Pump Starting Batteries**. This change uses performance-based system / component history and guidance from Nuclear Electric Insurance Limited Loss Control Standards, "Performance Based Analysis for Testing and Maintenance" as an industry acceptable method for justification.

If the proposed activity, in its entirety, involves any one of the criteria below, check the appropriate box, provide a justification/basis in the Description above, and forward to a Reviewer. No further 50.59 Review is required. If none of the criteria is applicable, continue with the 50.59 Review.

- ☐ The proposed activity is editorial/typographical as defined in Section 5.2.2.1.
- ☐ The proposed activity represents an "FSAR-only" change as allowed in Section 5.2.2.2_____. (Insert item # from Section 5.2.2.2).
- ☐ The proposed activity is controlled by another regulation per Section 5.2.2.3.

If further 50.59 Review is required, check the applicable review(s): (Only the sections indicated must be included in the Review.)

☐	**SCREENING**	**Sections I, II, and III required**
☐	**50.59 EVALUATION EXEMPTION**	**Sections I, II, III, and IV required**
☒	**50.59 EVALUATION (#: 02-005 (rev.1)_____)**	**Sections I, II, III, and V required**

Preparer: A.L. Holder, EOI, W3, Plant Programs Engineering
Name (print) / Signature / Company / Department / Date

Reviewer: B.C. Collyer, EOI, W3, Plant Programs Engineering
Name (print) / Signature / Company / Department / Date

OSRC: _____
Chairman's Name (print) / Signature / Date
[Required only for Programmatic Exclusion Screenings (see Section 5.8) and 50.59 Evaluations.]

List of Assisting/Contributing Personnel:

Name:	Scope of Assistance:

II. SCREENING

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? (Check "N/A" for those documents that are not applicable to the facility.)

Operating License	YES	NO	N/A	CHANGE # and/or SECTIONS IMPACTED
Operating License	☐	☒		
TS	☐	☒		
NRC Orders	☐	☒	☐	
If "YES", obtain NRC approval prior to implementing the change. (See Section 5.1.13 for exceptions.)				

LBDs controlled under 50.59	YES	NO	N/A	CHANGE # (if applicable) and/or SECTIONS IMPACTED
FSAR	☐	☒		
TS Bases	☐	☒		
Technical Requirements Manual	☒	☐		TRM Section 4.7.10.1.3a
Core Operating Limits Report	☐	☒		
Offsite Dose Calculations Manual	☐	☒		
NRC Safety Evaluation Reports[1]	☐	☒		
If "YES", perform an Exemption Review per Section IV OR perform a 50.59 Evaluation per Section V.				

LBDs controlled under other regulations	YES	NO	N/A	CHANGE # (if applicable) and/or SECTIONS IMPACTED
Quality Assurance Program Manual[2]	☐	☒		
Emergency Plan[2]	☐	☒		
Security Plan[2,3]	☐	☒		
Fire Protection Program[4] (includes the Fire Hazards Analysis)	☐	☒	☐	
If "YES", evaluate/process any changes in accordance with the appropriate regulation.				

2. Does the proposed activity involve a test or experiment not described in the FSAR?
If "yes," perform an Exemption Review per Section IV OR perform a 50.59 Evaluation per Section V.

☐ Yes
☒ No

3. Does the proposed activity potentially impact equipment, procedures, or facilities utilized for storing spent fuel at an Independent Spent Fuel Storage Installation?
(Check "N/A" if dry fuel storage is not applicable to the facility.)
If "yes," perform a 72.48 Review in accordance with NMM Procedure LI-112.
(See Sections 1.5 and 5.3.1.5 of the EOI 10CFR50.59 Review Program Guidelines.)

☐ Yes
☐ No
☒ N/A

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[1] If "YES," see Section 5.1.5.
[2] If "YES," notify the responsible department and ensure a 50.54 Evaluation is performed.
[3] The Security Plan is classified as safeguards and can only be reviewed by personnel with the appropriate security clearance. The Preparer should notify the security department of potential changes to the Security Plan.
[4] If "YES," evaluate the change in accordance with the requirements of the facility's Operating License Condition.

B. Basis

(Provide a clear, concise basis for the answers given in the applicable sections above. 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.)

Generic Letter 86-10 states, "the licensee may make changes to the approved fire protection program without prior approval of the Commission only if those changes would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire. The licensee may alter specific features of the approved program provided (a) such changes do not otherwise involve a change in a license condition or technical specification or result in an unreviewed safety question (see 10CFR50.59), and (b) such changes do not result in failure to complete the fire protection program as approved by the Commission." This TRM change revises the frequency of surveillance testing for the Diesel Fire Pump Starting Batteries from once per 7-days to once per 31-days. Originally, the TRM 4.7.10.1.3a surveillance provided for testing of battery voltage and electrolyte levels once per 7-days. Performance-based review of system history has indicated that no acceptance criteria failures have taken place within the past two years. Additionally, system design features (one pump meeting the largest system flow demand) provide for a dual battery banks, effectively establishing a redundant fire pump arrangement (1-electric driven fire pump & 2-diesel driven fire pumps). Therefore the LBD change is allowable under the above described provision of the Generic Letter. Further, the FSAR, Tech Specs. and LBDs other than the TRM did not specify the surveillance frequency for the specific sub-component under consideration. Thus, the below 50.59 Evaluation is presented for the TRM change. No adverse impact to other LBDs, reviewed the level of fire protection provided, the safe shutdown requirements or nuclear safety are presented.

C. References

[Discuss the methodology for performing the LBD search. 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 5.3.6.4 of LI-101.]

LBDs/Documents Reviewed:	Keywords:
FSAR, SER, SSER, QAPM, TECHSPEC	Fire Pump, Fire Pump Battery

D. Is the validity of this Review dependent on any other change? (See Section 5.3.4 of the EOI 10CFR50.59 Program Review Guidelines.)

☐ **Yes**
☒ **No**

If "Yes," list the required changes.

_____

_____

_____

_____

III. 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.

Will the proposed Change being evaluated:

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

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

IV. 50.59 EVALUATION EXEMPTION

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

A. Check the applicable boxes below. If any of the boxes are checked, a 50.59 Evaluation is not required. If none of the boxes are checked, perform a 50.59 Evaluation in accordance with Section V. Provide supporting documentation or references as appropriate.

☐ The proposed activity meets all of the following criteria regarding design function per Section 5.5.1.1:

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 5.5.1.2. 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 5.5.1.3. 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 5.5.6 of the EOI 10CFR50.59 Review Program Guidelines for guidance.)

NA

V. 50.59 EVALUATION

A. Executive Summary (Serves as input to NRC summary report. Limit to one page or less. Send an electronic copy to the site licensing department after OSRC approval, if available.)

Brief description of change, test, or experiment:

Revision of TRM 4.7.10.1.3a surveillance frequency from once per 7 days to once per 31 days for the **Diesel Fire Pump Starting Batteries**. This change uses performance-based system / component history and guidance from Nuclear Electric Insurance Limited Loss Control Standards, "Performance Based Analysis for Testing and Maintenance" as an industry acceptable method for justification.

Reason for proposed Change:

Originally, the TRM 4.7.10.1.3a surveillance provided for testing of battery voltage and electrolyte levels once per 7-days. Performance-based review of system history has indicated that no acceptance criteria failures have taken place within the past two years. This TRM change revises the frequency of surveillance testing for the Diesel Fire Pump Starting Batteries from once per 7-days to once per 31-days. Additionally, system design features (one pump meeting the largest system flow demand) provide for a dual battery banks, effectively establishing a redundant fire pump arrangement (1-electric driven fire pump & 2- diesel driven fire pumps). Thus, no adverse impact to the level of fire protection provided, the safe shutdown requirements or nuclear safety are presented.

50.59 Evaluation summary and conclusions

Generic Letter 86-10 states, "the licensee may make changes to the approved fire protection program without prior approval of the Commission only if those changes would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire. The licensee may alter specific features of the approved program provided (a) such changes do not otherwise involve a change in a license condition or technical specification or result in an unreviewed safety question (see 10CFR50.59), and (b) such changes do not result in failure to complete the fire protection program as approved by the Commission." Based on the system design features and performance history, no adverse impact to the level of fire protection provided, the safe shutdown requirements or nuclear safety is presented. Therefore the LBD change is allowable under the above described provisions of Generic Letter 86-10.

B. 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 is an administrative change to the surveillance requirements of TRM section 4.7.0.103a. This TRM section does not directly impact the accident scenarios presented in Chapter 15 of FSAR, but rather affects only a FIRE event, which is not classified as a DBA. The surveillance activity frequency is being revised based on performance based history. Response of fire protection systems and components during a FIRE event will remain as previously analyzed and approved. Therefore, no impact on the frequency of occurrence of the events is presented by this change.

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:

This is an administrative change to the surveillance requirements of TRM section 4.7.10.1.3a. This section does not directly impact the accident scenarios presented in Chapter 15 of FSAR, but rather affects only a FIRE event, which is not classified as a DBA. This surveillance requirement in no way influences the probability of a FIRE event. Because no other systems are impacted by this change, and because the fire protection water supply system is provided with redundant pumping capability, the likelyhood of occurrence of malfunctions of the fire protection water supply system or other systems remains unchanged.

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

☐ Yes
☒ No

BASIS:

The change to the Surveillance Requirement of TRM 4.7.10.1.3a, only provides for a change in the periodicity of the surveillance requirement. As this change in no way affects the operation or design functions of the fire protection water supply system, there is no change to the consequences of accidents or FIRE events previous considered or presented.

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:

This change involves the performance frequency of surveillance requirements associated with the diesel fire pump starting batteries. These fire rated assemblies are considered non-safety, quality related equipment. Because the TRM addresses only the frequency of surveillance actions, there is no change to the malfunction or consequences thereof related to the assemblies.

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

BASIS:

This change involves the performance frequency of surveillance requirements associated with the diesel fire pump starting batteries. The accident or plant event associated with this equipment is a FIRE with no concurrent DBA. Therefore, the surveillance requirement associated with the batteries is not considered to affect any current, or present any new accident scenarios.

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

Because the change proposed involves only the performance-based frequency extension of surveillance associated with the diesel fire pump batteries, no additional malfunction of the Diesel Fire Pump(s) is presented. Because any single fire pump is capable of meeting the highest system flow demand and because there is one eletric and two diesel fire pumps, with each diesel having two battery banks there existsmultiple levels of redunancy. Because of this no additional malfunction is possible.

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

BASIS:

There is no interface or impact with the plant fission product barriers or design limits presented by this TRM change request. The accident associated with this equipment is a FIRE with no concurrent DBA. Therefore, no limits are exceeded or altered which could affect fission product barriers.

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:

This TRM change maintains a consistent level of fire protection and surveillance requirements for systems as described in the TRM. Current industry accepted tools for analysis of performance-based application of testing and mainteannce have been used in developing this change. No Design Bases or Safety Analyses were affected by this change.

I. OVERVIEW / SIGNATURES

Facility: Waterford 3

Document Reviewed: ER-W3-2002-0352-000 Change/Rev. 0

System Designator(s)/Description: Safety Injection (SI)

Description of Proposed Change

ER-W3-2002-0352-000 will install automatic venting capability for the LPSI Train "A" discharge header. An auto-vent manifold will be installed downstream of manual vent valve SI-133A. SI-133A will be normally open to allow auto-venting of the LPSI header. The auto-vent manifold consists of two 3/4" manual vent valves (SI-1331A and SI-1332A), two solenoid valves SI-6011 or SI-6012, and an auto vent valve. SI-1331A and SI-1332A will allow manual venting if SI-6011 or SI-6012 are inoperable or out of service. Valves SI-6011, SI-6012 and the auto vent valve are installed in series. SI-1331A and SI-1332A will have a passive close safety function, and SI-6011 and SI-6012 will have an active close safety function on an SIAS.

Solenoid valves SI-6011 and SI-6012 are currently installed in line 2SI1-306, PASS Supply From 2SI24-2B. ER-W3-98-1263-00-02 functionally abandoned these components and deferred removal of these components to a later date. ER-W3-2002-0352-000 will relocate these components.

If the proposed activity, in its entirety, involves any one of the criteria below, check the appropriate box, provide a justification/basis in the Description above, and forward to a Reviewer. No further 50.59 Review is required. If none of the criteria is applicable, continue with the 50.59 Review.

☐ The proposed activity is editorial/typographical as defined in Section 5.2.2.1.

☐ The proposed activity represents an "FSAR-only" change as allowed in Section 5.2.2.2_____.
(Insert item # from Section 5.2.2.2).

☐ The proposed activity is controlled by another regulation per Section 5.2.2.3.

If further 50.59 Review is required, check the applicable review(s): (Only the sections indicated must be included in the Review.)

☐	SCREENING	Sections I, II, and III required
☐	50.59 EVALUATION EXEMPTION	Sections I, II, III, and IV required
☒	50.59 EVALUATION #: 02-014	Sections I, II, III, and V required

Preparer: R.T. Finch for M. Touma / R.T. Finch for M. Touma / EOI / DE 6/22/02
Name (print) / Signature / Company / Department / Date

Reviewer: John Russo John Russo / EOI / DE-Mech 6/22/02
Name (print) / Signature / Company / Department / Date

OSRC: K. Walsh 6/25/02
Chairman's Name (print) / Signature / Date
[Required only for Programmatic Exclusion Screenings (see Section 5.8) and 50.59 Evaluations.]

List of Assisting/Contributing Personnel:

Name:	Scope of Assistance:

II. SCREENING

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? (Check "N/A" for those documents that are not applicable to the facility.)

Operating License	YES	NO	N/A	CHANGE # and/or SECTIONS IMPACTED
Operating License	☐	☒		
TS	☐	☒		
NRC Orders	☐	☐	☒	
If "YES", obtain NRC approval prior to implementing the change. (See Section 5.1.13 for exceptions.)				

LBDs controlled under 50.59	YES	NO	N/A	CHANGE # (if applicable) and/or SECTIONS IMPACTED
FSAR	☒	☐		Table 3.9-9, DRN#02-1039; Figure 4.4-8, DRN#02-1016; Table 7.3-5, DRN#02-1017; Table 7.3-8, DRN#02-1017; Table 9.3-20, DRN#02-1040; Table 9.3-16, DRN#1054; Table 6.3-1, DRN#1051
TS Bases	☐	☒		
Technical Requirements Manual	☐	☒		
Core Operating Limits Report	☐	☒		
Offsite Dose Calculations Manual	☐	☒		
NRC Safety Evaluation Reports[1]	☐	☒		
If "YES", perform an Exemption Review per Section IV OR perform a 50.59 Evaluation per Section V.				

LBDs controlled under other regulations	YES	NO	N/A	CHANGE # (if applicable) and/or SECTIONS IMPACTED
Quality Assurance Program Manual[2]	☐	☒		
Emergency Plan[2]	☐	☒		
Security Plan[2,3]	☐	☒		
Fire Protection Program[4] (includes the Fire Hazards Analysis)	☐	☐	☒	
If "YES", evaluate/process any changes in accordance with the appropriate regulation.				

2. Does the proposed activity involve a test or experiment not described in the FSAR?
   If "yes," perform an Exemption Review per Section IV OR perform a 50.59 Evaluation per Section V.
   ☐ Yes ☒ No

3. Does the proposed activity potentially impact equipment, procedures, or facilities utilized for storing spent fuel at an Independent Spent Fuel Storage Installation?
   (Check "N/A" if dry fuel storage is not applicable to the facility.)
   If "yes," perform a 72.48 Review in accordance with NMM Procedure LI-112.
   (See Sections 1.5 and 5.3.1.5 of the EOI 10CFR50.59 Review Program Guidelines.)
   ☐ Yes ☐ No ☒ N/A

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[1] If "YES," see Section 5.1.5.
[2] If "YES," notify the responsible department and ensure a 50.54 Evaluation is performed.
[3] The Security Plan is classified as safeguards and can only be reviewed by personnel with the appropriate security clearance. The Preparer should notify the security department of potential changes to the Security Plan.
[4] If "YES," evaluate the change in accordance with the requirements of the facility's Operating License Condition.

B. Basis

Entergy-FulFind, Electronic Text Search Utility, was utilized to search all LBD's using the keywords listed below. The relevant LBD's, where keywords were found, are listed below. The only LBD's impacted are the FSAR sections listed in Section A.1 above.

C. References

LBD's Reviewed:

FSAR Sections: 1.9.37; 3.6.1; 3.9.3; 4.4.3; 5.2.5.1.4; 6.3; 7.3.1.1.1; 7.3.1.1.4; 9.3.6; 9.5, 15

FSAR Tables: 3.9-9; 4.4-9; 7.3-5; 7.3-8; 9.3-20

FSAR Figures: 4.4-8

FSAR Appendix: 3.6A, Section 3.6A.1.1.3

Technical Specification 3/4.5.2

Technical Requirements Manual

Commitment Management System

Keywords:

SI-133, ISV 6011, ISV 6012, vent valve, LPSI header, LP header, Low Pressure Safety Injection, Shutdown Cooling

D. **Is the validity of this Review dependent on any other change?** (See Section 5.3.4 of the EOI 10CFR50.59 Program Review Guidelines.)

☐ Yes
☒ No

If "Yes," list the required changes.

III. 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.

Will the proposed Change being evaluated:

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

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

V. 50.59 EVALUATION

A. Executive Summary (Serves as input to NRC summary report. Limit to one page or less. Send an electronic copy to the site licensing department after OSRC approval, if available.)

Brief description of change, test, or experiment:

This ER will install automatic venting capability for the LPSI Train "A" discharge header. An auto-vent manifold will be installed downstream of manual vent valve SI-133A. SI-133A will be normally open to allow auto-venting of the LPSI header. The auto-vent manifold consists of two 3/4" manual vent valves (SI-1331A and SI-1332A), two solenoid valves SI-6011 or SI-6012, and an auto vent valve. Valves SI-1331A and SI-1332A will allow manual venting if SI-6011 or SI-6012 are inoperable or out of service. Solenoid valves SI-6011 or SI-6012 and the auto vent valve are installed in series. SI-1331A and SI-1332A will have a passive close safety function, and SI-6011 and SI-6012 will have an active close safety function on an SIAS.

Solenoid valves SI-6011 and SI-6012 are currently installed in line 2SI1-306, PASS Supply From 2SI24-2B. ER-W3-98-1263-00-02 functionally abandoned these components and deferred removal of these components to a later date. ER-W3-2002-0352-000 will relocate these components.

Reason for proposed Change:

Technical Specification 3/4.5.2 surveillance requires verification at least every 31 days that the ECCS is full of water. Due to leakage past the containment isolation valves, nitrogen gas has been coming out of solution and forming gas pockets at certain locations in the SI system (Ref. CR-W3-2002-0818). Operations personnel have been frequently performing ultrasonic exams of the SI piping in order to identify and quantify gas bubble sizes. The highest numbers of occurrences and largest volume of gas pockets have been observed at vent valve SI-133A.

50.59 Evaluation summary and conclusions

The evaluation determined that the frequency and consequences of accidents evaluated in the FSAR are not impacted. In addition, the likelihood and consequences of malfunction of the LPSI system is not impacted. The normally closed vent valve SI-133A is being left open. However, two seismically supported, Safety Related Class 2 isolation valves are being installed in series downstream of SI-133A, which automatically close upon an SIAS to preclude the likelihood of leakage from the LPSI system post LOCA and the valves are manually isolated prior to initiating Shutdown Cooling during normal shutdowns. In addition, the modification to the LPSI header meets all applicable design, material and construction standards applicable to the LPSI system.

B. 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:

The Accident Analyses in the FSAR were reviewed and it was determined that this modification to the LPSI piping will not impact the frequency of occurrence of any accident. The normally closed vent valve SI-133A located on the LPSI Train "A" discharge header piping will be left open as part of this change. However, two Seismic Category 1, Safety Related Class 2 isolation valves will be installed in series downstream of SI-133A. They will automatically close upon an SIAS to preclude the likelihood of leakage from the LPSI system post LOCA. In addition, the valves will be manually isolated prior to initiating Shutdown Cooling during normal shutdowns, which will be controlled by operation procedures.

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 LPSI system is part of the Emergency Core Cooling System (ECCS). It is designed to provide core cooling in the event of a LOCA or a Main Steam Line Break (MSLB). The LPSI system also provides Shutdown Cooling functions. There will be no increase in the likelihood of a malfunction of the LPSI system. The normally closed vent valve SI-133A on the LPSI discharge header piping will be left open and an auto vent manifold will be installed downstream. The manifold will consist of Safety Class 2 and Non-Safety components. The Safety Class 2 components and piping will also be Seismic Category 1. The Non-Safety components and piping will be seismically supported. There will be a class break at the second solenoid isolation valve down stream of SI-133A. The solenoid isolation valves will automatically close upon an SIAS to isolate the Non-Safety components and piping.

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

☐ Yes
☒ No

BASIS:

The Accident Analyses in the FSAR were reviewed and it was determined that this modification to the LPSI piping will not impact the consequences (radiation dose) of any accident. The normally closed vent valve SI-133A located on the LPSI discharge header piping will be left open as part of this change. However, two seismically supported, Safety Related Class 2 isolation valves will be installed in series downstream of SI-133A. The valves were originally purchased as containment isolation valves with a leakage criteria of 3 ml/hr. However, for this new application a maximum leakage rate of 30 ml/hr is reasonable for an IST seat leakage limit. The dose impact of the 30 ml/hr (0.00013 gpm) maximum leakage requirement has negligible impact in the CVAS areas (ref. Calculation EC-S93-007). They will automatically close upon an SIAS to preclude the likelihood of leakage from the LPSI system post LOCA. The leakage rate of the isolation valves will be tested and documented to ensure it is less than allowed leakage rate. The allowed leakage rate for the valves will not impact the consequences of a LOCA or RWSP inventory.

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 modification to the LPSI system will not increase the consequences (radiological release) of a LOCA. The leakage rate of the isolation valves will be tested and documented to ensure it is less than allowed leakage rate. The valves were originally purchased as containment isolation valves with a leakage criteria of 3 ml/hr. However, for this new application a maximum leakage rate of 30 ml/hr is reasonable for an IST seat leakage limit. The dose impact of the 30 ml/hr (0.00013 gpm) maximum leakage requirement has negligible impact in the CVAS areas (ref. Calculation EC-S93-007). In addition, the design of the system meets the single failure criterion such that a single malfunction will not adversely affect the ability of the system to be isolated.

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

BASIS:

The modification to the LPSI system does not create an accident of a different type than previously evaluated. LPSI system flow diversion during injection mode, loss of RWSP inventory and loss of Reactor Coolant inventory during shutdown cooling operation has all been evaluated in the FSAR.

In addition, fire in the Control Room or in the RAB Wing Area, where the auto vent manifold will be located, will not cause an accident of a different type as discussed below:

Normal Mode (Standby Mode)

- Control Room Fire
  A fire in the Control Room would potentially result in the loss of power to both solenoid isolation valves, which fail open. This is because in accordance with Appendix R, the "A" Safety Train is assumed to be unavailable and some "B" Train components are de-energized. Therefore, the "A" Train of Shutdown Cooling will not be utilized and the failure of the both solenoid isolation valves will not affect the "B" Train.

- -35 Wing Area Fire
  A fire in the area where the solenoid isolation valves are located could potentially cause both valves to fail open. The fire would also prevent access to manually isolate the solenoid valves. However, in accordance with Appendix R, access to the area the fire occurred is restored prior to required cold shutdown actions.

Post LOCA (Injection Mode)
A fire is not postulated to occur concurrently with a design basis accident.

Shutdown Cooling Mode
If shutdown cooling train "A" is in operation following a normal plant shutdown when a fire occurs in the control room or the –35 wing area, the auto vent valve would remain isolated via a manual valve which was closed prior to initiating shutdown cooling.

Loss of Offsite Power (LOOP)
Although the solenoid isolation valves are fail open valves, they are each powered from separate trains ('A' & 'B') and are provided power from the Static Uninterruptible Power Supply (SUPS). The availability of power to the valves will not be impacted by a LOOP. If the valves were closed they would remain powered and not drift open. Therefore, the solenoid valves will be capable of performing their isolation function in the event of a LOOP.

Station Blackout (SBO)
During an SBO the load supplying the solenoid isolation valves is shed after 30 minutes. However, these valves are not required to perform an isolation function during an SBO except during shutdown cooling. Since manual isolation of the solenoid valves is procedurally required prior to initiating shutdown cooling, the solenoid isolation valves would not be required to operate during shutdown cooling.

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 malfunction of the auto vent manifold that will be installed on the LPSI discharge header will not create different results than previously evaluated. The following are the failure modes for the new components:

Normal Operation (Standby Mode)

If the auto vent valve failed open during normal plant operations, the RWSP inventory would be reduced at a very slow rate. The RWSP low level alarm and water on the floor would allow detection of the failure.

If the auto vent valve failed closed during normal plant operations the potential gas build up in the LPSI system would not be vented. The Technical Specification surveillance that is performed on a monthly basis would detect the failure.

Post LOCA (Injection Mode)

Post accident the auto vent valve is isolated from the LPSI system via two safety-related isolation valves that are powered from separate safety trains and installed in series upstream of the auto vent valve. The isolation valves are solenoid valves that automatically close upon an SIAS. Failure of one solenoid valve to close would not prevent the isolation of the auto vent valve. Therefore, failure of the auto vent valve will not affect the operation of the LPSI system during injection mode.

Shutdown Cooling Mode

During Shutdown Cooling operation following a normal plant shutdown, the auto vent valve will be isolated via a manual valve. The procedure used by Operations to initiate shutdown cooling will be revised to require manual isolation of the auto vent valve prior to initiating shutdown cooling using the "A" train. Post LOCA, the auto vent valve will be isolated via the solenoid valves that automatically close upon an SIAS. Therefore, failure of the auto vent valve will not affect the operation of the LPSI system during shutdown cooling mode.

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 modification to the LPSI header will not impact the design basis limits of any fission product barriers. The LPSI system functions of providing core cooling in the event of a LOCA or a MSLB are 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:

There are no methods of evaluation affected by this modification.

I. OVERVIEW / SIGNATURES

Facility: WATERFORD 3 STEAM ELECTRIC STATION

Document Reviewed: ER-W3-2001-1040-000 **Change/Rev.** 0

System Designator(s)/Description: FP

Description of Proposed Change

Revision of TRM 4.7.11.1b surveillance (Fire Dampers) to alter frequency of individual component surveillance to use a 10% statistical sample process. This change uses performance based system history and guidance from Nuclear Electric Insurance Limited Loss Control Standards, "Performance Based Analysis for Testing and Maintenance.

If the proposed activity, in its entirety, involves any one of the criteria below, check the appropriate box, provide a justification/basis in the Description above, and forward to a Reviewer. No further 50.59 Review is required. If none of the criteria is applicable, continue with the 50.59 Review.

- ☐ The proposed activity is editorial/typographical as defined in Section 5.2.2.1.
- ☐ The proposed activity represents an "FSAR-only" change as allowed in Section 5.2.2.2_____. (Insert item # from Section 5.2.2.2).
- ☐ The proposed activity is controlled by another regulation per Section 5.2.2.3.

If further 50.59 Review is required, check the applicable review(s): (Only the sections indicated must be included in the Review.)

☐	SCREENING	Sections I, II, and III required
☐	50.59 EVALUATION EXEMPTION	Sections I, II, III, and IV required
☒	50.59 EVALUATION (#: ~~02-039~~ 02-015 ~~7-24-02~~)	Sections I, II, III, and V required

Preparer: A.L. Holder, EOI, W3, Plant Programs Engineering (electronic signature via ERD) 7/15/02
Name (print) / Signature / Company / Department / Date

Reviewer: B.C. Collyer, EOI, W3, Plant Programs Engineering (electronic signature via ERD) 7-15-02
Name (print) / Signature / Company / Department / Date

OSRC: K. WALSH 7/24/02
Chairman's Name (print) / Signature / Date
[Required only for Programmatic Exclusion Screenings (see Section 5.8) and 50.59 Evaluations.]

List of Assisting/Contributing Personnel:

Name:	Scope of Assistance:

II. SCREENING

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? (Check "N/A" for those documents that are not applicable to the facility.)

Operating License	YES	NO	N/A	CHANGE # and/or SECTIONS IMPACTED
Operating License	☐	☒		
TS	☐	☒		
NRC Orders	☐	☒	☐	
If "YES", obtain NRC approval prior to implementing the change. (See Section 5.1.13 for exceptions.)				

LBDs controlled under 50.59	YES	NO	N/A	CHANGE # (if applicable) and/or SECTIONS IMPACTED
FSAR	☐	☒		
TS Bases	☐	☒		
Technical Requirements Manual	☒	☐		TRM 4.7.11.1b
Core Operating Limits Report	☐	☒		
Offsite Dose Calculations Manual	☐	☒		
NRC Safety Evaluation Reports[1]	☐	☒		
If "YES", perform an Exemption Review per Section IV OR perform a 50.59 Evaluation per Section V.				

LBDs controlled under other regulations	YES	NO	N/A	CHANGE # (if applicable) and/or SECTIONS IMPACTED
Quality Assurance Program Manual[2]	☐	☒		
Emergency Plan[2]	☐	☒		
Security Plan[2,3]	☐	☒		
Fire Protection Program[4] (includes the Fire Hazards Analysis)	☐	☒	☐	
If "YES", evaluate/process any changes in accordance with the appropriate regulation.				

2. Does the proposed activity involve a test or experiment not described in the FSAR?
If "yes," perform an Exemption Review per Section IV OR perform a 50.59 Evaluation per Section V.

☐ Yes
☒ No

3. Does the proposed activity potentially impact equipment, procedures, or facilities utilized for storing spent fuel at an Independent Spent Fuel Storage Installation?
(Check "N/A" if dry fuel storage is not applicable to the facility.)
If "yes," perform a 72.48 Review in accordance with NMM Procedure LI-112.
(See Sections 1.5 and 5.3.1.5 of the EOI 10CFR50.59 Review Program Guidelines.)

☐ Yes
☐ No
☒ N/A

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[1] If "YES," see Section 5.1.5.
[2] If "YES," notify the responsible department and ensure a 50.54 Evaluation is performed.
[3] The Security Plan is classified as safeguards and can only be reviewed by personnel with the appropriate security clearance. The Preparer should notify the security department of potential changes to the Security Plan.
[4] If "YES," evaluate the change in accordance with the requirements of the facility's Operating License Condition.

B. Basis

(Provide a clear, concise basis for the answers given in the applicable sections above. 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.)

This TRM Change provides performance-based revision to frequency of surveillance testing for fire dampers. TRM Section 4.7.11.1b provides for surveillance of fire dampers / fire windows / and associated hardware once per 18 months. System history indicates that the failure rate for the past 5 years is .001 and no failures have occurred since 1996. Based on this, and the application of accepted Performance Based Analysis techniques, this TRM change will shift the surveillance to a statistical sample set surveillance typical to that provided for Fire Barrier Penetration seals and described in TRM 4.7.11.1c. Given the performance history, similar system surveillance methodology, and reliability review assured via the corrective action process, no adverse impact to the level of fire protection provided, the safe shutdown requirements or nuclear safety are presented.

C. References

[Discuss the methodology for performing the LBD search. 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 5.3.6.4 of LI-101.]

LBDs/Documents Reviewed:	Keywords:
FSAR 9.5.1 (inc. Figures), TRM	Fire Damper, Fire Window, Surveillance

D. Is the validity of this Review dependent on any other change? (See Section 5.3.4 of the EOI 10CFR50.59 Program Review Guidelines.)

☐ **Yes**
☒ **No**

If "Yes," list the required changes.

_____

_____

_____

_____

III. 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.

Will the proposed Change being evaluated:

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

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

IV. 50.59 EVALUATION EXEMPTION

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

A. Check the applicable boxes below. If any of the boxes are checked, a 50.59 Evaluation is not required. If none of the boxes are checked, perform a 50.59 Evaluation in accordance with Section V. Provide supporting documentation or references as appropriate.

☐ The proposed activity meets all of the following criteria regarding design function per Section 5.5.1.1:

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 5.5.1.2. 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 5.5.1.3. 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 5.5.6 of the EOI 10CFR50.59 Review Program Guidelines for guidance.)

NA

V. 50.59 EVALUATION

A. Executive Summary (Serves as input to NRC summary report. Limit to one page or less. Send an electronic copy to the site licensing department after OSRC approval, if available.)

Brief description of change, test, or experiment:

Revision of TRM 4.7.11.1b surveillance (Fire Dampers) to alter frequency of individual component surveillance to use a 10% statistical sample process. This change uses performance based system history and guidance from Nuclear Electric Insurance Limited Loss Control Standards, "Performance Based Analysis for Testing and Maintenance.

Reason for proposed Change:

Based on benchmarking efforts this change to the surveillance requirements of TRM 4.7.11.1b was undertaken as a means to utilize performance based alternative approaches and achieve cost effective use of resources while maintaining program requirements.

50.59 Evaluation summary and conclusions

Fire protection is Non-Safety, Quality Related. This analysis established that no safety impact was presented. This TRM change maintains a consistent level of fire protection and surveillance requirements for systems a described in the TRM. Current industry accepted tools and practices for the analysis of performance-based application of testing and maintenance have been used in the development of this change.

B. 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 is a change to the surveillance requirements of TRM section 4.7.11.1b. This TRM section does not impact the accident scenarios presented in Chapter 15 of the FSAR, but rather affects only a FIRE event, which is not classified as a DBA. The surveillance activity frequency at the component level is being revised based on performance-based history. Responses of fire protection systems and components during a FIRE event will remain as previously analyzed and approved. The level of defense-in-depth of the fire protection program is maintained. Therefore, no impact on the frequency of occurrence of events is presented by this change.

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:

   This is a change to the surveillance requirements of TRM section 4.7.11.1b. This TRM section does not impact the accident scenarios presented in Chapter 15 of the FSAR, but rather affects only a FIRE event, which is not classified as a DBA. This surveillance requirement is specific to passive elements of the fire protection system and therefore, in no way influences the probability of a fire event. Because no systems are impacted or altered by this change, the likelihood of occurrence of malfunctions of the fire protections system or other plant systems remains unchanged.

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

   BASIS:

   The change to the surveillance Requirements of TRM 4.7.11.1b only provide for a change in the periodicity of the surveillance requirement at the individual component (fire damper) level. As this change in no way affects the operation or design functions of the Fire Rated Assemblies, there is no change to the consequences of accidents or FIRE events previously considered or presented.

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:

   This change involves the performance frequency of surveillance requirements associated with Fire Rated Assemblies, specifically Fire Dampers / Fire Windows / and associated hardware. These fire rated assemblies are designated "non-safety", "Quality-Related" plant equipment. Because the TRM addresses only the frequency of surveillance actions, there is no change to the malfunction or consequences thereof related to these assemblies.

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

BASIS:

This change involves the performance frequency of surveillance requirements associated with Fire Rated Assemblies, specifically Fire Dampers / Fire Windows / and associated hardware. The accident or plant event associated with this equipment is a FIRE, with no concurrent DBA. Therefore, the surveillance requirement associated with the referenced Fire Rated Assemblies was determined not to affect any current, nor present any new accident scenarios.

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

Because the change described involves only the performance-based frequency extension through statistical sampling associated with Fire Rated Assemblies and specifically, Fire Dampers / Fire Windows / and associated hardware, no additional malfunction of these Fire Rated Assemblies is presented. Because these passive fire rated assemblies comprise only a portion of the defense-in-depth provided by the overall fire protection program and plant systems, no additional malfunctions not previously considered exist.

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

BASIS:

There is no interface or impact with the plant's fission product barriers or design limits presented by this TRM change. The accident or plant event associated with the equipment described by this change is a FIRE with no concurrent DBA. Therefore, no limits are exceeded, challenged or altered which could affect fission product barriers or design limits.

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:

This TRM change does not involve a method of evaluation found in the FSAR. No computer based calculations or methods were used. Therefore, evaluation methodology used in the development of the design bases and safety analysis are not impacted.

I. OVERVIEW / SIGNATURES

Facility: WATERFORD 3 STEAM ELECTRIC STATION

Document Reviewed: ER-W3-2002-0373-000 **Change/Rev.** 0

System Designator(s)/Description: FP

Description of Proposed Change

Addition of clarification to various portions of FSAR Section 9.5.1 regarding 8-Hour Battery Powered Emergency Lighting. In addition this ER provides the G.L. 86-10 Evaluation, and Commitment Change Evaluation to correct the erroneous statement found in SSER #3 regarding the use of self-contained battery pack lights for "cold" safe shutdown applications.

This change is in response to CR-WF3-2000-00829 and request to identify those LTE units required to be maintained for Post-Fire Safe Shutdown applications.

If the proposed activity, in its entirety, involves any one of the criteria below, check the appropriate box, provide a justification/basis in the Description above, and forward to a Reviewer. No further 50.59 Review is required. If none of the criteria is applicable, continue with the 50.59 Review.

- ☐ The proposed activity is editorial/typographical as defined in Section 5.2.2.1.
- ☐ The proposed activity represents an "FSAR-only" change as allowed in Section 5.2.2.2_____. (Insert item # from Section 5.2.2.2).
- ☐ The proposed activity is controlled by another regulation per Section 5.2.2.3.

If further 50.59 Review is required, check the applicable review(s): (Only the sections indicated must be included in the Review.)

☐	SCREENING	Sections I, II, and III required
☐	50.59 EVALUATION EXEMPTION	Sections I, II, III, and IV required
☒	50.59 EVALUATION (#: 02-016)	Sections I, II, III, and V required

Preparer: A.L. Holder, EOI, W3, Plant Programs Engineering 6/26/02
Name (print) / Signature / Company / Department / Date

Reviewer: B.C. Collyer, EOI, W3, Plant Programs Engineering 9-30-02
Name (print) / Signature / Company / Department / Date

OSRC: K. Peters 10/16/02
Chairman's Name (print) / Signature / Date
[Required only for Programmatic Exclusion Screenings (see Section 5.8) and 50.59 Evaluations.]

List of Assisting/Contributing Personnel:

Name:	Scope of Assistance:

II. SCREENING

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? (Check "N/A" for those documents that are not applicable to the facility.)

Operating License	YES	NO	N/A	CHANGE # and/or SECTIONS IMPACTED
Operating License	☐	☒		
TS	☐	☒		
NRC Orders	☐	☒	☐	
If "YES", obtain NRC approval prior to implementing the change. (See Section 5.1.13 for exceptions.)				

LBDs controlled under 50.59	YES	NO	N/A	CHANGE # (if applicable) and/or SECTIONS IMPACTED
FSAR	☒	☐		9.5.1, 9.5.3
TS Bases	☐	☒		
Technical Requirements Manual	☐	☒		
Core Operating Limits Report	☐	☒		
Offsite Dose Calculations Manual	☐	☒		
NRC Safety Evaluation Reports[1]	☒	☐		SSER #3, Section 9.5.1.5
If "YES", perform an Exemption Review per Section IV OR perform a 50.59 Evaluation per Section V.				

LBDs controlled under other regulations	YES	NO	N/A	CHANGE # (if applicable) and/or SECTIONS IMPACTED
Quality Assurance Program Manual[2]	☐	☒		
Emergency Plan[2]	☐	☒		
Security Plan[2,3]	☐	☒		
Fire Protection Program[4] (includes the Fire Hazards Analysis)	☐	☒	☐	
If "YES", evaluate/process any changes in accordance with the appropriate regulation.				

2. Does the proposed activity involve a test or experiment not described in the FSAR?
If "yes," perform an Exemption Review per Section IV OR perform a 50.59 Evaluation per Section V.

☐ Yes
☒ No

3. Does the proposed activity potentially impact equipment, procedures, or facilities utilized for storing spent fuel at an Independent Spent Fuel Storage Installation?
(Check "N/A" if dry fuel storage is not applicable to the facility.)
If "yes," perform a 72.48 Review in accordance with NMM Procedure LI-112.
(See Sections 1.5 and 5.3.1.5 of the EOI 10CFR50.59 Review Program Guidelines.)

☐ Yes
☒ No
☐ N/A

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[1] If "YES," see Section 5.1.5.
[2] If "YES," notify the responsible department and ensure a 50.54 Evaluation is performed.
[3] The Security Plan is classified as safeguards and can only be reviewed by personnel with the appropriate security clearance. The Preparer should notify the security department of potential changes to the Security Plan.
[4] If "YES," evaluate the change in accordance with the requirements of the facility's Operating License Condition.

B. Basis

(Provide a clear, concise basis for the answers given in the applicable sections above. 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.)

Generic Letter 86-10 states, "the licensee may make changes to the approved fire protection program without prior approval of the Commission only if those changes would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire. The licensee may alter specific features of the approved program provided (a) such changes do not otherwise involve a change in a license condition or technical specification or result in an unreviewed safety question (see 10CFR50.59), and (b) such changes do not result in failure to complete the fire protection program as approved by the Commission." This FSAR Revision and Commitment Change Request provides definition of those 8-Hour Battery Powered Emergency Light units required for use as described in Calculation EC-F00-0026, Post-Fire Safe Shutdown Analysis. 8-Hour Emergency Battery Power Lights are installed specifically for compliance to 10CFR50, Appendix R. Life Safety and general plant lighting needs both normal and emergency are provided by the Normal and Emergency AC lighting system which remains unaffected by this ER. 8-Hour Emergency Battery Power Light units installed, in addition to those identified as required for Safe Shutdown, are no longer required for plant operation. Because this change clarifies and further describes compliance to the existing regulation (10CFR50, Appendix R), no adverse impact to the level of fire protection provided, the safe shutdown requirements or nuclear safety are presented.

C. References

[Discuss the methodology for performing the LBD search. 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 5.3.6.4 of LI-101.]

LBDs/Documents Reviewed:	Keywords:
FSAR 9.5.1 SSER #3	8-Hour, Emergency Lighting, Appendix R Lighting, Safe Shutdown Lighting

D. Is the validity of this Review dependent on any other change? (See Section 5.3.4 of the EOI 10CFR50.59 Program Review Guidelines.)

☐ Yes
☒ No

If "Yes," list the required changes.

_____

_____

_____

_____

III. 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.

Will the proposed Change being evaluated:

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

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

IV. 50.59 EVALUATION EXEMPTION

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

A. Check the applicable boxes below. If any of the boxes are checked, a 50.59 Evaluation is not required. If none of the boxes are checked, perform a 50.59 Evaluation in accordance with Section V. Provide supporting documentation or references as appropriate.

☐ The proposed activity meets all of the following criteria regarding design function per Section 5.5.1.1:

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 5.5.1.2. 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 5.5.1.3. 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 5.5.6 of the EOI 10CFR50.59 Review Program Guidelines for guidance.)

NA

V. 50.59 EVALUATION

A. Executive Summary (Serves as input to NRC summary report. Limit to one page or less. Send an electronic copy to the site licensing department after OSRC approval, if available.)

Brief description of change, test, or experiment:

The intent of this ER, associated FSAR change and Commitment Change Request is to define those 8-Hour Battery Powered Emergency Lights required for Post-Fire Safe Shutdown as described in 10CFR50, Appendix R, Section III.J. Future application of all testing and maintenance will be limited to only those lighting units required for Safe Shutdown. It is also the intent of this ER to serve as the G.L. 86-10 Fire Protection Evaluation, and to be used to correct the erroneous statement found in SER section 9.5.1.5 that states self-contained battery pack lights will be installed in all areas of the plant which must be manned to bring the plant to a safe "cold" shutdown.

Reason for proposed Change:

There exists the need to clearly define those 8-Hour Battery Powered Emergency Lights (system designation LTE) which are required for Post-Fire Safe Shutdown. The plant makes use of some 266 emergency lighting units, of which many were installed in excess of regulatory requirements and are no longer required. Determination of the required LTE units will be used in the preparation of maintenance and testing activities and also has application to the Maintenance Rule. This information will assist in limiting the scope of those activities to only those components actually required. Additionally, Condition Report CR-WF3-2000-00829 identified a reference to use of emergency lighting in all areas of the plant which must be manned to bring the plant to safe cold shutdown. This is beyond the requirements of 10CFR50, Appendix R and is regarded as erroneous information..

50.59 Evaluation summary and conclusions

This FSAR Revision and Commitment Change Request provides definition of those 8-Hour Battery Powered Emergency Light units required for use as described in Calculation EC-F00-0026, Post-Fire Safe Shutdown Analysis. Because this change clarifies and further describes compliance to the existing regulation (10CFR50, Appendix R), no adverse impact to the level of fire protection provided, the safe shutdown requirements or nuclear safety are presented.

B. 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 provides clarification describing the specific 8-hour battery powered emergency lights necessary to support the Post-Fire Safe Shutdown Analysis (EC-F00-0026) as required by 10CFR50, Appendix R, Section III.J. This change also corrects erroneous information contained in SSER #3, section 9.5.1.5 regarding areas provided with emergency lighting. The changes do not impact the accident scenarios presented in Chapter 15 of the FSAR, but rather would affect only a FIRE event, which is not classified as a DBA. Because there are no changes to the methodology with which the regulatory requirements are met, but simply clarification of the lighting detailed, no impact is presented. Post-Fire Safe Shutdown equipment, systems and components will remain as previously analyzed and approved. The level of defense-in-depth of the fire protection program is maintained. Additionally, because the LTE system provides support of activities associated with the fire event mitigation, there is no affect on the frequency of the accident or event. Therefore, no impact on the frequency of occurrence of events is presented by this change.

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:

   This change provides clarification describing the specific 8-hour battery powered emergency lights necessary to support the Post-Fire Safe Shutdown Analysis (EC-F00-0026) as required by 10CFR50, Appendix R, Section III.J. This change also corrects erroneous information contained in SSER #3, section 9.5.1.5 regarding areas provided with emergency lighting. The changes do not impact the accident scenarios presented in Chapter 15 of the FSAR, but rather would affect only a FIRE event, which is not classified as a DBA. Further, these lights are not required to be credited for compliance to other regulatory requirements such as BTP-9.5-1 or for NFPA-101, Life Safety. These requirements are satisfied by emergency AC lighting. Because no systems are impacted or altered by this change, the likelihood of occurrence of malfunctions of the fire protections system or other plant systems remains unchanged.

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

   BASIS:

   This change to the specific 8-hour emergency lights required for Post-Fire Safe Shutdown only provides for a change in the selected application of light units and correction of SSER and FSAR to reflect such selections. Compliance with the regulation as stated is maintained as presented. Post-Fire Safe Shutdown equipment, systems and components will remain as previously analyzed and approved. The level of defense-in-depth of the fire protection program is maintained. Therefore, this change in no way affects the operation or design functions of the LTE system as required by 10CFR50, Appendix R Section III.J. and no change to the consequences of accidents or FIRE events previously considered or presented.

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:

This change involves delineation of those LTE units required for Post-Fire Safe Shutdown as determined by calculation EC-F00-0026. There is no direct system interface from the LTE system. LTE units are designated "non-safety" and "Quality-Related" plant equipment. Because the change to the FSAR and SSER Commitment Change addresses only the component application aspect of the emergency lights, there is no change to the malfunction or consequences thereof related to these units.

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

BASIS:

This change involves delineation of the specific 8-hour emergency lighting units required for Post-Fire Safe Shutdown. Because the change continues to provide compliance to the regulatory requirement and no physical plant changes are made, no new or alternative accident scenarios are presented by this change. The accident or plant event associated with this equipment is a FIRE, with no concurrent DBA. Therefore, the FSAR and SSER commitment changes were determined not to affect any current, nor present any new accident scenarios.

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

This change involves delineation of the specific 8-hour emergency lighting units required for Post-Fire Safe Shutdown. There exists no system interface conditions or new operational methods of the LTE system. Also, because the change continues to provide compliance to the regulatory requirement and no physical plant changes are made, no new or alternative accident scenarios are presented by this change. Because the change described involves only the component definition and application of the LTE system, no additional malfunction of these components or other SSCs are presented.

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

BASIS:

There is no interface or impact with the plant's fission product barriers or design limits presented by this change. The accident or plant event associated with the equipment described by this change is a FIRE with no concurrent DBA. Therefore, no limits are exceeded, challenged or altered which could affect fission product barriers or design limits.

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:

This changes listed maintain a consistent level of fire protection as described in the Post-Fire Safe Shutdown Analysis. The change proposed has been processed using the ER and Commitments Changes processes. The method of analysis and the process for evaluation of this change are consistent with those used to develop and maintain the overall fire protection and Post-Fire Safe Shutdown programs.

I. OVERVIEW / SIGNATURES

Facility: ____Waterford 3_____

Document Reviewed: Post Fire Safe Shutdown Analysis (ECF-F00-026) **Change/Rev.** __1_

System Designator(s)/Description: __FP + Misc_____

Description of Proposed Change

Calculation ECF-00-026 is the Post Fire Safe Shutdown Analysis. The calculation replaces the "Associated Circuits Analysis" (ACA). The ACA was provided to Entergy (LP&L) in 1985 by the plants Constructor/Engineer Ebasco. The Associated Circuits Analysis was never entered into the document control system and thus was never verified, maintained or controlled (by LP&L/Entergy). The ACA was prepared in response to the NRCs specific request for such a document. A summary of the document was submitted to the NRC and accepted via SSER 10. Calculation ECF-00-026 represents the first controlled document of this type at Waterford 3 Nuclear Station. It was prepared to meet past as well as current NRC expectations and requirements. This description of proposed change and the calculation itself is a review of the fire protection portions of the change. The 50.59 evaluation contained in Section V addresses the non-fire protection aspects of the proposed change. This distinction is further explained below.

Waterford 3 facility license condition 2.c.9 states that "EOI may make changes to the approved fire protection program without prior approval of the Commission only if those changes would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire." NEI 96-07, "Guidelines for 10CFR 50.59 Implementation", section 4.15 states that "10CFR 50.59 (c)(4) provides that when applicable regulations establish more specific criteria for controlling certain changes, 10CFR 50.59 does not also apply. Consistent with this intent, the standard fire protection license condition establishes specific criteria for control of fire protection changes and falls within the scope of 10 CFR 50.59 (c)(4). Thus applying 10 CFR 50.59 to fire protection program changes is not required." The NEI document further states "Changes to the fire protection program should be evaluated for impacts on other design functions, and 10 CFR 50.59 should be applied to the non-fire protection related effects of the change, if any." The Entergy "10CFR50.59 Review program Guidelines" section 5.2.3 essentially mirrors the NEI guide. Entergy procedure LI-101 is consistent with the NEI guide in that section 5.2.2.3 (regarding Section 1 of the 50.59 review form) states "The proposed activity or portions thereof will be controlled by other regulations..." and then specifically lists fire protection and the fire protection License Condition. Thus the required scope of this 50.59 is a review of the non-fire protection related effects of the change. The current fire protection program change process at Waterford 3 is a review of the change by a qualified fire protection engineer (with assistance of others as needed). The results of a review are maintained for future NRC review as part of the ER and/or within file R-type A.9.02 (Generic Letter 86-10 reviews).

The detailed description information from this review (Section I) will be placed in file R-type A9.02 for future NRC review as it (and the calculation itself) serves as the required fire protection evaluation. The non-fire protection related impact is addressed by the 50.59 evaluation provided in Section V.

See Attachment 1 for the continuation of "Description of Proposed Change".

If the proposed activity, in its entirety, involves any one of the criteria below, check the appropriate box, provide a justification/basis in the Description above, and forward to a Reviewer. No further 50.59 Review is required. If none of the criteria is applicable, continue with the 50.59 Review.

- ☐ The proposed activity is editorial/typographical as defined in Section 5.2.2.1.
- ☐ The proposed activity represents an "FSAR-only" change as allowed in Section 5.2.2.2_____. (Insert item # from Section 5.2.2.2).
- X The proposed activity is controlled by another regulation per Section 5.2.2.3. **(Fire Protection Portion only, as discussed under description of change)**

If further 50.59 Review is required, check the applicable review(s): (Only the sections indicated must be included in the Review.)

☐	**SCREENING**	**Sections I, II, and III required**
☐	**50.59 EVALUATION EXEMPTION**	**Sections I, II, III, and IV required**
X	50.59 EVALUATION (#: 02-017)	**Sections I, II, III, and V required**

Preparer: B. Collyer Entergy –Programs Engineering/ 10/9/02
Name (print) / Signature / Company / Department / Date

Reviewer: A. Holder Entergy –Programs Engineering/ 10/10/02
Name (print) / Signature / Company / Department / Date

OSRC: K. Peters K. Peters 10/16/02
Chairman's Name (print) / Signature / Date
[Required only for Programmatic Exclusion Screenings (see Section 5.8) and 50.59 Evaluations.]

List of Assisting/Contributing Personnel:

Name:	Scope of Assistance:
None	

II. SCREENING

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? (Check "N/A" for those documents that are not applicable to the facility.)

Operating License	YES	NO	N/A	CHANGE # and/or SECTIONS IMPACTED
Operating License	☐	X		
TS	☐	X		
NRC Orders	☐	X	☐	
If "YES", obtain NRC approval prior to implementing the change. (See Section 5.1.13 for exceptions.)				

LBDs controlled under 50.59	YES	NO	N/A	CHANGE # (if applicable) and/or SECTIONS IMPACTED
FSAR	X	☐		FSAR Section 9.5.1
TS Bases	☐	X		
Technical Requirements Manual	☐	X		
Core Operating Limits Report	☐	X		
Offsite Dose Calculations Manual	☐	X		
NRC Safety Evaluation Reports[1]	X	☐		SSER 3, 5, 8, 10
If "YES", perform an Exemption Review per Section IV OR perform a 50.59 Evaluation per Section V.				

LBDs controlled under other regulations	YES	NO	N/A	CHANGE # (if applicable) and/or SECTIONS IMPACTED
Quality Assurance Program Manual[2]	☐	X		
Emergency Plan[2]	☐	X		
Security Plan[2,3]	☐	X		
Fire Protection Program[4] (includes the Fire Hazards Analysis)	X	☐	☐	The FHA is contained within FSAR Section 9.5.1.
If "YES", evaluate/process any changes in accordance with the appropriate regulation.				

2. Does the proposed activity involve a test or experiment not described in the FSAR?
If "yes," perform an Exemption Review per Section IV OR perform a 50.59 Evaluation per Section V.

☐ Yes
X No

3. Does the proposed activity potentially impact equipment, procedures, or facilities utilized for storing spent fuel at an Independent Spent Fuel Storage Installation?
(Check "N/A" if dry fuel storage is not applicable to the facility.)
If "yes," perform a 72.48 Review in accordance with NMM Procedure LI-112.
(See Sections 1.5 and 5.3.1.5 of the EOI 10CFR50.59 Review Program Guidelines.)

☐ Yes
☐ No
X N/A

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[1] If "YES," see Section 5.1.5.
[2] If "YES," notify the responsible department and ensure a 50.54 Evaluation is performed.
[3] The Security Plan is classified as safeguards and can only be reviewed by personnel with the appropriate security clearance. The Preparer should notify the security department of potential changes to the Security Plan.
[4] If "YES," evaluate the change in accordance with the requirements of the facility's Operating License Condition.

B. **Basis**

The FSAR is impacted because it describes the existence of post fire safe shutdown procedures. However these procedures are not discussed or described in detail and as such there are no changes to the FSAR.

SSER 3, 5, 8 and 10 provides discussion related to post fire safe shutdown. The SSERs include various applicable exemptions and deviations from Appendix R.

The Fire Protection Program is impacted since the item under review is a revision to one of the documents that support the fire protection program.

The Technical Requirements Manual (TRM) includes fire protection but those portions of the document are not impacted by this "change". The "change" does not have any impact on surveillance, testing, compensatory or other activities as described or required by the TRM.

All other items listed under A.1 either have no association with fire protection (such as Security Plan) or the fire protection portion is not impacted (such as Operating License and Technical Specifications). Since these items are not impacted in any way they are provided with a NO response.

C. **References**

The LBD search included keyword searches as well as a detailed review of every fire protection/safe shutdown Regulatory Guide, Information Notice, deviation/exemption request letter, SER and SER Supplements and internal correspondence files. Attachment 1 provides a listing of the LBDs/Documents that are applicable to the subject of this safety evaulaton.

LBDs/Documents Reviewed:	Keywords:
Attachment 1 contains an extensive listing of documents associated with this review.	"fire", "ACA", "safe shutdown"

D. **Is the validity of this Review dependent on any other change?** (See Section 5.3.4 of the EOI 10CFR50.59 Program Review Guidelines.)

☐ **Yes**
x **No**

If "Yes," list the required changes.

_____

_____

_____

_____

III. 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.

Will the proposed Change being evaluated:

Yes	No	
☐	X	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)?
☐	X	Involve a land disturbance of undisturbed land areas (i.e., grading activities, construction, excavations, reforestation, creating, or removing ponds)?
☐	X	Involve dredging activities in a lake, river, pond, or stream?
☐	X	Increase the amount of thermal heat being discharged to the river or lake?
☐	X	Increase the concentration or quantity of chemicals being discharged to the river, lake, or air?
☐	X	Discharge any chemicals new or different from that previously discharged?
☐	X	Change the design or operation of the intake or discharge structures?
☐	X	Modify the design or operation of the cooling tower that will change water or air flow characteristics?
☐	X	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?
☐	X	Modify existing stationary fuel burning equipment (i.e., diesel fuel oil, butane, gasoline, propane, and kerosene)?[1]
☐	X	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]
☐	X	Involve the installation or use of equipment that will result in an air emission discharge?
☐	X	Involve the installation or modification of a stationary or mobile tank?
☐	X	Involve the use or storage of oils or chemicals?
☐	X	Involve burial or placement of any solid wastes in the site area that may effect runoff, surface water, or groundwater?

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

IV. 50.59 EVALUATION EXEMPTION

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

A. Check the applicable boxes below. If any of the boxes are checked, a 50.59 Evaluation is not required. If none of the boxes are checked, perform a 50.59 Evaluation in accordance with Section V. Provide supporting documentation or references as appropriate.

☐ The proposed activity meets all of the following criteria regarding design function per Section 5.5.1.1:

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 5.5.1.2. 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 5.5.1.3. 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 5.5.6 of the EOI 10CFR50.59 Review Program Guidelines for guidance.)

V. 50.59 EVALUATION

A. Executive Summary (Serves as input to NRC summary report. Limit to one page or less. Send an electronic copy to the site licensing department after OSRC approval, if available.)

Brief description of change, test, or experiment:

Calculation ECF-00-026 is the Post Fire Safe Shutdown Analysis. The calculation replaces the "Associated Circuits Analysis" (ACA). The ACA was provided to Entergy (LP&L) in 1985 by the plant's Constructor/Engineer Ebasco. The Associated Circuits Analysis was never entered into the document control system and thus was never verified, maintained or controlled (by LP&L/Entergy). The ACA was prepared in response to the NRCs specific request for such a document. A summary of the document was submitted to the NRC and accepted via SSER 10. Calculation ECF-00-026 represents the first controlled document of this type at Waterford 3 Nuclear Station. It was prepared to meet past as well as current NRC expectations and requirements.

The document consists of four volumes plus an access database. The database is controlled as a part of the calculation. The calculation consists of a report comprised of the assumptions, shutdown methodology, basic description of shutdown systems, associated circuits and various information as it relates to post fire safe shutdown. The major sections of the calculation are in the form of several Appendices. These appendices are:

A 10CFR50 Appendix R Safe Shutdown Equipment List and Logic Diagrams
B Circuit Analysis
C Safe Shutdown Compliance Assessment and Fire Area Summaries
D Functional Requirements Time Line Analysis
E Manual Action Feasibility Study
F Instrument Tubing Evaluation
G Fire Induced Loss of Offsite Power Analysis

The document is a reflection of existing plant design as it relates to post fire safe shutdown.

Reason for proposed Change:

The document was prepared to provide updated documentation of the post fire safe shutdown capability.

50.59 Evaluation summary and conclusions

Waterford 3 facility license condition 2.c.9 states that "EOI may make changes to the approved fire protection program without prior approval of the Commission only if those changes would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire." NEI 96-07, "Guidelines for 10CFR 50.59 Implementation", section 4.15 states that "10CFR 50.59 (c)(4) provides that when applicable regulations establish more specific criteria for controlling certain changes, 10CFR 50.59 does not also apply. Consistent with this intent, the standard fire protection license condition establishes specific criteria for control of fire protection changes and falls within the scope of 10 CFR 50.59 (c)(4). Thus applying 10 CFR 50.59 to fire protection program changes is not required." The NEI document further states "Changes to the fire protection program should be evaluated for impacts on other design functions, and 10 CFR 50.59 should be applied to the non-fire protection related effects of the change, if any." The Entergy "10CFR50.59 Review program

Guidelines" section 5.2.3 essentially mirrors the NEI guide. Entergy procedure LI-101 is consistent with the NEI guide in that section 5.2.2.3 (regarding Section 1 of the 50.59 review form) states "The proposed activity or portions thereof will be controlled by other regulations..." and then specifically lists fire protection and the fire protection License Condition. Thus the scope of this 50.59 is a review of the non-fire protection related effects of the change. The non-fire protection related aspects of the "change" do not change existing plant design, function or operation of plant equipment or operator response to plant accidents. In addition the fire protection aspects of the "change" do not result in a reduction in the level of fire protection or impact the ability to obtain and maintain post fire safe shutdown and as such is consistent with facility license condition 2.c.9.

B. 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
x 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
X No

BASIS:

FSAR Chapter 15 does not include "fire" as an accident and as such there can be no increase in the frequency of occurrence of an accident as a result of a fire. NRC guidance as provided by 10CFR50 Appendix R and BTP 9.5.1 does not postulate a fire and a plant accident concurrently. The only time this is considered is if the fire were to result in an accident. This is not the case at Waterford 3. The "changes" discussed by this 50.59 evaluation do not result in any physical plant changes. Some features of design are not credited in the analysis. This is because those features are not necessary to support the capability for post fire safe shutdown. The calculation included an evaluation of instrumentation tubing to determine if a fire could have an impact on the accuracy or response characteristics of plant instruments used for safe plant shutdown. The analysis determined that the routing and location of the plant instrument tubing is such that credited plant instrumentation is not impacted. This is not discussed in the FSAR. The analysis also evaluated spurious operation of equipment due to fire induced hot shorts, grounds or open circuits and includes actions to mitigate the effects of potential fire induced mal-operations (This is not discussed to any detail in the FSAR). The actions do not affect system performance or reliability in a manner that could lead to an accident. In addition, response to these actions does not increase operator burden (which could impact "frequency") because the actions have always been required and this analysis simply clearly lists those actions. It should be noted that some manual actions are new but these replace multiple actions or actions with higher time requirements and as such represent a reduction in operator burden. All actions have been reviewed for capability, time restraint, environmental concerns, access and existence of emergency lights (only hot shutdown actions require lights) and thus have no impact on frequency. There is no increase or impact of the frequency of occurrence of any 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 X No

BASIS:

As previously stated a fire is not an "accident" type as discussed in the FSAR and a concurrent fire and "accident" is not required to be considered unless the fire can be an initiator of an accident. The FSAR describes post fire safe shutdown in general terms including a listing of systems credited for post fire safe shutdown. The safe shutdown analysis (calculation) includes the same listing of safe shutdown systems plus a listing of components and cables within those systems. The analysis reviews the cables and components for spurious operation using the methodology "any and all, one at a time" meaning only one spurious operation occurs at a time but all spurious operations are evaluated. The plant is designed and functional for this methodology. The calculation does not change this methodology and as such there is no increase in the likelihood of occurrence of a malfunction. In addition there is no impact on the reliability of safety systems assumed to function in any accident analysis as described in the FSAR. The design of the plant has not been changed relative to this and as such there is no increase in the consequences of previously evaluated accidents.

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

BASIS:

The safe shutdown analysis demonstrates the ability of the plant to be safely shutdown in the event of a fire in any plant area including the Control Room. The analysis reflects the existing plant in regards to maloperation of equipment and the normal and fail-as-is positions of components (such as valves). The calculation does not result in a change to any plant equipment or the function of any plant equipment credited for dose mitigation to the public. Thus previous reviews of plant equipment for public dose related concerns are not impacted and as such existing consequence discussions in the FSAR are unchanged.

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 X No

BASIS:

The objective of this question is the protection of the public health and safety as it relates to radiation dose associated with a malfunction and plant accident. The safe shutdown analysis is concerned with a fire and as previously stated is not one of the "accidents" discussed in the FSAR. Thus this alone indicates there is no increase in the consequences because there is no change to the plant. The analysis has no impact on plant components (such as valves) other than to reflect their use and potential fire related failure modes. The use of plant equipment via automatic or manual means in regards to their design function is not impacted by the safe shutdown analysis and as such there is no change or increase in the consequences of a malfunction.

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

BASIS:

The safe shutdown analysis does not introduce a failure or initiator not previously considered in the FSAR. For example the analysis credits the isolation of the main steam lines to ensure secondary side isolation and to allow a controlled plant cool-down using the emergency feedwater system. The analysis reviews the fire impact on this isolation to ensure that isolation is still possible in the event of a fire. However the functional use (including failure modes) and isolation of the main steam lines is unchanged in regards to accidents previously evaluated in the FSAR. This example applies to all safety class systems impacted by the safe shutdown analysis in that existing analysis applies and thus no new accident scenarios are introduced.

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 X No

BASIS

Fire related malfunctions of SSCs are not explicitly described in the FSAR. In addition the safe shutdown analysis does not introduce initiators or failures not explicitly described that would result in a malfunction having a different result than that described in the FSAR. All fire related malfunctions are bounded by other malfunctions already described for the "accidents" discussed in the FSAR. For example the accident scenarios in the FSAR may discuss the malfunction of a valve and the impact of that malfunction. The safe shutdown analysis is focused on ensuring the valve, in the event of a fire, is free of fire damage so that it can perform its required function. Thus the function as described in the FSAR bounds the functions as credited in the safe shutdown analysis. This is consistent throughout the safe shutdown analysis in that it verifies the availability of at least one safe shutdown train to perform its credited safe shutdown function. This includes scenarios in which the Control Room is evacuated due to fire. Existing design features are provided and have been previously evaluated to safely shut down the plant from the remote shut down panel. Thus the safe shutdown analysis does not create the possibility for a malfunction of an SSC important to safety different than 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 X No

BASIS:

The intent of this question is to ensure the function of the fuel cladding, reactor coolant system boundary, containment and associated critical support systems are not challenged by the change. The safe shutdown analysis is not associated with any design basis limits. The analysis verifies that the plant can safely shutdown due to a fire. For example the pressurizer heaters are the desired and easiest method to control plant cool down. The inability to control plant cool down could result in the eventual loss of a fission product barrier. In some fire areas the pressurizer heaters are not available due to potential cable fire damage. The potential loss of the pressurizer heaters is recognized as a potential off normal activity and there are existing plant procedures to manually control plant cool down. Thus, as stated for the other 50.59 questions, the safe shutdown analysis does not change plant design and does not introduce new scenarios that could impact existing accident evaluations. Thus the safe shutdown analysis has no impact on fission product barriers or related design basis limits.

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
X No

BASIS:

There is no impact to any method of evaluation including mathematical models, computer program limits, uncertainty measurements, etc. The safe shutdown analysis simply verifies that existing design is adequate to ensure post fire capability to achieve and maintain safe plant shutdown within the evaluations and limits previously established and described in the FSAR. The design of any safety system is not changed by the safe shutdown analysis or operated in a manner outside of which the system was intended.

50.59 Review – Attachment 1

(Continuation of Section 1)

Appendix A of the calculation provides the Safe Shutdown Equipment List and Logic Diagrams. This appendix provided the basis for the post fire safe shutdown system selection to fulfill the performance criteria as defined in 10CFR50 Appendix R, Section III.L. The Appendix also documents that the safe shutdown systems and components required to achieve the performance criteria are identified, and that the applicable components and system interrelationships are shown on safe shutdown logic diagrams. This Appendix also provides a basis for component exclusion within a safe shutdown system. The safe shutdown equipment list is maintained on an access database with the database results printed and contained within this Appendix. This list/database provides various information such as the equipment ID, equipment description, normal position, fail position, hot shutdown position, cold shutdown position and power supply. The logic diagrams of this Appendix provide a visual logic path for achieving post fire safe shutdown.

Appendix B of the calculation provides the safe shutdown circuit analysis. This appendix along with the database describes the methodology and guidelines used in performing the cable selection and circuit analysis for 10CFR50 Appendix R safe shutdown components. The safe shutdown cable analysis worksheets used for input into the database are discussed in this Appendix.

Appendix C of the calculation provides the 10CFR50 Appendix R safe shutdown compliance assessment and fire area summaries. A compliance assessment summary was prepared for each analysis area (Fire Area) to ensure each area examined is in compliance with the requirements of 10CFR 50 Appendix R Sections III.G and III.L. The compliance assessment consists of a methodical review of all safe shutdown equipment and cables contained within the designated analysis area. The analysis ensured that at least one safe shutdown path is available based on worst case postulated equipment and/or cable losses in the area. The attachment documents the compliance assessment for 51 Fire Areas/Zones. Each assessment includes the print out from the database that details the equipment/cables in a fire area and the associated compliance statement. For example a fire in a certain area may result in the damage to one component/cable of a safe shutdown train. The compliance statement provides information that demonstrates why the loss of that component/cable will not impact post fire safe plant shutdown.

The Associated Circuits Analysis (The original safe shutdown analysis submitted to the NRC) included Project Procedure II-B-10. This procedure provided the methodology and assumptions used in the analysis. For example the procedure states "For components required to achieve and maintain hot standby, manual operation of equipment (ie, valves, switches, circuit breakers, etc), shall be considered an acceptable means of operating equipment and isolating systems provided it can be demonstrated that sufficient time and manpower is available". The new safe shutdown analysis (ECF-00-026) is consistent to the methodology/information submitted to the NRC with correction of errors in the original analysis, updates to incorporate approved plant changes since the original analysis, and additional analysis to satisfy current regulatory documentation expectations.

NUREG-0787 Supplement 10 (Waterford SSER) reflected the acceptance of the original safe shutdown analysis as follows:

"By letters dated November 30, 1984 and February 7, 1985, the licensee provided the associated circuits analysis that evaluated the effects of spurious signals (i.e., hot shorts, open circuits, or shorts to ground) on the operation of systems, equipment, and components required to achieve and maintain safe shutdown

conditions with or without the availability of offsite power. The licensee analysis also considered the effects of damage on control room/cable vault circuits to ensure that transfer/isolation of circuits essential for achieving and maintaining safe shutdown can be accomplished. As a result of this analysis the licensee proposed some hardware modifications including installation of redundant fuses and selector switches, isolation switches, and cable rerouting, and also identified operator actions required to mitigate the effects of spurious actuations. The staff has reviewed the licensee's submittals regarding spurious circuit actuations that may result from fires. The staff concludes that the methodology and results of the analysis for identifying and rectifying undesired plant conditions from spurious actuations is acceptable."

In addition SSER 10 stated:

"On the basis of its review of the licensee's spurious signal analysis and proposed hardware modifications, the staff concludes that the post-fire safe shutdown capability and alternative shutdown capability for Waterford 3 complies with the guidelines of SRP Section 9.5.1, positions C.5.b and C.5.c (Appendix R, Sections III.G.3 and III.L) and is , therefore, acceptable."

The original analysis specifically identified the manual actions for alternative safe shutdown areas (Control Room/Cable Vault) but only passively identified the manual actions for non-alternative safe shutdown areas. These actions were essentially hidden within the circuit analysis worksheets of the analysis. The philosophy at that time (1980s) was that operator action for non-alternative safe shutdown areas would be based on symptomatic conditions. The current analysis specifically identifies the manual actions that may be required for each Fire Area. This was provided to meet current regulatory expectations.

In addition to the identification of manual actions, the new analysis prompted the discovery of existing deficiencies in the original analysis, the incorporation of additional analysis that resulted in the reduction of required manual operator actions, and reduction of credited plant fire barriers (wrap and walls). Note, as stated previously, the new analysis does not credit the use of some existing fire barriers. The actual deletion of these barriers from plant design will be via future ERs per the configuration control process. However the new safe shutdown analysis is a reflection of the current plant configuration. Thus the analysis will state the existence of the fire barrier and also state that it is not credited in the analysis. All the existing requirements, such as surveillances and impaired barrier compensatory actions, will be maintained until formal deletion via the configuration control process (ER).

Appendix R, Section III.L.4 states in part "If such equipment and systems will not be capable of being powered by both on-site and off-site electrical power systems because of fire damage, an independent on-site power system shall be provided." Appendix R, Section III.L.5 states "If such equipment and systems used prior to 72 hours after the fire will not be capable of being powered by both onsite and offsite electrical power systems because of fire damage, an independent onsite power system shall be provided." Appendix R, Section III.L (and III.G.3) is concerned with alternative and dedicated shutdown capability. For non-alternative shutdown areas Appendix R and NRC guidance allows the use of offsite power provided it cannot be lost due to fire effects.

The original safe shutdown analysis made the conservative assumption that a fire in every area of the plant would result in the loss of offsite power. Some areas of the plant contained features and actions that were required due to this loss of power assumption. For example, if emergency diesel generator cables were in an area they may have been protected with fire wrap to ensure the availability of emergency diesel power to that area. The new analysis included a review of the cables and equipment in an area to determine if normal offsite power would be lost due to a fire in the area. If offsite power was determined to be available then certain manual actions and fire barriers (such as fire wrap) were no longer credited for

that area in the analysis. Again, credited means the existing feature is not needed for post fire safe plant shutdown, even though the feature may be installed/provided for the plant.

The new safe shutdown analysis includes an Instrument Tubing Evaluation. This type of evaluation was not considered in the original safe shutdown analysis. The objective of the evaluation was to assess the impact of fluid density changes inside instrument tubing on indication and control signals credited for compliance with 10CFR50 Appendix R. This was provided to document that the heating of the process fluid within the sensing lines during a fire would not result in erroneous reading or spurious equipment actuations. This analysis was provided because Section III.L.2 of Appendix R requires provision for direct readings of the process variables necessary to perform and control the reactor safe shutdown functions. Also in Information Notice 84-09, the NRC specifies that the licensee demonstrate the capability to monitor various parameters necessary to achieve safe shutdown. This analysis provides documentation that there are no fire related instrument tubing concerns at Waterford 3.

The original safe shutdown analysis (ACA) noted that safe shutdown could be achieved without the use of pressurizer heaters, but did include the heaters as required safe shutdown equipment. This was provided because the heaters are the desired and easiest method to control plant cool-down. Current plant procedures allow safe shutdown without the pressurizer heaters when necessary. NRC Generic Letter 86-10 Section 5.3.5 (Question/Response section) indicates that the pressurizer heaters are not required for post fire safe shutdown. Pressurizer heaters are not credited for a fire in Fire Areas RAB3, RAB5, RAB7B, RAB7C, RAB8B, RAB8C and TGB. They are credited for other areas of the plant. Also the analysis does not credit some manual actions and fire barriers (firewall) in RAB8B ("B" Switchgear Room) between SSD-ESWGR-32A and SSD-ESWGR-32B. In addition, fire wrap for the pressurizer heater cables in Fire Area RAB 8B is not credited.

The Boric Acid Makeup Tanks (BAMT) were previously credited as a required source of borated water for all fire areas. The Appendix R scenario does not require consideration of failures (such as a stuck rod) unless a fire is the source of the failure. ER-W3-0068-00-00 "Appendix R Project – Boration Requirements without a Stuck Rod" examined the shutdown margin using only the RWSP with RCS letdown isolated. The shutdown margin was found to be more than adequate (more than "accident" analysis). In areas where the charging suction valve from the RWST (CVC-507) is unaffected by a fire, the RWSP is credited as the sole source of makeup water and thus previous credited actions to make the BAMTs available are no longer necessary for some fire areas. The requirement to monitor the BAMTs in Fire Area RAB39 is not necessary for a fire in RAB3, RAB3A, RAB30, RAB37 and RAB39. Some installed fire wrap related to the BAMTs is no longer credited for some fire areas. Manual actions for a fire in RAB39 to de-energize BAM-113A at SSD-EMCC-312B in RAB 8B and BAM-113B at SSD-EMCC-311B in RAB 8B plus the operation of valves in RAB39 are no longer credited due to the single credited action to operate CVC-507. The single operator action essentially reduces potential operator burden.

A cold shutdown manual action was credited for a fire in RAB39 to de-energize and open SI-415B. This allows fire wrap on raceways 30511V-SB and 35220-SB to no longer be credited. Since it is a cold shutdown action it is not time critical and is an improvement over multiple manual actions and dependence on fire wrap to maintain the integrity of the associated circuits.

One hour fire wrap previously credited for a fire in Fire Area RAB31 for SI-MPMP-0002A/B, CVC-MPMP-0001AB, HVR-MAHU-0040AB, HVR-MAHU-0042AB, 4KV-ESWGR-3B and SSD-ESWGR-31B is no longer credited. The affected cables cannot cause any spurious actuations that would adversely affect safe shutdown and the train "AB" components are not required since train "B" components are

available and credited in the area. This was a correction of an error in the original safe shutdown analysis.

The analysis eliminated credit for the hot shutdown action to de-energize CVC-183 at SSD-EMCC-311B in RAB 8B, then to close CVC-183 in RAB31 to isolate the VCT for a fire in Fire Areas CTB, RAB1B, RAB2, RAB15A, RAB17, RAB20, RAB21, RAB35 and RAB41. The analysis determined that off site power will be available in the area and thus the manual actions are not necessary.

The analysis eliminated credit for hot shutdown actions to open doors to establish Battery Room cooling for a fire in RAB2. The action is not required because off-site power has been verified to be unaffected due to a fire in this area.

The analysis eliminated credit for hot shutdown action to operate the Train B fuel oil transfer pump, EGF-MPMP-0001B, from the Train B EDG Control Panel due to the loss of automatic level control for a fire in RAB16. This action is not required because off-site power was verified to be unaffected due to a fire in this fire area.

The analysis eliminated credit for the hot shutdown action to remove control power fuses and manually close the breaker in RAB8B for the Train B Exhaust Fan, HVR-MFAN-0025B for a fire in RAB23. This action is not required because off-site power was verified to be unaffected due to a fire in this fire area.

The analysis replaced the cold shutdown action to manually close SI-331A and SI-332A inside Containment with the normal shutdown actions to re-close the valves respective breakers at SD-EMCC-311A in RAB8A (valve breakers are maintained open during plant operations). Valves may then be closed normally from the Control Room for a fire in Fire Areas RAB16, RAB16A, RAB18, RAB19, RAB24, RAB25, RAB37, RAB40 and CTA. This was done to reduce operator burden and response time by eliminating a containment entry.

The analysis replaced the cold shutdown action to manually close SI-331B and SI-332B inside Containment with the normal shutdown actions to re-close the valves respective breakers at SSD-EMCC-311B in RAB8B (valve breakers are maintained open during plant operations). Valves may then be closed normally from the Control Room for a fire in RAB1B, RAB2, RAB15, Rab15A, RAB17, RAB20, RAB21, RAB35, RAB41 and CTB. This was done to reduce operator burden and response time by eliminating a containment entry.

The analysis eliminated credit for fire wrap in Fire Area RAB2 on raceways 31041A-SA, 31041E-SA, 31041F-SA and B3523-SA. They are no longer credited as Train A EDG exhaust fan operation is not required for a fire in RAB2. This is because Train "A" offsite power is available for the area.

The analysis eliminated credit for fire wrap in Fire Area RAB6 on raceways 32377A-SB, 32377A1-SB, 32377B-SB, 32377B1-SB, 32377C-SB, 32377C1-SB, 32377D-SB and 32377D1-SB They are no longer credited as Train B EDG operation is not required for a fire in RAB6. Train "B" offsite power is available and credited for this area.

The analysis eliminated credit for fire wrap in Fire Area RAB 19 on raceways 32377A1-SB, 32377B1-SB, 32377C1-SB and 32377D1-SB because Train B EDG operation is not required for a fire in RAB 19. Trains A and B off site power and is available in this area.

The analysis eliminated credit for fire wrap in Fire Area RAB23 on raceways 32370T-SB, 32377A-SB, 32377B-SB, 32377C-SB and 32377D-SB because Train B EDG operation is not required for a fire in RAB23. Train B off-site power is available in this area.

RAB1B, Control Room H&V Room, contains one hour fire wrap on Train "A" cables as they pass over HVC-MAHU-0001B and Train "B" cables as they pass over HVC-MAHU-001A. Most of these cables are not credited in this analysis. Also an approved exception from Section III.G.2 of Appendix R was granted to allow the enclosure of essential redundant conduits in the same fire wrap for Battery Room A, A/B and B ventilation exhaust fans. The fans are not credited in this area, as opening battery room doors provides adequate ventilation. Thus the exception is not necessary. These actions are discussed in FSAR 9.5.1., SSER 8 and deviation request letter W3P84-0709.

The Train AB Essential Chiller, Chilled Water Pump and Compressor Oil Pump are separated from the Train A and B Essential Chillers (including the Chilled Water Pumps and Compressor Oil Pumps) by a partial height one-hour rated firewall in Fire Area RAB2. This wall is located on the west side of this room, roughly along column line 2A to the north and south of column line K. Cables for the AB Chiller and its support components that are routed on the east side of this partial height wall are protected with one-hour fire wrap and routed in conduit embedded in concrete. The power cable for Essential Chilled Water Pump A/B (31068A, routed in conduit 31068A-SAB in the west portion of the room) is also protected on the west side of the partial height wall, which it crosses at ceiling level. Conduit 31068A-SAB then travels down the west wall of the room to the pump. There are no cables for the A or B Chiller or its support components on the west side of this wall. Thus, for a fire on the west side of the partial height barrier both the A and B Essential Chilled Water System will remain available. For a fire on the east side of this barrier, the AB Chiller and its support components will be available to supply either the A or B Essential Chilled Water headers. Cable 31065E, which supports operation of the AB Chiller, is wrapped from Instrument Cabinet C-101C on the west side of the partial height wall, then travels north crossing the wall, then passes down along column 2A/K where it penetrates the partial height wall at floor level as it goes to the AB Chiller. This analysis credits the wrap on this conduit from this penetration back to Instrument Cabinet C-101C. Wrap on the west side of the partial height wall, except for conduits 31068A-SAB and 31065E-SAB as discussed above, is not credited in the analysis.

The RAB2 HVAC Equipment Room Supply Fans are located in the southwest corner of the room between column lines J and K and 1A and 2A, with HVR-MAHU-0022A being to the west of HVR-MAHU-0022B. The fans are separated by a one-hour firewall, and HVR-MAHU-0022B also has one-hour fire wrap material applied to its bottom side (it is mounted approximately eight (8) feet above the floor). Cables for both fans and respective dampers are routed to the east. A one-hour fire wrap partially protects cables 31117A for HVR-MAHU-0022A and 31117C for HVR-MAHU-0022A, HVR-MFAN-0024A, and respective dampers. Cable 31117A is protected up to the fan motor housing located on the west side of the one hour firewall and cable 31117C is protected up to the exit point of tray C201N-SA:4207 in the near vicinity of EDG Room A exhaust fan in the southwest portion of this area. At this point, the cable exits the tray in unprotected conduit 31117C-SA to junction box B3981-SA. A fire induced ground on this cable could disable the Train A room supply and exhaust fan control circuits. Cables 31119A for HVR-MAHU-0022B and 31119C for HVR-MAHU-0022B, HVR-MFAN-0024B and respective dampers are routed in unprotected conduit and tray in this same vicinity. A fire induced ground on these cables could disable the Train B supply and exhaust fans. Thus, a fire in the most southwest corner of the room may result in loss of H&V Mechanical Room HVAC (in addition to the Train A EDG Room exhaust fan). This may require the opening of room doors and the use of portable ventilation equipment to maintain adequate room cooling as discussed and approved in SSER 8. For the remainder of the room, adequate protection and separation of Train A from Train B SSD equipment exists to support Train A H&V Mechanical Room HVAC. This analysis does not credit the partial height wall

separating HVR-MAHU-0022A from HVR-MAHU-0022B, nor does it credit the fire wrap material on the bottom of HVR-MAHU-0022B. Fire wrap on conduits supporting HVR-MAHU-0022A in the southwest corner of this room are also not credited in this analysis. Where cables for this fan are routed in protected cable trays, that fire wrap is credited.

In SSER 8 an exemption for partial height walls for Fire Area RAB2 (and other areas) was approved partly based on the combustible loading in the area. The SSER was written providing general approval for all the areas discussed in the submittal letter (W3P84-0709) and included the statement that the combustible loading in the areas was 30 minutes. This is an accurate statement for all areas except RAB 2. RAB 2 has a higher combustible loading. In providing a general approval for all areas containing partial height walls, it appears the NRC inadvertently misstated the combustible loading for RAB2 or the NRC did not include the charcoal that is fully enclosed in the HVAC filter units in the assessment of the area's combustible loading. The SSER simply does not provide sufficient detail to determine the precise basis for the 30 minute statement. However the submittal information was correct, the submittal letter was referenced in the SSER and the NRC approved the plant's request.

A fire in RAB7A requires a manual action in Fire Area RAB7B which is in the same Relay Room Envelope. This action occurs, under worst case conditions, approximately 10 minutes after the initiating spurious event. An access path to RAB7B exists without passing through RAB7A and the nature of the required action (operation of an isolation switch) indicates that the action is acceptable. Thus this action is maintained as an acceptable post fire safe shutdown action.

Circuit design features (electrically isolating instrument signals to LCP-43 at Process Analog Cabinets) and normal operating procedures of maintaining LCP-43 transfer switches in the "CONTR ROOM" position preclude the need to protect several train "A" raceways in RAB7B with fire wrap. Thus the wrapped raceways are not credited in this analysis. Also, there is an existing exemption from the requirements of Section III.G.2 of 10CFR50 Appendix R (approved via SSER8) for having cables enclosed in the same one-hour rated fire wrap enclosure. This exemption was not required.

Fire Area RAB15 ("B" Emergency Generator) contains fire wrap that is not credited in the analysis. The components associated with the wrapped cables are not required in the event of a fire in this area because train "A" offsite power and EDG "A" is available post fire.

Fire Area RAB19 (Component Cooling Water Pump "A") contains fire wrap that is not credited in the analysis. The components associated with these cables are not required in the event of a fire in this area because train "B" offsite power is available post fire.

Fire Area RAB23 (Corridor Area and Common Passageways) contains fire wrapped cables supporting EDG operation. This fire wrap is not credited in this analysis because offsite power will be available post fire. Also, some of these cables are associated with an approved exception from Section III.G.2 of Appendix R because they are enclosed in the same wrap bundle. This Appendix R exception is not required for these cables. In addition there are some wrapped cables for train "A" components (such as CCW pump and an air handling unit). This wrap is also not credited because this is a "B" train safe shutdown area.

There is an existing NRC exception request allowing automatic sprinklers in only part of the area of Fire Area RAB32. One of the factors considered in the exception request was the protection (by fire wrap) of conduit for the Train "A" Diesel Oil Transfer Pump. This wrap is not credited in the analysis because both Train "A" and Train "B" offsite power will be available and as such operation of the emergency diesel generator is not required.

The revised analysis includes time line information that categorizes actions based on their time sensitivity. These time groups are (1) Actions to be taken in the Control Room, (2) Actions to be taken following Control Room evacuation to ensure actions taken in the Control Room have not been negated by subsequent spurious actuation signals, (3) Actions to stabilize the RCS and Steam Generators and (4) actions analyzed to be low priority with respect to time sensitivity. Time line information provided in the analysis is not intended to provide absolute numbers but rather to prioritize actions necessary to assure safe shutdown of the plant. The supplementary information presented in Appendix R states in part "... it is not possible to predict the specific conditions under which fires may occur and propagate." Following this guidance it goes to reason that it is not possible to predict the exact behavior and interaction of plant systems given a fire. However the performance goals of Reactivity Control, Reactor Coolant Makeup, Reactor Heat Removal, Process Monitoring and Support Functions as prescribed by NRC regulations were analyzed to ensure the ability to achieve and maintain post fire safe plant shutdown. In addition Section 5.3.10 of Generic Letter 86-10 requires that for alternative shutdown areas that the plant maintain the ability to achieve safe shutdown assuming a loss of all automatic functions and the worst-case design basis transients. Thus the analysis considered transients including the isolation of normal spray, volume control tank valve spurious closure, spurious actuation of an atmospheric dump valve, loss of cooling to the emergency diesel generators, inadvertent safety injection initiation and inadvertent containment spray initiation. It should also be noted that the Waterford 3 safe shutdown compliance strategy does not rely on any hot standby repairs to achieve post fire safe shutdown. The only repairs credited are the replacement of fuses for cold shutdown components that may be blown prior to transferring control to the remote shutdown panel, LCP-43. This is consistent with NRC requirements and expectations (10CFR 50 Appendix R).

In summary the analysis reflects existing plant design while opening the door for future design changes that deletes certain fire barriers. These future design changes will result in changes to the FSAR and other design documents. This 50.59 review and fire protection review concludes that the "change" introduced by this calculation is consistent with the fire protection license condition, does not require prior NRC approval and has no adverse impact on the non-fire protection aspects of the plant.

References

(Continuation of Section II.C)

Code of Federal Regulations, Title 10, Part 50, Appendix R. "Fire Protection Program for Nuclear Power Facilities Operating Prior to January 1, 1979".

Memorandum to All Power Licensees with Plants Licensed Prior to January 1, 1979 from Darrell G. Eisenhut, "Fire Protection Rule (45 FR 76602, November 19, 1980) - Generic Letter 81-12," February 20, 1981.

Memorandum to Darrell G. Eisenhut, "Fire Protection Rule (45 FR 76602, November 19, 1980) - Clarification of Generic Letter 81-12," March 22, 1982.

NRC Generic Letter 86-10, Implementation of Fire Protection Requirements, 4/24/86

NRC Information Notice 83-14, "Actuation of Fire Suppression System Causing Inoperability of Safety-Related Equipment" (June 22, 1983).

NRC Information Notice 92-18, "Potential for Loss of Remote shutdown Capability During a Control Room Fire" (February 28, 1992).

NUREG-0050, Recommendations Related to Browns Ferry Fire, 2/76.

Branch Technical Position CMEB 9.5-1, Guidelines for Fire Protection For Nuclear Power Plants, Revision 2.

IE Information Notice 83-41, Actuation of Fire Suppression System Causing Inoperability of Safety Related Equipment, 6/22/83

IE Information Notice 87-50, Potential LOCA at HI- and LO- Pressure Interface From Fire Damage, 10/9/87

IE Information Notice 90-69, Adequacy of Emergency and Essential Lighting, 10/31/90

NRC Information Notice 94-12, "Insights Gained From Resolving Generic Issues 57: Effects of Fire Protection System Actuation On Safety-Related Equipment", 2/9/94

NRC Information Notice 84-09, "Lessons Learned from NRC Inspections of Fire Protection Safe Shutdown Systems" (2/13/84 and revision 1, 3/7/84)

W3SES Technical Specifications Docket No. 50-382, Operating License No. NPF-38.

W3SES Final Safety Analysis Report, Revision 10, October 1999.

NUREG-0787, Safety Evaluation Report related to the operation of the Waterford Steam Electric Station, Unit No. 3, dated July 1981, with Supplement 3 (April 1982), Supplement 5 (June 1983), Supplement 8 (December 1984), and Supplement 10 (March 1985).

Waterford 3 Associated Circuits Analysis, November 30, 1984.

Waterford 3 Letter W3P84-0709, Request for Relief from Certain Technical Requirements of Appendix R to 10 CFR 50, dated March 26, 1984.

NRC Inspection Report No. 50-382/00-07, dated April 24, 1986 – Waterford 3

NRC Memo, Mattson/Vollmer Re: Allowable Repairs and Cold Shutdown Time Constraints, July 2, 1982

Waterford 3 Associated Circuits Analysis, November 30, 1984 (ACA)

I. OVERVIEW / SIGNATURES

Facility: Waterford 3

Document Reviewed: ER-W3-2002-0499-000 **Change/Rev.:** _____

System Designator(s)/Description: N/A (involves TRM change associated with minimum containment temperature)

Description of Proposed Change The proposed change revises two different elements of the TRM 3.6.1.5 ACTION statement and its associated basis. Firstly, the ACTION statement requires the restoration of the minimum containment temperature within 1 hour. The proposed change will revise this requirement from 1 hour to 8 hours. Secondly, the ACTION statement requires a power reduction to less than or equal to 70 percent within the next 6 hours. The proposed change will revise this requirement by replacing it with a requirement to insert a 0.2 kW/ft Peak Linear Heat Rate penalty into COLSS for every 10 degrees F below the 90 degree F limit within the same timeframe of 6 hours.

If the proposed activity, in its entirety, involves any one of the criteria below, check the appropriate box, provide a justification/basis in the Description above, and forward to a Reviewer. No further 50.59 Review is required. If none of the criteria is applicable, continue with the 50.59 Review.

- ☐ The proposed activity is editorial/typographical as defined in Section 5.2.2.1.
- ☐ The proposed activity represents an "FSAR-only" change as allowed in Section 5.2.2.2_____. (Insert item # from Section 5.2.2.2).
- ☐ The proposed activity is controlled by another regulation per Section 5.2.2.3.

If further 50.59 Review is required, check the applicable review(s): (Only the sections indicated must be included in the Review.)

☐	**SCREENING**	**Sections I, II, and III required**
☐	**50.59 EVALUATION EXEMPTION**	**Sections I, II, III, and IV required**
☒	**50.59 EVALUATION (#:) 02-018**	**Sections I, II, III, and V required**

Preparer: Michael K. Brandon/ M.K. Brandon /Entergy/ Waterford Licensing/ 10/16/02
Name (print) / Signature / Company / Department / Date

Reviewer: Lisa B. Borell/ Lisa A. Borel /Entergy/Waterford Licensing/ 10/16/02
Name (print) / Signature / Company / Department / Date

OSRC 10/25/02
Chairman's Signature / Date (N/A for Screenings and 50.59 Evaluation Exemptions)

List of Assisting/Contributing Personnel:

Name:	Scope of Assistance:
Jerry Holman, Clint Alday, and Deborah Bentzinger	ECCS Analyses insights, historical PHLR margins, and COLSS programming insights.

II. SCREENING

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? (Check "N/A" for those documents that are not applicable to the facility.)**

Operating License	YES	NO	N/A	CHANGE # and/or SECTIONS TO BE REVISED
Operating License	☐	☒		
TS	☐	☒		
NRC Orders	☐	☒	☐	
If "YES", obtain NRC approval prior to implementing the change. (See Section 5.1.13 for exceptions.)				

LBDs controlled under 50.59	YES	NO	N/A	CHANGE # and/or SECTIONS TO BE REVISED
FSAR	☐	☒		
TS Bases	☐	☒		
Technical Requirements Manual	☒	☐		TRM 3.6.1.5 and its basis
Core Operating Limits Report	☐	☒		
Offsite Dose Calculations Manual	☐	☒		
NRC Safety Evaluation Reports[1]	☐	☒		
If "YES", perform an Exemption Review per Section IV OR perform a 50.59 Evaluation per Section V.				

LBDs controlled under other regulations	YES	NO	N/A	CHANGE # and/or SECTIONS TO BE REVISED
Quality Assurance Program Manual[2]	☐	☒		
Emergency Plan[2]	☐	☒		
Security Plan[2, 3]	☐	☒		
Fire Protection Program[4] (Includes the Fire Hazards Analysis)	☐	☒	☐	
If "YES", evaluate/process any changes in accordance with the appropriate regulation.				

2. **Does the proposed activity involve a test or experiment not described in the FSAR?**
   If "yes," perform an Exemption Review per Section IV OR perform a 50.59 Evaluation per Section V.
   ☐ Yes ☒ No

3. **Does the proposed activity potentially impact equipment, procedures, or facilities utilized for storing spent fuel at an Independent Spent Fuel Storage Installation? (Check "N/A" if dry fuel storage is not applicable to the facility.)**
   If "yes," perform a 72.48 Review in accordance with NMM Procedure LI-112. (See Sections 1.5 and 5.3.1.5 of the EOI 10CFR50.59 Review Program Guidelines.)
   ☐ Yes ☐ No ☒ N/A

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[1] If "YES," see Section 5.1.5.
[2] If "YES," notify the responsible department and ensure a 50.54 Evaluation is performed.
[3] The Security Plan is classified as safeguards and can only be reviewed by personnel with the appropriate security clearance. The Preparer should notify the security department of potential changes to the Security Plan.
[4] If "YES," evaluate the change in accordance with the requirements of the facility's Operating License Condition.

B. Basis

(Provide a clear, concise basis for the answers given in the applicable sections above. 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.)

The proposed change directly affects TRM 3.6.1.5 and therefore the TRM is impacted. A keyword search of the LRS electronic 10CFR50.59 LBD files was conducted using the key words of "containment" and "temperature". This was broad search and resulted in 189 "hits". While a few references to the 90 degree containment temperature condition were identified in the FSAR, no change to any LBDs except the TRM is needed.

C. References

[Discuss the methodology for performing the LBD search. 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 5.3.6.4 of LI-101.]

LBDs/Documents Reviewed:	Keywords:
Electronic search of the LRS/fulfind 10CFR50.59 LBD electronic database	"containment" and "temperature"
Discussions of containment temperature relative to accident analyses were found primarily in FSAR Ch.6 and 15. FSAR Section 6.2 discusses containment design, Section 6.3 discusses the ECCS model and containment temperature assumptions, FSAR Section 15.6.3 discusses LBLOCA analyses. In addition to the FSAR, containment temperature high limits are contained in TS 3.6.1.5 and its basis. As stated above, the only document requiring revision due to this change is TRM 3.6.1.5 and its basis.	

D. Is the validity of this Review dependent on any other change? (See Section 5.3.4 of the EOI 10CFR50.59 Program Review Guidelines)

☐ Yes
☒ No

If "Yes," list the required changes.

III. 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.

Will the proposed Change being evaluated:

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

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

IV. 50.59 EVALUATION EXEMPTION

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

A. Check the applicable boxes below. If any of the boxes are checked, a 50.59 Evaluation is not required. If none of the boxes are checked, perform a 50.59 Evaluation in accordance with Section V. Provide supporting documentation or references as appropriate.

☐ The proposed activity meets all of the following criteria regarding design function per Section 5.5.1.1:

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 functions of an SSC described in the FSAR will be accomplished.

☐ An approved, valid 50.59 Review(s) covering associated aspects of the proposed change already exists per Section 5.5.1.2. 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 5.5.1.3. 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 5.5.6 of the EOI 10CFR50.59 Review Program Guidelines for guidance.)

This section is not required since a full 50.59 evaluation has been performed.

V. 50.59 EVALUATION

A. Executive Summary (Serves as input to NRC summary report. Limit to one page or less. Send an electronic copy to the site licensing department after PSRC approval, if available.)

Brief description of change, test, or experiment:

This change revises TRM 3.6.1.5, Containment Systems, Air Temperature and its basis, by extending the response time in the ACTION statement from 1 hour to 8 hours and by replacing the requirement to reduce power to 70 percent with a requirement to insert a 0.2 kW/ft Peak Linear Heat Rate penalty into Core Operating Limit Supervisory System (COLSS) for every 10 degrees F below the 90 degree F air temperature limit.

Reason for proposed Change:

In June 1997, Waterford 3 created this new TRM section in response to Condition Report 96-0251. This Condition Report documented the inversely proportional relationship between containment temperature and the calculated Peak Clad Temperature (PCT) in the Waterford 3 Emergency Core Cooling System (ECCS) analysis. A minimum containment temperature of 90 degrees is assumed in the current analysis of record. Since no explicit administrative control was in place to ensure compliance with this analysis assumption, TRM 3.6.1.5 was developed and implemented. The actions prescribed in the original TRM provided very conservative bounding actions. The 1 hour AOT does not allow a reasonable amount of time to verify, diagnose and respond to an indicated low containment temperature. In addition, a 1 hour action time in the Technical Specifications or the TRM is typically specified for those situations where a complete loss of a safety function has occurred. A low containment temperature may reduce PCT margins; however, a reduced margin does not merit a 1 hour action time. The action for reducing power does not allow any credit for the margin that exists between the Peak Linear Heat Rate (PLHR) assumed in the ECCS analyses and the actual PLHR that would exist at a time when the minimum containment temperature was violated. PLHR has a more significant effect on PCT than containment temperature. The action of inserting a 0.2 kW/ft COLSS penalty in lieu of reducing power to 70 percent provides a comparable level of protection without creating a power transient. This change will allow for a more prudent and safer course of action to respond to an unexpected low containment temperature excursion.

50.59 Evaluation summary and conclusions

This change involves administrative controls that are in place to ensure plant operation, specifically minimum containment temperature remains within the bounding assumption made in the Emergency Core Cooling System (ECCS) analysis. The minimum containment temperature has no bearing on the frequency of the occurrence of any accident evaluated in the FSAR. Containment temperature is not an initiator of any postulated accident. In addition this change deletes the requirement for a power reduction transient. Therefore this change will not increase the frequency of occurrence of an accident previously evaluated in the FSAR.

This change will not increase the likelihood of occurrence of a malfunction of a structure, system, or component (SSC) important to safety. The revised TRM will have no effect on equipment qualification. The revised TRM will not force an automatic power reduction. It will require the inserting of a COLSS penalty that will serve as an alternate means for ensuring PCTs remain bounded by current ECCS analyses. In addition, a low containment temperature will result in lower containment peak pressures therefore no increase in containment malfunctions due to high pressure would be created. Finally the extension of the action time from 1 hour to 8 hours will reduce the chances of an operator error due to time pressure and the need for taking immediate action (i.e., within 1 hour) is not justified based on a comparison of comparable TS action times, the fact that temperatures changes in containment are

expected to occur slowly, and adequate margin will almost always exist between the bounding PLHR and the actual PLHR.

This change will ensure appropriate action is taken, and therefore, this change will not result in more than a minimal increase in the consequences of an accident previously evaluated in the FSAR or an increase the likelihood of occurrence of a malfunction of a SSC important to safety

The revised TRM does not involve any accident initiators and would not create the possibility for an accident of a different type. No new failure modes or types of failures are created by the change. Therefore a malfunction of a different type will not occur.

Containment air temperature does impact Peak Clad Temperature (PCT) which is directly associated with fuel rod integrity. The administrative control specified by the change will ensure that PCT remains bounded by the FSAR analyses and ensures that the design basis limit for this fission product barrier is not exceeded or altered. With regard to the containment function, a lower containment initial temperature will result in lower peak containment pressure. Therefore operating with a reduced containment temperature will have no adverse effect on the containment pressure design basis limit. In addition this TRM revision does not involve any change in the method of evaluation and is therefore not a departure from a method of evaluation.

B. <u>License Amendment Determination</u>

Does the proposed Change being evaluated represent a change to a method of evaluation <u>ONLY</u>? 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 involves administrative controls that are in place to ensure safe plant operation, specifically minimum containment temperature, remains within the bounding assumption made in the Emergency Core Cooling System (ECCS) analysis. The minimum containment temperature has no bearing on the frequency of the occurrence of any accident evaluated in the FSAR. Containment temperature is not an initiator of any postulated accident. In addition this change deletes the requirement for a power reduction transient. Therefore this change will not increase 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:

   This change will not increase the likelihood of occurrence of a malfunction of a structure, system, or component (SSC) important to safety. While equipment qualification could potentially be adversely affected by extended operation at elevated temperatures (e.g., above 120 degrees F - the Technical Specification Upper Limit for Containment Atmosphere), operation at temperatures slightly below the minimum limit specified in this TRM will not adversely affect SSCs from a environmental qualification perspective. The revised TRM will not force an automatic power reduction. It will require the insertion of a Core Operating Limit Supervisory System (COLSS) penalty that will serve as an alternate means for ensuring PCTs remain bounded by current ECCS analyses. The action of inserting a COLSS penalty will not increase the likelihood of a malfunction as this will not affect the way COLSS operates. In addition, a low containment temperature will result in lower containment peak pressures therefore no increase in containment malfunctions due to high pressure would be created. Finally the extension of the action time from 1 hour to 8 hours will reduce the chances of an operator error due to time pressure and the need for taking immediate

action (i.e., within 1 hour) is not justified based on a comparison of comparable TS action times (see TS 3.6.1.5 on high containment temperature) and the fact that temperatures changes in containment are expected to occur slowly.

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

BASIS:

This change will continue to provide an effective administrative control to ensure the plant operates within the necessary boundaries such that the previously evaluated consequences are not increased or exceeded. The consequences resulting from an accident are a function of various conditions that vary throughout an operating cycle. The assumptions utilized in the FSAR evaluated accidents are a collection of bounding worst case conditions that typically don't exist concurrently. This change will ensure that the consequences of a postulated accident remain bounded by the analyses of record. The COLSS penalty required by the proposed TRM revision will ensure that the consequences of an accident during a period of time when the minimum containment air temperature falls below the assumed analysis value, will be bounded by the results calculated in the FSAR analyses. This change will provide the plant some additional time for responding to a low containment temperature condition and will effectively eliminate the need to initiate a power reduction transient. This change will ensure appropriate action (i.e., the COLSS penalty) is taken to ensure continued safe operation within the bounds of the applicable analyses. 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:

This change will continue to provide an effective administrative control to ensure the plant operates within the necessary boundaries such that the previously evaluated consequences are not increased or exceeded. This change will not increase the likelihood of occurrence of a malfunction of a SSC important to safety. While the containment temperature has an influence on PCT and containment peak pressure, this change will not introduce new malfunctions or increased consequences. The revised TRM will not force an automatic power reduction. It will require the insertion of a COLSS penalty to compensate for continued operation at a containment temperature below 90 degrees F. This action will assure safe operation and thus there will not be more than a minimal increase in the consequences of a SSC malfunction. The consequences resulting from a malfunction are a function of various conditions that vary throughout an operating cycle. The assumptions utilized in the FSAR evaluated malfunctions are a collection of bounding worst case conditions that typically don't exist concurrently. This change will ensure that the consequences of a postulated malfunction remain bounded by the analyses of record.

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

BASIS:

The revised TRM does not involve any accident initiators and would not create the possibility for an accident of a different type. This change provides a different means to compensate for low containment temperatures and effectively eliminates the need for a forced power reduction transient. This change is administrative in nature in that no hardware changes are made.

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

This change is administrative in nature and does not involve any hardware changes. Appropriate

controls will be maintained such that the plant will respond to any event within the bounds of the existing accident analyses. No new failure modes or types of failures are created by the change. Therefore a malfunction with a different result will not occur.

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

BASIS:

Containment air temperature does impact Peak Clad Temperature (PCT) which is directly associated with fuel rod integrity. However, PCT is primarily a function of Peak Linear Heat Rate (PLHR). PCT, to a much lesser extent, is influenced by parameters such as containment temperature, containment pressure, containment humidity, ECCS flow, etc. The administrative control specified by the change will ensure that PCT remains bounded by the FSAR analyses and ensures that the design basis limit for this fission product barrier is not exceeded or altered. It is important to note that PLHR margin will always exist throughout a fuel cycle, with the most limiting margin occurring at the beginning of core life and with the greatest margin at the end of core life. For a condition of low containment temperature, the action will result in some of the margin between the COLSS PLHR setpoint and the actual PLHR being taken away by the additional penalty. The removal of this margin will typically have no impact on steady state operation. With regard to the containment function, a lower containment initial temperature will result in lower peak containment pressure. Therefore operating with a reduced containment temperature will have no adverse effect on the containment pressure design basis limit.

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:

This change in administrative in that it provides an alternate means for compensating for a low containment temperature condition. This change does not involve any change in the method of evaluation and is therefore not a departure from a method of evaluation.

I. OVERVIEW / SIGNATURES

Facility: Waterford 3

Document Reviewed: ER-W3-2002-0352-002 **Change/Rev.** 0

System Designator(s)/Description: Safety Injection (SI)

Description of Proposed Change

CR-WF3-2002-0818 identified that a void is repeatedly forming at a high point of the Safety Injection piping where it is routed between outside containment isolation valve SI-138A and containment building penetration number 39. The cause of the voiding is believed to be seat leakage at valves SI-142A and SI-1421A, which allows nitrogen-saturated water from the Safety Injection Tank to enter the lower pressure piping upstream of valve SI-142A, where the nitrogen comes out of solution. This ER will install automatic venting capability downstream of existing manual vent valve SI-1402A. New components include a new automatic vent valve, two solenoid valves, a manual isolation valve and two manual test valves.

If the proposed activity, in its entirety, involves any one of the criteria below, check the appropriate box, provide a justification/basis in the Description above, and forward to a Reviewer. No further 50.59 Review is required. If none of the criteria is applicable, continue with the 50.59 Review.

- ☐ The proposed activity is editorial/typographical as defined in Section 5.2.2.1.
- ☐ The proposed activity represents an "FSAR-only" change as allowed in Section 5.2.2.2_____. (Insert item # from Section 5.2.2.2).
- ☐ The proposed activity is controlled by another regulation per Section 5.2.2.3.

If further 50.59 Review is required, check the applicable review(s): (Only the sections indicated must be included in the Review.)

☐	**SCREENING**	**Sections I, II, and III required**
☐	**50.59 EVALUATION EXEMPTION**	**Sections I, II, III, and IV required**
☒	**50.59 EVALUATION #:** 02-019	**Sections I, II, III, and V required**

Preparer: Gary E. Payne Gary E Payne EOI/DE Mechanical Systems/ 10-31-02
Name (print) / Signature / Company / Department / Date

Reviewer: Richard T. Finch Richard T. Finch EOI/DE Mechanical Systems/ 10/31/02
Name (print) / Signature / Company / Department / Date

OSRC: K Peters Peters 10/31/02
Chairman's Name (print) / Signature / Date
[Required only for Programmatic Exclusion Screenings (see Section 5.8) and 50.59 Evaluations.]

List of Assisting/Contributing Personnel:

Name:	Scope of Assistance:
Michael Brandon - Licensing	Evaluation Reviewer

II. SCREENING

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? (Check "N/A" for those documents that are not applicable to the facility.)

Operating License	YES	NO	N/A	CHANGE # and/or SECTIONS IMPACTED
Operating License	☐	☒		
TS	☐	☒		
NRC Orders	☐	☒	☐	
If "YES", obtain NRC approval prior to implementing the change. (See Section 5.1.13 for exceptions.)				

LBDs controlled under 50.59	YES	NO	N/A	CHANGE # (if applicable) and/or SECTIONS IMPACTED
FSAR	☒	☐		Table 3.9-9, DRN# 02-1398; Table 6.2-32, Table 6.3-1, DRN# 02-1399; Table 7.3-5, Table 7.3-8, DRN #02-1400; Table 7.5-3, DRN#02-1634.
TS Bases	☐	☒		
Technical Requirements Manual	☒	☐		Table 3.6-2, DRN# 02-1405
Core Operating Limits Report	☐	☒		
Offsite Dose Calculations Manual	☐	☒		
NRC Safety Evaluation Reports[1]	☐	☒		
If "YES", perform an Exemption Review per Section IV OR perform a 50.59 Evaluation per Section V.				

LBDs controlled under other regulations	YES	NO	N/A	CHANGE # (if applicable) and/or SECTIONS IMPACTED
Quality Assurance Program Manual[2]	☐	☒		
Emergency Plan[2]	☐	☒		
Security Plan[2,3]	☐	☒		
Fire Protection Program[4] (includes the Fire Hazards Analysis)	☐	☒	☐	
If "YES", evaluate/process any changes in accordance with the appropriate regulation.				

2. Does the proposed activity involve a test or experiment not described in the FSAR?
If "yes," perform an Exemption Review per Section IV OR perform a 50.59 Evaluation per Section V.

☐ Yes
☒ No

3. Does the proposed activity potentially impact equipment, procedures, or facilities utilized for storing spent fuel at an Independent Spent Fuel Storage Installation?
(Check "N/A" if dry fuel storage is not applicable to the facility.)
If "yes," perform a 72.48 Review in accordance with NMM Procedure LI-112.
(See Sections 1.5 and 5.3.1.5 of the EOI 10CFR50.59 Review Program Guidelines.)

☐ Yes
☐ No
☒ N/A

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[1] If "YES," see Section 5.1.5.
[2] If "YES," notify the responsible department and ensure a 50.54 Evaluation is performed.
[3] The Security Plan is classified as safeguards and can only be reviewed by personnel with the appropriate security clearance. The Preparer should notify the security department of potential changes to the Security Plan.
[4] If "YES," evaluate the change in accordance with the requirements of the facility's Operating License Condition.

B. Basis

Entergy-FulFind, Electronic Text Search Utility, was utilized to search all LBD's using the keywords listed below. The relevant LBD's, where keywords were found, are listed below. The only LBD's impacted are the FSAR and TRM sections listed in Section A.1 above.

C. References

LBD's Reviewed:

FSAR Sections: 1.9.37; 3.6.1; 3.9.3; 4.4.3; 5.2.5.1.4; 6.3; 7.3.1.1.1; 7.3.1.1.4; 9.3.6

FSAR Tables: 3.9-9; 4.4-9; 7.3-5; 7.3-8; 9.3-20

FSAR Figures: 4.4-8

FSAR Appendix: 3.6A, Section 3.6A.1.1.3

Technical Specification 3/4.1.4, 3/4.1.5, 3/4.5.2, 34.6.3, 3/4.4.9, 3/4.9.8.1, 3/4.9.8.2
Technical Requirement Manual
Table 3.6-2

NUREG 800: Standard Review Plan
Section 6.2.4

NUREG 0787: Safety Evaluation Report Section 6.2.4

Keywords:

SI-1402, SI-138, vent valve, LPSI header, LP header, Low Pressure Safety Injection, Shutdown Cooling, penetration, containment isolation

D. **Is the validity of this Review dependent on any other change?** (See Section 5.3.4 of the EOI 10CFR50.59 Program Review Guidelines.)

☐ Yes
☒ No

If "Yes," list the required changes.

III. 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.

Will the proposed Change being evaluated:

Yes	No	
☐	☒	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)?
☐	☒	Involve a land disturbance of undisturbed land areas (i.e., grading activities, construction, excavations, reforestation, creating, or removing ponds)?
☐	☒	Involve dredging activities in a lake, river, pond, or stream?
☐	☒	Increase the amount of thermal heat being discharged to the river or lake?
☐	☒	Increase the concentration or quantity of chemicals being discharged to the river, lake, or air?
☐	☒	Discharge any chemicals new or different from that previously discharged?
☐	☒	Change the design or operation of the intake or discharge structures?
☐	☒	Modify the design or operation of the cooling tower that will change water or air flow characteristics?
☐	☒	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?
☐	☒	Modify existing stationary fuel burning equipment (i.e., diesel fuel oil, butane, gasoline, propane, and kerosene)?[1]
☐	☒	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]
☐	☒	Involve the installation or use of equipment that will result in an air emission discharge?
☐	☒	Involve the installation or modification of a stationary or mobile tank?
☐	☒	Involve the use or storage of oils or chemicals?
☐	☒	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.

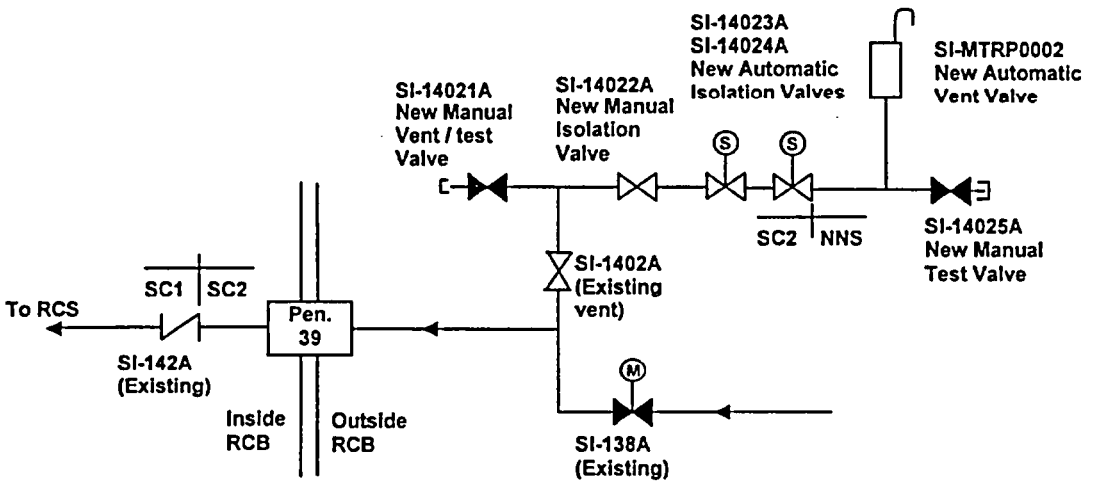
V. 50.59 EVALUATION

A. Executive Summary (Serves as input to NRC summary report. Limit to one page or less. Send an electronic copy to the site licensing department after OSRC approval, if available.)

Brief description of change, test, or experiment:

ER-W3-2002-0352-000 installed automatic venting at vent valve SI-133A to remove voids accumulating upstream of containment isolation valve SI-138A. This ER (2002-0352-002), will install similar automatic venting capability at existing vent valve SI-1402A to eliminate voiding between valve SI-138A and containment penetration #39.

This change will install a new automatic vent valve, two solenoid valves, a manual isolation valve and two manual test valves, as shown on the flow diagram below.



The new piping up to solenoid valve SI-14024A is designed American Society of Mechanical Engineers (ASME) Class 2, and the downstream automatic vent valve and test valve are non-safety related, designed in accordance with American National Standards Institute (ANSI) B31.1. The first solenoid valve is classified as a Containment Isolation Valve and it will be normally energized open, fail closed, and automatically closed by either the Safety Injection Actuation Signal (SIAS) or Containment Isolation Actuation Signal (CIAS), or remote manually from a new switch located on CP-8 in the Control Room. The second solenoid valve, although not classified as a containment isolation valve, will also be normally energized open, fail closed, and automatically closed by either the SIAS or CIAS signals, or it may be manually closed for testing at a new local control panel located adjacent to the valve. Both solenoid valves will have plant monitoring computer position indication. The

valves will both be powered from the "A" safety related electrical bus because this piping is part of the "A" train of the SI System.

Reason for proposed Change:

CR-WF3-2002-0818 identified that a void is repeatedly forming at a high point of the Safety Injection piping where it is routed between outside containment isolation valve SI-138A and containment building penetration number 39. The cause of the voiding is believed to be seat leakage at valves SI-142A and SI-1421A, which allows nitrogen-saturated water from the Safety Injection Tank to enter the lower pressure piping upstream of valve SI-142A, where the nitrogen comes out of solution.

50.59 Evaluation summary and conclusions

This evaluation included a review of the Licensing Basis Documents identified in Section II-A Screening, and also an Entergy-FulFind keyword search of the words identified in Section II-C. The evaluation determined the frequency of an accident or Structure, System or Component (SSC) malfunction previously evaluated in the Safety Analysis Report (SAR) will not be increased. The affected portions of the Safety Injection and Static Uninteruptible Power Supply (SUPS) are not accident initiators. The new design is consistent with the design requirements of the existing systems. The penetration will continue to meet the requirements of General Design Criteria (GDC) 54, 55 and Standard Review Plan 6.2.4. That is, the penetration will continue to have an inside containment isolation check valve, with automatic outside containment isolation valves in series with the inside valve. The outside containment isolation valves will be located as close to containment as practical. The affected systems will continue to meet all 10CFR Part 50 Appendix A General Design Requirements, including single failure as interpreted in ANSI N658-1976. The new containment isolation valve will meet the requirements of Regulatory Guide 1.97. Electrical components will be designed and tested in accordance with Institute of Electrical and Electronic Engineers (IEEE) requirements, and will be environmentally qualified (EQ) for a harsh environment, as required. Separation and independence of electrical systems will also be maintained. The proposed change will not create any new system interfaces, and will not place increased reliance on any SSC. The non-safety portion of the system is isolated from the safety portion of the Safety Injection system following an accident by redundant automatic valves. Any leakage through the isolation valves following an accident will have a negligible effect on the Refueling Water Storage Tank volume. Therefore, the proposed change does not increase the consequences of an accident or SSC malfunction, and the change does not create the possibility of an accident or SSC malfunction of a different type than previously evaluated in the SAR. The proposed change does not impact a design basis limit for a fission product barrier, and does not result in any new design basis analysis methods.

There is no change to any Technical Specification, and prior approval by the Nuclear Regulatory Commission (NRC) is not required for this change. Several Final Safety Analysis Report (FSAR) changes are required to describe the new automatic vent valve and associated isolation and test valves, and they are shown on the Document Revision Notices (DRN) listed in Section II-A.

B. 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:

FSAR Section 15, "Accident Analysis" identifies accidents previously evaluated in the FSAR. This chapter was reviewed and it was determined that the frequency of occurrence of a "Decrease in Reactor Coolant System Inventory" as described in Section 15.6.3.3, Loss Of Coolant Accident (LOCA) is the only accident which could potentially be impacted by the proposed changes. The potential for LOCA was reviewed because existing vent valve SI-1402A is located on a portion of the Safety Injection (SI) system that is classified as Reactor Coolant System Pressure Boundary in accordance with ANSI N18.2a-1975 which indicates that the RCS extends to the outermost containment isolation valve.

This evaluation determined that the frequency of a LOCA is not increased. Section 15.6.3.3.1 defines a LOCA as "a hypothetical break in a pipe in the reactor coolant system pressure boundary resulting in the loss of reactor coolant at a rate in excess of the capability of the coolant makeup system." Although the vent manifold will technically be extending the reactor coolant pressure boundary, this portion of pipe is isolated from the cold leg by check valve SI-336B in series with check valve SI-142A and its normally closed bypass valve SI-1421A. The safety related portions of the modification are designed in accordance with the applicable requirements of ASME Section III, Class 2. Even if a break is assumed to occur in the added portion of pipe, which includes the nonsafety-related automatic vent valve, primary coolant would have to leak past this series of valves at a rate greater than the capacity of one charging pump, which is 44 gpm, to meet LOCA criteria. That leak rate past two normally closed check valves is not considered to be credible. Therefore, a line break in the added section of the SI piping would not constitute a LOCA.

The new solenoid valves are powered from Static Uninterruptible Power Supply (SUPS) 3A-S. The loss of power to the solenoids will automatically close the valves. The failure of the SUPS and solenoids is not an initiator of an accident described in the SAR.

In summary, the affected systems are not initiators of an accident and the proposed change does not increase the frequency of an accident described in the SAR.

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 change will not increase in the likelihood of occurrence of a malfunction of a SCC important to safety. The safety related portions of the modification are designed in accordance with the applicable requirements of ASME Section III, Class 2, and will be tested in accordance with ASME Section XI, as applicable. The penetration is exempt from 10CFR Appendix J testing because the penetration will maintain a water seal 30 days following an accident. As described above, the non-safety related portions will be automatically isolated in the event of either a SIAS or CIAS, and minor seat leakage would be identified during monthly surveillance testing. In addition, the entire piping manifold, including the non-safety related automatic vent valve and manual valve are seismically supported, so non-seismic SSC's falling onto safety related SSC's is not a concern.

The new components will be located in a potentially harsh environment, but both solenoid valves are environmentally qualified. Electrical components will be designed and tested in accordance with IEEE requirements. This modification affects only the "A" train of the Safety Injection system and both solenoid valves will be powered from the "A" train electrical bus, so separation and independence are provided as applicable. The new containment isolation valve will be located in an area immediately adjacent to the containment penetration which was previously evaluated for jet impingement, missiles, and pipe whip.

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

BASIS:

The FSAR Chapter 15, Accident Analysis was reviewed, but the only accident consequences (radiation dose) that the proposed change could possibly impact are associated with a Loss of Coolant Accident (LOCA) as described in Subsection 15.6.3.3. The proposed modification to the Safety Injection header could potentially reduce the amount of water being injected into the Reactor Coolant System post LOCA if the non-safety related automatic vent valve were to malfunction. However, as was discussed in question 1 above, two Safety Related Class 2 isolation valves are being installed in series, which automatically close upon an SIAS to eliminate leakage from the proposed vent pathway post LOCA. In addition, a control switch with position indication lights will be provided on CP-8 in the Control Room to allow for remote manual closure of the containment isolation valve. Because the solenoid valves must be energized to open, failure of any electrical component serving a solenoid valve would cause the valve to actuate to its safe, closed position, which would isolate the non-safety related portion of the system and preserve system inventory. Furthermore, the automatic vent valve serves no accident mitigation function. The new containment isolation valve will meet the requirements of Regulatory Guide 1.97.

Any leakage from the new components will be routed to the Liquid Waste Management system and any gaseous release will discharge into the Controlled Ventilation Area and will be monitored and filtered prior to release to the environment.

The new penetration configuration meets GDC 54, 55, Standard Review Plan (SRP) 6.2.4, and ANSI N271 which provide requirements for penetrations which are part of the reactor coolant pressure boundary. Specifically, the penetration will have two containment isolation valves in series and the outside isolation valves are located as close to Containment as practical. There will be two normally open manual valves between SI-142A and SI-14023A. The manual valves will facilitate IST leak testing of the new solenoid valves SI-14023A and SI-14024A by providing isolation of the tested valves from the penetration piping. The manual valves will also allow manual venting of the penetration if the automatic vent or one of the solenoid valves is out of service.

ANSI N271-1976 provides typical containment isolation configurations for meeting GDC requirements. Some of the typical configurations depicted in Appendix B of the standard do contain valves between the inside and outside containment isolation valves. Existing penetrations 1 and 2 (Main Steam) are examples of containment penetrations which include normally open manual valves between the inside and outside containment isolation valves (Atmospheric Dump Valves).

The new outside containment isolation valve (SI-14023A) will be located approximately 12 feet from containment. Therefore it is concluded the new penetration design meets the GDC 54 and 55 requirements "as close to containment as practical" based on the practical need for the manual isolation valves, the similarity of the new design to typical penetration configurations depicted in ANSI N271-1976 and existing penetrations 1 and 2, and the close proximity of the new containment isolation valve to containment compared to existing containment isolation valves.

The new penetration configuration will remain water filled 30 days post accident and therefore remains exempt from 10CFR50 Appendix J Type C testing.

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 modification would not increase the consequences (radiological release) of any malfunction of equipment important to safety because two solenoid valves are provided in series and both automatically close upon either a SIAS or CIAS. No new system interactions are created. Any leakage from the new components will be routed to the Liquid Waste Management system and any gaseous release will discharge into the Controlled Ventilation Area and will be monitored and filtered prior to release to the environment. Post accident, any slight leakage through the closed solenoids and the auto vent valve will have a negligible impact on Refueling Water Storage Tank volume. In addition, the design prevents a single failure from affecting RWSP volume. The addition of the automatic vent manifold to the safety injection piping will not increase the reliance on the Safety Injection system or any other system which mitigates the consequences of the accidents described in Chapter 15.

The solenoid valves are energized to open. Therefore, failure of an electrical component serving a solenoid valve would cause the valve to actuate to its safe, closed position. An indication of closed or no indication on the control board would alert operators of the problem such that they could take necessary compensatory actions, such as manual venting. The additional electrical load (solenoids, relays, & lights) on the SUPS 3A-S is minimal and is within the capability of the SUPS, associated battery, and Emergency Diesel Generator. The solenoids are installed with circuit protection and upon a fault the load will be isolated via circuit breaker. Therefore, the SUPS will not be adversely affected.

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

BASIS:

The proposed modification cannot create the possibility for an accident of a different type than any previously evaluated in the FSAR because no new system interfaces are created. It is conceivable that the automatic vent valve could fail to reseat following routine venting, but the manufacturer has advised that this component design has considerable operating experience and does not have a history of failure in the open position. The non-safety portion of the system is isolated from the safety portion of the Safety Injection system following an accident by redundant automatic valves. Any leakage through the isolation valves following an accident will have a negligible effect on the Refueling Water Storage Tank volume. In addition, failure to reseat during normal plant operation would result in a gradual depletion of RWSP inventory which would be indicated by multiple indicators, including control room alarm. In response to leakage from the automatic vent valve, or indication of low RWSP inventory, the operator will have the ability to manually close containment isolation valve SI-14023A from CP-8 in the Control Room to isolate the vent path.

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 proposed modification cannot create the possibility for a malfunction of a SSC important to safety with a different result than any previously evaluated in the FSAR because the new automatic vent valve will be isolated by redundant solenoid valves upon reciept of either a SIAS or CIAS. As described above in response to questions 1 and 5, leakage from the RWSP during normal plant operation would be indicated by multiple means and could easily be isolated by remote manual closure of containment isolation valve SI-14023A from CP-8 in the Control Room.

New containment isolation valve SI-14023A will have a manual control switch and position indication lights located on CP-8 in the Control Room. The manual switch specified is identical to the other switches used to control valves and the indicator lights are also identical to other lights used for valve position indication. In addition, all labeling and color schemes will comply with Section 2.0 of Human Factors Manual 457002335 to ensure that all applicable Human Factors criteria are met.

The proposed modification to the Safety Injection header could potentially reduce the amount of water being injected into the Reactor Coolant System post LOCA if the non-safety related automatic vent valve were to malfunction. However, as was discussed in question 1 above, two Safety Related Class 2 isolation valves are being installed in series, which automatically close upon an SIAS to eliminate leakage from the proposed vent pathway post LOCA. In addition, a control switch with position indication lights will be provided on CP-8 in the Control Room to allow for remote manual closure of the containment isolation valve.

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 purpose of the proposed configuration change is to restore or maintain the fission product barrier provided by the RCS pressure boundary and the SI system by removing or preventing the formation of voids in the system. The new vent pathway is located on a portion of the SI system that is classified as part of the RCS pressure boundary because the RCS boundary extends to the outermost containment isolation valve as described in ANSI N18.2a-1975. However, existing ASME Section III, Class 1 check valves SI-142A and SI-336B, and two new ASME Section III, Class 2, fail closed solenoid valves are provided to automatically isolate the vent pathway upon SIAS or CIAS, so a total of four safety related barriers are provided to prevent backflow of RCS inventory through the automatic vent valve. In addition, pressure indication is provided upstream of check valve SI-336B to provide indication of seat leakage past the primary isolation valve, and the non-safety related automatic vent valve is also rated for RCS design conditions. Therefore, the integrity of the Reactor Coolant and Safety Injection systems and specifically, containment penetration 39, are not degraded by the proposed changes. The proposed modification cannot affect a design basis limit for a fission product barrier because no new system interactions are created and loss of RWSP inventory would be indicated by multiple means before the water inventory was significantly reduced.

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 proposed changes to install automatic venting capability on the Safety Injection system do not require re-analysis of any existing design basis or safety analysis; therefore it does not affect any existing method of evaluation or analytical method described in the FSAR. The design basis of the Safety Injection system and containment penetration are described in W3-DBD-001 "Safety Injection", and W3-DBD-026 "Containment Isolation and Leakage Rate Testing".

I. OVERVIEW / SIGNATURES

Facility: Waterford 3

Document Reviewed: ER-W3-2002-0488-000 **Change/Rev.:** 0

System Designator(s)/Description: 120 V Vital AC

Description of Proposed Change

This ER provides a new TRM section (3/4.8.3 Onsite Power Distribution Systems) that requires that if any of the SUPS rectifiers are inoperable and the SUPS is not being supplied from the bypass AC power, either the rectifier must be restored within 24 hours or two battery chargers must be in service within 24 hours, or an evaluation and action plan for continued operation must be completed by engineering and approved by the General Manager Plant Operations within the next 6 hours. This will replace the OP-100-014 requirement that two battery chargers be operable when any SUPS rectifier is inoperable or restore the rectifier within 24 hours or be in hot standby within 6 hours and in cold shutdown within the following 30 hours.

If the proposed activity, in its entirety, involves any one of the criteria below, check the appropriate box, provide a justification/basis in the Description above, and forward to a Reviewer. No further 50.59 Review is required. If none of the criteria is applicable, continue with the 50.59 Review.

- ☐ The proposed activity is editorial/typographical as defined in Section 5.2.2.1.
- ☐ The proposed activity represents an "FSAR-only" change as allowed in Section 5.2.2.2_____. (Insert item # from Section 5.2.2.2).
- ☐ The proposed activity is controlled by another regulation per Section 5.2.2.3.

If further 50.59 Review is required, check the applicable review(s): (Only the sections indicated must be included in the Review.)

☐	**SCREENING**	**Sections I, II, and III required**
☐	**50.59 EVALUATION EXEMPTION**	**Sections I, II, III, and IV required**
☒	**50.59 EVALUATION (#02-020)**	**Sections I, II, III, and V required**

Preparer: Lisa Borel / Lisa A. Borel / EOI / Licensing / 10/22/02
Name (print) / Signature / Company / Department / Date

Reviewer: Michael Brandon / M. Brandon / EOI / Licensing / 10/28/02
Name (print) / Signature / Company / Department / Date

OSRC 11/6/02
Chairman's Signature / Date (N/A for Screenings and 50.59 Evaluation Exemptions)

List of Assisting/Contributing Personnel:

Name:	Scope of Assistance:
N/A	

II. SCREENING

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? (Check "N/A" for those documents that are not applicable to the facility.)**

Operating License	YES	NO	N/A	CHANGE # and/or SECTIONS TO BE REVISED
Operating License	☐	☒		
TS	☐	☒		
NRC Orders	☐	☒	☐	
If "YES", obtain NRC approval prior to implementing the change. (See Section 5.1.13 for exceptions.)				

LBDs controlled under 50.59	YES	NO	N/A	CHANGE # and/or SECTIONS TO BE REVISED
FSAR	☐	☒		
TS Bases	☐	☒		
Technical Requirements Manual	☒	☐		New section 3/4.8.3 and Basis (DRN 02-1639)
Core Operating Limits Report	☐	☒		
Offsite Dose Calculations Manual	☐	☒		
NRC Safety Evaluation Reports[1]	☐	☒		
If "YES", perform an Exemption Review per Section IV OR perform a 50.59 Evaluation per Section V.				

LBDs controlled under other regulations	YES	NO	N/A	CHANGE # and/or SECTIONS TO BE REVISED
Quality Assurance Program Manual[2]	☐	☒		
Emergency Plan[2]	☐	☒		
Security Plan[2, 3]	☐	☒		
Fire Protection Program [4] (includes the Fire Hazards Analysis)	☐	☒	☐	
If "YES", evaluate/process any changes in accordance with the appropriate regulation.				

2. **Does the proposed activity involve a test or experiment not described in the FSAR?**
   If "yes," perform an Exemption Review per Section IV OR perform a 50.59 Evaluation per Section V.
   ☐ Yes ☒ No

3. **Does the proposed activity potentially impact equipment, procedures, or facilities utilized for storing spent fuel at an Independent Spent Fuel Storage Installation? (Check "N/A" if dry fuel storage is not applicable to the facility.)**
   If "yes," perform a 72.48 Review in accordance with NMM Procedure LI-112. (See Sections 1.5 and 5.3.1.5 of the EOI 10CFR50.59 Review Program Guidelines.)
   ☐ Yes ☐ No ☒ N/A

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[1] If "YES," see Section 5.1.5.
[2] If "YES," notify the responsible department and ensure a 50.54 Evaluation is performed.
[3] The Security Plan is classified as safeguards and can only be reviewed by personnel with the appropriate security clearance. The Preparer should notify the security department of potential changes to the Security Plan.
[4] If "YES," evaluate the change in accordance with the requirements of the facility's Operating License Condition.

B. Basis

(Provide a clear, concise basis for the answers given in the applicable sections above. 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.)

A search of the Licensing Basis Documents (LRS Fulfind index LBDS_50_59) using the keywords listed below was conducted. Hits were found in several of the documents, however, only the TRM will be impacted by this change. The SER, section 8.3.1.1 describes the 120 V Uninterruptible AC system noting that it is provided to supply the Plant Protection System control and instrumentation channels. It describes that the inverters are normally supplied through its rectifier from a 480 V AC MCC, and on failure of the normal supply they are automatically fed from the battery. It also describes the three sources of power to each of the SUPS – normal AC, emergency DC and bypass AC. It states that the bypass AC source is only used during required maintenance of the inverter or rectifier. The SER section 8.3.2.1 states that since each inverter is normally powered from an AC supply with DC backup, the failure of a battery or battery charger will not in any way affect the operation of the required AC loads from the inverter, unless there is a simultaneous failure of the AC feeder. This change has no impact on these discussions and they remain valid.

FSAR section 8.3.1.1.1 describes the 120 V Uninterruptible AC system and states that each inverter is normally supplied through its rectifier from a 480 V ESF MCC. Should this supply fail, the inverter is supplied automatically from a 125 V DC ESF battery. FSAR section 8.3.1.1.2.10 discusses that the PPS is supplied with power from the 4 uninterruptible AC inverters and that each inverter is supplied from a safety related MCC with automatic transfer to battery supply on AC failure. Since the AC and DC supplies for the two inverters are taken from the same Division (A or B) as the inverter serves, full separation between divisions is assumed. FSAR Table 3.2-1 describes the safety, seismic, tornado and flood classifications of the system and FSAR Table 8.3-2 describes the SUPS ratings. FSAR Table 8.3-9, the 120 V Uninterruptible Vital AC System Single Failure Analysis states that the SUPS will be supplied by the battery with an interruption of output power. FSAR section 8.3.1.2.14 states that no random single failure in any one inverter will degrade the performance of the other three. With one measurement channel bypassed for testing, failure of a second inverter will still leave 2 channels functional, thus providing protection without unnecessary tripping (because of "two out of four" logic). This change has no affect on the design or operation of the 120 V Uninterruptible AC system and remains in accordance with the description currently in the FSAR.

FSAR Table 8.3-10 "125 V DC ESF Single Failure Analysis", states that one battery charger can supply the resultant normal DC load plus the 120 V AC inverter loads normally carried by the failed MCC. However, the battery may not be charged or may discharge slightly. FSAR section 8.3.2 describes the DC system design. FSAR section 8.3.2.1.2 states that each charger is capable of maintaining the connected battery in a fully charged condition while supplying the normal continuous load on the DC bus and can also supply an equalizing charge under the same conditions. Each charger can recharge a fully discharged battery and at the same time supply the normal steady state DC bus load. This change has no affect on the design or operation of the DC system and remains in accordance with the description currently in the FSAR.

FSAR section 7.3 "Engineered Safety Features Systems" describes how AC power for actuation systems has a power source from the SUPS and loss of preferred offsite power doesn't interrupt power to these vital busses. FSAR section 7.4 states that the instrumentation and controls for safe shutdown are designed and arranged so that no single failure can prevent a safe shutdown, even in the event of loss of offsite power. Compliance with single failure criterion is accomplished by providing redundancy of power supplies and actuation circuits. This change has no affect on the power supply design for these systems and remains in accordance with the present description in the FSAR.

FSAR chapter 15 discusses many events that include loss of offsite power. This change has no affect on the design or operation of the plant on a loss of offsite power and therefore descriptions in

chapter 15 are not affected. FSAR appendix 8.1A, Station Blackout Evaluation, is not affected by this change since the batteries will be maintained fully charged and there will be no affect on the plant response to a station blackout, therefore this description in the FSAR remains unaffected.

C. References

[Discuss the methodology for performing the LBD search. 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 5.3.6.4 of LI-101.]

LBDs/Documents Reviewed:	Keywords:
FSAR, TRM, TRM Bases, Tech Specs and Bases, SER	SUPS, static uninterruptible power, rectifier, inverter, vital bus, batteries, battery chargers, plant protection system, PPS, loss of offsite power, station blackout

D. **Is the validity of this Review dependent on any other change?** (See Section 5.3.4 of the EOI 10CFR50.59 Program Review Guidelines) ☐ Yes ☒ No

If "Yes," list the required changes.

III. 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.

Will the proposed Change being evaluated:

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

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

V. 50.59 EVALUATION

A. Executive Summary (Serves as input to NRC summary report. Limit to one page or less. Send an electronic copy to the site licensing department after PSRC approval, if available.)

Brief description of change, test, or experiment:

This ER provides a new TRM section (3/4.8.3 Onsite Power Distribution Systems) that requires if any of the SUPS rectifiers are inoperable and the SUPS is not being supplied from bypass AC power, either the rectifier must be restored within 24 hours or two battery chargers must be in service within 24 hours, or an evaluation and action plan for continued operation must be developed and approved by the General Manager Plant Operations within the next 6 hours. This will replace the procedure OP-100-014 requirement that two battery chargers be operable when any SUPS rectifier is inoperable or restore the rectifier within 24 hours or be in hot standby within 6 hours and in cold shutdown within the following 30 hours.

Reason for proposed Change:

An NRC inspection identified a concern that TS 3.8.3.1 could allow indefinite operation with the SUPS inverter connected to the DC source and the associated rectifier of the SUPS disabled and that the battery charger sizing calculations did not adequately analyze this condition that could potentially drain the safety related batteries. Calculation EC-E99-002 was developed and concluded that to ensure the battery is not discharged, two battery chargers are required if any one of the SUPS rectifiers associated with that train is taken out of service during normal plant operations. Technical Specification 3.8.2.1 requires that only one battery charger be operable. Procedure OP-100-014 was revised to include a requirement that two battery chargers be operable when any SUPS rectifier is inoperable with conservative actions to restore the rectifier within 24 hours or be in hot standby within 6 hours and in cold shutdown within the following 30 hours. Controls and actions related to the rectifiers being out of service are more appropriate in the TRM than in an Operations procedure, therefore this ER was initiated to create a new TRM for the SUPS rectifiers and remove the actions from the Operations procedure. Additionally, the shutdown action statement currently in the Operations procedure is overly conservative and will be revised. Recognizing that if two battery chargers are operable they are capable of maintaining the batteries charged while also supplying the SUPS load, and that there are other actions that could be taken with a SUPS out of service to prevent discharging the batteries (e.g., monitoring the battery), a new TRM will replace this shutdown requirement with an action that allows an assessment of the condition to determine the most prudent course of action when a rectifier is out of service, based on current plant conditions.

50.59 Evaluation summary and conclusions

This change is administrative in nature and no changes are being made to the plant or to the design or operation of the electrical power systems. This change does not affect the reliability or redundancy of the three power sources to each of the SUPS. This change will ensure that necessary actions will be taken to ensure that batteries are not discharged during normal plant operations should a rectifier be taken out of service. The 120 V Uninterruptible AC system and the 125 V DC system are not initiators of accidents, rather they serve to mitigate the effects of accidents and malfunctions and therefore this change does not involve any increase in the frequency or likelihood of occurrence of accidents or malfunctions. Since there is no change to the design and operation of the systems and actions will be taken to ensure all accident analyses assumptions are maintained, this change does not increase the consequences of any accident or malfunction previously evaluated. Since no physical changes are made to the plant or to the design or operation of the systems, the possibility of a different type of accident or of a malfunction with a different result is not presented. This change has no affect on fuel cladding, reactor coolant system pressure boundary or containment and therefore doesn't affect any design basis parameters for any of the fission product barriers. This change does not involve any methods of evaluation for the behavior or response of the plant. It is concluded that prior NRC approval is not required for this change.

B. 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:

The 120V Uninterruptible AC system, including the SUPS rectifiers and inverters, is provided to provide backup power to the Plant Protection System and ESF control and instrumentation channels. If the normal AC supply to the inverters supplying the Plant Protection System should fail, the inverter is automatically supplied from a 125 V DC battery. This system is not an initiator of any accidents previously evaluated in the FSAR, rather it functions to mitigate the effects of accidents. Therefore, this change can have no effect on 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 change is administrative in nature and no physical changes are being made to the system. No changes are made to system redundancy or separation. The change provides for actions required to be taken if a SUPS rectifier is taken out of service and the controls necessary to ensure that the batteries are not discharged during normal operating conditions. The actions required will still ensure that batteries are not discharged during normal operations. Therefore there will be no effect on the likelihood of occurrence of a malfunction 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:

This change is administrative in nature and no changes are being made to the physical plant or to the design or operation of the electrical power systems. This change does not affect the reliability or redundancy of the three power sources for each of the SUPS. This change will ensure that necessary actions will be taken to ensure that batteries are not discharged during normal operations should a rectifier be taken out of service, and therefore that all assumptions in the accident analyses will be maintained. Since there is no change to the design and operation of the system and actions will be taken to ensure all accident analyses assumptions are maintained, there will be no increase in the consequences of any 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:

This change is administrative in nature and no physical changes are made to the plant. This change solely addresses actions to be taken when a rectifier is taken out of service to ensure the batteries are maintained charged. There is no change to the design or operation of any of the electrical power systems. Therefore, there is no change in consequences of a malfunction of any system, structure or component 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:

   No physical changes are being made to the plant and no changes are made to the design or operation of the system. Therefore the possibility of an accident of a different type than any previously evaluated is not created.

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

   No physical changes are being made to the plant and no changes are made to the design or operation of the system. Results of a SUPS or battery failure would not be any different. Therefore the possibility of a malfunction with a different result is not created.

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

   BASIS:

   This change makes no change to the system design or operation. Rather, it provides for an alternative to evaluate required actions based on actual plant conditions if a rectifier is out of service and only one battery charger is in service. This action will still ensure that the batteries are not discharged during normal plant operation. All three sources of power to each of the SUPS will meet their design basis conditions and power supply to the plant protection system will be unaffected. This change has no effect on fuel cladding, reactor coolant system pressure boundary or containment, and does not affect any design basis parameters for any of the fission product barriers.

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:

   This change does not affect any calculation framework for evaluating behavior or response of the plant or an SSC. No new or revised analyses are involved in this change. Therefore this change does not result in a departure from a method of evaluation previously described in the FSAR.

I. OVERVIEW / SIGNATURES

Facility: Waterford 3

Document Reviewed: ER 2002-0490-000 **Change/Rev.:** 0

System Designator(s)/Description: Switchgear Area Ventilation System (SVS)

Description of Proposed Change

The proposed change revises TRM 3.7.13, Switchgear Area Ventilation System and its basis. Consistent with the existing TRM 3.7.13, a period of 72 hours will still be provided to restore the switchgear area ventilation to operable status. The proposed change replaces the requirement to shut the plant down within the following 6 hours, if operability is not restored, with a requirement to initiate a Condition Report to justify continued operation. This change will also require General Manager of Plant Operations approval of this justification.

If the proposed activity, in its entirety, involves any one of the criteria below, check the appropriate box, provide a justification/basis in the Description above, and forward to a Reviewer. No further 50.59 Review is required. If none of the criteria is applicable, continue with the 50.59 Review.

- ☐ The proposed activity is editorial/typographical as defined in Section 5.2.2.1.
- ☐ The proposed activity represents an "FSAR-only" change as allowed in Section 5.2.2.2_____. (Insert item # from Section 5.2.2.2).
- ☐ The proposed activity is controlled by another regulation per Section 5.2.2.3.

If further 50.59 Review is required, check the applicable review(s): (Only the sections indicated must be included in the Review.)

☐	SCREENING	Sections I, II, and III required
☐	50.59 EVALUATION EXEMPTION	Sections I, II, III, and IV required
☒	50.59 EVALUATION (#:02-021)	Sections I, II, III, and V required

Preparer: Michael K. Brandon/ MKB /Entergy/ Waterford Licensing/ 11/11/02
Name (print) / Signature / Company / Department / Date

Reviewer: Lisa B. Borel/ Lisa A. Borel /Entergy/ Waterford Licensing/ 11/11/02
Name (print) / Signature / Company / Department / Date

OSRC Kevin Walsh 11/19/02
Chairman's Signature / Date (N/A for Screenings and 50.59 Evaluation Exemptions)

List of Assisting/Contributing Personnel:

Name:	Scope of Assistance:

II. SCREENING

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? (Check "N/A" for those documents that are not applicable to the facility.)**

Operating License	YES	NO	N/A	CHANGE # and/or SECTIONS TO BE REVISED
Operating License	☐	☒		
TS	☐	☒		
NRC Orders	☐	☒	☐	
If "YES", obtain NRC approval prior to implementing the change. (See Section 5.1.13 for exceptions.)				

LBDs controlled under 50.59	YES	NO	N/A	CHANGE # and/or SECTIONS TO BE REVISED
FSAR	☐	☒		
TS Bases	☐	☒		
Technical Requirements Manual	☒	☐		DRN 2002-1609 – TRM 3.7.13 and its basis
Core Operating Limits Report	☐	☒		
Offsite Dose Calculations Manual	☐	☒		
NRC Safety Evaluation Reports[1]	☐	☒		
If "YES", perform an Exemption Review per Section IV OR perform a 50.59 Evaluation per Section V.				

LBDs controlled under other regulations	YES	NO	N/A	CHANGE # and/or SECTIONS TO BE REVISED
Quality Assurance Program Manual[2]	☐	☒		
Emergency Plan[2]	☐	☒		
Security Plan[2, 3]	☐	☒		
Fire Protection Program [4] (Includes the Fire Hazards Analysis)	☐	☒	☐	
If "YES", evaluate/process any changes in accordance with the appropriate regulation.				

2. **Does the proposed activity involve a test or experiment not described in the FSAR?**
   If "yes," perform an Exemption Review per Section IV OR perform a 50.59 Evaluation per Section V.
   ☐ Yes ☒ No

3. **Does the proposed activity potentially impact equipment, procedures, or facilities utilized for storing spent fuel at an Independent Spent Fuel Storage Installation? (Check "N/A" if dry fuel storage is not applicable to the facility.)**
   If "yes," perform a 72.48 Review in accordance with NMM Procedure LI-112. (See Sections 1.5 and 5.3.1.5 of the EOI 10CFR50.59 Review Program Guidelines.)
   ☐ Yes ☐ No ☒ N/A

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[1] If "YES," see Section 5.1.5.
[2] If "YES," notify the responsible department and ensure a 50.54 Evaluation is performed.
[3] The Security Plan is classified as safeguards and can only be reviewed by personnel with the appropriate security clearance. The Preparer should notify the security department of potential changes to the Security Plan.
[4] If "YES," evaluate the change in accordance with the requirements of the facility's Operating License Condition.

B. **Basis**

(Provide a clear, concise basis for the answers given in the applicable sections above. 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.)

The proposed change directly affects TRM 3.7.13 and therefore the TRM is impacted. A keyword search of the electronic 10CFR50.59 LBD files was conducted using the key words of "switchgear ventilation". This was a broad search and resulted in 37 "hits".

Discussions of the switchgear ventilation system were identified in the FSAR section 9.4.3.5 and in section 11.3.3. NRC's review of this system discussion is provided in section 9.4 of the W3 SER. Switchgear ventilation and associated temperature transients relative to a Station Blackout Scenario are discussed in Waterford's SBO submittals and were reviewed by the NRC as documented in NRC SERs on SBO dated January 15, 1992 and June 17, 1992.

With the exception of the TRM, none of these Licensing Basis Documents include a discussion of the actions to be taken in the event of a system inoperability. Since this change only involves the administrative response/actions for a system inoperability, the TRM and its basis is the only Licensing Basis document impacted by this change.

C. **References**

[Discuss the methodology for performing the LBD search. 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 5.3.6.4 of LI-101.]

LBDs/Documents Reviewed:	Keywords:
10CFR50.59 LBD electronic database	"switchgear ventilation"
System description information is contained in section 9.4.3.5 of the FSAR. A brief discussion of the role of SVS relative to radioactive effluents is provided in section 11.3.3 of the FSAR.	
The heat-up of rooms/areas serviced by the Switchgear ventilation system was evaluated for a SBO scenario and these results were reviewed and accepted by the NRC in SERs dated 1/15/92 and 6/17/92.	

D. **Is the validity of this Review dependent on any other change?** (See Section 5.3.4 of the EOI 10CFR50.59 Program Review Guidelines)

☐ Yes
☒ No

If "Yes," list the required changes.

III. 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.

Will the proposed Change being evaluated:

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

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

V. 50.59 EVALUATION

A. Executive Summary (Serves as input to NRC summary report. Limit to one page or less. Send an electronic copy to the site licensing department after PSRC approval, if available.)

Brief description of change, test, or experiment:

The proposed change revises TRM 3.7.13, Switchgear Area Ventilation System and its basis. Consistent with the existing TRM 3.7.13, a period of 72 hours will still be provided to restore the switchgear area ventilation to operable status. The proposed change replaces the requirement to shut the plant down within the following 6 hours, if operability is not restored, with a requirement to initiate a Condition Report to justify continued operation. This change will also require General Manager of Plant Operations approval of this justification.

Reason for proposed Change:

In January 1997, TRM amendment 7 was approved. The amendment created TRM 3.7.13 which provided TRM operability requirements for the Switchgear Area Ventilation System (SVS). This TRM was created to establish an effective administrative control to address operability requirements for this system. Since this is a TRM item, Licensees are authorized to make changes pursuant to the 50.59 process. In addition, as stated in Generic Letter 91-18, a licensee can continue power operations of a facility with inoperable equipment provided TS compliance is maintained and a reasonable assurance of safety is established. The actions prescribed in the original TRM provide conservative bounding actions. This change will add additional flexibility and allow for the most prudent and safest course of action when considering the specific circumstances of a given situation.

50.59 Evaluation summary and conclusions

This change involves administrative controls that are in place to address Switchgear Ventilation System (SVS) operability. The SVS is not an initiator of any postulated accident and will not affect the frequency of occurrence of an accident previously evaluated in the FSAR. This change is structured to ensure that no more than a minimal increase in the likelihood of occurrence of a malfunction of a structure, system, or component (SSC) important to safety will occur. While equipment performance could potentially be adversely affected if required to perform at temperatures in excess of the Environmental Qualification (EQ) limits, the proposed action statement will require an evaluation to demonstrate a reasonable assurance of safety is provided to justify continued operation with an SVS inoperability. The proposed TRM basis explicitly addresses the design basis requirements of this system relative to maintaining a suitable operating environment for selected electrical equipment. The proposed TRM basis explicitly addresses the need to assure that no more than a minimal increase in the likelihood of a malfunction is created.

SVS does not directly mitigate the consequences of an accident. As discussed in FSAR section 11.3, no credit for this ventilation system is assumed for radiological effluents. Therefore this change will not result in more than a minimal increase in the consequences of an accident previously evaluated in the FSAR. Additionally SVS components do not directly mitigate the consequences of a malfunction. SVS does serve to support the operability of TS systems that do mitigate the consequences of accidents. A malfunction of these supported TS system could potentially increase the consequences. Given this potential, an explicit discussion has been provided in the basis for this proposed TRM revision to address the potential for equipment malfunction and the potential consequences of a malfunction. Therefore this change will not result in more than a minimal increase in the consequences of a malfunction.

This change does not involve any accident initiators and would not create the possibility for an accident of a different type. This change is administrative in nature in that it provides additional flexibility in how the plant may respond to a condition that involves a SVS inoperability. The evaluation required by the revised TRM to justify continued operation will ensure that no more than a minimal increase for a malfunction of a SSC is created. This evaluation will also demonstrate that the function of SVS is maintained to the extent the design basis support requirements are satisfied. Therefore, since these functions will be maintained for those systems important to safety, the possibility for a malfunction of a SSC important to safety with a different result will not be created.

The design basis of SVS does not directly relate to the design basis limit for a fission product barrier. Therefore continued operation with a SVS inoperability will not result in a design basis limit for a fission product barrier being exceeded or altered. This change is administrative in that it provides the flexibility to assess the impact of an SVS inoperability based on various considerations, as outlined in GL 91-18, to establish a reasonable assurance of safety. Techniques used to justify continued operation will be based on the regulatory guidance provided in GL 91-18. Therefore this change will not result in a departure from a method of evaluation.

B. 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 involves administrative controls that are in place to address Switchgear Ventilation System (SVS) operability. The SVS is not an initiator of any postulated accident. This change will eliminate the requirement for a default plant shutdown in the case of an SVS inoperability that is not corrected within 72 hours. While a plant shutdown may still occur depending on the specific circumstances, the proposed change will provide the option of justifying continued operation provided a reasonable assurance of safety is demonstrated. Therefore this change will have no effect on 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:

   This change is structured to ensure that no more than a minimal increase in the likelihood of occurrence of a malfunction of a structure, system, or component (SSC) important to safety will occur. While equipment performance could potentially be adversely affected if required to perform at temperatures in excess of the Environmental Qualification (EQ) limits, the proposed action statement will require an evaluation to demonstrate a reasonable assurance of safety is provided to justify continued operation with an SVS inoperability. The proposed TRM basis explicitly addresses the design basis requirements of this system relative to maintaining a suitable operating environment for selected electrical equipment. The proposed TRM basis explicitly addresses the need to assure that no more than a minimal increase in the likelihood of a malfunction is created.

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

BASIS:

This change will continue to provide an effective administrative control to ensure that plant operation beyond the allow outage time (AOT) limit of 72 hours is safe. SVS does not directly mitigate the consequences of an accident. As discussed in FSAR section 11.3, no credit for this ventilation system is assumed for radiological effluents. The SVS does serve to support the operability of TS systems that do mitigate the consequences of accidents. This change does not obviate any TS operability requirement for the TS systems credited for mitigating the consequences of an accident. This change will provide the plant additional flexibility for the purpose of justifying continued operation when individual SVS SSCs are inoperable. This change will not support or allow continued operation unless it can be demonstrated by an evaluation that continued operation is safe. This evaluation should consider the applicable specific circumstances that exist at the time of the inoperability, appropriate compensatory measures, and the risk associated with continued operation with the inoperability. 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:

SVS components do not directly mitigate the consequences of a malfunction. As discussed in FSAR section 11.3, no credit for this ventilation system is assumed for radiological effluents. SVS does serve to support the operability of TS systems that do mitigate the consequences of accidents. A malfunction of these supported TS systems could potentially increase the consequences. Given this potential, an explicit discussion has been provided in the basis for this proposed TRM revision to address the potential for equipment malfunction and the potential consequences of a malfunction. This change does not obviate any TS operability requirement for the TS systems credited for mitigating the consequences of an accident. This change will provide the plant additional flexibility for the purpose of justifying continued operation when individual SVS SSCs are inoperable. This change will not support or allow continued operation unless it can be demonstrated by an evaluation that continued operation is safe. This evaluation should consider the applicable specific circumstances that exist at the time of the inoperability, appropriate compensatory measures, and the risk associated with continued operation with the inoperability. Therefore this change will not result in more than a minimal increase in the consequences of a malfunction.

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

BASIS:

This change does not involve any accident initiators and would not create the possibility for an accident of a different type. This change simply provides the flexibility to assess the specific circumstances of a given situation and take the safest course of action. This change is administrative in nature in that it provides additional flexibility in how the plant may respond to a condition that involving a SVS inoperability.

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

This change is administrative in nature and does not involve any hardware changes. The evaluation required by the revised TRM to justify continued operation will ensure that no more than a minimal increase for a malfunction of a SSC is created. This evaluation will also demonstrate that the function of SVS is maintained to the extent the design basis support requirements are satisfied.

These support functions may be augmented with compensatory actions, if needed. Therefore, since these functions will be maintained for those systems important to safety, the possibility for a malfunction of a SSC important to safety with a different result will not be created.

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 design basis of SVS does not directly relate to the design basis limit for a fission product barrier. While SVS may support selected pieces of equipment which could impact a fission product barrier, this change does not alleviate any of the operability requirements associated with these supported systems. Therefore continued operation with a SVS inoperability will not result in a design basis limit for a fission product barrier 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:

This change is administrative in that it provides the flexibility to assess the impact of an SVS inoperability based on various considerations, as outlined in GL 91-18, to establish a reasonable assurance of safety. Techniques used to justify continued operation will be based on the regulatory guidance provided in GL 91-18. Therefore this change will not result in a departure from a method of evaluation.

I. OVERVIEW / SIGNATURES

Facility: Waterford 3

Document Reviewed: ER-W3-2002-0468-000 **Change/Rev.** 0

System Designator(s)/Description: Safety Injection (SI)

Description of Proposed Change

ER-W3-2002-0468-000 evaluates the LPSI train "A" piping with the presence of voids (up to 0.70 ft^3) in each leg of the system. This condition will be evaluated as part of the systems design basis. The void can be in both injection legs simultaneously or only in one injection leg. In addition, in each leg the void may be at either the high point vent or at the penetration in any combination as long as the total void in each leg is less than 0.7 ft^3.

To support the new design condition, support SIRR-760 and a structural base plate require a modification due to the increase in loading.

If the proposed activity, in its entirety, involves any one of the criteria below, check the appropriate box, provide a justification/basis in the Description above, and forward to a Reviewer. No further 50.59 Review is required. If none of the criteria is applicable, continue with the 50.59 Review.

- ☐ The proposed activity is editorial/typographical as defined in Section 5.2.2.1.
- ☐ The proposed activity represents an "FSAR-only" change as allowed in Section 5.2.2.2_____. (Insert item # from Section 5.2.2.2).
- ☐ The proposed activity is controlled by another regulation per Section 5.2.2.3.

If further 50.59 Review is required, check the applicable review(s): (Only the sections indicated must be included in the Review.)

☐	SCREENING	Sections I, II, and III required
☐	50.59 EVALUATION EXEMPTION	Sections I, II, III, and IV required
■	50.59 EVALUATION (#: 02-022)	Sections I, II, III, and V required

Preparer: Brian Lanka 11-14-02
Name (print) / Signature / Company / Department / Date

Reviewer: Nara Ray NARA RAY 11-14-02
Name (print) / Signature / Company / Department / Date

OSRC: K. Peters 11/14/02
Chairman's Name (print) / Signature / Date
[Required only for Programmatic Exclusion Screenings (see Section 5.8) and 50.59 Evaluations.]

List of Assisting/Contributing Personnel:

Name:	Scope of Assistance:
Dan Rohli	Mechanical Systems
Michelle Groome	I&C
Nassar Pazooki	SEA

II. SCREENING

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? (Check "N/A" for those documents that are not applicable to the facility.)

Operating License	YES	NO	N/A	CHANGE # and/or SECTIONS IMPACTED
Operating License	☐	■		
TS	☐	■		
NRC Orders	☐	■	☐	
If "YES", obtain NRC approval prior to implementing the change. (See Section 5.1.13 for exceptions.)				

LBDs controlled under 50.59	YES	NO	N/A	CHANGE # (if applicable) and/or SECTIONS IMPACTED
FSAR	■	☐		DRN 02-1586 3.9.1.2.1.19, 3.9.1.2.1.20, 3.9.1.2.1.21
TS Bases	■	☐		DRN 02-1635 3/4.5.2 and 3/4.5.3 (page B 3/4 5-1d)
Technical Requirements Manual	☐	■		
Core Operating Limits Report	☐	■		
Offsite Dose Calculations Manual	☐	■		
NRC Safety Evaluation Reports[1]	☐	■		
If "YES", perform an Exemption Review per Section IV OR perform a 50.59 Evaluation per Section V.				

LBDs controlled under other regulations	YES	NO	N/A	CHANGE # (if applicable) and/or SECTIONS IMPACTED
Quality Assurance Program Manual[2]	☐	■		
Emergency Plan[2]	☐	■		
Security Plan[2 3]	☐	■		
Fire Protection Program[4] (includes the Fire Hazards Analysis)	☐	■	☐	
If "YES", evaluate/process any changes in accordance with the appropriate regulation.				

2. Does the proposed activity involve a test or experiment not described in the FSAR?
If "yes," perform an Exemption Review per Section IV OR perform a 50.59 Evaluation per Section V.

☐ Yes
■ No

3. Does the proposed activity potentially impact equipment, procedures, or facilities utilized for storing spent fuel at an Independent Spent Fuel Storage Installation?
(Check "N/A" if dry fuel storage is not applicable to the facility.)
If "yes," perform a 72.48 Review in accordance with NMM Procedure LI-112.
(See Sections 1.5 and 5.3.1.5 of the EOI 10CFR50.59 Review Program Guidelines.)

☐ Yes
☐ No
■ N/A

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[1] If "YES," see Section 5.1.5.
[2] If "YES," notify the responsible department and ensure a 50.54 Evaluation is performed.
[3] The Security Plan is classified as safeguards and can only be reviewed by personnel with the appropriate security clearance. The Preparer should notify the security department of potential changes to the Security Plan.
[4] If "YES" evaluate the change in accordance with the requirements of the facility's Operating License Condition

B. **Basis**

(Provide a clear, concise basis for the answers given in the applicable sections above. 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.)

Entergy-Fulfind, Electronic Text Search Utility using the LBDS 5059 index, was utilized to search all the LBD's using the keywords listed below. The relevant LBD's , where keywords were found, are listed below.

C. **References**

[Discuss the methodology for performing the LBD search. 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 5.3.6.4 of LI-101.]

LBDs/Documents Reviewed:

FSAR Sections:

1.2.2.7.4; 1.9.37; 3.6A;
3.6.1; 3.9.1, 3.9.2, 3.9.3;
4.4.3; 5.2.5.1.4; 6.3;
7.3.1.1.1; 7.3.1.1.4; 9.3.6;
9.5; 15

FSAR Tables:

3.2-1;

Technical Specifications (including bases)

3/4.3; 3/4.4; 3/4.5; 3/4.6

Technical Requirements Manual

3/4.3, Table 3.6-2

Commitment Management System

Keywords:

LPSI, Low Pressure Safety Injection, Void(s), Bubble(s), LOCA, full of water, RWSP, HYTRAN, SYSFLO, PIPER

D. **Is the validity of this Review dependent on any other change?** (See Section 5.3.4 of the EOI 10CFR50.59 Program Review Guidelines.)

☐ Yes
■ No

If "Yes," list the required changes.

The validity of this review is only based on the work outlined in ER-2002-0468-000 being completed.

III. 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.

Will the proposed Change being evaluated:

Yes	No	
☐	■	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)?
☐	■	Involve a land disturbance of undisturbed land areas (i.e., grading activities, construction, excavations, reforestation, creating, or removing ponds)?
☐	■	Involve dredging activities in a lake, river, pond, or stream?
☐	■	Increase the amount of thermal heat being discharged to the river or lake?
☐	■	Increase the concentration or quantity of chemicals being discharged to the river, lake, or air?
☐	■	Discharge any chemicals new or different from that previously discharged?
☐	■	Change the design or operation of the intake or discharge structures?
☐	■	Modify the design or operation of the cooling tower that will change water or air flow characteristics?
☐	■	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?
☐	■	Modify existing stationary fuel burning equipment (i.e., diesel fuel oil, butane, gasoline, propane, and kerosene)?[1]
☐	■	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]
☐	■	Involve the installation or use of equipment that will result in an air emission discharge?
☐	■	Involve the installation or modification of a stationary or mobile tank?
☐	■	Involve the use or storage of oils or chemicals?
☐	■	Involve burial or placement of any solid wastes in the site area that may effect runoff, surface water, or groundwater?

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

IV. 50.59 EVALUATION EXEMPTION

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

A. Check the applicable boxes below. If any of the boxes are checked, a 50.59 Evaluation is not required. If none of the boxes are checked, perform a 50.59 Evaluation in accordance with Section V. Provide supporting documentation or references as appropriate.

☐ The proposed activity meets all of the following criteria regarding design function per Section 5.5.1.1:

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 5.5.1.2. 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 5.5.1.3. 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 5.5.6 of the EOI 10CFR50.59 Review Program Guidelines for guidance.)

V. 50.59 EVALUATION

A. Executive Summary (Serves as input to NRC summary report. Limit to one page or less. Send an electronic copy to the site licensing department after OSRC approval, if available.)
Brief description of change, test, or experiment:

ER-W3-2002-0468-000 evaluates the LPSI train "A" piping with the presence of voids (up to 0.7 ft^3) in each of the two injection legs the system. This condition is being incorporated into the design of the LPSI Train "A" discharge piping. The new void limit will revise the existing limit in OP-903-026. Technical Specification Basis 3/4.5.2 and 3/4.5.3 is revised to address the void limit, which is applicable to LPSI train "A" discharge piping only (DRN 02-1635). FSAR section 3.9.1.2.1.19, 3.9.1.2.1.20 and 3.9.1.2.1.21 are being added to the FSAR (DRN 02-1586). These sections describe the HYTRAN, SYSFLO, and PIPER computer programs that were used to model the system transient.

To support the new design condition, support SIRR-760 and a structural base plate require a modification due to the increase in loading.

Reason for proposed Change:

Technical Specification 3/4.5.2 surveillance requires verification at least every 31 days that the ECCS is full of water. Due to leakage past containment isolation valves (SI-142A/143A), nitrogen gas has been coming out of solution and forming gas pockets at certain locations in the SI system (Ref. CR-W3-2002-0818). Operations and QA personnel have been frequently performing ultrasonic exams of the SI piping in order to identify and quantify gas bubble sizes. Due to the existence and size of the gas pockets, the Control Room has entered several Technical Specification action statements.

Currently, the presence of any size gas void is considered to be an adverse condition. ER-W3-2002-0468-000 will allow for "design basis" voiding of up to 0.7 ft^3 in each leg of the LPSI "A" Train. The maximum void size to support system operability is not changing as a result of this ER.

50.59 Evaluation summary and conclusions

The evaluation determined that the frequency and consequences of an accident evaluated in the FSAR are not impacted. In addition the likelihood and consequences of a malfunction of the LPSI system is not impacted. The piping system was evaluated for the effects of a hydraulic transient loading and the piping meets the applicable Code requirements. However, support SIRR-760 and a structural base plate are being modified due to load increases. The modifications meet all applicable design, material and construction standards applicable to the LPSI system. There is no change to the Operating License. The Technical Specification Bases is being revised to address that a void may be present (DRN 02-1635) and the FSAR is being revised to address the computer programs used for the new design (DRN 02-1586). Prior NRC approval is not required for this change.

B. 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:

The Accident analyses in the FSAR were reviewed and it was determined this proposed change will not impact the frequency of an occurrence of any accident. The LPSI system is not an initiator for any accidents described in the FSAR. During normal operation the LPSI system is aligned to support automatic initiation following a LOCA or MSLB. During normal operation, the LPSI pumps are off and the LPSI header to RCS loop control valves are closed (i.e., system is in standby mode). The system is used to mitigate the effects of an accident involving a decrease in reactor water inventory. There is no increase in the possibility of an RCS leak. There is no change to the pressure boundary of the LPSI system. The system has been evaluated for the hydraulic transient loading and the temporary pressure spike associated with the presence of voids during pump start.

A hydraulic transient could occur during pump surveillance if the pump is started with a void in the line. By limiting the void size to a total of 0.7 ft^3 per leg, the pressure in the line will never exceed the design pressure and the pipe stress is still below Code allowables. This ensures there is will be minimal increase in occurrence of a LOCA.

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 LPSI system is part of the Emergency Core Cooling System (ECCS). It is designed to provide core cooling in the event of a LOCA or Main Steam Line Break (MSLB). The LPSI system also provides Shutdown Cooling functions. There is no increase of a likelihood of a malfunction of the LPSI system. The LPSI Train A piping has been evaluated for the presence of some voids and found acceptable. All supports and structural steel have been evaluated and found acceptable. The pressure in the system remains within the existing design value. There will be no inadvertent lifting of any pressure relieving devices with a void of 0.7 ft^3 in each injection leg. All instrumentation has been found acceptable for the effects of the hydraulic transient. With the presence of voids the system will still be able to deliver its required flow. In addition, the system was designed with redundant components and this ER does not have any impact on LPSI Train B.

Technical Specification Bases B 3/4.5 provides the bases for ensuring the systems are full of water. Being full of water ensures that there will not be potentially damaging hydraulic transient, pump cavitation or non-compressible gas from entering the reactor. With voids not exceeding a total size of 0.7 ft^3 in each of the two injection legs of LPSI A, the piping is qualified for the hydraulic transient loading. Stresses remain below the approved code allowables. Voids in the discharge section of the pipe will not cause pump cavitation. The void is traveling away from the pump. Lastly, the small nitrogen void has been evaluated if it enters the reactor and it was found negligible. DRN 02-1635 was issued to revise the Bases to add a statement about the allowable void size for the discharge piping in LPSI train A.

Information Notice 2002-018 documented an Auxiliary Feedwater Pump failure event at Callaway that was attributed to gas saturated water coming out of solution near the pump impeller. The Callaway pump takes suction from a closed Condensate Storage Tank that is sparged with nitrogen. Waterford 3 personnel reviewed the applicability of this event to Waterford 3 equipment via operating experience condition report LO-OPX-2002-00146. The evaluation concluded, in part, that the Waterford 3 Safety Injection system is not susceptible to this phenomenon. The SI pumps take suction from the Refueling Water Storage Pool, which is vented to the atmosphere. Because it is vented, there will not be any significant amount of dissolved gas in the fluid being pumped during the injection mode of operation. The voids that are forming in the LPSI discharge piping are a result of leakage of nitrogen saturated water from the Safety Injection Tanks past check valves SI-142A and SI-143A. The nitrogen saturated water cannot migrate back to the pump through the discharge piping, because the discharge piping upstream of the flow control valves, SI-138A and SI-139A, is opened to the RWSP via the minimum flow recirculation line, and is thus maintained depressurized. Nitrogen coming out of solution naturally collects at the system high point immediately upstream of the flow control valves near vent valves SI-133A and SI-134A. After receipt of a Recirculation Actuation Signal, the SI pumps' suction switches from the RWSP to the Safety Injection Sump. This sump is open to the containment atmosphere, which is limited to 44 psig. Therefore, no significant amount of nitrogen will remain in solution during this mode of operation. Prior to entering the shutdown cooling mode of operation, the system is inspected for the presence of voids and vented as necessary. In addition, the Reactor Coolant System provide suction to the LPSI pumps during this mode. The significantly higher NPSH provided by the RCS will counter-act the effects of gas coming out of solution a the pump during Shutdown Cooling. Also, plant operating experience has demonstrated the satisfactory operation of the LPSI pumps during Shutdown Cooling. Because gas saturated solution cannot migrate to the pumps' suction during injection and recirculation modes, and it will have no adverse affect during shutdown cooling mode, the current NPSH calculations for the SI pumps remains valid, and there is no need to adjust for gas saturation. Therefore, operation with gas voids and/or nitrogen saturated fluid in the LPSI discharge piping will not increase the likelihood of occurrence of a malfunction of any structure system or component important to safety as 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 Accident Analyses in the FSAR were reviewed and it was determined that this modification will not impact the consequences (radiation dose) of any accident. The safety injection system is designed to ECCS criteria to ensure core cooling in the event of an LOCA or MSLB. The safety injection system (SIS) fluid shall provide sufficient neutron absorbers (boron) to maintain the reactor subcritical. The presence of a minimum void in the discharge piping in train A of LPSI will not impact the safety function of the system. The boron comes from the safety injection tanks (SIT) and the Refueling Water Storage Pool (RWSP). There is no change to the existing boron concentration levels.

Based on an evaluation by Westinghouse (formerly ABB Combustion Engineering) performed in response to CR-WF3-1996-1965, it is concluded that the additional Nitrogen injected into the core (up to 5 ft^3) will not have an impact on the safety analysis. The Westinghouse response concludes that the LOCA accident analyses were not significantly impacted due to the addition of all of the Nitrogen initially present in the Safety Injection Tanks into the core. Because the 0.70 ft^3 void in each leg being allowed by this evaluation is negligible compared to the amount of nitrogen in each of 4 SITs, judgement leads to the conclusion that the voiding will have no impact on the safety analysis.

The Containment Water Level calculation, MN(Q)6-4, does not credit the volume of the ECCS piping. Therefore, initial voiding in the LPSI piping will have no effect of the calculated safety injection sump level, and will therefore have no adverse effect on the Net Positive Suction Head available to the ECCS pumps post-RAS.

The LPSI pumps are designed to inject large volumes of water at low pressure. The pumps are sized based on the requirements of shutdown cooling, which is more demanding than LPSI injection. A small void in the line will have negligible impact on the ability of the pumps to provide their intended function. The LPSI Train A is still within the design basis with the presence of void up to 0.70 ft^3 per leg and the system will still mitigate the effects of an accident involving a decrease in reactor water inventory. The pressure in the system will not exceed the design pressure of the piping. The pipe supports and associated structural steel meets the appropriate design allowables due to the hydraulic transient loading except for support SIRR-760 and one structural steel base plate. These components are being modified to meet their Code allowables.

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:

This modification to the LPSI system will not increase the consequences (radiological release) of a LOCA or MSLB. There is no increase in consequences of LOCA or MSLB. The presence of voids in the discharge piping of LPSI train "A" will cause hydraulic transient loading and a pressure spike in the system. The piping has been evaluated for this transient and the piping remains within the ASME Code allowables. The pipe supports have also been evaluated and found to be within their design allowables. Support SIRR-760 and structural base plate are modified due to the increase in loading. The support design and construction are to the existing criteria for the LPSI system.

The hydraulic transient loading will not have any adverse effect on the remaining portions of the system. The loading on the pump nozzles are still within the vendors design allowables. The loading on the containment penetration is still within the design allowables. The hydraulic transient will not subject any system valves to pressure locking. The additional nitrogen that would be injected into the core following a LOCA has been evaluated and found to have a negligible impact.

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

BASIS:

This proposed change to the LPSI system does not create an accident of a different type other than the previously evaluated accidents. There are no new system interfaces created. The LPSI system is not an initiator for any accidents. The system is normally in standby mode. Any voids in the system while the system is in standby mode will have no effect on any other system. During shutdown cooling, the system is procedurally vented to remove any voids in the system that could cause a hydraulic transient. This will ensure no unnecessary burden on the system during shutdown cooling (SDC). In addition, in SDC the LPSI pumps are started with the recirculation isolation valve open. Pressure will never build in the system so it is not susceptible to a hydraulic transient. The piping, piping components, valves and penetrations have all been evaluated for the effects of the hydraulic event.

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 proposed change will not impact the operation or performance of the LPSI system. The LPSI will not cause a malfunction of any SSC. The LPSI system was designed to meet its functional requirement with even the failure of a single active component. The piping, pipe supports and building steel are acceptable for the hydraulic transient loading. The presence of a 0.70 ft^3 void per leg will not impact the ability of the system to deliver its rated flow. In SDC the recirculation line is open so any void in the pipe will be directed to the suction of the LPSI pump initially. By limiting the void size, pump cavitation will not occur and limiting the void size will not adversely effect the pump performance. The hydraulic transient will not interfere with any other system ability to perform their safety function. The operation of the system is not affected by this modification. The loading on the pump due to the transient will not effect the pumps ability to deliver is rated capacity.

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

BASIS:

This design change will allow gas pockets of up to 0.70 ft^3 to be present at penetration 38, between containment isolation valves SI-143A (inside containment check valve) and SI-139A and at penetration 39, between SI-142A (inside containment check valve) and SI-138A. Events requiring containment isolation also require safety injection actuation. Therefore, the void will be collapsed or swept out of the system when the SI system becomes functional following SIAS. In addition, Penetrations 38 and 39 are exempt from Type C Leak testing because safety injection flow can be guaranteed to exist under all LOCA conditions, even considering single failure criteria (FSAR Table 6.2-43). If the LPSI pump were to fail to start, then flow from the HPSI header would prevent containment atmosphere from leaking through the break and into the low-pressure header. Therefore, the presence of 0.70 ft^3 voids at penetrations 38 and 39 will not compromise containment integrity. Also, the void will not prevent closure of any of the containment isolation valves. Check valves SI-142A and SI-143A are normally closed because the Safety Injection Tanks provide higher pressure downstream of the check valves than the static head provided by the RWSP on the upstream side. Furthermore, if there were no differential pressure across the check valves, there would be no mechanism for gas to come out of solution. Voiding will therefore not affect the ability of SI-142A or SI-143A to perform their containment isolation functions. Valves SI-138A and SI-139A are located at relative low points in the system, where gas will not collect. Therefore, voiding will not affect the operation of these valves.

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 FSAR does not provide detail on which systems are to be evaluated for a hydraulic transient. Currently Waterford has performed hydraulic transient evaluations for system that are susceptible (i.e., ACCW and EFW). The Waterford 3 pipe stress design guide (AMEC-D-001) states *"A time history analysis shall be performed using the available computer program along with the proper forcing functions (force versus time)."* There is no specific guidance given on the program to be used to develop the time history input (definition of the hydraulic transient event). In the case of the LPSI analyses, ANSYS was used to perform the time history analyses. This program is described in the Section 3.9.1.2.2.1.10 of the FSAR.

To generate the hydraulic transient loading time histories The SYSFLO and PIPER computer programs were used. The transient event was evaluated using HYTRAN, SYSFLO and PIPER computer programs. The SYSFLO and PIPER computer programs were used by a vendor and these programs meet the vendors Quality Assurance program. The QA was performed under the requirements of 10CFR50, Appendix B. The SYSFLO fluid transient programs use a numerical method to solve the resulting set of integrated mass, energy, and momentum equations using the technique described in "Flash-4: a fully Implicit Fortran IV Program for the Digital Simulation of Transients in a Reactor Plant", WAPD-TM-840. This method is already described in the FSAR as the method used for WATERHAMMER and CFLASH-4 programs. These programs solve the same type of problems as SYSFLO. Although a different computer program was used, the methodology used by SYSFLO is the same methodology as described in the FSAR.

The HYTRAN computer program was verified and validated to the requirements of Entergy Software Quality Assurance Procedure IT-104. HYTRAN computer program uses the (methods of characteristics approach to solving hydraulic transient problem. The method of characteristics is the approach used by other another program (WHAMOCII) described in the FSAR. Although a different computer program was used, the methodology used by HYTRAN is the same methodology as described in the FSAR.

FSAR Section 3.9.1.2 describes the computer programs employed to qualify the non-NSSS systems and components. DRN 02-1586 added three sections to FSAR Section 3.9.1.2 to address these programs. The results of all three of these programs has been validated and the results are consistent with industry standards. In addition, the FSAR does not provide specific guidance on the program to be used to evaluate hydraulic transients. Thus, the method of evaluation is not different than those described in the FSAR.

I. OVERVIEW / SIGNATURES

Facility: Waterford 3

Document Reviewed: ER-W3-2001-1208-000, EC-M97-079 (DRN 01-3705), MN(Q)-6-27 (DRN-01-3704), EC-M91-011 (DRN 01-3981)

System Designator(s)/Description: SI, CS

Description of Proposed Change

Waterford 3 Net Positive Suction Head (NPSH) calculations, MN(Q)-6-27 for the High Pressure Safety Injection (HPSI) and Containment Spray (CS) pumps and EC-M97-079 for the Low Pressure Safety Injection (LPSI) pumps, assumed that the check valves located in the suction headers would be fully open. Vendor information indicates that, based on the assumed flow, some of these check valves would not be fully open during a design basis event. Therefore the pressure drop across the valve is slightly higher than was previously assumed in these calculations. MN(Q)-6-27 and EC-M97-079 were revised to reflect the new flow coefficient information. This resulted in slightly less margin in NPSH available as compared to the required NPSH for the HPSI, LPSI, and CS pumps. FSAR Chapter 6 and Design Basis Documents 1 and 13 were revised by ER-W3-2001-1208-000 to reflect the new NPSH values. Calculation EC-M91-011, which determines the water level in the Refueling Water Storage Pool (RWSP) outlet piping during recirculation mode, references MN(Q)-6-27 as a source for flow resistance coefficient information. This calculation was also updated by ER-W3-2001-1208-000, with negligible impact on the conclusions.

If the proposed activity, in its entirety, involves any one of the criteria below, check the appropriate box, provide a justification/basis in the Description above, and forward to a Reviewer. No further 50.59 Review is required. If none of the criteria is applicable, continue with the 50.59 Review.

- ☐ The proposed activity is editorial/typographical as defined in Section 5.2.2.1.
- ☐ The proposed activity represents an "FSAR-only" change as allowed in Section 5.2.2.2_____. (Insert item # from Section 5.2.2.2).
- ☐ The proposed activity is controlled by another regulation per Section 5.2.2.3.

If further 50.59 Review is required, check the applicable review(s): (Only the sections indicated must be included in the Review.)

☐	**SCREENING**	**Sections I, II, and III required**
☐	**50.59 EVALUATION EXEMPTION**	**Sections I, II, III, and IV required**
☒	50.59 EVALUATION (#: 02-023)	**Sections I, II, III, and V required**

Preparer: Daniel J. Rohli/ Daniel J. Rohli /EOI/ DE-Mechanical / 11/13/02
Name (print) / Signature / Company / Department / Date

Reviewer: Matt Touna/ Matt Touna /EOI/ DE-Mechanical / 11-13-02
Name (print) / Signature / Company / Department / Date

OSRC: 11/20/02
Chairman's Name (print) / Signature / Date
[Required only for Programmatic Exclusion Screenings (see Section 5.8) and 50.59 Evaluations.]

List of Assisting/Contributing Personnel: N/A

II. SCREENING

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? (Check "N/A" for those documents that are not applicable to the facility.)

Operating License	YES	NO	N/A	CHANGE # and/or SECTIONS IMPACTED
Operating License	☐	☒		
TS	☐	☒		
NRC Orders	☐	☒	☐	
If "YES", obtain NRC approval prior to implementing the change. (See Section 5.1.13 for exceptions.)				

LBDs controlled under 50.59	YES	NO	N/A	CHANGE # (if applicable) and/or SECTIONS IMPACTED
FSAR	☒	☐		DRN 01-3706 Sections 6.2 and 6.3; Table 6.2-22
TS Bases	☐	☒		
Technical Requirements Manual	☐	☒		
Core Operating Limits Report	☐	☒		
Offsite Dose Calculations Manual	☐	☒		
NRC Safety Evaluation Reports[1]	☐	☒		
If "YES", perform an Exemption Review per Section IV OR perform a 50.59 Evaluation per Section V.				

LBDs controlled under other regulations	YES	NO	N/A	CHANGE # (if applicable) and/or SECTIONS IMPACTED
Quality Assurance Program Manual[2]	☐	☒		
Emergency Plan[2]	☐	☒		
Security Plan[2,3]	☐	☒		
Fire Protection Program[4] (includes the Fire Hazards Analysis)	☐	☒	☐	
If "YES", evaluate/process any changes in accordance with the appropriate regulation.				

2. Does the proposed activity involve a test or experiment not described in the FSAR?
If "yes," perform an Exemption Review per Section IV OR perform a 50.59 Evaluation per Section V.

☐ Yes
☒ No

3. Does the proposed activity potentially impact equipment, procedures, or facilities utilized for storing spent fuel at an Independent Spent Fuel Storage Installation?
(Check "N/A" if dry fuel storage is not applicable to the facility.)
If "yes," perform a 72.48 Review in accordance with NMM Procedure LI-112.
(See Sections 1.5 and 5.3.1.5 of the EOI 10CFR50.59 Review Program Guidelines.)

☐ Yes
☐ No
☒ N/A

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[1] If "YES," see Section 5.1.5.
[2] If "YES," notify the responsible department and ensure a 50.54 Evaluation is performed.
[3] The Security Plan is classified as safeguards and can only be reviewed by personnel with the appropriate security clearance. The Preparer should notify the security department of potential changes to the Security Plan.
[4] If "YES," evaluate the change in accordance with the requirements of the facility's Operating License Condition.

B. Basis

(Provide a clear, concise basis for the answers given in the applicable sections above. 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.)

The changes in the suction header check valve resistance coefficients result in a slightly lower NPSH available to the HPSI, LPSI, and CS pumps. However, the resulting NPSH available is still greater than the required NPSH for all Emergency Core Cooling System (ECCS) pumps whether taking suction from the RWSP or the SI Sump. Therefore, all ECCS pumps will be able to deliver fluid at design basis flow rates under all design basis conditions without the concern of cavitation of the pumped fluid. Revising NPSH calculations corresponding documentation does not require or involve any tests or experiments.

An electronic search of the licensing basis documents was performed as described in Section C below. The only licensing impact found was in sections 6.2, 6.3, and Table 6.2-22 of the FSAR. A 50.59 evaluation is documented below to justify revising these sections.

C. References

[Discuss the methodology for performing the LBD search. 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 5.3.6.4 of LI-101.]

LBDs/Documents Reviewed:	Keywords:
Calculations EC-M97-079, MN(Q)-6-27, EC-M91-011, EC-M98-008, EC-M98-069, MN(Q)-6-4, MN(Q)-6-41, Vendor Manual 460000042 Volume 2, Reg. Guide 1.1, FSAR Sections 6.2.2.3.2, 6.42.4.2, 6.3.2.2.2, Table 6.2-22, Chapter 15, FSAR Figures 6.3-3a, 6.3-3b, 6.3-3c, 6.2-40, Reg. Guide 1.1-1970, CR-WF3-2001-0429.	An electronic search was performed using LRS Fulfind with the "LBDS_50_59" tables selected and the keywords "NPSH" and "Net Positive Suction Head"

D. Is the validity of this Review dependent on any other change? (See Section 5.3.4 of the EOI 10CFR50.59 Program Review Guidelines.)

☐ Yes
☒ No

If "Yes," list the required changes.

_____

_____

_____

_____

III. 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.

Will the proposed Change being evaluated:

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

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

IV. 50.59 EVALUATION EXEMPTION

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

A. Check the applicable boxes below. If any of the boxes are checked, a 50.59 Evaluation is not required. If none of the boxes are checked, perform a 50.59 Evaluation in accordance with Section V. Provide supporting documentation or references as appropriate.

☐ The proposed activity meets all of the following criteria regarding design function per Section 5.5.1.1:

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 5.5.1.2. 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 5.5.1.3. 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 5.5.6 of the EOI 10CFR50.59 Review Program Guidelines for guidance.)

V. 50.59 EVALUATION

A. Executive Summary (Serves as Input to NRC summary report. Limit to one page or less. Send an electronic copy to the site licensing department after OSRC approval, if available.)

Brief description of change, test, or experiment:

Calculations MN(Q)-6-27 and EC-M97-079 determine the Net Positive Suction Head (NPSH) available to the HPSI, LPSI and CS pumps. CR-WF3-2001-0429 identified that non-conservative flow coefficients were used for various check valves in the pumps' suction piping. The calculations were revised to reflect the corrected flow coefficient information. This resulted in slightly less margin in NPSH Available (NPSHA) as compared to the NPSH Required (NPSHR) for the pumps. FSAR Chapter 6 and DBDs 1 and 13 were revised by ER-W3-2001-1208-000 to reflect the new NPSH values. Calculation EC-M91-011, which determines the water level in the Refueling Water Storage Pool (RWSP) outlet piping during recirculation mode, references MN(Q)-6-27 as a source for flow resistance coefficient information. This calculation was also updated, with negligible impact on the conclusion.

Reason for proposed Change:

Calculations MN(Q)-6-27 for the HPSI and CS pumps, EC-M97-079 for the LPSI pumps had previously assumed that the check valves located in the suction headers would be fully open. Vendor information indicates that, based on the assumed flow, some of these check valves would not be fully open during a design basis event. Therefore the pressure drop across the valve is slightly higher than was previously calculated in the NPSH calculations for these pumps.

50.59 Evaluation summary and conclusions

Reg. Guide 1.1-1970 documents the NPSH requirements for emergency core cooling system and containment heat removal system pumps. This document requires that the NPSHA value be greater than the NPSHR provided by the manufacturer for each pump, without taking credit for elevated containment pressure post-accident. Calculations MN(Q)-6-27 and EC-M97-079 determine the NPSHA for the HPSI, LPSI, and CS pumps. Although the proposed change will reduce the margin slightly, the NPSHA is still greater than NPSHR for the pumps during all design basis scenarios, without crediting elevated containment pressure. Because this requirement is met, potentially damaging cavitation will not occur and the pumps will perform as designed. Therefore, this change has no affect on operation, performance or reliability of any structure, system, or component, and it does not require prior NRC approval.

B. 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:

The Safety Injection (SI) and Containment Spray (CS) systems are designed to mitigate the consequences of accidents evaluated in the FSAR. The safety injection system provides core cooling in the event of a Loss of Coolant Accident (LOCA) or a Main Steam Line Break (MSLB). The Containment Spray system removes heat and fission products from the containment atmosphere during and following either a LOCA or a MSLB inside the containment and limits off site radiation by reducing the pressure differential between containment and the external environment and by scrubbing the containment atmosphere following a LOCA. The SI and CS systems are not initiators of accidents as described in the FSAR, therefore this 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 Low Pressure Safety Injection (LPSI) pumps and High Pressure Safety Injection (HPSI) pumps start upon receipt of a Safety Injection Actuation Signal (SIAS). The CS pumps start upon receipt of a Containment Spray Actuation Signal (CSAS). These pumps are required to deliver their minimum specified flow to the Reactor Coolant System (RCS) or spray nozzles. Reg. Guide 1.1-1970 requires that adequate NPSH be made available to the emergency core cooling pumps and containment heat removal pumps without reliance on elevated containment pressure. Meeting the NPSH requirements is required to prevent potentially damaging cavitation of the pumped fluid. The NPSHR value is provided by the pump vendor. As long as the NPSHR value is met, damaging pump cavitation will not occur. The NPSHR for the LPSI and HPSI pumps is 20 ft. The NPSHR for the CS pumps is 18 ft. This change reduces the NPSHA value to the pumps slightly. The scenario having the least NPSH margin is the LPSI A pump taking suction from the SI sump. The NPSHA value for this case was previously 20.6 ft., and is being reduced to 20.38 ft. as a result of this change. The revised NPSHA will still be greater than the NPSHR in all cases, with no credit taken for elevated containment pressure. Significant cavitation will not occur, and there will be no increase in the likelihood of a malfunction of the pumps.

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

☐ Yes
☑ No

BASIS:

The SI and CS systems are needed to provide core cooling and reduce the temperature and pressure of containment following a LOCA or MSLB. The HPSI, LPSI and CS pumps are critical components in these systems and are necessary to mitigate the consequences if one of these events were to occur. NPSH is a parameter that affects only the pumps. Because the slight decrease in NPSHA will not increase in the likelihood of malfunction of the pumps, as documented in the response to question #2, the pumps will function as designed, and there will be no increase

in the consequences of a LOCA or MSLB, or any other 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:

   NPSH is a parameter that has the potential to affect pump performance. Therefore, the consequences of malfunction of the LPSI, HPSI, and CS pumps were reviewed. FSAR Tables 6.3-1, 6.2-27, and 9.3-16 provide the failure modes and effects analysis of the Safety Injection, Containment Heat Removal, and Shutdown Cooling Systems, respectively. In all cases, the failure effects of a LPSI, HPSI or Containment Spray pump is compensated for by a redundant, parallel train. As stated in the response to question #2, a slight reduction in NPSHA will not result in an increase in the likelihood of malfunction of the pumps. This reduction in NPSHA will not be a common mode failure of both trains. Therefore, this redundant parallel train argument remains valid, and no increased reliance is placed on any structure, system or component. There will be no increase in the consequences of a malfunction of the ECCS pumps or any other structure, system or component evaluated in the FSAR as a result of the decrease in NPSHA.

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

   BASIS:

   No physical modification is being made to the plant as a result of this change. No new system interfaces are being created. Operation of the SI, CS, or SDC systems will not change in any way. NPSH is a parameter that has the potential to affect only pump performance. As stated in the response to question #2, a slight decrease in NPSHA will not adversely affect the operation, reliability or performance of any structure, system or component, and therefore does not create a new accident initiator. The NPSHA reduction will therefore not create the possibility of any accident that has not been 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

   NPSH is a parameter that has the potential to affect pump performance. Slightly reducing the NPSHA value to the LPSI, HPSI, and CS pumps could potentially affect the performance of those pumps. The malfunction of these components is evaluated in the failure modes and affects analyses of the Safety Injection, Containment Heat Removal, and Shutdown Cooling Systems (FSAR Tables 6.3-1, 6.2-27, and 9.3-16). Malfunction of these components would be mitigated by the presence of a redundant parallel train. Because a decrease in NPSHA will not result in an increase in the probability of occurrence of a malfunction of the pumps, it cannot cause a common mode failure, and the current failure modes and effects analysis remains valid. The change does not create a new failure mechanism for the pumps with a different result than previously described in the FSAR. Therefore, this change will not cause equipment malfunction with different results than 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 SI and CS systems both penetrate the containment wall, and a portion of the SI system is considered part of the RCS pressure boundary. However, NPSH is a parameter that could affect only pump performance. Containment and RCS pressure boundary integrity are not affected in any way by pump performance because the SI and RCS piping are designed to withstand the maximum pressure capable of being produced by the pumps. The safety injection system provides flow to the core to prevent damage to the fuel cladding during accident conditions. Damage will not occur provided that the SI system delivers its rated flow to the core. Similarly, the CS system is needed to ensure that containment pressure remains below its design basis value, and containment integrity will not be challenged provided that the CS system delivers its rated flow to the spray header. Because a decrease in NPSHA will not result in an increase in the probability of occurrence of a malfunction of the SI and CS pumps, the pumps will still deliver their rated flow, and the fuel cladding and containment integrity will not be challenged. Therefore, no design basis limit for any fission product barrier is 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:

Section 6.3.2.2.2.3 of the FSAR describes the method of calculating the NPSH available for the HPSI, LPSI and CS pumps. The section states that the method of calculating NPSH available meets the intent of Reg. Guide 1.1. A "saturated sump" model is used in which containment atmospheric pressure is assumed to be the saturation pressure corresponding to the temperature of the water in the sump. This method was approved by the NRC in SER section 6.2.2 and section 6.2.2.II.2 of the Standard Review Plan. The proposed changes to calculations MN(Q)-6-27 and EC-M97-079 affect only the friction losses assumed for particular check valves in the suction piping and do not alter the method in which the NPSHA is being calculated.

I. OVERVIEW / SIGNATURES

Facility: Waterford 3

Document Reviewed: ER-W3-2000-0225-000 **Change/Rev.:** CN 2

System Designator(s)/Description: Boron Management (BM)

Description of Proposed Change

ER-W3-2000-0225-000 authorized the inactivation of the Boron Management System (BMS) Flash Tank and associated pumps, piping, instrumentation, control room annunciators, and valves because the equipment was no longer being used. The use of the Flash Tank generated a large volume of gaseous radioactive wastes that had to be stored and processed. Normal system operation is to bypass the Flash Tank, discharging effluent directly to the Holdup Tanks (HUTs) from letdown flow, Equipment Drain Tank or Reactor Drain Tank discharges. The HUTs are capable of satisfying the radiological treatment functions that were previously performed by the Flash Tank. CR-WF3-2002-01103 was generated when the SRC Subcommittee reviewed the 50.59 Evaluation Exemption that was prepared for ER-W3-2000-0225-000 and determined that it was unsatisfactory in that it did not consider the adverse impact of the change on the design function at the component level. Although the ER has been implemented and the affected licensing basis documents have been updated, this 50.59 Evaluation is being prepared to document that the changes did not require prior NRC approval in accordance with 10CFR50.59.

If the proposed activity, in its entirety, involves any one of the criteria below, check the appropriate box, provide a justification/basis in the Description above, and forward to a Reviewer. No further 50.59 Review is required. If none of the criteria is applicable, continue with the 50.59 Review.

- ☐ The proposed activity is editorial/typographical as defined in Section 5.2.2.1.
- ☐ The proposed activity represents an "FSAR-only" change as allowed in Section 5.2.2.2_____. (Insert item # from Section 5.2.2.2).
- ☐ The proposed activity is controlled by another regulation per Section 5.2.2.3.

If further 50.59 Review is required, check the applicable review(s): (Only the sections indicated must be included in the Review.)

☐	SCREENING	Sections I, II, and III required
☐	50.59 EVALUATION EXEMPTION	Sections I, II, III, and IV required
☒	50.59 EVALUATION (#: 02-024	Sections I, II, III, and V required

Preparer: Thomas R. Hempel Thomas R. Hempel / Entergy / Design Engineering / 11-18-02
Name (print) / Signature / Company / Department / Date

Reviewer: Gary E. Payne Gary E. Payne / Entergy / Design Engineering / 11-18-02
Name (print) / Signature / Company / Department / Date

OSRC A. Rutkowski 11/20/02
Chairman's Signature / Date (N/A for Screenings and 50.59 Evaluation Exemptions)

List of Assisting/Contributing Personnel:

Name:	Scope of Assistance:
Bruce Proctor	Technical Input

II. SCREENING

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? (Check "N/A" for those documents that are not applicable to the facility.)

Operating License	YES	NO	N/A	CHANGE # and/or SECTIONS TO BE REVISED
Operating License	☐	☒		
TS	☐	☒		
NRC Orders	☐	☒	☐	
If "YES", obtain NRC approval prior to implementing the change. (See Section 5.1.13 for exceptions.)				

LBDs controlled under 50.59	YES	NO	N/A	CHANGE # and/or SECTIONS TO BE REVISED
FSAR	☒	☐		Sections 1.2.2.8, 1.9.37, Table 1.3-1 DRN 00-803; Table 3.2-1, 3.2-2, 3.5-9c, 3.9-15 DRN 00-804; Sections 9.3.2, 9.3.3, 9.3.4, Figures 9.3-1 Sh4, 9.3-2 Sh1 & 5 DRN 00-695; Section 11.2.2.1, 11.3.1, 11.5.3.1, Tables 11.2-1, 11.2-6, 11.2-9, 11.3-3, 11.3-4, Figures 11.2-2 Sh4, 11.2-1 Sh1 & 2 DRN 00-696; Tables 12.2-8, 12.2-16 DRN 00-805.
TS Bases	☐	☒		
Technical Requirements Manual	☐	☒		
Core Operating Limits Report	☐	☒		
Offsite Dose Calculations Manual	☐	☒		
NRC Safety Evaluation Reports[1]	☐	☒		
If "YES", perform an Exemption Review per Section IV OR perform a 50.59 Evaluation per Section V.				

LBDs controlled under other regulations	YES	NO	N/A	CHANGE # and/or SECTIONS TO BE REVISED
Quality Assurance Program Manual[2]	☐	☒		
Emergency Plan[2]	☐	☒		
Security Plan[2, 3]	☐	☒		
Fire Protection Program [4] (includes the Fire Hazards Analysis)	☐	☒	☐	
If "YES", evaluate/process any changes in accordance with the appropriate regulation.				

2. Does the proposed activity involve a test or experiment not described in the FSAR?
If "yes," perform an Exemption Review per Section IV OR perform a 50.59 Evaluation per Section V.

☐ Yes
☒ No

[1] If "YES," see Section 5.1.5.
[2] If "YES," notify the responsible department and ensure a 50.54 Evaluation is performed.
[3] The Security Plan is classified as safeguards and can only be reviewed by personnel with the appropriate security clearance. The Preparer should notify the security department of potential changes to the Security Plan.
[4] If "YES," evaluate the change in accordance with the requirements of the facility's Operating License Condition.

(Check "N/A" if dry fuel storage is not applicable to the facility.) N/A
If "yes," perform a 72.48 Review in accordance with NMM Procedure LI-112.
(See Sections 1.5 and 5.3.1.5 of the EOI 10CFR50.59 Review Program Guidelines.)

B. **Basis**

(Provide a clear, concise basis for the answers given in the applicable sections above. 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.)

The inactivation and isolation of the Boron Management System Flash Tank, associated pumps, piping and instrumentation is not a test or experiment, but a permanent change to the facility. The Flash Tank is not the subject of the Operating License, Technical Specifications nor their bases, the Core Operating Limits Report, the Fire Hazards Analysis, the Fire Protection Program, the Offsite Dose Calculation Manual, nor the Radwaste Process Control Program. The FSAR sections listed in response to question 1, previously discussed the Flash Tank and they have been revised by ER-W3-2000-0225-000 to reflect the inactive status. Technical Requiements Manual Section 3.11.1.3 and its bases pertain to the "Liquid Radwaste Treatment System", the scope of which includes the Boron Management and Liquid Waste Mangement Systems and therefore the Flash Tank, did not require revision based on the changes made. Additionally sections 11.2.1 and 11.2.2 of the historical NRC SER discuss the Flash Tank, but without affect on any amendment basis.

C. **References**

[Discuss the methodology for performing the LBD search. 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 5.3.6.4 of LI-101.]

LBDs/Documents Reviewed:

FSAR Sections: 1.2.2.8; 1.9.37; 9.3.2; 9.3.3; 9.3.4; 11.2.2.1; 11.3.1; & 11.5.3.1

FSAR Tables: 1.3-1; 3.2-1; 3.2-2; 3.5-9c; 3.9-15; 11.2-1; 11.2-6; 11.2-9; 11.3-3; 11.3-4; 12.2-8; 12.2-16

FSAR Figures: 9.3-1 Sh4; 9.3-2 Sh1 & 5; 11.2-2 Sh4; 11.2-1 Sh1 & 2;

Technical Requirements Manual
Section 3.11.1.3

Keywords:

Electronic search in the Licensing Research System (LRS),under the WF3 Fulfind LBDS_50_59 Section, utilizing the words "Flash Tank" for search criteria.

D. **Is the validity of this Review dependent on any other change?** (See Section 5.3.4 of the EOI 10CFR50.59 Program Review Guidelines) ☒ Yes ☐ No

The subject changes proposed under Engineering Request ER-W3-2000-0225-000 were originally reviewed under a 50.59 Evaluation Exemption. Waterford 3 Condition Report No. 2002-1103 documented the use of an exemption as inappropriate for a change that adversely impacts a component (Flash Tank inactivation) of the Boron Management System that is described in the FSAR. This 50.59 Evaluation therefore supersedes the Evaluation Exemption in ER-W3-2000-0225-000.

III. 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.

Will the proposed Change being evaluated:

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

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

V. 50.59 EVALUATION

A. Executive Summary (Serves as input to NRC summary report. Limit to one page or less. Send an electronic copy to the site licensing department after PSRC approval, if available.)

Brief description of change, test, or experiment:

The Boron Management System Flash Tank, associated pumps, piping, instruments and control room annunciators, were no longer used in the processing of radioactive liquid waste for recycle or disposal. These components were de-activated, isolated from the remainder of the system, and reflected as inactive on the FSAR sections identified in Section II.

Reason for proposed Change:

The Flash Tank used large quantities of nitrogen during the processing of radioactive liquid waste to remove hydrogen and fission gases. This processing generated considerable radioactive gaseous wastes that required storage and processing by the gaseous waste system. The Boron Management System Holdup Tanks have the capability to achieve acceptable liquid waste radiological levels utilizing natural decay therefore minimizing the production of radioactive gaseous waste.

50.59 Evaluation summary and conclusions

The Flash Tank, which was a component of the Boron Management System (BMS), was considered part of the Liquid Radioactive Waste Treatment System. Compliance with the system design basis and Technical Requirements Manual Section 3.11.1.3 is still maintained with the Flash Tank inactivated because the system and component functional requirements of radioactive waste processing are now accomplished with the use of the Holdup Tanks. No change to the TRM or its bases is required as a result of inactivating the Flash Tank.

Although reliance was placed on the Flash Tank in the Safety Evaluation Report (SER), the original design of the Boron Management System allowed for bypassing the Flash Tank and utilizing the Holdup Tanks for the radioactive effluent processing. There were no restrictions placed on the use of the Flash Tank or the ability to bypass the tank, so the inactivation of the Flash Tank had no adverse affect on the Liquid Radioactive Waste Treatment system evaluation in the SER.

This evaluation has concluded that the inactivation and isolation of the Flash Tank with associated pumps, piping and instruments did not change the design bases or method of evaluation for the Boron Management or Waste Management Systems. The radioactive release accidents in the FSAR utilize equipment which would produce the greatest release consequence in determining post accident dose projections. This change does not impact the consequences of these accidents. Compliance with the guidelines and limits established in 10CFR20 and 10CFR50, Appendix I for radiological waste release and disposal will remain unchanged as a result of these changes. The inactivation of the Flash Tank did not affect a fission product barrier, or create any new system interactions or flowpaths, nor does the change impact the Boron Management System's ability to perform its intended design function.

B. 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:

Based on the radioactive release potential of the Flash Tank, FSAR Chapter 15 accident analyses were reviewed for impact by the inactivation / isolation of the Flash Tank with associated pumps, piping and instruments for the following accident scenarios:

- Radioactive Waste Gas System Leak or Failure (Section 15.7.3.1)
- Liquid Waste System Leak or Failure (Section 15.7.3.2)
- Postulated Radioactive Releases Due to Liquid Containing Tank Failures (Section 15.7.3.3)

The methods of analysis, consequences and conclusions for these accidents have been reviewed with the following results.

Radioactive Waste Gas System Leak or Failure Accident: The upper limit of a gaseous release was determined by using the scenario of a Waste Gas Decay Tank or relief valve failure. The de-activation of the Flash Tank and associated pumps, piping and instruments did not impact this analysis.

Liquid Waste System Leak or Failure: This accident postulates dose/activity release based on failure of non-safety, non-seismic Boron Management / Waste Management equipment as a result of a safe shutdown earthquake. The Flash Tank is classified as a seismic 1, safety class 3 component and therefore it was not considered in this event analysis.

Postulated Radioactive Releases Due to Liquid Containing Tank Failures: This accident considers only the Waste Concentrator Tank Failure due to the highest inventory of radionuclides in any component outside the Reactor Containment Building. The Flash Tank therefore was not included in this accident analysis.

Original system operation allowed for the diversion of flow directly to the Holdup Tanks (HUTs) therefore bypassing the Flash Tank. The HUTs have the ability to process radioactive liquid without the use of nitrogen sparging, thereby minimizing the formation of radioactive waste gas. No new release pathways were created by inactivating / isolating of the Flash Tank with associated pumps, piping and instruments due to the original system diversion capability to the HUT's. The frequency of occurrence of evaluated accidents has therefore been determined as not affected by the changes authorized by ER-W3-2000-0225-000.

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 inactivation / isolation of the Flash Tank, associated pumps, piping and instruments eliminated the original design functions of the Flash Tank to process liquid radwaste by bubbling large quantities of nitrogen through a sparger to remove hydrogen and fission gasses. This type of processing resulted in the production of a large volume of radioactive waste gas discharge to the

Gas Surge Header which required further processing by the Gaseous Waste System and proved inefficient due to the nitrogen and gas processing costs. Normal system operation was to bypass the Flash Tank, discharging effluent directly to the Holdup Tanks (HUT's) which utilize natural decay to meet the degasification function performed by the Flash Tank. The HUT's, which are blanketed with nitrogen, also vent radioactive gasses to the Vent Gas Collection Header of the Gaseous Waste System, but in much smaller quantities. Since the original system design allowed for the selection of either the Flash Tank or the Holdup Tanks for radiological liquid waste processing, the inactivation of the Flash Tank had no impact on the system's design, because all component functions and design requirements previously performed by the Flash Tank are met by the Holdup Tanks.

As stated in FSAR Section 11.2.1, Design Bases of the Liquid Waste Management System, the principal design objective of the overall system is to protect plant personnel, the general public and the environment, by ensuring that all releases of radioactive materials, both in plant and to the environment are ALARA and within the requirements of 10CFR20 and Appendix I to 10CFR50.

The Boron Management System (BMS) shall have the capacity to accommodate all liquid wastes generated during base-loaded station operation at warranted output as well as back to back cold shutdowns and restarts.

The Boron Management System historically provided the flexibility to allow the plant operator to select the desired balance between the holdup for radioactive decay, evaporation, ion exchange, filtration and dilution. Included in the original design was the ability to bypass the Flash Tank and send radioactive effluent directly to the Holdup Tanks if desired.

The Holdup Tanks are capable of efficiently replacing the component design functions previously performed by the Flash Tank, and thereby ensuring all system design requirements are met without increasing the likelihood of occurrence of a system, structure or component malfunction.

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

The applicable accidents in FSAR Chapter 15, as stated in response to question no. 1, were reviewed, with the conclusion that the Flash Tank was not used in the determination of radiation dose associated with the consequences of any accidents. The accidents considered other equipment with a greater release consequence (dose). The consequences of these accidents are unaffected by the subject Flash Tank inactivation. The original design of the Boron Management System allowed for bypassing the Flash Tank, and sending radioactive effluent directly to the Holdup Tanks as part of the previously approved system design basis, no accident consequence increase is realized by the subject inactivation. The Flash Tank is not credited for mitigating any consequence of accidents listed in the FSAR. The proposed Flash Tank, associated pumps, piping, instruments, and control room annunciator inactivation will not change or create a new release pathway.

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 de-activation of the Flash Tank would not increase the consequences (radiological release) of a malfunction of equipment or system, because the de-activation resulted in a configuration that is within the previously approved system design basis in that it allows for effluent to divert from the Flash Tank to the Holdup Tanks. The Holdup Tanks can be used as the sole receiver of radiological effluent from letdown, the Equipment Drain Tank or the Reactor Drain Tank for

processing during all modes of plant operation or shutdown. Since any of the four Holdup Tanks may be used for radioactive waste processing, the inactivation of the Flash Tank will not increase the reliance on a single component whose failure could prohibit the systems ability to perform its design function. The Boron Management and Waste Management Systems capability to control, store and process radiological waste will not deviate from the presently approved system design and therefore not impact or increase any radiation dose associated with a malfunction of equipment important to safety.

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

BASIS:

The de-activation of the Flash Tank cannot create the possibility for an accident of a different type than previously evaluated in the FSAR because no new system interfaces are created. The inactivation of the Flash Tank associated pumps, piping, instruments and control room annunciators was accomplished by closing valves, pulling annunciator cards and opening breakers to remove power from valves and equipment to permanently align flow to the Holdup Tanks. The subject inactivated equipment was flushed and drained prior to deactivation and will not be used in future the processing of radioactive effluent. The Boron Management System's original design allowed for the selection of processing radioactive effluent by either the Flash Tank or Holdup Tanks, therefore the subject inactivation / isolation resulted in the sole use of a previously approved flow path for waste processing. No new accidents are realized as a result of inactivation of the Flash Tank since the Boron Management System originally provided the bypass capability.

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 Boron Management System's safety functions are to prevent uncontrolled release of radioactive gases to the environment and to support the integrity of the primary containment boundary at the piping penetration. These functions remain unchanged as a result of the subject changes because the portions of the system affected are not at the containment piping penetration. No new malfunction initiators or failures are created since the bypass capability existed as an original system design feature.

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 subject changes to inactivate the Flash Tank, associated pumps, piping and instruments did not affect the fission product barriers of fuel cladding, reactor coolant system boundary or containment. The Boron Management System in conjunction with the Waste Management System assures that releases of radioactive materials within the plant and to the environment are as low as reasonably achievable (ALARA) in accordance with the requirements and limits in 10CFR part 20 and 10CFRPart 50 Appendix I. The substitution of the Holdup Tanks for the fluid processing capabilities of the inactivated Flash Tank will not change or adversely affect the design function of the Boron Management System or the Liquid Radioactive Waste System as previously evaluated by the NRC in the SER. The containment building piping penetration safety related portion of the Boron Management System is unaffected by the subject modification.

6. 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 subject changes to inactivate and isolate the Boron Management System Flash Tank, associated pumps, piping and instruments did not require a re-analysis of the system's design basis because all of the system functions can still be accomplished without the use of the Flash Tank. The Holdup Tanks have been successfully utilized in the treatment of radioactive liquid waste and are considered the preferred option when considering the nitrogen requirement and waste gas produced when using the Flash Tank for liquid waste processing. The intended functions of the Boron Management System are: to prevent an uncontrolled release of radioactive gas; to support the integrity of the containment boundary, to receive, store and purify water of letdown or reactor coolant quality; provide a method of stripping reactor coolant water of dissolved hydrogen and fission gasses; and concentrate boric acid solution for recycling to the Reactor Coolant System (Ref. W3-DBD-050). The purpose of the Flash Tank was to remove hydrogen and fission gasses by sparging radioactive effluent with nitrogen. The Holdup Tanks have demonstrated the ability to meet this design objective utilizing natural decay and venting hydrogen and fission gas to the Gaseous Waste System. The inactivation of the Flash Tank did not affect a fission product barrier, or the consequences of any accidents evaluated in the FSAR, nor impact the Boron Management System ability to perform its intended design function, therefore the proposed activity does not involve a change to a method of evaluation.

I. OVERVIEW / SIGNATURES

Facility: Waterford 3

Document Reviewed: ER 2002-0489-000 and OP-100-014 **Change/Rev.:** 0

System Designator(s)/Description: Essential Instrument Air (EIA)

Description of Proposed Change

The proposed change creates a new TRM 3.7.14, Essential Instrument Air and its bases. Operability requirements for this system are currently contained in OP-100-014 (see page 46 of OP-100-014 revision 12). The existing action requirements contained in OP-100-014, require cross connecting the high and low pressure lines between two compressed gas stations within 4 hours and the initiation of a plant shutdown within 14 days if the inoperable station is not restored operable. The proposed change moves the current requirements in OP-100-014 intact to the new TRM 3.7.14 with one exception. The requirement to shut the plant down, if operability is not restored, is replaced with a requirement to initiate a Condition Report to evaluate whether continued operation is justified.

If the proposed activity, in its entirety, involves any one of the criteria below, check the appropriate box, provide a justification/basis in the Description above, and forward to a Reviewer. No further 50.59 Review is required. If none of the criteria is applicable, continue with the 50.59 Review.

- ☐ The proposed activity is editorial/typographical as defined in Section 5.2.2.1.
- ☐ The proposed activity represents an "FSAR-only" change as allowed in Section 5.2.2.2_____. (Insert item # from Section 5.2.2.2).
- ☐ The proposed activity is controlled by another regulation per Section 5.2.2.3.

If further 50.59 Review is required, check the applicable review(s): (Only the sections indicated must be included in the Review.)

☐	**SCREENING**	**Sections I, II, and III required**
☐	**50.59 EVALUATION EXEMPTION**	**Sections I, II, III, and IV required**
☒	**50.59 EVALUATION (#: 02-075**	**Sections I, II, III, and V required**

Preparer: Michael K. Brandon/ M.K.B. /Entergy/ Waterford Licensing/ 12/18/02
Name (print) / Signature / Company / Department / Date

Reviewer: Lisa B. Borel/ Lisa B. Borel /Entergy/ Waterford Licensing/ 12/18/02
Name (print) / Signature / Company / Department / Date

OSRC 12/19/02
Chairman's Signature / Date (N/A for Screenings and 50.59 Evaluation Exemptions)

List of Assisting/Contributing Personnel:

Name:	Scope of Assistance:

II. SCREENING

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? (Check "N/A" for those documents that are not applicable to the facility.)**

Operating License	YES	NO	N/A	CHANGE # and/or SECTIONS TO BE REVISED
Operating License	☐	☒		
TS	☐	☒		
NRC Orders	☐	☒	☐	
If "YES", obtain NRC approval prior to implementing the change. (See Section 5.1.13 for exceptions.)				

LBDs controlled under 50.59	YES	NO	N/A	CHANGE # and/or SECTIONS TO BE REVISED
FSAR	☐	☒		
TS Bases	☐	☒		
Technical Requirements Manual	☒	☐		DRN 2002-1876 – new TRM 3.7.14, its basis and the table of contents
Core Operating Limits Report	☐	☒		
Offsite Dose Calculations Manual	☐	☒		
NRC Safety Evaluation Reports[1]	☐	☒		
If "YES", perform an Exemption Review per Section IV OR perform a 50.59 Evaluation per Section V.				

LBDs controlled under other regulations	YES	NO	N/A	CHANGE # and/or SECTIONS TO BE REVISED
Quality Assurance Program Manual[2]	☐	☒		
Emergency Plan[2]	☐	☒		
Security Plan[2, 3]	☐	☒		
Fire Protection Program[4] (Includes the Fire Hazards Analysis)	☐	☒	☐	
If "YES", evaluate/process any changes in accordance with the appropriate regulation.				

2. **Does the proposed activity involve a test or experiment not described in the FSAR?** ☐ Yes ☒ No
   If "yes," perform an Exemption Review per Section IV OR perform a 50.59 Evaluation per Section V.

3. **Does the proposed activity potentially impact equipment, procedures, or facilities utilized for storing spent fuel at an Independent Spent Fuel Storage Installation?** ☐ Yes ☐ No ☒ N/A
   (Check "N/A" if dry fuel storage is not applicable to the facility.)
   If "yes," perform a 72.48 Review in accordance with NMM Procedure LI-112.
   (See Sections 1.5 and 5.3.1.5 of the EOI 10CFR50.59 Review Program Guidelines.)

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[1] If "YES," see Section 5.1.5.
[2] If "YES," notify the responsible department and ensure a 50.54 Evaluation is performed.
[3] The Security Plan is classified as safeguards and can only be reviewed by personnel with the appropriate security clearance. The Preparer should notify the security department of potential changes to the Security Plan.
[4] If "YES," evaluate the change in accordance with the requirements of the facility's Operating License Condition.

B. Basis

(Provide a clear, concise basis for the answers given in the applicable sections above. 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.)

The proposed change creates a new TRM, TRM 3.7.14 and therefore the TRM is impacted. Three keyword searches of the electronic 10CFR50.59 LBD files were conducted using the key words of "essential instrument air", "essential air accumulators" and "EIA". This was a broad search and resulted in 49, 17 and 1 "hits", respectively.

Discussions of the Compressed Air System are provided in section 9.3.1 of the FSAR, the classification of Compressed Air System components are provided in Table 3.2-1 of the FSAR, the requirements for containment isolation valves are provided in Table 6.2-32 of the FSAR, design and material data for the Essential Air Accumulators are provided in Table 9.3-21A of the FSAR and Table 9.3-1A lists the Safety Class valves with air accumulators.

No Licensing Basis Document includes a discussion of a 14 day shutdown action to be taken in the event of a system inoperability. In Entergy letter W3F1-97-0107, dated May 6, 1997, Entergy committed to consider the EIA system as a support system for the associated containment isolation valves. As a result of this commitment, Administrative Controls were developed in OP-100-014. The requirement to cross connect the high and low pressure lines within 4 hours supports this commitment as 4 hours is the TS action for an inoperable containment isolation valve. The 4 hour requirement is not changed by this change. The TRM created by this change will be used to replace the administrative controls in OP-100-014. Since this change only involves the administrative response/actions for a system inoperability, the TRM and its basis is the only Licensing Basis document impacted by this change.

C. References

[Discuss the methodology for performing the LBD search. 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 5.3.6.4 of LI-101.]

LBDs/Documents Reviewed:	Keywords:
10CFR50.59 LBD electronic database	"essential instrument air"
Discussions of the Compressed Air System are provided in section 9.3.1 of the FSAR, the classification of Compressed Air System components are provided in Table 3.2-1 of the FSAR, the requirements for containment isolation valves are provided in Table 6.2-32 of the FSAR, design and material data for the Essential Air Accumulators are provided in Table 9.3-21A of the FSAR and Table 9.3-1A lists the Safety Class valves with air accumulators.	"essential air accumulators" "EIA"

D. **Is the validity of this Review dependent on any other change?** (See Section 5.3.4 of the EOI 10CFR50.59 Program Review Guidelines) ☐ Yes ☒ No

If "Yes," list the required changes.

III. 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.

Will the proposed Change being evaluated:

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

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

V. 50.59 EVALUATION

A. Executive Summary (Serves as input to NRC summary report. Limit to one page or less. Send an electronic copy to the site licensing department after PSRC approval, if available.)

Brief description of change, test, or experiment:

The proposed change creates a new TRM 3.7.14, Essential Instrument Air and its bases. Operability requirements for this system are currently contained in OP-100-014 (see page 46 of OP-100-014 revision 12). The existing operability requirements contained in OP-100-014, require the initiation of high and low pressure cross connect alignments within 4 hours and the initiation of a plant shutdown within 14 days if the inoperable station is not restored operable. The proposed change moves the current requirements in OP-100-014 intact to the new TRM 3.7.14 with one exception. The requirement to shut the plant down, if operability is not restored, is replaced with a requirement to initiate a Condition Report to evaluate whether continued operation is justified. This change will also require General Manager of Plant Operations approval of this justification.

Reason for proposed Change:

The current administrative control requiring a plant shutdown for an inoperable essential instrument air system is overly conservative. Licensees are authorized to make changes pursuant to the 50.59 process. In addition, as stated in Generic Letter 91-18, a licensee can continue power operations of a facility with inoperable equipment provided TS compliance is maintained and a reasonable assurance of safety is established. This change will add additional flexibility and allow for the most prudent and safest course of action when considering the specific circumstances of a given situation.

50.59 Evaluation summary and conclusions

This change involves administrative controls that are in place to address Essential Instrument Air (EIA) system operability. The EIA system is not an initiator of any postulated accident and will not affect the frequency of occurrence of an accident previously evaluated in the FSAR. This change is structured to ensure that no more than a minimal increase in the likelihood of occurrence of a malfunction of a structure, system, or component (SSC) important to safety will occur. The proposed action statement will require an evaluation to demonstrate a reasonable assurance of safety is provided to justify continued operation with an EIA inoperability. The proposed TRM basis addresses the design basis requirements of this system relative to maintaining long term (i.e., 30 days) containment isolation.

This change will continue to provide an effective administrative control to ensure that plant operation beyond the allowed outage time (AOT) limit of 14 days is safe. The EIA system does provide a back-up containment isolation function to mitigate the consequences of an accident. The EIA does serve to support the operability of TS systems (Containment Isolation Valves) that do mitigate the consequences of accidents. This change does not obviate any TS operability requirements for the TS systems credited for mitigating the consequences of an accident. This change will provide the plant additional flexibility for the purpose of justifying continued operation, if appropriate, when individual EIA SSCs are inoperable. Therefore this change will not result in more than a minimal increase in the consequences of an accident or a malfunction previously evaluated in the FSAR.

This change does not involve any accident initiators and would not create the possibility for an accident of a different type. This change is administrative in nature and does not involve any hardware changes. The evaluation required by the new TRM to justify continued operation will ensure that no more than a minimal increase for a malfunction of a SSC is created. This evaluation will also demonstrate that the function of EIA system is maintained to the extent the design basis support requirements are satisfied. These support functions may be augmented with compensatory actions, if needed. Therefore, since these

functions will be maintained for those systems important to safety, the possibility for a malfunction of a SSC important to safety with a different result will not be created.

This change does not obviate any TS operability requirements for the TS systems credited for mitigating the consequences of an accident. This change will provide the plant additional flexibility for the purpose of justifying continued operation when individual EIA SSCs are inoperable. This change will not support or allow continued operation unless it can be demonstrated by an evaluation that continued operation is safe. This evaluation should consider the applicable specific circumstances that exist at the time of the inoperability, appropriate compensatory measures, and the risk associated with continued operation with the inoperability. Therefore continued operation with an EIA inoperability will not result in a design basis limit for a fission product barrier being exceeded or altered.

This change is administrative in that it provides the flexibility to assess the impact of an EIA system inoperability based on various considerations, as outlined in GL 91-18, to establish a reasonable assurance of safety. Techniques used to justify continued operation will be based on the regulatory guidance provided in GL 91-18. Therefore this change will not result in a departure from a method of evaluation.

B. 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 involves administrative controls that are in place to address Essential Instrument Air (EIA) system operability. The EIA system is not an initiator of any postulated accident. This change will eliminate the requirement for a default plant shutdown in the case of an EIA inoperability that is not corrected within 14 days. While a plant shutdown may still occur depending on the specific circumstances, the proposed change will provide the option of justifying continued operation provided a reasonable assurance of safety is demonstrated. Therefore this change will have no effect on 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:

   This change is structured to ensure that no more than a minimal increase in the likelihood of occurrence of a malfunction of a structure, system, or component (SSC) important to safety will occur. The proposed action statement will require an evaluation to demonstrate a reasonable assurance of safety is provided to justify continued operation with an EIA inoperability. The proposed TRM basis addresses the design basis requirements of this system relative to maintaining long term (i.e., 30 days) containment isolation capability.

   For example an EIA inoperability may exist because a compressed gas station pressure may be at less than 2250 psig. For such a condition, it may be possible to demonstrated full functional capability (i.e., 30 day containment isolation capability) by determining a required pressure based

on actually leak down data vice design basis leak down values. Therefore an acceptable evaluation, as required by the proposed change, will ensure that no more than a minimal increase in the likelihood of occurrence of a malfunction will occur.

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

BASIS:

This change will continue to provide an effective administrative control to ensure that plant operation beyond the allow outage time (AOT) limit of 14 days is safe. The EIA system does support the containment isolation function to mitigate the consequences of an accident The EIA does serve to support the operability of TS systems (Containment Isolation Valves) that do mitigate the consequences of accidents. This change does not obviate any TS operability requirements for the TS systems credited for mitigating the consequences of an accident. This change will provide the plant additional flexibility for the purpose of justifying continued operation when individual EIA SSCs are inoperable. This change will not support or allow continued operation unless it can be demonstrated by an evaluation that continued operation is safe. This evaluation should consider the applicable specific circumstances that exist at the time of the inoperability, appropriate compensatory measures, and the risk associated with continued operation with the inoperability. 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 EIA provides a support function for selected Containment Isolation valves that are credited for the mitigation of consequences for specific equipment malfunctions. A malfunction of the supported containment isolation valves could potentially increase the consequences. Given this potential, an explicit discussion has been provided in the basis for this proposed TRM revision to address the potential for equipment malfunction and the potential consequences of a malfunction. This change does not obviate any TS operability requirement for the TS systems credited for mitigating the consequences of an accident. This change will provide the plant additional flexibility for the purpose of justifying continued operation, if appropriate, when individual EIA SSCs are inoperable. This change will not support or allow continued operation unless it can be demonstrated by an evaluation that continued operation is safe. This evaluation should consider the applicable specific circumstances that exist at the time of the inoperability, appropriate compensatory measures, and the risk associated with continued operation with the inoperability. Therefore this change will not result in more than a minimal increase in the consequences of a malfunction.

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

BASIS:

This change does not involve any accident initiators and would not create the possibility for an accident of a different type. This change simply provides the flexibility to assess the specific circumstances of a given situation and take the safest course of action. This change is administrative in nature in that it provides additional flexibility in how the plant may respond to a condition that involving an EIA system inoperability.

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

This change is administrative in nature and does not involve any hardware changes. The evaluation required by the new TRM to justify continued operation will ensure that no more than a

minimal increase for a malfunction of a SSC is created. This evaluation will also demonstrate that the function of EIA system is maintained to the extent the design basis support requirements are satisfied. These support functions may be augmented with compensatory actions or situation specific evaluations, as appropriate. Therefore, since these functions will be maintained for those systems important to safety, the possibility for a malfunction of a SSC important to safety with a different result will not be created.

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 EIA provides a back-up support function to Containment Isolation valves that are credited for the mitigation of consequences for specific equipment malfunctions. A malfunction of the supported containment isolation valves could potentially affect the performance of the containment. This change does not obviate any TS operability requirement for the TS systems credited for mitigating the consequences of an accident. This change will provide the plant additional flexibility for the purpose of justifying continued operation, if appropriate, when individual EIA SSCs are inoperable. This change will not support or allow continued operation unless it can be demonstrated by an evaluation that continued operation is safe. This evaluation should consider the applicable specific circumstances that exist at the time of the inoperability, appropriate compensatory measures, and the risk associated with continued operation with the inoperability. Therefore continued operation with an EIA inoperability will not result in a design basis limit for a fission product barrier 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:

This change is administrative in that it provides the flexibility to assess the impact of an EIA system inoperability based on various considerations, as outlined in GL 91-18, to establish a reasonable assurance of safety. Techniques used to justify continued operation will be based on the regulatory guidance provided in GL 91-18. Therefore this change will not result in a departure from a method of evaluation.

I. OVERVIEW / SIGNATURES

Facility: Waterford 3

Document Reviewed: ER-W3-2002-0683-000 **Change/Rev.:** 0

System Designator(s)/Description: MS, COLSS, FW

Description of Proposed Change

Revise TRM 3.3.5 to delete the ACTION that currently states "With one or both of the ultrasonic flowmeters (UFMs) inoperable, reduce THERMAL POWER and COLSS RATED THERMAL POWER limits to less than or equal to 3437 MWt within 2 hours."

If the proposed activity, in its entirety, involves any one of the criteria below, check the appropriate box, provide a justification/basis in the Description above, and forward to a Reviewer. No further 50.59 Review is required. If none of the criteria is applicable, continue with the 50.59 Review.

- ☐ The proposed activity is editorial/typographical as defined in Section 5.2.2.1.
- ☐ The proposed activity represents an "FSAR-only" change as allowed in Section 5.2.2.2_____. (Insert item # from Section 5.2.2.2).
- ☐ The proposed activity is controlled by another regulation per Section 5.2.2.3.

If further 50.59 Review is required, check the applicable review(s): (Only the sections indicated must be included in the Review.)

☐	SCREENING	Sections I, II, and III required
☐	50.59 EVALUATION EXEMPTION	Sections I, II, III, and IV required
☒	50.59 EVALUATION (#: ____) 02-026	Sections I, II, III, and V required

Preparer: Lisa Borel / Lisa A. Borel / Ent / Licensing / 12/18/02
Name (print) / Signature / Company / Department / Date

Reviewer: Tom Fleischer / [signature] / ENT / DE I:C / 12/18/02
Name (print) / Signature / Company / Department / Date

OSRC [signature] 12/19/02
Chairman's Signature / Date (N/A for Screenings and 50.59 Evaluation Exemptions)

List of Assisting/Contributing Personnel:

Name:	Scope of Assistance:

II. SCREENING

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? (Check "N/A" for those documents that are not applicable to the facility.)**

Operating License	YES	NO	N/A	CHANGE # and/or SECTIONS TO BE REVISED
Operating License	☐	☒		
TS	☐	☒		
NRC Orders	☐	☒	☐	
If "YES", obtain NRC approval prior to implementing the change. (See Section 5.1.13 for exceptions.)				

LBDs controlled under 50.59	YES	NO	N/A	CHANGE # and/or SECTIONS TO BE REVISED
FSAR	☐	☒		
TS Bases	☐	☒		
Technical Requirements Manual	☒	☐		DRN 02-1889; TRM 3.3.5 and Basis
Core Operating Limits Report	☐	☒		
Offsite Dose Calculations Manual	☐	☒		
NRC Safety Evaluation Reports[1]	☐	☒		
If "YES", perform an Exemption Review per Section IV OR perform a 50.59 Evaluation per Section V.				

LBDs controlled under other regulations	YES	NO	N/A	CHANGE # and/or SECTIONS TO BE REVISED
Quality Assurance Program Manual[2]	☐	☒		
Emergency Plan[2]	☐	☒		
Security Plan[2, 3]	☐	☒		
Fire Protection Program[4] (includes the Fire Hazards Analysis)	☐	☒	☐	
If "YES", evaluate/process any changes in accordance with the appropriate regulation.				

2. **Does the proposed activity involve a test or experiment not described in the FSAR?** ☐ Yes ☒ No
   If "yes," perform an Exemption Review per Section IV OR perform a 50.59 Evaluation per Section V.

3. **Does the proposed activity potentially impact equipment, procedures, or facilities utilized for storing spent fuel at an Independent Spent Fuel Storage Installation?** ☐ Yes ☐ No ☒ N/A
   (Check "N/A" if dry fuel storage is not applicable to the facility.)
   If "yes," perform a 72.48 Review in accordance with NMM Procedure LI-112.
   (See Sections 1.5 and 5.3.1.5 of the EOI 10CFR50.59 Review Program Guidelines.)

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[1] If "YES," see Section 5.1.5.
[2] If "YES," notify the responsible department and ensure a 50.54 Evaluation is performed.
[3] The Security Plan is classified as safeguards and can only be reviewed by personnel with the appropriate security clearance. The Preparer should notify the security department of potential changes to the Security Plan.
[4] If "YES," evaluate the change in accordance with the requirements of the facility's Operating License Condition.

B. **Basis**

(Provide a clear, concise basis for the answers given in the applicable sections above. 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.)

An electronic search in LRS Fulfind using index table LBDS_50_59 was performed using the keywords listed below. Hits were identified in various sections of the FSAR, in the COLR and the NRC SER that approved the App. K power uprate. The NRC SER states "If the LEFM is not operable, plant operation will be administratively controlled at a power level consistent with the accuracy of the available instrumentation. With these controls, the effect on plant operations is that power will be maintained at a level that accounts for the appropriate instrumentation uncertainties, thereby preserving ECCS limits." This change to the TRM action will still provide administrative controls consistent with the accuracy of the available instrumentation, and therefore still meets the requirements of the SER. The FSAR does not discuss the ultrasonic flowmeter, nor is there any discussion of the specific instrument used by COLSS for feedwater flow. FSAR Table 7.7-1 lists the COLSS sensors for secondary calorimetric generically (steam pressure, steam flow, feedwater flow, feedwater temperature) and lists the sensor range. This change has no effect on the range for these sensors nor does it change the generic sensor type. FSAR section 1.3.2.7.2 discusses that COLSS provides the operator with an alarm so that the operator can maintain the reactor core within the limiting conditions of operation by initiating a power reduction whenever any one of the monitored conditions reaches its specified limiting condition of operation. This change does not invalidate that description. FSAR section 7.1.1.6 states that COLSS is a system that is not required for safety, and this remains true. FSAR section 7.5A provides a general description of COLSS operation that is not affected by this change since this change is beyond the level of detail provided in the FSAR. FSAR section 7.7.1.5 states that the COLSS serves to monitor reactor core conditions in an efficient manner and provides indication and alarm functions to aid the operator in maintenance of core conditions within the LCOs given in the Technical Specifications. A core power operating limit based on licensed power level is also monitored by COLSS. Operation of the reactor at or below this operating limit ensures that the total core power is never greater than that assumed as an initial condition in the accident analysis. It also states that the secondary calorimetric power is based on measurements of feedwater flowrate, feedwater temperature, steam flow and steam pressure. This change still provides for COLSS monitoring of core power and uses the same input measurements for secondary calorimetric power, therefore there is no impact on this section of the FSAR. FSAR Section 15.0 states that after the App. K power uprate, no reanalysis of Chapter 15 events was warranted because the licensing analyses bounded the power uprate plus power measurement uncertainty. This change has no effect on uprated power limit, and the measurement uncertainty is improved by this change, therefore the analyses are still bounding. The COLR provides limits for certain variables when COLSS is out of service that are unaffected by this change. This change addresses actions to be taken with a UFM out of service, not when COLSS is out of service.

C. **References**

[Discuss the methodology for performing the LBD search. 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 5.3.6.4 of LI-101.]

LBDs/Documents Reviewed:	Keywords:
SER for TS Amendment 183; FSAR Chapters 1, 4, 7 & 15, COLR	"Appendix K Power Uprate", "Power Uprate Request", LEFM, UFM, "Ultrasonic Flow Meter", "Leading Edge Flow Meter", COLSS, "Core Operating Limit Supervisory", "Flow Meter", "Feedwater Flow Measurement", "Acoustic", "pressure transmitter", "flow transmitter"

D. **Is the validity of this Review dependent on any other change?** (See Section 5.3.4 of the EOI 10CFR50.59 Program Review Guidelines)

☐ Yes
☒ No

If "Yes," list the required changes.

III. 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.

Will the proposed Change being evaluated:

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

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

IV. 50.59 EVALUATION EXEMPTION

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

A. Check the applicable boxes below. If any of the boxes are checked, a 50.59 Evaluation is not required. If none of the boxes are checked, perform a 50.59 Evaluation in accordance with Section V. Provide supporting documentation or references as appropriate.

☐ The proposed activity meets all of the following criteria regarding design function per Section 5.5.1.1:

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 functions of an SSC described in the FSAR will be accomplished.

☐ An approved, valid 50.59 Review(s) covering associated aspects of the proposed change already exists per Section 5.5.1.2. 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 5.5.1.3. 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 5.5.6 of the EOI 10CFR50.59 Review Program Guidelines for guidance.)

N/A

V. 50.59 EVALUATION

A. Executive Summary (Serves as input to NRC summary report. Limit to one page or less. Send an electronic copy to the site licensing department after PSRC approval, if available.)

Brief description of change, test, or experiment:

Revise TRM 3.3.5 to delete the ACTION that currently states "With one or both of the ultrasonic flowmeters (UFMs) inoperable, reduce THERMAL POWER and COLSS RATED THERMAL POWER limits to less than or equal to 3437 MWt within 2 hours." The restriction to reduce power within 2 hours is no longer required based on a reduction of secondary calorimetric uncertainty based on calculation ECI01-002. Uncertainty was reduced by imposing tighter reference accuracy acceptance criteria consistent with instrumentation manufacturer performance specifications. The tighter reference accuracies will be corroborated by tighter calibration tolerances. The tighter reference accuracy acceptance criteria reduce MSBSCAL and FWBSCAL uncertainties to less than 0.488%.

Reason for proposed Change:

The ultrasonic flow meters (UFMs) measure feedwater flow and bulk feedwater temperature. The UFM feedwater flow and feedwater bulk temperature inputs are used by the Core Operating Limits Supervisory System (COLSS) to calculate station secondary calorimetric power. The UFM feedwater flow and feedwater bulk temperature inputs are also used as inputs into calibration constant algorithms that compensate or "calibrate" the alternate feedwater and main steam venturi-based flows and feedwater temperature instrumentation inputs by COLSS on a loss of the UFMs. The loss of a UFM will cause COLSS to automatically default to the compensated alternate venturi-based instrumentation inputs. COLSS normally defaults to Main Steam BSCAL (MSBSCAL) when reactor power is greater than or equal to 95% of 3441 MWt rated thermal power (RTP) or Feedwater BSCAL (FWBSCAL) when reactor power is less than 95% of 3441 MWt RTP. In addition, with the loss of a UFM, COLSS will apply a power penalty factor of 0.1% RTP to BSCAL. This penalty factor was required to compensate for the inherent uncertainties of the alternate venturi-based instrumentation loops that could not be calibrated out by the UFM calibration factors. Re-evaluation has determined that it is possible to calibrate the main steam pressure transmitters and flow transmitters used by the alternate instrumentation loops to a tighter reference accuracy, and by doing so, it is no longer necessary to impose the COLSS 0.1% RTP power penalty factor. Calculation ECI01-002 "COLSS Secondary Calorimetric Measurement Uncertainty" has been revised using manufacturer specified reference accuracies for these transmitters and justifies the ability of the alternate methods (MSBSCAL and FWBSCAL) to measure RTP at 100% power for the first 48 hours after losing one or both UFMs with the assurance that licensed RTP will not be exceeded. The ability to ensure that licensed RTP limits will not be exceeded for the first 48 hours following the loss of one or both UFMs allows the 2 hour actions in TRM 3.3.5 to be removed. The 0.1% penalty factor needed for the previous calculation is no longer necessary.

50.59 Evaluation summary and conclusions

COLSS monitors the reactor core conditions and provides indication and alarm functions to aid the operator in maintenance of core conditions within the limiting conditions for operation and the Technical Specifications. COLSS, the UFMs and the venturi-based instrumentation are not accident initiators, and therefore there can be no increase in the frequency of occurrence of an accident. This change neither adds or removes any equipment to the plant. This change involves re-calibration of main steam pressure and flow instrumentation to a tighter calibration tolerance equal to instrumentation manufacturer specified reference accuracies. This increases the accuracy of the input to COLSS used in the secondary calorimetric to determine reactor thermal power. This change does not require replacement of any of the instruments, and does not affect alarms or

output devices. This change does not affect the COLSS methodology for calculation of the secondary calorimetric power nor any of the operating limits. The recalibration will have no effect on the likelihood of occurrence of a malfunction of an SSC previously evaluated in the FSAR, nor will it increase the consequences of any malfunction or create a malfunction with a different result. This change does not create the possibility of an accident of a different type than previously evaluated. COLSS monitors a core power operating limit based on licensed power level. Operation of the reactor at or below this operating limit ensures that the total core power is never greater than that assumed as an initial condition in the accident analysis. This change does not alter that limit and the re-calibration of the venturi-based instruments will increase their accuracy and remove the requirement to reduce power within two hours of the UFMs being inoperable. This change will not increase the consequences of any accidents previously evaluated. COLSS will continue to monitor the core limits with the same, or better, accuracy. This change does not affect any of the design basis limits for fission product barriers. No methods of evaluation described in the FSAR used in the establishment of design basis or safety analysis will be altered by this change. The method of calculation of the secondary calorimetric and the method of calculating COLSS secondary calorimetric measurement uncertainty have not been changed. Additionally, the NRC approved the App. K power uprate predicated on the fact that if the UFM is not operable, plant operation will be administratively controlled at a power level consistent with the accuracy of the available instrumentation and that with these controls, the effect on plant operations is that power will be maintained at a level that accounts for the appropriate instrumentation uncertainties, thereby preserving ECCS limits. This change eliminates one of those administrative controls based on increased accuracy of COLSS input, however the additional necessary administrative controls remain in place and plant operation is still administratively controlled at a power level consistent with the accuracy of the available instrumentation. It is concluded that prior NRC approval is not required.

B. 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:

   COLSS monitors the reactor core conditions in an efficient manner and provides indication and alarm functions to aid the operator in maintenance of core conditions within the Limiting Conditions for Operations and the Technical Specifications. COLSS, the UFMs and the venturi-based instrumentation are not accident initiators, and therefore there can be no increase in the frequency of occurrence of an accident due to re-calibrating the venturi-based instrumentation to a tighter calibration tolerance that allows removal of the power penalty within 2 hours when the UFMs are inoperable.

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:

   This change does not add or remove any equipment to the plant. This change involves re-calibration of main steam pressure and flow instrumentation to a tighter calibration tolerance, thus increasing the accuracy of the input to COLSS used in the secondary calorimetric to determine reactor thermal power. This change does not require replacement of any of the instruments, and does not affect alarms or output devices. The recalibration will not result in more than a minimal increase in the likelihood of occurrence of a malfunction of an SSC 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:

   COLSS monitors the reactor core conditions and provides indication and alarm functions to aid the operator in maintenance of the core conditions within the Limiting Conditions for Operations and the Technical Specifications. COLSS does not initiate any automatic or direct control functions, and is not required for the safe shutdown of the plant. COLSS is not credited for any accident mitigation functions. COLSS monitors a core power operating limit based on licensed power level. Operation of the reactor at or below this operating limit ensures that the total core power is never greater than that assumed as an initial condition in the accident analysis. This change does not alter this limit, and the re-calibration of the venturi-based instruments will increase their accuracy and remove the requirement to reduce power after the first two hours of the UFMs being inoperable. Additionally, as noted in FSAR chapter 15, no reanalysis of any chapter 15 events was warranted by the Appendix K power uprate because the accident analyses bounded the power uprate plus power measurement uncertainty. This change reduces the measurement uncertainty when using the venturi-based instruments for COLSS input for the secondary calorimetric, and therefore the analyses remain bounding. This change will not increase the consequences of any accidents previously evaluated.

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:

   This change does not add or remove any equipment to the plant. This change involves re-

calibration of main steam pressure and flow instrumentation to a tighter calibration tolerance, thus increasing the accuracy of the input to COLSS used in the secondary calorimetric to determine reactor thermal power. This change does not require replacement of any of the instruments, and does not affect alarms or output devices. COLSS monitors the reactor core conditions and provides indication and alarm functions to aid the operator in maintenance of the core conditions within the Limiting Conditions for Operations and the Technical Specifications. COLSS does not initiate any automatic or direct control functions. This change does not affect the COLSS methodology for calculation of the secondary calorimetric power nor any of the operating limits. It strictly provides for more accurate input to COLSS when the venturi-based instrumentation is used as an input and eliminates the need to reduce power within 2 hours of a UFM becoming inoperable. Therefore, there is no impact on the consequences of any malfunctions previously evaluated.

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

BASIS:

COLSS monitors the reactor core conditions and provides indication and alarm functions to aid the operator in maintenance of the core conditions within the Limiting Conditions for Operations and the Technical Specifications. COLSS does not initiate any automatic or direct control functions, and is not required for the safe shutdown of the plant. COLSS is not credited for any accident mitigation functions, nor are COLSS, the UFMs or the venturi-based instrumentation accident initiators. This change does not add or remove any equipment to the plant, rather it provides for recalibration of instrumentation to a tighter calibration tolerance that allows elimination of the power reduction requirements when using the venturi-based instrumentation for COLSS input. Therefore, this change does not create the possibility for an accident of a different type than previously evaluated.

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

This change provides for recalibration of instrumentation to a tighter calibration tolerance for COLSS input. This change does not add or remove any equipment to the plant. This change involves re-calibration of main steam pressure and flow instrumentation to a tighter calibration tolerance, thus increasing the accuracy of the input to COLSS used in the secondary calorimetric to determine reactor thermal power. This change does not require replacement of any of the instruments, and does not affect alarms or output devices. COLSS monitors the reactor core conditions and provides indication and alarm functions to aid the operator in maintenance of the core conditions within the Limiting Conditions for Operations and the Technical Specifications. COLSS does not initiate any automatic or direct control functions. This change does not affect the COLSS methodology for calculation of the secondary calorimetric power nor any of the operating limits. Therefore the possibility of a malfunction of an SSC with a different result is not created.

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

BASIS:

COLSS monitors the reactor core conditions and provides indication and alarm functions to aid the operator in maintenance of the core conditions within the Limiting Conditions for Operation and the Technical Specifications. COLSS monitors a core power operating limit based on licensed power level. Operation of the reactor at or below this operating limit ensures that the total core power is never greater than that assumed as an initial condition in the accident analysis. This change does not alter this limit, and the re-calibration of the venturi-based instruments will increase their accuracy. COLSS will continue to monitor the core limits with the same, or better, accuracy. Additionally, as noted in FSAR chapter 15, no reanalysis of any chapter 15 events was warranted by the Appendix K power uprate because the accident analyses bounded the power uprate plus power measurement uncertainty. This change will reduce the measurement uncertainty when using

the venturi-based instruments for COLSS input for the secondary calorimetric, and therefore the accident analyses remain bounding. This change does not affect any of the design basis limits for fission product barriers.

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:

No methods of evaluation described in the FSAR used in the establishment of design basis or safety analysis will be altered by this change. This change provides for re-calibration of the main steam pressure and flow instrumentation that will result in more accurate input to COLSS when the venturi-based instrumentation is used for the secondary calorimetric, and eliminates the need to reduce power within 2 hours of a UFM becoming inoperable. The method of calculation of the secondary calorimetric and the method of calculating the COLSS Secondary Calorimetric Measurement Uncertainty have not been changed (note that neither of these methods is described in the FSAR).

I. OVERVIEW / SIGNATURES

Facility: Waterford 3 Steam Electric Station
Document Reviewed: ER-W3-2002-0663-001 / MM-006-119, Yard Oil Separator to CW Temporary Pump System **Change/Rev.:** 0
System Designator(s)/Description: SP/Sump Pump System and CW/Circulating Water System

Description of Proposed Change

The ER and procedure authorize directing the discharge of the Yard Oil Separator to the Circulating Water System. The ER is the engineering basis document for the procedure. Instructions are provided for the installation, start-up, operation, and removal of a temporary pumping system to transfer effluent from the Yard Oil Separator to the discharge piping of the Circulating Water (CW) system. It may be necessary to change the normal discharge flowpath from the 40 Arpent Canal to the CW system in order to reduce the overall radiological dose impact from liquid effluents. The existence of a small primary to secondary leak and radioactivity as identified in CR-W3-2002-1870 warrants a release path that will provide an advantageous dilution factor.

If the proposed activity, in its entirety, involves any one of the criteria below, check the appropriate box, provide a justification/basis in the Description above, and forward to a Reviewer. No further 50.59 Review is required. If none of the criteria is applicable, continue with the 50.59 Review.

- ☐ The proposed activity is editorial/typographical as defined in Section 5.2.2.1.
- ☐ The proposed activity represents an "FSAR-only" change as allowed in Section 5.2.2.2_____. (Insert item # from Section 5.2.2.2).
- ☐ The proposed activity is controlled by another regulation per Section 5.2.2.3.

If further 50.59 Review is required, check the applicable review(s): (Only the sections indicated must be included in the Review.)

☐	SCREENING	Sections I, II, and III required
☐	50.59 EVALUATION EXEMPTION	Sections I, II, III, and IV required
☒	50.59 EVALUATION (#03-002 (03-002)	Sections I, II, III, and V required

Preparer: J. Gavigan/ J Gavigan / EOI / System Engineering / 2-26-03
Name (print) / Signature / Company / Department / Date

Reviewer: T. Hempel/ T. Hempel / EOI / Mechanical Design Engineering / 2-26-03
Name (print) / Signature / Company / Department / Date

OSRC C. Fugate 2-26-03
Chairman's Signature / Date
[Required only for Programmatic Exclusion Screenings (see Section 5.8) and 50.59 Evaluations.]

List of Assisting/Contributing Personnel:

Name:	Scope of Assistance:
Gregory Hood, Billy Day	Environmental Impact, Procedure Preparation

II. SCREENING

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? (Check "N/A" for those documents that are not applicable to the facility.)

Operating License	YES	NO	N/A	CHANGE # and/or SECTIONS TO BE REVISED
Operating License	☐	☒		
TS	☐	☒		
NRC Orders	☐	☒	☐	
If "YES", obtain NRC approval prior to implementing the change. (See Section 5.1.13 for exceptions.)				

LBDs controlled under 50.59	YES	NO	N/A	CHANGE # and/or SECTIONS TO BE REVISED
FSAR	☒	☐		Section 9.3.3.2.2.5 - DRN 03-213, Section 10.4.2.5 - DRN 03-214, Section 11.5.2.4.1.9 – DRN 03-215
TS Bases	☐	☒		
Technical Requirements Manual	☐	☒		
Core Operating Limits Report	☐	☒		
Offsite Dose Calculations Manual	☐	☒		
NRC Safety Evaluation Reports[1]	☐	☒		
If "YES", perform an Exemption Review per Section IV OR perform a 50.59 Evaluation per Section V.				

LBDs controlled under other regulations	YES	NO	N/A	CHANGE # and/or SECTIONS TO BE REVISED
Quality Assurance Program Manual[2]	☐	☒		
Emergency Plan[2]	☐	☒		
Security Plan[2, 3]	☐	☒		
Fire Protection Program[4] (includes the Fire Hazards Analysis)	☐	☒	☐	
If "YES", evaluate/process any changes in accordance with the appropriate regulation.				

2. Does the proposed activity involve a test or experiment not described in the FSAR? ☐ Yes ☒ No
If "yes," perform an Exemption Review per Section IV OR perform a 50.59 Evaluation per Section V.

3. Does the proposed activity potentially impact equipment, procedures, or facilities utilized for storing spent fuel at an Independent Spent Fuel Storage Installation? ☐ Yes ☐ No ☒ N/A
(Check "N/A" if dry fuel storage is not applicable to the facility.)
If "yes," perform a 72.48 Review in accordance with NMM Procedure LI-112.
(See Sections 1.5 and 5.3.1.5 of the EOI 10CFR50.59 Review Program Guidelines.)

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[1] If "YES," see Section 5.1.5.
[2] If "YES," notify the responsible department and ensure a 50.54 Evaluation is performed.
[3] The Security Plan is classified as safeguards and can only be reviewed by personnel with the appropriate security clearance. The Preparer should notify the security department of potential changes to the Security Plan.
[4] If "YES," evaluate the change in accordance with the requirements of the facility's Operating License Condition.

B. **Basis**

(Provide a clear, concise basis for the answers given in the applicable sections above. 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.)

The new procedure is not a test or experiment and does not affect spent fuel. The affected FSAR sections identified are the result of an electronic search using keywords listed below. The FSAR changes reflect the additional Yard Oil Separator discharge flow path to the Circulating Water system.

C. **References**

[Discuss the methodology for performing the LBD search. 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 5.3.6.4 of LI-101.]

LBDs/Documents Reviewed:

FSAR
Section 9.3 - Process Auxiliaries
Section 9.5 - Other Auxiliary Systems
Section 10.4 - Other Features of Steam and Power Systems
Section 11.2 - Liquid Waste Management System
Section 11.4 - Solid Waste Management System
Section 11.5 - Process and Effluent Radiological Monitoring and Sampling Systems
Section 12.2 - Radiation Sources
Chapter 15.2.2.3 - Accident Analyses, Loss of Condenser Vacuum with a Concurrent Single Failure

Technical Requirements Manual
Section 3/4.11.1 – Radioactive Effluents – Liquid Effluents; Table 4.11-1, Radioactive Liquid Waste Sampling and Analysis Program
Section 3/4.12.1 – Radiological Environmental Monitoring Program; Table 3.12-1, Radiological Environmental Monitoring Program

SER
Section 11.2.1 – Liquid Waste Processing System

NRC Letter Docket No. 50-382, Request for Additional Information – Waterford 3, paragraph 321.36 (11.5,9.3)

Keywords:

Searched utilizing the LBDS_50_59 Table in LRS with the keywords:

Oil Separator, Storm Drain, Storm Water, Circulating Water Drain

Emergency Plan, Table 7-2, Process and
Effluent Radiological
Monitors/Samplers

D. **Is the validity of this Review dependent on any other change?** (See Section 5.3.4 of the EOI 10CFR50.59 Program Review Guidelines)

☐ Yes
☒ No

If "Yes," list the required changes.

State of Louisiana, Department of Environmental Quality (DEQ) approval has been granted in DEQ letter File No.: LA0007374, AI No.: 35260, Activity No.: PER20030001 dated February 13, 2003, for discharging effluents from the Yard Oil Separator directly to the Circulating Water System.

III. 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.

Will the proposed Change being evaluated:

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

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

V. 50.59 EVALUATION

A. **Executive Summary** (Serves as input to NRC summary report. Limit to one page or less. Send an electronic copy to the site licensing department after PSRC approval, if available.)

Brief description of change, test, or experiment:

The subject ER and procedure will direct sending the discharge of the Yard Oil Separator to the Circulating Water System by a temporary pumping system. The procedure provides instructions for the installation, start-up, testing, operation, and removal of a temporary pumping system to transfer effluent from the Yard Oil Separator to the discharge piping of the Circulating Water (CW) system. It may be necessary to change the normal discharge flowpath to the 40 Arpent Canal in order to reduce the overall radiological dose impact from liquid effluents. The existence of a small primary to secondary leak necessitates establishment of a release path that can be credited for dilution.

FSAR Sections have been identified for revision to reflect the alternate flow path to the Circulating Water System or clarify the effluent discharge into the oil separator will not be above specified radiation monitor setpoint limits.

Reason for proposed Change:
The current discharge path to the 40 Arpent Canal does not provide the dilution factor afforded by the Circulating Water System. Effluents with small activity levels cumulate in the relatively stagnant canal and approach the Radiological Environmental Monitoring Program (REMP) reporting levels established in the TRM Section 3/4.12.1 and in TRM Table 3.12-1 (Reference Waterford 3 Condition Report No 2003-0272). The Louisiana Department of Environmental Quality has approved under File Letter No. LA0007374, the use of the Circulating Water System as a flow path for directing effluent from the Yard Oil Separator.

50.59 Evaluation summary and conclusions

This evaluation included a review of the Licensing Basis Documents identified in Section II-A, Screening, and an Entergy-FulFind keyword search utilizing the keywords identified in Section II-C. The evaluation determined that the frequency of an accident or Structure, System or Component (SSC) malfunction previously evaluated in the Safety Analysis Report (SAR) will not be increased. The affected portions of the Sump Pump (SP) and Circulating Water (CW) systems do not initiate accidents. The proposed pumping system will not increase the consequences of an accident or SSC malfunction, and will not create the possibility of an accident or SSC malfunction of a different type than previously evaluated in the SAR. The design of the pumping system between the SP and the CW systems is consistent with the existing design requirements of SP and CW systems. The proposed pumping system does not impact a design basis limit for a fission product barrier and does not result in any new design basis analysis methods. There are no changes to any Technical Specifications and Nuclear Regulatory Commission prior approval is not required. The sections in the Final Safety Analysis Report (FSAR) which require revision to reflect the proposed pumping system are addressed by Document Revision Notices 03-213, 03-214 and 03-215 listed in Section II-A. The radiological effluent dose impact to the public is reduced due to dilution with the discharge aligned to the CW system rather than to the 40 Arpent Canal. Therefore, the routing of the Yard Oil Separator to the CW system adequately protects the health and safety of the public.

B. 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:

FSAR Chapter 15, "Accident Analysis" identifies accidents previously evaluated in the FSAR. This chapter was reviewed and determined that the frequency of occurrence of a "Loss of Condenser Vacuum" as described in Section 15.2.1.3 is the only accident which could potentially be impacted by the subject changes. Failure of the Circulating Water System to supply cooling water to the Condenser could result in a loss of vacuum, therefore warranting consideration. The Oil Separator effluent transfer system will tie in to the Circulating Water outlet water boxes B2 and C1. These new connections are located on the downstream side of the Condenser where thermal heat transfer will not be affected. The 300 gpm flow rate of the proposed transfer pumping system will have negligible effect on the approximate 80,000 gpm minimum flow rate at an individual water box. A pipe or hose rupture has also been considered with the resultant determination that the break effects would be minimized by check valves at each water box connection. This evaluation has therefore determined the proposed pumping transfer system will not cause the Circulating Water System to operate outside its design limits and will not impact the frequency of occurrence of a Loss of Condenser Vacuum accident.

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:

No SSC's evaluated as important to safety listed in the FSAR are affected by the proposed procedure. The discharge of the Yard Oil Separator and Circulating Water discharge piping from the condenser are not SSC's important to safety.

Electric power will be supplied from a welding outlet which is supplied by a non-safety related breaker. The electrical demand of the equipment for the proposed connection is well within the capacity of the breaker. The other welding outlets supplied by the breaker will have tags to prevent their use without Control Room approval.

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

☐ Yes ☒ No

BASIS:

The Oil Separator and Circulating Water System are not credited with mitigating any accident consequences involving radiation dose. The proposed change does interface with any SSC that does mitigate an accident. The Loss of Condenser vacuum accident scenario was discussed in response to question 1 without impact. Since the Circulating Water System affords a dilution factor that does not exist for the relatively stagnant 40 Arpent Canal, the transfer system will result in a decrease in dose to the public from effluent discharges with activity.

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 objective of the proposed Oil Separator effluent transfer system to the Circulating Water System is to eliminate a build up of effluent with relatively low level activity in the environment (40 Arpent Canal). The dilution benefit offered by the Circulating Water System will have the effect of reducing dose to the public therefore no increase in radiological dose from an accident can be realized. There is no increased reliance on any SSC important to safety.

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

   BASIS:

   While the proposed connection does create a new system interface for the SP and CW systems, no failure of the new equipment could impact any SSC important to safety. No new accident is created by the proposed change. The potential for flooding from the Circulating Water system should a hose rupture is prevented by check valves installed at the connections to the Circulating Water System. The check valves are designed to the same material requirements as the Circulating Water System piping. Flooding due to a hose rupture on the proposed pumping system will be limited to approximately 7000 gallons of liquid which is the capacity of the Yard Oil Separator sump between the high and low levels which supplies the proposed transfer system. A hose rupture is minimized by the selection of materials suitable of meeting the pressure and temperature considerations of the pumping system. Periodic inspections will ensure system reliability by identifying any leakage at hoses or fittings. The areas of hose routings which drain to the storm water system will also have the hose couplings bagged to prevent potential leakage to the environment.

   Since discharges of the Yard Oil Separator to the drainage canal then to the 40 Arpent Canal are currently allowed in the LPDES permit, there would be no LPDES permit consequences for this accidental release via the storm drain system. A small amount of previously monitored radioactivity may be released to the 40 Arpent Canal pathway. Such a release would be accounted for and documented for both the LPDES and radioactive effluent release programs.

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

No new type of malfunction of any SSC important to safety is created because the scope is limited to the non-safety related Yard Oil Separator and Circulating Water System.

Leakage past normally closed valves SP-6173, Yard Oil Separator Discharge Isolation Valve, CS-1251B, Condenser Waterbox B2 Downstream Isolation Valve, and CE-1261C, Condenser Waterbox C1 Downstream Isolation Valve, could result in effluent with radioactivity below the radiation monitor setpoint migrating to the 40 Arpent Canal. A hose rupture on the subject pumping system could also result in a discharge of low radioactivity effluent into the storm water drains and eventually to the 40 Arpent Canal. If a hose in the transformer yard were to leak, the low level contaminated water would go into the storm drains, which feed the site drainage canal. This leakage would probably be detected during Operators tours before being detected by the environmental monitors. Hose leakage in the Turbine Building and areas enclosed by a berm would be routed by floor drains back to the Yard Oil Separator. Regardless, discharges via a leak to the ditches thence to the 40 Arpent Canal from this Outfall are currently authorized in the LPDES permit. A small amount of previously monitored radioactivity may be released to the 40 Arpent Canal pathway. Such a release would be accounted for and documented for both the LPDES and radioactive effluent release programs.

7. Result in a design basis limit for a fission product barrier as described in the FSAR being exceeded or altered?

☐ Yes
☒ No

BASIS:

No fission product barrier is affected by this procedure. Small trace amounts of tritium have been detected in the effluent of the Oil Separator apparently due to primary to secondary leakage in a steam generator. The ability to pump the oil separator contents to an alternate location such as the Circulating Water System does not affect any fission product barriers or the design basis limits for fuel cladding, the Reactor Coolant System or Containment. The proposed change has no effect on the ability to monitor the primary to secondary leakrate.

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:

This procedure does not change any method of evalution described in the FSAR.

This procedure will allow waste water to be discharged into the CW system in lieu of to the 40 Arpent Canal. The CW system release pathway will result in a lower effluent dose to the public due to the large dilution that is provided by the system. No credit is taken for dilution for releases via the 40 Arpent Canal. The FSAR includes an assessment of compliance with 10CFR50 Appendix I dose objectives. The FSAR Chapter 11 (see section 11.2.3) and the Environmental Report Appendix 3-1 were reviewed to determine if there would be any impact on the 10CFR50 App I determination. The 10CFR50 App I determination currently included in the FSAR and Environmental Report assumes that all radioactivity released from the plant, including that released from the Yard Oil Separator, is discharged into the CW system. Thus, discharging Yard Oil Separator system wastewater via the CW system is an evolution already included in the 10CFR50 App I determination. Additionally, the TRM effluent radiation monitoring instrumentation requirements were reviewed. The currently installed instrumentation will alarm and terminate discharge of wastewater from the TBIWS upon receipt of a high radiation signal regardless of the alignment of the final discharge destination (either to the CW system or to the 40 Arpent Canal). Flow monitoring instrumentation will be installed to adequately monitor the volume of effluent released to the CW system. Thus, the effluent monitoring instrumentation will continue to provide adequate protection to prevent high radioactivity in liquid effluent releases from the TBIWS.

I. OVERVIEW / SIGNATURES

Facility: Waterford 3 Steam Electric Station

Document Reviewed: ER-W3-2002-683-001 **Change/Rev.:** 0

System Designator(s)/Description: Ultrasonic Flowmeter

Description of Proposed Change

This ER revises TRM 3/4.3.5 (Ultrasonic Flowmeter) to clarify the actions, eliminate the need to change COLSS thermal power limits, add a note related to reactor power cutback, and revise the applicability of the Limiting Condition for Operation (LCO) from above 20% power to above 50% power. These changes are editorial with the exception of the change to the power level which impacts the CEA withdrawal within deadband analysis.

If the proposed activity, in its entirety, involves any one of the criteria below, check the appropriate box, provide a justification/basis in the Description above, and forward to a Reviewer. No further 50.59 Review is required. If none of the criteria is applicable, continue with the 50.59 Review.

- ☐ The proposed activity is editorial/typographical as defined in Section 5.2.2.1.
- ☐ The proposed activity represents an "FSAR-only" change as allowed in Section 5.2.2.2_____. (Insert item # from Section 5.2.2.2).
- ☐ The proposed activity is controlled by another regulation per Section 5.2.2.3.

If further 50.59 Review is required, check the applicable review(s): (Only the sections indicated must be included in the Review.)

☐	**SCREENING**	**Sections I, II, and III required**
☐	**50.59 EVALUATION EXEMPTION**	**Sections I, II, III, and IV required**
☒	**50.59 EVALUATION (#: 03-004**	**Sections I, II, III, and V required**

Preparer: Richard K. Baird / Richard K. Baird / EOI / NE / 3/18/03
Name (print) / Signature / Company / Department / Date

Reviewer: Jerry Holman / JM Holman / EOI / NE / 3/18/03
Name (print) / Signature / Company / Department / Date

OSRC 3/19/03
Chairman's Signature / Date (N/A for Screenings and 50.59 Evaluation Exemptions)

List of Assisting/Contributing Personnel:

Name: **Scope of Assistance:**

II. SCREENING

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? (Check "N/A" for those documents that are not applicable to the facility.)

Operating License	YES	NO	N/A	CHANGE # and/or SECTIONS TO BE REVISED
Operating License	☐	☒		
TS	☐	☒		
NRC Orders	☐	☒	☐	
If "YES", obtain NRC approval prior to implementing the change. (See Section 5.1.13 for exceptions.)				

LBDs controlled under 50.59	YES	NO	N/A	CHANGE # and/or SECTIONS TO BE REVISED
FSAR	☐	☒		
TS Bases	☐	☒		
Technical Requirements Manual	☒	☐		DRN 03-247 revises TRM section 3/4.3.5 to incorporate more appropriate wording and change the applicability for the LCO.
Core Operating Limits Report	☐	☒		
Offsite Dose Calculations Manual	☐	☒		
NRC Safety Evaluation Reports[1]	☐	☒		
If "YES", perform an Exemption Review per Section IV OR perform a 50.59 Evaluation per Section V.				

LBDs controlled under other regulations	YES	NO	N/A	CHANGE # and/or SECTIONS TO BE REVISED
Quality Assurance Program Manual[2]	☐	☒		
Emergency Plan[2]	☐	☒		
Security Plan[2, 3]	☐	☒		
Fire Protection Program[4] (includes the Fire Hazards Analysis)	☐	☒	☐	
If "YES", evaluate/process any changes in accordance with the appropriate regulation.				

2. Does the proposed activity involve a test or experiment not described in the FSAR?
If "yes," perform an Exemption Review per Section IV OR perform a 50.59 Evaluation per Section V.

☐ Yes
☒ No

3. Does the proposed activity potentially impact equipment, procedures, or facilities utilized for storing spent fuel at an Independent Spent Fuel Storage Installation? (Check "N/A" if dry fuel storage is not applicable to the facility.)
If "yes," perform a 72.48 Review in accordance with NMM Procedure LI-112.
(See Sections 1.5 and 5.3.1.5 of the EOI 10CFR50.59 Review Program Guidelines.)

☐ Yes
☐ No
☒ N/A

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[1] If "YES," see Section 5.1.5.
[2] If "YES," notify the responsible department and ensure a 50.54 Evaluation is performed.
[3] The Security Plan is classified as safeguards and can only be reviewed by personnel with the appropriate security clearance. The Preparer should notify the security department of potential changes to the Security Plan.
[4] If "YES," evaluate the change in accordance with the requirements of the facility's Operating License Condition.

B. **Basis**

(Provide a clear, concise basis for the answers given in the applicable sections above. 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.)

TRM 3/4.3.5 provides LCOs and the Surveillance Requirements associated with the Ultrasonic Flow Meter (UFM). An electronic search in LRS Fullfind was performed using the keywords listed below. This change to the TRM will still provide the administrative controls on power with the appropriate instrument uncertainties as specified in the NRC SER for the UFM/Appendix K uprate. The FSAR does not contain any description of the design basis for the UFM nor do the Technical Specifications (TS). The UFM allows Waterford 3 to operate at a higher power level because it is more accurate than the secondary, venturi-based power measurements. The FSAR does discuss COLSS, but this TRM change does not affect COLSS as described in the FSAR.

C. **References**

[Discuss the methodology for performing the LBD search. 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 5.3.6.4 of LI-101.]

LBDs/Documents Reviewed:

TSCR NPF-38-238, TRM,

ER-W3-2002-0683-000

Keywords:

"UFM", "Ultrasonic Flow Meter", "LEFM", "Leading Edge Flow Meter", "COLSS"

D. **Is the validity of this Review dependent on any other change?** (See Section 5.3.4 of the EOI 10CFR50.59 Program Review Guidelines)

☒ Yes
☐ No

If "Yes," list the required changes.

ER-W3-2002-0683-000 must be implemented completely before the changes associated with ER-W3-2002-0683-001 can be made.

III. 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.

Will the proposed Change being evaluated:

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

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

V. 50.59 EVALUATION

A. Executive Summary (Serves as input to NRC summary report. Limit to one page or less. Send an electronic copy to the site licensing department after PSRC approval, if available.)

Brief description of change, test, or experiment:

ER-W3-2002-0683-001 makes the following revisions to TRM 3/4.3.5 (Ultrasonic Flowmeter):

- Editorial changes to clarify the intent of actions – The action statements were clarified to be with COLSS in service or COLSS out of service. Action (b) (when COLSS is out of service) is taken from the existing bases to be more explicitly identified as an action.
- Eliminate the requirement to change the COLSS power limits – The required power reductions in the action statements are designated as a percent of power less than 100% rather than changing a COLSS constant to implement the power reduction. This implements the power reduction in a different procedural manner, but still ensures adequate controls.
- Add a note regarding returning the UFM to service after a reactor power cutback – The note on restoring the UFM after a reactor power cutback reduces operator burden during this transient and allows the Operator to better focus on stabilizing the plant. The 6 hour time frame to enter the TRM after a reactor power cutback is much less than the 48 hours allowed for the UFM to be out of service during normal steady state operation.
- Change the applicability from above 20% power to above 50% power – This change ensures that feedwater is above the temperature at which the UFM provides a reliable signal. The Cycle 12 CEA withdrawal within deadband analysis at 50% power is affected since it credits the smaller power measurement uncertainty from the UFM.

Reason for proposed Change:

The purpose of this change is to clarify the actions to be taken when the UFM is out of service and reduce burden on Operations related to the UFM.

50.59 Evaluation summary and conclusions

This change to TRM 3/4.3.5 neither adds nor removes any equipment to the plant. Thus, there is no impact to the frequency of accidents or malfunction of equipment. This change does not alter the function of the UFM or the way that COLSS monitors reactor power. This change does not affect any fission product barrier or method of evaluation. Appropriate administrative controls and power reductions are maintained to account for power measurement instrument uncertainties with the UFM out of service. The thermal margin preserved by COLSS and the various COLSS out of service limit lines in the Core Operating Limit Report at the current time in life for Cycle 12 is adequate to offset an increase in power measurement uncertainty when the UFM is not in service below 50% power. The consequences of FSAR Chapter 15 accident analyses are unchanged and bounded by the current analyses. Therefore, it is concluded that prior NRC approval of this change is not required.

B. 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 revises TRM 3/4.3.5, Ultrasonic Flowmeter to clarify the intent of the actions when the UFM is out of service. There is no impact to any accident initiator as a result of this TRM change. Therefore, there is no increase in frequency of occurrence of an accident.

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:

This change does not add or remove any equipment in the plant. This change clarifies the actions to be taken when the UFM is out of service. The change to the power level for applicability does not affect the way in which the UFM functions. Therefore, there is not more than a minimal change to the likelihood of a malfunction of equipment.

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

☐ Yes ☒ No

BASIS:

The Cycle 12 analysis for the single CEA withdrawal within deadband (CEAWD) at 50% power assumes a 0.5% power measurement uncertainty. This analysis conservatively applies over the power range from 21% to 69%. This analysis is therefore impacted by the applicability change for UFM being in service from 20% power to 50% power. However, the consequences for this event are most severe at the beginning of the cycle when MTC is the least negative. The analysis shows that when MTC is more negative than -0.9×10^{-4} DRho/Deg F, the available overpower margin exceeds the required overpower margin by more than the amount necessary to credit a 0.5% uncertainty. In other words, with the more negative MTC, the smaller power measurement uncertainty from the UFM does not need to be credited to maintain acceptable results for this event. Based on the plant data book curves, the MTC for Cycle 12 became more negative than -0.9×10^{-4} DRho/Deg F after approximately 10/1/02. The existing margin requirements adequately bound operation for the remainder of Cycle 12. Therefore, this change does not alter the consequences of any 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:

This change does not add or remove any equipment in the plant. Operation of the UFM or COLSS is not changed by this revision to the TRM requirements for the UFM. There is no greater reliance on any existing equipment as a result of this TRM change. Allowing 6 hours to enter the TRM after a reactor power cutback is well within the time allowed for the UFM to be out of service during normal steady state operation. The greater accuracy of power measurement provided by the UFM is not necessary during recovery from a reactor power cutback. Therefore, there is no increase in the consequences any malfunction.

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

   BASIS:

   The UFM is used as an input to COLSS to monitor reactor power more accurately. It does not initiate any automatic actions and is not required for safe shutdown of the plant. This change addresses actions to be taken when the UFM is out of service and does not affect the operation of any equipment. This TRM change does not affect the initiation of any accident. Therefore, this change does not create the possibility for an accident of a different type.

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 UFM is used as an input to COLSS to monitor reactor power more accurately. It does not initiate any automatic actions and is not required for safe shutdown of the plant. This change addresses actions to be taken when the UFM is out of service and does add or remove any equipment. Therefore, this change does not create the possibility for a malfunction with different results.

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

   BASIS:

   This change to the TRM requirements for the UFM does not affect any fission product barrier. Adequate thermal margin is preserved for the remainder of Cycle 12 to ensure that fuel failure does not occur for the CEA withdrawal within deadband or any other anticipated operational occurrence. Therefore, this change does not affect any fission product barrier.

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:

   This change clarifies the actions when the UFM is out of service. No methods of evaluation described in the FSAR are changed by this revision to the TRM.

I. OVERVIEW / SIGNATURES
Facility: WATERFORD 3

Document Reviewed: ER-W3-2002-0603-000 Change/Rev.: 0

System Designator(s)/Description:

Description of Proposed Change

ER-W3-2002-0603-000 revises FSAR Section 15.2.3.1, Feedwater System Pipe Break, to make the large Feedwater Line Break (FWLB) event documented in the FSAR consistent with the current large FWLB analysis methodology, inputs and assumptions and results. The proposed change also moves the small feedwater line break analysis, described in FSAR Section 15.C.1, Reanalysis of Small Feedwater System Pipe Break Events With the Limiting Single Failure and Offsite Power available, to Section 15.2.3.1, following the description of the large FWLB event. FSAR Section 15.C.1 and associated tables and figures have also been deleted.

If the proposed activity, in its entirety, involves any one of the criteria below, check the appropriate box, provide a justification/basis in the Description above, and forward to a Reviewer. No further 50.59 Review is required. If none of the criteria is applicable, continue with the 50.59 Review.

- ☐ The proposed activity is editorial/typographical as defined in Section 5.2.2.1.
- ☐ The proposed activity represents an "FSAR-only" change as allowed in Section 5.2.2.2_____. (Insert item # from Section 5.2.2.2).
- ☐ The proposed activity is controlled by another regulation per Section 5.2.2.3.

If further 50.59 Review is required, check the applicable review(s): (Only the sections indicated must be included in the Review.)

☐	SCREENING	Sections I, II, and III required
☐	50.59 EVALUATION EXEMPTION	Sections I, II, III, and IV required
☒	50.59 EVALUATION (#: ____) 03-005	Sections I, II, III, and V required

Preparer: Nasser Pazooki / Nasser Pazooki / EOI / NE-S&EA / 1/9/03
Name (print) / Signature / Company / Department / Date

Reviewer: Richard K. Baird / Richard K. Baird / EOI / NE / 1/9/03
Name (print) / Signature / Company / Department / Date

OSRC 3/25/03
Chairman's Signature / Date (N/A for Screenings and 50.59 Evaluation Exemptions)

List of Assisting/Contributing Personnel:

Name: Scope of Assistance:

II. SCREENING

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? (Check "N/A" for those documents that are not applicable to the facility.)**

Operating License	YES	NO	N/A	CHANGE # and/or SECTIONS TO BE REVISED
Operating License	☐	☒		
TS	☐	☒		
NRC Orders	☐	☒	☐	
If "YES", obtain NRC approval prior to implementing the change. (See Section 5.1.13 for exceptions.)				

LBDs controlled under 50.59	YES	NO	N/A	CHANGE # and/or SECTIONS TO BE REVISED
FSAR	☒	☐		FSAR Section 15.2.3.1 and Appendix 15.C
TS Bases	☐	☒		
Technical Requirements Manual	☐	☒		
Core Operating Limits Report	☐	☒		
Offsite Dose Calculations Manual	☐	☒		
NRC Safety Evaluation Reports[1]	☐	☒		
If "YES", perform an Exemption Review per Section IV OR perform a 50.59 Evaluation per Section V.				

LBDs controlled under other regulations	YES	NO	N/A	CHANGE # and/or SECTIONS TO BE REVISED
Quality Assurance Program Manual[2]	☐	☒		
Emergency Plan[2]	☐	☒		
Security Plan[2, 3]	☐	☒		
Fire Protection Program [4] (includes the Fire Hazards Analysis)	☐	☒	☐	
If "YES", evaluate/process any changes in accordance with the appropriate regulation.				

2. ***Does the proposed activity involve a test or experiment not described in the FSAR?*** ☐ Yes ☒ No
   If "yes," perform an Exemption Review per Section IV OR perform a 50.59 Evaluation per Section V.

3. **Does the proposed activity potentially impact equipment, procedures, or facilities utilized for storing spent fuel at an Independent Spent Fuel Storage Installation?** ☐ Yes ☐ No ☒ N/A
   (Check "N/A" if dry fuel storage is not applicable to the facility.)
   If "yes," perform a 72.48 Review in accordance with NMM Procedure LI-112.
   (See Sections 1.5 and 5.3.1.5 of the EOI 10CFR50.59 Review Program Guidelines.)

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[1] If "YES," see Section 5.1.5.
[2] If "YES," notify the responsible department and ensure a 50.54 Evaluation is performed.
[3] The Security Plan is classified as safeguards and can only be reviewed by personnel with the appropriate security clearance. The Preparer should notify the security department of potential changes to the Security Plan.
[4] If "YES," evaluate the change in accordance with the requirements of the facility's Operating License Condition.

B. **Basis**

(Provide a clear, concise basis for the answers given in the applicable sections above. 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.)

As discussed in Section I, the proposed change revises FSAR Section 15.2.3.1, Feedwater System Pipe Break, to make the large Feedwater Line Break (FWLB) event documented in the FSAR consistent with the current large FWLB analysis methodology, inputs and assumptions and results. The proposed change also moves the small feedwater line break analysis, described in FSAR Section 15.C.1, Reanalysis of Small Feedwater System Pipe Break Events With the Limiting Single Failure and Offsite Power available, to Section 15.2.3.1, following the description of the large FWLB event. This change does not impact any other LBD or operating license.

C. **References**

[Discuss the methodology for performing the LBD search. 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 5.3.6.4 of LI-101.]

Documents:

1. Waterford Steam Electric Station, Unit No. 3, Final Safety Analysis Report (FSAR), Facility Operating License Number NPF-38, Docket No. 50-382, through Revision 10.
2. CESSAR Appendix B, Amendment No. 7, March 31, 1982.
3. ABB CE Calculation, A-WS-FE-0076, Revision 1 "Waterford 3 Feedwater Line Break Event Analysis for Increase Primary and Secondary Safety Valve Tolerances", 8/28/00.
4. ABB CE Calculation 9270-DT-021, Rev. 0, Waterford 3 – FSAR Feedwater Line Break Analysis, 10/24/1978.
5. ABB CE Calculation 9270-TS-010, Rev. 00, "Waterford-3 Cycle 2 Peak Pressure Events", December 31, 1986.
6. Waterford 3 SER Supplement 1, Section 15.3.2, "Feedwater System Pipe Breaks".

FSAR Sections, Tables, and Figures Reviewed:

Section 15.2.3.1, Figures 15.2-37 through 15.2-53, Tables 15.2-8, 15.2-9, 15.2-9a, 15.2-9b, Appendix 15.C, and Figures 15.C.1-1 through 15.C.1-9, and Tables 15.C.1-1 through 15.C.1-3, Response to SER Open Item No. 9 (FSAR 15.A.2)

D. **Is the validity of this Review dependent on any other change?** (See Section 5.3.4 of the EOI 10CFR50.59 Program Review Guidelines)

☐ Yes
☒ No

If "Yes," list the required changes.

III. 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.

Will the proposed Change being evaluated:

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

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

IV. 50.59 EVALUATION EXEMPTION

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

A. Check the applicable boxes below. If any of the boxes are checked, a 50.59 Evaluation is not required. If none of the boxes are checked, perform a 50.59 Evaluation in accordance with Section V. Provide supporting documentation or references as appropriate.

☐ The proposed activity meets all of the following criteria regarding design function per Section 5.5.1.1:

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 functions of an SSC described in the FSAR will be accomplished.

☐ An approved, valid 50.59 Review(s) covering associated aspects of the proposed change already exists per Section 5.5.1.2. 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 5.5.1.3. 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 5.5.6 of the EOI 10CFR50.59 Review Program Guidelines for guidance.)

V. 50.59 EVALUATION

A. Executive Summary (Serves as Input to NRC summary report. Limit to one page or less. Send an electronic copy to the site licensing department after PSRC approval, if available.)

Brief description of change, test, or experiment:
The proposed change revises FSAR Section 15.2.3.1, Feedwater System Pipe Break, to make the large Feedwater Line Break (FWLB) event documented in the FSAR consistent with the current large FWLB analysis methodology, inputs and assumptions and results. The proposed change also moves and modifies the small FWLB analysis described in FSAR Section 15.C.1, "Reanalysis of Small Feedwater System Pipe Break Events With the Limiting Single Failure and Offsite Power Available." to Section 15.2.3.1, following the description of the large FWLB event. The FSAR Section 15.C.1 has been deleted.

Reason for proposed Change:
The large Feedwater Line Break (FWLB) event documented in the FSAR represents the FWLB analysis that was performed for Cycle 1. For Cycle 2 and beyond the large FWLB event has been analyzed using a different methodology (Reference 2) than Cycle 1 analysis. The new methodology resulted in a smaller break area (0.2 ft^2 vs. 1.076 ft^2) as the limiting break size for the large FWLB. The new methodology is described in detail in CESSAR Appendix B (Ref. 2). Since the FWLB analysis results for Cycle 2 and beyond (References 3, 4 and 5) has been bounded by the Cycle 1 results, the Cycle 1 analysis has been retained in the FSAR as the bounding analysis. Since significant changes have been made to the FWLB analysis methodology and specifically the limiting break size has been changed from 1.076 ft^2 to 0.20 ft^2, the FSAR is updated to reflect the new FWLB analysis methodology and results.

FSAR Section 15.C.1 documents the small FWLB analysis. The description of the small FWLB analysis and related tables and figures has been moved to FSAR Section 15.2.3.1. FSAR Section 15.C.1 and the related tables and figures have been deleted.

50.59 Evaluation summary and conclusions
The proposed change revises FSAR Section 15.2.3.1, Feedwater System Pipe Break, to make the large Feedwater Line Break (FWLB) event documented in the FSAR consistent with the current large FWLB analysis methodology, inputs and assumptions and results. The proposed change also moves the small FWLB analysis described in FSAR Section 15.C.1 to Section 15.2.3.1 following the description of the large FWLB event. The FSAR Section 15.C.1 is deleted. The methodology used to analyze the large and small FWLB events is documented in Reference 2 and is approved by NRC (References 2 and 6).

The evaluation demonstrates that the revised FWLB event analysis does not result in a design basis limit for a fission product barrier as described in the FSAR to be exceeded or altered.

The evaluation demonstrates that the revised FWLB event analysis does not result in a design basis limit for a fission product barrier as described in the FSAR to be exceeded or altered.

The proposed change provides a new method for analyzing FWLB events, however, this methodology has been approved by NRC (References 2 and 6).

Note that since the methodology used to analyze the feedwater line break event has been approved by NRC, this evaluation could have been exempted per Section IV. However, to provide more detail information about the analysis results and acceptance criteria a 50.59 evaluation is performed.

B. 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:

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:

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

☐ Yes
☐ No

BASIS:

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:

5. Create a possibility for an accident of a different type than any previously evaluated in the FSAR?

☐ Yes
☐ No

BASIS:

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

7. Result in a design basis limit for a fission product barrier as described in the FSAR being exceeded or altered?

☐ Yes
☐ No

BASIS:

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 proposed change revises the description and related tables and figures of the large FWLB event in the FSAR to be consistent with the latest methodology and inputs and assumptions used in the FWLB analyses (Reference 3). The new methodology has been used in Waterford 3 FWLB analyses since Cycle 2 and has been approved by NRC (References 2 and 6). The Cycle 1 FWLB analysis has been retained in the FSAR because of its bounding results. The FSAR is revised to reflect the latest FWLB analysis methodology and inputs and assumptions.

The proposed change also moves the small FWLB analysis described in FSAR Section 15.C.1 to Section 15.2.3.1 following the description of the large FWLB event. The FSAR Section 15.C.1 is deleted.

The limiting parameters of interest for the FWLB events are peak RCS pressure and peak steam generator pressures. The following provides the acceptance limits for these parameters (Ref. 3):

	RCS Pressure Limit (psia)	SG Pressure Limit (psia)
Small FWLB with Loss of AC	3000	1210
Small FWLB without Loss of AC	2750	1210
Large FWLB with Loss of AC	3000	1210
Large FWLB without Loss of AC	3000	1210

The resulting peak pressures for the limiting large and small FWLB events with the new methodology (Ref. 3) are:

	RCS Pressure (psia)	SG Pressure (psia)
Small FWLB without Loss of AC	2716.04	1166.20
Large FWLB with Loss of AC	2750.00	1165.00

Note that the large FWLB with and without loss of AC power has the same acceptance limits. The FWLB with loss of AC power bounds the FWLB without loss of AC power. Therefore, the FWLB without loss of AC power was not analyzed.

Since Waterford 3 FWLB event has been analyzed with the new methodology since Cycle 2 and the new methodology has been approved by NRC (References 2 and 6), the proposed change is not considered a departure from a method of evaluation described in the FSAR that is used in establishing the design bases or in the safety analyses.

Attachment 2

W3F1-2003-0085

Waterford 3 Commitment Change Report

Commitment Summary Report

CCEF Number	*Commitment Number*	*Commitment Description*	*Reason for Change/Deletion*
2002-0006	A-26026	Voluntary enhancement to perform analysis to support a license amendment to revise our current licensing basis to include the routine performance of full core offloads.	Commitment being deleted. ER-W3-2000-0518 that was initiated to support this was cancelled due to lack of funding and long range plans do not support full core offload every outage. This was not a Regulatory Commitment but was characterized as a Voluntary Enhancement. Additionally, canceling plans to do an analysis to support possible full core offloads in the future has no affect on the plant or any structure, system or component.
2002-0007	A-26144	Arrangements will be made such that the storage tank level is maintained above the 5 day Technical Specification minimum (38,000 gallons) during the test.	Commitment text is being revised as follows: Arrangements will be made such that the storage tank level is maintained above the "5 day" Technical Specification (TS) minimum (38,000 gallons) during the test. (Required only if the Emergency Diesel Generator (EDG) is to be maintained operable during the 24 hour test.) Justification for the change is as follows: The intent of the commitment was to ensure the EDG remained operable throughout the 24 hour test. Fuel oil consumption data indicates that the minimum TS fuel oil level (38,000 gallons) will be reached after approximately 8 hours of EDG operation. Therefore, to maintain the EDG operable, arrangements must be made to replenish the EDG fuel oil before the fuel oil level drops below 38,000 gallons per TS 3.8.1.1. If the EDG is inoperable there is no need to maintain fuel oil level above 38,000 gallons. If for some reason, during the 24 hour test, the fuel oil level drops below 38,000 gallons, TS require the EDG be declared inoperable and appropriate actions be taken to restore the EDG to operable status within the allowed outage time specified in the TS. The bottom line is that we will comply with TS and take the appropriate actions within the applicable Allowed Outage Times.

CCEF Number	*Commitment Number*	*Commitment Description*	*Reason for Change/Deletion*
2002-0008	A-26232	Checkworks Model will be revised as appropriate to incorporate flow and thermodynamic states that are projected for uprated conditions. The results of these models will be factored into future inspection/pipe replacement plans consistent with the current FAC program requirements.	The due date for this commitment is being changed from upon implementation of Technical Specification change to prior to refuel 12. The CHECKWORKS model cannot be revised until the plant has run for at least one cycle. The appropriate data will be gathered during cycle 12 and input into the CHECKWORKS model. This has been discussed with the NRC and extension does not impact the SER.
2002-0009	P-15385	Nuclear Operations Executive Directive, ED-029, "Employee Termination and Resignation Practices" has been revised. Senior Managers within Nuclear Operations are required to provide security information pertaining to the reason and condition associated with all terminations and resignations. Senior managers are also provided specific instructions which outline conditions for employee terminations "for cause due to lack of trustworthiness or Reliability."	This commitment is being deleted. This commitment is no longer useful because current controlled processes developed since origination of this commitment satisfy the requirements of this commitment (i.e., Fitness for Duty, Continual Behavioral Observation Program (CBOP) and Corporate Human Resources Discipline Processes.)

CCEF Number	*Commitment Number*	*Commitment Description*	*Reason for Change/Deletion*
2002-0010	P-15299	Modify the vendor interface program to establish a more formalized method of vendor contact, proposed as the key vendor contact program, to ensure that vendor technical information is kept current and complete.	Commitment text being revised to read: Waterford 3/Entergy Operations, Inc. will implement a revised process which will require documented contact with key non-NSSS vendors once every other calendar year. This process will also control the list of non-NSSS vendors to be contacted. Generic Letter 90-03 requires licensees to maintain a vendor interface program which is a good faith documented effort to periodically contact the vendors of key non-NSSS safety related components (such as auxiliary feedwater pumps, batteries, inverters, battery chargers, cooling water pumps, and valve operators) to obtain any technical information applicable to this equipment. As documented by letters CEO-98/00079, CEO-99/00086, and CEO-2000/00089, Entergy Operations has contacted approximately 44 vendors per year for the last 3 years to request updated technical information related to approximately 510 technical publications. In response to these requests, approximately 43 documents were submitted to Entergy as updated information. Only a small percentage of the documents received were found to be applicable to plant equipment. None of the information received resulted in any corrective actions or plant modifications. Changing the frequency of Entergy's periodic contact with key non-NSSS vendors to every other calendar year represents no appreciable difference in meeting the intent of the Generic Letter and therefore should have no adverse effect on plant equipment.
2002-0011	P-25250	The drill participation requirements presently maintained in an informal manner will be incorporated as part of procedure EP-003-020, Emergency Preparedness Drills and Exercises	Commitment is being deleted. Waterford 3 no longer tracks all ERO responders. Per NEI 99-02, Waterford 3 tracks and reports results of respondents for all key responders to the NRC as performance indicators. This requirement is satisfied by procedure EPP-431.

CCEF Number	*Commitment Number*	*Commitment Description*	*Reason for Change/Deletion*
2002-0012	P-25904	Revise Weapons training and requalification program to incorporate changes to defensive strategy and improve security officer proficiency by providing 20 hours of training per 10 week cycle until an industry standard is adopted.	Commitment text being revised to read: Weapons training and requalification program to include 40 hours annually for firearm training. The number of hours spent annually will be reviewed once an industry standard is adopted. This training was developed due to the weapons scores experienced prior to the year 2000. The 20 hours of training per 10 week cycle was initially initiated in January 2001. During the time period from the 1st quarter 2001 through 2nd quarter 2002, security has seen an increase in the proficiency of security officers. The regulatory confirmatory order for which this commitment was made has been closed, with no continuing requirements from the confirmatory order stated. Security continues to train on weapons use but believes based on the above data that the commitment as initiated accomplished the intent for which it was designed. It is believed that under the improved training program, 40 hours of weapons training annually is sufficient to ensure proficiency is maintained. Security will review this commitment once an industry standard is adopted.
2002-0013	P-16525	Chemistry procedure CE-001-003, Reporting, Review and Evaluation of Chemistry Data, was revised and reissued to establish a watch station shift chemistry log and a weekly Technical Specification Surveillance Check Sheet. Completion of routine surveillances is signed by the shift technician and reviewed by the Chemistry Supervisor on regular working days.	Commitment text is being revised to remove the requirement for a weekly Technical Specification Surveillance Check Sheet. Completion of routine surveillances is signed by the shift technician and reviewed by the Chemistry Supervisor on regular working days. Technical Specification surveillances are scheduled in CDMS and printed out on a shiftly basis. The surveillances are also tracked by a tickler card file which is used on a daily basis and is inventoried on a weekly basis to ensure the cards are filed on the correct dates. The weekly Technical Specification surveillance sheet is outdated and has to be corrected often posing more opportunities for an error to occur. Since two separate methods are already in place to ensure that TS surveillances are completed in the required time, the sheet is not needed.

CCEF Number	*Commitment Number*	*Commitment Description*	*Reason for Change/Deletion*
2002-0014	P-16525	DEAM procedure PE-P-002-00 in conjunction with the Engineering Request process and procedure UNT-005-015 are in place to ensure that the correct commercial grade item per design is installed and received an engineering evaluation, if required, to ensure adequate dedication criteria was established for replacement items.	Commitment text being revised to change reference to the implementing procedure as identified in the text. Nuclear Management Manual procedure DC-306, in conjunction with the Engineering Request Process and UNT-005-015 are in place to ensure that the correct commercial grade item per design is installed and received an engineering evaluation, if required, to ensure adequate dedication criteria was established for replacement items. Deletion of DEAM PE-P-002-000 and initiation of NMM DC-306 as the ENS standard.

CCEF Number	*Commitment Number*	*Commitment Description*	*Reason for Change/Deletion*
2002-0015	P-23611	The current process for requesting assistance to resolve technical problems, requests, or questions is site procedure W5.602, "Problem Evaluation/Information Request." This procedure is adequate to ensure the dispostion of technical issues is documented, reviewed and approved.. Design procedures and input checklists are in place to prevent similar occurrences during the design change process. This includes Design Engineering Administrative Manual procedure ES-P-001, Design Inputs, which ensures all design inputs are considered, and ES-P-002, Design Verification, which ensures that design documents are adequately verified.	This commitment is being deleted. This item is a statement of fact and no commitments or actions are described or were intended. This should never have been identified and entered as a commitment.
2002-0016	P-5446	Corporate restrictions with respect to the common defense and security in obtaining fuel for civilian purposes.	The national policy on use of military special nuclear material has changed from the time of the original obligation/commitment. The current fuel being used in the Entergy nuclear plants includes fuel blended down from highly enriched uranium originally intended for military purposes. This material was released by the government for commercial use for non proliferation purposes.

CCEF Number	*Commitment Number*	*Commitment Description*	*Reason for Change/Deletion*
2002-0017	P-24625	Guidance for taking Technical Specification equipment out of service.	Commitment P24625 was made to minimize the recurrence of an adverse condition. The adverse condition was a failure to enter the appropriate Technical Specification (TS) action when maintenance rendered equipment inoperable. This commitment is from 1996 at a time when Waterford 3 did not have an adequate process for providing engineering inputs and routinely did not enter TS actions when performing maintenance/surveillance activities. Currently Waterford 3 implements the Engineering Request process for all engineering inputs and all maintenance/surveillance activities are evaluated for TS applicability. When maintenance activities impact TS requirements it is clearly stated in the Operations Impact Statement in the work package. This commitment specifically addressed review of work packages when there was change in scope. This is a requirement appropriately implemented in the work management control process by WM-100. Commitment P24626 was a necessary enhancement in 1996 but retention will serve no additional value. Therefore P24625 can be closed to history.
2002-0018	A-25437	Requirements for Static Uninterruptible Power Supply (SUPS) Operation	Commitment changed to state that the requirements for SUPS operation will be put in a new Technical Requirements Manual (TRM) instead of in the Technical Specification Bases. The TRM is an appropriate place to locate the necessary actions required if a SUPS rectifier is taken out of service.
2002-0019	A-25672	Relocation of Reactor Trip Override and Auxiliary Feed Water Pump High Discharge Pressure Trip circuitry requirements from the Technical Requirements Manual to the Technical Specification Bases	Revised commitment text to reflect the relocation of the Reactor Trip Override and Auxiliary Feed Water Pump High Discharge Pressure Trip circuitry requirements from the Technical Requirements Manual section 3/4.7.1.6.2 and 3/4.7.1.6.3 to Technical Specification Bases section 3/4.7.1.6.

CCEF Number	*Commitment Number*	*Commitment Description*	*Reason for Change/Deletion*
2003-0001	P-25499	As part of corrective action of performing work on the wrong component Waterford 3 committed to revise Maintenance Directive 7, Pre Job/Post Job Briefing Form, to include a step to verify components that are scheduled to be worked.	This commitment is being closed. This commitment was made as a result of a human error. Currently Entergy implements a comprehensive Human Performance Program designed to lessen the potential for human error. The pre-job brief is an important part of reducing the probability for human error. However, this commitment is not needed to insure that appropriate pre-job briefs are performed nor is tracking this commitment necessary to prevent recurrence of the condition adverse to quality.
2003-0002	P-12751	In order to prevent recurrence of diesel generator turbo thrust bearing failures, the thrust bearing and failure detector clearances will be inspected every 19 months.	Commitment is being closed. Section 15 of the Cooper Bessemer KSV Technical Manual includes a requirement to inspect turbocharger thrust bearing clearances. These inspections are imposed by TS 4.8.1.1.2.f at intervals not to exceed two years. Therefore there is no need to continue tracking this commitment.

CCEF Number	*Commitment Number*	*Commitment Description*	*Reason for Change/Deletion*
2003-0003	P-24733	Procedure UNT-005-005 will be revised to include the following: 1) An enhancement to Attachment 6.1, authorization of working hour policy deviations to indicate, in addition to the reasons for the deviation, the number of hours required to be worked, 2) A clarification on the requirements for approval of working hour deviations prior to commencement of the work activity; 3) Clarification of the 2 hour exception for the late watch relief and 4) A clarification on who the working hour policy applies to.	This commitment is being closed. The above changes were made in response to LER-97-012-01 in which it was determined that a programmatic breakdown occurred in the administration of the Technical Specification working hour limits. A new procedure OM-123 has been developed which will cover the working hour limits requirements for all Entergy Nuclear South plants and will replace UNT-005-005 in which the above clarifications were made. The new procedure implements the requirements of the site TS which reflect the requirements of Generic Letter 82-12, "Nuclear Power Plant Staff Working Hours." Neither the GL nor the TS require documentation of the number of hours an individual will work in excess of the working hour limits. OM-123 provides instructions for approval for exceeding the working hour limits prior to an employee exceeding them; the allowance for the special 2 hour provision to accommodate occasional circumstances that occur when a watch stander's relief is unavoidably late; and clarification of to whom the policy applies. The above information is therefore carried forward in the new procedure. The information that is added for clarification is simply a means by which better understanding of the requirements contained in the TS and/or GL is more clearly communicated. There is no reason to carry a commitment stating that these items have been clarified even though the clarifications were made as part of an LER corrective action plan. The expectations associated with working hour limits are communicated in the new procedure and should be communicated by site management. Procedure changes can be suggested at any time by anyone if he or she is questioning whether the procedure is applicable to his or her activity. In addition, any information that is unclear can be changed at any time. Use of the procedure and challenging the requirements contained in the procedure will result in procedure improvements and adherence to the working hour limits.

CCEF Number	*Commitment Number*	*Commitment Description*	*Reason for Change/Deletion*
2003-0004	P-2077	Incorporate into plant procedures the clarified definition of key maintenance personnel as given in Generic Letter 83-14	This commitment is closed. The generic letter nor any other document required that the definition of key maintenance personnel be included in plant procedures. Inclusion of the definition is a good practice and helps communicate the NRC definition. The definition will be retained and the reference to the source of the definition will be retained. The definition of a commitment as contained in LI-110 and states in part that a commitment is an explicit statement to take a specific action agreed to by senior management and submitted in writing on the docket. A review of Waterford 3 correspondence did not result in finding a written agreement that this definition would be included in site procedures.
2003-0005	P-15263	Chemistry Procedure CE-001-003 reporting, review and evaluation of chemistry data which provides the instructions for reporting chemistry data has been revised to add an extra check to the weekly TS Surveillance Check sheet to ensure the tickler card file receives a supervisory review.	This commitment is being closed. Technical Specification (TS) Surveillances are scheduled in CDMS and printed out on a shiftly basis. The Surveillances are also tracked by a tickler card file which is used on a Daily Basis and is inventoried on a weekly basis to ensure the cards are filed on the correct dates. The weekly TS surveillance sheet is outdated and has to be corrected often, which poses more opportunities for an error to occur. Since two separate methods are already in place to ensure that TS Surveillances are completed in the required time, the sheet is not needed.

CCEF Number	*Commitment Number*	*Commitment Description*	*Reason for Change/Deletion*
2003-0006	P-25722	As a result of self assessments and Entergy Peer Group Input, Waterford 3 is in the process of revising site directive W2.501, Corrective Action, which will contain detailed operability assessment guidance.	Commitments to take long-term corrective actions are made to minimize recurrence of adverse conditions. A good measure of the effectiveness of these commitments is the success in avoiding recurrent adverse conditions. The NRC, under its enforcement policy, uses a two-year time period from the date of the last inspection or the period within the last two inspections, whichever is longer, as an indication that the adverse condition related to a particular area has been corrected. The original Notice of Violation was issued in Inspection Report 97-16 dated October 17, 1997. Corrective actions were reviewed and deemed acceptable in Inspection Report 99-16 dated September 1, 1999. A review of NRC findings occurring since October 17, 1997 revealed no repeat or similar violations relative to improper operability reviews. Thus, approximately six years have elapsed since implementation of this commitment with no violations on this matter. This commitment was primarily an enhancement to the existing operability determination process. A review of this commitment finds that it is no longer necessary due to changes made in the Waterford 3 corrective action program. Changes made since the original commitment was made include: Waterford 3's corrective action program is now implemented by a corporate procedure (LI-102) that is used by all the ENS sites. Best practices at each of the sites were identified and implemented in order to follow the best process overall. The corrective action program has undergone several process changes since the violation that have improved implementation of operability reviews. One major change is the introduction of a Paperless Condition Reporting System (PCRS). PCRS has enabled Operations personnel (primarily the Shift Technical Advisors) access to previously completed operability reviews for similar equipment which can be used for guidance. Also, there is now a Condition Review Group that reviews all CRs; operability evaluations by the operators are challenged at those meetings if it is determined that any evaluations are weak. Though infrequent, challenging the evaluations results in coaching the operability evaluators which, in the aggregate, improves performance. In PCRS, a drop down checklist has been added for use by CR initiators to determine if an operability review is needed at that level. This helps focus operator priority on those CRs actually needing an operability determination, which contributes to the quality of operability

CCEF Number	Commitment Number	Commitment Description	Reason for Change/Deletion
			reviews. The licensing department reviews all CRs for reportability on an on-going basis which contributes to the screening process for operability determinations. This is an administrative change that removes clarifying guidance used for operability evaluations. The guidance being removed was originally added in response to an NRC violation based on weak documentation of operability determinations; the ability of plant personnel to ensure the SSC is capable of performing its intended safety function was not in question. There is no change to plant configuration or operating practice used to monitor plant equipment for operability or satisfaction of its safety function. There is no change on how plant operators monitor station parameters and activities for operability affects on plant equipment. There are no changes that affect failure mechanisms, accident response, or safety analyses.