

10 CFR 50.90

RS-03-042

February 27, 2003

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001Quad Cities Nuclear Power Station, Units 1 and 2
Facility Operating License Nos. DPR-29 and DPR-30
NRC Docket Nos. 50-254 and 50-265**Subject:** Request for Technical Specifications Changes Related to Reactor Protection System Instrumentation (Scram Discharge Volume Water Level – High)**References:** (1) Letter from P. R. Simpson (Exelon Generation Company, LLC) to U. S. Nuclear Regulatory Commission, "Request for Technical Specifications Changes Related to Reactor Protection System Instrumentation (Scram Discharge Volume Water Level – High)," August 16, 2002

(2) Letter from M. Chawla (U. S. Nuclear Regulatory Commission) to O. D. Kingsley (Exelon Generation Company, LLC), "Issuance of Amendments – Technical Specifications Change – Reactor Protection System Instrumentation Scram Discharge Volume Water Level High for Quad Cities Nuclear Power Station, Units 1 and 2," February 11, 2002

In accordance with 10 CFR 50.90, "Application for amendment of license or construction permit," Exelon Generation Company, LLC (EGC) requests a change to Facility Operating License Nos. DPR-29 and DPR-30, Technical Specifications (TS), for Quad Cities Nuclear Power Station (QCNPS), Units 1 and 2. The proposed change adds an additional Surveillance Requirement (SR) for the Reactor Protection System Scram Discharge Volume (SDV) Water Level – High differential pressure switches. Specifically, SR 3.3.1.1.11 is added to Function 7.b of TS Table 3.3.1.1-1, "Reactor Protection System Instrumentation." SR 3.3.1.1.11 is a trip unit calibration performed on a 92-day frequency.

During a review of Reference 1, EGC identified a deficiency in the TS relating to the SDV Water Level – High differential pressure switches. QCNPS TS Table 3.3.1.1-1 does not list a required surveillance for calibration of Function 7b at a 92-day frequency. A condition report was generated to place this issue within EGC's corrective action program. In accordance with NRC Administrative Letter 98-10, "Dispositioning of Technical Specifications That Are Insufficient to Assure Plant Safety," administrative controls were

ADD 1

put into place in response until the proposed amendment is approved. The proposed amendment would add the required surveillance to the TS.

Reference 1 contains a similar TS change request submitted for Dresden Nuclear Power Station, Units 2 and 3.

In addition, the proposed change revises Function 7.a of TS Table 3.3.1.1-1 to delete the reference to thermal switches, applicable to Unit 1 through cycle 17. In Reference 2, the NRC approved a TS change to support an upgrade of the SDV level instrumentations from Fluid Components International thermal switches to Magnetrol float switches. Since the instrumentation for both units is upgraded, the reference to thermal switches is not needed.

The attachments to this letter provide information supporting the proposed changes and are arranged as follows.

- Attachment 1 is the notarized affidavit.
- Attachment 2 provides an evaluation supporting the proposed changes.
- Attachment 3 contains the applicable TS page markup with the proposed changed indicated.
- Attachment 4 contains the revised TS page including the proposed changes.

The proposed changes have been reviewed by the QCNPS Plant Operations Review Committee and approved by the Nuclear Safety Review Board in accordance with the requirements of the EGC Quality Assurance Program.

EGC has reviewed the proposed changes and verified that there is no impact on previous submittals awaiting NRC approval.

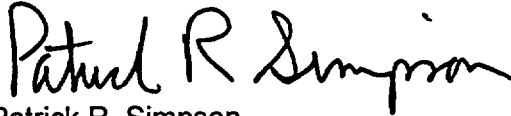
Because this amendment request is associated with a non-conservative TS, EGC requests approval of the proposed amendment as soon as practicable, but no later than March 7, 2004. Once approved, the amendments shall be implemented within 60 days.

In accordance with 10 CFR 50.91(b), EGC is notifying the State of Illinois of this application for changes to the TS by transmitting a copy of this letter and its attachments to the designated State Official.

February 27, 2003
U. S. Nuclear Regulatory Commission
Page 3

If you have any questions or require additional information, please contact Mr. Thomas G. Roddey at (630) 657-2811.

Respectfully,



Patrick R. Simpson
Manager - Licensing
Mid-West Regional Operating Group

Attachments: Attachment 1: Affidavit
Attachment 2: Evaluation of Proposed Changes
Attachment 3: Marked-Up Technical Specifications Page for Proposed
Changes
Attachment 4: Revised Technical Specifications Page for Proposed
Changes

cc: Regional Administrator - NRC Region III
NRC Senior Resident Inspector - Quad Cities Nuclear Power Station
Office of Nuclear Facility Safety - Illinois Department of Nuclear Safety

ATTACHMENT 1
Affidavit

STATE OF ILLINOIS)
COUNTY OF DUPAGE)
IN THE MATTER OF)
EXELON GENERATION COMPANY, LLC) Docket Numbers
QUAD CITIES NUCLEAR POWER STATION, UNITS 1 AND 2) 50-254 and 50-265

SUBJECT: Request for Technical Specifications Changes Related to Reactor Protection System Instrumentation (Scram Discharge Volume Water Level – High)

AFFIDAVIT

I affirm that the content of this transmittal is true and correct to the best of my knowledge, information and belief.

Patrick R. Simpson
Patrick R. Simpson
Manager – Licensing
Mid-West Regional Operating Group

Subscribed and sworn to before me, a Notary Public in and

for the State above named, this 27th day of

February, 2003.

Anese L. Grigsby
Notary Public



ATTACHMENT 2
Evaluation of Proposed Changes

Subject: Request for Technical Specifications Changes Related to Reactor Protection System Instrumentation (Scram Discharge Volume Water Level – High)

- 1.0 INTRODUCTION
- 2.0 DESCRIPTION OF PROPOSED AMENDMENT
- 3.0 BACKGROUND
- 4.0 REGULATORY REQUIREMENTS & GUIDANCE
- 5.0 TECHNICAL ANALYSIS
- 6.0 REGULATORY ANALYSIS
- 7.0 NO SIGNIFICANT HAZARDS CONSIDERATION
- 8.0 ENVIRONMENTAL CONSIDERATION
- 9.0 REFERENCES

ATTACHMENT 2

Evaluation of Proposed Changes

1.0 INTRODUCTION

In accordance with 10 CFR 50.90, "Application for amendment of license or construction permit," Exelon Generation Company, LLC (EGC) requests a change to Facility Operating License Nos. DPR-29 and DPR-30, Technical Specifications (TS), for Quad Cities Nuclear Power Station (QCNPS), Units 1 and 2. The proposed change adds an additional Surveillance Requirement (SR) for the Reactor Protection System Scram Discharge Volume (SDV) Water Level – High differential pressure switches. Specifically, SR 3.3.1.1.11 is added to Function 7.b of TS Table 3.3.1.1-1, "Reactor Protection System Instrumentation." SR 3.3.1.1.11 is a trip unit calibration performed on a 92-day frequency. In addition, the proposed change revises Function 7.a of TS Table 3.3.1.1-1 to delete the reference to thermal switches, applicable to Unit 1 through cycle 17. Since the instrumentation for both units is upgraded, the reference to thermal switches is not needed.

During a review of Reference 1, EGC identified a deficiency in the TS relating to the SDV level – high differential pressure switches. TS Table 3.3.1.1-1 does not list a required surveillance for calibration of Function 7b at a 92-day frequency. A condition report was generated to place this issue within EGC's corrective action program. In accordance with NRC Administrative Letter 98-10, "Dispositioning of Technical Specifications That Are Insufficient to Assure Plant Safety," administrative controls were put into place in response until the proposed amendment is approved. The proposed amendment would add the required surveillance to the TS.

Because this amendment request is associated with a non-conservative TS, EGC requests approval of the proposed amendment as soon as practicable, but no later than March 7, 2004. Once approved, the amendments shall be implemented within 60 days.

2.0 DESCRIPTION OF PROPOSED AMENDMENT

The proposed changes are as follows.

- Revise Function 7.a of TS Table 3.3.1.1-1 to delete the reference to thermal switches.
- In Function 7.b of TS Table 3.3.1.1-1, add "SR 3.3.1.1.11" to each SR listing (i.e., listing for Modes 1, 2 and 5).

3.0 BACKGROUND

The protection and monitoring functions of RPS are designed to ensure safe operation of the reactor. RPS, using "one-out-of-two-taken-twice" logic, initiates a reactor scram when one or more monitored parameters exceed their specified limits.

The SDV receives water displaced by motion of the control rod drive pistons during a reactor scram. Should there be insufficient volume to accept the displaced water, control rod insertion would be hindered. Therefore, a reactor scram is initiated while the remaining free volume is sufficient to accommodate a full core scram. No credit is taken for a scram initiated from the SDV Water Level – High Function for any of the design basis accidents or transients analyzed in the Updated Final Safety Analysis Report (UFSAR). However, the SDV Water Level – High Function is retained to ensure the RPS remains operable.

ATTACHMENT 2
Evaluation of Proposed Changes

SDV water level is measured by two diverse methods. Two differential pressure transmitters and their associated switches, in conjunction with two float switches (for a total of eight level signals), measure the level in each of the two SDVs. The outputs of these devices are arranged so that there is a signal from a differential pressure switch and a float switch to each RPS logic channel.

The TS require safety-related instrumentation, including RPS, to be tested at a specified interval to ensure a high degree of safety system reliability. The SRs specified in TS Table 3.3.1.1-1, Function 7, provide assurance that the SDV Water Level – High function of RPS instrumentation will perform as required. Function 7 is required to be operable in Modes 1 and 2, and in Mode 5 with any control rod withdrawn from a core cell containing one or more fuel assemblies, since these are the modes or other specified conditions when control rods are withdrawn. At all other times, Function 7 may be bypassed.

TS Section 3.3.1.1 provides the requirements for RPS instrumentation. The various functions of the RPS instrumentation are specified on TS Table 3.3.1.1-1, along with their applicable operational modes, SRs and Allowable Values. RPS Instrumentation Function 7.b of Table 3.3.1.1-1 specifies the following applicable SRs for the SDV water level differential pressure switches.

<u>Surveillance Requirement</u>	<u>Frequency</u>
SR 3.3.1.1.5, Functional Test of RPS Scram Contactor	7 days
SR 3.3.1.1.10, Channel Functional Test	92 days
SR 3.3.1.1.16, Channel Calibration	24 months
SR 3.3.1.1.17, Logic System Functional Test	24 months

Note that a Channel Check Surveillance Requirement (i.e., SR 3.3.1.1.1) is not specified because the differential pressure switches are non-indicating and do not allow for a Channel Check.

The SRs listed for the SDV water level differential pressure switch specified in TS Table 3.3.1.1-1, Function 7.b, require performance of a level Channel Calibration at least once every 24 months (i.e., SR 3.3.1.1.16). However, in order to perform this level Channel Calibration as infrequently as once every 24 months, the QCNPS setpoint analysis assumes the trip unit associated with the SDV water level differential pressure switch is calibrated at least once every 92 days. Although QCNPS performs the 92-day trip unit calibration (i.e., SR 3.3.1.1.11) for the SDV water level differential pressure switch, it is not specified in TS Table 3.3.1.1-1 for Function 7.b. Therefore, SR 3.3.1.1.11 should be added to the SRs specified for the SDV water level differential pressure switch in Table 3.3.1.1-1.

The proposed TS change is reflected on a marked-up copy of the affected TS page in Attachment 3. The revised TS page affected by the proposed change is also provided as information in Attachment 4.

ATTACHMENT 2 Evaluation of Proposed Changes

4.0 REGULATORY REQUIREMENTS & GUIDANCE

10 CFR 50.36, "Technical specifications," provides the regulatory requirements for the content required in a licensee's TS. 10 CFR 50.36(c)(3), "Surveillance requirements," requires TS to include SRs that specify 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.

5.0 TECHNICAL ANALYSIS

The addition of a trip unit calibration (i.e., SR 3.3.1.1.11) to the listed SRs for TS Table 3.3.1.1-1, Function 7.b, provides for appropriate SRs for the RPS SDV water level instrumentation. This instrumentation consists of a differential pressure type level transmitter with a non-indicating electronic trip unit. The use of level transmitters and trip units allow utilization of a 24-month surveillance frequency for the level Channel Calibration (SR 3.3.1.1.16), provided that the associated trip units are calibrated every 92 days. Since SR 3.3.1.1.16 performance is specified for the RPS SDV water level instrumentation in TS Table 3.3.1.1-1, Function 7.b, performance of SR 3.3.1.1.11 should also be specified for this Function. Although SR 3.3.1.1.11 performance is not currently specified in Table 3.3.1.1-1, Function 7.b, QCNPS does calibrate the trip units for the subject RPS SDV water level instrumentation every 92 days. Since the addition of SR 3.3.1.1.11 to the listed SRs for TS Table 3.3.1.1-1, Function 7.b, provides a more comprehensive TS, plant safety is enhanced and the proposed change is deemed acceptable.

In addition, as noted in Section 3, "Background," of this Attachment, no credit is taken for a scram initiated from the SDV Water Level – High Function for any of the design basis accidents or transients analyzed in the UFSAR. The SDV Water Level – High Function is retained however, to ensure the RPS remains operable.

6.0 REGULATORY ANALYSIS

Function 7b provides input to the RPS to ensure that a scram signal is generated when one or more monitored parameters exceed their specified limits. The purpose of this action is to preserve the integrity of the fuel cladding and the reactor coolant pressure boundary, and to minimize the energy that must be absorbed following a loss of coolant accident, assuring the fuel peak cladding temperature remains below the limits of 10 CFR 50.46, "Acceptance criteria for emergency core cooling system for light-water nuclear power reactors." Therefore, the Scram Discharge Volume Water Level – High Functions must be included in the QCNPS, Units 1 and 2, TS in accordance with 10 CFR 50.36, "Technical specifications," paragraph (c)(2)(ii).

The SRs listed for the SDV water level differential pressure switch specified in TS Table 3.3.1.1-1, Function 7.b, require performance of a level Channel Calibration at least once every 24 months (i.e., SR 3.3.1.1.16). However, in order to perform this level Channel Calibration as infrequently as once every 24 months, the QCNPS setpoint analysis assumes the trip unit associated with the SDV water level differential pressure switch is calibrated at least once every 92 days. Although QCNPS performs the 92-day trip unit calibration (i.e., SR 3.3.1.1.11) for the SDV water level differential pressure switch, it is not specified in TS Table 3.3.1.1-1 for Function 7.b. Therefore, SR 3.3.1.1.11 should be added to the SRs specified for the SDV water level

ATTACHMENT 2
Evaluation of Proposed Changes

differential pressure switch in Table 3.3.1.1-1. This will ensure that the requirements of 10 CFR 50.36(c)(3) are met for Function 7.b.

7.0 NO SIGNIFICANT HAZARDS CONSIDERATION

According to 10 CFR 50.92, "Issuance of amendment," paragraph (c), a proposed amendment to an operating license involves no significant hazards consideration if operation of the facility in accordance with the proposed amendment would not:

- (1) Involve a significant increase in the probability or consequences of an accident previously evaluated; or
- (2) Create the possibility of a new or different kind of accident from any accident previously evaluated; or
- (3) Involve a significant reduction in a margin of safety.

In support of this determination, an evaluation of each of the three criteria set forth in 10 CFR 50.92 is provided below regarding the proposed license amendment.

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

Response: No

The proposed Technical Specifications (TS) change adds a trip unit calibration surveillance requirement (SR) for the analog trip units associated with the Scram Discharge Volume (SDV) Water Level – High Trip Function for the Reactor Protection System (RPS) Instrumentation. Specifically, SR 3.3.1.1.11 is added to Function 7.b of TS Table 3.3.1.1-1, "Reactor Protection System Instrumentation." In addition, the proposed change revises Function 7.a of TS Table 3.3.1.1-1 to delete a reference to thermal switches, applicable to Unit 1 through cycle 17. The change to Function 7.a is editorial, since Unit 1 SDV level instrumentation has been upgraded to replace Fluid Components International thermal switches with Magnetrol float switches.

TS requirements that govern operability or routine testing of plant instruments are not assumed to be initiators of any analyzed event because these instruments are intended to prevent, detect, or mitigate accidents. Therefore, these proposed changes will not involve an increase in the probability of an accident previously evaluated. Additionally, these proposed changes do not increase the consequences of an accident previously evaluated because the proposed changes do not adversely impact structures, systems, or components. The proposed changes establish requirements that ensure components are operable when necessary for the prevention or mitigation of accidents or transients. Furthermore, there will be no change in the types or significant increase in the amounts of any effluents released offsite.

In summary, the proposed changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

ATTACHMENT 2
Evaluation of Proposed Changes

- 2. Do the proposed changes create the possibility of a new or different kind of accident from any accident previously evaluated?**

Response: No

There is no change being made to the parameters within which Quad Cities Nuclear Power Station (QCNPS) is operated. The proposed changes do not adversely impact the manner in which the SDV Water Level – High RPS instrumentation will operate under normal and abnormal operating conditions. The proposed changes will not alter the function demands on credited equipment. No alteration in the procedures, which ensure QCNPS remains within analyzed limits, is proposed, and no change is being made to procedures relied upon to respond to an off-normal event. Therefore, these proposed changes provide an equivalent level of safety and will not create the possibility of a new or different kind of accident from any accident previously evaluated. The changes in methods governing normal plant operation are consistent with the current safety analysis assumptions. Therefore, these proposed changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

- 3. Do the proposed changes involve a significant reduction in a margin of safety.**

Response: No

Margins of safety are established in the design of components, the configuration of components to meet certain performance parameters, and in the establishment of setpoints to initiate alarms and actions. The proposed changes do not affect the probability of failure or availability of the affected instrumentation, and the proposed changes do not revise any allowable values for RPS functions. Therefore, it is concluded that the proposed changes do not result in a reduction in the margin of safety.

Conclusion

Based on the above, Exelon Generation Company, LLC (EGC) concludes that the proposed amendments present 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.

8.0 ENVIRONMENTAL CONSIDERATION

EGC has evaluated the proposed changes against the criteria for identification of licensing and regulatory actions requiring environmental assessment in accordance with 10 CFR 51.21, "Criteria for and identification of licensing and regulatory actions requiring environmental assessments." EGC has determined that the proposed changes meet the criteria for a categorical exclusion as set forth in 10 CFR 51.22, "Criterion for categorical exclusion; identification of licensing and regulatory actions eligible for categorical exclusion or otherwise not requiring environmental review," paragraph (c)(9), and as such, has determined that no irreversible consequences exist in accordance with 10 CFR 50.92, "Issuance of amendment," paragraph (b). This determination is based on the fact that this change is being proposed as an amendment to a license issued pursuant to 10 CFR 50, "Domestic Licensing of Production and Utilization Facilities," which changes a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, "Standards for

ATTACHMENT 2
Evaluation of Proposed Changes

Protection Against Radiation," or that changes an inspection or a SR, and the amendment meets the following specific criteria.

(i) The amendment involves no significant hazards consideration.

As demonstrated in Section 7.0, the proposed changes do not involve a significant hazards consideration.

(ii) There is no significant change in the types or significant increase in the amounts of any effluent that may be released offsite.

The proposed changes, which revise Function 7.a to delete an outdated reference to thermal switches and add a new SR to Function 7.b is consistent with the plant design basis. There will be no significant increase in the amounts of any effluents released offsite. The proposed changes do not result in an increase in power level, do not increase the production, nor alter the flow path or method of disposal of radioactive waste or byproducts. Therefore, the proposed change will not affect the types or increase the amounts of any effluents released offsite.

(iii) There is no significant increase in individual or cumulative occupational radiation exposure.

The proposed changes will not result in changes in the configuration of the facility. The proposed changes only affect the SDV Water Level – High Function of the RPS Instrumentation specified in the TS. There will be no change in the level of controls or methodology used for processing of radioactive effluents or handling of solid radioactive waste, nor will the proposal result in any change in the normal radiation levels within the plant. Therefore, there will be no increase in individual or cumulative occupational radiation exposure resulting from this change.

9.0 REFERENCES

- (1) Letter from P. R. Simpson (Exelon Generation Company, LLC) to U. S. Nuclear Regulatory Commission, "Request for Technical Specifications Changes Related to Reactor Protection System Instrumentation (Scram Discharge Volume Water Level – High)," August 16, 2002
- (2) Letter from M. Chawla (U. S. Nuclear Regulatory Commission) to O. D. Kingsley (Exelon Generation Company, LLC), "Issuance of Amendments – Technical Specifications Change – Reactor Protection System Instrumentation Scram Discharge Volume Water Level High for Quad Cities Nuclear Power Station, Units 1 and 2," February 11, 2002

ATTACHMENT 3
Marked-Up Technical Specifications Page for Proposed Changes

REVISED TS PAGE

3.3.1.1-9

Table 3.3.1.1-1 (page 3 of 3)
Reactor Protection System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER TRIP SYSTEM	CONDITIONS REFERENCED FROM REQUIRED ACTION D.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
7. Scram Discharge Volume Water Level-High					
a. Thermal Switch (for Unit 1 only through cycle 7) Float Switch	1,2	2	G	SR 3.3.1.1.5 SR 3.3.1.1.10 SR 3.3.1.1.16 SR 3.3.1.1.17	≤ 38.9 gallons
	5(a)	2	H	SR 3.3.1.1.5 SR 3.3.1.1.10 SR 3.3.1.1.16 SR 3.3.1.1.17	≤ 38.9 gallons
b. Differential Pressure Switch	1,2	2	G	SR 3.3.1.1.5 SR 3.3.1.1.10 SR 3.3.1.1.16 SR 3.3.1.1.17	≤ 32.3 gallons
	5(a)	2	H	SR 3.3.1.1.5 SR 3.3.1.1.10 SR 3.3.1.1.16 SR 3.3.1.1.17	≤ 32.3 gallons
8. Turbine Stop Valve-Closure	≥ 38.5% RTP	4	E	SR 3.3.1.1.5 SR 3.3.1.1.10 SR 3.3.1.1.13 SR 3.3.1.1.16 SR 3.3.1.1.17 SR 3.3.1.1.18	≤ 9.7% closed
9. Turbine Control Valve Fast Closure, Trip Oil Pressure-Low	≥ 38.5% RTP	2	E	SR 3.3.1.1.5 SR 3.3.1.1.10 SR 3.3.1.1.13 SR 3.3.1.1.16 SR 3.3.1.1.17 SR 3.3.1.1.18	≥ 475 psig
10. Turbine Condenser Vacuum-Low	1	2	F	SR 3.3.1.1.5 SR 3.3.1.1.10 SR 3.3.1.1.12 SR 3.3.1.1.17 SR 3.3.1.1.18	≥ 21.6 inches Hg vacuum
11. Reactor Mode Switch-Shutdown Position	1,2	1	G	SR 3.3.1.1.15 SR 3.3.1.1.17	NA
	5(a)	1	H	SR 3.3.1.1.15 SR 3.3.1.1.17	NA
12. Manual Scram	1,2	1	G	SR 3.3.1.1.8 SR 3.3.1.1.17	NA
	5(a)	1	H	SR 3.3.1.1.8 SR 3.3.1.1.17	NA

SR 3.3.1.1.11

(a) With any control rod withdrawn from a core cell containing one or more fuel assemblies.

ATTACHMENT 4
Revised Technical Specifications Page for Proposed Changes

REVISED TS PAGE

3.3.1.1-9

Table 3.3.1.1-1 (page 3 of 3)
Reactor Protection System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER TRIP SYSTEM	CONDITIONS REFERENCED FROM REQUIRED ACTION D.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
7. Scram Discharge Volume Water Level-High					
a. Float Switch	1,2	2	G	SR 3.3.1.1.5 SR 3.3.1.1.10 SR 3.3.1.1.16 SR 3.3.1.1.17	≤ 38.9 gallons
	5(a)	2	H	SR 3.3.1.1.5 SR 3.3.1.1.10 SR 3.3.1.1.16 SR 3.3.1.1.17	≤ 38.9 gallons
b. Differential Pressure Switch	1,2	2	G	SR 3.3.1.1.5 SR 3.3.1.1.10 SR 3.3.1.1.11 SR 3.3.1.1.16 SR 3.3.1.1.17	≤ 32.3 gallons
	5(a)	2	H	SR 3.3.1.1.5 SR 3.3.1.1.10 SR 3.3.1.1.11 SR 3.3.1.1.16 SR 3.3.1.1.17	≤ 32.3 gallons
8. Turbine Stop Valve-Closure	≥ 38.5% RTP	4	E	SR 3.3.1.1.5 SR 3.3.1.1.10 SR 3.3.1.1.13 SR 3.3.1.1.16 SR 3.3.1.1.17 SR 3.3.1.1.18	≤ 9.7% closed
9. Turbine Control Valve Fast Closure, Trip Oil Pressure-Low	≥ 38.5% RTP	2	E	SR 3.3.1.1.5 SR 3.3.1.1.10 SR 3.3.1.1.13 SR 3.3.1.1.16 SR 3.3.1.1.17 SR 3.3.1.1.18	≥ 475 psig
10. Turbine Condenser Vacuum-Low	1	2	F	SR 3.3.1.1.5 SR 3.3.1.1.10 SR 3.3.1.1.12 SR 3.3.1.1.17 SR 3.3.1.1.18	≥ 21.6 inches Hg vacuum
11. Reactor Mode Switch-Shutdown Position	1,2	1	G	SR 3.3.1.1.15 SR 3.3.1.1.17	NA
	5(a)	1	H	SR 3.3.1.1.15 SR 3.3.1.1.17	NA
12. Manual Scram	1,2	1	G	SR 3.3.1.1.8 SR 3.3.1.1.17	NA
	5(a)	1	H	SR 3.3.1.1.8 SR 3.3.1.1.17	NA

(a) With any control rod withdrawn from a core cell containing one or more fuel assemblies.