

RS-07-118
October 9, 2007

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

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

Subject: Application for Technical Specification Change TSTF-423, Risk Informed Modification to Selected Required Action End States for BWR Plants, Using the Consolidated Line Item Improvement Process

Reference: TSTF-423, Revision 0, "Technical Specifications End States, NEDC-32988-A, Revision 2"

In accordance with 10 CFR 50.90, "Application for amendment of license or construction permit," Exelon Generation Company, LLC (EGC) is requesting a change to the Technical Specifications (TS) of Facility Operating License Nos. DPR-19 and DPR-25 for Dresden Nuclear Power Station (DNPS), Units 2 and 3. The proposed amendment would modify TS to risk-inform requirements regarding selected Required Action End States as provided in the referenced document.

Attachment 1 provides a description of the proposed change, the requested confirmation of applicability, and plant-specific verifications. Attachment 2 provides the existing TS pages marked up to show the proposed change. Attachment 3 provides the existing TS Bases pages marked up to show the proposed change. The TS Bases pages are provided for information only and do not require NRC approval. Attachment 4 provides a summary of the regulatory commitments made in this submittal.

Changes to TS are consistent with the changes outlined in the referenced document; minor deviations are discussed in Attachment 1. DNPS, Units 2 and 3 TS are based on NUREG-1433, "Standard Technical Specifications General Electric Plants, BWR/4," though it is not identical to this guidance. Therefore, an adaptation of the referenced document was required.

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EGC requests approval of the proposed license amendment by October 9, 2008, with implementation within 120 days of issuance.

This amendment request has been reviewed and approved by the DNPS Plant Operations Review Committee and the Nuclear Safety Review Board in accordance with the requirements of the EGC Quality Assurance Program.

In accordance with 10 CFR 50.91, "Notice for public comment," EGC is notifying the State of Illinois of this application for amendment by transmitting a copy of this letter and its attachments to the designated State Official.

If you have any questions concerning this letter, please contact Ms. Michelle Yun at (630) 657-2818.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 9th day of October 2007.

Respectfully,

A handwritten signature in black ink, appearing to read "Jeffrey L. Hansen". The signature is fluid and cursive, with a large loop at the end.

Jeffrey L. Hansen
Manager – Licensing
Exelon Generation Company, LLC

- Attachment 1: Description and Assessment
- Attachment 2: Mark-up of Proposed Technical Specification Changes
- Attachment 3: Mark-up of Technical Specification Bases Changes
- Attachment 4: List of Regulatory Commitments

ATTACHMENT 1
Description and Assessment

Subject: Application for Technical Specification Change TSTF-423, Risk Informed Modification to Selected Required Action End States for BWR Plants, Using the Consolidated Line Item Improvement Process

1.0 DESCRIPTION

2.0 ASSESSMENT

2.1 Applicability of Topical Report, TSTF-423, and Published Safety Evaluation

2.2 Optional Changes and Variations

3.0 REGULATORY ANALYSIS

3.1 No Significant Hazards Consideration Determination

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ATTACHMENT 1
Description and Assessment

1.0 DESCRIPTION

The proposed amendment would modify Technical Specifications (TS) to risk-informed requirements regarding selected Required Action End States.

The changes are consistent with the Nuclear Regulatory Commission (NRC) approved Industry/Technical Specification Task Force (TSTF) TSTF-423, Revision 0, "Technical Specifications End States, NEDC-32988-A," except as described in Section 2.2 below. The availability of this TS improvement was published in the *Federal Register* on March 23, 2006 as part of the Consolidated Line Item Improvement Process (CLIIP).

2.0 ASSESSMENT

2.1 Applicability of Topical Report, TSTF-423, and Published Safety Evaluation

Exelon Generation Company, LLC (EGC) has reviewed the General Electric (GE) topical report (i.e., Reference 1), TSTF-423 (i.e., Reference 2), and the NRC model Safety Evaluation (i.e., Reference 3) as part of the CLIIP. EGC has concluded that the information in the GE topical report and TSTF-423, as well as the safety evaluation prepared by the NRC, are applicable to Dresden Nuclear Power Station (DNPS), Units 2 and 3 and provide justification for the incorporation of the proposed changes into the DNPS, Units 2 and 3 TS.

2.2 Optional Changes and Variations

EGC is proposing the following variations or deviations from the GE topical report, TS changes described in the TSTF-423, Revision 0, or the NRC's model safety evaluation, dated March 23, 2006.

TSTF-423 is based on NUREG-1433, "Standard Technical Specifications General Electric Plants, BWR/4." DNPS, Units 2 and 3 TS are based on NUREG-1433, but are not identical to this guidance. As a result, an adaptation of TSTF-423 was required, in some cases, for implementation into the DNPS, Units 2 and 3 TS due to the minor administrative differences in format (e.g., condition letter designation, etc).

Proposed changes made to STS 3.3.8.2, "RPS Electric Power Monitoring," already exist in DNPS, Units 2 and 3 TS 3.3.8.2 and are therefore not included as a proposed change in this submittal.

STS 3.6.1.9, "Main Steam Isolation Valve (MSIV) Leakage Control System (LCS)," STS 3.7.2, "Plant Service Water (PSW) System and Ultimate Heat Sink (UHS)," and STS 3.8.7, "Inverters – Operating," do not exist in DNPS, Units 2 and 3 TS and are therefore not included as a proposed change in this submittal. Therefore, the aforementioned TSTF changes are not part of this submittal.

ATTACHMENT 1
Description and Assessment

3.0 REGULATORY ANALYSIS

3.1 No Significant Hazards Consideration Determination

Exelon Generation Company, LLC (EGC) has reviewed the proposed No Significant Hazards Consideration Determination (NSHCD) published in the *Federal Register* as part of the Consolidated Line Item Improvement Process (CLIP), (i.e., Reference 3). EGC has concluded that the proposed NSHCD presented in the *Federal Register* notice is applicable to Dresden Nuclear Power Station (DNPS), Units 2 and 3 and is hereby incorporated by reference to satisfy the requirements of 10 CFR 50.91(a), "Notice for public comment."

3.2 Verification and Commitments

As discussed in the notice of availability published in the *Federal Register* on March 23, 2006 for this TS improvement, plant-specific verifications were performed as follows.

EGC commits to the regulatory commitments in Attachment 4. In addition, EGC has supportive TS Bases consistent with the GE topical report and TSTF-423, which provide guidance and details on how to implement the new requirements. Implementation of TSTF-423 requires that risk be managed and assessed. EGC's configuration risk management program is adequate to satisfy this requirement. The risk assessment need not be quantified, but may be a qualitative assessment of the vulnerability of systems and components when one or more systems are not able to perform their associated function. Furthermore, EGC has a Bases Control Program consistent with Section 5.5 of the Standard Technical Specifications (STS).

4.0 ENVIRONMENTAL EVALUATION

The amendment affects requirements with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR 20, "Standards for Protection Against Radiation." The NRC has determined that the amendment adopting TSTF-423, Revision 0, involves no significant increases in amounts of effluents that may be released offsite, no significant changes in the types of effluents that may be released offsite, and no significant increases in the individual or cumulative occupational radiation exposure. The NRC has previously issued a proposed finding that TSTF-423, Revision 0, involves no significant hazards considerations and there has been no public comment on said finding in the *Federal Register*, Notice 70 FR 74037, December 14, 2005. Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9), "Criterion for categorical exclusion." In accordance with 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of this amendment.

ATTACHMENT 1
Description and Assessment

5.0 IMPACT ON PREVIOUS SUBMITTALS

The amendment seeks to execute changes on TS that currently has a pending amendment. The following TS has the associated amendment pending.

TSTF-448, Control Room Habitability	B 3.7.4 – 4 to B 3.7.4 – 6	Submitted 4/12/07
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6.0 REFERENCES

1. NEDC-32988-A, Revision 2, "Technical Justification to Support Risk-Informed Modification to Selected Required Action End States for BWR Plants," dated December 2002
2. TSTF-423, Revision 0, "Technical Specifications End States, NEDC-32988-A"
3. Volume 71, Federal Register, Page 14726 (71FRN14726), "Notice of Availability of Model Application Concerning Technical Specifications for Boiling Water Reactor Plants to Risk-Inform Requirements Regarding Selected Required Action End States Using the Consolidated Line Item Improvement Process," dated March 23, 2006

ATTACHMENT 2
Mark-up of Proposed Technical Specification Page Changes

Revised Technical Specification Pages

3.4.3 -1
3.5.1 -1
3.5.1 -2
3.5.1 -3
3.5.3 -1
3.6.1.1 -1
3.6.1.6 -1
3.6.1.7 -1
3.6.1.7 -2
3.6.1.8 -1
3.6.2.3 -1
3.6.2.4 -1
3.6.4.1 -1
3.6.4.3 -1
3.6.4.3 -2
3.7.1 -1
3.7.4 -1
3.7.5 -1
3.7.6 -1
3.8.1 -5
3.8.4 -4
3.8.7 -2

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.3 Safety and Relief Valves

LC0 3.4.3 The safety function of 9 safety valves shall be OPERABLE. |

AND

The relief function of 5 relief valves shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One relief valve inoperable.	A.1 Restore the relief valve to OPERABLE status.	14 days
B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 3.	12 hours
OR	AND	
	B.2 Be in MODE 4.	36 hours
C. Two or more relief valves inoperable.	C.1 Be in MODE 3.	12 hours
<u>OR</u>	<u>AND</u>	
One or more safety valves inoperable.	C.2 Be in MODE 4.	36 hours

3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS) AND ISOLATION CONDENSER (IC) SYSTEM

3.5.1 ECCS-Operating

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

APPLICABILITY: MODE 1, MODES 2 and 3, except high pressure coolant injection (HPCI) and ADS valves are not required to be OPERABLE with reactor steam dome pressure \leq 150 psig.

ACTIONS

----- NOTE -----
LCO 3.0.4.b is not applicable to HPCI.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One Low Pressure Coolant Injection (LPCI) pump inoperable.	A.1 Restore LPCI pump to OPERABLE status.	30 days
B. One LPCI subsystem inoperable for reasons other than Condition A. <u>OR</u> One Core Spray subsystem inoperable.	B.1 Restore low pressure ECCS injection/spray subsystem to OPERABLE status.	7 days
C. One LPCI pump in each subsystem inoperable.	C.1 Restore one LPCI pump to OPERABLE status.	7 days
D. Two LPCI subsystems inoperable for reasons other than Condition C. E.	D.1 Restore one LPCI subsystem to OPERABLE status. E.1	72 hours
D. Required Action and associated Completion Time of Condition A, B, or C not met.	D.1 Be in MODE 3.	12 hours (continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
F. E. Required Action and associated Completion Time of Condition A , E , B , C , or D not met.	E.1 F.1 Be in MODE 3. AND E.2 F.2 Be in MODE 4.	12 hours 36 hours
G. F. HPCI System inoperable.	F.1 G.1 Verify by administrative means IC System is OPERABLE. AND F.2 G.2 Restore HPCI System to OPERABLE status.	Immediately 14 days
H. G. One ADS valve inoperable.	G.1 H.1 Restore ADS valve to OPERABLE status.	14 days
J. A. Required Action and associated Completion Time of Condition F or G not met. OR Two or more ADS valves inoperable.	H.1 J.1 Be in Mode 3. AND H.2 J.2 Reduce reactor steam dome pressure to ≤ 150 psig.	12 hours 36 hours
(continued)		
I. Required Action and associated Completion Time of Condition G or H not met.	I.1 Be in MODE 3.	12 hours

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p><input checked="" type="checkbox"/> K.1. Two or more low pressure ECCS injection/spray subsystems inoperable for reasons other than Condition C or D. <input type="checkbox"/> E</p> <p><u>OR</u></p> <p>HPCI System and one or more ADS valves inoperable.</p> <p><u>OR</u></p> <p>One or more low pressure ECCS injection/spray subsystems inoperable and one or more ADS valves inoperable.</p> <p><u>OR</u></p> <p>HPCI System inoperable and either one low pressure ECS injection/spray subsystem is inoperable or Condition C entered.</p>	<p>I.1 <input checked="" type="checkbox"/> K.1</p> <p>Enter LCO 3.0.3</p>	<p>Immediately</p>

3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS) AND ISOLATION CONDENSER (IC) SYSTEM

3.5.3 IC System

LCO 3.5.3 The IC System shall be OPERABLE.

APPLICABILITY: MODE 1,
MODES 2 and 3 with reactor steam dome pressure > 150 psig.

ACTIONS

-----NOTE-----
LCO 3.0.4.b is not applicable to IC.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. IC System inoperable.	A.1 Verify by administrative means High Pressure Coolant Injection System is OPERABLE.	Immediately
	<u>AND</u> A.2 Restore IC System to OPERABLE status.	14 days
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	12 hours
	B.2 Reduce reactor steam dome pressure to \leq 150 psig.	36 hours.

3.6 CONTAINMENT SYSTEMS

3.6.1.1 Primary Containment

LC0 3.6.1.1 Primary containment shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Primary containment inoperable.	A.1 Restore primary containment to OPERABLE status.	1 hour
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	12 hours
	AND B.2 Be in MODE 4.	36 hours

3.6 CONTAINMENT SYSTEMS

3.6.1.6 Low Set Relief Valves

LC0 3.6.1.6 The low set relief function of two relief valves shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One low set relief valve inoperable.	A.1 Restore low set relief valve to OPERABLE status.	14 days
B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 3.	12 hours
	AND B.2 Be in MODE 4.	36 hours
OR		
C. Two low set relief valves inoperable.	C.1 Be in MODE 3.	12 hours
	AND C.2 Be in MODE 4.	36 hours

3.6 CONTAINMENT SYSTEMS

3.6.1.7 Reactor Building-to-Suppression Chamber Vacuum Breakers

LC0 3.6.1.7 Each reactor building-to-suppression chamber vacuum breaker shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more lines with one reactor building-to-suppression chamber vacuum breaker not closed.	A.1 Close the open vacuum breaker.	7 days
B. One or more lines with two reactor building-to-suppression chamber vacuum breakers not closed.	B.1 Close one open vacuum breaker.	1 hour
C. One line with one or more reactor building-to-suppression chamber vacuum breakers inoperable for opening.	C.1 Restore the vacuum breaker(s) to OPERABLE status.	7 days

(continued)

D. Required Action and Associated Completion Time of Condition C not met.	D.1 Be in MODE 3.	12 hours
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Reactor Building-to-Suppression Chamber Vacuum Breakers
3.6.1.7

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p><input checked="" type="checkbox"/> E. Two lines with one or more reactor building-to-suppression chamber vacuum breakers inoperable for opening.</p>	<p>D.1 <input checked="" type="checkbox"/> E.1 Restore all vacuum breakers in one line to OPERABLE status.</p>	1 hour
<p><input checked="" type="checkbox"/> F. Required Action and Associated Completion Time not met.</p> <p style="text-align: center;">↑ of Conditions A, B, or E</p>	<p>E.1 <input checked="" type="checkbox"/> F.1 Be in MODE 3.</p> <p style="text-align: center;">AND</p> <p>E.2 <input checked="" type="checkbox"/> F.2 Be in MODE 4.</p>	12 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.6.1.7.1 -----NOTES-----</p> <p>1. Not required to be met for vacuum breakers that are open during Surveillances.</p> <p>2. Not required to be met for vacuum breakers open when performing their intended function.</p> <p>-----</p> <p>Verify each vacuum breaker is closed.</p>	14 days
<p>SR 3.6.1.7.2 Perform a functional test of each vacuum breaker.</p>	92 days

(continued)

3.6 CONTAINMENT SYSTEMS

3.6.1.8 Suppression Chamber-to-Drywell Vacuum Breakers

LC0 3.6.1.8 Nine suppression chamber-to-drywell vacuum breakers shall be OPERABLE for opening.

AND

Twelve suppression chamber-to-drywell vacuum breakers shall be closed.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required suppression chamber-to-drywell vacuum breaker inoperable for opening.	A.1 Restore one vacuum breaker to OPERABLE status.	72 hours
<input checked="" type="checkbox"/> C. One suppression chamber-to-drywell vacuum breaker not closed.	B.1 <input type="checkbox"/> C.1 Close the open vacuum breaker.	4 hours
<input checked="" type="checkbox"/> D. Required Action and associated Completion Time not met. <div style="text-align: center; border: 1px solid black; padding: 2px; margin: 5px auto; width: fit-content;">of Condition C</div>	C.1 <input type="checkbox"/> D.1 Be in MODE 3.	12 hours
	C.2 <input type="checkbox"/> D.2 Be in MODE 4.	36 hours
B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 3.	12 hours

The diagram shows a flow from Condition C to Condition B and from Condition D to Condition B. An arrow points from the left side of the table to Condition B. Another arrow points from the 'of Condition C' box up to Condition D.

3.6 CONTAINMENT SYSTEMS

3.6.2.3 Suppression Pool Cooling

LC0 3.6.2.3 Two suppression pool cooling subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One suppression pool cooling subsystem inoperable.	A.1 Restore suppression pool cooling subsystem to OPERABLE status.	7 days
<input checked="" type="checkbox"/> C. Two suppression pool cooling subsystems inoperable.	B.1 <input checked="" type="checkbox"/> C.1 Restore one suppression pool cooling subsystem to OPERABLE status.	8 hours
<input checked="" type="checkbox"/> D. Required Action and associated Completion Time not met. <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-top: 5px;">of Condition C</div>	C.1 <input checked="" type="checkbox"/> D.1 Be in MODE 3.	12 hours
	AND C.2 <input checked="" type="checkbox"/> D.2 Be in MODE 4.	36 hours
B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 3.	12 hours

3.6 CONTAINMENT SYSTEMS

3.6.2.4 Suppression Pool Spray

LC0 3.6.2.4 Two suppression pool spray subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One suppression pool spray subsystem inoperable.	A.1 Restore suppression pool spray subsystem to OPERABLE status.	7 days
B. Two suppression pool spray subsystems inoperable.	B.1 Restore one suppression pool spray subsystem to OPERABLE status.	8 hours
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3.	12 hours
	C.2 Be in MODE 4.	36 hours

3.6 CONTAINMENT SYSTEMS

3.6.4.1 Secondary Containment

LCO 3.6.4.1 The secondary containment shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3,
During movement of recently irradiated fuel assemblies in
the secondary containment,
During operations with a potential for draining the reactor
vessel (OPDRVs).

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Secondary containment inoperable in MODE 1, 2, or 3.	A.1 Restore secondary containment to OPERABLE status.	4 hours
B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 3.	12 hours
	B.2 Be in MODE 4.	36 hours
C. Secondary containment inoperable during movement of recently irradiated fuel assemblies in the secondary containment or during OPDRVs.	C.1 -----NOTE----- LCO 3.0.3 is not applicable. ----- Suspend movement of recently irradiated fuel assemblies in the secondary containment.	Immediately
	<u>AND</u> C.2 Initiate action to suspend OPDRVs.	Immediately

3.6 CONTAINMENT SYSTEMS

3.6.4.3 Standby Gas Treatment (SGT) System

LCO 3.6.4.3 Two SGT subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3,
During movement of recently irradiated fuel assemblies in
the secondary containment,
During operations with a potential for draining the reactor
vessel (OPDRVs).

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One SGT subsystem inoperable.	A.1 Restore SGT subsystem to OPERABLE status.	7 days
B. Required Action and associated Completion Time of Condition A not met in MODE 1, 2, or 3.	B.1 Be in MODE 3.	12 hours
	B.2 Be in MODE 4.	36 hours
C. Required Action and associated Completion Time of Condition A not met during movement of recently irradiated fuel assemblies in the secondary containment or during OPDRVs.	-----NOTE----- LCO 3.0.3 is not applicable. -----	Immediately
	C.1 Place OPERABLE SGT subsystem in operation. <u>OR</u>	

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. (continued)	C.2.1 Suspend movement of recently irradiated fuel assemblies in secondary containment. <u>AND</u> C.2.2 Initiate action to suspend OPDRVs.	Immediately Immediately
D. Two SGT subsystems inoperable in MODE 1, 2, or 3.	D.1 Restore one SGT subsystem to OPERABLE status.	1 hour
E. Required Action and associated Completion Time of Condition D not met.	E.1 Be in MODE 3. E.2 Be in MODE 4.	12 hours 36 hours
F. Two SGT subsystems inoperable during movement of recently irradiated fuel assemblies in the secondary containment or during OPDRVs.	F.1 -----NOTE----- LCO 3.0.3 is not applicable. ----- Suspend movement of recently irradiated fuel assemblies in secondary containment. <u>AND</u> F.2 Initiate action to suspend OPDRVs.	Immediately Immediately

3.7 PLANT SYSTEMS

3.7.1 Containment Cooling Service Water (CCSW) System

LCO 3.7.1 Two CCSW subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One CCSW pump inoperable.	A.1 Restore CCSW pump to OPERABLE status.	30 days
B. One CCSW pump in each subsystem inoperable.	B.1 Restore one CCSW pump to OPERABLE status.	7 days
C. One CCSW subsystem inoperable for reasons other than Condition A.	C.1 Restore CCSW subsystem to OPERABLE status.	7 days
E.1 . Both CCSW subsystems inoperable for reasons other than Condition B.	D.1 E.1 Restore one CCSW subsystem to OPERABLE status.	8 hours
F.1 . Required Action and associated Completion Time not met. ↑ of Condition E	E.1 Be in MODE 3. AND F.1 E.2 Be in MODE 4. AND F.2	12 hours 36 hours
D. Required Action and associated Completion Time of Conditions A, B, or C not met.	D.1 Be in MODE 3.	12 hours

3.7 PLANT SYSTEMS

3.7.4 Control Room Emergency Ventilation (CREV) System

LCO 3.7.4 The CREV System shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3,
During movement of recently irradiated fuel assemblies in
the secondary containment,
During operations with a potential for draining the reactor
vessel (OPDRVs).

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. CREV System inoperable in MODE 1, 2, or 3.	A.1 Restore CREV System to OPERABLE status.	7 days
B. Required Action and associated Completion Time of Condition A not met in MODE 1, 2, or 3.	B.1 Be in MODE 3.	12 hours
	AND B.2 Be in MODE 4.	36 hours
C. CREV System inoperable during movement of recently irradiated fuel assemblies in the secondary containment or during OPDRVs.	-----NOTE----- LCO 3.0.3 is not applicable. -----	Immediately
	C.1 Suspend movement of recently irradiated fuel assemblies in the secondary containment.	
	<u>AND</u> C.2 Initiate action to suspend OPDRVs.	Immediately

3.7 PLANT SYSTEMS

3.7.5 Control Room Emergency Ventilation Air Conditioning (AC) System

LCO 3.7.5 The Control Room Emergency Ventilation AC System shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3,
During movement of recently irradiated fuel assemblies in the secondary containment,
During operations with a potential for draining the reactor vessel (OPDRVs).

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Control Room Emergency Ventilation AC System inoperable in MODE 1, 2, or 3.	A.1 Restore Control Room Emergency Ventilation AC System to OPERABLE status.	30 days
B. Required Action and associated Completion Time of Condition A not met in MODE 1, 2, or 3.	B.1 Be in MODE 3.	12 hours
	AND B.2 Be in MODE 4.	36 hours
C. Control Room Emergency Ventilation AC System inoperable during movement of recently irradiated fuel assemblies in the secondary containment or during OPDRVs.	-----NOTE----- LCO 3.0.3 is not applicable. -----	Immediately
	C.1 Suspend movement of recently irradiated fuel assemblies in the secondary containment.	
	<u>AND</u> C.2 Initiate action to suspend OPDRVs.	Immediately

3.7 PLANT SYSTEMS

3.7.6 Main Condenser Offgas

LC0 3.7.6 The gross gamma activity rate of the noble gases measured prior to the offgas holdup line shall be $\leq 252,700 \mu\text{Ci}/\text{second}$ after decay of 30 minutes.

APPLICABILITY: MODE 1,
MODES 2 and 3 with any main steam line not isolated and steam jet air ejector (SJAE) in operation.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Gross gamma activity rate of the noble gases not within limit.	A.1 Restore gross gamma activity rate of the noble gases to within limit.	72 hours
B. Required Action and associated Completion Time not met.	B.1 Isolate all main steam lines.	12 hours
	<u>OR</u>	
	B.2 Isolate SJAE.	12 hours
	<u>OR</u>	
	B.3 1 Be in MODE 3.	12 hours
	AND	
	B.3.2 Be in MODE 4.	36 hours

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
F. Required Action and associated Completion Time of Condition A, B, C, D, or E not met.	F.1 Be in MODE 3. AND F.2 Be in MODE 4.	12 hours 36 hours
G. Three or more required AC sources inoperable.	G.1 Enter LCO 3.0.3.	Immediately

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>B. One or more DC electrical power distribution subsystems inoperable.</p>	<p>B.1 Restore DC electrical power distribution subsystems to OPERABLE status.</p>	<p>2 hours <u>AND</u> 16 hours from discovery of failure to meet LCO 3.8.7.a</p>
<p>C. One or more required opposite unit Division 2 AC or DC electrical power distribution subsystems inoperable.</p>	<p>-----NOTE----- Enter applicable Conditions and Required Actions of LCO 3.8.1 when Condition C results in the inoperability of a required offsite circuit. -----</p> <p>C.1 Restore required opposite unit Division 2 AC and DC electrical power distribution subsystems to OPERABLE status.</p>	<p>7 days</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. AND D.2 Be in MODE 4.</p>	<p>12 hours 36 hours</p>
<p>E. Two or more electrical power distribution subsystems inoperable that, in combination, result in a loss of function.</p>	<p>E.1 Enter LCO 3.0.3.</p>	<p>Immediately</p>

ATTACHMENT 3
Mark-up of Technical Specification Bases Page Changes
(For Information Only)

Revised Bases Pages
(Provided for Information Only)

B 3.4.3 -5	B 3.7.6 -3
B 3.4.3 -7	B 3.8.1 -16
B 3.4.3 -8	B 3.8.1 -17
B 3.5.1 -7	B 3.8.1 -18
B 3.5.1 -8	B 3.8.1 -19
B 3.5.1 -9	B 3.8.1 -20
B 3.5.1 -10	B 3.8.1 -22
B 3.5.1 -18	B 3.8.1 -23
B 3.5.3 -3	B 3.8.1 -24
B 3.5.3 -4	B 3.8.1 -25
B 3.5.3 -6	B 3.8.1 -26
B 3.5.3 -7	B 3.8.1 -27
B 3.6.1.1 -3	B 3.8.1 -28
B 3.6.1.1 -4	B 3.8.1 -30
B 3.6.1.1 -5	B 3.8.1 -31
B 3.6.1.6 -2	B 3.8.1 -32
B 3.6.1.6 -3	B 3.8.1 -33
B 3.6.1.6 -4	B 3.8.1 -35
B 3.6.1.6 -5	B 3.8.4 -16
B 3.6.1.7 -4	B 3.8.4 -17
B 3.6.1.7 -5	B 3.8.4 -19
B 3.6.1.7 -6	B 3.8.7 -10
	B 3.8.7 -11
B 3.6.1.8 -4	
B 3.6.1.8 -6	
B 3.6.2.3 -3	
B 3.6.2.3 -4	
B 3.6.2.4 -3	
B 3.6.2.4 -4	
B 3.6.4.1 -3	
B 3.6.4.1 -6	
B 3.6.4.3 -3	
B 3.6.4.3 -5	
B 3.6.4.3 -6	
B 3.6.4.3 -7	
B 3.7.1 -4	
B 3.7.1 -5	
B 3.7.1 -6	
B 3.7.4 -4	
B 3.7.4 -5	
B 3.7.4 -6	
B 3.7.5 -3	
B 3.7.5 -5	
B 3.7.6 -2	

BASES

ACTIONS
(continued)

~~B.1 and B.2~~

~~With less than the minimum number of required safety valves OPERABLE, a transient may result in the violation of the ASME Code limit on reactor pressure. If the relief function of the inoperable relief valves cannot be restored to OPERABLE status within the associated Completion Time of Required Action A.1, or if the relief function of two or more relief valves are inoperable, or if the safety function of one or more safety valves is inoperable, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to MODE 3 within 12 hours and to MODE 4 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach required plant conditions from full power conditions in an orderly manner and without challenging plant systems.~~

overall
plant risk is
minimized.

is

Insert 1

Insert 2

SURVEILLANCE
REQUIREMENTS

SR 3.4.3.1

This Surveillance requires that the safety valves, including the S/RV, will open at the pressures assumed in the safety analysis of Reference 1. The demonstration of the safety valve and S/RV safety lift settings must be performed during shutdown, since this is a bench test, to be done in accordance with the Inservice Testing Program. The lift setting pressure shall correspond to ambient conditions of the valves at nominal operating temperatures and pressures. The safety valve and S/RV setpoints are $\pm 1\%$ for OPERABILITY.

SR 3.4.3.2

The actuator of each of the Electromatic relief valves (ERVs) and the dual function safety/relief valves (S/RVs) is stroked to verify that the pilot valve strokes when manually actuated. For the S/RVs, the actuator test is performed by energizing a solenoid that pneumatically actuates a plunger located within the main valve body. The plunger is connected to the second stage disc. When steam pressure actuates the plunger during plant operation, this allows pressure to be vented from the top of the main valve piston, allowing reactor pressure to lift the main valve piston,

(continued)

BASES

SURVEILLANCE
REQUIREMENTS

SR 3.4.3.2 (continued)

The combination of the valve testing and the valve actuator testing provide a complete check of the capability of the valves to open and close, such that full functionality is demonstrated through overlapping tests, without cycling the valves.

The 24 month Frequency ensures that each solenoid for each relief valve is tested. The 24 month Frequency was developed based on the relief valve tests required by the ASME Boiler and Pressure Vessel Code, Section XI (Ref. ~~V8~~). Operating experience has shown that these components usually pass the Surveillance when performed at the 24 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

6

SR 3.4.3.3

The relief valves, including the S/RV, are required to actuate automatically upon receipt of specific initiation signals. A system functional test is performed to verify that the mechanical portions (i.e., solenoids) of the relief valve operate as designed when initiated either by an actual or simulated automatic initiation signal. The LOGIC SYSTEM FUNCTIONAL TESTs in LCO 3.3.5.1, "Emergency Core Cooling System (ECCS) Instrumentation," and LCO 3.3.6.3, "Relief Valve Instrumentation," overlap this SR to provide complete testing of the safety function.

The 24 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the surveillance were performed with the reactor at power. Operating experience has shown these components usually pass the Surveillance when performed at the 24 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

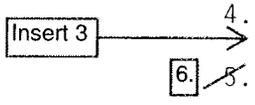
This SR is modified by a Note that excludes valve actuation since the valves are individually tested in accordance with SR 3.4.3.2.

(continued)

BASES (continued)

REFERENCES

1. UFSAR, Section 5.2.2.
2. UFSAR, Section 15.2.3.1.
3. UFSAR, Section 15.2.2.1.
4. UFSAR, Chapter 15.
5. ASME, Boiler and Pressure Vessel Code, Section XI.



The diagram shows a rectangular box containing the text "Insert 3". An arrow points from the right side of this box to the number "4." in the fourth reference item. Below this, a box containing "6." has a diagonal slash pointing to the number "5." in the fifth reference item.

BASES

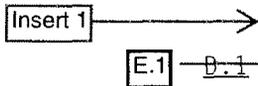
ACTIONS
(continued)

B.1

If a LPCI subsystem is inoperable for reasons other than Condition A or a CS subsystem is inoperable, the inoperable low pressure ECCS injection/spray subsystem must be restored to OPERABLE status within 7 days. In this Condition, the remaining OPERABLE subsystems provide adequate core cooling during a LOCA. However, overall ECCS reliability is reduced, because a single failure in one of the remaining OPERABLE subsystems, concurrent with a LOCA, may result in the ECCS not being able to perform its intended safety function. The 7 day Completion Time is based on a reliability study (Ref. 10) that evaluated the impact on ECCS availability, assuming various components and subsystems were taken out of service. The results were used to calculate the average availability of ECCS equipment needed to mitigate the consequences of a LOCA as a function of allowed outage times (i.e., Completion Times).

C.1

If one LPCI pump in each subsystem is inoperable, one LPCI pump must be restored to OPERABLE status within 7 days. In this Condition, the remaining OPERABLE ECCS subsystems provide adequate core cooling during a LOCA. However, overall ECCS reliability is reduced because a single failure in one of the remaining OPERABLE ECCS subsystems, concurrent with a LOCA, may result in the ECCS not being able to perform its intended safety function. The 7 day Completion Time is based on a reliability study (Ref. 10) that evaluated the impact on ECCS availability, assuming various components and subsystems were taken out of service. The results were used to calculate the average availability of ECCS equipment needed to mitigate the consequences of a LOCA as a function of allowed outage times (i.e., Completion Times).



If two LPCI subsystems are inoperable for reasons other than Condition C, one inoperable subsystem must be restored to OPERABLE status within 72 hours. In this Condition, the

(continued)

BASES

ACTIONS E.1 ~~D.1~~ (continued)

remaining OPERABLE CS subsystems provide adequate core cooling during a LOCA. However, overall ECCS reliability is reduced, because a single failure in one of the remaining CS subsystems, concurrent with a LOCA, may result in ECCS not being able to perform its intended safety function. The 72 hour Completion Time is based on a reliability study cited in Reference 10 that evaluated the impact on ECCS availability, assuming various components and subsystems were taken out of service. The results were used to calculate the average availability of ECCS equipment needed to mitigate the consequences of a LOCA as a function of allowable repair times (i.e., Completion Times).

F.1 and F.2~~E.1 and E.2~~

E If any Required Action and associated Completion Time of Condition ~~A, B, C, or D~~ is not met, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 12 hours and to MODE 4 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

G.1 and G.2 ~~F.1 and F.2~~

If the HPCI System is inoperable and the IC System is verified to be OPERABLE, the HPCI System must be restored to OPERABLE status within 14 days. In this Condition, adequate core cooling is ensured by the OPERABILITY of the redundant and diverse low pressure ECCS injection/spray subsystems in conjunction with ADS. Also, the IC System will automatically provide core cooling at most reactor operating pressures. Verification of IC OPERABILITY is therefore required immediately when HPCI is inoperable. This may be performed as an administrative check by examining logs or other information to determine if IC is out of service for maintenance or other reasons. It does not mean to perform

(continued)

BASES

ACTIONS G.1 and G.2 ~~F.1 and F.2~~ (continued)

the Surveillances needed to demonstrate the OPERABILITY of the IC System. If the OPERABILITY of the IC System cannot be verified, however, Condition I must be immediately entered. In the event of component failures concurrent with a design basis LOCA, there is a potential, depending on the specific failures, that the minimum required ECCS equipment will not be available. A 14 day Completion Time is based on a reliability study cited in Reference 10 and has been found to be acceptable through operating experience.

H.1 ~~G.1~~

The LCO requires five ADS valves to be OPERABLE in order to provide the ADS function. With one ADS valve out of service, the overall reliability of the ADS is reduced, because a single failure in the OPERABLE ADS valves could result in a reduction in depressurization capability. Therefore, operation is only allowed for a limited time. The 14 day Completion Time is based on a reliability study cited in Reference 10 and has been found to be acceptable through operating experience.

Insert 2 →

J.1 and J.2 ~~H.1 and H.2~~

~~If any Required Action and associated Completion Time of Condition F or G is not met, or if two or more required ADS valves are inoperable, the plant must be brought to a condition in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 12 hours and reactor steam dome pressure reduced to ≤ 150 psig within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.~~

(continued)

BASES

ACTIONS
(continued)

~~I.1~~ **K.1**

K

When multiple ECCS subsystems are inoperable, as stated in Condition ~~1~~, the plant is in a condition outside of the accident analyses. Therefore, LCO 3.0.3 must be entered immediately.

SURVEILLANCE
REQUIREMENTS

SR 3.5.1.1

The flow path piping has the potential to develop voids and pockets of entrained air. Maintaining the pump discharge lines of the HPCI System, CS System, and LPCI subsystems full of water ensures that the ECCS will perform properly, injecting its full capacity into the RCS upon demand. This will also prevent a water hammer following an ECCS initiation signal. One acceptable method of ensuring that the lines are full is to vent at the high points. The 31 day Frequency is based on the gradual nature of void buildup in the ECCS piping, the procedural controls governing system operation, and operating experience.

SR 3.5.1.2

Verifying the correct alignment for manual, power operated, and automatic valves in the ECCS flow paths provides assurance that the proper flow paths will exist for ECCS operation. This SR does not apply to valves that are locked, sealed, or otherwise secured in position since these were verified to be in the correct position prior to locking, sealing, or securing. A valve that receives an initiation signal is allowed to be in a nonaccident position provided the valve will automatically reposition in the proper stroke time. This SR does not require any testing or valve manipulation; rather, it involves verification that

(continued)

BASES

REFERENCES
(continued)

5. UFSAR, Section 15.6.4.
6. UFSAR, Section 15.6.5.
7. 10 CFR 50, Appendix K.
8. UFSAR, Section 6.3.3
9. 10 CFR 50.46.
10. Memorandum from R. L. Baer (NRC) to V. Stello, Jr. (NRC), "Recommended Interim Revisions to LCOs for ECCS Components," December 1, 1975.

Insert 3 →

BASES

ACTIONS
(continued)

A.1 and A.2

If the IC System is inoperable during MODE 1, or MODE 2 or 3 with reactor steam dome pressure > 150 psig, and the HPCI System is immediately verified to be OPERABLE, the IC System must be restored to OPERABLE status within 14 days. In this Condition, loss of the IC System will not affect the overall plant capability to provide makeup inventory at high reactor pressure since the HPCI System is the only high pressure system assumed to function during a loss of coolant accident (LOCA). OPERABILITY of HPCI is therefore verified immediately when the IC System is inoperable. This may be performed as an administrative check, by examining logs or other information, to determine if HPCI is out of service for maintenance or other reasons. It does not mean it is necessary to perform the Surveillances needed to demonstrate the OPERABILITY of the HPCI System. If the OPERABILITY of the HPCI System cannot be immediately verified, however, Condition B must be immediately entered. For transients and certain abnormal events with no LOCA, IC (as opposed to HPCI) is an acceptable source of core cooling which also limits the loss of the RPV water level. Therefore, a limited time is allowed to restore the inoperable IC to OPERABLE status.

The 14 day Completion Time is based on a reliability study (Ref. 2) that evaluated the impact on ECCS availability, assuming various components and subsystems were taken out of service. The results were used to calculate the average availability of ECCS equipment needed to mitigate the consequences of a LOCA as a function of allowed outage times (AOTs). Because of similar functions of HPCI and IC, the AOTs (i.e., Completion Times) determined for HPCI are also applied to IC.

B.1 and B.2

overall plant
risk is
minimized.

If the IC System cannot be restored to OPERABLE status within the associated Completion Time, or if the HPCI System is simultaneously inoperable, the plant must be brought to a condition in which the ~~LCO does not apply~~. To achieve this status, the plant must be brought to at least MODE 3 within 12 hours ~~and reactor steam dome pressure reduced to~~

(continued)

BASES

ACTIONS

~~B.1 and B.2~~ (continued)

Insert 1

~~≤ 150 psig within 36 hours.~~ The allowed Completion Time is
~~are~~ reasonable, based on operating experience, to reach the
required plant conditions from full power conditions in an
orderly manner and without challenging plant systems.

SURVEILLANCE
REQUIREMENTS

SR 3.5.3.1

This SR verifies the water volume and temperature in the shell side of the IC to be sufficient for proper operation. Based on a scram from 3016 MWt (102% RTP), a minimum water level of 6 feet at a temperature of $\leq 210^{\circ}\text{F}$ in the condenser provides sufficient decay heat removal capability for 20 minutes of operation without makeup water. The volume and temperature allow sufficient time for the operator to provide makeup to the condenser.

The 24 hour Frequency is based on operating experience related to the trending of the parameter variations during normal operation.

SR 3.5.3.2

Verifying the correct alignment for manual, power operated, and automatic valves in the IC flow path provides assurance that the proper flow path will exist for IC operation. This SR does not apply to valves that are locked, sealed, or otherwise secured in position since these valves were verified to be in the correct position prior to locking, sealing, or securing. A valve that receives an initiation signal is allowed to be in a nonaccident position provided the valve will automatically reposition in the proper stroke time. This SR does not require any testing or valve manipulation; rather, it involves verification that those valves capable of potentially being mispositioned are in the correct position. This SR does not apply to valves that cannot be inadvertently misaligned, such as check valves.

The 31 day Frequency of this SR was derived from the Inservice Testing Program requirements for performing valve testing at least once every 92 days. The Frequency of

(continued)

BASES

SURVEILLANCE
REQUIREMENTS

SR 3.5.3.4 (continued)

must be available to perform this test. Therefore, sufficient time is allowed after adequate pressure and flow are achieved to perform the test. Adequate steam pressure and flow is represented by reactor power greater than 60%. Reactor startup is allowed prior to performing the heat removal capability test, provided an engineering evaluation has been performed which demonstrates reasonable assurance of the IC System's design heat removal capability. Therefore, SR 3.5.3.4 is modified by a Note that states the Surveillance is not required to be performed until 12 hours after reactor power is adequate to perform the test. The 12 hours allowed for performing the heat removal capability test, after the required power level is reached, is sufficient to achieve stable conditions for testing and provides reasonable time to complete the SR.

5

As described in Reference ^V4, if one or more of the IC System condenser tubes are plugged during maintenance and testing, an engineering evaluation shall be performed to assure that the required IC System decay heat removal capability is available with margin and the heat removal capability of the IC System shall be confirmed during power operation by performing SR 3.5.3.4 once the necessary reactor operating conditions are reached. The reactor will not be operated in Mode 1 without some assurance that the necessary IC System safety function can be met with the plugged tube(s).

The 60 month Frequency is based on engineering judgement, and has been shown to be acceptable through operating experience.

REFERENCES

1. UFSAR, Section 5.4.6.
2. Memorandum from R. L. Baer (NRC) to V. Stello, Jr. (NRC), "Recommended Interim Revisions to LCOs for ECCS Components," December 1, 1975.
3. Safety Evaluation transmitted by letter from L. W. Rossbach (NRC) to O. D. Kingsley (Exelon), "Dresden Nuclear Power Station, Units 2 and 3 - Issuance of Amendments for Extended Power Uprate," dated December 21, 2001.

Insert 2



(continued)

BASES

-
- REFERENCES (continued) 5 ~~4~~. Safety Evaluation transmitted by letter from M. Banerjee (NRC) to C. M. Crane (Exelon), "Dresden Nuclear Power Station, Units 2 and 3 - Issuance of Amendments RE: Isolation Condenser Surveillance Requirements," dated August 25, 2005.
-

BASES

LCO
(continued) ensure the primary containment pressure and temperature does not exceed design limits. Compliance with this LCO will ensure a primary containment configuration, including equipment hatches, that is structurally sound and that will limit leakage to those leakage rates assumed in the safety analyses.

Individual leakage rates specified for the primary containment air lock are addressed in LCO 3.6.1.2.

APPLICABILITY In MODES 1, 2, and 3, a DBA could cause a release of radioactive material to primary containment. In MODES 4 and 5, the probability and consequences of these events are reduced due to the pressure and temperature limitations of these MODES. Therefore, primary containment is not required to be OPERABLE in MODES 4 and 5 to prevent leakage of radioactive material from primary containment.

ACTIONS

A.1

In the event primary containment is inoperable, primary containment must be restored to OPERABLE status within 1 hour. The 1 hour Completion Time provides a period of time to correct the problem commensurate with the importance of maintaining primary containment OPERABILITY during MODES 1, 2, and 3. This time period also ensures that the probability of an accident (requiring primary containment OPERABILITY) occurring during periods where primary containment is inoperable is minimal.

B.1 and B.2

overall plant risk is minimized.

is

If primary containment cannot be restored to OPERABLE status within the required Completion Time, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 12 hours and to MODE 4 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

Insert 1

(continued)

BASES (continued)

SURVEILLANCE
REQUIREMENTS

SR 3.6.1.1.1

Maintaining the primary containment OPERABLE requires compliance with the visual examinations and leakage rate test requirements of the Primary Containment Leakage Rate Testing Program. Failure to meet air lock leakage limit (SR 3.6.1.2.1) or main steam isolation valve leakage limit (SR 3.6.1.3.10) does not necessarily result in a failure of this SR. The impact of the failure to meet these SRs must be evaluated against the Type A, B, and C acceptance criteria of the Primary Containment Leakage Rate Testing Program.

As left leakage prior to the first startup after performing a required Primary Containment Leakage Rate Testing Program leakage test is required to be $< 0.6 L_a$ for combined Type B and C leakage, and $\leq 0.75 L_a$ for overall Type A leakage. At all other times between required leakage rate tests, the acceptance criteria is based on an overall Type A leakage limit of $\leq 1.0 L_a$. At $\leq 1.0 L_a$ the offsite dose consequences are bounded by the assumptions of the safety analysis. The Frequency is required by the Primary Containment Leakage Rate Testing Program.

SR 3.6.1.1.2

Maintaining the pressure suppression function of the primary containment requires limiting the leakage from the drywell to the suppression chamber. Thus, if an event were to occur that pressurized the drywell, the steam would be directed through the downcomers into the suppression pool. This SR measures drywell-to-suppression chamber differential pressure during a 7.5 minute period to ensure that the leakage paths that would bypass the suppression pool are within allowable limits.

Satisfactory performance of this SR can be achieved by establishing a known differential pressure (≥ 1.0 psid) between the drywell and the suppression chamber and verifying that the measured bypass leakage is $\leq 2\%$ of the acceptable A/\sqrt{k} design value of 0.18 ft^2 (Ref. 5). The leakage test is performed every 24 months. The 24 month Frequency was developed considering it is prudent that this Surveillance be performed during a unit outage and also in

(continued)

BASES

SURVEILLANCE
REQUIREMENTS

SR 3.6.1.1.2 (continued)

view of the fact that component failures that might have affected this test are identified by other primary containment SRs. Two consecutive test failures, however, would indicate unexpected primary containment degradation, in this event, the Note indicates, increasing the Frequency to once every 12 months is required until the situation is remedied as evidenced by passing two consecutive tests.

REFERENCES

1. UFSAR, Section 6.2.1.
2. UFSAR, Section 15.6.5.
3. 10 CFR 50, Appendix J, Option B.

Insert 2

5.

- ~~4.~~ Dresden Station Special Report No. 23, "Information Concerning Dresden Units 2 and 3 Drywell to Torus Vacuum Breakers," April 1973.
-
-

BASES

APPLICABLE
SAFETY ANALYSES
(continued)

higher loads, are avoided. The safety analysis demonstrates that the low set relief functions to avoid the induced thrust loads on the relief valve discharge line resulting from "subsequent actuations" of the relief valve during Design Basis Accidents (DBAs). Even though two low set relief valves are specified, only one low set relief valve is required to operate in any DBA analysis.

Low set relief valves satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

Two low set relief valves are required to be OPERABLE to satisfy the assumptions of the safety analyses (Ref. 1). The requirements of this LCO are applicable to the mechanical and electrical capability of the low set relief valves to function for controlling the opening and closing of the low set relief valves.

APPLICABILITY

In MODES 1, 2, and 3, an event could cause pressurization of the reactor and opening of relief valves. In MODES 4 and 5, the probability and consequences of these events are reduced due to the pressure and temperature limitations in these MODES. Therefore, maintaining the low set relief valves OPERABLE is not required in MODE 4 or 5.

ACTIONS

A.1

With one low set relief valve inoperable, the remaining OPERABLE low set relief valve is adequate to perform the designed function. However, the overall reliability is reduced. The 14 day Completion Time takes into account the redundant capability afforded by the remaining low set relief valve and the low probability of an event occurring during this period in which the remaining low set relief valve capability would be required.

~~B.1 and B.2~~

~~If two low set relief valves are inoperable or if the~~ an
inoperable low set relief valve cannot be restored to
OPERABLE status within the required Completion Time, the

(continued)

BASES

ACTIONS

~~B.1 and B.2~~ (continued)

overall plant risk
is minimized.

Insert 1

plant must be brought to a MODE in which the ~~LCO does not apply~~. To achieve this status, the plant must be brought to at least MODE 3 within 12 hours ~~and to MODE 4 within 36 hours~~. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

is

Insert 2

SURVEILLANCE
REQUIREMENTS

SR 3.6.1.6.1

The actuator of each of the Electromatic low set relief valves (ERVs) is stroked to verify that the pilot valve strokes when manually actuated. For the ERVs, the actuator test is performed with the pilot valve actuator mounted in its normal position. This will allow testing of the manual actuation electrical circuitry, solenoid actuator, pilot operating lever, and pilot plunger. This test will verify pilot valve movement. However, since this test is performed prior to establishing the reactor pressure needed to overcome main valve closure spring force, the main valve will not stroke during the test.

This SR, together with the valve testing performed as required by the ASME Code for pressure relieving devices (ASME OM Code - 1998 through 2000 Addenda), verify the capability of each relief valve to perform its function.

Valve testing will be performed at a steam test facility, where the valve (i.e., main valve and pilot valve) and an actuator representative of the actuator used at the plant will be installed on a steam header in the same orientation as the plant installation. The test conditions in the test facility will be similar to those in the plant installation, including ambient temperature, valve insulation, and steam conditions. The valve will then be leak tested, functionally tested to ensure the valve is capable of opening and closing (including stroke time), and leak tested a final time. Valve seat tightness will be verified by a cold bar test, and if not free of fog, leakage will be measured and verified to be below design limits. In addition, for the safety mode of S/RVs, an as-found setpoint verification and as-found leak check are performed, followed

(continued)

BASES

SURVEILLANCE
REQUIREMENTS

SR 3.6.1.6.1 (continued)

by verification of set pressure, and delay. The valve will then be shipped to the plant without any disassembly or alteration of the main valve or pilot valve components.

The combination of the valve testing and the valve actuator testing provide a complete check of the capability of the valves to open and close, such that full functionality is demonstrated through overlapping tests, without cycling the valves.

3

The 24 month Frequency was based on the relief valve tests required by the ASME Boiler and Pressure Vessel Code, Section XI (Ref. ~~VZ~~). The Frequency of 24 months ensures that each solenoid for each low set relief valve is tested. Operating experience has shown that these components usually pass the Surveillance when performed at the 24 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

SR 3.6.1.6.2

The low set relief designated relief valves are required to actuate automatically upon receipt of specific initiation signals. A system functional test is performed to verify that the mechanical portions (i.e., solenoids) of the low set relief function operate as designed when initiated either by an actual or simulated automatic initiation signal. The LOGIC SYSTEM FUNCTIONAL TEST in LCO 3.3.6.3, "Low Set Relief Valve Instrumentation," overlaps this SR to provide complete testing of the safety function.

The 24 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown these components usually pass the Surveillance when performed at the 24 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

This SR is modified by a Note that excludes valve actuation. This prevents a reactor pressure vessel pressure blowdown.

(continued)

BASES (continued)

REFERENCES

1. UFSAR, Section 6.2.1.3.5.3.

Insert 3

3.

2. ASME, Boiler and Pressure Vessel Code, Section XI.

BASES (continued)

ACTIONS

A Note has been added to provide clarification that, for the purpose of this LCO, separate Condition entry is allowed for each reactor building-to-suppression chamber vacuum breaker line.

A.1

With one or more lines with one vacuum breaker not closed, the leak tight primary containment boundary may be threatened. Therefore, the inoperable vacuum breakers must be restored to OPERABLE status or the open vacuum breaker closed within 7 days. The 7 day Completion Time takes into account the redundancy afforded by the remaining breakers, the fact that the OPERABLE breaker in each of the lines is closed, and the low probability of an event occurring that would require the vacuum breakers to be OPERABLE during this period.

B.1

With one or more lines with two vacuum breakers not closed, primary containment integrity is not maintained. Therefore, one open vacuum breaker must be closed within 1 hour. This Completion Time is consistent with the ACTIONS of LCO 3.6.1.1, "Primary Containment," which requires that primary containment be restored to OPERABLE status within 1 hour.

C.1

With one line with one or more vacuum breakers inoperable for opening, the leak tight primary containment boundary is intact. The ability to mitigate an event that causes a containment depressurization is threatened, however, if both vacuum breakers in at least one vacuum breaker penetration are not OPERABLE. Therefore, the inoperable vacuum breaker must be restored to OPERABLE status within 7 days. This is consistent with the Completion Time for Condition A and the fact that the leak tight primary containment boundary is being maintained.

Insert 1 →

(continued)

BASES

ACTIONS
(continued)

~~D.1~~ **E.1**

With two lines with one or more vacuum breakers inoperable for opening, the primary containment boundary is intact. However, in the event of a containment depressurization, the function of the vacuum breakers is lost. Therefore, all vacuum breakers in one line must be restored to OPERABLE status within 1 hour. This Completion Time is consistent with the ACTIONS of LCO 3.6.1.1, which requires that primary containment be restored to OPERABLE status within 1 hour.

F.1 and F.2

~~E.1 and E.2~~

Time of Condition A, B, or E



If any Required Action and associated Completion ~~time~~ can not be met, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 12 hours and to MODE 4 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

SURVEILLANCE
REQUIREMENTS

SR 3.6.1.7.1

Each vacuum breaker is verified to be closed to ensure that a potential breach in the primary containment boundary is not present. This Surveillance is performed by observing local or control room indications of vacuum breaker position. The 14 day Frequency is based on engineering judgment, is considered adequate in view of other indications of vacuum breaker status available to operations personnel, and has been shown to be acceptable through operating experience.

Two Notes are added to this SR. The first Note allows reactor-to-suppression chamber vacuum breakers opened in conjunction with the performance of a Surveillance to not be considered as failing this SR. These periods of opening vacuum breakers are controlled by plant procedures and do not represent inoperable vacuum breakers. The second Note is included to clarify that vacuum breakers open due to an actual differential pressure are not considered as failing this SR.

(continued)

BASES

SURVEILLANCE
REQUIREMENTS
(continued)

SR 3.6.1.7.2

Each vacuum breaker must be cycled to ensure that it opens properly to perform its design function and returns to its fully closed position. This ensures that the safety analysis assumptions are valid. The 92 day Frequency of this SR was developed based upon Inservice Testing Program requirements to perform valve testing at least once every 92 days.

SR 3.6.1.7.3

Demonstration of vacuum breaker opening setpoint is necessary to ensure that the safety analysis assumption regarding vacuum breaker full open differential pressure of ≤ 0.5 psid is valid. The 24 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. For this plant, the 24 month Frequency has been shown to be acceptable, based on operating experience, and is further justified because of other surveillances performed at shorter Frequencies that convey the proper functioning status of each vacuum breaker.

REFERENCES

Insert 2

1. UFSAR, Section 6.2.1.2.4.
-

BASES

ACTIONS

A.1 (continued)

would not function as designed during an event that depressurized the drywell), the remaining eight OPERABLE vacuum breakers are capable of providing the vacuum relief function. However, overall system reliability is reduced because a single failure in one of the remaining vacuum breakers could result in an excessive suppression chamber-to-drywell differential pressure during a DBA. Therefore, with one of the nine required vacuum breakers inoperable, 72 hours is allowed to restore at least one of the inoperable vacuum breakers to OPERABLE status so that plant conditions are consistent with those assumed for the design basis analysis. The 72 hour Completion Time is considered acceptable due to the low probability of an event in which the remaining vacuum breaker capability would not be adequate.

Insert 1 →

~~B.1~~ C.1

With one vacuum breaker not closed, communication between the drywell and suppression chamber airspace exists, and, as a result, there is the potential for primary containment overpressurization due to this bypass leakage if a LOCA were to occur. Therefore, the open vacuum breaker must be closed. A short time is allowed to close the vacuum breaker due to the low probability of an event that would pressurize primary containment. The required 4 hour Completion Time is considered adequate to safely plan and complete the manual cycling necessary to close the vacuum breaker which may be located in a high radiation area.

~~C.1 and C.2~~ D.1 and D.2

of Condition C

If any Required Action and associated Completion Time cannot be met, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 12 hours and to MODE 4 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

(continued)

BASES

SURVEILLANCE
REQUIREMENTS

SR 3.6.1.8.3 (continued)

the potential for an unplanned transient if the Surveillance were performed with the reactor at power. The 24 month Frequency has been shown to be acceptable, based on operating experience, and is further justified because of other surveillances performed at shorter Frequencies that convey the proper functioning status of each vacuum breaker.

REFERENCES

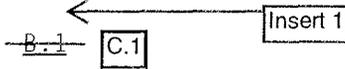
1. UFSAR, Section 6.2.1.2.4.2.

Insert 2

2. UFSAR, Table 6.2-1.

BASES

ACTIONS
(continued)



With two suppression pool cooling subsystems inoperable, one subsystem must be restored to OPERABLE status within 8 hours. In this condition, there is a substantial loss of the primary containment pressure and temperature mitigation function. The 8 hour Completion Time is based on this loss of function and is considered acceptable due to the low probability of a DBA and the potential avoidance of a plant shutdown transient that could result in the need for the suppression pool cooling subsystems to operate.



If any Required Action and associated Completion Time cannot be met, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 12 hours and to MODE 4 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

SURVEILLANCE
REQUIREMENTS

SR 3.6.2.3.1

Verifying the correct alignment for manual and power operated valves in the suppression pool cooling mode flow path provides assurance that the proper flow path exists for system operation. This SR does not apply to valves that are locked, sealed, or otherwise secured in position since these valves were verified to be in the correct position prior to locking, sealing, or securing. A valve is also allowed to be in the nonaccident position provided it can be aligned to the accident position within the time assumed in the accident analysis. This is acceptable since the suppression pool cooling mode is manually initiated. This SR does not require any testing or valve manipulation; rather, it involves verification that those valves capable of being mispositioned are in the correct position. This SR does not apply to valves that cannot be inadvertently misaligned, such as check valves.

The Frequency of 31 days is justified because the valves are operated under procedural control, improper valve position would affect only a single subsystem, the probability of an

(continued)

BASES

SURVEILLANCE
REQUIREMENTS

SR 3.6.2.3.1 (continued)

event requiring initiation of the system is low, and the system is a manually initiated system. This Frequency has been shown to be acceptable based on operating experience.

SR 3.6.2.3.2

Verifying that each required LPCI pump develops a flow rate ≥ 5000 gpm while operating in the suppression pool cooling mode with flow through the associated heat exchanger ensures that the primary containment peak pressure and temperature can be maintained below the design limits during a DBA (Ref. 1). The flow is a normal test of centrifugal pump performance required by ASME Code, Section XI (Ref. ~~2~~). This test confirms one point on the pump design curve, and the results are indicative of overall performance. Such inservice tests confirm component OPERABILITY, and detect incipient failures by indicating abnormal performance. The Frequency of this SR is in accordance with the Inservice Testing Program.

REFERENCES

1. UFSAR, Section 6.2.

Insert 2

3.

2. ASME, Boiler and Pressure Vessel Code, Section XI.

BASES

ACTIONS

A.1 (continued)

However, the overall reliability is reduced because a single failure in the OPERABLE subsystem could result in reduced primary containment bypass mitigation capability. The 7 day Completion Time was chosen in light of the redundant suppression pool spray capabilities afforded by the OPERABLE subsystem and the low probability of a DBA occurring during this period.

B.1

With both suppression pool spray subsystems inoperable, at least one subsystem must be restored to OPERABLE status within 8 hours. In this condition, there is a substantial loss of the primary containment bypass leakage mitigation function. The 8 hour Completion Time is based on this loss of function and is considered acceptable due to the low probability of a DBA and because alternative methods to reduce pressure in the primary containment are available.

~~C.1 and C.2~~

overall plant risk is minimized.

Insert 1

If any Required Action and associated Completion Time cannot be met, the plant must be brought to a MODE in which the ~~LCO does not apply~~. To achieve this status, the plant must be brought to at least MODE 3 within 12 hours ~~and MODE 4 within 36 hours~~. The allowed Completion Times ~~are~~ reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

is

SURVEILLANCE REQUIREMENTS

SR 3.6.2.4.1

Verifying the correct alignment for manual and power operated valves in the suppression pool spray mode flow path provides assurance that the proper flow path exists for system operation. This SR does not apply to valves that are locked, sealed, or otherwise secured in position since these valves were verified to be in the correct position prior to locking, sealing, or securing. A valve is also allowed to be in the nonaccident position provided it can be aligned to the accident position within the time assumed in the

(continued)

BASES

SURVEILLANCE
REQUIREMENTS

SR 3.6.2.4.1 (continued)

accident analysis. This is acceptable since the suppression pool spray mode is manually initiated. This SR does not require any testing or valve manipulation; rather, it involves verification that those valves capable of being mispositioned are in the correct position. This SR does not apply to valves that cannot be inadvertently misaligned, such as check valves.

The Frequency of 31 days is justified because the valves are operated under procedural control, improper valve position would affect only a single subsystem, the probability of an event requiring initiation of the system is low, and the system is a manually initiated system. This Frequency has been shown to be acceptable based on operating experience.

SR 3.6.2.4.2

This Surveillance is performed every 10 years to verify that the spray nozzles are not obstructed and that spray flow will be provided when required. The 10 year Frequency is adequate to detect degradation in performance due to the passive nozzle design and has been shown to be acceptable through operating experience.

REFERENCES

Insert 2

1. UFSAR, Section 6.2.
-

BASES (continued)

ACTIONS

A.1

If secondary containment is inoperable, it must be restored to OPERABLE status within 4 hours. The 4 hour Completion Time provides a period of time to correct the problem that is commensurate with the importance of maintaining secondary containment during MODES 1, 2, and 3. This time period also ensures that the probability of an accident (requiring secondary containment OPERABILITY) occurring during periods where secondary containment is inoperable is minimal.

~~B.1 and B.2~~

If secondary containment cannot be restored to OPERABLE status within the required Completion Time, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 12 hours and to MODE 4 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

overall plant risk is minimized.

is

Insert 1

C.1 and C.2

Movement of recently irradiated fuel assemblies in the secondary containment and OPDRVs can be postulated to cause significant fission product release to the secondary containment. In such cases, the secondary containment is the only barrier to release of fission products to the environment. Therefore, movement of recently irradiated fuel assemblies must be immediately suspended if the secondary containment is inoperable.

Suspension of this activity shall not preclude completing an action that involves moving a component to a safe position.

Also, action must be immediately initiated to suspend OPDRVs to minimize the probability of a vessel draindown and subsequent potential for fission product release. Actions must continue until OPDRVs are suspended.

Required Action C.1 has been modified by a Note stating that LCO 3.0.3 is not applicable. If moving recently irradiated fuel assemblies while in MODE 4 or 5, LCO 3.0.3 would not

(continued)

BASES

SURVEILLANCE
REQUIREMENTS

SR 3.6.4.1.3 (continued)

addition to the requirements of LCO 3.6.4.3, either SGT subsystem will perform this test. The inoperability of the SGT System does not necessarily constitute a failure of this Surveillance relative to secondary containment OPERABILITY. Operating experience has shown the secondary containment boundary usually passes the Surveillance when performed at the 24 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

REFERENCES

Insert 2 →

1. UFSAR, Section 15.6.5.
-
-

BASES

APPLICABILITY (continued) In MODES 4 and 5, the probability and consequences of these events are reduced due to the pressure and temperature limitations in these MODES. Therefore, maintaining the SGT System in OPERABLE status is not required in MODE 4 or 5, except for other situations under which significant releases of radioactive material can be postulated, such as during operations with a potential for draining the reactor vessel (OPDRVs) or during movement of recently irradiated fuel assemblies in the secondary containment. Due to radioactive decay, the SGT System is only required to be OPERABLE during fuel handling involving handling recently irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within the previous 24 hours).

ACTIONS

A.1

With one SGT subsystem inoperable, the inoperable subsystem must be restored to OPERABLE status in 7 days. In this condition, the remaining OPERABLE SGT subsystem is adequate to perform the required radioactivity release control function. However, the overall system reliability is reduced because a single failure in the OPERABLE subsystem could result in the radioactivity release control function not being adequately performed. The 7 day Completion Time is based on consideration of such factors as the availability of the OPERABLE redundant SGT System and the low probability of a DBA occurring during this period.

~~B.1 and B.2~~

overall plant risk is minimized. →

Insert 1 →

If the SGT subsystem cannot be restored to OPERABLE status within the required Completion Time in MODE 1, 2, or 3, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 12 hours and to MODE 4 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

is

C.1, C.2.1, and C.2.2

During movement of recently irradiated fuel assemblies, in the secondary containment or during OPDRVs, when Required

(continued)

BASES

ACTIONS
(continued)

E.1 and E.2

overall plant risk
is minimized.

If one SGT subsystem cannot be restored to OPERABLE status within the required Completion Time in MODE 1, 2, or 3, the plant must be brought to a MODE in which the ~~LCO does not apply~~. To achieve this status, the plant must be brought to at least MODE 3 within 12 hours ~~and to MODE 4 within 36 hours~~. The allowed Completion Times ~~are~~ reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

Insert 2

is

F.1 and F.2

When two SGT subsystems are inoperable, if applicable, movement of recently irradiated fuel assemblies in secondary containment must immediately be suspended. Suspension of this activity shall not preclude completion of movement of a component to a safe position. Also, if applicable, action must immediately be initiated to suspend OPDRVs in order to minimize the probability of a vessel draindown and subsequent potential for fission product release. Actions must continue until OPDRVs are suspended.

Required Action F.1 has been modified by a Note stating that LCO 3.0.3 is not applicable. If moving recently irradiated fuel assemblies while in MODE 4 or 5, LCO 3.0.3 would not specify any action. If moving recently irradiated fuel assemblies while in MODE 1, 2, or 3, the fuel movement is independent of reactor operations. Therefore, in either case, inability to suspend movement of recently irradiated fuel assemblies would not be a sufficient reason to require a reactor shutdown.

(continued)

BASES (continued)

SURVEILLANCE
REQUIREMENTS

SR 3.6.4.3.1

Operating (from the control room using the manual initiation switch) each SGT subsystem for ≥ 10 continuous hours ensures that both subsystems are OPERABLE and that all associated controls are functioning properly. It also ensures that blockage, fan or motor failure, or excessive vibration can be detected for corrective action. Operation with the heaters on (automatic heater cycling to maintain temperature) for ≥ 10 continuous hours every 31 days eliminates moisture on the adsorbers and HEPA filters. The 31 day Frequency was developed in consideration of the known reliability of fan motors and controls and the redundancy available in the system.

SR 3.6.4.3.2

This SR verifies that the required SGT filter testing is performed in accordance with the Ventilation Filter Testing Program (VFTP). The SGT System filter tests are in accordance with Regulatory Guide 1.52 (Ref. ~~V4~~). The VFTP includes testing HEPA filter performance, charcoal adsorber efficiency, minimum system flow rate, and the physical properties of the activated charcoal (general use and following specific operations). Specific test frequencies and additional information are discussed in detail in the VFTP.

5

SR 3.6.4.3.3

This SR verifies that each SGT subsystem starts on receipt of an actual or simulated initiation signal. While this Surveillance can be performed with the reactor at power, operating experience has shown that these components usually pass the Surveillance when performed at the 24 month Frequency. The LOGIC SYSTEM FUNCTIONAL TEST in LCO 3.3.6.2, "Secondary Containment Isolation Instrumentation," overlaps this SR to provide complete testing of the safety function. Therefore, the Frequency was found to be acceptable from a reliability standpoint.

(continued)

BASES (continued)

- REFERENCES
1. UFSAR, Section 3.1.2.4.12.
 2. UFSAR, Section 6.5.3.2.
 3. UFSAR, Section 15.6.5.
 -  4. Regulatory Guide 1.52, Rev. 2.
-
-

BASES

ACTIONS

A.1 (continued)

failure in the OPERABLE subsystem could result in reduced CCSW capability. The 30 day Completion Time is based on the remaining CCSW heat removal capability and the low probability of a DBA with concurrent worst case single failure.

B.1

With one CCSW pump inoperable in each subsystem, if no additional failures occur in the CCSW System, then the remaining OPERABLE pumps and flow paths provide adequate heat removal capacity for long term containment cooling to maintain safe shutdown conditions. One inoperable pump is required to be restored to OPERABLE status within 7 days. The 7 day Completion Time for restoring one inoperable CCSW pump to OPERABLE status is based on engineering judgment, considering the level of redundancy provided and the low probability of an event occurring requiring CCSW during this period.

C.1

Required Action C.1 is intended to handle the inoperability of one CCSW subsystem for reasons other than Condition A. The Completion Time of 7 days is allowed to restore the CCSW subsystem to OPERABLE status. With the unit in this condition, the remaining OPERABLE CCSW subsystem is adequate to perform the CCSW heat removal function. However, the overall reliability is reduced because a single failure in the OPERABLE CCSW subsystem could result in loss of CCSW function. The Completion Time is based on the redundant CCSW capabilities afforded by the OPERABLE subsystem and the low probability of an event occurring requiring CCSW during this period.

Insert 1 →

~~D.1~~ E.1

With both CCSW subsystems inoperable (e.g., both subsystems with inoperable pumps(s) or flow paths, or one subsystem with an inoperable pump and one subsystem with an inoperable

(continued)

BASES

ACTIONS

E.1 ~~D.1~~ (continued)

flow path), the CCSW System is not capable of performing its intended function. At least one subsystem must be restored to OPERABLE status within 8 hours. The 8 hour Completion Time for restoring one CCSW subsystem to OPERABLE status, is based on the Completion Times provided for the suppression pool cooling and spray functions.

F.1 and F.2

~~E.1 and E.2~~

If any Required Action and associated Completion Time of Conditions A, B, C, or D are not met, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 12 hours and in MODE 4 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

SURVEILLANCE
REQUIREMENTS

SR 3.7.1.1

Verifying the correct alignment for each manual and power operated valve in each CCSW subsystem flow path provides assurance that the proper flow paths will exist for CCSW operation. This SR does not apply to valves that are locked, sealed, or otherwise secured in position, since these valves are verified to be in the correct position prior to locking, sealing, or securing. A valve is also allowed to be in the nonaccident position, and yet considered in the correct position, provided it can be realigned to its accident position. This is acceptable because the CCSW System is a manually initiated system.

This SR does not require any testing or valve manipulation; rather, it involves verification that those valves capable of being mispositioned are in the correct position. This SR does not apply to valves that cannot be inadvertently misaligned, such as check valves.

The 31 day Frequency is based on engineering judgment, is consistent with the procedural controls governing valve operation, and ensures correct valve positions.

(continued)

BASES (continued)

- REFERENCES
1. UFSAR, Section 9.2.1.
 2. UFSAR, Section 9.2.5.
 3. UFSAR, Section 9.2.2.
 4. UFSAR, Section 2.4.8.
 5. UFSAR, Section 6.2.2.
 6. UFSAR, Section 6.2.1.3.2.
-
-

Insert 2



BASES

ACTIONS
(continued)

~~B.1 and B.2~~

In MODE 1, 2, or 3, if the inoperable CREV System cannot be restored to OPERABLE status within the associated Completion Time, the unit must be placed in a MODE that minimizes risk. To achieve this status, the unit must be placed in at least MODE 3 within 12 hours and in MODE 4 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

is

overall plant

Insert 1

C.1. and C.2

LCO 3.0.3 is not applicable while in MODE 4 or 5. However, since recently irradiated fuel movement can occur in MODE 1, 2, or 3, the Required Actions of Condition C are modified by a Note indicating that LCO 3.0.3 does not apply. If moving recently irradiated fuel assemblies while in MODE 1, 2, or 3, the fuel movement is independent of reactor operations. Entering LCO 3.0.3 while in MODE 1, 2, or 3 would require the unit to be shutdown, but would not require immediate suspension of movement of recently irradiated fuel assemblies. The NOTE to the ACTIONS, "LCO 3.0.3 is not applicable," ensures that the actions for immediate suspension of recently irradiated fuel assembly movement are not postponed due to entry into LCO 3.0.3.

With the CREV System inoperable, during movement of recently irradiated fuel assemblies in the secondary containment or during OPDRVs, action must be taken immediately to suspend activities that present a potential for releasing radioactivity that might require the CREV System to be placed in the isolation/pressurization mode of operation. This places the unit in a condition that minimizes risk.

If applicable, movement of recently irradiated fuel assemblies in the secondary containment must be suspended immediately. Suspension of this activity shall not preclude completion of movement of a component to a safe position. Also, if applicable, action must be initiated

(continued)

BASES

ACTIONS

C.1 and C.2 (continued)

immediately to suspend OPDRVs to minimize the probability of a vessel draindown and the subsequent potential for fission product release. Action must continue until the OPDRVs are suspended.

SURVEILLANCE
REQUIREMENTS

SR 3.7.4.1

This SR verifies that the CREV System in a standby mode starts from the control room and continues to operate. This SR includes initiating flow through the HEPA filters and charcoal adsorbers. Standby systems should be checked periodically to ensure that they start and function properly. As the environmental and normal operating conditions of this system are not severe, testing the system once every month provides an adequate check on this system. Monthly heater operation for ≥ 10 continuous hours, during system operation dries out any moisture that has accumulated in the charcoal as a result of humidity in the ambient air. Furthermore, the 31 day Frequency is based on the known reliability of the equipment.

SR 3.7.4.2

This SR verifies that the required CREV testing is performed in accordance with Specification 5.5.7, "Ventilation Filter Testing Program (VFTP)." The CREV filter tests are in accordance with Regulatory Guide 1.52 (Ref. 4). The VFTP includes testing HEPA filter performance, charcoal adsorber efficiency, system flow rate, and the physical properties of the activated charcoal (general use and following specific operations). Specific test frequencies and additional information are discussed in detail in the VFTP.

5

SR 3.7.4.3

This SR verifies that on a manual initiation from the control room, the CREV System filter train starts and the isolation dampers close. Operating experience has shown that these components normally pass the SR when performed at the 24 month Frequency. Therefore, the Frequency was found to be acceptable from a reliability standpoint.

(continued)

BASES

SURVEILLANCE
REQUIREMENTS

(continued)

SR 3.7.4.4

This SR verifies the integrity of the control room emergency zone and the assumed inleakage rates of potentially contaminated air. The control room emergency zone positive pressure, with respect to potentially contaminated adjacent areas, is periodically tested to verify proper function of the CREV System. During the emergency isolation/pressurization mode of operation, the CREV System is designed to slightly pressurize the control room emergency zone ≥ 0.125 inches water gauge positive pressure with respect to the adjacent areas to minimize unfiltered inleakage. The CREV System is designed to maintain this positive pressure at a flow rate of ≤ 2000 scfm to the control room emergency zone in the isolation/pressurization mode. The Frequency of 24 months is consistent with industry practice and other filtration systems SRs.

REFERENCES

1. UFSAR, Section 6.4.
2. UFSAR, Section 9.4.
3. UFSAR, Section 15.6.5.
5. ~~4.~~ Regulatory Guide 1.52, Revision 2, March 1978.

Insert 2



5.



BASES

APPLICABILITY (continued) In MODES 4 and 5, the probability and consequences of a Design Basis Accident are reduced due to the pressure and temperature limitations in these MODES. Therefore, maintaining the Control Room Emergency Ventilation AC System OPERABLE is not required in MODE 4 or 5, except for the following situations under which significant radioactive releases can be postulated:

- a. During movement of recently irradiated fuel assemblies in the secondary containment; and
- b. During operations with a potential for draining the reactor vessel (OPDRVs).

Due to radioactive decay, the Control Room Emergency Ventilation AC System is only required to be OPERABLE during fuel handling involving handling recently irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within the previous 24 hours).

ACTIONS

A.1

With the Control Room Emergency Ventilation AC System inoperable in MODE 1, 2, or 3, the system must be restored to OPERABLE status within 30 days. The 30 day Completion Time is based on the low probability of an event occurring requiring control room emergency zone isolation and the availability of alternate nonsafety cooling methods.

~~B.1 and B.2~~

In MODE 1, 2, or 3, if the inoperable Control Room Emergency Ventilation AC System cannot be restored to OPERABLE status within the associated Completion Time, the unit must be placed in a MODE that minimizes risk. To achieve this status, the unit must be placed in at least MODE 3 within 12 hours and in MODE 4 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

overall risk

is

Insert 1

(continued)

BASES (continued)

REFERENCES Insert 2 → 1. UFSAR, Section 6.4.

BASES (continued)

APPLICABILITY The LCO is applicable when steam is being exhausted to the main condenser and the resulting noncondensibles are being processed via the Main Condenser Offgas System. This occurs during MODE 1, and during MODES 2 and 3 with any main steam line not isolated and the SJAE in operation. In MODES 4 and 5, main steam is not being exhausted to the main condenser and the requirements are not applicable.

ACTIONS

A.1

If the offgas radioactivity rate limit is exceeded, 72 hours is allowed to restore the gross gamma activity rate to within the limit. The 72 hour Completion Time is reasonable, based on engineering judgment, the time required to complete the Required Action, the large margins associated with permissible dose and exposure limits, and the low probability of a Main Condenser Offgas System rupture.

and

B.1, B.2, B.3-1, and B.3-2

If the gross gamma activity rate is not restored to within the limits in the associated Completion Time, all main steam lines or the SJAE must be isolated. This isolates the Main Condenser Offgas System from significant sources of radioactive steam. The main steam lines are considered isolated if at least one main steam isolation valve in each main steam line is closed, and at least one main steam line drain valve in each drain line is closed. The 12 hour Completion Time is reasonable, based on operating experience, to perform the actions from full power conditions in an orderly manner and without challenging unit systems.

overall plant risk is minimized.

is

An alternative to Required Actions B.1 and B.2 is to place the unit in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 12 hours and in MODE 4 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

Insert 1

(continued)

BASES (continued)

SURVEILLANCE
REQUIREMENTS

SR 3.7.6.1

This SR, on a 31 day Frequency, requires an isotopic analysis of a representative offgas sample (taken at the recombiner outlet or the SJAE outlet if the recombiner is bypassed) to ensure that the required limits are satisfied. The noble gases to be sampled are Xe-133, Xe-135, Xe-138, Kr-85M, Kr-87, and Kr-88. If the measured rate of radioactivity increases significantly as indicated by the main condenser air ejector noble gas activity monitor (by $\geq 50\%$ after correcting for expected increases due to changes in THERMAL POWER), an isotopic analysis is also performed within 4 hours after the increase is noted, to ensure that the increase is not indicative of a sustained increase in the radioactivity rate. The 31 day Frequency is adequate in view of other instrumentation that continuously monitor the offgas, and is acceptable, based on operating experience.

This SR is modified by a Note indicating that the SR is not required to be performed until 31 days after any main steam line is not isolated and the SJAE is in operation. Only in this condition can radioactive fission gases be in the Main Condenser Offgas System at significant rates.

REFERENCES

1. Letter E-DAS-015-00 from D.A. Studley (Sciencetech-NUS) to T. Leffler (ComEd), dated January 24, 2000.
2. 10 CFR 50.67.

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ACTIONS
(continued)

E.1

With two required DGs inoperable, there is no more than one remaining standby AC source. Thus, with an assumed loss of offsite electrical power, sufficient standby AC sources may not be available to power the minimum required ESF functions. Since the offsite electrical power system is the only source of AC power for the majority of ESF equipment at this level of degradation, the risk associated with continued operation for a very short time could be less than that associated with an immediate controlled shutdown. (The immediate shutdown could cause grid instability, which could result in a total loss of AC power.) Since any inadvertent unit generator trip could also result in a total loss of offsite AC power, however, the time allowed for continued operation is severely restricted. The intent here is to avoid the risk associated with an immediate controlled shutdown and to minimize the risk associated with this level of degradation.

According to Regulatory Guide 1.93 (Ref. 6), with both DGs inoperable, operation may continue for a period that should not exceed 2 hours. The Completion Time assumes complete loss of onsite (DG) AC capability to power the minimum loads needed to respond to analyzed events.

~~F.1 and F.2~~

If the inoperable AC electrical power sources cannot be restored to OPERABLE status within the associated Completion Time, the unit must be brought to a MODE in which the LCO does not apply. To achieve this status, the unit must be brought to at least MODE 3 within 12 hours and to MODE 4 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

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G.1

Condition G corresponds to a level of degradation in which all redundancy in the AC electrical power supplies has been lost. At this severely degraded level, any further losses in the AC electrical power system will cause a loss of

(continued)

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ACTIONS

G.1 (continued)

function. Therefore, no additional time is justified for continued operation. The unit is required by LCO 3.0.3 to commence a controlled shutdown.

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The AC sources are designed to permit inspection and testing of all important areas and features, especially those that have a standby function, in accordance with UFSAR, Section 3.1.2.2.9 (Ref. ~~V.7~~). Periodic component tests are supplemented by extensive functional tests during refueling outages (under simulated accident conditions). The SRs for demonstrating the OPERABILITY of the DGs are consistent with the recommendations of Regulatory Guide 1.9 (Ref. ~~V.8~~), Regulatory Guide 1.108 (Ref. ~~V.9~~), and Regulatory Guide 1.137 (Ref. ~~V.10~~), as addressed in the UFSAR. 10

11 The Surveillances are modified by two Notes to clearly identify how the Surveillances apply to the given unit and the opposite unit AC electrical power sources. Note 1 states that SR 3.8.1.1 through 3.8.1.20 are applicable only to the given unit AC electrical power sources and Note 2 states that SR 3.8.1.21 is applicable to the opposite unit AC electrical power sources. These Notes are necessary since the opposite unit AC electrical power sources are not required to meet all of the requirements of the given unit AC electrical power sources (e.g., the opposite unit's DG is not required to start on the opposite unit's ECCS initiation signal to support the OPERABILITY of the given unit).

12 Where the SRs discussed herein specify voltage and frequency tolerances, the following summary is applicable. The minimum steady state output voltage of 3952 V is 90% of the nominal 4160 V output voltage. This value, which is specified in ANSI C84.1 (Ref. ~~V.11~~), allows for voltage drop to the terminals of 4000 V motors whose minimum operating voltage is specified as 90% or 3600 V. It also allows for voltage drops to motors and other equipment down through the 120 V level where minimum operating voltage is also usually specified as 90% of name plate rating. The specified maximum steady state output voltage of 4368 V is equal to the maximum operating voltage specified for 4000 V motors. It ensures that for a lightly loaded distribution system, the voltage at the terminals of 4000 V motors is no more than the maximum rated operating voltages. The specified

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BASES

SURVEILLANCE
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(continued)

minimum and maximum frequencies of the DG are 58.8 Hz and 61.2 Hz, respectively. These values are equal to $\pm 2\%$ of the 60 Hz nominal frequency and are derived from the recommendations found in Regulatory Guide 1.9 (Ref. ~~8~~).

9

SR 3.8.1.1

This SR ensures proper circuit continuity for the offsite AC electrical power supply to the onsite distribution network and availability of offsite AC electrical power. The breaker alignment verifies that each breaker is in its correct position to ensure that distribution buses and loads are connected to their preferred power source and that appropriate independence of offsite circuits is maintained. The 7 day Frequency is adequate since breaker position is not likely to change without the operator being aware of it and because its status is displayed in the control room.

SR 3.8.1.2 and SR 3.8.1.8

These SRs help to ensure the availability of the standby electrical power supply to mitigate DBAs and transients and maintain the unit in a safe shutdown condition.

To minimize the wear on moving parts that do not get lubricated when the engine is not running, these SRs have been modified by a Note (Note 1 for SR 3.8.1.2 and Note 1 for SR 3.8.1.8) to indicate that all DG starts for these Surveillances may be preceded by an engine prelube period and followed by a warmup prior to loading.

For the purposes of this testing, the DGs are started from standby conditions. Standby conditions for a DG mean that the diesel engine coolant and oil are being continuously circulated and temperature is being maintained consistent with manufacturer recommendations.

In order to reduce stress and wear on diesel engines, the manufacturer has recommended a modified start in which the starting speed of DGs is limited, warmup is limited to this lower speed, and the DGs are gradually accelerated to synchronous speed prior to loading. These start procedures are the intent of Note 2 of SR 3.8.1.2.

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BASES

SURVEILLANCE
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SR 3.8.1.2 and SR 3.8.1.8 (continued)

SR 3.8.1.8 requires that, at a 184 day Frequency, 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 13 LOCA analysis of UFSAR, Section 6.3 (Ref. ~~V12~~). The 13 second start requirement is not applicable to SR 3.8.1.2 (see Note 2 of SR 3.8.1.2), when a modified start procedure as described above is used. If a modified start is not used, the 13 second start requirement of SR 3.8.1.8 applies.

Since SR 3.8.1.8 does require a 13 second start, it is more restrictive than SR 3.8.1.2, and it may be performed in lieu of SR 3.8.1.2.

In addition, the DG is required to maintain proper voltage and frequency limits after steady state is achieved. The voltage and frequency limits are normally achieved within 13 seconds. The time for the DG to reach steady state operation, unless the modified DG start method is employed, is periodically monitored and the trend evaluated to identify degradation of governor and voltage regulator performance.

To minimize testing of the common DG, Note 3 of SR 3.8.1.2 and Note 2 of SR 3.8.1.8 allow a single test of the common DG (instead of two tests, one for each unit) to satisfy the requirements for both units. This is allowed since the main purpose of the Surveillance can be met by performing the test on either unit. However, to the extent practicable, the tests should be alternated between units. If the DG fails one of these Surveillances, the DG should be considered inoperable on both units, unless the cause of the failure can be directly related to only one unit.

9 The 31 day Frequency for SR 3.8.1.2 is consistent with Regulatory Guide 1.9 (Ref. ~~V8~~). The 184 day Frequency for SR 3.8.1.8 is a reduction in cold testing consistent with Generic Letter 84-15 (Ref. 5). These Frequencies provide adequate assurance of DG OPERABILITY, while minimizing degradation resulting from testing.

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SURVEILLANCE
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(continued)

SR 3.8.1.3

This Surveillance verifies that the DGs are capable of synchronizing and accepting a load approximately equivalent to that corresponding to the continuous rating. A minimum run time of 60 minutes is required to stabilize engine temperatures, while minimizing the time that the DG is connected to the offsite source.

Although no power factor requirements are established by this SR, the DG is normally operated at a power factor between 0.8 lagging and 1.0 when running synchronized with the grid. The 0.8 power factor value is the design rating of the machine at a particular kVA. The 1.0 power factor value is an operational condition where the reactive power component is zero, which minimizes the reactive heating of the generator. Operating the generator at a power factor between 0.8 lagging and 1.0 avoids adverse conditions associated with underexciting the generator and more closely represents the generator operating requirements when performing its safety function (running isolated on its associated 4160 V ESS bus). The load band is provided to avoid routine overloading of the DG. Routine overloading may result in more frequent teardown inspections in accordance with vendor recommendations in order to maintain DG OPERABILITY.

The 31 day Frequency for this Surveillance is consistent with Regulatory Guide 1.9 (Ref. ~~8~~).

9

Note 1 modifies this Surveillance to indicate that diesel engine runs for this Surveillance may include gradual loading, as recommended by the manufacturer, so that mechanical stress and wear on the diesel engine are minimized.

Note 2 modifies this Surveillance by stating that momentary transients because of changing bus loads do not invalidate this test. Similarly, momentary power factor transients above the limit do not invalidate the test.

Note 3 indicates that this Surveillance should be conducted on only one DG at a time in order to avoid common cause failures that might result from offsite circuit or grid perturbations.

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SR 3.8.1.5 and SR 3.8.1.7 (continued)

environment in order to survive. Removal of water from the fuel oil day tank once every 31 days eliminates the necessary environment for bacterial survival. This is accomplished by draining a portion of the contents from the bottom of the day tank. Checking for and removal of any accumulated water from the bulk storage tank once every 92 days also eliminates the necessary environment for bacterial survival. This is the most effective means of controlling microbiological fouling. In addition, it eliminates the potential for water entrainment in the fuel oil during DG operation. Water may come from any of several sources, including condensation, ground water, rain water, contaminated fuel oil, and breakdown of the fuel oil by bacteria. Frequent checking for and removal of accumulated water minimizes fouling and provides data regarding the watertight integrity of the fuel oil system. The Surveillance Frequencies are established by Regulatory Guide 1.137 (Ref. V10). This SR is for preventive maintenance. The presence of water does not necessarily represent a failure of this SR provided that accumulated water is removed during performance of this Surveillance.

11

SR 3.8.1.6

This Surveillance demonstrates that each fuel oil transfer pump operates and automatically transfers fuel oil from its associated storage tank to its associated day tank. It is required to support continuous operation of standby power sources. This Surveillance provides assurance that each fuel oil transfer pump is OPERABLE, the fuel oil piping system is intact, the fuel delivery piping is not obstructed, and the controls and control systems for automatic fuel transfer systems are OPERABLE.

The Frequency for this SR is consistent with the Frequency for testing the DGs in SR 3.8.1.3. DG operation for SR 3.8.1.3 is normally long enough that fuel oil level in the day tank will be reduced to the point where the fuel oil transfer pump automatically starts to restore fuel oil level by transferring oil from the storage tank.

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(continued)

SR 3.8.1.9

Transfer of each 4160 V ESS bus power supply from the normal offsite circuit to the alternate offsite circuit demonstrates the OPERABILITY of the alternate circuit distribution network to power the shutdown loads. The 24 month Frequency of the Surveillance is based on engineering judgment taking into consideration the plant conditions required to perform the Surveillance, and is intended to be consistent with expected fuel cycle lengths. Operating experience has shown that these components usually pass the SR when performed on the 24 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

SR 3.8.1.10

Each DG is provided with an engine overspeed trip to prevent damage to the engine. Recovery from the transient caused by the loss of a large load could cause diesel engine overspeed, which, if excessive, might result in a trip of the engine. This Surveillance demonstrates the DG load response characteristics and capability to reject the largest single load without exceeding predetermined voltage and frequency and while maintaining a specified margin to the overspeed trip. The largest single load for each DG is a service water pump (686 kW). The specified load value conservatively bounds the expected kW rating of the single largest loads under accident conditions. This Surveillance may be accomplished by:

- a. Tripping the DG output breaker with the DG carrying greater than or equal to its associated single largest post-accident load while paralleled to offsite power, or while solely supplying the bus; or
- b. Tripping its associated single largest post-accident load with the DG solely supplying the bus.

Consistent with Regulatory Guide 1.9 (Ref. ⁹~~8~~), the load rejection test is acceptable if the diesel speed does not

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BASES

SURVEILLANCE
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SR 3.8.1.10 (continued)

exceed the nominal (synchronous) speed plus 75% of the difference between nominal speed and the overspeed trip setpoint, or 115% of nominal speed, whichever is lower. This corresponds to 66.73 Hz, which is the nominal speed plus 75% of the difference between nominal speed and the overspeed trip setpoint.

The time, voltage and frequency tolerances specified in this SR are derived from Regulatory Guide 1.9 (Ref. ~~V.8~~) 9 recommendations for response during load sequence intervals. The 3 seconds specified in SR 3.8.1.10.b is equal to 60% of the 5 second load sequence interval associated with sequencing the ECCS low pressure pumps during an undervoltage on the bus concurrent with a LOCA. The 4 seconds specified in SR 3.8.1.10.c is equal to 80% of the 5 second load sequence interval associated with sequencing the ECCS low pressure pumps during an undervoltage on the bus concurrent with a LOCA. The voltage and frequency specified are consistent with the design range of the equipment powered by the DG. SR 3.8.1.10.a corresponds to the maximum frequency excursion, while SR 3.8.1.10.b and SR 3.8.1.10.c are steady state voltage and frequency values specified to which the system must recover following load rejection. The 24 month Frequency takes into consideration the plant conditions required to perform the Surveillance, and is intended to be consistent with expected fuel cycle lengths.

This SR is modified by a Note. The reason for the Note is to minimize testing of the common DG and allow a single test of the common DG (instead of two tests, one for each unit) to satisfy the requirements for both units. This is allowed since the main purpose of the Surveillance can be met by performing the test on either unit. If the DG fails one of these Surveillances, the DG should be considered inoperable on both units, unless the cause of the failure can be directly related to only one unit.

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SURVEILLANCE
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(continued)

SR 3.8.1.11

Consistent with Regulatory Guide 1.9 (Ref. ⁹8), paragraph C.2.2.8, this Surveillance demonstrates the DG capability to reject a full load without overspeed tripping or exceeding the predetermined voltage limits. The DG full load rejection may occur because of a system fault or inadvertent breaker tripping. This Surveillance ensures proper engine generator load response under the simulated test conditions. This test simulates the loss of the total connected load that the DG experiences following a full load rejection and verifies that the DG does not trip upon loss of the load.

These acceptance criteria provide DG damage protection. While the DG is not expected to experience this transient during an event, and continues to be available, this response ensures that the DG is not degraded for future application, including reconnection to the bus if the trip initiator can be corrected or isolated.

In order to ensure that the DG is tested under load conditions that are as close to design basis conditions as possible, a load band (90% to 100%) has been specified based on Regulatory Guide 1.9 (Ref. ⁹8).

The 24 month Frequency takes into consideration the plant conditions required to perform the Surveillance, and is intended to be consistent with expected fuel cycle lengths.

This SR is modified by two Notes. To minimize testing of the common DG, Note 1 allows a single test of the common DG (instead of two tests, one for each unit) to satisfy the requirements for both units. This is allowed since the main purpose of the Surveillance can be met by performing the test on either unit. If the DG fails one of these Surveillances, the DG should be considered inoperable on both units, unless the cause of the failure can be directly related to only one unit. Note 2 modifies this Surveillance by stating that momentary transients outside the voltage limit do not invalidate this test.

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BASES

SURVEILLANCE
REQUIREMENTS
(continued)

SR 3.8.1.12

Consistent with Regulatory Guide 1.9 (Ref. ⁹~~8~~), paragraph C.2.2.4, this Surveillance 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 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 ¹³accident analysis for responding to a design basis large break LOCA (Ref. ~~V12~~). The Surveillance should be continued for a minimum of 5 minutes in order to demonstrate that all starting transients have decayed and stability has been achieved.

The requirement to verify the connection and power supply of permanently connected loads is intended to satisfactorily show the relationship of these loads to the DG loading logic. In certain circumstances, many of these loads cannot actually be connected or loaded without undue hardship or potential for undesired operation. For instance, a component or system may be out-of-service and closure of its associated breaker during this test may damage the component or system. In lieu of actual demonstration of the connection and loading of these loads, testing that adequately shows the capability of the DG system to perform these functions is acceptable. This testing may include any series of sequential, overlapping, or total steps so that the entire connection and loading sequence is verified.

The Frequency of 24 months takes into consideration plant conditions required to perform the Surveillance, and is intended to be consistent with expected fuel cycle lengths.

This SR is modified by a Note. The reason for the Note is to minimize wear and tear on the DGs during testing. For the purpose of this testing, the DGs shall be started from standby conditions, that is, with the engine coolant and lube oil being continuously circulated and temperature maintained consistent with manufacturer recommendations.

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BASES

SURVEILLANCE
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(continued)

SR 3.8.1.13

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Consistent with Regulatory Guide 1.9 (Ref. ~~8~~), paragraph C.2.2.5, this Surveillance 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). In addition, the DG is required to maintain proper voltage and frequency limits after steady state is achieved. The time for the DG to reach the steady state voltage and frequency limits is periodically monitored and the trend evaluated to identify degradation of governor and voltage regulator performance. The DG is required to operate for ≥ 5 minutes. The 5 minute period provides sufficient time to demonstrate stability.

The Frequency of 24 months takes into consideration plant conditions required to perform the Surveillance, and is intended to be consistent with the expected fuel cycle lengths.

This SR is modified by a Note. The reason for the Note is to minimize wear and tear on the DGs during testing. For the purpose of this testing, the DGs must be started from standby conditions, that is, with the engine coolant and oil being continuously circulated and temperature maintained consistent with manufacturer recommendations.

SR 3.8.1.14

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Consistent with Regulatory Guide 1.9 (Ref. ~~8~~) paragraph C.2.2.12, this Surveillance demonstrates that DG non-critical protective functions (e.g., high jacket water temperature) are bypassed on 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.

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BASES

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SR 3.8.1.14 (continued)

The 24 month Frequency is based on engineering judgment, takes into consideration plant conditions required to perform the Surveillance, and is intended to be consistent with expected fuel cycle lengths.

SR 3.8.1.15

Regulatory Guide 1.9 (Ref. ⁹~~8~~), paragraph C.2.2.9, requires demonstration that the DGs can start and run continuously at full load capability for an interval of not less than 24 hours, 22 hours of which is at a load equivalent to 90% to 100% of the continuous rating of the DG and 2 hours of which is at a load equivalent to 105% to 110% of the continuous rating of the DG. The DG starts for this Surveillance can be performed either from standby or hot conditions. The provisions for prelube and warmup, discussed in SR 3.8.1.2, and for gradual loading, discussed in SR 3.8.1.3, are applicable to this SR.

In order to ensure that the DG is tested under load conditions that are as close to design conditions as possible, testing must be performed at a power factor as close to the accident load power factor as practicable. When synchronized with offsite power, the power factor limit is ≤ 0.85 . This power factor is chosen to bound the actual worst case inductive loading that the DG could experience under design basis accident conditions.

The power factor used for conducting the 24-hour endurance run must consider the effects of bus voltage on connected equipment. Therefore, "practicable" includes a criterion of minimizing potential high bus voltage on the 4 kV buses. High bus voltage may result in exceeding the manufacturer's tolerances for safety related 4 kV motors and for devices downstream of the 4 kV system (e.g., 480 V devices). Operating an electric motor above design rating can overexcite the motor, overheat the rotor and reduce its qualified life.

High voltage on the medium voltage buses could result in exceeding the nominal $\pm 10\%$ voltage tolerance at the

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BASES

SURVEILLANCE
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SR 3.8.1.15 (continued)

Therefore, the power factor shall be maintained as close as practicable to the specified limit while still ensuring that if the DG output breaker were to trip during the Surveillance that the maximum DG winding voltage would not be exceeded. Therefore, it is prudent to limit the time of exposure as there is risk associated with operation of the generator at accident power factor for long periods.

Even when the grid voltage may be such that the DG excitation levels needed to obtain the specified power factor may not cause unacceptable voltage on the emergency buses, there is risk associated with operating the generator above unity power factor. If the DG output breaker were to trip, the combination of high internal voltage and the transient due to the interruption of current through an inductive reactance will result in high voltage. The point on the waveform when the circuit breaker opens also influences the magnitude of transient voltage. This could damage the winding of the generator. Therefore, it is not practicable to operate the generator in droop mode at the anticipated worst case accident power factor for long periods. The inductive load will vary during the accident. VAR demand is dependent on the connected loads, starting of induction motors and system impedance. Raising the voltage regulator for an output of 1600 kVAR (equal to approximately 0.85 power factor at rated kW output), maintaining this output for a short time period, then returning output to near unity power factor is more representative of system requirements (Ref. 14).

15

To minimize testing of the common DG, Note 3 allows a single test of the common DG (instead of two tests, one for each unit) to satisfy the requirements for both units. This is allowed since the main purpose of the Surveillance can be met by performing the test on either unit. If the DG fails one of these Surveillances, the DG should be considered inoperable on both units, unless the cause of the failure can be directly related to only one unit.

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BASES

SURVEILLANCE
REQUIREMENTS
(continued)

SR 3.8.1.16

This Surveillance demonstrates that the diesel engine 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 (Ref. ~~V12~~). In addition, the DG is required to maintain proper voltage and frequency limits after steady state is achieved. The time for the DG to reach the steady state voltage and frequency limits is periodically monitored and the trend evaluated to identify degradation of governor and voltage regulator performance.

13

The 24 month Frequency takes into consideration the plant conditions required to perform the Surveillance, and is intended to be consistent with the expected fuel cycle lengths.

This SR is modified by three Notes. Note 1 ensures that the test is performed with the diesel sufficiently hot. The requirement that the diesel has operated for at least 2 hours at approximately full load conditions prior to performance of this Surveillance is based on manufacturer recommendations for achieving hot conditions. Momentary transients due to changing bus loads do not invalidate this test. Note 2 allows all DG starts to be preceded by an engine prelube period to minimize wear and tear on the diesel during testing. To minimize testing of the common DG, Note 3 allows a single test of the common DG (instead of two tests, one for each unit) to satisfy the requirements for both units. This is allowed since the main purpose of the Surveillance can be met by performing the test on either unit. If the DG fails one of these Surveillances, the DG should be considered inoperable on both units, unless the cause of the failure can be directly related to only one unit.

SR 3.8.1.17

Consistent with Regulatory Guide 1.9 (Ref. ~~8~~), paragraph C.2.2.11, this Surveillance ensures that the

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BASES

SURVEILLANCE
REQUIREMENTS

SR 3.8.1.17 (continued)

manual synchronization and load transfer from the DG to the offsite source can be made and that the DG can be returned to ready-to-load status when offsite power is restored. It also ensures that the auto-start logic is reset to allow the DG to reload if a subsequent loss of offsite power occurs. The DG is considered to be in ready-to-load status when the DG is at rated speed and voltage, the output breaker is open and can receive an auto-close signal on bus undervoltage, and the individual load timers are reset.

The Frequency of 24 months takes into consideration plant conditions required to perform the Surveillance, and is intended to be consistent with expected fuel cycle lengths.

SR 3.8.1.18

Under accident conditions with loss of offsite power loads are sequentially connected to the bus by the automatic load sequence time delay relays. The sequencing logic controls the permissive and starting signals to motor breakers to prevent overloading of the DGs due to high motor starting currents. The -10% load sequence time interval limit ensures that a sufficient time interval exists for the DG to restore frequency and voltage prior to applying the next load. There is no upper limit for the load sequence time interval since, for a single load interval (i.e., the time between two load blocks), the capability of the DG to restore frequency and voltage prior to applying the second load is not negatively affected by a longer than designed load interval, and if there are additional load blocks (i.e., the design includes multiple load intervals), then the lower limit requirements (-10%) will ensure that sufficient time exists for the DG to restore frequency and voltage prior to applying the remaining load blocks (i.e., all load intervals must be $\geq 90\%$ of the design interval). Reference V-13 provides a summary of the automatic loading of ESS buses.

The Frequency of 24 months takes into consideration plant conditions required to perform the Surveillance, and is intended to be consistent with expected fuel cycle lengths.

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BASES

SURVEILLANCE
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(continued)

SR 3.8.1.19

In the event of a DBA coincident with a loss of offsite power, the DGs are required to supply the necessary power to ESF systems so that the fuel, RCS, and containment design limits are not exceeded.

This Surveillance demonstrates DG operation, as discussed in the Bases for SR 3.8.1.12, during a loss of offsite power actuation test signal in conjunction with an ECCS initiation signal. In lieu of actual demonstration of connection and loading of loads, testing that adequately shows the capability of the DG system to perform these functions is acceptable. This testing may include any series of sequential, overlapping, or total steps so that the entire connection and loading sequence is verified.

The Frequency of 24 months takes into consideration plant conditions required to perform the Surveillance, and is intended to be consistent with expected fuel cycle lengths.

This SR is modified by a Note. The reason for the Note is to minimize wear and tear on the DGs during testing. For the purpose of this testing, the DGs must be started from standby conditions, that is, with the engine coolant and oil being continuously circulated and temperature maintained consistent with manufacturer recommendations.

SR 3.8.1.20

This Surveillance demonstrates that the DG starting independence has not been compromised. Also, this Surveillance demonstrates that each engine can achieve proper frequency and voltage within the specified time when the DGs are started simultaneously.

The 10 year Frequency is consistent with the recommendations of Regulatory Guide 1.9 (Ref. ~~8~~).

This SR is modified by a Note. ⁹ The reason for the Note is to minimize wear on the DG during testing. For the purpose of this testing, the DGs must be started from standby conditions, that is, with the engine coolant and oil continuously circulated and temperature maintained consistent with manufacturer recommendations.

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BASES

REFERENCES
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8. 7. UFSAR, Section 3.1.2.2.9.
9. 8. Regulatory Guide 1.9, Revision 3, July 1993.
10. 9. Regulatory Guide 1.108, Revision 1, August 1977.
11. 10. Regulatory Guide 1.137, Revision 1, October 1979.
12. 11. ANSI C84.1, 1982.
13. 12. UFSAR, Section 6.3.
14. 13. UFSAR, Section 8.3.1.5.1.
15. 14. Letter from R. M. Krich (ComEd) to NRC, "Request for Technical Specifications Changes for Dresden Nuclear Power Station, Units 2 and 3, LaSalle County Station, Units 1 and 2, and Quad Cities Nuclear Power Station, Units 1 and 2, to Convert to Improved Standard Technical Specifications," dated March 3, 2000.

BASES

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I.1 (continued)

design basis event were to occur. With a standby gas treatment subsystem inoperable, LCO 3.6.4.3, "Standby Gas Treatment System" requires restoration of the inoperable SGT subsystem to OPERABLE status in 7 days. Therefore, a 7 day Completion Time is provided to restore the opposite unit Division 2 125 VDC electrical power subsystem to OPERABLE status. The 7 day Completion Time is based on consideration of such factors as the availability of the OPERABLE redundant system(s) and the low probability of a DBA occurring during this time period.

overall plant risk is minimized

~~J.1 and J.2~~

If the inoperable DC electrical power subsystem cannot be restored to OPERABLE status within the required Completion Time, the unit must be brought to a MODE in which ~~the LCO does not apply~~. To achieve this status, the unit must be brought to at least MODE 3 within 12 hours ~~and to MODE 4 within 36 hours~~. The allowed Completion Times ~~are~~ reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems. ~~The Completion Time to bring the unit to MODE 4 is consistent with the time required in Regulatory Guide 1.93 (Ref. 7).~~

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SURVEILLANCE REQUIREMENTS

SR 3.8.4.1

Verifying battery terminal voltage while on float charge for the batteries helps to ensure the effectiveness of the battery chargers, which support the ability of the batteries to perform their intended function. Float charge is the condition in which the charger is supplying the continuous charge required to overcome the internal losses of a battery and maintain the battery in a fully charged state, while supplying the continuous steady state loads of the associated DC subsystem. On float charge, battery cells will receive adequate current to optimally charge the battery. The voltage requirements are based on the nominal design voltage of the battery and are consistent with the minimum float established by the battery manufacturer

(continued)

BASES

SURVEILLANCE
REQUIREMENTS

SR 3.8.4.1 (continued)

(2.17 Vpc or 260.4 V at the 250 VDC battery terminals and 125.9 V at the 125 VDC battery terminals). This voltage maintains the battery plates in a condition that supports maintaining the grid life (expected to be approximately 20 years). The 7 day Frequency is conservative when compared with manufacturers recommendations and IEEE-450 (Ref. ~~V.8~~). SR 3.8.4.1.c is modified by a Note. The Note requires the Unit 2 alternate battery to meet the specified voltage limit only when it is required to be OPERABLE. This battery is required to be OPERABLE when it is being used to meet Required Actions F.1, G.1, or H.2.

9

SR 3.8.4.2 and SR 3.8.4.3

These SRs verify the design capacity of the battery chargers. According to Regulatory Guide 1.32 (Ref. ~~8~~), the battery charger supply is recommended to be based on the largest combined demands of the various steady state loads and the charging capacity to restore the battery from the design minimum charge state to the fully charged state, irrespective of the status of the unit during these demand occurrences. The minimum required amperes and duration ensures that these requirements can be satisfied. This SR provides two options. One option requires that each battery charger be capable of supplying 200 amps at the minimum established float voltage for 4 hours. The ampere requirements are based on the output rating of the chargers. The voltage requirements are based on the charger voltage level after a response to a loss of AC power. The time period is sufficient for the charger temperature to have stabilized and to have been maintained for at least 2 hours.

The other option requires each battery charger be capable of recharging the battery after a service test coincident with supplying the largest coincident demands of the various continuous steady state loads (irrespective of the status of the plant during which these demands occur). This level of loading may not normally be available following the battery service test and will need to be supplemented with additional loads. The duration for this test may be longer than the charger sizing criteria since the battery recharge

10

(continued)

BASES (continued)

- REFERENCES
1. UFSAR, Section 3.1.2.2.8.
 2. Safety Guide 6, March 10, 1971.
 3. IEEE Standard 308, 1974.
 4. UFSAR, Section 8.3.2.
 5. UFSAR, Chapter 6.
 6. UFSAR, Chapter 15.
 7. Regulatory Guide 1.93, Revision 0, December 1974.
 -   8. IEEE Standard 450, 1995.
 -  9. Regulatory Guide 1.32, Revision 2, February 1977.
-

BASES

ACTIONS

C.1 (continued)

The Required Action is modified by a Note indicating that the applicable Conditions of LCO 3.8.1 be entered and Required Actions taken if the inoperable opposite unit AC electrical power distribution subsystem results in an inoperable required offsite circuit. This is an exception to LCO 3.0.6 and ensures the proper actions are taken for these components.

D.1 and D.2

overall plant risk is minimized.

Insert 1

If the inoperable distribution subsystem cannot be restored to OPERABLE status within the associated Completion Time, the unit must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 12 hours and to MODE 4 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

E.1

Condition E corresponds to a level of degradation in the electrical distribution system that causes a required safety function to be lost. When the inoperability of two or more AC or DC electrical power distribution subsystems, in combination, results in the loss of a required function, the plant is in a condition outside the accident analysis. Therefore, no additional time is justified for continued operation. LCO 3.0.3 must be entered immediately to commence a controlled shutdown. The term "in combination" means that the loss of function must result from the inoperability of two or more AC and DC electrical power distribution subsystems; a loss of function solely due to a single AC or DC electrical power distribution subsystem inoperability even with another AC or DC electrical power distribution subsystem concurrently inoperable, does not require entry into Condition E.

(continued)

BASES (continued)

SURVEILLANCE
REQUIREMENTS

SR 3.8.7.1

This Surveillance verifies that the AC and DC electrical power distribution subsystems are functioning properly, with the correct circuit breaker alignment. The correct breaker alignment ensures the appropriate separation and independence of the electrical divisions are maintained, and the appropriate voltage is available to each required bus. The verification of proper voltage availability on the buses ensures that the required voltage is readily available for motive as well as control functions for critical system loads connected to these buses. The 7 day Frequency takes into account the redundant capability of the AC and DC electrical power distribution subsystems, redundant power supplies available to the essential service and instrument 120 VAC buses, and other indications available in the control room that alert the operator to bus and subsystem malfunctions.

REFERENCES

1. UFSAR, Chapter 6.
2. UFSAR, Chapter 15.
3. Regulatory Guide 1.93, December 1974.

Insert 2



Dresden Nuclear Power Station TSTF-423 LAR Technical Specification Bases Page Inserts

LCO 3.4.3 Safety and Relief Valves

Insert 1

Remaining in the Applicability of the LCO is acceptable because the plant risk in MODE 3 is similar to or lower than the risk in MODE 4 (Ref. 5) and because the time spent in MODE 3 to perform the necessary repairs to restore the system to OPERABLE status will be short. However, voluntary entry into MODE 4 may be made as it is also an acceptable low-risk state.

Insert 2

C.1 and C.2

If the relief function of two or more relief valves is inoperable or if the safety function of one or more safety valves is inoperable, a transient may result in the violation of the ASME Code limit on reactor pressure. The plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to MODE 3 within 12 hours and to MODE 4 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

Insert 3

5. NEDC-32988-A, Revision 2, Technical Justification to Support Risk-Informed Modification to Selected Required End States for BWR Plants, December 2002.

LCO 3.5.1 ECCS-Operating

Insert 1

D.1

If any Required Action and associated Completion Time of Condition A, B, or C is not met, the plant must be brought to a MODE in which the overall plant risk is minimized. To achieve this status, the plant must be brought to at least MODE 3 within 12 hours. Remaining in the Applicability of the LCO is acceptable because the plant risk in MODE 3 is similar to or lower than the risk in MODE 4 (Ref. 11) and because the time spent in MODE 3 to perform the necessary repairs to restore the system to OPERABLE status will be short. However, voluntary entry into MODE 4 may be made as it is also an acceptable low-risk state. The allowed Completion Time is reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

Insert 2

I.1

If any Required Action and associated Completion Time of Condition G or H is not met, the plant must be brought to a MODE in which overall plant risk is minimized. To achieve this status, the plant must be brought to at least MODE 3 within 12 hours. Remaining in the Applicability of the LCO is acceptable because the plant risk in MODE 3 is similar to or lower than the risk in MODE 4 (Ref. 11) and because the time spent in MODE 3 to perform the necessary repairs to restore the system to OPERABLE status will be short. However, voluntary entry into MODE 4 may be made as it is also an acceptable low-risk state. The allowed Completion Time is reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

Insert 3

11. NEDC-32988-A, Revision 2, Technical Justification to Support Risk-Informed Modification to Selected Required End States for BWR Plants, December 2002.

LCO 3.5.3 IC System

Insert 1

Remaining in the Applicability of the LCO is acceptable because the plant risk in MODE 3 is similar to or lower than the risk in MODE 4 (Ref. 4) and because the time spent in MODE 3 to perform the necessary repairs to restore the system to OPERABLE status will be short. However, voluntary entry into MODE 4 may be made as it is also an acceptable low-risk state.

Insert 2

4. NEDC-32988-A, Revision 2, Technical Justification to Support Risk-Informed Modification to Selected Required End States for BWR Plants, December 2002.

LCO 3.6.1.1 Primary Containment

Insert 1

Remaining in the Applicability of the LCO is acceptable because the plant risk in MODE 3 is similar to or lower than the risk in MODE 4 (Ref. 4), because the time spent in MODE 3 to perform the necessary repairs to restore the system to OPERABLE status will be short. However, voluntary entry into MODE 4 may be made as it is also an acceptable low-risk state.

Insert 2

4. NEDC-32988-A, Revision 2, "Technical Justification to Support Risk-Informed Modification to Selected Required End States for BWR Plants", December 2002.

LCO 3.6.1.6 Low-Low Set (LLS) Valves

Insert 1

Remaining in the Applicability of the LCO is acceptable because the plant risk in MODE 3 is similar to or lower than the risk in MODE 4 (Ref. 2) and because the time spent in MODE 3 to perform the necessary repairs to restore the system to OPERABLE status will be short. However, voluntary entry into MODE 4 may be made as it is also an acceptable low-risk state.

Insert 2

C.1 and C.2

If two or more LLS valves are inoperable, there could be excessive short duration S/RV cycling during an overpressure event. The plant must be brought to a condition in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 12 and MODE 4 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

Insert 3

2. NEDC-32988-A, Revision 2, Technical Justification to Support Risk-Informed Modification to Selected Required End States for BWR Plants, December 2002.

LCO 3.6.1.7 Reactor Building-to-Suppression Chamber Vacuum Breakers

Insert 1

D.1

If one line has one or more reactor building-to-suppression chamber vacuum breakers inoperable for opening and they are not restored within the Completion Time in Condition C, the remaining breakers in the remaining lines can provide the opening function. The plant must be brought to a condition in which the overall plant risk is minimized. To achieve this status, the plant must be brought to at least MODE 3 within 12 hours. Remaining in the Applicability of the LCO is acceptable because the plant risk in MODE 3 is similar to or lower than the risk in MODE 4 (Ref. 2) and because the time spent in MODE 3 to perform the necessary repairs to restore the system to OPERABLE status will be short. However, voluntary entry into MODE 4 may be made as it is also an acceptable low-risk state. The allowed Completion Time is reasonable based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

Insert 2

2. NEDC-32988-A, Revision 2, Technical Justification to Support Risk-Informed Modification to Selected Required End States for BWR Plants, December 2002.

LCO 3.6.1.8 Suppression Chamber-to-Drywell Vacuum Breakers

Insert 1

B.1

If a required suppression chamber-to-drywell vacuum breaker is inoperable for opening and is not restored to OPERABLE status the required Completion Time, this plant must be brought to a condition in which the overall plant risk is minimized. To achieve this status, the plant must be brought to at least MODE 3 within 12 hours. Remaining in the Applicability of the LCO is acceptable because the plant risk in MODE 3 is similar to or lower than the risk in MODE 4 (Ref. 3) and because the time spent in MODE 3 to perform the necessary repairs to restore the system to OPERABLE status will be short. However, voluntary entry into MODE 4 may be made as it is also an acceptable low-risk state. The allowed Completion Time is reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

Insert 2

3. NEDC-32988-A, Revision 2, Technical Justification to Support Risk-Informed Modification to Selected Required End States for BWR Plants, December 2002.

LCO 3.6.2.3 Suppression Pool Cooling

Insert 1

B.1

If one RHR suppression pool cooling subsystem is inoperable and is not restored to OPERABLE status within the required Completion Time, the plant must be brought to a condition in which the overall plant risk is minimized. To achieve this status, the plant must be brought to at least MODE 3 within 12 hours. Remaining in the Applicability of the LCO is acceptable because the plant risk in MODE 3 is similar to or lower than the risk in MODE 4 (Ref. 2) and because the time spent in MODE 3 to perform the necessary repairs to restore the system to OPERABLE status will be short. However, voluntary entry into MODE 4 may be made as it is also an acceptable low-risk state. The allowed Completion Time is reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

Insert 2

2. NEDC-32988-A, Revision 2, Technical Justification to Support Risk-Informed Modification to Selected Required End States for BWR Plants, December 2002.

LCO 3.6.2.4 Suppression Pool Spray

Insert 1

Remaining in the Applicability of the LCO is acceptable because the plant risk in MODE 3 is similar to or lower than the risk in MODE 4 (Ref. 2) and because the time spent in MODE 3 to perform the necessary repairs to restore the system to OPERABLE status will be short. However, voluntary entry into MODE 4 may be made as it is also an acceptable low-risk state.

Insert 2

2. NEDC-32988-A, Revision 2, Technical Justification to Support Risk-Informed Modification to Selected Required End States for BWR Plants, December 2002.

LCO 3.6.4.1 Secondary Containment

Insert 1

Remaining in the Applicability of the LCO is acceptable because the plant risk in MODE 3 is similar to or lower than the risk in MODE 4 (Ref. 2), because the time spent in MODE 3 to perform the necessary repairs to restore the system to OPERABLE status will be short. However, voluntary entry into MODE 4 may be made as it is also an acceptable low-risk state.

Insert 2

2. NEDC-32988-A, Revision 2, Technical Justification to Support Risk-Informed Modification to Selected Required End States for BWR Plants, December 2002.

LCO 3.6.4.3 Standby Gas Treatment (SGT) System

Insert 1

Remaining in the Applicability of the LCO is acceptable because the plant risk in MODE 3 is similar to or lower than the risk in MODE 4 (Ref. 4) and because the time spent in MODE 3 to perform the necessary repairs to restore the system to OPERABLE status will be short. However, voluntary entry into MODE 4 may be made as it is also an acceptable low-risk state.

Insert 2

Remaining in the Applicability of the LCO is acceptable because the plant risk in MODE 3 is similar to or lower than the risk in MODE 4 (Ref. 4) and because the time spent in MODE 3 to perform the necessary repairs to restore the system to OPERABLE status will be short. However, voluntary entry into MODE 4 may be made as it is also an acceptable low-risk state.

Insert 3

4. NEDC-32988-A, Revision 2, Technical Justification to Support Risk-Informed Modification to Selected Required End States for BWR Plants, December 2002.

LCO 3.7.1 Containment Cooling Service Water (CCSW) System

Insert 1

D.1

If one CCSW subsystem is inoperable or one CCSW pump in one or two subsystems is inoperable and not restored within the provided Completion Time, the plant must be brought to a condition in which the overall plant risk is minimized. To achieve this status, the plant must be brought to at least MODE 3 within 12 hours. Remaining in the Applicability of the LCO is acceptable because the plant risk in MODE 3 is similar to or lower than the risk in MODE 4 (Ref. 7) and because the time spent in MODE 3 to perform the necessary repairs to restore the system to OPERABLE status will be short. However, voluntary entry into MODE 4 may be made as it also an acceptable low-risk state. The allowed Completion Time is reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant system.

Insert 2

7. NEDC-32988-A, Revision 2, Technical Justification to Support Risk-Informed Modification to Selected Required End States for BWR Plants, December 2002.

LCO 3.7.4 Control Room Emergency Ventilation (CREV) System

Insert 1

Remaining in the Applicability of the LCO is acceptable because the plant risk in MODE 3 is similar to or lower than the risk in MODE 4 (Ref. 4) and because the time spent in MODE 3 to perform the necessary repairs to restore the system to OPERABLE status will be short. However, voluntary entry into MODE 4 may be made as it is also an acceptable low-risk state.

Insert 2

4. NEDC-32988-A, Revision 2, Technical Justification to Support Risk-Informed Modification to Selected Required End States for BWR Plants, December 2002.

LCO 3.7.5 Control Room Emergency Ventilation Air Conditioning (AC) System

Insert 1

Remaining in the Applicability of the LCO is acceptable because the plant risk in MODE 3 is similar to or lower than the risk in MODE 4 (Ref. 2) and because the time spent in MODE 3 to perform the necessary repairs to restore the system to OPERABLE status will be short. However, voluntary entry into MODE 4 may be made as it is also an acceptable low-risk state.

Insert 2

2. NEDC-32988-A, Revision 2, "Technical Justification to Support Risk-Informed Modification to Selected Required End States for BWR Plants", December 2002.

LCO 3.7.6 Main Condenser Offgas

Insert 1

Remaining in the Applicability of the LCO is acceptable because the plant risk in MODE 3 is similar to or lower than the risk in MODE 4 (Ref. 3) and because the time spent in MODE 3 to perform the necessary repairs to restore the system to OPERABLE status will be short. However, voluntary entry into MODE 4 may be made as it is also an acceptable low-risk state.

Insert 2

3. NEDC-32988-A, Revision 2, "Technical Justification to Support Risk-Informed Modification to Selected Required End States for BWR Plants", December 2002.

LCO 3.8.1 AC Sources – Operating

Insert 1

Remaining in the Applicability of the LCO is acceptable because the plant risk in MODE 3 is similar to or lower than the risk in MODE 4 (Ref. 7) and because the time spent in MODE 3 to perform the necessary repairs to restore the system to OPERABLE status will be short. However, voluntary entry into MODE 4 may be made as it is also an acceptable low-risk state.

Insert 2

7. NEDC-32988-A, Revision 2, "Technical Justification to Support Risk-Informed Modification to Selected Required End States for BWR Plants", December 2002.

LCO 3.8.4 DC Sources – Operating

Insert 1

Remaining in the Applicability of the LCO is acceptable because the plant risk in MODE 3 is similar to or lower than the risk in MODE 4 (Ref. 8) and because the time spent in MODE 3 to perform the necessary repairs to restore the system to OPERABLE status will be short. However, voluntary entry into MODE 4 may be made as it is also an acceptable low-risk state.

Insert 2

8. NEDC-32988-A, Revision 2, "Technical Justification to Support Risk-Informed Modification to Selected Required End States for BWR Plants", December 2002.

LCO 3.8.7 Distribution Systems – Operating

Insert 1

Remaining in the Applicability of the LCO is acceptable because the plant risk in MODE 3 is similar to or lower than the risk in MODE 4 (Ref. 4) and because the time spent in MODE 3 to perform the necessary repairs to restore the system to OPERABLE status will be short. However, voluntary entry into MODE 4 may be made as it is also an acceptable low-risk state.

Insert 2

4. NEDC-32988-A, Revision 2, "Technical Justification to Support Risk-Informed Modification to Selected Required End States for BWR Plants", December 2002.

ATTACHMENT 4
List of Regulatory Commitments

The following table identifies those actions committed to by Exelon Generation Company, LLC (EGC) in this document. Any other statements in the submittal are provided for information purposes and are not considered to be regulatory commitments.

COMMITMENT	COMMITTED DATE	COMMITMENT TYPE	
		ONE-TIME ACTION (Yes/No)	PROGRAMMATIC (Yes/No)
EGC will follow the guidance established in Section 11 of NUMARC 93-01, "Industry Guidance for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," Nuclear Management and Resource Council, Revision 3, July 2000.	Ongoing	No	Yes
EGC will follow the guidance established in TSTF-IG-05-02, "Implementation Guidance for TSTF-423, Revision 0, 'Technical Specifications End States, NEDC-32988-A,'" Revision 1, March 2007.	Implement with amendment	No	Yes