



10 CFR 50.90

LR-N18-0098
LAR H18-05

OCT 30 2018
U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555-0001

Hope Creek Generating Station
Renewed Facility Operating License No. NPF-57
NRC Docket No. 50-354

Subject: License Amendment Request: Remote Shutdown System

In accordance with 10 CFR 50.90, PSEG Nuclear LLC (PSEG) hereby requests an amendment to Renewed Facility Operating License No. NPF-57 for Hope Creek Generating Station (HCGS).

This license amendment request proposes changes to Technical Specification (TS) 3.3.7.4, REMOTE SHUTDOWN SYSTEM INSTRUMENTATION AND CONTROLS. The proposed change would make the HCGS requirements consistent with Improved Standard Technical Specification (ISTS) 3.3.3.2, Remote Shutdown System.

The proposed change will increase the allowed outage time for inoperable Remote Shutdown System components to a time that is more consistent with their safety significance. It will also delete Tables 3.3.7.4-1, REMOTE SHUTDOWN MONITORING INSTRUMENTATION, 3.3.7.4-2, REMOTE SHUTDOWN SYSTEMS CONTROLS, and 4.3.7.4-1, REMOTE SHUTDOWN MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS, to be relocated to the Technical Requirements Manual (TRM) where they will be directly controlled by HCGS.

PSEG's technical and regulatory evaluation of this LAR and the TS change are provided in an enclosure to this letter.

The proposed change has been evaluated in accordance with 10 CFR 50.91(a)(1), using the criteria in 10 CFR 50.92(c), and it has been determined that this request involves no significant hazards considerations.

There are no regulatory commitments contained in this letter.

PSEG requests NRC approval of the proposed License Amendment within one year of submittal acceptance, to be implemented within 60 days of issuance.

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In accordance with 10 CFR 50.91(b)(1), a copy of this request for amendment has been sent to the State of New Jersey.

If you have any questions or require additional information, please contact Mr. Lee Marabella at (856) 339-1208.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on 10/30/2018
(Date)

Respectfully,



Jean Fleming
Director – Site Regulatory Compliance

Enclosure: Evaluation of the Proposed Change

- C. Administrator, Region I, NRC
Project Manager, NRC
NRC Senior Resident Inspector, Hope Creek
Mr. P. Mulligan, Chief, NJBNE
Mr. L. Marabella, Corporate Commitment Tracking Coordinator
Mr. T. MacEwen, Hope Creek Commitment Tracking Coordinator

Enclosure

Evaluation of the Proposed Change

HOPE CREEK NUCLEAR GENERATING STATION
RENEWED FACILITY OPERATING LICENSE NO. NPF-57
DOCKET NO. 50-354

License Amendment Request: Remote Shutdown System

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ATTACHMENTS:

1. Technical Specification Page Markups
2. Technical Specification Bases Page Markups (for information only)

1.0 SUMMARY DESCRIPTION

This license amendment request proposes a change which would revise Hope Creek Technical Specification (TS) Limiting Condition for Operation (LCO) 3.3.7.4 and associated ACTIONS and SURVEILLANCE REQUIREMENTS concerning operability of the Remote Shutdown System. The proposed change would increase the allowed outage time for inoperable Remote Shutdown System components to a time that is more consistent with their safety significance. It will also delete Tables 3.3.7.4-1, REMOTE SHUTDOWN MONITORING INSTRUMENTATION, 3.3.7.4-2, REMOTE SHUTDOWN SYSTEMS CONTROLS, and 4.3.7.4-1, REMOTE SHUTDOWN MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS, to be relocated to the Technical Requirements Manual (TRM) where they will be directly controlled by HCGS.

2.0 DETAILED DESCRIPTION

2.1 System Design and Operation

The Remote Shutdown System (RSS) provides the means for achieving and maintaining safe shutdown conditions from outside the main control room in the unlikely event the main control room becomes uninhabitable.

The primary control station for the RSS is the remote shutdown panel (RSP). In the event of a failure at the RSP, sufficient redundant safety grade instrumentation and controls are available remote from both the main control room and the RSP to ensure that safe shutdown of the reactor can be achieved in accordance with the requirements of 10 CFR 50 Appendix A General Design Criteria (GDC) 19. The systems for which the RSP provides remote instrumentation and controls to accomplish this function are as follows:

- 2.1.1. Reactor Core Isolation Cooling (RCIC) – to maintain reactor water level.
- 2.1.2. Residual Heat Removal (RHR) system (loop B) - for suppression pool cooling and shutdown cooling.
- 2.1.3. Safety Auxiliaries Cooling System (SACS) (loop B) - to supply cooling water to the RHR (B) heat exchanger, RCIC and RHR pump room coolers, RHR (B) motor oil and seal coolers, the Standby Diesel Generator (SDG) cooling loads, and other necessary loads.
- 2.1.4. Station Service Water System (SSWS) (loop B) - to supply cooling water to the SACS loop B heat exchangers.
- 2.1.5. Control Area Chilled Water System (CACWS) (loop B) - for cooling various ESF equipment rooms and the main control room.
- 2.1.6. Nuclear boiler instrumentation - to monitor reactor vessel pressure and level.
- 2.1.7. Portions of the Fuel Pool Cooling System (FPCS).
- 2.1.8. Main steam line safety/relief valves (manual actuation) - to lower reactor vessel pressure.

2.2 Current Technical Specification Requirements

The current TS 3.3.7.4, “Remote Shutdown System Instrumentation and Controls”, Limiting Condition for Operability (LCO) states, “The remote shutdown system instrumentation and controls shown in Table 3.3.7.4-1 and Table 3.3.7.4-2 shall be OPERABLE.”

TS 3.3.4 ACTIONS a. and b. state,

- a. With the number of OPERABLE remote shutdown monitoring instrumentation channels less than required by Table 3.3.7.4-1, restore the inoperable channel(s) to OPERABLE status within 7 days or be in at least HOT SHUTDOWN within the next 12 hours.
- b. With the number of OPERABLE remote shutdown system controls less than required in Table 3.3.7.4-2, restore the inoperable control(s) to OPERABLE status within 7 days or be in at least HOT SHUTDOWN within the next 12 hours.

SURVEILLANCE REQUIREMENT 4.3.7.4.1 states, "Each of the above required remote shutdown monitoring instrumentation channels shall be demonstrated OPERABLE by performance of the CHANNEL CHECK and CHANNEL CALIBRATION operations at the frequencies specified in the Surveillance Frequency Control Program unless otherwise noted by Table 4.3.7.4-1."

SURVEILLANCE REQUIREMENT 4.3.7.4.2 states, "At least one of each of the above remote shutdown control switch(es) and control circuits shall be demonstrated OPERABLE by verifying its capability to perform its intended function(s) in accordance with the Surveillance Frequency Control Program."

2.3 Reason for the Proposed Change

The proposed changes, as shown in Section 2.4 and described in Section 3.0 below, revise TS 3.3.7.4 to be consistent with Improved Standard Technical Specifications (ISTS) 3.3.3.2. In doing so it removes unnecessary information and relocates it to a licensee controlled document preventing needless expenditure of licensee and NRC resources processing license amendments to revise tables when the licensee can adequately control the information.

The change also increases the Allowed Outage Time for inoperable Remote Shutdown System components from 7 to 30 days which is more consistent with their safety significance and is consistent with the ISTS 3.3.3.2 REQUIRED ACTION A.1 COMPLETION TIME.

2.4 Description of the Proposed Change

TS 3.3.7.4 is being revised as shown below:

LCO:

The remote shutdown system ~~instrumentation and controls shown in Table 3.3.7.4.1 and Table 3.3.7.4-2~~ functions shall be OPERABLE.

ACTION:

-----NOTE-----
Separate ACTION entry is allowed for each Function

- a. With one or more of the number of OPERABLE required remote shutdown monitoring functions ~~inoperable instrumentation channels less than required by Table 3.3.7.4-1,~~

restore the inoperable function(s) to OPERABLE status within 7 30 days or be in at least HOT SHUTDOWN within the next 12 hours.

- b. ~~With the number of OPERABLE remote shutdown system controls less than required in Table 3.3.7.4-2, restore the inoperable control(s) to OPERABLE status within 7 days or be in at least HOT SHUTDOWN within the next 12 hours.~~

SURVEILLANCE REQUIREMENTS:

4.3.7.4.1 Each of the above normally energized required remote shutdown monitoring instrumentation channels shall be demonstrated OPERABLE by performance of the a CHANNEL CHECK and CHANNEL CALIBRATION operations at the frequency specified in the Surveillance Frequency Control Program ~~unless otherwise noted by Table 4.3.7.4-1.~~

4.3.7.4.2 ~~At least one of each of the above~~ Each required control circuit and transfer switch remote shutdown control switch(es) and control circuits shall be demonstrated OPERABLE by verifying its capability to perform its intended function(s) in accordance with the Surveillance Frequency Control Program.

4.3.7.4.3 Each required instrumentation channel* shall be demonstrated OPERABLE by performance of a CHANNEL CALIBRATION at the frequency specified in the Surveillance Frequency Control Program.

* Safety Relief Valve Position, Standby Diesel Generator Breaker Indication, and Switchgear Room Cooler Status Indication are excluded from CHANNEL CALIBRATION.

Tables 3.3.7.4-1, 3.3.7.4-2 and 4.3.7.4-1 are being deleted and relocated to the Technical Requirements Manual (TRM) where they will be directly controlled by HCGS. Revisions to the TRM are reviewed pursuant to 10 CFR 50.59. The APPLICABILITY for LCO 3.3.7.4 is not being revised.

3.0 TECHNICAL EVALUATION

The technical basis for each of the proposed changes listed in Section 2.4 is provided in the following Table:

Proposed Change	Evaluation
<p>1. Revise TS 3.3.7.4 Limiting Condition for Operation (LCO) to simply state that the Remote Shutdown System functions shall be OPERABLE. References to instrumentation as shown in the associated Tables 3.3.7.4-1 and 3.3.7.4-2 are deleted.</p> <p>Current TS 3.3.7.4 Tables 3.3.7.4-1, 3.3.7.4-2 and 4.3.7.4-1 list the specific instruments and controls for the remote</p>	<p>The definition of OPERABLE in the TS provides adequate guidance for determining what instrumentation and controls are necessary for a particular Remote Shutdown System function. It is unnecessary to list specific instruments and controls in the TS to provide adequate assurance that the functions can be performed. GDC 19 requires that remote shutdown capability be provided. The</p>

<p>shutdown system. The proposed change will relocate this information to licensee controlled documents.</p>	<p>functions will be described in the TRM, which is sufficient to assure that the system will be OPERABLE. Listing specific instrumentation and controls is unnecessary and may lead to needless expenditure of licensee and NRC resources processing license amendments to revise the table when the licensee can adequately control the information. These details are not necessary to adequately describe the actual regulatory requirement. Therefore, they can be moved to a licensee controlled document without a significant impact on safety. Placing these details in controlled documents provides adequate assurance that they will be maintained. Revisions to the TRM are reviewed pursuant to 10 CFR 50.59 as described in UFSAR Section 13.5.4. Changes to the TRM will not affect the requirements of the LCO for the Remote Shutdown System.</p>
<p>2. Revise TS 3.3.7.4 ACTION a. to delete the reference to monitoring instrumentation channels as shown in the associated Table 3.3.7.4-1. The ACTION will be simplified to state the entry condition for the action as "one or more of the required functions inoperable".</p> <p>Add a note to permit separate condition entry for each function.</p>	<p>Table 3.3.7.4-1 is being deleted as discussed in 1 above. This proposed change to TS 3.3.7.4 ACTION a. is consistent with the ISTS CONDITION A. wording.</p> <p>The proposed note is also consistent with ISTS. Without the proposed note, the proposed new wording could be interpreted as not allowing separate entry for each function. Consequently, the proposed change is considered to be an administrative change.</p>
<p>3. Revise TS 3.3.7.4 ACTION a. to change the required action time from 7 days to 30 days.</p>	<p>Extending the allowed outage time to 30 days is reasonable based on operating experience and the low probability of an event occurring that would require the control room to be evacuated. This proposed change is consistent with the ISTS CONDITION A. COMPLETION TIME.</p>
<p>4. Delete TS 3.3.7.4 ACTION b.</p>	<p>Table 3.3.7.4-2 is being deleted and relocated to a licensee controlled document so reference to it is no longer applicable. In addition, the action is encompassed by ACTION a. through rewording to now say One or more required functions.</p>
<p>5. Delete Tables 3.3.7.4-1, 3.3.7.4-2 and 4.3.7.4-1 and relocate the Remote Shutdown System equipment information to the TRM.</p>	<p>Deletion of the tables is discussed in 1 above. In addition, the Tables were removed from NUREG-1433 by the adoption of TSTF-266.</p>

<p>6. Revise SURVEILLANCE REQUIREMENT (SR) 4.3.7.4.1 and add SR 4.3.7.4.3 to</p> <p>a) delete reference to Table 4.3.7.4-1 which is being deleted</p> <p>b) relocate CHANNEL CALIBRATION to a new SR 4.3.7.4.3</p> <p>c) require the channel check only for normally energized Remote Shutdown System instrumentation</p> <p>d) Add a note to SR 4.3.7.4.3 that the Safety Relief Valve Position, Standby Diesel Generator Breaker Indication, and Switchgear Room Cooler Status Indication are excluded from CHANNEL CALIBRATION and</p> <p>e) replace “the” with “a”,</p>	<p>a) Table 4.3.7.4-1 deletion is described in Item 1 above.</p> <p>b) Splitting out the CHANNEL CALIBRATION into a new SR and rewording the SR makes them consistent with ISTS.</p> <p>c) Performing a channel check of normally de-energized instrumentation is not practical or feasible during power operation. This change is consistent with ISTS SR 3.3.3.2.1.</p> <p>d) The note makes the Remote Shutdown System consistent with the requirements already established for Safety Relief Valve Position, Standby Diesel Generator Breaker Indication, and Switchgear Room Cooler Status Indication in current TS Table 4.3.7.4-1.</p> <p>e) Administrative wording change</p>
<p>7. Revise SR 4.3.7.4.2 replacing, “At least one of each of the above remote shutdown switch(es) and control circuits” with “each required control circuit and transfer switch.”</p>	<p>These changes make the SR wording consistent with ISTS SR 3.3.3.2 and reflect the removal of TS Table 3.3.7.4-2.</p>
<p>8. Revise TS Index pages viii and ix to reflect TS Section 3.3.7.4 title and deletion of the tables.</p>	<p>Administrative change.</p>

4.0 REGULATORY EVALUATION

4.1 Applicable Regulatory Requirements and Criteria

10 CFR 50.36, “Technical Specifications,” identifies the requirements for the Technical Specification categories for operating power plants: (1) Safety limits, limiting safety system settings, and limiting control settings, (2) *Limiting conditions for operation*, (3) Surveillance requirements, (4) Design features, (5) Administrative controls, (6) Decommissioning and (7) Initial notification, and (8) Written Reports. For Limiting conditions for operation, 10 CFR 50.36 states: Limiting conditions for operation are the lowest functional capability or performance levels of equipment required for safe operation of the facility. When a limiting condition for operation of a nuclear reactor is not met, the licensee shall shut down the reactor or follow any remedial action permitted by the technical specifications until the condition can be met. For Surveillance Requirements, 10 CFR 50.36 states: Surveillance requirements are requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the limiting conditions for operation will be met.

The Remote Shutdown System is required to provide equipment at appropriate locations outside the control room with a capability to promptly shut down and maintain the unit in a safe condition thus satisfying Criterion 4 of 10 CFR 50.36(c)(2)(ii). HCGS UFSAR Section 7.4.1.4 (Reference 6.1) describes the design of the Remote Shutdown System and its design bases. The proposed changes to TS 3/4.3.7.4 do not affect the UFSAR description of the HCGS Remote Shutdown System, its design bases, or performance.

10 CFR 50 Appendix A, GDC 19, "Control Room," states that equipment at appropriate locations outside the control room shall be provided (1) with a design capability for prompt hot shutdown of the reactor, including necessary instrumentation and controls to maintain the unit in a safe condition during hot shutdown, and (2) with a potential capability for subsequent cold shutdown of the reactor through the use of suitable procedures. Since no physical changes are being made, and current design bases are not being affected, there is no impact on compliance with GDC 19.

4.2 Precedent

4.2.1 License Amendments

The changes proposed herein to the Remote Shutdown System are similar to those previously approved by the NRC for the South Texas Project Electric Generating Station. This previous approval is discussed below.

South Texas Project Electric Generating Station

By letter dated November 4, 2003 (ADAMS accession ML033140308), as supplemented by letter dated June 29, 2004 (ML041890388), STP Nuclear Operating Company requested NRC approval of a South Texas Project Generating Station TS change to the Remote Shutdown System to be consistent with the requirements of NUREG-1431. The NRC approved the change in License Amendment Nos. 163/152 for STP Units 1 and 2, issued August 20, 2004 (ML042370841). The amendment issued for STP was substantively equivalent to the amendment requested herein for the HCGS, in that it revised the TS associated with the Remote Shutdown System to be consistent with the requirements of NUREG-1431 which is substantively equivalent to the NUREG-1433 TS for the Remote Shutdown System.

4.3 No Significant Hazards Consideration

PSEG Nuclear LLC (PSEG) requests approval of a change to the Hope Creek Generating Station (HCGS) Technical Specifications (TS) concerning operability of the Remote Shutdown System. The proposed change would increase the allowed outage time for inoperable Remote Shutdown System components to a time that is more consistent with their safety significance and with the requirements of NUREG-1433, "Standard Technical Specifications - General Electric BWR/4 Plants." It will also delete Tables 3.3.7.4-1, REMOTE SHUTDOWN MONITORING INSTRUMENTATION, 3.3.7.4-2, REMOTE SHUTDOWN SYSTEMS CONTROLS, and 4.3.7.4-1, REMOTE SHUTDOWN MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS, to be relocated to the Technical Requirements Manual (TRM). Although the Remote Shutdown System component list is relocated from the TS to the TRM, the information being relocated will be controlled and further revisions to the TRM Table will be subject to 10 CFR 50.59.

PSEG has evaluated whether or not a significant hazards consideration is involved with the proposed amendment by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment," as discussed below:

1. Does the proposed amendment involve a significant increase in the probability or consequences of an accident previously evaluated?

Response: No.

The proposed TS amendment does not involve potential accident initiators; therefore, there is no significant increase in the probability of an accident previously evaluated. There is no proposed change to the design basis or configuration of the plant and the extension of the allowed outage time of the Remote Shutdown System functions is consistent with the low probability of an event requiring control room evacuation during the allowed outage time and does not have a significant effect on safety.

Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the proposed amendment create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: No.

The proposed amendment does not involve physical alteration of the HCGS. No new equipment is being introduced, and installed equipment is not being operated in a new or different manner. There is no change being made to the parameters within which the HCGS is operated. There are no setpoints at which protective or mitigating actions are initiated that are affected by this proposed action. The change does not alter assumptions made in the safety analysis. This proposed action will not alter the manner in which equipment operation is initiated, nor will the functional demands on credited equipment be changed. No alteration is proposed to the procedures that ensure the HCGS remains within analyzed limits, and no change is being made to procedures relied upon to respond to an off-normal event. As such, no new failure modes are being introduced.

Therefore, the proposed changes do not create the possibility of a new or different kind of accident from any previously evaluated.

3. Does the proposed amendment involve a significant reduction in a margin of safety?

Response: No.

Margin of safety is related to the confidence in the ability of the fission product barriers to perform their design functions during and following an accident. These barriers include the fuel cladding, the reactor coolant system, and the containment system. The proposed change, which makes the HCGS TS for Remote Shutdown System consistent with the requirements of NUREG-1433, does not exceed or alter a setpoint, design basis or safety limit.

Therefore, the proposed amendment does not involve a significant reduction in a margin of safety.

Based upon the above, PSEG Nuclear concludes that the proposed amendment presents no significant hazards consideration under the standards set forth in 10 CFR 50.92 (c), and, accordingly, a finding of “no significant hazards consideration” is justified.

4.4 Conclusion

In conclusion, based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission’s regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

5.0 ENVIRONMENTAL CONSIDERATION

A review has determined that the proposed amendment would change a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or would change an inspection or surveillance requirement. However, the proposed amendment does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluent that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment.

6.0 REFERENCES

- 6.1 Hope Creek Generating Station Updated Final Safety Analysis Report

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Attachment 1

Technical Specification Pages with Proposed Changes

TECHNICAL SPECIFICATION PAGES WITH PROPOSED CHANGES

The following Technical Specifications for Renewed Facility Operating License NPF-57 are affected by this change request:

Technical Specification

Pages

Index

viii, ix

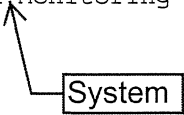
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-----NOTE-----
Separate ACTION entry is allowed for each Function

INSTRUMENTATION

REMOTE SHUTDOWN SYSTEM INSTRUMENTATION AND CONTROLS

LIMITING CONDITION FOR OPERATION

3.3.7.4 The remote shutdown system instrumentation and controls shown in Table 3.3.7.4-1 and Table 3.3.7.4-2 shall be OPERABLE. ↑ functions

APPLICABILITY OPERATIONAL CONDITIONS 1 and 2.

ACTION:

one or more of

function

required functions inoperable,

a. With the number of OPERABLE remote shutdown monitoring instrumentation channels less than required by Table 3.3.7.4-1, restore the inoperable channel(s) to OPERABLE status within 7 days or be in at least HOT SHUTDOWN within the next 12 hours. 30

b. With the number of OPERABLE remote shutdown system controls less than required in Table 3.3.7.4-2, restore the inoperable control(s) to OPERABLE status within 7 days or be in at least HOT SHUTDOWN within the next 12 hours.

normally energized

a

SURVEILLANCE REQUIREMENTS

4.3.7.4.1 Each of the above required remote shutdown monitoring instrumentation channels shall be demonstrated OPERABLE by performance of the CHANNEL CHECK and CHANNEL CALIBRATION operations at the frequencies specified in the Surveillance Frequency Control Program unless otherwise noted by Table 4.3.7.4-1. frequency

frequency

Each required control circuit and transfer switch

4.3.7.4.2 At least one of each of the above remote shutdown control switch(es) and control circuits shall be demonstrated OPERABLE by verifying its capability to perform its intended function(s) in accordance with the Surveillance Frequency Control Program.

4.3.7.4.3 Each required instrumentation channel* shall be demonstrated OPERABLE by performance of a CHANNEL CALIBRATION at the frequency specified in the Surveillance Frequency Control Program.

* Safety Relief Valve Position, Standby Diesel Generator Breaker Indication, and Switchgear Room Cooler Status Indication are excluded from CHANNEL CALIBRATION.

HOPE CREEK

3/4 3-75

TABLE 3.3.7.4-1

REMOTE SHUTDOWN MONITORING INSTRUMENTATION

Pages 3/4 3-75 through 3/4 3-84 are deleted

<u>INSTRUMENT</u>	<u>MINIMUM INSTRUMENTS OPERABLE*</u>
1. Reactor Vessel Pressure	2
2. Reactor Vessel Water Level	2
3. Safety/Relief Valve Position, (3) valves	1/valve
4. Suppression Chamber Water Level	2
5. Suppression Chamber Water Temperature	2
6. RHR System Flow	1
7. Safety Auxiliaries Cooling System Flow	1
8. Safety Auxiliaries Cooling System Temperature	1
9. RCIC System Flow	1
10. RCIC Turbine Speed	1
11. RCIC Turbine Bearing Oil Pressure Low Indication	1
12. RCIC High Pressure/Low Pressure Turbine Bearing Temperature High Indication	1
13. Condensate Storage Tank Level Low-Low Indication	1
14. Standby Diesel Generator 1AG400 Breaker Indication	1

~~*Either primary location (Remote Shutdown Panel, 10C399) or alternate location.~~

TABLE 3.3.7.4-1 (Continued)REMOTE SHUTDOWN MONITORING INSTRUMENTATION

<u>INSTRUMENT (Continued)</u>	<u>MINIMUM INSTRUMENTS OPERABLE*</u>
15. Standby Diesel Generator 1BG400 Breaker Indication	1
16. Standby Diesel Generator 1CG400 Breaker Indication	1
17. Standby Diesel Generator 1DG400 Breaker Indication	1
18. Switchgear Room Cooler 1AVH401 Status Indication	1
19. Switchgear Room Cooler 1BVH401 Status Indication	1
20. Switchgear Room Cooler 1CVH401 Status Indication	1
21. Switchgear Room Cooler 1DVH401 Status Indication	1

~~*Either primary location (Remote Shutdown Panel 10C399) or alternate location.~~

TABLE 3.3.7.4-2

REMOTE SHUTDOWN SYSTEMS CONTROLSCHANNEL TRANSFER SWITCHES - REMOTE SHUTDOWN PANEL (RSP)⁽¹⁾

ISV-HSS-4410A	Control	Class 1E Channel A Transfer Switch
ISV-HSS-4410B	Control	Class 1E Channel B Transfer Switch
ISV-HSS-4410C	Control	Class 1E Channel C Transfer Switch
ISV-HSS-4410D	Control	Class 1E Channel D Transfer Switch
ISV-HSS-4410N	Control	Non-Class 1E Transfer Switch

RCIC SYSTEM - RSP

IFC-HV-4282	Control	RCIC Turbine Trip/Throttle Valve
IFC-HV-F045	Control	RCIC Turbine Shutoff Valve
IFC-HV-F008	Control	RCIC Steam Supply Outboard Isolation Valve
IFC-HV-F007	Control	RCIC Steam Supply Inboard Isolation Valve
IBD-HV-F031	Control	Suppression Pool to RCIC Pump Suction Valve
IBD-HV-F010	Control	Condensate Storage Tank to RCIC Pump Suction Valve
IBD-SV-F019	Control	RCIC Pump Discharge Minimum Flow Valve
IBD-HV-F046	Control	RCIC Turbine Cooling Water Supply Valve
IBD-HV-F013	Control	RCIC Pump Discharge to Feedwater Line Isolation Valve
IFC-HV-F076	Control	RCIC Steam Line Inboard Isolation Valve
IBD-HV-F012⁽²⁾	Indication	RCIC Pump Discharge Valve
IBD-HV-F022⁽³⁾	Indication	Test Return Valve to Condensate Storage Tank
IFC-HV-F059⁽²⁾	Indication	RCIC Turbine Exhaust to Suppression Pool Valve
IFC-HV-F060⁽²⁾	Indication	RCIC Condenser Vacuum Pump Discharge Valve
IFC-HV-F062⁽²⁾	Indication	RCIC Turbine Exhaust Outboard Vacuum Breaker Isolation Valve
IFC-HV-F084⁽²⁾	Indication	RCIC Turbine Exhaust Inboard Vacuum Breaker Isolation Valve
IFC-HV-F025⁽³⁾	Indication	RCIC Condensate Pot Drain to Main Condenser Valve
IFC-HV-F004⁽³⁾	Indication	RCIC Vacuum Tank Condensate Pump Discharge to Clean Rad Waste Valve
IBD-BP228⁽⁴⁾	Indication	ECCS (RCIC) Jockey Pump BP228
IFC-OP220	Control	RCIC Vacuum Tank Condensate Pump OP220
IFC-OP219	Control	RCIC Gland Seal Condenser Vacuum Pump OP219
IFC-FIC-4158	Control	RCIC System Injection Flow

RHR SYSTEM - RSP

IBC-HV-F006B	Control	RHR Pump BP202 Suction From Recirc Line Valve
IBC-HV-F004B	Control	RHR Pump BP202 Suction From Suppression Pool Valve

TABLE 3.3.7.4-2 (Continued)

REMOTE SHUTDOWN SYSTEMS CONTROLSRHR SYSTEM - RSP (Cont.)

1BC-HV-F007B	Control-	RHR Pump BP202 Minimum Flow Valve to Suppression Pool
1BC-HV-F048B	Control-	RHR Loop B Heat Exchanger Bypass Valve
1BC-HV-F015B	Control-	RHR Loop B Shutdown Cooling Return Valve
1BC-HV-F009	Control-	RHR Shutdown Cooling Suction From Recirc Line Inboard Isolation Valve
1BC-HV-F008	Control-	RHR Shutdown Cooling Suction From Recirc Line Outboard Isolation Valve
1BC-HV-F122B	Control-	RHR Loop B Shutdown Cooling Injection Check Valve Bypass Valve
1BC-HV-4439	Control-	RHR Discharge to Liquid Radwaste Reactor Building Isolation Valve
1BC-HV-F024B	Control-	RHR Pump BP202 Test Return Valve to Suppression Pool
1BC-HV-F047B	Control-	RHR Loop B Heat Exchanger Shell Side Inlet Valve
1BC-HV-F003B	Control-	RHR Loop B Heat Exchanger Shell Side Outlet Valve
1BC-HV-F049	Control-	RHR Discharge to Liquid Radwaste Inboard Isolation Valve
1BC-HV-F049	Control-	RHR Discharge to Liquid Radwaste Outboard Isolation Valve
1BC-HV-F006A ⁽³⁾	Indication-	RHR Pump AP202 Suction From Recirc Line Valve
1BC-HV-F010B ⁽³⁾	Indication-	RHR Pump DP202 Test Return Valve to Suppression Pool
1BC-HV-F016B ⁽³⁾	Indication-	RHR Loop B Containment Spray Outboard Isolation Valve
1BC-HV-F027B ⁽³⁾	Indication-	RHR Loop B Suppression Pool Spray Line Isolation Valve
1BC-HV-F017B ⁽³⁾	Indication-	RHR Low Pressure Coolant Injection Loop B Injection Valve
1BC-HV-F004D ⁽²⁾	Indication-	RHR Pump DP202 Suction From Suppression Pool Valve
1BC-HV-F021A ⁽³⁾	Indication-	RHR Loop A Containment Spray Inboard Isolation Valve
1BC-HV-F021B ⁽³⁾	Indication-	RHR Loop B Containment Spray Inboard Isolation Valve
1BC-BP202	Control-	RHR Pump BP202
1BC-HSS-4416B	Control-	Transfer Switch For RHR Pump BP202
1BC-DP228 ⁽⁴⁾	Indication-	ECCS (RHR B) Jockey Pump DP228

TABLE 3.3.7.4 2 (Continued)

REMOTE SHUTDOWN SYSTEMS CONTROLS

RHR SYSTEM - REDUNDANT CONTROLS

IBC-HV-F006A	Local Control	RHR Pump AP202 Suction From Recirc Line Valve
IBC-HV-F004A	Local Control	RHR Pump AP202 Suction From Suppression Pool Valve
IBC-HV-F048A	Local Control	RHR Loop A Heat Exchanger Bypass Valve
IBC-HV-F015A	Local Control	RHR Loop A Shutdown Cooling Return Valve
IBC-HV-F024A	Local Control	RHR Pump AP202 Test Return Valve to Suppression Pool
IBC-HV-F047A	Local Control	RHR Loop A Heat Exchanger Shell Side Inlet Valve
IBC-HV-F003A	Local Control	RHR Loop A Heat Exchanger Shell Side Outlet Valve
IBC-AP202	Local Control	RHR Pump AP202

SACS - RSP

IEG-HV-2522B IEG-HV-2496B (5)	Control	SACS Loop B to Turbine Auxiliaries Cooling System (TACS) Inboard Supply and Return Valves
IEG-HV-2522D IEG-HV-2496D (6)	Control	SACS Loop B to TACS Outboard Supply and Return Valves
IEG-HV-2512B	Control	RHR Loop B Heat Exchanger Tube Side Outlet Valve
IEG-HV-2491B	Control	SACS Loop B Heat Exchanger B1E201, Inlet Valve
IEG-HV-2494B	Control	SACS Loop B Heat Exchanger B2E201, Inlet Valve
IEG-HV-2520B (7)(2)	Indication	RHR Pump BP202 Seal and Motor Bearing Coolers Cooling Water Supply Valve
IEG-BP210	Control	SACS Loop B Pump BP210
IEG-HSS-2485B	Control	Transfer Switch For SACS Loop B Pump BP210
IEG-OP210	Control	SACS Loop B Pump OP210
IEG-HSS-2485D	Control	Transfer Switch For SACS Loop B Pump OP210

SACS - REDUNDANT CONTROLS

IEG-HV-2496A	Local Control	SACS Loop A Return From TACS Inboard Valve
IEG-HV-2496C	Local Control	SACS Loop A Return From TACS Outboard Valve
IEG-HV-2512A	Local Control	RHR Loop A Heat Exchanger Tube Side Outlet Valve

TABLE 3.3.7.4-2 (Continued)

REMOTE SHUTDOWN SYSTEMS CONTROLS

SACS - REDUNDANT CONTROLS (Cont.)

~~1EG-AP210~~ ~~Local Control - SACS Loop A Pump AP210~~
~~1EG-CP210~~ ~~Local Control - SACS Loop A Pump CP210~~

STATION SERVICE WATER SYSTEM (SSWS) - RSP

~~1EA-HV-2204~~ ~~Control - Reactor Auxiliaries Cooling System (RACS) Heat Exchanger Supply Valve (From SACS Loop B)~~
~~1EA-HV-2355B~~ ~~Control - SACS Loop B Heat Exchanger B2E201 Outlet Valve~~
~~1EA-HV-2371B~~ ~~Control - SACS Loop B Heat Exchanger B1E201 Outlet Valve~~
~~1EA-HV-2357B~~ ~~Control - SACS Loop B to Cooling Tower Valve~~
~~1EA-HV-2198B~~ ~~Control - SSWS Pump BP502 Discharge Valve~~
~~1EA-HV-2198D~~ ~~Control - SSWS Pump DP502 Discharge Valve~~
~~1EA-HV-2197B~~ ~~Control - SSWS Strainer BF509 Main Backwash Valve~~
~~1EA-HV-2197D~~ ~~Control - SSWS Strainer DF509 Main Backwash Valve~~
~~1EA-BP502~~ ~~Control - SSWS Pump BP502~~
~~1EA-HSS-2219B~~ ~~Control - Transfer Switch For SSWS Pump BP502~~
~~1EA-DP502~~ ~~Control - SSWS Pump DP502~~
~~1EA-HSS-2219D~~ ~~Control - Transfer Switch For SSWS Pump DP502~~

SSWS - REDUNDANT CONTROLS

~~1EA-HV-2203~~ ~~Local Control - RACS Heat Exchanger Supply Valve (From SACS Loop A)~~
~~1EA-AP502~~ ~~Local Control - SSWS Pump AP502~~
~~1EA-CP502~~ ~~Local Control - SSWS Pump CP502~~

CONTROL AREA CHILLED WATER SYSTEM (CACWS) - RSP

~~1GJ-BK400~~ ~~Control - Control Area Chiller BK400~~
~~1GJ-HSS-9652B~~ ~~Control - Transfer Switch For Control Area Chiller BK400~~
~~1GJ-BK403~~ ~~Control - Safety-Related Panel Room Chiller BK403~~
~~1GJ-HSS-9666B4~~ ~~Control - Transfer Switch For Safety-Related Panel Room Chiller BK403~~
~~1GJ-BP400~~ ~~Control - Control Area Chilled Water Circulating Pump BP400~~
~~1GJ-BP414~~ ~~Control - Safety-Related Panel Room Chilled Water Circulating Pump BP414~~

TABLE 3.3.7.4-2 (Continued)

REMOTE SHUTDOWN SYSTEMS CONTROLS

GACWS - REDUNDANT CONTROLS

1GJ-AK400	Local Control	Control Area Chiller AK400
1GJ-AK403	Local Control	Safety-Related Panel Room Chiller AK403
1GJ-AP400	Local Control	Control Area Chilled Water Circulating Pump AP400
1GJ-AP414	Local Control	Safety-Related Panel Room Chilled Water Circulating Pump AP414

REACTOR RECIRCULATION SYSTEM - RSP

1BB-HV-F031B (3)	Indication	Reactor Recirculation Pump BP201 Discharge Valve
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SAFETY/RELIEF VALVES - RSP

1AB-PSV-F013F	Control	Main Steam Line B Safety/Relief Valve
1AB-PSV-F013H	Control	Main Steam Line D Safety/Relief Valve
1AB-PSV-F013M	Control	Main Steam Line D Safety/Relief Valve

SAFETY/RELIEF VALVES - REDUNDANT CONTROLS

1AB-PSV-F013A	Local Control	Main Steam Line A Safety/Relief Valve
1AB-PSV-F013E	Local Control	Main Steam Line C Safety/Relief Valve

(1) The Remote Shutdown Panel (RSP) is Panel 10C399.

(2) Valve is signalled to open on RSP Takeover.

(3) Valve is signalled to close on RSP Takeover.

(4) Pump is signalled to run on RSP Takeover.

(5) Operation of valve 1EG-HV-2496B is ganged to operation of valve 1EG-HV-2522B.

(6) Operation of valve 1EG-HV-2496D is ganged to operation of valve 1EG-HV-2522D.

(7) Operation of valve 1EG-HV-2520B is ganged to operation of RHR Pump BP202.

TABLE 4-3.7.4-1

REMOTE SHUTDOWN MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>INSTRUMENT</u>	<u>CHANNEL CHECK ^(a)</u>	<u>CHANNEL CALIBRATION ^(a)</u>
1: Reactor Vessel Pressure		
2: Reactor Vessel Water Level		
3: Safety/Relief Valve Position (Energization)		NA
4: Suppression Chamber Water Level		
5: Suppression Chamber Water Temperature		
6: RHR System Flow		
7: Safety Auxiliaries Cooling System Flow		
8: Safety Auxiliaries Cooling System Temperature		
9: RGIC System Flow		
10: RGIC Turbine Speed		
11: RGIC Turbine Bearing Oil Pressure Low Indication		
12: RGIC High Pressure/Low Pressure Turbine Bearing Temperature High Indication		

TABLE 4-3.7.4-1 (Continued)

REMOTE SHUTDOWN MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>INSTRUMENT</u>	<u>CHANNEL CHECK (a)</u>	<u>CHANNEL CALIBRATION (a)</u>
13: Condensate Storage Tank Level Low-Low Indication		
14: Standby Diesel Generator 1AG400 Breaker Indication		NA
15: Standby Diesel Generator 1BG400 Breaker Indication		NA
16: Standby Diesel Generator 1CG400 Breaker Indication		NA
17: Standby Diesel Generator 1DG400 Breaker Indication		NA
18: Switchgear Room Cooler 1AVH401 Status Indication		NA
19: Switchgear Room Cooler 1BVH401 Status Indication		NA
20: Switchgear Room Cooler 1CVH401 Status Indication		NA
21: Switchgear Room Cooler 1DVH401 Status Indication		NA

(a) Frequencies are specified in the Surveillance Frequency Control Program unless otherwise noted in the table.

Attachment 2

Technical Specification Bases Page with Proposed Changes

(For information only)

TECHNICAL SPECIFICATION BASES PAGE WITH PROPOSED CHANGES

The following Technical Specifications Bases for Renewed Facility Operating License NPF-57 are affected by this change request:

Technical Specification

Page

3/4 3.7.4

B 3/4 3-5

INSTRUMENTATION

BASES

3/4.3.7 MONITORING INSTRUMENTATION

3/4.3.7.1 RADIATION MONITORING INSTRUMENTATION

The OPERABILITY of the radiation monitoring instrumentation ensures that; (1) the radiation levels are continually measured in the areas served by the individual channels, and (2) the alarm or automatic action is initiated when the radiation level trip setpoint is exceeded; and (3) sufficient information is available on selected plant parameters to monitor and assess these variables following an accident. This capability is consistent with 10 CFR Part 50, Appendix A, General Design Criteria 19, 41, 60, 61, 63 and 64.

3/4.3.7.2 DELETED

3/4.3.7.3 DELETED

3/4.3.7.4 REMOTE SHUTDOWN MONITORING INSTRUMENTATION AND CONTROLS

The OPERABILITY of the remote shutdown monitoring instrumentation and controls ensures that sufficient capability is available to permit shutdown and maintenance of HOT SHUTDOWN of the unit from locations outside of the control room. This capability is required in the event control room habitability is lost and is consistent with General Design Criteria 19 of 10 CFR 50.

3/4.3.7.5 ACCIDENT MONITORING INSTRUMENTATION

The OPERABILITY of the accident monitoring instrumentation ensures that sufficient information is available on selected plant parameters to monitor and assess important variables following an accident. This capability is consistent with the recommendations of Regulatory Guide 1.97, "Instrumentation for Light Water Cooled Nuclear Power Plants to Assess Plant Conditions During and Following an Accident," December 1980 and NUREG-0737, "Clarification of TMI Action Plan Requirements," November 1980.

3/4.3.7.6 SOURCE RANGE MONITORS

The source range monitors provide the operator with information of the status of the neutron level in the core at very low power levels during startup and shutdown. At these power levels, reactivity additions shall not be made without this flux level information available to the operator. For a discussion of SPIRAL RELOAD and SPIRAL UNLOAD and the associated flux monitoring requirements, see Technical Specification Bases Section 3/4.9.2. When the intermediate range monitors are on scale, adequate information is available without the SRMs and they can be retracted.

3/4.3.7.7 DELETED

