

RS-21-078

10 CFR 50.90

August 19, 2021

U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
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Clinton Power Station, Unit 1  
Facility Operating License No. NPF-62  
NRC Docket No. 50-461

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  
Renewed 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: Response to Request for Additional Information for Application to Revise Technical Specification to Adopt TSTF-582, "Reactor Pressure Vessel Water Inventory Control (RPV WIC) Enhancements," and TSTF-583-T, "TSTF-582 Diesel Generator Variation"

- References:
1. Letter from P.R. Simpson (Exelon) to U.S. NRC, "Application to Revise Technical Specification to Adopt TSTF-582, 'Reactor Pressure Vessel Water Inventory Control (RPV WIC) Enhancements,'" dated November 18, 2020 (ML20323A248)
  2. Email from S. Wall (U.S. Nuclear Regulatory Commission) to R. Steinman (Exelon Generation Company, LLC), Subject: "Final RAI - Exelon Fleet LAR to Adopt TSTF-582 and TSTF-583-T (EPID Nos. L-2020-LLA-0253, and L-2020-LLA-0254)," dated July 8, 2021 (ML21190A019)

In the Reference 1 letter, Exelon Generation Company, LLC, (EGC) requested an amendment to Facility Operating License (FOL) No. NPF-62 for Clinton Power Station, Unit 1, Renewed FOL Nos. DPR-19 and DPR-25 for Dresden Nuclear Power Station, Units 2 and 3, Renewed FOL Nos. NPF-11 and NPF-18 for LaSalle County Station, Units 1 and 2, and Renewed FOL

Nos. DPR-29 and DPR-30 for Quad Cities Nuclear Power Station, Units 1 and 2. The proposed amendment is consistent with previously NRC-approved Industry/Technical Specification Task Force Traveler 582 (TSTF-582), Revision 0, "Reactor Pressure Vessel Water Inventory Control (RPV WIC) Enhancements," (Reference 1), and also incorporates the variation described in TSTF-583-T, Revision 0, "TSTF-582 Diesel Generator Variation."

In Reference 2, the NRC requested additional information that is needed to complete the review of the proposed amendment. In response to this request, EGC is providing the additional information requested in Attachments 1 through 4.

Attachment 1 contains the response to the request for additional information (RAI) in Reference 2. Attachment 2 contains corrected Technical Specification markup for Dresden. Attachment 3 contains corrected Technical Specification markup for LaSalle. Attachment 4 contains corrected Technical Specification markup for Quad Cities. Attachments 2, 3 and 4 will replace in its entirety Attachments 2.2, 2.3, and 2.4, respectively, of the original submittal (Reference 1).

EGC has reviewed the information supporting the finding of no significant hazards consideration, and the environmental consideration, that were previously provided to the NRC in Reference 1. The additional information provided in this submittal does not affect the bases for concluding that the proposed license amendment does not involve a significant hazards consideration. In addition, the information provided in this submittal does not affect the bases for concluding that neither an environmental impact statement nor an environmental assessment needs to be prepared in connection with the proposed amendment.

There are no regulatory commitments contained within this letter.

Should you have any questions concerning this letter, please contact Ms. Linda Palutis at (630) 657-2821.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 19<sup>th</sup> day of August 2021.

Respectfully,



Patrick Simpson  
Sr Manager Licensing  
Exelon Generation Company, LLC



Attachments:

1. Response to Request for Additional Information
2. Markup of Proposed Technical Specification Pages for Dresden Nuclear Power Station
3. Markup of Proposed Technical Specification Pages for LaSalle County Station
4. Markup of Proposed Technical Specification Pages for Quad Cities Nuclear Power Station

cc: NRC Regional Administrator, Region III  
NRC Senior Resident Inspector – Clinton Power Station  
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

### Response to Request for Additional Information

#### Background

Paragraph 50.36(c)(3) of Title 10 of the Code of Federal Regulations (10 CFR) requires that TSs include surveillance requirements (SRs), which are requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the limiting conditions for operation (LCOs) will be met.

The LCO and associated SRs for alternating-current (AC) electrical power sources that are applicable when a unit is in modes 1, 2, and 3 are specified in TS 3.8.1, "AC Sources – Operating." The LCOs and associated SRs for AC electrical power sources and electrical distributions systems that are applicable when a unit is in modes 4 and 5 or during movement of recently irradiated fuel assemblies in the secondary containment are specified in TS 3.8.2, "AC Sources – Shutdown," and TS 3.8.8, "Distribution Systems – Shutdown," respectively.

#### Request Additional Information (RAI) 1 (Dresden)

Section 8.3.1.5.2, "System Arrangement," of the Dresden Updated Final Safety Analysis Report (UFSAR) states, in part, that diesel generator (DG) 2 provides power to the Division II emergency core cooling system (ECCS) equipment for Unit 2, and DG 3 provides power to Division II ECCS equipment for Unit 3. DG 2/3 provides power to the Division I ECCS equipment for either Unit 2 or Unit 3.

Dresden LCO 3.8.1.d requires that the following AC electrical power source be operable when the unit is operating: "The opposite unit's DG capable of supporting the equipment required to be OPERABLE by LCO 3.6.4.3, LCO 3.7.4 (Unit 3 only), and LCO 3.7.5 (Unit 3 only)." SR 3.8.1.21 is applicable to the opposite unit's AC electrical power sources and it specifies, in part, the SRs necessary to meet LCO 3.8.1.d.

Dresden LCO 3.8.2.b requires that the following AC electrical power source be operable when the unit is shutdown: "One diesel generator (DG) capable of supplying one division of the onsite Class 1E AC electrical power distribution subsystem(s) required by LCO 3.8.8." When a unit is shutdown, Dresden LCO 3.8.8 requires: "The necessary portions of the AC, DC [direct current], and the opposite unit's Division 2 electrical power distribution subsystems shall be OPERABLE to support equipment required to be OPERABLE." Dresden SR 3.8.2.1 specifies the SRs in TS 3.8.1 that are necessary to meet LCO 3.8.2.

The licensee proposed to revise Dresden SR 3.8.2.1 as shown in the table below. The proposed changes would make several SRs for AC sources required by TS 3.8.2 no longer applicable. The licensee also proposed to revise TS 3.3.8.1, "Loss of Power (LOP) Instrumentation," such that LCO 3.3.8.1 would no longer be applicable "[w]hen the associated diesel generator is required to be OPERABLE by LCO 3.8.2, 'AC Sources Shutdown.'" The LAR states that these changes are based on TSTF-582 and TSTF-583-T. However, these travelers and the NRC safety evaluation for TSTF-582 do not address shared AC sources at multi-unit sites. In addition, the LAR does not address the shared AC sources at Dresden. The LAR also proposes, without justification, to delete SRs currently required by SR 3.8.2.1 (e.g., Dresden SR 3.8.1.7) which are not included in the TSTF-582 or TSTF-583-T changes. The proposed changes would also make SR 3.8.2.1 inconsistent with SR 3.8.1.21.

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<b>Current SR 3.8.2.1</b>	<b>Proposed SR 3.8.2.1</b>										
<p>-----NOTE-----                      The following SRs are not required to be performed: SR 3.8.1.3, SR 3.8.1.10 through SR 3.8.1.12, and SR 3.8.1.14 through SR 3.8.1.18.                      -----                      For AC sources required to be OPERABLE the SRs of Specification 3.8.1, except SR 3.8.1.9, SR 3.8.1.13, SR 3.8.1.19, SR 3.8.1.20, and SR 3.8.1.21 are applicable.</p>	<p>-----NOTE-----                      The following SRs are not required to be performed: SR 3.8.1.3, SR 3.8.1.10, SR 3.8.1.11, SR 3.8.1.15, and SR 3.8.1.17.                      -----                      The following SRs are applicable for AC sources required to be OPERABLE:</p> <table border="0" data-bbox="824 594 1414 749"> <tr> <td>SR 3.8.1.1</td> <td>SR 3.8.1.6</td> </tr> <tr> <td>SR 3.8.1.2</td> <td>SR 3.8.1.10</td> </tr> <tr> <td>SR 3.8.1.3</td> <td>SR 3.8.1.11</td> </tr> <tr> <td>SR 3.8.1.4</td> <td>SR 3.8.1.15</td> </tr> <tr> <td>SR 3.8.1.5</td> <td>SR 3.8.1.17</td> </tr> </table>	SR 3.8.1.1	SR 3.8.1.6	SR 3.8.1.2	SR 3.8.1.10	SR 3.8.1.3	SR 3.8.1.11	SR 3.8.1.4	SR 3.8.1.15	SR 3.8.1.5	SR 3.8.1.17
SR 3.8.1.1	SR 3.8.1.6										
SR 3.8.1.2	SR 3.8.1.10										
SR 3.8.1.3	SR 3.8.1.11										
SR 3.8.1.4	SR 3.8.1.15										
SR 3.8.1.5	SR 3.8.1.17										

Provide the following information for Dresden:

- A. For SR 3.8.2.1, identify the currently applicable SRs of TS 3.8.1 that are necessary to meet LCO 3.6.4.3, LCO 3.7.4, LCO 3.7.5, and LCO 3.8.8. The response should discuss the following plant conditions: Unit 2 operating and Unit 3 shutdown, Unit 2 shutdown and Unit 3 operating, and both Units 2 and 3 shutdown.
- B. For each SR of TS 3.8.1 that would no longer be applicable to TS 3.8.2 under the proposed amendment, explain why the SR is not needed to support the opposite unit or to meet the requirements of LCO 3.8.2. The response should address the requirements in LCO 3.6.4.3, LCO 3.7.4, LCO 3.7.5, and LCO 3.8.8. The response should also identify and address any differences between the events considered in the NRC staff's safety evaluation for TSTF-582 and the Dresden design and licensing basis.
- C. Identify the changes to SR 3.8.1.21 that are needed to make it consistent with the proposed SR 3.8.2.1. Provide justification to support these changes.
- D. In conjunction with the information requested under A, B, and C above, justify the deletion of the following wording from the Applicability of LCO 3.3.8.1: "When the associated diesel generator is required to be OPERABLE by LCO 3.8.2, 'AC Sources Shutdown.'"

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#### Response to RAI 1 (Dresden):

##### Part A

Dresden Surveillance Requirement (SR) 3.8.2.1 lists the subset of SRs from Technical Specification (TS) 3.8.1, "AC Sources – Operating," that are required to be met for alternating current (AC) electrical power sources that are required to be operable by limiting condition for operation (LCO) 3.8.2, "AC Sources - Shutdown." LCO 3.8.2 is applicable to a unit that is in modes 4 or 5, or during movement of recently irradiated fuel assemblies in the secondary containment. LCO 3.8.2 requires one offsite circuit between the offsite transmission network and the onsite Class 1E AC electrical power distribution subsystem(s) required by LCO 3.8.8, "Distribution Systems – Shutdown," and one diesel generator (DG) capable of supplying one division of the onsite Class 1E AC electrical power distribution subsystem(s) required by LCO 3.8.8.

According to LCO 3.0.9 and SR 3.0.5, LCOs and SRs, respectively, are applied individually to each unit at a dual-unit site, such that the operating mode of one unit does not affect the application of the TS to the opposite unit. Therefore, the TS 3.8.1 SRs that are currently required to be met by SR 3.8.2.1 when a unit is in the mode of applicability of SR 3.8.2 are independent of the opposite unit's mode. The applicability of these SRs under the current Dresden SR 3.8.2.1 wording (prior to adoption of TSTF-582) is summarized in Table 1A-1.

**Table 1A-1 Dresden TS 3.8.1 SRs Required by Current SR 3.8.2.1**

<b>SR</b>	<b>Unit Two (Shutdown)</b>	<b>Unit Three (Shutdown)</b>
3.8.1.1	Applicable (offsite circuit)	Applicable (offsite circuit)
3.8.1.2	Applicable *	Applicable **
3.8.1.3	Applicable *	Applicable **
3.8.1.4	Applicable *	Applicable **
3.8.1.5	Applicable *	Applicable **
3.8.1.6	Applicable *	Applicable **
3.8.1.7	Applicable *	Applicable **
3.8.1.8	Applicable *	Applicable **
3.8.1.9	Not Applicable	Not Applicable
3.8.1.10	Applicable *	Applicable **
3.8.1.11	Applicable *	Applicable **
3.8.1.12	Applicable *	Applicable **
3.8.1.13	Not Applicable	Not Applicable
3.8.1.14	Applicable *	Applicable **
3.8.1.15	Applicable *	Applicable **
3.8.1.16	Applicable *	Applicable **
3.8.1.17	Applicable *	Applicable **



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SR	Unit Two (Shutdown)	Unit Three (Shutdown)
3.8.1.18	Applicable *	Applicable **
3.8.1.19	Not Applicable	Not Applicable
3.8.1.20	Not Applicable	Not Applicable
3.8.1.21	Not Applicable	Not Applicable

\* For Unit 2, the required DG will be either the Unit 2 DG or the Unit 2/3 (shared) DG.

\*\*For Unit 3, the required DG will be either the Unit 3 DG or the Unit 2/3 (shared) DG.

LCOs 3.6.4.3, 3.7.4, and 3.7.5 are not applicable to a unit that is in mode 4 or 5 unless recently irradiated fuel is being moved in the shared secondary containment. These LCO's, when applicable, require equipment to be operable that is powered by both the same unit and the opposite unit's AC distribution subsystem(s). For equipment powered by the same unit (e.g., for Unit 2, 2/3B Standby Gas Treatment (SBGT), Control Room Emergency Ventilation (CREV), and Control Room Emergency Ventilation Air Conditioning (CREV-AC)), the AC Sources required by LCO 3.8.2 support the associated equipment, with applicable SRs specified in the table above. For equipment powered by the opposite unit (e.g., for Unit 2, 2/3A SBGT), the required opposite unit distribution subsystems are required to be operable by LCO 3.8.8; however, no corresponding opposite unit requirement exists under LCO 3.8.2 for AC Sources. This is supported by the current bases of LCO 3.8.2 state that:

"In general, when the unit is shutdown the Technical Specification requirements ensure that the unit has the capability to mitigate the consequences of postulated accidents. However, assuming a single failure and concurrent loss of all offsite or loss of all onsite power is not required. The rationale for this is based on the fact that many Design Basis Accidents (DBAs) that are analyzed in modes 1, 2, and 3 have no specific analyses in modes 4 and 5. Worst case bounding events are deemed not credible in modes 4 and 5 because the energy contained within the reactor pressure boundary, reactor coolant temperature and pressure, and corresponding stresses result in the probabilities of occurrences significantly reduced or eliminated, and minimal consequences. These deviations from DBA analysis assumptions and design requirements during shutdown conditions are allowed by the LCO for required systems."

Therefore, under current Dresden's TS the applicable SR's of LCO 3.8.1 that are specified to be met under SR 3.8.2.1 for the AC sources required to be operable by LCO 3.8.2 are those listed in the table above, even if movement of recently irradiated fuel in secondary containment is causing the shutdown unit to be in the mode of applicability of LCOs 3.6.4.3, 3.7.4, and 3.7.5. Adequate power to support the operability of required opposite unit equipment is assured by LCO 3.8.8.

For any operating unit, even if the opposite unit is shutdown, all SR's of LCO 3.8.1 apply to the AC sources required to be operable, which will include one qualified circuit between the offsite transmission network and the opposite unit's onsite Class 1E AC Electrical Power Distribution System and the opposite unit DG capable of supporting LCOs 3.6.4.3, 3.7.4, and 3.7.5.



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#### Part B

Since no changes have been proposed for SR 3.8.1.21, any opposite unit AC sources required by a unit operating in mode 1, 2, or 3 will continue to be subject to the existing set of SRs to establish operability. For multi-unit sites with shared AC distribution systems and sources, the same AC Source (e.g., a unit or shared DG) may be required for each Unit by different LCOs (e.g., LCO 3.8.1 or LCO 3.8.2); however, the basis for the equipment being required to be operable is different for an operating unit versus a shutdown unit. Since the operating unit must still have the capability to mitigate the effects of Design Basis Accidents (DBA) analyzed for operating conditions (e.g., DBA Loss of Coolant Accident), all of the requirements associated with DG automatic start in response to Emergency Core Cooling Systems (ECCS) or Loss of Offsite Power (LOOP) signals, time to achieve rated voltage and frequency, and load sequencing continue to be required. Thus, no changes to SR 3.8.1.21 are appropriate or proposed.

As described in the Safety Evaluation for TSTF-582 (Reference 1) and supported by the Loss of Power (LOP) Variation model Safety Evaluation (Reference 2), the DGs supporting a shutdown unit (operating in mode 4, 5, or during movement of recently irradiated fuel in secondary containment) may be manually started and loaded in response to a Reactor Pressure Vessel (RPV) draining event. Furthermore, the essential consideration for the events assessed in Reference 1, namely that the Fuel Handling Accident (FHA) does not assume a LOOP and that the minimum Drain Time permitted for any duration by LCO 3.5.2 is 1 hour, are consistent with the Dresden licensing basis. The ability of each required DG to support the required loads via manual start and loading continues to be demonstrated by the SRs that are retained under the proposed revision to SR 3.8.2.1. Additionally, for the FHA, no credit in the analysis is taken for the operation of SBGT, CREV, or CREV-AC (Reference 3). Equipment required by LCOs 3.6.4.3, 3.7.4, and 3.7.5 will continue to be supported by operable distribution subsystems specified by LCO 3.8.8. The Dresden licensing basis does not include any additional events requiring automatic start of DGs for a shutdown unit that have not already been considered in the safety evaluation for TSTF-582 (i.e., Fuel Handling Accident, draining event in mode 4 or 5). The proposed LAR does not affect which AC sources will be required via LCO 3.8.2 to support the distribution systems required operable via LCO 3.8.8, but only revises the applicable SRs that are required to consider a DG operable for LCO 3.8.2 (though additional SRs may apply to the same DG and its associated start logic if required by an operating unit via SR 3.8.1.21).

Based on the above considerations, justification for deletion of each proposed SR of LCO 3.8.1 from the list of SRs required by the DG(s) required to be operable by LCO 3.8.2 is provided:

#### SR 3.8.1.8

This surveillance verifies the DG ability to achieve required voltage and frequency within 13 seconds. The 13 second timeframe is not required to support manual start of the DG in response to the postulated events in mode 4 or 5, and the ability of the DG to be manually started and loaded continues to be demonstrated by SR 3.8.1.2. If an operating unit requires the same DG to be operable, this surveillance will continue to be applicable for the operating unit via SR 3.8.1.21. This SR is equivalent to SR 3.8.1.7 from NUREG-1433 Revision 4, with the exception that the Dresden SR includes a note allowing the performance of this test for the common DG to satisfy this SR for both Units. This SR is assessed for deletion from the NUREG-1433 Standard Technical Specification (STS) SR 3.8.2.1 in Reference 2.

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#### SR 3.8.1.12

This surveillance verifies, in part, the automatic start and loading of a DG on a LOOP signal. As previously discussed, response to the postulated events in mode 4 and 5 does not require automatic start and loading of a DG. If an operating unit requires the same DG to be operable, this surveillance will continue to be applicable for the operating unit via SR 3.8.1.21. This SR is equivalent to SR 3.8.1.11 from NUREG-1433 Revision 4, with the exception that Dresden does not include the verification of auto-connected loads through a load sequencer (since the Dresden design does not have this feature). This SR is approved for deletion from the NUREG-1433 STS SR 3.8.2.1 in Reference 1.

#### SR 3.8.1.14

This surveillance verifies that the required DG's noncritical automatic trips are bypassed on an actual or simulated loss of voltage signal on the emergency bus concurrent with an actual or simulated ECCS initiation signal. Since the requirement for operable ECCS initiation signals is proposed for removal from LCO 3.3.5.2, removal of this surveillance from the list of those surveillances required for a DG supporting LCO 3.8.2 establishes consistency. Consistent with the assessment provided in Section 3.6 of Reference 1, LCO 3.8.2 and LCO 3.5.2 will, upon an actual LOOP, continue to require the restoration of an RPV injection source capable of operating without offsite power within a timeframe adequate for responding to a vessel draining event. If an operating unit requires the same DG to be operable, this surveillance will continue to be applicable for the operating unit via SR 3.8.1.21. This SR is equivalent to SR 3.8.1.13 from NUREG-1433 Revision 4. This SR is approved for deletion from the NUREG-1433 STS SR 3.8.2.1 in Reference 1.

#### SR 3.8.1.16

This surveillance demonstrates that the DG can restart from a hot condition, such as subsequent to shutdown from normal surveillances, and achieve the required voltage and frequency within 13 seconds. The 13 second timeframe is not required to support manual start of the DG in response to the postulated events in mode 4 or 5, and the ability of the DG to be manually started and loaded continues to be demonstrated by SR 3.8.1.2. If an operating unit requires the same DG to be operable, this surveillance will continue to be applicable for the operating unit via SR 3.8.1.21. This SR is equivalent to SR 3.8.1.15 from NUREG-1433 Revision 4, with the exception that the Dresden SR includes a note allowing the performance of this test for the common DG to satisfy this SR for both Units. This SR is assessed for deletion from the NUREG-1433 STS SR 3.8.2.1 in Reference 2.

#### SR 3.8.1.18

This surveillance verifies the interval between each sequenced load block is  $\geq 90\%$  of the design interval for each load sequence time delay relay. This logic is associated with automatic start and loading of an EDG in response to an ECCS initiation signal concurrent with a LOOP. Since the requirement for operable ECCS initiation signals is proposed for removal from LCO 3.3.5.2, removal of this surveillance from the list of those surveillances required a DG supporting LCO 3.8.2 establishes consistency. Manual loading of the DG will continue to be able to be performed by licensed operators in response to the postulated events in mode 4 and 5 or during

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movement of recently irradiated fuel in secondary containment. This SR is equivalent to SR 3.8.1.18 from NUREG-1433 Revision 4. This SR is assessed for deletion from the NUREG-1433 STS SR 3.8.2.1 in Reference 2.

#### SR 3.8.1.7

SR 3.8.1.7 was inadvertently removed from the list of SRs required to be performed under SR 3.8.2.1 even though it is required as shown in Table 1A-1. Attachment 2 provides the corrected markup of SR 3.8.2.1. Attachment 2 will replace in its entirety Attachment 2.2 of the original submittal. However, the only change to the markup is the correction to SR 3.8.2.1 on Page 3.8.2-3.

#### **Part C**

As discussed in the responses to Parts A and B, no changes are required for SR 3.8.1.21, as this SR continues to specify the appropriate criteria for operability of an opposite unit AC source that is required by a unit operating in modes 1, 2, or 3.

#### **Part D**

As described in Part B, the DGs supporting a shutdown unit (operating in mode 4, 5, or during movement of recently irradiated fuel in secondary containment) may be manually started and loaded in response to a Reactor Pressure Vessel (RPV) draining event.

TSTF-582 did not include all the TS changes needed to reflect that TS 3.8.2 does not require automatic start and loading of a DG within 13 seconds on an ECCS initiation signal or LOOP signal. TSTF-583-T addressed these additional changes, which included the revision of the Applicability of LCO 3.3.8.1 to remove the currently specified condition "When the associated diesel generator as required to be OPERABLE by LCO 3.8.2, 'AC Sources – Shutdown.'"

TS 3.3.8.1, "Loss of Power (LOP) Instrumentation," is currently applicable in modes 1, 2, and 3, and when the associated DG is required to be operable by TS 3.8.2. Implementation of TSTF-582 revises TS 3.8.2 to no longer require automatic start and loading of a DG on a LOOP signal. Consequently, the instrumentation that generates the LOOP signal should not be required to be operable when the DG is required to be operable by TS 3.8.2. As a result, the deletion of the condition related to TS 3.8.2 in the applicability of LCO 3.3.8.1 is appropriate.



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#### RAI 2 (LaSalle)

Section 8.3.1.1.2, "Unit Class 1E A-C Power System," of the LaSalle UFSAR states, in part, that the main components of the unit Class 1E AC power system for Unit 1 (or Unit 2) are three DGs, one of which is common to Unit 1 and Unit 2.

LaSalle LCO 3.8.1.c requires that the following AC electrical power source be operable when the unit is operating: "The opposite unit's Division 2 DG capable of supporting the associated equipment required to be OPERABLE by LCO 3.6.4.3, 'Standby Gas Treatment (SGT) System,' LCO 3.7.4, 'Control Room Area Filtration (CRAF) System,' and LCO 3.7.5, 'Control Room Area Ventilation Air Conditioning (AC) System.'" SR 3.8.1.21 is applicable to the opposite unit's AC electrical power sources and it specifies, in part, the SRs necessary to meet LCO 3.8.1.c.

LaSalle LCO 3.8.2 requires, in part, that the following AC electrical power sources be operable when the unit is shutdown:

- b. One diesel generator (DG) capable of supplying one division of the Division 1 or 2 onsite Class 1E AC electrical power distribution subsystem(s) required by LCO 3.8.8;
- ...
- d. One qualified circuit, which may be the same circuit in LCO 3.8.2.a. between the offsite transmission network and the opposite unit Division 2 onsite Class 1E AC electrical power distribution subsystem, or the opposite unit DG capable of supplying the opposite unit Division 2 onsite Class 1E AC electrical power distribution subsystem, when the opposite unit Division 2 onsite Class 1E AC electrical power distribution subsystem is required by LCO 3.8.8.

When a unit is shutdown, LaSalle LCO 3.8.8 requires: "The necessary portions of the Division 1, Division 2, and Division 3 AC and DC, and the opposite unit Division 2 AC and DC electrical power distribution subsystems shall be OPERABLE to support equipment required to be OPERABLE." LaSalle SR 3.8.2.1 specifies the SRs in TS 3.8.1 that are necessary to meet LCO 3.8.2.

The licensee proposed to revise LaSalle SR 3.8.2.1 as shown in the table below. The proposed changes would make several SRs for AC sources required by TS 3.8.2 no longer applicable.

The licensee also proposed to revise LaSalle TS 3.3.8.1, "Loss of Power (LOP) Instrumentation," such that LCO 3.3.8.1 would no longer be applicable "[w]hen the associated diesel generator (DG) is required to be OPERABLE by LCO 3.8.2, 'AC Sources Shutdown.'" The LAR states that these changes are based on TSTF-582 and TSTF-583-T. However, these travelers and the NRC safety evaluation for TSTF-582 do not address shared AC sources at multi-unit sites. In addition, the LAR does not address the shared AC sources at LaSalle. The LAR also proposes, without justification, to delete SRs currently required by SR 3.8.2.1 (e.g., LaSalle SR 3.8.1.21) which are not included in the TSTF-582 or TSTF-583-T changes. The proposed changes would also make SR 3.8.2.1 inconsistent with SR 3.8.1.21.

**ATTACHMENT 1**

**Response to Request for Additional Information**

<b>Current SR 3.8.2.1</b>	<b>Proposed SR 3.8.2.1</b>										
<p>-----NOTES-----</p> <p>1. The following SRs are not required to be performed: SR 3.8.1.3, SR 3.8.1.9 through SR 3.8.1.11, and SR 3.8.1.13 through SR 3.8.1.16, SR 3.8.1.18, and SR 3.8.1.19.</p> <p>2. SR 3.8.1.12 and SR 3.8.1.19 are not required to be met.</p> <p>-----</p> <p>For AC sources required to be OPERABLE, the SRs of Specification 3.8.1, except SR 3.8.1.8, SR 3.8.1.17, and SR 3.8.1.20, are applicable.</p>	<p>-----NOTE-----</p> <p>The following SRs are not required to be performed: SR 3.8.1.3, SR 3.8.1.9, SR 3.8.1.10, SR 3.8.1.14, and SR 3.8.1.16.</p> <p>-----</p> <p>The following SRs are applicable for AC sources required to be OPERABLE:</p> <table border="0"> <tr> <td>SR 3.8.1.1</td> <td>SR 3.8.1.6</td> </tr> <tr> <td>SR 3.8.1.2</td> <td>SR 3.8.1.9</td> </tr> <tr> <td>SR 3.8.1.3</td> <td>SR 3.8.1.10</td> </tr> <tr> <td>SR 3.8.1.4</td> <td>SR 3.8.1.14</td> </tr> <tr> <td>SR 3.8.1.5</td> <td>SR 3.8.1.16</td> </tr> </table>	SR 3.8.1.1	SR 3.8.1.6	SR 3.8.1.2	SR 3.8.1.9	SR 3.8.1.3	SR 3.8.1.10	SR 3.8.1.4	SR 3.8.1.14	SR 3.8.1.5	SR 3.8.1.16
SR 3.8.1.1	SR 3.8.1.6										
SR 3.8.1.2	SR 3.8.1.9										
SR 3.8.1.3	SR 3.8.1.10										
SR 3.8.1.4	SR 3.8.1.14										
SR 3.8.1.5	SR 3.8.1.16										

Provide the following information for LaSalle:

- A. For SR 3.8.2.1, identify the currently applicable SRs of TS 3.8.1 that are necessary to meet LCO 3.6.4.3, LCO 3.7.4, LCO 3.7.5, and LCO 3.8.8. The response should discuss the following plant conditions: Unit 1 operating and Unit 2 shutdown, Unit 1 shutdown and Unit 2 operating, and both Units 1 and 2 shutdown.
- B. For each SR of TS 3.8.1 that would no longer be applicable to TS 3.8.2 under the proposed amendment, explain why the SR is not needed to support the opposite unit or to meet the requirements of LCO 3.8.2. The response should address the requirements in LCO 3.6.4.3, LCO 3.7.4, LCO 3.7.5, and LCO 3.8.8. The response should also identify and address any differences between the events considered in the NRC staff's safety evaluation for TSTF-582 and the LaSalle design and licensing basis.
- C. Identify the changes to SR 3.8.1.21 that are needed to make it consistent with the proposed SR 3.8.2.1. Provide justification to support these changes.
- D. In conjunction with the information requested under A, B, and C above, justify the deletion of the following wording from the Applicability of LCO 3.3.8.1: "When the associated diesel generator (DG) is required to be OPERABLE by LCO 3.8.2, 'AC Sources Shutdown.'"



## ATTACHMENT 1

### Response to Request for Additional Information

#### Response to RAI 2 (LaSalle):

#### PART A:

LaSalle SR 3.8.2.1 lists the subset of SRs from TS 3.8.1, "AC Sources – Operating," that are required to be met for alternating current (AC) electrical power sources that are required to be operable by LCO 3.8.2, "AC Source - Shutdown." LCO 3.8.2 is applicable to a unit that is in modes 4 or 5, or during movement of irradiated fuel assemblies in the secondary containment. LCO 3.8.2 requires one offsite circuit between the offsite transmission network and the onsite Class 1E AC electrical power distribution subsystem(s) required by LCO 3.8.8, "Distribution Systems – Shutdown," and one diesel generator (DG) capable of supplying one division of the onsite Class 1E AC electrical power distribution subsystem(s) required by LCO 3.8.8 and LCO 3.8.2.d.

According to LCO 3.0.9 and SR 3.0.5, LCOs and SRs, respectively, are applied individually to each unit at a dual-unit site, the operating mode of one unit does not affect the application of the TS to the opposite unit. Therefore, the TS 3.8.1 SRs that are required to be met by SR 3.8.2.1 when a unit is in the mode of applicability of SR 3.8.2 are independent of the opposite unit's mode. The applicability of these SRs under the current LaSalle SR 3.8.2.1 wording (prior to adoption of TSTF-582) is summarized in Table 2A-1.

**Table 2A-1 LaSalle TS 3.8.1 SRs Required by Current SR 3.8.2.1**

<b>SR</b>	<b>Unit One (Shutdown)</b>	<b>Unit Two (Shutdown)</b>
3.8.1.1	Applicable	Applicable
3.8.1.2	Applicable	Applicable
3.8.1.3	Applicable	Applicable
3.8.1.4	Applicable	Applicable
3.8.1.5	Applicable	Applicable
3.8.1.6	Applicable	Applicable
3.8.1.7	Applicable	Applicable
3.8.1.8	Not Applicable	Not Applicable
3.8.1.9	Applicable	Applicable
3.8.1.10	Applicable	Applicable
3.8.1.11	Applicable	Applicable
3.8.1.12	Applicable	Applicable
3.8.1.13	Applicable	Applicable
3.8.1.14	Applicable	Applicable
3.8.1.15	Applicable	Applicable
3.8.1.16	Applicable	Applicable
3.8.1.17	Not Applicable	Not Applicable
3.8.1.18	Required	Applicable
3.8.1.19	Required	Applicable

## ATTACHMENT 1

### Response to Request for Additional Information

SR	Unit One (Shutdown)	Unit Two (Shutdown)
3.8.1.20	Not Applicable	Not Applicable
3.8.1.21	Not Applicable	Not Applicable

LCOs 3.6.4.3, 3.7.4, and 3.7.5 are not applicable to a unit that is in mode 4 or 5 unless irradiated fuel is being moved in the shared secondary containment or when core alterations are in progress. These LCO's, when applicable, require equipment to be operable that is powered by both the same unit and the opposite unit's Division 2 AC distribution subsystem(s). For equipment powered by the same unit (e.g., for Unit 1, Unit 1 Standby Gas Treatment (SBGT), A Control Room Area Filtration (CRAF) System, and A Control Room Area Ventilation Air Conditioning (AC) System), the AC Sources required by LCO 3.8.2 support the associated equipment, with applicable SRs specified in the table above. For equipment powered by the opposite unit (e.g., for Unit 1, Unit 2 SBGT, B Control Room Area Filtration (CRAF) System, and B Control Room Area Ventilation Air Conditioning (AC) System), the required opposite unit distribution subsystems are required to be operable by LCO 3.8.8; however, no corresponding opposite unit requirement exists under LCO 3.8.2 for AC Sources. This is supported by the current bases of LCO 3.8.2 state that:

"In general, when the unit is shutdown the Technical Specification requirements ensure that the unit has the capability to mitigate the consequences of postulated accidents. However, assuming a single failure and concurrent loss of all offsite or loss of all onsite power is not required. The rationale for this is based on the fact that many Design Basis Accidents (DBAs) that are analyzed in modes 1, 2, and 3 have no specific analyses in modes 4 and 5. Worst case bounding events are deemed not credible in modes 4 and 5 because the energy contained within the reactor pressure boundary, reactor coolant temperature and pressure, and corresponding stresses result in the probabilities of occurrences significantly reduced or eliminated, and minimal consequences. These deviations from DBA analysis assumptions and design requirements during shutdown conditions are allowed by the LCO for required systems."

Therefore, under current LaSalle TS the applicable SR's of LCO 3.8.1 that are specified to be met under SR 3.8.2.1 for the AC sources required to be operable by LCO 3.8.2 are those listed in the table above, even if movement of irradiated fuel in secondary containment or during core alterations are causing the shutdown unit to be in the mode of applicability of LCOs 3.6.4.3, 3.7.4, and 3.7.5. Adequate power to support the operability of required opposite unit equipment is assured by LCO 3.8.8.

For any operating unit, even if the opposite unit is shutdown, all SR's of LCO 3.8.1 apply to the AC sources required to be operable, which will include two qualified circuits between the offsite transmission network and onsite Class 1E AC Electrical Power Distribution System, three DGs (Division 1, 2 &3), and the opposite unit's onsite Class 1E AC Electrical Power Distribution System and the opposite unit DG capable of supporting LCOs 3.6.4.3, 3.7.4, and 3.7.5.

## ATTACHMENT 1

### Response to Request for Additional Information

#### PART B:

Since no changes have been proposed for SR 3.8.1.21, any opposite unit AC sources required by a unit operating in mode 1, 2, or 3 will continue to be subject to the existing set of SRs to establish operability. For multi-unit sites with shared AC distribution systems and sources, the same AC Source (e.g., a unit or shared DG) may be required for each Unit by different LCOs (e.g., LCO 3.8.1 or LCO 3.8.2); however, the basis for the equipment being required to be operable is different for an operating unit versus a shutdown unit. Since the operating unit must still have the capability to mitigate the effects of Design Basis Accidents (DBA) analyzed for operating conditions (e.g. DBA Loss of Coolant Accident), all of the requirements associated with DG automatic start in response to ECCS or LOOP signals, time to achieve rated voltage and frequency, and load sequencing continue to be required. Thus, no changes to SR 3.8.1.21 are appropriate or proposed.

As described in the Safety Evaluation for TSTF-582 (Reference 1) and supported by the LOP Variation model Safety Evaluation (Reference 2), the DGs supporting a shutdown unit (operating in mode 4, 5, or during movement of irradiated fuel in secondary containment) may be manually started and loaded in response to a Reactor Pressure Vessel (RPV) draining event. Furthermore, the essential consideration for the events assessed in Reference 1, namely that the FHA does not assume a LOOP and that the minimum Drain Time permitted for any duration by LCO 3.5.2 is 1 hour, are consistent with the LaSalle licensing basis. The ability of each required DG to support the required loads via manual start and loading continues to be demonstrated by the SRs that are retained under the proposed revision to SR 3.8.2.1. Additionally, the FHA analysis does not assume a Loss of Off-Site Power as an initial condition. Equipment required by LCOs 3.6.4.3, 3.7.4, and 3.7.5 will continue to be supported by operable distribution subsystems specified by LCO 3.8.8. The LaSalle licensing basis does not include any additional events requiring automatic start of DGs for a shutdown unit that have not already been considered in the safety evaluation for TSTF-582 (i.e., Fuel Handling Accident, draining event in mode 4 or 5). The proposed LAR does not affect which AC sources will be required via LCO 3.8.2 to support the distribution systems required operable via LCO 3.8.8, but only revises the applicable SRs that are required to consider a DG operable for LCO 3.8.2 (though additional SRs may apply to the same DG and its associated start logic if required by an operating unit via SR 3.8.1.21).

Based on the above considerations, justification for deletion of each proposed SR of LCO 3.8.1 from the list of SRs required by the DG(s) required to be operable by LCO 3.8.2 is provided:

#### SR 3.8.1.7

This SR requires that the DG starts from standby conditions and achieves required voltage and frequency within 13 seconds. The 13 second start requirement supports the assumptions in the design basis Loss of Coolant Accident (LOCA) analysis.

#### LCO 3.5.2

This LCO does not assume that the onsite electrical power source will start automatically on an ECCS or loss of power signal. Therefore, the 13 second start requirement per SR 3.8.1.7 is not applicable.



## ATTACHMENT 1

### Response to Request for Additional Information

LCO 3.6.4.3, LCO 3.7.4, and LCO 3.7.5

These LCOs are only required in modes 1, 2, 3, during movement of irradiated fuel assemblies in the secondary containment and during core alterations. TS 3.8.2 does not apply in modes 1, 2 or 3. The FHA analysis does not assume a Loss of Off-Site Power as an initial condition.

LCO 3.8.8

The distribution systems required to be operable per LCO 3.8.8 are not changed by the proposed LAR. The proposed changes only revise the applicable SRs that are required to consider a DG operable per LCO 3.8.2

#### SR 3.8.1.11

This SR demonstrates the as designed operation of the standby power sources during loss of the offsite source. This test verifies all actions encountered from the loss of offsite power, including shedding of the nonessential loads (Divisions 1 and 2 only) and energization of the emergency buses and respective loads from the DG. It further demonstrates the capability of the DG to automatically achieve the required voltage and frequency within the specified time. The DG auto-start and energization of permanently connected loads time of 13 seconds is derived from requirements of the accident analysis for responding to a design basis large break LOCA.

LCO 3.5.2

This LCO does not assume that the onsite electrical power source will start automatically on an ECCS or loss of power signal. Therefore, the automatic Loss of Power diesel start per SR 3.8.1.11 is not applicable.

LCO 3.6.4.3, LCO 3.7.4, and LCO 3.7.5

These LCOs are only required in modes 1, 2, 3, during movement of irradiated fuel assemblies in the secondary containment, and during core alterations. TS 3.8.2 does not apply in modes 1, 2 or 3. The FHA analysis does not assume a Loss of Off-Site Power as an initial condition.

LCO 3.8.8

The distribution systems required to be operable per LCO 3.8.8 are not changed by the proposed LAR. The proposed changes only revise the applicable SRs that are required to consider a DG operable per LCO 3.8.2

#### SR 3.8.1.12

This SR demonstrates that the DG automatically starts and achieves the required voltage and frequency within the specified time (13 seconds) from the design basis actuation signal (LOCA signal).

## ATTACHMENT 1

### Response to Request for Additional Information

#### LCO 3.5.2

This LCO does not assume that the onsite electrical power source will start automatically on an ECCS or loss of power signal. Therefore, the automatic LOCA Signal diesel start per SR 3.8.1.12 is not applicable.

#### LCO 3.6.4.3, LCO 3.7.4, and LCO 3.7.5

These LCOs are only required in modes 1, 2, 3, during movement of irradiated fuel assemblies in the secondary containment, and during core alterations. TS 3.8.2 does not apply in modes 1, 2 or 3. The FHA analysis does not assume a Loss of Off-Site Power as an initial condition.

#### LCO 3.8.8

The distribution systems required to be operable per LCO 3.8.8 are not changed by the proposed LAR. The proposed changes only revise the applicable SRs that are required to consider a DG operable per LCO 3.8.2

#### SR 3.8.1.13

This SR demonstrates that DG non-critical protective functions (e.g., high jacket water temperature) are bypassed on a loss of voltage signal concurrent with an ECCS initiation test signal and critical protective functions (engine overspeed and generator differential current) trip the DG to avert substantial damage to the DG unit. The non-critical trips are bypassed during DBAs and provide an alarm on an abnormal engine condition. This alarm provides the operator with sufficient time to react appropriately. The DG availability to mitigate the DBA is more critical than protecting the engine against minor problems that are not immediately detrimental to emergency operation of the DG.

#### LCO 3.5.2

This LCO does not assume that the onsite electrical power source will start automatically on a loss of voltage signal concurrent with an ECCS initiation signal. Therefore, SR 3.8.1.13 is not applicable.

#### LCO 3.6.4.3, LCO 3.7.4, and LCO 3.7.5

These LCOs are only required in modes 1, 2, 3, during movement of irradiated fuel assemblies in the secondary containment, and during core alterations. TS 3.8.2 does not apply in modes 1, 2 or 3. The FHA analysis does not assume a Loss of Off-Site Power as an initial condition.

#### LCO 3.8.8

The distribution systems required to be operable per LCO 3.8.8 are not changed by the proposed LAR. The proposed changes only revise the applicable SRs that are required to consider a DG operable per LCO 3.8.2



## ATTACHMENT 1

### Response to Request for Additional Information

#### SR 3.8.1.15

This SR demonstrates that the DG can restart from a hot condition, such as subsequent to shutdown from normal surveillances, and achieve the required voltage and frequency within 13 seconds. The 13 second time is derived from the requirements of the accident analysis for responding to a design basis large break LOCA.

#### LCO 3.5.2

This LCO does not assume that the onsite electrical power source will start or restart following a shutdown within 13 seconds. Therefore, the diesel restart demonstration per SR 3.8.1.15 is not applicable.

#### LCO 3.6.4.3, LCO 3.7.4, and LCO 3.7.5

These LCOs are only required in modes 1, 2, 3, during movement of irradiated fuel assemblies in the secondary containment, and during core alterations. TS 3.8.2 does not apply in modes 1,2 or 3. The FHA analysis does not assume a Loss of Off-Site Power as an initial condition.

#### LCO 3.8.8

The distribution systems required to be operable per LCO 3.8.8 are not changed by the proposed LAR. The proposed changes only revise the applicable SRs that are required to consider a DG operable per LCO 3.8.2

#### SR 3.8.1.18

This SR verifies the interval between each sequenced load block is  $\geq 90\%$  of the design interval for each load sequence time delay relay. This logic is associated with automatic start and loading of an EDG in response to an ECCS initiation signal concurrent with a LOOP. Since the requirement for operable ECCS initiation signals is proposed for removal from LCO 3.3.5.2, removal of this surveillance from the list of those surveillances required a DG supporting LCO 3.8.2 establishes consistency.

#### LCO 3.5.2

This LCO does not assume that the onsite electrical power source will start automatically on a loss of power signal concurrent with an ECCS initiation signal. Therefore, demonstrating the interval for each load sequence time delay relay per SR 3.8.1.18 is not applicable.

#### LCO 3.6.4.3, LCO 3.7.4, and LCO 3.7.5

These LCOs are only required in modes 1, 2, 3, during movement of irradiated fuel assemblies in the secondary containment, and during core alterations. TS 3.8.2 does not apply in modes 1, 2 or 3. The FHA analysis does not assume a Loss of Off-Site Power as an initial condition.

## ATTACHMENT 1

### Response to Request for Additional Information

#### LCO 3.8.8

The distribution systems required to be operable per LCO 3.8.8 are not changed by the proposed LAR. The proposed changes only revise the applicable SRs that are required to consider a DG operable per LCO 3.8.2.

#### SR 3.8.1.19

This Surveillance demonstrates the DG operation during a loss of offsite power actuation test signal in conjunction with an ECCS initiation signal.

#### LCO 3.5.2

This LCO does not assume that the onsite electrical power source will start automatically on a loss of voltage signal concurrent with an ECCS initiation signal. Therefore, SR 3.8.1.19 is not applicable.

#### LCO 3.6.4.3, LCO 3.7.4, and LCO 3.7.5

These LCOs are only required in modes 1, 2, 3, during movement of irradiated fuel assemblies in the secondary containment, and during core alterations. TS 3.8.2 does not apply in modes 1, 2 or 3. The FHA analysis does not assume a Loss of Off-Site Power as an initial condition.

#### LCO 3.8.8

The distribution systems required to be operable per LCO 3.8.8 are not changed by the proposed LAR. The proposed changes only revise the applicable SRs that are required to consider a DG operable per LCO 3.8.2

### Part C

As discussed in the responses to items A and B, no changes are required for SR 3.8.1.21, as this SR continues to specify the appropriate criteria for operability of an opposite unit AC Source that is required by a Unit operating in modes 1, 2, or 3.

### Part D

TSTF-582, "RPV WIC Enhancements," states that LCO 3.5.2, "RPV WIC," does not assume that the onsite electrical power source will start automatically on an ECCS or loss of power signal. Additionally, the FHA analysis does not assume a Loss of Off-Site Power as an initial condition. In an oversight in TSTF-582, not all TS 3.8.1 SRs listed in SR 3.8.2.1 that test automatic start and loading of a diesel generator on an ECCS or loss of offsite power signal were excluded, and the Applicability of TS 3.3.8.1 was not revised to reflect that the LOP instrumentation should not be required to be operable when the associated EDG is not required to automatically start in response to a LOOP.

**ATTACHMENT 1**

**Response to Request for Additional Information**

**RAI 3 (Quad Cities)**

Section 8.3.1.6, "Standby Emergency Diesel Generator System," of the Quad Cities UFSAR states, in part, that the DG system provides emergency source of AC power in the event all normal offsite power becomes unavailable. The system consists of three DGs: 1, 2, and 1/2 (shared DG).

Quad Cities LCO 3.8.1.d requires that the following AC electrical power source be operable when the unit is operating: "The opposite unit's DG capable of supporting the equipment required to be OPERABLE by LCO 3.6.4.3, LCO 3.7.4 (Unit 2 only), and LCO 3.7.5 (Unit 2 only)." SR 3.8.1.21 is applicable to the opposite unit's AC electrical power sources and it specifies, in part, the SRs necessary to meet LCO 3.8.1.d.

Quad Cities LCO 3.8.2.b requires that the following AC electrical power source be operable when the unit is shutdown: "One diesel generator (DG) capable of supplying one division of the onsite Class 1E AC electrical power distribution subsystem(s) required by LCO 3.8.8." When a unit is shutdown, Quad Cities LCO 3.8.8 requires: "The necessary portions of the AC, DC, and the opposite unit's electrical power distribution subsystems shall be OPERABLE to support equipment required to be OPERABLE." Quad Cities SR 3.8.2.1 specifies the SRs in TS 3.8.1 that are necessary to meet LCO 3.8.2.

The licensee proposed to revise Quad Cities SR 3.8.2.1 as shown in the table below. The proposed changes would make several SRs for AC sources required by TS 3.8.2 no longer applicable. The licensee also proposed to revise Quad Cities TS 3.3.8.1, "Loss of Power (LOP) Instrumentation," such that LCO 3.3.8.1 would no longer be applicable "[w]hen the associated diesel generator is required to be OPERABLE by LCO 3.8.2, 'AC Sources Shutdown.'" The LAR states that these changes are based on TSTF-582 and TSTF-583-T. However, these travelers and the NRC safety evaluation for TSTF-582 do not address shared AC sources at multi-unit sites. In addition, the LAR does not address the shared AC sources at Quad Cities. The LAR also proposes, without justification, to delete SRs currently required by SR 3.8.2.1 (e.g., Quad Cities SR 3.8.1.7) which are not included in the TSTF-582 or TSTF-583-T changes. The proposed changes would also make SR 3.8.2.1 inconsistent with SR 3.8.1.21.

<b>Current SR 3.8.2.1</b>	<b>Proposed SR 3.8.2.1</b>										
<p>-----NOTE-----</p> <p>The following SRs are not required to be performed: SR 3.8.1.3, SR 3.8.1.10 through SR 3.8.1.12, and SR 3.8.1.14 through SR 3.8.1.19.</p> <p>-----</p> <p>For AC sources required to be OPERABLE the SRs of Specification 3.8.1, except SR 3.8.1.9, SR 3.8.1.13, SR 3.8.1.19, SR 3.8.1.20, and SR 3.8.1.21, are applicable.</p>	<p>-----NOTE-----</p> <p>The following SRs are not required to be performed: SR 3.8.1.3, SR 3.8.1.10, SR 3.8.1.11, SR 3.8.1.15, and SR 3.8.1.17.</p> <p>-----</p> <p>The following SRs are applicable for AC sources required to be OPERABLE:</p> <table border="0"> <tr> <td>SR 3.8.1.1</td> <td>SR 3.8.1.6</td> </tr> <tr> <td>SR 3.8.1.2</td> <td>SR 3.8.1.10</td> </tr> <tr> <td>SR 3.8.1.3</td> <td>SR 3.8.1.11</td> </tr> <tr> <td>SR 3.8.1.4</td> <td>SR 3.8.1.15</td> </tr> <tr> <td>SR 3.8.1.5</td> <td>SR 3.8.1.17</td> </tr> </table>	SR 3.8.1.1	SR 3.8.1.6	SR 3.8.1.2	SR 3.8.1.10	SR 3.8.1.3	SR 3.8.1.11	SR 3.8.1.4	SR 3.8.1.15	SR 3.8.1.5	SR 3.8.1.17
SR 3.8.1.1	SR 3.8.1.6										
SR 3.8.1.2	SR 3.8.1.10										
SR 3.8.1.3	SR 3.8.1.11										
SR 3.8.1.4	SR 3.8.1.15										
SR 3.8.1.5	SR 3.8.1.17										

Provide the following information for Quad Cities:

## ATTACHMENT 1

### Response to Request for Additional Information

- A. For SR 3.8.2.1, identify the currently applicable SRs of TS 3.8.1 that are necessary to meet LCO 3.6.4.3, LCO 3.7.4, LCO 3.7.5, and LCO 3.8.8. The response should discuss the following plant conditions: Unit 1 operating and Unit 2 shutdown, Unit 1 shutdown and Unit 2 operating, and both Units 1 and 2 shutdown.
- B. For each SR of TS 3.8.1 that would no longer be applicable to TS 3.8.2 under the proposed amendment, explain why the SR is not needed to support the opposite unit or to meet the requirements of LCO 3.8.2. The response should address the requirements in LCO 3.6.4.3, LCO 3.7.4, LCO 3.7.5, and LCO 3.8.8. The response should also identify and address any differences between the events considered in the NRC staff's safety evaluation for TSTF-582 and the Quad Cities design and licensing basis.
- C. Identify the changes to SR 3.8.1.21 that are needed to make it consistent with the proposed SR 3.8.2.1. Provide justification to support these changes.
- D. In conjunction with the information requested under A, B, and C above, justify the deletion of the following wording from the Applicability of LCO 3.3.8.1: "When the associated diesel generator is required to be OPERABLE by LCO 3.8.2, 'AC Sources Shutdown.'"



## ATTACHMENT 1

### Response to Request for Additional Information

#### Response to RAI 3 (Quad Cities):

#### Part A

Quad Cities Surveillance Requirement (SR) 3.8.2.1 lists the subset of SRs from Technical Specification (TS) 3.8.1, "AC Source – Operating," that are required to be met for alternating current (AC) electrical power sources that are required to be operable by LCO 3.8.2, "AC Sources - Shutdown." LCO 3.8.2 is applicable to a unit that is in modes 4 or 5, or during movement of recently irradiated fuel assemblies in the secondary containment. LCO 3.8.2 requires one offsite circuit between the offsite transmission network and the onsite Class 1E AC electrical power distribution subsystem(s) required by LCO 3.8.8, "Distribution Systems – Shutdown," and one diesel generator (DG) capable of supplying one division of the onsite Class 1E AC electrical power distribution subsystem(s) required by LCO 3.8.8.

According to LCO 3.0.9 and SR 3.0.5, LCOs and SRs, respectively, are applied individually to each unit at a dual-unit site, such that the operating mode of one unit does not affect the application of the TS to the opposite unit. Therefore, the TS 3.8.1 SRs that are currently required to be met by SR 3.8.2.1 when a unit is in the mode of applicability of SR 3.8.2 are independent of the opposite unit's mode. The applicability of these SRs under the current Quad Cities SR 3.8.2.1 wording (prior to adoption of TSTF-582) is summarized in Table 3A-1.

**Table 3A-1 Quad Cities TS 3.8.1 SRs Required by Current SR 3.8.2.1**

SR	Unit One (Shutdown)	Unit Two (Shutdown)
3.8.1.1	Applicable (offsite circuit)	Applicable (offsite circuit)
3.8.1.2	Applicable*	Applicable**
3.8.1.3	Applicable*	Applicable**
3.8.1.4	Applicable*	Applicable**
3.8.1.5	Applicable*	Applicable**
3.8.1.6	Applicable*	Applicable**
3.8.1.7	Applicable*	Applicable**
3.8.1.8	Applicable*	Applicable**
3.8.1.9	Not Applicable	Not Applicable
3.8.1.10	Applicable*	Applicable**
3.8.1.11	Applicable*	Applicable**
3.8.1.12	Applicable*	Applicable**
3.8.1.13	Not Applicable	Not Applicable
3.8.1.14	Applicable*	Applicable**
3.8.1.15	Applicable*	Applicable**
3.8.1.16	Applicable*	Applicable**
3.8.1.17	Applicable*	Applicable**
3.8.1.18	Applicable*	Applicable**



## ATTACHMENT 1

### Response to Request for Additional Information

SR	Unit One (Shutdown)	Unit Two (Shutdown)
3.8.1.19	Not Applicable	Not Applicable
3.8.1.20	Not Applicable	Not Applicable
3.8.1.21	Not Applicable	Not Applicable

\*For Unit One, the required DG will be either the Unit 1 DG or the Unit 1/2 (shared) DG.

\*\*For Unit Two, the required DG will be either the Unit 2 DG or the Unit 1/2 (shared) DG.

LCOs 3.6.4.3, 3.7.4, and 3.7.5 are not applicable to a unit that is in mode 4 or 5 unless recently irradiated fuel is being moved in the shared secondary containment. These LCO's, when applicable, require equipment to be operable that is powered by both the same unit and the opposite unit's AC distribution subsystem(s). For equipment powered by the same unit (e.g., for Unit 1, 1/2B Standby Gas Treatment (SBGT), Control Room Emergency Ventilation (CREV), and Control Room Emergency Ventilation Air Conditioning (CREV-AC)), the AC Sources required by LCO 3.8.2 support the associated equipment, with applicable SRs specified in the table above. For equipment powered by the opposite unit (e.g., for Unit 1, 1/2A SBGT), the required opposite unit distribution subsystems are required to be operable by LCO 3.8.8; however, no corresponding opposite unit requirement exists under LCO 3.8.2 for AC Sources. This is supported by the current bases of LCO 3.8.2 state that:

"In general, when the unit is shutdown the Technical Specification requirements ensure that the unit has the capability to mitigate the consequences of postulated accidents. However, assuming a single failure and concurrent loss of all offsite or loss of all onsite power is not required. The rationale for this is based on the fact that many Design Basis Accidents (DBAs) that are analyzed in modes 1, 2, and 3 have no specific analyses in modes 4 and 5. Worst case bounding events are deemed not credible in modes 4 and 5 because the energy contained within the reactor pressure boundary, reactor coolant temperature and pressure, and corresponding stresses result in the probabilities of occurrences significantly reduced or eliminated, and minimal consequences. These deviations from DBA analysis assumptions and design requirements during shutdown conditions are allowed by the LCO for required systems."

Therefore, under current Quad Cities TS the applicable SR's of LCO 3.8.1 that are specified to be met under SR 3.8.2.1 for the AC sources required to be operable by LCO 3.8.2 are those listed in the table above, even if movement of recently irradiated fuel in secondary containment is causing the shutdown unit to be in the mode of applicability of LCOs 3.6.4.3, 3.7.4, and 3.7.5. Adequate power to support the operability of required opposite unit equipment is assured by LCO 3.8.8.

For any operating unit, even if the opposite unit is shutdown, all SR's of LCO 3.8.1 apply to the AC sources required to be operable, which will include one qualified circuit between the offsite transmission network and the opposite unit's onsite Class 1E AC Electrical Power Distribution System and the opposite unit DG capable of supporting LCOs 3.6.4.3, 3.7.4, and 3.7.5.

## ATTACHMENT 1

### Response to Request for Additional Information

#### Part B

Since no changes have been proposed for SR 3.8.1.21, any opposite unit AC sources required by a unit operating in mode 1, 2, or 3 will continue to be subject to the existing set of SRs to establish operability. For multi-unit sites with shared AC distribution systems and sources, the same AC Source (e.g., a unit or shared DG) may be required for each Unit by different LCOs (e.g., LCO 3.8.1 or LCO 3.8.2); however, the basis for the equipment being required to be operable is different for an operating unit versus a shutdown unit. Since the operating unit must still have the capability to mitigate the effects of Design Basis Accidents (DBA) analyzed for operating conditions (e.g. DBA Loss of Coolant Accident), all of the requirements associated with DG automatic start in response to ECCS or LOOP signals, time to achieve rated voltage and frequency, and load sequencing continue to be required. Thus, no changes to SR 3.8.1.21 are appropriate or proposed.

As described in the Safety Evaluation for TSTF-582 (Reference 1) and supported by the LOP Variation model Safety Evaluation (Reference 2), the DGs supporting a shutdown unit (operating in mode 4, 5, or during movement of recently irradiated fuel in secondary containment) may be manually started and loaded in response to a Reactor Pressure Vessel (RPV) draining event. Furthermore, the essential consideration for the events assessed in Reference 1, namely that the FHA does not assume a LOOP and that the minimum Drain Time permitted for any duration by LCO 3.5.2 is 1 hour, are consistent with the Quad Cities licensing basis. The ability of each required DG to support the required loads via manual start and loading continues to be demonstrated by the SRs that are retained under the proposed revision to SR 3.8.2.1. Additionally, for the Fuel Handling Accident, no credit in the analysis is taken for the operation of SBGT, CREV, or CREV-AC (Reference 4). Equipment required by LCOs 3.6.4.3, 3.7.4, and 3.7.5 will continue to be supported by operable distribution subsystems specified by LCO 3.8.8. The Quad Cities licensing basis does not include any additional events requiring automatic start of DGs for a shutdown unit that have not already been considered in the safety evaluation for TSTF-582 (i.e., Fuel Handling Accident, draining event in mode 4 or 5). The proposed LAR does not affect which AC sources will be required via LCO 3.8.2 to support the distribution systems required operable via LCO 3.8.8, but only revises the applicable SRs that are required to consider a DG operable for LCO 3.8.2 (though additional SRs may apply to the same DG and its associated start logic if required by an operating unit via SR 3.8.1.21).

Based on the above considerations, justification for deletion of each proposed SR of LCO 3.8.1 from the list of SRs required by the DG(s) required to be operable by LCO 3.8.2 is provided:

#### SR 3.8.1.8

This surveillance verifies the DG ability to achieve required voltage and frequency within 13 seconds. The 13 second timeframe is not required to support manual start of the DG in response to the postulated events in mode 4 or 5, and the ability of the DG to be manually started and loaded continues to be demonstrated by SR 3.8.1.2. If an operating unit requires the same DG to be operable, this surveillance will continue to be applicable for the operating unit via SR 3.8.1.21. This SR is equivalent to SR 3.8.1.7 from NUREG-1433 Revision 4, with the exception that the Quad Cities SR includes a note allowing the performance of this test for the common DG to satisfy this SR for both Units. This SR is assessed for deletion from the NUREG-1433 STS SR 3.8.2.1 in Reference 2.

#### SR 3.8.1.12

## ATTACHMENT 1

### Response to Request for Additional Information

This surveillance verifies, in part, the automatic start and loading of a DG on a LOOP signal. As previously discussed, response to the postulated events in mode 4 and 5 does not require automatic start and loading of a DG. If an operating unit requires the same DG to be operable, this surveillance will continue to be applicable for the operating unit via SR 3.8.1.21. This SR is equivalent to SR 3.8.1.11 from NUREG-1433 Revision 4, with the exception that Quad Cities does not include the verification of auto-connected loads through a load sequencer (as the Quad Cities design does not have this feature). This SR is approved for deletion from the NUREG-1433 STS SR 3.8.2.1 in Reference 1.

#### SR 3.8.1.14

This surveillance verifies that the required DG's noncritical automatic trips are bypassed on an actual or simulated loss of voltage signal on the emergency bus concurrent with an actual or simulated ECCS initiation signal. Since the requirement for operable ECCS initiation signals is proposed for removal from LCO 3.3.5.2, removal of this surveillance from the list of those surveillances required for a DG supporting LCO 3.8.2 establishes consistency. Consistent with the assessment provided in Section 3.6 of Reference 1, LCO 3.8.2 and LCO 3.5.2 will, upon an actual LOOP, continue to require the restoration of an RPV injection source capable of operating without offsite power within a timeframe adequate for responding to a vessel draining event. If an operating unit requires the same DG to be operable, this surveillance will continue to be applicable for the operating unit via SR 3.8.1.21. This SR is equivalent to SR 3.8.1.13 from NUREG-1433 Revision 4. This SR is approved for deletion from the NUREG-1433 STS SR 3.8.2.1 in Reference 1.

#### SR 3.8.1.16

This surveillance demonstrates that the DG can restart from a hot condition, such as subsequent to shutdown from normal surveillances, and achieve the required voltage and frequency within 13 seconds. The 13 second timeframe is not required to support manual start of the DG in response to the postulated events in mode 4 or 5, and the ability of the DG to be manually started and loaded continues to be demonstrated by SR 3.8.1.2. If an operating unit requires the same DG to be operable, this surveillance will continue to be applicable for the operating unit via SR 3.8.1.21. This SR is equivalent to SR 3.8.1.15 from NUREG-1433 Revision 4, with the exception that the Quad Cities SR includes a note allowing the performance of this test for the common DG to satisfy this SR for both Units. This SR is assessed for deletion from the NUREG-1433 STS SR 3.8.2.1 in Reference 2.

#### SR 3.8.1.18

This surveillance verifies the interval between each sequenced load block is  $\geq 90\%$  of the design interval for each load sequence time delay relay. This logic is associated with automatic start and loading of an EDG in response to an ECCS initiation signal concurrent with a LOOP. Since the requirement for operable ECCS initiation signals is proposed for removal from LCO 3.3.5.2, removal of this surveillance from the list of those surveillances required a DG supporting LCO 3.8.2 establishes consistency. Manual loading of the DG will continue to be able to be performed by licensed operators in response to the postulated events in mode 4 and 5 or during movement of recently irradiated fuel in secondary containment. This SR is equivalent to SR 3.8.1.18 from NUREG-1433 Revision 4. This SR is assessed for deletion from the



## ATTACHMENT 1

### Response to Request for Additional Information

NUREG-1433 STS SR 3.8.2.1 in Reference 2.

#### SR 3.8.1.7

This SR was inadvertently removed from the list of SRs required to be performed under SR 3.8.2.1 and will be retained. Attachment 4 provides the corrected markup of SR 3.8.2.1. Attachment 4 will replace in its entirety Attachment 2.4 of the original submittal. However, the only change to the markup is the correction to SR 3.8.2.1 on Page 3.8.2-5.

#### **Part C**

As discussed in the responses to Parts A and B, no changes are required for SR 3.8.1.21, as this SR continues to specify the appropriate criteria for operability of an opposite unit AC Source that is required by a unit operating in modes 1, 2, or 3.

#### **Part D**

As described in Part B, the DGs supporting a shutdown unit (operating in mode 4, 5, or during movement of recently irradiated fuel in secondary containment) may be manually started and loaded in response to a Reactor Pressure Vessel (RPV) draining event.

TSTF-582 did not include all the TS changes needed to reflect that TS 3.8.2 does not require automatic start and loading of a DG within 13 seconds on an ECCS initiation signal or LOOP signal. TSTF-583-T addressed these additional changes, which included the revision of the Applicability of LCO 3.3.8.1 to remove the currently specified condition "When the associated diesel generator as required to be OPERABLE by LCO 3.8.2, 'AC Sources – Shutdown.'"

TS 3.3.8.1, "Loss of Power (LOP) Instrumentation," is currently applicable in modes 1, 2, and 3, and when the associated DG is required to be operable by TS 3.8.2. Implementation of TSTF-582 revises TS 3.8.2 to no longer require automatic start and loading of a DG on a LOOP signal. Consequently, the instrumentation that generates the LOOP signal should not be required to be operable when the DG is required to be operable by TS 3.8.2. As a result, the deletion of the condition related to TS 3.8.2 in the applicability of LCO 3.3.8.1 is appropriate.



## ATTACHMENT 1

### Response to Request for Additional Information

#### RAI 4 (LaSalle)

LaSalle SR 3.5.2.6 currently requires the licensee to: "Operate the required ECCS injection/spray subsystem through the recirculation line for  $\geq 10$  minutes." Adoption of TSTF-582 should revise SR 3.5.2.6 by adding two notes and deleting "through the recirculation line." However, the markup of SR 3.5.2.6 in the LAR only adds the two notes.

Confirm that "through the recirculation line" is to be deleted from LaSalle SR 3.5.2.6 or provide justification for not making this change.

LaSalle SR 3.5.2.6 currently requires the licensee to: "Operate the required ECCS injection/spray subsystem through the recirculation line for  $\geq 10$  minutes." Adoption of TSTF-582 should revise SR 3.5.2.6 by adding two notes and deleting "through the recirculation line." However, the markup of SR 3.5.2.6 in the LAR only adds the two notes.

Confirm that "through the recirculation line" is to be deleted from LaSalle SR 3.5.2.6 or provide justification for not making this change.

## **ATTACHMENT 1**

### **Response to Request for Additional Information**

#### **Response to RAI 4 (LaSalle):**

The originally submitted mark-up for LaSalle SR 3.5.2.6 incorrectly omitted the markup for the deletion of the phrase "through the recirculation line" as shown in TSTF-582. A corrected mark-up of TS page 3.5.2-5 is included in Attachment 3 to this letter. Attachment 3 supersedes Attachment 2.3 of the original submittal.

## ATTACHMENT 1

### Response to Request for Additional Information

#### REFERENCES

1. Letter from Victor G. Cusumano (U.S. NRC) to Technical Specification Task Force, "Final Safety Evaluation of Technical Specification Task Force Traveler TSTF-582, Revision 0, 'RPV WIC Enhancements' Using the Consolidated Line Item Improvement Process (EPID L-2019-PMP-0199)," dated August 13, 2020 (ML20219A317)
2. Letter from Victor G. Cusumano (U.S. NRC) to Technical Specification Task Force, "model Safety Evaluation of Technical Specification Task Force Traveler TSTF-582, Revision 0, 'RPV WIC Enhancements' and TSTF-583-T, Revision 0, 'TSTF-582 Diesel Generator Variation,' Using the Consolidated Line Item Improvement Process," dated October 9, 2020
3. Dresden UFSAR Section 15.7.
4. Quad Cities UFSAR Section 15.7.

**ATTACHMENT 2**  
**Markup of Proposed Technical Specifications Pages**

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

**REVISED TECHNICAL SPECIFICATIONS PAGES**

**1.1-4**  
**3.3.5.2-1**  
**3.3.5.2-2**  
**3.3.5.2-3**  
**3.3.8.1-1**  
**3.6.1.3-5**  
**3.8.2-3**



1.1 Definitions (continued)

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DRAIN TIME

The DRAIN TIME is the time it would take for the water inventory in and above the Reactor Pressure Vessel (RPV) to drain to the top of the active fuel (TAF) seated in the RPV assuming:

- a. The water inventory above the TAF is divided by the limiting drain rate;
- b. The limiting drain rate is the larger of the drain rate through a single penetration flow path with the highest flow rate, or the sum of the drain rates through multiple penetration flow paths susceptible to a common mode failure (~~e.g., seismic event, loss of normal power, single human error~~), for all penetration flow paths below the TAF except:

closed and  
administratively controlled



1. Penetration flow paths connected to an intact closed system, or isolated by manual or automatic valves that are locked, sealed, or otherwise secured in the closed position, blank flanges, or other devices that prevent flow of reactor coolant through the penetration flow paths;
2. Penetration flow paths capable of being isolated by valves that will close automatically without offsite power prior to the RPV water level being equal to the TAF when actuated by RPV water level isolation instrumentation; or
3. Penetration flow paths with isolation devices that can be closed prior to the RPV water level being equal to the TAF by a dedicated operator trained in the task, who is in continuous communication with the control room, is stationed at the controls, and is capable of closing the penetration flow path isolation device without offsite power.

(continued)

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3.3 INSTRUMENTATION

3.3.5.2 Reactor Pressure Vessel (RPV) Water Inventory Control Instrumentation

LC0 3.3.5.2 The RPV Water Inventory Control instrumentation for each Function in Table 3.3.5.2-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3.5.2-1.

ACTIONS

-----NOTE-----  
Separate Condition entry is allowed for each channel.  
-----

CONDITION	REQUIRED ACTION	COMPLETION TIME
<del>A. One or more channels inoperable.</del>	<del>A.1 Enter the Condition referenced in Table 3.3.5.2-1 for the channel.</del> <div style="border: 1px solid red; padding: 2px; display: inline-block; margin-top: 5px;">A.1</div> 	Immediately
<div style="border: 1px solid red; padding: 5px; display: inline-block; margin-bottom: 10px;">A. One or more channels inoperable.</div> <del>B. As required by Required Action A.1 and referenced in Table 3.3.5.2-1.</del>	<del>B.1 Initiate action to place channel in trip.</del>  OR <div style="border: 1px solid red; padding: 2px; display: inline-block; margin-right: 5px;">A.2.1</div> <del>B.2.1 Declare associated penetration flow path(s) incapable of automatic isolation.</del>  AND <div style="border: 1px solid red; padding: 2px; display: inline-block; margin-right: 5px;">A.2.2</div> <del>B.2.2 Initiate action to calculate DRAIN TIME.</del>	Immediately   Immediately   Immediately
<del>C. As required by Required Action A.1 and referenced in Table 3.3.5.2-1.</del>	<del>C.1 Place channel in trip.</del>	<del>1 hour</del>

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<del>D. As required by Required Action A.1 and referenced in Table 3.3.5.2-1.</del>	<del>D.1 Restore channel to OPERABLE status.</del>	<del>24 hours</del>
<del>E. Required Action and associated Completion Time of Condition C or D not met.</del>	<del>E.1 Declare associated low pressure ECCS injection/spray subsystem inoperable.</del>	<del>Immediately</del>

SURVEILLANCE REQUIREMENTS

**These SRs apply to each Function in**

NOTE

~~Refer to Table 3.3.5.2-1 to determine which SRs apply for each ECCS Function.~~

SURVEILLANCE	FREQUENCY
SR 3.3.5.2.1 Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.3.5.2.2 Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program



RPV Water Inventory Control Instrumentation  
3.3.5.2

Table 3.3.5.2-1 (Page 1 of 1)  
RPV Water Inventory Control Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION A.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
<del>1. Core Spray System</del>					
<del>a. Reactor Steam Dome Pressure Low (Permissive)</del>	<del>4, 5</del>	<del>2 (a)</del>	<del>G</del>	<del>SR 3.3.5.2.2</del>	<del>≤ 341.7 psig</del>
<del>b. Core Spray Pump Discharge Flow Low (Bypass)</del>	<del>4, 5</del>	<del>1 per pump (a)</del>	<del>D</del>	<del>SR 3.3.5.2.2</del>	<del>≥ 802 gpm and ≤ 992 gpm</del>
<del>2. Low Pressure Coolant Injection (LPCI) System</del>					
<del>a. Reactor Steam Dome Pressure Low (Permissive)</del>	<del>4, 5</del>	<del>2 (a)</del>	<del>G</del>	<del>SR 3.3.5.2.2</del>	<del>≤ 341.7 psig</del>
<del>b. Low Pressure Coolant Injection Pump Discharge Flow Low (Bypass)</del>	<del>4, 5</del>	<del>1 per loop (a)</del>	<del>D</del>	<del>SR 3.3.5.2.2</del>	<del>≥ 1107 gpm</del>
<del>3. Shutdown Cooling System (SDC) Isolation</del>					
<del>a. Reactor Vessel Water Level Low</del>	<del>(b)</del>	<del>1 per trip system</del>	<del>B</del>	<del>SR 3.3.5.2.1 SR 3.3.5.2.2</del>	<del>≥ 2.65 inches</del>
<del>4. Reactor Water Cleanup System Isolation</del>					
<del>a. Reactor Vessel Water Level Low</del>	<del>(b)</del>	<del>1 per trip system</del>	<del>B</del>	<del>SR 3.3.5.2.1 SR 3.3.5.2.2</del>	<del>≥ 2.65 inches</del>

~~(a) Associated with an ECCS subsystem required to be OPERABLE by LCO 3.5.2, "RPV Water Inventory Control."~~

~~(b) When automatic isolation of the associated penetration flow path(s) is credited in calculating DRAIN TIME.~~

1. ↓

a ↓

2. ↓

a ↓


a ↑



3.3 INSTRUMENTATION

3.3.8.1 Loss of Power (LOP) Instrumentation

LCO 3.3.8.1 The LOP instrumentation for each Function in Table 3.3.8.1-1 shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3,  ~~When the associated diesel generator is required to be OPERABLE by LCO 3.8.2, "AC Sources Shutdown."~~

ACTIONS

-----NOTE-----  
Separate Condition entry is allowed for each channel.  
-----

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more channels inoperable.	A.1 Place channel in trip.	1 hour
B. Required Action and associated Completion Time not met.	B.1 Declare associated diesel generator (DG) inoperable.	Immediately

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. (continued)	<p>C.2 -----NOTES-----            1. Isolation devices in high radiation areas may be verified by use of administrative means.             2. Isolation devices that are a locked, sealed, or otherwise secured may be verified by use of administrative means.            -----             Verify the affected penetration flow path is isolated.</p>	Once per 31 days
D. MSIV leakage rate not within limit.	D.1 Restore leakage rate to within limit.	8 hours
E. Required Action and associated Completion Time of Condition A, B, C, or D not met <del>in</del> <del>MODE 1, 2, or 3.</del>	<p>E.1 Be in MODE 3.  <u>AND</u>            E.2 Be in MODE 4.</p>	<p>12 hours             36 hours</p>



ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One required DG inoperable.	B.1 Suspend CORE ALTERATIONS.	Immediately
	<u>AND</u>	
	B.2 Suspend movement of recently irradiated fuel assemblies in secondary containment.	Immediately
	<u>AND</u>	
	B.3 Initiate action to restore required DG to OPERABLE status.	Immediately

**SR 3.8.1.3, SR 3.8.1.10, SR 3.8.1.11, SR 3.8.1.15, and SR 3.8.1.17.**

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.8.2.1 -----NOTE-----                      The following SRs are not required to be performed: <del>SR 3.8.1.3, SR 3.8.1.10 through SR 3.8.1.12, and SR 3.8.1.14 through SR 3.8.1.18.</del></p> <p>For AC sources required to be OPERABLE the <del>SRs of Specification 3.8.1, except SR 3.8.1.9, SR 3.8.1.13, SR 3.8.1.19, SR 3.8.1.20, and SR 3.8.1.21 are applicable.</del></p>	<p>In accordance with applicable SRs</p>

**The following SRs are applicable for**

- SR 3.8.1.1**
- SR 3.8.1.2**
- SR 3.8.1.3**
- SR 3.8.1.4**
- SR 3.8.1.5**
- SR 3.8.1.6**
- SR 3.8.1.7**
- SR 3.8.1.10**
- SR 3.8.1.11**
- SR 3.8.1.15**
- SR 3.8.1.17**

**ATTACHMENT 3**  
**Markup of Proposed Technical Specifications Pages**

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

**REVISED TECHNICAL SPECIFICATIONS PAGES**

**1.1-4**  
**3.3.5.2-1**  
**3.3.5.2-2**  
**3.3.5.2-3**  
**3.3.5.2-4**  
**3.3.6.1-4**  
**3.3.8.1-1**  
**3.5.1-1**  
**3.5.1-2**  
**3.5.2-2**  
**3.5.2-3**  
**3.5.2-5**  
**3.8.2-4**




1.1 Definitions

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DOSE EQUIVALENT I-131 (continued)	30, Supplement to Part 1, pages 192-212, Table titled, "Committed Dose Equivalent in Target Organs or Tissues per Intake of Unit Activity."
DRAIN TIME	<p>The DRAIN TIME is the time it would take for the water inventory in and above the Reactor Pressure Vessel (RPV) to drain to the top of the active fuel (TAF) seated in the RPV assuming:</p> <ol style="list-style-type: none"><li>a. The water inventory above the TAF is divided by the limiting drain rate;</li><li>b. The limiting drain rate is the larger of the drain rate through a single penetration flow path with the highest flow rate, or the sum of the drain rates through multiple penetration flow paths susceptible to a common mode failure <del>(e.g., seismic event, loss of normal power, single human error)</del>, for all penetration flow paths below the TAF except:<ol style="list-style-type: none"><li>1. Penetration flow paths connected to an intact closed system, or isolated by manual or automatic valves that are <del>locked, sealed, or otherwise secured</del> in the closed position, blank flanges, or other devices that prevent flow of reactor coolant through the penetration flow paths;</li><li>2. Penetration flow paths capable of being isolated by valves that will close automatically without offsite power prior to the RPV water level being equal to the TAF when actuated by RPV water level isolation instrumentation; or</li></ol></li></ol>

closed and administratively controlled



(continued)

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3.3 INSTRUMENTATION

3.3.5.2 Reactor Pressure Vessel (RPV) Water Inventory Control Instrumentation

LC0 3.3.5.2 The RPV Water Inventory Control instrumentation for each Function in Table 3.3.5.2-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3.5.2-1.

ACTIONS

A.1 Initiate action to place channel in trip.  
OR

---NOTE---

Separate Condition entry is allowed for each channel.

CONDITION	REQUIRED ACTION	COMPLETION TIME
<del>A. One or more channels inoperable.</del>	<del>A.1 Enter the Condition referenced in Table 3.3.5.2-1 for the channel.</del>	<del>Immediately</del>
<del>B. As required by Required Action A.1 and referenced in Table 3.3.5.2-1.</del>	<del>B.1 Declare associated penetration flow path(s) incapable of automatic isolation.</del>	<del>Immediately</del>
<del>C. As required by Required Action A.1 and referenced in Table 3.3.5.2-1.</del>	<del>C.1 Place channel in trip.</del>	<del>1 hour</del>

A. One or more channels inoperable.

Immediately

A.2.1

Initiate action to calculate

A.2.2

AND

Immediately

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<del>D. As required by Required Action A.1 and referenced in Table 3.3.5.2-1.</del>	<del>D.1 Restore channel to OPERABLE status.</del>	<del>24 hours</del>
<del>E. Required Action and associated Completion Time of Condition C or D not met.</del>	<del>E.1 Declare associated ECCS injection/spray subsystem inoperable.</del>	<del>Immediately</del>

These SRs apply to each Function in

SURVEILLANCE REQUIREMENTS

NOTE

~~Refer to Table 3.3.5.2-1 to determine which SRs apply for each ECCS Function.~~

SURVEILLANCE	FREQUENCY
SR 3.3.5.2.1 Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.3.5.2.2 Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program

Table 3.3.5.2-1 (page 1 of 2)  
RPV Water Inventory Control Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION A.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
<del>1. Low Pressure Coolant Injection A (LPCI) and Low Pressure Core Spray (LPCS) Subsystems</del>					
<del>a. Reactor Steam Dome Pressure Low (Injection Permissive)</del>	<del>4,5</del>	<del>1<sup>(a)</sup></del>	<del>G</del>	<del>SR 3.3.5.2.2</del>	<del>≤ 522 psig</del>
<del>b. LPCS Pump Discharge Flow Low (Bypass)</del>	<del>4,5</del>	<del>1 per pump<sup>(a)</sup></del>	<del>D</del>	<del>SR 3.3.5.2.2</del>	<del>≥ 1240 gpm and ≤ 1835 gpm</del>
<del>c. LPCI Pump A Discharge Flow Low (Bypass)</del>	<del>4,5</del>	<del>1 per pump<sup>(a)</sup></del>	<del>D</del>	<del>SR 3.3.5.2.2</del>	<del>≥ 1330 gpm and ≤ 2144 gpm</del>
<del>d. LPCS and LPCI A Injection Line Pressure Low (Injection Permissive)</del>	<del>4,5</del>	<del>1 per valve<sup>(a)</sup></del>	<del>G</del>	<del>SR 3.3.5.2.2</del>	<del>≤ 522 psig</del>
<del>2. LPCI B and LPCI C Subsystems</del>					
<del>a. Reactor Steam Dome Pressure Low (Injection Permissive)</del>	<del>4,5</del>	<del>1<sup>(a)</sup></del>	<del>G</del>	<del>SR 3.3.5.2.2</del>	<del>≤ 522 psig</del>
<del>b. LPCI Pump B and LPCI Pump C Discharge Flow Low (Bypass)</del>	<del>4,5</del>	<del>1 per pump<sup>(a)</sup></del>	<del>D</del>	<del>SR 3.3.5.2.2</del>	<del>≥ 1330 gpm and ≤ 2144 gpm</del>
<del>c. LPCI B and LPCI C Injection Line Pressure Low (Injection Permissive)</del>	<del>4,5</del>	<del>1 per valve<sup>(a)</sup></del>	<del>G</del>	<del>SR 3.3.5.2.2</del>	<del>≤ 522 psig</del>

(continued)

~~(a) Associated with an ECCS subsystem required to be OPERABLE by LCO 3.5.2, "RPV Water Inventory Control."~~

Table 3.3.5.2-1 (page 2 of 2)  
RPV Water Inventory Control Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION A.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
<del>3. High Pressure Core Spray (HPCS) System</del>					
<del>a. HPCS Pump Discharge Pressure High (Bypass)</del>	<del>4, 5</del>	<del>1(a)</del>	<del>Ø</del>	<del>SR 3.3.5.2.2</del>	<del>≥ 113.2 psig</del>
<del>b. HPCS System Flow Rate Low (Bypass)</del>	<del>4, 5</del>	<del>1(a)</del>	<del>Ø</del>	<del>SR 3.3.5.2.2</del>	<del>≥ 1380 gpm and ≤ 2194 gpm</del>
1. <del>4. RHR Shutdown Cooling System Isolation</del>	<del>a</del> <input checked="" type="checkbox"/> <del>(b)</del>				
a. Reactor Vessel Water Level-Low, Level 3	<del>(b)</del>	2 in one trip system	<del>B</del>	<del>SR 3.3.5.2.1</del> <del>SR 3.3.5.2.2</del>	≥ 11.0 inches
2. <del>5. Reactor Water Cleanup (RWCU) System Isolation</del>	<del>a</del> <input checked="" type="checkbox"/> <del>(b)</del>				
a. Reactor Vessel Water Level-Low, Level 2	<del>(b)</del>	2 in one trip system	<del>B</del>	<del>SR 3.3.5.2.2</del>	≥ -58.0 inches

~~(a) Associated with an ECCS subsystem required to be OPERABLE by LCO 3.5.2, "RPV Water Inventory Control."~~

~~(b) When automatic isolation of the associated penetration flow path(s) is credited in calculating DRAIN TIME.~~



Primary Containment Isolation Instrumentation  
3.3.6.1

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
J. As required by Required Action C.1 and referenced in Table 3.3.6.1-1.	J.1 Initiate action to restore channel to OPERABLE status.	Immediately
	<del>OR</del>	
	<del>J.2 Initiate action to isolate the Residual Heat Removal (RHR) Shutdown Cooling (SDC) System.</del>	<del>Immediately</del>

SURVEILLANCE REQUIREMENTS

- NOTES-----
1. Refer to Table 3.3.6.1-1 to determine which SRs apply for each Primary Containment Isolation Function.
  2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the associated Function maintains isolation capability.
- 

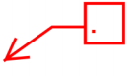
SURVEILLANCE	FREQUENCY
SR 3.3.6.1.1 Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.3.6.1.2 Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program

(continued)

3.3 INSTRUMENTATION

3.3.8.1 Loss of Power (LOP) Instrumentation

LC0 3.3.8.1 The LOP instrumentation for each Function in Table 3.3.8.1-1 shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3,   
~~When the associated diesel generator (DG) is required to be OPERABLE by LC0 3.8.2, "AC Sources Shutdown."~~

ACTIONS

-----NOTE-----  
Separate Condition entry is allowed for each channel.  
-----

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more channels inoperable.	A.1 Place channel in trip.	1 hour
B. Required Action and associated Completion Time not met.	B.1 Declare associated DG inoperable.	Immediately

3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS), REACTOR PRESSURE VESSEL (RPV) WATER INVENTORY CONTROL, AND REACTOR CORE ISOLATION COOLING (RCIC) SYSTEM



3.5.1 ECCS-Operating

LCO 3.5.1 Each ECCS injection/spray subsystem and the Automatic Depressurization System (ADS) function of six safety/relief valves shall be OPERABLE.

APPLICABILITY: MODE 1, MODES 2 and 3, except ADS valves are not required to be OPERABLE with reactor steam dome pressure ≤ 150 psig.

ACTIONS

High Pressure Core Spray (HPCS)

-----NOTE-----  
LCO 3.0.4.b is not applicable to ~~HPCS~~.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One low pressure ECCS injection/spray subsystem inoperable.	A.1 Restore low pressure ECCS injection/spray subsystem to OPERABLE status.	7 days

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>B. <del>High Pressure Core Spray (HPCS)</del> System inoperable.</p>	<p>B.1 Verify by administrative means RCIC System is OPERABLE when RCIC is required to be OPERABLE.</p> <p><u>AND</u></p> <p>B.2 Restore HPCS System to OPERABLE status.</p>	<p>Immediately</p> <p>14 days</p>
<p>C. Two low pressure ECCS injection/spray subsystems inoperable.</p>	<p>C.1 Restore one low pressure ECCS injection/spray subsystem to OPERABLE status.</p>	<p>72 hours</p>
<p>D. Required Action and associated Completion Time of Condition A, B, or C not met.</p>	<p>D.1 Be in MODE 3.</p>	<p>12 hours</p>
<p>E. One required ADS valve inoperable.</p>	<p>E.1 Restore required ADS valve to OPERABLE status.</p>	<p>14 days</p>
<p>F. Required Action and associated Completion Time of Condition E not met.</p>	<p>F.1 Be in MODE 3.</p>	<p>12 hours</p>

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. DRAIN TIME < 36 hours and ≥ 8 hours.	C.1 Verify secondary containment boundary is capable of being established in less than the DRAIN TIME.	4 hours
	<u>AND</u>	
	C.2 Verify each secondary containment penetration flow path is capable of being isolated in less than the DRAIN TIME.	4 hours
	<u>AND</u>	
	C.3 Verify one standby gas treatment subsystem is capable of being placed in operation in less than the DRAIN TIME.	4 hours

(SGT)

(continued)



ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>D. DRAIN TIME &lt; 8 hours.</p>	<p>D.1 -----NOTE-----                      Required ECCS injection/spray subsystem or additional method of water injection shall be capable of operating without offsite electrical power.                      -----</p>	
	<p>Initiate action to establish an additional method of water injection with water sources capable of maintaining RPV water level &gt; TAF for ≥ 36 hours.</p>	<p>Immediately</p>
	<p><u>AND</u></p>	
	<p>D.2 Initiate action to establish secondary containment boundary.</p>	<p>Immediately</p>
	<p><u>AND</u></p>	
	<p>D.3 Initiate action to isolate each secondary containment penetration flow path or verify it can be manually isolated from the control room.</p>	<p>Immediately</p>
	<p><u>AND</u></p>	
	<p>D.4 Initiate action to verify one <del>standby gas treatment</del> subsystem is capable of being placed in operation.</p>	<p>Immediately</p>

automatically or



SGT



(continued)

**NOTES**

- 1. Operation may be through the test return line.
- 2. Credit may be taken for normal system operation to satisfy this SR.

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.5.2.5	<p style="text-align: center;"><del>NOTE</del></p> <p><del>Not required to be met for system vent flow paths opened under administrative control.</del></p> <p><del>Verify, for the required ECCS injection/spray subsystem, each manual, power operated, and automatic valve in the flow path, that is not locked, sealed, or otherwise secured in position, is in the correct position.</del></p>	<p><del>In accordance with the Surveillance Frequency Control Program</del></p>
SR 3.5.2.6	<p>Operate the required ECCS injection/spray subsystem <del>through the recirculation line</del> for <math>\geq 10</math> minutes.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
SR 3.5.2.7	<p>Verify each valve credited for automatically isolating a penetration flow path actuates to the isolation position on an actual or simulated isolation signal.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>
SR 3.5.2.8	<p style="text-align: center;">-----NOTE-----</p> <p>Vessel injection/spray may be excluded.</p> <p>-----</p> <p>Verify the required ECCS injection/spray subsystem can be manually operated.</p>	<p>In accordance with the Surveillance Frequency Control Program</p>

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required offsite circuit or DG of LCO Item d. inoperable.	D.1 Declare associated standby gas treatment subsystem, control room area filtration subsystem, and control room area ventilation air conditioning subsystem inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.8.2.1</p> <p>-----NOTES-----</p> <p>1. The following SRs are not required to be performed: SR 3.8.1.3, SR 3.8.1.9 through <del>SR 3.8.1.11, SR 3.8.1.13 through SR 3.8.1.16, SR 3.8.1.18, and SR 3.8.1.19.</del></p> <p>2. <del>SR 3.8.1.12 and SR 3.8.1.19 are not required to be met.</del></p> <p>-----</p> <p>For AC sources required to be OPERABLE, the SRs of Specification 3.8.1, except <del>SR 3.8.1.8, SR 3.8.1.17, and SR 3.8.1.20,</del> are applicable.</p>	<p>, SR 3.8.1.10, SR 3.8.1.14, and</p> <p>:</p> <p>In accordance with applicable SRs</p>

The following SRs are applicable for

- |            |             |
|------------|-------------|
| SR 3.8.1.1 | SR 3.8.1.6  |
| SR 3.8.1.2 | SR 3.8.1.9  |
| SR 3.8.1.3 | SR 3.8.1.10 |
| SR 3.8.1.4 | SR 3.8.1.14 |
| SR 3.8.1.5 | SR 3.8.1.16 |

**ATTACHMENT 4**  
**Markup of Proposed Technical Specifications Pages**

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

**REVISED TECHNICAL SPECIFICATIONS PAGES**

**1.1-4**  
**3.3.5.2-1**  
**3.3.5.2-2**  
**3.3.5.2-3**  
**3.3.8.1-1**  
**3.5.2-2**  
**3.5.2-4**  
**3.5.2-5**  
**3.5.2-6**  
**3.6.1.3-1**  
**3.6.1.3-4**  
**3.8.2-5**

1.1 Definitions (continued)

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DRAIN TIME

The DRAIN TIME is the time it would take for the water inventory in and above the Reactor Pressure Vessel (RPV) to drain to the top of the active fuel (TAF) seated in the RPV assuming:

a. The water inventory above the TAF is divided by the limiting drain rate;

b. The limiting drain rate is the larger of the drain rate through a single penetration flow path with the highest flow rate, or the sum of the drain rates through multiple penetration flow paths susceptible to a common mode failure (~~e.g., seismic event, loss of normal power, single human error~~), for all penetration flow paths below the TAF except:

1. Penetration flow paths connected to an intact closed system, or isolated by manual or automatic valves that are ~~locked, sealed, or otherwise secured~~ in the closed position, blank flanges, or other devices that prevent flow of reactor coolant through the penetration flow paths;
2. Penetration flow paths capable of being isolated by valves that will close automatically without offsite power prior to the RPV water level being equal to the TAF when actuated by RPV water level isolation instrumentation; or
3. Penetration flow paths with isolation devices that can be closed prior to the RPV water level being equal to the TAF by a dedicated operator trained in the task, who is in continuous communication with the control room, is stationed at the controls, and is capable of closing the penetration flow path isolation device without offsite power.

closed and administratively controlled



(continued)

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3.3 INSTRUMENTATION

3.3.5.2 Reactor Pressure Vessel (RPV) Water Inventory Control Instrumentation

LCO 3.3.5.2 The RPV Water Inventory Control instrumentation for each Function in Table 3.3.5.2-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3.5.2-1.

ACTIONS

-----NOTE-----  
Separate Condition entry is allowed for each channel.  
-----

CONDITION		COMPLETION TIME
<del>A. One or more channels inoperable.</del> <div style="border: 1px solid red; padding: 2px; display: inline-block; color: red;">A. One or more channels inoperable.</div>	<div style="border: 1px solid red; padding: 2px; display: inline-block; color: red;">A.1 Initiate action to place channel in trip OR</div> <del>A.1 Enter the Condition referenced in Table 3.3.5.2-1 for the channel.</del>	<del>Immediately</del> <div style="border: 1px solid red; padding: 2px; display: inline-block; color: red;">Immediately</div>
<del>B. As required by Required Action A.1 and referenced in Table 3.3.5.2-1.</del>	<del>B.1 Declare associated penetration flow path(s) incapable of automatic isolation.</del> <div style="border: 1px solid red; padding: 2px; display: inline-block; color: red;">A.2.1</div> <div style="border: 1px solid red; padding: 2px; display: inline-block; color: red; border-radius: 50%; text-align: center;">AND</div> <div style="border: 1px solid red; padding: 2px; display: inline-block; color: red;">Initiate action to calculate</div> <del>B.2 Calculate DRAIN TIME.</del>	<del>Immediately</del>           <del>Immediately</del>
<del>C. As required by Required Action A.1 and referenced in Table 3.3.5.2-1.</del>	<del>C.1 Place channel in trip.</del>	<del>1 hour</del>
<del>D. As required by Required Action A.1 and referenced in Table 3.3.5.2-1.</del>	<del>D.1 Restore channel to OPERABLE status.</del>	<del>24 hours</del>

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<del>E. Required Action and associated Completion Time of Condition C or D not met.</del>	<del>E.1 Declare associated low pressure ECCS injection/spray subsystem inoperable.</del>	<del>Immediately</del>

These SRs apply to each Function in

SURVEILLANCE REQUIREMENTS

----- NOTE -----

~~Refer to Table 3.3.5.2-1 to determine which SRs apply for each ECCS Function.~~

SURVEILLANCE	FREQUENCY
SR 3.3.5.2.1 Perform CHANNEL CHECK.	In accordance with the Surveillance Frequency Control Program
SR 3.3.5.2.2 Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program

RPV Water Inventory Control Instrumentation  
3.3.5.2

Table 3.3.5.2-1 (Page 1 of 1)  
RPV Water Inventory Control Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION A.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
<del>1. Core Spray System</del>					
<del>a. Reactor Steam Dome Pressure Low (Permissive)</del>	<del>4, 5</del>	<del>2 (a)</del>	<del>G</del>	<del>SR 3.3.5.2.2</del>	<del>≤ 342 psig</del>
<del>b. Core Spray Pump Discharge Flow Low (Bypass)</del>	<del>4, 5</del>	<del>1 per pump (a)</del>	<del>D</del>	<del>SR 3.3.5.2.2</del>	<del>≥ 577 gpm and ≤ 830 gpm</del>
<del>2. Low Pressure Coolant Injection (LPCI) System</del>					
<del>a. Reactor Steam Dome Pressure Low (Permissive)</del>	<del>4, 5</del>	<del>2 (a)</del>	<del>G</del>	<del>SR 3.3.5.2.2</del>	<del>≤ 342 psig</del>
<del>b. Low Pressure Coolant Injection Pump Discharge Flow Low (Bypass)</del>	<del>4, 5</del>	<del>1 per loop (a)</del>	<del>D</del>	<del>SR 3.3.5.2.2</del>	<del>≥ 2526 gpm</del>
<del>3. RHR Shutdown Cooling System (SDC) Isolation</del>					
<del>a. Reactor Vessel Water Level-Low</del>	<del>(b)</del>	<del>1 per trip system</del>	<del>B</del>	<del>SR 3.3.5.2.1 SR 3.3.5.2.2</del>	<del>≥ 3.8 inches</del>
<del>4. Reactor Water Cleanup (RWCU) System Isolation</del>					
<del>a. Reactor Vessel Water Level-Low</del>	<del>(b)</del>	<del>1 per trip system</del>	<del>B</del>	<del>SR 3.3.5.2.1 SR 3.3.5.2.2</del>	<del>≥ 3.8 inches</del>


~~(a) Associated with an ECCS subsystem required to be OPERABLE by LCO 3.5.2, "RPV Water Inventory Control."~~

~~(b) When automatic isolation of the associated penetration flow path(s) is credited in calculating DRAIN TIME.~~

3.3 INSTRUMENTATION

3.3.8.1 Loss of Power (LOP) Instrumentation

LCO 3.3.8.1 The LOP instrumentation for each Function in Table 3.3.8.1-1 shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3,  ~~When the associated diesel generator is required to be OPERABLE by LCO 3.8.2, "AC Sources Shutdown."~~

ACTIONS

-----NOTE-----  
Separate Condition entry is allowed for each channel.  
-----

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more channels inoperable.	A.1 Place channel in trip.	1 hour
B. Required Action and associated Completion Time not met.	B.1 Declare associated diesel generator (DG) inoperable.	Immediately

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. DRAIN TIME < 36 hours and ≥ 8 hours.	C.1 Verify secondary containment boundary is capable of being established in less than the DRAIN TIME.	4 hours
	<u>AND</u>	
	C.2 Verify each secondary containment penetration flow path is capable of being isolated in less than the DRAIN TIME.	4 hours
	<u>AND</u>	
	C.3 Verify one standby gas treatment subsystem is capable of being placed in operation in less than the DRAIN TIME.	4 hours

(SGT)

(continued)



ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. (continued)	<p>D.3 Initiate action to isolate each secondary containment penetration flow path or verify it can be manually isolated from the control room.</p> <p><b>automatically or</b> →</p> <p><u>AND</u></p> <p>D.4 Initiate action to verify one <del>standby gas treatment</del> subsystem is capable of being placed in operation.</p> <p>← <b>SGT</b></p>	<p>Immediately</p> <p>Immediately</p>
<p>E. Required Action and associated Completion Time of Condition C or D not met.</p> <p><u>OR</u></p> <p>DRAIN TIME &lt; 1 hour.</p>	E.1 Initiate action to restore DRAIN TIME to ≥ 36 hours.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.5.2.1 Verify DRAIN TIME ≥ 36 hours.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.5.2.2 Verify, for the required ECCS injection/spray subsystem, the:</p> <p>a. Suppression pool water level is <math>\geq</math> 8.5 ft; or</p> <p>b. Contaminated condensate storage tank(s) water volume is <math>\geq</math> 140,000 available gallons.</p>	<p>In accordance with the Surveillance Frequency Control Program <del>+</del></p>
<p>SR 3.5.2.3 Verify, for the required ECCS injection/spray subsystem, locations susceptible to gas accumulation are sufficiently filled with water.</p>	<p>In accordance with the Surveillance Frequency Control Program <del>+</del></p>
<p>SR <del>3.5.2.4</del> <del>NOTE</del></p> <p><del>Not required to be met for system vent flow paths opened under administrative control.</del></p> <p><del>Verify, for the required ECCS injection/spray subsystem, each manual, power operated, and automatic valve in the flow path, that is not locked, sealed, or otherwise secured in position, is in the correct position.</del></p>	<p><del>In accordance with the Surveillance Frequency Control Program</del> <del>+</del></p>

(continued)

**NOTES**  
 1. Operation may be through the test return line.  
 2. Credit may be taken for normal system operation to satisfy this SR.

SR 3.5.2.4

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR <del>3.5.2.5</del>	Operate the required ECCS injection/spray subsystem <del>through the recirculation line</del> for ≥ 10 minutes.	In accordance with the Surveillance Frequency Control Program
SR <del>3.5.2.6</del>	Verify each valve credited for automatically isolating a penetration flow path actuates to the isolation position on an actual or simulated isolation signal.	In accordance with the Surveillance Frequency Control Program
SR <del>3.5.2.7</del>	<p>-----NOTE-----                      Vessel injection/spray may be excluded.                      -----</p> <p>Verify the required ECCS injection/spray subsystem can be manually operated.</p>	In accordance with the Surveillance Frequency Control Program

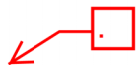
SR 3.5.2.5

SR 3.5.2.6

3.6 CONTAINMENT SYSTEMS

3.6.1.3 Primary Containment Isolation Valves (PCIVs)

LCO 3.6.1.3 Each PCIV, except reactor building-to-suppression chamber vacuum breakers, shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3,   
~~When associated instrumentation is required to be OPERABLE per LCO 3.3.6.1, "Primary Containment Isolation Instrumentation."~~

ACTIONS

- NOTES -----
1. Penetration flow paths may be unisolated intermittently under administrative controls.
  2. Separate Condition entry is allowed for each penetration flow path.
  3. Enter applicable Conditions and Required Actions for systems made inoperable by PCIVs.
  4. Enter applicable Conditions and Required Actions of LCO 3.6.1.1, "Primary Containment," when PCIV leakage results in exceeding overall containment leakage rate acceptance criteria.
- 

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. -----NOTE----- Only applicable to penetration flow paths with two or more PCIVs. ----- One or more penetration flow paths with one PCIV inoperable for reasons other than Condition D.</p>	<p>A.1 Isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve, closed manual valve, blind flange, or check valve with flow through the valve secured.</p> <p><u>AND</u></p>	<p>4 hours except for main steam line <u>AND</u> 8 hours for main steam line</p> <p>(continued)</p>

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. (continued)	<p>C.2 -----NOTES-----            1. Isolation devices in high radiation areas may be verified by use of administrative means.             2. Isolation devices that are locked, sealed, or otherwise secured may be verified by use of administrative means.            -----             Verify the affected penetration flow path is isolated.</p>	Once per 31 days
D. MSIV leakage rate not within limit.	D.1 Restore leakage rate to within limit.	8 hours
E. Required Action and associated Completion Time of Condition A, B, C, or D not met <del>in MODE 1, 2, or 3.</del>	<p>E.1 Be in MODE 3.  <u>AND</u>            E.2 Be in MODE 4.</p>	<p>12 hours             36 hours</p>



**SR 3.8.1.3, SR 3.8.1.10, SR 3.8.1.11, SR 3.8.1.15, and SR 3.8.1.17.**

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.8.2.1 -----NOTE-----                      The following SRs are not required to be performed: <del>SR 3.8.1.3, SR 3.8.1.10 through SR 3.8.1.12, and SR 3.8.1.14 through SR 3.8.1.19.</del></p> <p>For AC sources required to be OPERABLE the SRs of Specification 3.8.1, except <del>SR 3.8.1.9, SR 3.8.1.13, SR 3.8.1.19, SR 3.8.1.20, and SR 3.8.1.21,</del> are applicable.</p>	<p>In accordance with applicable SRs</p>

The following SRs are applicable for

- SR 3.8.1.1**
- SR 3.8.1.2**
- SR 3.8.1.3**
- SR 3.8.1.4**
- SR 3.8.1.5**
- SR 3.8.1.6**
- SR 3.8.1.7**
- SR 3.8.1.10**
- SR 3.8.1.11**
- SR 3.8.1.15**
- SR 3.8.1.17**