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RS-14-322

10 CFR 50.90

December 22, 2014

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

Dresden Nuclear Power Station, Units 2 and 3
Renewed Facility Operating License Nos. DPR-19 and DPR-25
NRC Docket Nos. 50-237 and 50-249

LaSalle County Station, Units 1 and 2
Facility Operating License Nos. NPF-11 and NPF-18
NRC Docket Nos. 50-373 and 50-374

Quad Cities Nuclear Power Station, Units 1 and 2
Renewed Facility Operating License Nos. DPR-29 and DPR-30
NRC Docket Nos. 50-254 and 50-265

Subject: License Amendment Request for Addition of New LCO 3.10.8 for Reactor Vessel Hydrostatic and Leak Testing Requirements and for Adoption of TSTF-484, Revision 0, "Use of TS 3.10.1 for Scram Time Testing Activities"

References:
1) NUREG-1433, "Standard Technical Specifications for General Electric BWR/4 Plants," Revision 4.0

2) NUREG-1434, "Standard Technical Specifications for General Electric BWR/6 Plants," Revision 4.0

In accordance with 10 CFR 50.90, "Application for amendment of license, construction permit, or early site permit," Exelon Generation Company, LLC (EGC) requests an amendment to the Technical Specifications (TS), Appendix A, of the Facility Operating Licenses listed above. The proposed amendment modifies the TS to add a new Limiting Condition for Operation (LCO) 3.10.8 to Section 3.10, "Special Operations," to specifically permit inservice leakage and hydrostatic testing at reactor coolant system (RCS) temperatures greater than the average reactor coolant temperature for MODE 4 with the reactor shutdown.

In addition, the proposed amendment includes an expanded scope of LCO 3.10.8 consistent with the NRC approved Revision 0 of Technical Specification Task Force (TSTF) Improved Standard Technical Specification Change Traveler, TSTF-484, "Use of TS 3.10.1 for Scram Time Testing Activities." The expanded scope of LCO 3.10.8, and the associated Bases, includes provisions for temperatures greater than the average reactor coolant temperature for MODE 4 with the reactor shutdown for performance of inservice leakage and hydrostatic testing, as a consequence of maintaining adequate reactor pressure for inservice leakage and hydrostatic testing, or as a consequence of maintaining adequate reactor pressure for control

rod scram time testing initiated in conjunction with inservice leakage and hydrostatic testing, while considering operational conditions to be in MODE 4. The availability of the TS revision via TSTF-484 was announced in the *Federal Register* on October 27, 2006 (71 FR 63050).

For Dresden Nuclear Power Station and Quad Cities Nuclear Power Station, the proposed changes are consistent with NUREG-1433, Revision 4.0 (Reference 1). For LaSalle County Station, the proposed changes are consistent with NUREG-1434, Revision 4.0 (Reference 2). The proposed LCO 3.10.8 corresponds to Improved Standard Technical Specification (STS) LCO 3.10.1, "Inservice Leak and Hydrostatic Testing Operation."

Attachment 1 provides an evaluation of the proposed changes. Attachment 2 provides the TS pages marked up to show the proposed changes. Attachment 3 provides the proposed TS changes in final typed format. Attachment 4 provides the TS Bases pages marked up to show the proposed changes. The TS Bases pages are provided for information only and do not require NRC approval.

EGC requests approval of the proposed license amendment by December 22, 2015, to support implementation activities prior to the LSCS Unit 1 spring 2016 refueling outage (L1R16). Once approved, the amendment shall be implemented within 60 days.

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

In accordance with 10 CFR 50.91, "Notice for public comment; State consultation," paragraph (b), a copy of this application, with attachments, is being provided to the designated Illinois Official.

There are no regulatory commitments contained within this letter. Should you have any questions concerning this letter, please contact Ms. Lisa A. Simpson at (630) 657-2815.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 22nd of December 2014.

Respectfully,

David M. Gullott
Manager – Licensing
Exelon Generation Company, LLC

Attachments:
1) Evaluation of Proposed Changes
2) Proposed Technical Specifications Changes (Mark-Up)
3) Proposed Technical Specifications Changes (Re-Typed)
4) Proposed Technical Specifications Bases Changes (Mark-Up)

cc: NRC Regional Administrator, Region III
NRC Senior Resident Inspector, Dresden Nuclear Power Station
NRC Senior Resident Inspector, LaSalle County Station
NRC Senior Resident Inspector, Quad Cities Nuclear Power Station
Illinois Emergency Management Agency – Division of Nuclear Safety

ATTACHMENT 1
Evaluation of Proposed Changes

Subject: License Amendment Request for Addition of New LCO for Reactor Vessel Hydrostatic and Leak Testing Requirements and for Adoption of TSTF-484, Revision 0, "Use of TS 3.10.1 for Scram Time Testing Activities"

ATTACHMENT 1
Evaluation of Proposed Changes

1.0 DESCRIPTION

In accordance with 10 CFR 50.90, "Application for amendment of license, construction permit, or early site permit," Exelon Generation Company, LLC (EGC) requests an amendment to the Technical Specifications (TS), Appendix A, of the Facility Operating Licenses for Dresden Nuclear Power Station (DNPS), Units 2 and 3; LaSalle County Station (LSCS) Units 1 and 2; and Quad Cities Nuclear Power Station (QCNPS), Units 1 and 2 under Facility Operating License Nos. DPR-19 and DPR 25; NPF-11 and NPF-18; DPR-29 and DPR-30, respectively.

The proposed amendment modifies the TS for DNPS, LSCS, and QCNPS to add a new Limiting Condition for Operation (LCO) 3.10.8 to Section 3.10, "Special Operations." Specifically, the proposed changes permit inservice leakage and hydrostatic testing at reactor coolant system (RCS) temperatures greater than the average reactor coolant temperature for MODE 4 with the reactor shutdown.

In addition, the proposed amendment includes an expanded scope of LCO 3.10.8 consistent with the NRC approved Revision 0 of Technical Specification Task Force (TSTF) Improved Standard Technical Specification Change Traveler, TSTF-484, "Use of TS 3.10.1 for Scram Time Testing Activities" (Reference 1). This expanded scope of LCO 3.10.8, and the associated Bases, includes provisions for temperatures greater than the average reactor coolant temperature for MODE 4 with the reactor shutdown for performance of inservice leakage and hydrostatic testing, as a consequence of maintaining adequate reactor pressure for inservice leakage and hydrostatic testing, or as a consequence of maintaining adequate reactor pressure for control rod scram time testing initiated in conjunction with inservice leakage and hydrostatic testing, while considering operational conditions to be in MODE 4. The availability of the TS revision via TSTF-484 was announced in the *Federal Register* on October 27, 2006 (71 FR 63050) (Reference 2).

For DNPS and QCNPS, the proposed changes are consistent with NUREG-1433, "Standard Technical Specifications for General Electric BWR/4 Plants," Revision 4.0. For LSCS, the proposed changes are consistent with NUREG-1434, "Standard Technical Specifications for General Electric BWR/6 Plants," Revision 4.0. The proposed LCO 3.10.8 corresponds to Improved Standard Technical Specification (STS) LCO 3.10.1, "Inservice Leak and Hydrostatic Testing Operation."

EGC requests approval of the proposed license amendment request by December 22, 2015, to support implementation activities prior to the LSCS Unit 1 spring 2016 refueling outage (L1R16). Once approved, the amendment shall be implemented at DNPS, LSCS, and QCNPS within 60 days.

2.0 PROPOSED CHANGES

The following changes are proposed:

A. LCO 3.10.8
Add new LCO 3.10.8 to TS Section 3.10, "Special Operations," for DNPS, LSCS, and QCNPS.

The purpose of this Special Operations LCO is to allow certain RCS pressure tests to be performed with the reactor pressure vessel (RPV) at temperatures greater than the average reactor coolant temperature for MODE 4 with the reactor shutdown. The proposed LCO 3.10.8 will allow the average reactor coolant temperature specified in the definitions for MODE 4, "Cold Shutdown," to be treated as "NA" and operation considered not to be in MODE 3, "Hot Shutdown," with average RCS temperature exceeding the average reactor coolant temperature for MODE 4 with the reactor shutdown. Therefore, LCO 3.10.8 allows the testing to continue and eliminates the need to suspend testing activities to reduce the average reactor coolant temperature below the MODE 4 to MODE 3 threshold. The proposed LCO 3.10.8 effectively provides a relaxation from the operability requirements that currently become effective when entering MODE 3 or when the RCS temperature is greater than the average reactor coolant temperature for MODE 4 with the reactor shutdown, with the exception that the following MODE 3 applicable LCOs must be met:

a. LCO 3.3.6.2, "Secondary Containment Isolation Instrumentation," Functions 1, 3, 4, and 5 of Table 3.3.6.2-1 for LSCS and Functions 1, 3, and 4 for DNPS and QCNPS
b. LCO 3.6.4.1, "Secondary Containment"
c. LCO 3.6.4.2, "Secondary Containment Isolation Valves (SCIVs)"
d. LCO 3.6.4.3, "Standby Gas Treatment (SGT) System"

Meeting these LCOs under the proposed LCO 3.10.8 will be required to assure an adequate margin of safety for the conditions to which LCO 3.10.8 apply. These systems and instrumentation will be required to be operable prior to allowing RCS temperatures to exceed the MODE 4-to-3 temperature threshold.

B. TSTF-484

Consistent with the NRC approved Revision of TSTF-484, the proposed TS changes include an expanded scope of LCO 3.10.8, "Inservice Leak and Hydrostatic Testing Operation." Proposed revisions to the TS Bases are also included in this application. Adoption of the TS Bases associated with TSTF-484, Revision 0, is an integral part of implementing this TS amendment. The changes to the affected TS Bases pages will be incorporated in accordance with TS Bases Control Program.

EGC is not proposing variations or deviations from the TS changes described in TSTF-484, Revision 0, or the NRC's model safety evaluation (SE) published on October 27, 2006 (71 FR 63050).

C. Other

Update the Table of Contents to reflect the proposed addition of LCO 3.10.8.

Attachment 2 provides the TS pages marked up to show the proposed changes. Attachment 3 provides the proposed TS changes in final typed format. Attachment 4 provides the TS Bases pages marked up to show the proposed changes. The TS Bases pages are provided for information only and do not require NRC approval.

3.0 BACKGROUND

LCO 3.10.8

The American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code) requires periodic inservice leakage and hydrostatic testing of the RCS in order to ensure the structural integrity of the RCS pressure boundary. Title 10 of the Code of Federal Regulations (10 CFR), Part 50, Appendix G, states: "Pressure tests and leak tests of the reactor vessel that are required by Section XI of the ASME Code must be completed before the core is critical." These reactor vessel inservice leakage and hydrostatic testing is performed with the RPV in essentially water solid condition using recirculation pump operation to achieve the requested test temperatures and pressures.

Inservice leakage and hydrostatic testing is required to be performed with minimum RCS temperatures in accordance with RCS pressure and temperature (P/T) curves per TS 3.4.9 for DNPS and QCNPS and TS 3.4.11 for LSCS. For DNPS and QCNPS, the maximum test temperature is 212 °F per DNPS and QCNPS TS 1.0, which is the highest temperature allowed for MODE 4, "Cold Shutdown." For LSCS, the maximum test temperature is 200 °F per LSCS TS 1.0. Operations requires margin to maintain the test temperature between the minimum test temperature limit and the maximum test temperature (per TS 1.0), which is administratively enforced by site inservice leakage and hydrostatic testing procedures. During the reactor vessel inservice leakage and hydrostatic testing completed at LSCS during the February 2014 refueling outage, the maximum reactor coolant temperature exceeded the procedural limits. Operations expected reactor coolant temperature not to exceed 186 °F; however, during the testing, the reactor coolant temperature reached 193 °F prior to the testing being secured.

The duration of the LSCS February 2014 refueling outage was shorter than the typical duration of a refueling outage, and therefore, the inservice leakage and hydrostatic testing was performed earlier than typical. This results in more decay heat from the core and the prediction of vessel temperature being more sensitive than in the past.

TSTF-484

The background for this application is adequately addressed by the NRC Notice of Availability published on October 27, 2006 (71 FR 63050).

4.0 TECHNICAL ANALYSIS

LCO 3.10.8

Allowing the reactor to be considered in MODE 4, "Cold Shutdown," when the RCS temperature is greater than the allowed average reactor coolant temperature for MODE 4 with the reactor shutdown, during, or as a consequence of, inservice leak or hydrostatic testing, effectively provides a relaxation to TS requirements that apply during MODE 3.

Under current TS, primary containment is required whenever RCS temperatures are greater than the average reactor coolant temperature for MODE 3 with the reactor shutdown, which restricts access to the reactor vessel. The restricted access to the reactor vessel combined with the elevated test temperatures makes performance of the required inspections a personnel safety concern. The proposed changes relax the requirement for primary containment integrity

during operation under proposed LCO 3.10.8. This will allow frequent, unobstructed access to perform the leakage inspections. Since inservice leakage and hydrostatic testing is performed with a nearly water solid RCS, at low decay heat values, and near MODE 4 conditions, the stored energy in the reactor core is very low. Under these conditions, the potential for failed fuel and a subsequent increase in coolant activity above the LCO 3.4.8, "RCS Specific Activity," limits are minimized. Furthermore, the secondary containment and SGT are required to be operable, in accordance with this Special Operations LCO, and will be capable of mitigating any airborne radioactivity or steam leaks that could occur during the performance of inservice leakage and hydrostatic testing. The required pressure testing conditions provide adequate assurance that the consequences of a steam leak will be conservatively bounded by the consequences of the postulated main steam line break outside of primary containment described in the UFSAR (References 3, 4, and 5). Therefore, these requirements will conservatively limit radiation releases to the environment.

In the event of a large primary system leak, the reactor vessel would rapidly depressurize due to the near water-solid condition of the RCS. Under these conditions, core cooling will be assured by LCO 3.5.2, "ECCS-Shutdown." In accordance with LCO 3.5.2, the long term cooling analysis following a design basis LOCA demonstrates that only one ECCS injection/spray subsystem is required, post LOCA, to maintain adequate reactor vessel water level in the event of an inadvertent vessel draindown. While in MODE 4, one ECCS injection/spray subsystem can maintain adequate reactor vessel water level; to provide redundancy, a minimum of two ECCS injection/spray subsystems are required to be operable in MODE 4.

For the purposes of these tests, the protection provided by the required MODE 4 applicable LCOs, in addition to the secondary containment and SGT requirements required to be met by this Special Operations LCO will ensure acceptable consequences during inservice leakage and hydrostatic testing conditions and during postulated accident conditions. As described in LCO 3.0.7, compliance with Special Operations LCOs provides flexibility to perform certain operations by appropriately modifying requirements of other LCOs.

TSTF-484
EGC has reviewed the SE published on October 27, 2006 (71 FR 63050). EGC has concluded that the technical justifications presented in the SE prepared by the NRC are applicable to DNPS, Units 2 and 3; LSCS, Units 1 and 2; and QCNPS, Units 1 and 2; and therefore justify this amendment for the incorporation of the proposed changes to the DNPS, LSCS, and QCNPS TS.

5.0 REGULATORY SAFETY ANALYSIS

Exelon Generation Company, LLC (EGC) requests an amendment to the Technical Specifications (TS), Appendix A, of the Facility Operating Licenses for Dresden Nuclear Power Station (DNPS), Units 2 and 3; LaSalle County Station (LSCS) Units 1 and 2; and Quad Cities Nuclear Power Station (QCNPS), Units 1 and 2. The proposed amendment modifies the TS to add a new Limiting Condition for Operation (LCO) to Section 3.10, "Special Operations," to specifically permit inservice leakage and hydrostatic testing and system leakage pressure testing at reactor coolant system (RCS) temperatures greater than the average reactor coolant temperature for MODE 4 with the reactor shutdown. The proposed changes are consistent with NUREG-1433, "Standard Technical Specifications for General Electric BWR/4 Plants,"

Revision 4.0, and NUREG-1434, "Standard Technical Specifications for General Electric BWR/6 Plants," Revision 4.0. The proposed LCO 3.10.8 corresponds to Improved Standard Technical Specification LCO 3.10.1, "Inservice Leak and Hydrostatic Testing Operation."

In addition, the proposed amendment includes an expanded scope of LCO 3.10.8 consistent with the NRC approved Revision 0 of Technical Specification Task Force (TSTF) Improved Standard Technical Specification Change Traveler, TSTF-484, "Use of TS 3.10.1 for Scram Time Testing Activities." The expanded scope of LCO 3.10.8, and the associated Bases, includes provisions for temperatures greater than the average reactor coolant temperature for MODE 4 with the reactor shutdown for performance of an inservice leakage and hydrostatic testing, as a consequence of maintaining adequate reactor pressure for inservice leakage and hydrostatic testing, or as a consequence of maintaining adequate reactor pressure for control rod scram time testing initiated in conjunction with inservice leakage and hydrostatic testing, while considering operational conditions to be in MODE 4. The availability of the TS revision via TSTF-484 was announced in the *Federal Register* on October 27, 2006 (71 FR 63050).

5.1 Applicable Regulatory Requirements/Criteria

LCO 3.10.8
The proposed changes have been evaluated to determine whether applicable regulations and requirements continue to be met.

- 10 CFR 50, Appendix G

  The American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code) requires periodic inservice leakage and hydrostatic testing of the RCS in order to ensure the structural integrity of the RCS pressure boundary. 10 CFR 50, Appendix G states that pressure tests and leak tests of the reactor vessel that are required by Section XI of the ASME Code must be completed before the core is critical.

- 10 CFR 50.36, Technical Specifications

  10 CFR 50.36, "Technical Specifications," provides the regulatory requirements for the content required in the TS. As stated in 10 CFR 50.36, the TS include Limiting Conditions for Operation (LCO) and Surveillance Requirements (SR) to assure that LCOs are met. The proposed changes to the TS LCOs and SRs for inservice leakage and hydrostatic testing, and scram time testing will continue to meet the requirements of 10 CFR 50.36.

- General Design Criterion 32, Inspection of Reactor Coolant Pressure Boundary

  General Design Criterion (GDC) 32 of Appendix A of 10 CFR 50 provides design considerations for components that are part of the reactor coolant pressure boundary.

The proposed application discusses the applicable regulatory requirements and guidance, including the 10 CFR 50, Appendix A, General Design Criteria (GDC). DNPS and QCNPS were not licensed to the 10 CFR 50, Appendix A, GDC. The DNPS and QCNPS Updated Final Safety Analysis Reports (UFSAR) provide an assessment against the draft GDC published in 1967. A review has determined that the plant-specific requirements are sufficiently similar to the Appendix A GDC as related to the proposed change. Listed below are the plant specific references from the UFSARs that provide the 10 CFR 50, Appendix A, GDC assessments:

- DNPS, UFSAR, Section 3.1, "Conformance with NRC General Design Criteria"
- QCNPS, UFSAR, Section 3.1, "Conformance with NRC General Design Criteria"

This difference does not alter the conclusion that the proposed changes are applicable to DNPS and QCNPS.

TSTF-484
A description of the proposed TS changes and its relationship to applicable regulatory requirements was provided in the NRC Notice of Availability published on October 27, 2006 (71 FR 63050).

5.2 No Significant Hazards Determination

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.

EGC has evaluated the proposed changes, using the criteria in 10 CFR 50.92, and has determined that the proposed changes do not involve a significant hazards consideration. The following information is provided to support a finding of no significant hazards consideration.

LCO 3.10.8

Criteria

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

   Response: No.

The proposed changes will not result in a significant change in the stored energy in the reactor vessel during the performance of the testing. The probability of an accident is not significantly increased because the proposed changes will not alter the method by which inservice leakage and hydrostatic testing is performed or significantly change the temperatures and pressures achieved to perform the test.

The consequences of previously evaluated accidents are not significantly increased because the required testing conditions provide adequate assurance that the consequences of a steam leak will be conservatively bounded by the consequences of the postulated main system line break outside of primary containment. Under these proposed changes, the secondary containment, standby gas treatment system, and associated initiation instrumentation are required to be operable during the performance of inservice leakage and hydrostatic testing and would be capable of mitigating any airborne radioactivity or steam leaks that could occur. In addition, the required Emergency Core Cooling subsystems will be more than adequate to ensure that a significant increase in consequences will not occur by ensuring that the potential for failed fuel and a subsequent increase in coolant activity above Technical Specification limits are minimized.

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

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

Response: No.

As the accumulated neutron fluence on the reactor vessel increases, the Pressure-Temperature Limits in TS 3.4.9 for DNPS and QCNPS and TS 3.4.11 for LSCS may eventually require that inservice leakage and hydrostatic testing be conducted at RCS temperatures greater than the average reactor coolant temperature for MODE 4 with the reactor shutdown. However, even with the required minimum reactor coolant temperatures less than or equal to the average reactor coolant temperature for MODE 4 with the reactor shutdown, maintaining RCS temperatures within a small band during testing can be impractical. The proposed changes will not result in a significant change in the stored energy in the reactor vessel during the performance of the testing nor will it alter the way inservice leakage and hydrostatic testing is performed or significantly change the temperatures and pressures achieved to perform the testing.

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 change involve a significant reduction in a margin of safety?

Response: No.

The proposed changes and additions result in increased system operability requirements above those that currently exist during the performance of inservice leakage and hydrostatic testing. The incremental increase in stored energy in the vessel during testing will be conservatively bounded by the consequences of the postulated main steam line break outside of primary containment and analyzed margins of safety are unchanged.

Therefore, the proposed changes do not involve a significant reduction in a margin of safety.

TSTF-484
EGC has reviewed the no significant hazards determination published on August 21, 2006 (71 FR 48561). The no significant hazards determination was made available on October 27, 2006 (71 FR 63050) as part of the CLIIP Notice of Availability. EGC has concluded that the determination presented in the notice is applicable to DNPS, Units 2 and 3; LSCS, Units 1 and 2; and QCNPS, Units 1 and 2; and the determination is hereby incorporated by reference to satisfy the requirements of 10 CFR 50.91(a).

Conclusion
Based on the above, EGC concludes that the proposed amendment does not involve a 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.

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 NRC'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.

6.0 ENVIRONMENTAL CONSIDERATION

LCO 3.10.8
EGC has evaluated the proposed amendment for environmental considerations. The review has resulted in the determination that the proposed amendment does not change a requirement with respect to the installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, and does not change surveillance requirements. The proposed amendment revises Technical Specifications to add a new LCO to Section 3.10, "Special Operations," to specifically permit inservice leakage and hydrostatic testing at reactor coolant system (RCS) temperatures greater than the average reactor coolant temperature for MODE 4 with the reactor shutdown. 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 the 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, in accordance with 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment.

TSTF-484
EGC has reviewed the environmental evaluation included in the safety evaluation (SE) published on October 27, 2006 (71 FR 63050). EGC has concluded that the NRC's findings presented in that evaluation are applicable to DNPS, Units 2 and 3; LSCS, Units 1 and 2; and QCNPS, Units 1 and 2; and the evaluation is hereby incorporated by reference for this application.

7.0 REFERENCES

1) TSTF-484, Revision 0, "Use of TS 3.10.1 for Scram Times Testing Activities"

2) *Federal Register* Notice, Notice of Availability published on October 27, 2006 (71 FR 63050)

3) Dresden Nuclear Power Station UFSAR 15.6.4, "Steam System Line Break Outside the Containment"

4) LaSalle County Station UFSAR 15.6.4, "Steam System Pipe Break Outside Containment"

5) Quad Cities Nuclear Power Station UFSAR Section 15.6.4, "Steam System Line Break Outside Containment"

ATTACHMENT 2

Proposed Technical Specifications Changes (Mark-Up)

Dresden Nuclear Power Station, Units 2 and 3
Renewed Facility Operating License Nos. DPR-19 and DPR-25

AFFECTED PAGES:

Table of Contents, Page iii
Table of Contents, Page iv
TS Page 3.10.8-1 (new)
TS Page 3.10.8-2 (new)

LaSalle County Station, Units 1 and 2
Facility Operating License Nos. NPF-11 and NPF-18

AFFECTED PAGES:

Table of Contents, Page iii
TS Page 3.10.8-1 (new)
TS Page 3.10.8-2 (new)

Quad Cities Nuclear Power Station, Units 1 and 2
Renewed Facility Operating License Nos. DPR-29 and DPR-30

AFFECTED PAGES:

Table of Contents, Page iii
TS Page 3.10.8-1 (new)
TS Page 3.10.8-2 (new)

(continued)

3.10 SPECIAL OPERATIONS

3.10.8 Inservice Leak and Hydrostatic Testing Operation

LCO 3.10.8 The average reactor coolant temperature specified in Table 1.1-1 for MODE 4 may be changed to "NA," and operation considered not to be in MODE 3; and the requirements of LCO 3.4.8, "Shutdown Cooling (SDC) System - Cold Shutdown," may be suspended to allow reactor coolant temperature > 212°F:

- For performance of an inservice leak or hydrostatic test,
- As a consequence of maintaining adequate pressure for an inservice leak or hydrostatic test, or
- As a consequence of maintaining adequate pressure for control rod scram time testing initiated in conjunction with an inservice leak or hydrostatic test,

provided the following MODE 3 LCOs are met:

a. LCO 3.3.6.2, "Secondary Containment Isolation Instrumentation," Functions 1, 3, and 4 of Table 3.3.6.2-1,

b. LCO 3.6.4.1, "Secondary Containment,"

c. LCO 3.6.4.2, "Secondary Containment Isolation Valves (SCIVs),"

d. LCO 3.6.4.3, "Standby Gas Treatment (SGT) System."

APPLICABILITY: MODE 4 with average reactor coolant temperature > 212°F.

ACTIONS

----------NOTE----------
Separate Condition entry is allowed for each requirement of the LCO.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more of the above requirements not met.	A.1 --------NOTES-------- Required Actions to be in MODE 4 include reducing average reactor coolant temperature to ≤ 212°F. ---------- Enter the applicable Condition of the affected LCO.	Immediately
	OR	
	A.2.1 Suspend activities that could increase the average reactor coolant temperature or pressure.	Immediately
	AND	
	A.2.2 Reduce average reactor coolant temperature to ≤ 212°F.	24 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.10.8.1	Perform the applicable SRs for the required MODE 3 LCOs.	According to the applicable SRs

(continued)

3.10 SPECIAL OPERATIONS

3.10.8 Inservice Leak and Hydrostatic Testing Operation

LCO 3.10.8 The average reactor coolant temperature specified in Table 1.1-1 for MODE 4 may be changed to "NA," and operation considered not to be in MODE 3; and the requirements of LCO 3.4.10, "Residual Heat Removal (RHR) Shutdown Cooling System - Cold Shutdown," may be suspended to allow reactor coolant temperature > 200°F:

- For performance of an inservice leak or hydrostatic test,
- As a consequence of maintaining adequate pressure for an inservice leak or hydrostatic test, or
- As a consequence of maintaining adequate pressure for control rod scram time testing initiated in conjunction with an inservice leak or hydrostatic test,

provided the following MODE 3 LCOs are met:

a. LCO 3.3.6.2, "Secondary Containment Isolation Instrumentation," Functions 1, 3, 4 and 5 of Table 3.3.6.2-1,

b. LCO 3.6.4.1, "Secondary Containment,"

c. LCO 3.6.4.2, "Secondary Containment Isolation Valves (SCIVs),"

d. LCO 3.6.4.3, "Standby Gas Treatment (SGT) System."

APPLICABILITY: MODE 4 with average reactor coolant temperature > 200°F.

ACTIONS

---NOTE---
Separate Condition entry is allowed for each requirement of the LCO.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more of the above requirements not met.	A.1 --------NOTES-------- Required Actions to be in MODE 4 include reducing average reactor coolant temperature to ≤ 200°F. ---------- Enter the applicable Condition of the affected LCO.	Immediately
	OR	
	A.2.1 Suspend activities that could increase the average reactor coolant temperature or pressure.	Immediately
	AND	
	A.2.2 Reduce average reactor coolant temperature to ≤ 200°F.	24 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.10.8.1	Perform the applicable SRs for the required MODE 3 LCOs.	According to the applicable SRs

(continued)

3.10 SPECIAL OPERATIONS

3.10.8 Inservice Leak and Hydrostatic Testing Operation

LCO 3.10.8 The average reactor coolant temperature specified in Table 1.1-1 for MODE 4 may be changed to "NA," and operation considered not to be in MODE 3; and the requirements of LCO 3.4.8, "Residual Heat Removal (RHR) Shutdown Cooling System - Cold Shutdown," may be suspended to allow reactor coolant temperature > 212°F:

- For performance of an inservice leak or hydrostatic test,
- As a consequence of maintaining adequate pressure for an inservice leak or hydrostatic test, or
- As a consequence of maintaining adequate pressure for control rod scram time testing initiated in conjunction with an inservice leak or hydrostatic test,

provided the following MODE 3 LCOs are met:

a. LCO 3.3.6.2, "Secondary Containment Isolation Instrumentation," Functions 1, 3, and 4 of Table 3.3.6.2-1,

b. LCO 3.6.4.1, "Secondary Containment,"

c. LCO 3.6.4.2, "Secondary Containment Isolation Valves (SCIVs),"

d. LCO 3.6.4.3, "Standby Gas Treatment (SGT) System."

APPLICABILITY: MODE 4 with average reactor coolant temperature > 212°F.

ACTIONS

---NOTE---
Separate Condition entry is allowed for each requirement of the LCO.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more of the above requirements not met.	A.1 ---NOTES--- Required Actions to be in MODE 4 include reducing average reactor coolant temperature to ≤ 212°F. --- Enter the applicable Condition of the affected LCO.	Immediately
	OR	
	A.2.1 Suspend activities that could increase the average reactor coolant temperature or pressure.	Immediately
	AND	
	A.2.2 Reduce average reactor coolant temperature to ≤ 212°F.	24 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.10.8.1	Perform the applicable SRs for the required MODE 3 LCOs.	According to the applicable SRs

ATTACHMENT 3

Proposed Technical Specifications Changes (Re-Typed)

Dresden Nuclear Power Station, Units 2 and 3
Renewed Facility Operating License Nos. DPR-19 and DPR-25

AFFECTED PAGES:

Table of Contents, Page iii
Table of Contents, Page iv
TS Page 3.10.8-1 (new)
TS Page 3.10.8-2 (new)

LaSalle County Station, Units 1 and 2
Facility Operating License Nos. NPF-11 and NPF-18

AFFECTED PAGES:

Table of Contents, Page iii
TS Page 3.10.8-1 (new)
TS Page 3.10.8-2 (new)

Quad Cities Nuclear Power Station, Units 1 and 2
Renewed Facility Operating License Nos. DPR-29 and DPR-30

AFFECTED PAGES:

Table of Contents, Page iii
TS Page 3.10.8-1 (new)
TS Page 3.10.8-2 (new)

(continued)

TABLE OF CONTENTS (continued)

3.10 SPECIAL OPERATIONS

3.10.8 Inservice Leak and Hydrostatic Testing Operation

LCO 3.10.8 The average reactor coolant temperature specified in Table 1.1-1 for MODE 4 may be changed to "NA," and operation considered not to be in MODE 3; and the requirements of LCO 3.4.8, "Shutdown Cooling (SDC) System - Cold Shutdown," may be suspended to allow reactor coolant temperature > 212°F:

- For performance of an inservice leak or hydrostatic test,
- As a consequence of maintaining adequate pressure for an inservice leak or hydrostatic test, or
- As a consequence of maintaining adequate pressure for control rod scram time testing initiated in conjunction with an inservice leak or hydrostatic test,

provided the following MODE 3 LCOs are met:

a. LCO 3.3.6.2, "Secondary Containment Isolation Instrumentation," Functions 1, 3, and 4 of Table 3.3.6.2-1,

b. LCO 3.6.4.1, "Secondary Containment,"

c. LCO 3.6.4.2, "Secondary Containment Isolation Valves (SCIVs),"

d. LCO 3.6.4.3, "Standby Gas Treatment (SGT) System."

APPLICABILITY: MODE 4 with average reactor coolant temperature > 212°F.

ACTIONS

---NOTE---
Separate Condition entry is allowed for each requirement of the LCO.

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One or more of the above requirements not met.	A.1	---NOTES--- Required Actions to be in MODE 4 include reducing average reactor coolant temperature to ≤ 212°F. --- Enter the applicable Condition of the affected LCO.	Immediately
	OR		
	A.2.1	Suspend activities that could increase the average reactor coolant temperature or pressure.	Immediately
	AND		
	A.2.2	Reduce average reactor coolant temperature to ≤ 212°F.	24 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.10.8.1	Perform the applicable SRs for the required MODE 3 LCOs.	According to the applicable SRs

(continued)

3.10 SPECIAL OPERATIONS

3.10.8 Inservice Leak and Hydrostatic Testing Operation

LCO 3.10.8 The average reactor coolant temperature specified in Table 1.1-1 for MODE 4 may be changed to "NA," and operation considered not to be in MODE 3; and the requirements of LCO 3.4.10, "Residual Heat Removal (RHR) Shutdown Cooling System - Cold Shutdown," may be suspended to allow reactor coolant temperature > 200°F:

- For performance of an inservice leak or hydrostatic test,
- As a consequence of maintaining adequate pressure for an inservice leak or hydrostatic test, or
- As a consequence of maintaining adequate pressure for control rod scram time testing initiated in conjunction with an inservice leak or hydrostatic test,

provided the following MODE 3 LCOs are met:

a. LCO 3.3.6.2, "Secondary Containment Isolation Instrumentation," Functions 1, 3, 4 and 5 of Table 3.3.6.2-1,

b. LCO 3.6.4.1, "Secondary Containment,"

c. LCO 3.6.4.2, "Secondary Containment Isolation Valves (SCIVs),"

d. LCO 3.6.4.3, "Standby Gas Treatment (SGT) System."

APPLICABILITY: MODE 4 with average reactor coolant temperature > 200°F.

ACTIONS

---NOTE---
Separate Condition entry is allowed for each requirement of the LCO.

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One or more of the above requirements not met.	A.1	---NOTES--- Required Actions to be in MODE 4 include reducing average reactor coolant temperature to ≤ 200°F. --- Enter the applicable Condition of the affected LCO.	Immediately
	OR		
	A.2.1	Suspend activities that could increase the average reactor coolant temperature or pressure.	Immediately
	AND		
	A.2.2	Reduce average reactor coolant temperature to ≤ 200°F.	24 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.10.8.1	Perform the applicable SRs for the required MODE 3 LCOs.	According to the applicable SRs

(continued)

3.10 SPECIAL OPERATIONS

3.10.8 Inservice Leak and Hydrostatic Testing Operation

LCO 3.10.8 The average reactor coolant temperature specified in Table 1.1-1 for MODE 4 may be changed to "NA," and operation considered not to be in MODE 3; and the requirements of LCO 3.4.8, "Residual Heat Removal (RHR) Shutdown Cooling System - Cold Shutdown," may be suspended to allow reactor coolant temperature > 212°F:

- For performance of an inservice leak or hydrostatic test,
- As a consequence of maintaining adequate pressure for an inservice leak or hydrostatic test, or
- As a consequence of maintaining adequate pressure for control rod scram time testing initiated in conjunction with an inservice leak or hydrostatic test,

provided the following MODE 3 LCOs are met:

a. LCO 3.3.6.2, "Secondary Containment Isolation Instrumentation," Functions 1, 3, and 4 of Table 3.3.6.2-1,

b. LCO 3.6.4.1, "Secondary Containment,"

c. LCO 3.6.4.2, "Secondary Containment Isolation Valves (SCIVs),"

d. LCO 3.6.4.3, "Standby Gas Treatment (SGT) System."

APPLICABILITY: MODE 4 with average reactor coolant temperature > 212°F.

ACTIONS

---NOTE---
Separate Condition entry is allowed for each requirement of the LCO.

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One or more of the above requirements not met.	A.1	---NOTES--- Required Actions to be in MODE 4 include reducing average reactor coolant temperature to ≤ 212°F. --- Enter the applicable Condition of the affected LCO.	Immediately
	OR		
	A.2.1	Suspend activities that could increase the average reactor coolant temperature or pressure.	Immediately
	AND		
	A.2.2	Reduce average reactor coolant temperature to ≤ 212°F.	24 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.10.8.1	Perform the applicable SRs for the required MODE 3 LCOs.	According to the applicable SRs

ATTACHMENT 4

Proposed Technical Specifications Bases Changes (Mark-Up)

Dresden Nuclear Power Station, Units 2 and 3
Renewed Facility Operating License Nos. DPR-19 and DPR-25

AFFECTED PAGES:

B 3.10.8-1 (new)
B 3.10.8-2 (new)
B 3.10.8-3 (new)
B 3.10.8-4 (new)
B 3.10.8-5 (new)

LaSalle County Station, Units 1 and 2
Facility Operating License Nos. NPF-11 and NPF-18

AFFECTED PAGES:

B 3.10.8-1 (new)
B 3.10.8-2 (new)
B 3.10.8-3 (new)
B 3.10.8-4 (new)
B 3.10.8-5 (new)

Quad Cities Nuclear Power Station, Units 1 and 2
Renewed Facility Operating License Nos. DPR-29 and DPR-30

AFFECTED PAGES:

B 3.10.8-1 (new)
B 3.10.8-2 (new)
B 3.10.8-3 (new)
B 3.10.8-4 (new)
B 3.10.8-5 (new)

NOTE: TS Bases pages are provided for information only.

B 3.10 SPECIAL OPERATIONS

B 3.10.8 Inservice Leak and Hydrostatic Testing Operation

BASES

BACKGROUND

The purpose of this Special Operations LCO is to allow certain reactor coolant pressure tests to be performed with the reactor pressure vessel (RPV) at temperatures > 212°F (normally corresponding to MODE 3) or to allow completing these reactor coolant pressure tests when the initial conditions do not require temperatures > 212°F. Furthermore, the purpose is to allow continued performance of control rod scram time testing required by SR 3.1.4.1 or SR 3.1.4.4 if reactor coolant temperatures exceed 212°F when the control rod scram time testing is initiated in conjunction with an inservice leak or hydrostatic test. These control rod scram time tests would be performed in accordance with LCO 3.10.3, "Single Control Rod Withdrawal - Cold Shutdown," during MODE 4 operation.

Inservice hydrostatic testing and system leakage pressure tests required by Section XI of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (Ref. 1) are performed prior to the reactor going critical after a refueling outage. Recirculation pump operation and a water solid RPV are used to achieve the necessary temperatures and pressures required for these tests. The minimum temperatures (at the required pressures) allowed for these tests are determined from the RPV pressure and temperature (P/T) limits required by LCO 3.4.9, "RCS Pressure and Temperature (P/T) Limits." These limits are conservatively based on the fracture toughness of the reactor vessel, taking into account anticipated vessel neutron fluence.

With increased reactor vessel fluence over time, the minimum allowable vessel temperature increases at a given pressure. Periodic updates to the RPV P/T limit curves are performed as necessary, based upon the results of analyses of irradiated surveillance specimen samples removed and analyzed in accordance with the Integrated Surveillance Program (ISP). Hydrostatic and leak testing may eventually be required with minimum reactor coolant temperatures > 212°F. However, even with required minimum reactor coolant temperatures ≤ 212°F, maintaining RCS temperatures within a small band during the test can be impractical.

(continued)

BASES

BACKGROUND (continued)

Removal of heat addition from recirculation pump operation and reactor core decay heat is coarsely controlled by Control Rod Drive Hydraulic System flow and Reactor Water Cleanup System non-regenerative heat exchanger operation. Test conditions are focused on maintaining a steady state pressure, and tightly limited temperature control poses an unnecessary burden on the operator and may not be achievable in certain instances.

A hydrostatic and/or system leakage test is performed at operating pressure on the primary system. Scram time testing, controlled by TS 3.1.4 and TS 3.10.3, is typically scheduled in parallel with these tests.

Other testing may be performed in conjunction with the allowances for inservice leak or hydrostatic tests and control rod scram time test.

APPLICABLE SAFETY ANALYSES

Allowing the reactor to be considered in MODE 4 when the reactor coolant temperature is > 212°F, during, or as a consequence of, hydrostatic or leak testing, or as a consequence of control rod scram time testing initiated in conjunction with an inservice leak or hydrostatic test, effectively provides an exception to MODE 3 requirements, including OPERABILITY of primary containment and the full complement of redundant Emergency Core Cooling Systems (ECCS). Since the tests are performed nearly water solid, at low decay heat values, and near MODE 4 conditions, the stored energy in the reactor core will be very low. Under these conditions, the potential for failed fuel and a subsequent increase in coolant activity above the LCO 3.4.6, "RCS Specific Activity," limits are minimized. In addition, the secondary containment will be OPERABLE, in accordance with this Special Operations LCO, and will be capable of handling any airborne radioactivity or steam leaks that could occur during the performance of hydrostatic or leak testing. The required pressure testing conditions provide adequate assurance that the consequences of a steam leak will be conservatively bounded by the consequences of the postulated main steam line break outside of primary containment described in Reference 2. Therefore, these requirements will conservatively limit radiation releases to the environment.

(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)

In the event of a large primary system leak, the reactor vessel would rapidly depressurize, allowing the low pressure core cooling systems to operate. The capability of the low pressure coolant injection and core spray subsystems, as required in MODE 4 by LCO 3.5.2, "ECCS - Shutdown," would be than adequate to keep the core flooded under this low decay heat load condition. Small system leaks would be detected by leakage inspections before significant inventory loss occurred.

For the purposes of these tests, the protection provided by normally required MODE 4 applicable LCOs, in addition to the secondary containment requirements required to be met by this Special Operations LCO, will ensure acceptable consequences during normal hydrostatic test conditions and during postulated accident conditions.

As described in LCO 3.0.7, compliance with Special Operations LCOs is optional, and therefore, no criteria of 10 CFR 50.36(c)(2)(ii) apply. Special Operations LCOs provide flexibility to perform certain operations by appropriately modifying requirements of other LCOs. A discussion of the criteria satisfied for the other LCOs is provided in their respective Bases.

LCO

As described in LCO 3.0.7, compliance with this Special Operations LCO is optional. Operation at reactor coolant temperatures > 212°F, can be in accordance with Table 1.1-1 for MODE 3 operation without meeting this Special Operations LCO or its ACTIONS. This option may be required due to P/T limits, however, which require testing at temperatures > 212°F, performance of inservice leak and hydrostatic testing would also necessitate the inoperability of some subsystems normally required to be OPERABLE when > 212°F. Additionally, even with required minimum reactor coolant temperatures ≤ 212°F, RCS temperatures may drift above 212°F during the performance of inservice leak and hydrostatic testing or during subsequent control rod scram time testing, which is typically performed in conjunction with inservice leak and hydrostatic testing. While this Special Operations LCO is provided for inservice leak and hydrostatic testing, and for scram time testing initiated in conjunction with an inservice leak or hydrostatic test, parallel performance of

(continued)

BASES

LCO (continued)

other tests and inspections is not precluded.

If it is desired to perform these tests while complying with this Special Operations LCO, then the MODE 4 applicable LCOs and specified MODE 3 LCOs must be met. This Special Operations LCO allows changing Table 1.1-1 temperature limits for MODE 4 to "NA" and suspending the requirements of LCO 3.4.8, "Shutdown Cooling (SDC) System - Cold Shutdown." The additional requirements for secondary containment LCOs to be met will provide sufficient protection for operations at reactor coolant temperatures > 212°F for the purposes of performing an inservice leak or hydrostatic test and for control rod scram time testing initiated in conjunction with an inservice leak or hydrostatic test.

This LCO allows primary containment to be open for frequent unobstructed access to perform inspections, and for outage activities on various systems to continue consistent with the MODE 4 applicable requirements.

APPLICABILITY

The MODE 4 requirements may only be modified for the performance of, or as a consequence of, inservice leak or hydrostatic tests, or as a consequence of control rod scram time testing initiated in conjunction with an inservice leak or hydrostatic test, so that these operations can be considered as in MODE 4, even though the reactor coolant temperature is > 212°F. The additional requirement for secondary containment OPERABILITY according to the imposed MODE 3 requirements provides conservatism in the response of the unit to any event that may occur. Operations in all other MODES are unaffected by this LCO.

ACTIONS

A Note has been provided to modify the ACTIONS related to inservice leak and hydrostatic testing operation. Section 1.3, Completion Times, specifies once a Condition has been entered, subsequent divisions, subsystems, components, or variables expressed in the Condition discovered to be inoperable or not within limits, will not result in separate entry into the Condition. Section 1.3 also specifies that Required Actions of the Condition continue to apply for each additional failure, with Completion Times based on initial entry into the Condition. However, the Required Actions for each requirement of the LCO not met provide appropriate

(continued)

BASES

ACTIONS (continued)

compensatory measures for separate requirements that are not met. As such, a Note has been provided that allows separate Condition entry for each requirement of the LCO.

A.1

If an LCO specified in LCO 3.10.8 is not met, the ACTIONS applicable to the stated requirements shall be entered immediately and complied with. Required Action A.1 has been modified by a Note that clarifies the intent of another LCO's Required Action to be in MODE 4 includes reducing the average reactor coolant temperature to ≤ 212°F.

A.2.1 and A.2.2

Required Action A.2.1 and Required Action A.2.2 are alternate Required Actions that can be taken instead of Required Action A.1 to restore compliance with the normal MODE 4 requirements, and thereby exit this Special Operations LCO's Applicability. Activities that could further increase reactor coolant temperature or pressure are suspended immediately, in accordance with Required Action A.2.1, and the reactor coolant temperature is reduced to establish normal MODE 4 requirements. The allowed Completion Time of 24 hours for Required Action A.2.2 is based on engineering judgment and provides sufficient time to reduce the average reactor coolant temperature from the highest expected value to ≤ 212°F with normal cooldown procedures. The Completion Time is also consistent with the time provided in LCO 3.0.3 for reaching MODE 4 from MODE 3.

SURVEILLANCE REQUIREMENTS

SR 3.10.8.1

The LCOs made applicable are required to have their Surveillances met to establish that this LCO is being met. A discussion of the applicable SRs is provided in their respective Bases.

REFERENCES

1. American Society of Mechanical Engineers, Boiler and Pressure Vessel Code, Section XI.

2. UFSAR, Section 15.6.4.

B 3.10 SPECIAL OPERATIONS

B 3.10.8 Inservice Leak and Hydrostatic Testing Operation

BASES

BACKGROUND

The purpose of this Special Operations LCO is to allow certain reactor coolant pressure tests to be performed with the reactor pressure vessel (RPV) at temperatures > 200°F (normally corresponding to MODE 3) or to allow completing these reactor coolant pressure tests when the initial conditions do not require temperatures > 200°F. Furthermore, the purpose is to allow continued performance of control rod scram time testing required by SR 3.1.4.1 or SR 3.1.4.4 if reactor coolant temperatures exceed 200°F when the control rod scram time testing is initiated in conjunction with an inservice leak or hydrostatic test. These control rod scram time tests would be performed in accordance with LCO 3.10.4, "Single Control Rod Withdrawal - Cold Shutdown," during MODE 4 operation.

Inservice hydrostatic testing and system leakage pressure tests required by Section XI of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (Ref. 1) are performed prior to the reactor going critical after a refueling outage. Recirculation pump operation and a water solid RPV are used to achieve the necessary temperatures and pressures required for these tests. The minimum temperatures (at the required pressures) allowed for these tests are determined from the RPV pressure and temperature (P/T) limits required by LCO 3.4.11, "RCS Pressure and Temperature (P/T) Limits." These limits are conservatively based on the fracture toughness of the reactor vessel, taking into account anticipated vessel neutron fluence.

With increased reactor vessel fluence over time, the minimum allowable vessel temperature increases at a given pressure. Periodic updates to the RPV P/T limit curves are performed as necessary, based upon the results of analyses of irradiated surveillance specimen samples removed and analyzed in accordance with the Integrated Surveillance Program (ISP). Hydrostatic and leak testing may eventually be required with minimum reactor coolant temperatures > 200°F. However, even with required minimum reactor coolant temperatures ≤ 200°F, maintaining RCS temperatures within a small band during the test can be impractical.

(continued)

BASES

BACKGROUND (continued)

Removal of heat addition from recirculation pump operation and reactor core decay heat is coarsely controlled by Control Rod Drive Hydraulic System flow and Reactor Water Cleanup System non-regenerative heat exchanger operation. Test conditions are focused on maintaining a steady state pressure, and tightly limited temperature control poses an unnecessary burden on the operator and may not be achievable in certain instances.

A hydrostatic and/or system leakage test is performed at operating pressure on the primary system. Scram time testing, controlled by TS 3.1.4 and TS 3.10.3, is typically scheduled in parallel with these tests.

Other testing may be performed in conjunction with the allowances for inservice leak or hydrostatic tests and control rod scram time test.

APPLICABLE SAFETY ANALYSES

Allowing the reactor to be considered in MODE 4 when the reactor coolant temperature is > 200°F, during, or as a consequence of, hydrostatic or leak testing, or as a consequence of control rod scram time testing initiated in conjunction with an inservice leak or hydrostatic test, effectively provides an exception to MODE 3 requirements, including OPERABILITY of primary containment and the full complement of redundant Emergency Core Cooling Systems (ECCS). Since the tests are performed nearly water solid, at low decay heat values, and near MODE 4 conditions, the stored energy in the reactor core will be very low. Under these conditions, the potential for failed fuel and a subsequent increase in coolant activity above the limits of LCO 3.4.8, "RCS Specific Activity," are minimized. In addition, the secondary containment will be OPERABLE, in accordance with this Special Operations LCO, and will be capable of handling any airborne radioactivity or steam leaks that could occur during the performance of hydrostatic or leak testing. The required pressure testing conditions provide adequate assurance that the consequences of a steam leak will be conservatively bounded by the consequences of the postulated main steam line break outside of primary containment described in Reference 2. Therefore, these requirements will conservatively limit radiation releases to the environment.

(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)

In the event of a large primary system leak, the reactor vessel would rapidly depressurize, allowing the low pressure core cooling systems to operate. The capability of the low pressure coolant injection and low pressure core spray subsystems, as required in MODE 4 by LCO 3.5.2, "ECCS - Shutdown," would be more than adequate to keep the core flooded under this low decay heat load condition. Small system leaks would be detected by leakage inspections before significant inventory loss occurred.

For the purposes of these tests, the protection provided by normally required MODE 4 applicable LCOs, in addition to the secondary containment requirements required to be met by this Special Operations LCO, will ensure acceptable consequences during normal hydrostatic test conditions and during postulated accident conditions.

As described in LCO 3.0.7, compliance with Special Operations LCOs is optional, and therefore, no criteria of 10 CFR 50.36(c)(2)(ii) apply. Special Operations LCOs provide flexibility to perform certain operations by appropriately modifying requirements of other LCOs. A discussion of the criteria satisfied for the other LCOs is provided in their respective Bases.

LCO

As described in LCO 3.0.7, compliance with this Special Operations LCO is optional. Operation at reactor coolant temperatures > 200°F, can be in accordance with Table 1.1-1 for MODE 3 operation without meeting this Special Operations LCO or its ACTIONS. This option may be required due to P/T limits, however, which require testing at temperatures > 200°F, performance of inservice leak and hydrostatic testing would also necessitate the inoperability of some subsystems normally required to be OPERABLE when > 200°F. Additionally, even with required minimum reactor coolant temperatures ≤ 200°F, RCS temperatures may drift above 200°F during the performance of inservice leak and hydrostatic testing or during subsequent control rod scram time testing, which is typically performed in conjunction with inservice leak and hydrostatic testing. While this Special Operations LCO is provided for inservice leak and hydrostatic testing, and for scram time testing initiated in conjunction with an inservice leak or hydrostatic test, parallel performance of other tests and inspections is not precluded.

(continued)

BASES

LCO (continued)

If it is desired to perform these tests while complying with this Special Operations LCO, then the MODE 4 applicable LCOs and specified MODE 3 LCOs must be met. This Special Operations LCO allows changing Table 1.1-1 temperature limits for MODE 4 to "NA" and suspending the requirements of LCO 3.4.10, "Residual Heat Removal (RHR) Shutdown Cooling System - Cold Shutdown." The additional requirements for secondary containment LCOs to be met will provide sufficient protection for operations at reactor coolant temperatures > 200°F for the purposes of performing an inservice leak or hydrostatic test and for control rod scram time testing initiated in conjunction with an inservice leak or hydrostatic test.

This LCO allows primary containment to be open for frequent unobstructed access to perform inspections, and for outage activities on various systems to continue consistent with the MODE 4 applicable requirements.

APPLICABILITY

The MODE 4 requirements may only be modified for the performance of, or as a consequence of, inservice leak or hydrostatic tests, or as a consequence of control rod scram time testing initiated in conjunction with an inservice leak or hydrostatic test, so that these operations can be considered as in MODE 4, even though the reactor coolant temperature is > 200°F. The additional requirement for secondary containment OPERABILITY according to the imposed MODE 3 requirements provides conservatism in the response of the unit to any event that may occur. Operations in all other MODES are unaffected by this LCO.

ACTIONS

A Note has been provided to modify the ACTIONS related to inservice leak and hydrostatic testing operation. Section 1.3, Completion Times, specifies once a Condition has been entered, subsequent divisions, subsystems, components, or variables expressed in the Condition discovered to be inoperable or not within limits, will not result in separate entry into the Condition. Section 1.3 also specifies Required Actions of the Condition continue to apply for each additional failure, with Completion Times based on initial entry into the Condition. However, the Required Actions for each requirement of the LCO not met provide appropriate compensatory measures for separate requirements that are not

(continued)

BASES

ACTIONS (continued)

met. As such, a Note has been provided that allows separate Condition entry for each requirement of the LCO.

A.1

If an LCO specified in LCO 3.10.8 is not met, the ACTIONS applicable to the stated requirements shall be entered immediately and complied with. Required Action A.1 has been modified by a Note that clarifies the intent of another LCO's Required Action to be in MODE 4 includes reducing the average reactor coolant temperature to ≤ 200°F.

A.2.1 and A.2.2

Required Action A.2.1 and Required Action A.2.2 are alternate Required Actions that can be taken instead of Required Action A.1 to restore compliance with the normal MODE 4 requirements, and thereby exit this Special Operations LCO's Applicability. Activities that could further increase reactor coolant temperature or pressure are suspended immediately, in accordance with Required Action A.2.1, and the reactor coolant temperature is reduced to establish normal MODE 4 requirements. The allowed Completion Time of 24 hours for Required Action A.2.2 is based on engineering judgment and provides sufficient time to reduce the average reactor coolant temperature from the highest expected value to ≤ 200°F with normal cooldown procedures. The Completion Time is also consistent with the time provided in LCO 3.0.3 for reaching MODE 4 from MODE 3.

SURVEILLANCE REQUIREMENTS

SR 3.10.8.1

The LCOs made applicable are required to have their Surveillances met to establish that this LCO is being met. A discussion of the applicable SRs is provided in their respective Bases.

REFERENCES

1. American Society of Mechanical Engineers, Boiler and Pressure Vessel Code, Section XI.

2. UFSAR, Section 15.6.4.

B 3.10 SPECIAL OPERATIONS

B 3.10.8 Inservice Leak and Hydrostatic Testing Operation

BASES

BACKGROUND

The purpose of this Special Operations LCO is to allow certain reactor coolant pressure tests to be performed with the reactor pressure vessel (RPV) at temperatures > 212°F (normally corresponding to MODE 3) or to allow completing these reactor coolant pressure tests when the initial conditions do not require temperatures > 212°F. Furthermore, the purpose is to allow continued performance of control rod scram time testing required by SR 3.1.4.1 or SR 3.1.4.4 if reactor coolant temperatures exceed 212°F when the control rod scram time testing is initiated in conjunction with an inservice leak or hydrostatic test. These control rod scram time tests would be performed in accordance with LCO 3.10.3, "Single Control Rod Withdrawal - Cold Shutdown," during MODE 4 operation.

Inservice hydrostatic testing and system leakage pressure tests required by Section XI of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (Ref. 1) are performed prior to the reactor going critical after a refueling outage. Recirculation pump operation and a water solid RPV are used to achieve the necessary temperatures and pressures required for these tests. The minimum temperatures (at the required pressures) allowed for these tests are determined from the RPV pressure and temperature (P/T) limits required by LCO 3.4.9, "RCS Pressure and Temperature (P/T) Limits." These limits are conservatively based on the fracture toughness of the reactor vessel, taking into account anticipated vessel neutron fluence.

With increased reactor vessel fluence over time, the minimum allowable vessel temperature increases at a given pressure. Periodic updates to the RPV P/T limit curves are performed as necessary, based upon the results of analyses of irradiated surveillance specimen samples removed and analyzed in accordance with the Integrated Surveillance Program (ISP). Hydrostatic and leak testing may eventually be required with minimum reactor coolant temperatures > 212°F. However, even with required minimum reactor coolant temperatures ≤ 212°F, maintaining RCS temperatures within a small band during the test can be impractical.

(continued)

BASES

BACKGROUND (continued)

Removal of heat addition from recirculation pump operation and reactor core decay heat is coarsely controlled by Control Rod Drive Hydraulic System flow and Reactor Water Cleanup System non-regenerative heat exchanger operation. Test conditions are focused on maintaining a steady state pressure, and tightly limited temperature control poses an unnecessary burden on the operator and may not be achievable in certain instances.

A hydrostatic and/or system leakage test is performed at operating pressure on the primary system. Scram time testing, controlled by TS 3.1.4 and TS 3.10.3, is typically scheduled in parallel with these tests.

Other testing may be performed in conjunction with the allowances for inservice leak or hydrostatic tests and control rod scram time test.

APPLICABLE SAFETY ANALYSES

Allowing the reactor to be considered in MODE 4 when the reactor coolant temperature is > 212°F, during, or as a consequence of, hydrostatic or leak testing, or as a consequence of control rod scram time testing initiated in conjunction with an inservice leak or hydrostatic test, effectively provides an exception to MODE 3 requirements, including OPERABILITY of primary containment and the full complement of redundant Emergency Core Cooling Systems (ECCS). Since the tests are performed nearly water solid, at low decay heat values, and near MODE 4 conditions, the stored energy in the reactor core will be very low. Under these conditions, the potential for failed fuel and a subsequent increase in coolant activity above the LCO 3.4.6, "RCS Specific Activity," limits are minimized. In addition, the secondary containment will be OPERABLE, in accordance with this Special Operations LCO, and will be capable of handling any airborne radioactivity or steam leaks that could occur during the performance of hydrostatic or leak testing. The required pressure testing conditions provide adequate assurance that the consequences of a steam leak will be conservatively bounded by the consequences of the postulated main steam line break outside of primary containment described in Reference 2. Therefore, these requirements will conservatively limit radiation releases to the environment.

(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)

In the event of a large primary system leak, the reactor vessel would rapidly depressurize, allowing the low pressure core cooling systems to operate. The capability of the low pressure coolant injection and core spray subsystems, as required in MODE 4 by LCO 3.5.2, "ECCS - Shutdown," would be than adequate to keep the core flooded under this low decay heat load condition. Small system leaks would be detected by leakage inspections before significant inventory loss occurred.

For the purposes of these tests, the protection provided by normally required MODE 4 applicable LCOs, in addition to the secondary containment requirements required to be met by this Special Operations LCO, will ensure acceptable consequences during normal hydrostatic test conditions and during postulated accident conditions.

As described in LCO 3.0.7, compliance with Special Operations LCOs is optional, and therefore, no criteria of 10 CFR 50.36(c)(2)(ii) apply. Special Operations LCOs provide flexibility to perform certain operations by appropriately modifying requirements of other LCOs. A discussion of the criteria satisfied for the other LCOs is provided in their respective Bases.

LCO

As described in LCO 3.0.7, compliance with this Special Operations LCO is optional. Operation at reactor coolant temperatures > 212°F, can be in accordance with Table 1.1-1 for MODE 3 operation without meeting this Special Operations LCO or its ACTIONS. This option may be required due to P/T limits, however, which require testing at temperatures > 212°F, performance of inservice leak and hydrostatic testing would also necessitate the inoperability of some subsystems normally required to be OPERABLE when > 212°F. Additionally, even with required minimum reactor coolant temperatures ≤ 212°F, RCS temperatures may drift above 212°F during the performance of inservice leak and hydrostatic testing or during subsequent control rod scram time testing, which is typically performed in conjunction with inservice leak and hydrostatic testing. While this Special Operations LCO is provided for inservice leak and hydrostatic testing, and for scram time testing initiated in conjunction with an inservice leak or hydrostatic test, parallel performance of other tests and inspections is not precluded.

(continued)

BASES

LCO (continued)

If it is desired to perform these tests while complying with this Special Operations LCO, then the MODE 4 applicable LCOs and specified MODE 3 LCOs must be met. This Special Operations LCO allows changing Table 1.1-1 temperature limits for MODE 4 to "NA" and suspending the requirements of LCO 3.4.8, "Residual Heat Removal (RHR) Shutdown Cooling System - Cold Shutdown." The additional requirements for secondary containment LCOs to be met will provide sufficient protection for operations at reactor coolant temperatures > 212°F for the purposes of performing an inservice leak or hydrostatic test and for control rod scram time testing initiated in conjunction with an inservice leak or hydrostatic test.

This LCO allows primary containment to be open for frequent unobstructed access to perform inspections, and for outage activities on various systems to continue consistent with the MODE 4 applicable requirements.

APPLICABILITY

The MODE 4 requirements may only be modified for the performance of, or as a consequence of, inservice leak or hydrostatic tests, or as a consequence of control rod scram time testing initiated in conjunction with an inservice leak or hydrostatic test, so that these operations can be considered as in MODE 4, even though the reactor coolant temperature is > 212°F. The additional requirement for secondary containment OPERABILITY according to the imposed MODE 3 requirements provides conservatism in the response of the unit to any event that may occur. Operations in all other MODES are unaffected by this LCO.

ACTIONS

A Note has been provided to modify the ACTIONS related to inservice leak and hydrostatic testing operation. Section 1.3, Completion Times, specifies once a Condition has been entered, subsequent divisions, subsystems, components, or variables expressed in the Condition discovered to be inoperable or not within limits, will not result in separate entry into the Condition. Section 1.3 also specifies that Required Actions of the Condition continue to apply for each additional failure, with Completion Times based on initial entry into the Condition. However, the Required Actions for each requirement of the LCO not met provide appropriate compensatory measures for separate requirements that are not

(continued)

BASES

ACTIONS (continued)

met. As such, a Note has been provided that allows separate Condition entry for each requirement of the LCO.

A.1

If an LCO specified in LCO 3.10.8 is not met, the ACTIONS applicable to the stated requirements shall be entered immediately and complied with. Required Action A.1 has been modified by a Note that clarifies the intent of another LCO's Required Action to be in MODE 4 includes reducing the average reactor coolant temperature to ≤ 212°F.

A.2.1 and A.2.2

Required Action A.2.1 and Required Action A.2.2 are alternate Required Actions that can be taken instead of Required Action A.1 to restore compliance with the normal MODE 4 requirements, and thereby exit this Special Operations LCO's Applicability. Activities that could further increase reactor coolant temperature or pressure are suspended immediately, in accordance with Required Action A.2.1, and the reactor coolant temperature is reduced to establish normal MODE 4 requirements. The allowed Completion Time of 24 hours for Required Action A.2.2 is based on engineering judgment and provides sufficient time to reduce the average reactor coolant temperature from the highest expected value to ≤ 212°F with normal cooldown procedures. The Completion Time is also consistent with the time provided in LCO 3.0.3 for reaching MODE 4 from MODE 3.

SURVEILLANCE REQUIREMENTS

SR 3.10.8.1

The LCOs made applicable are required to have their Surveillances met to establish that this LCO is being met. A discussion of the applicable SRs is provided in their respective Bases.

REFERENCES

1. American Society of Mechanical Engineers, Boiler and Pressure Vessel Code, Section XI.

2. UFSAR, Section 15.6.4.