TRANSMITTAL MANIFEST
NUCLEAR MANAGEMENT COMPANY, LLC
PRAIRIE ISLAND NUCLEAR GENERATING PLANT

Supplement to License Amendment Request Dated December 11, 2000
Conversion to Improved Technical Specifications (ITS)

Correspondence Date: December 12, 2001 **ITS LAR 12/11/00**

USNRC
DCD (original letter)
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Site Resident Inspector

State of Minnesota
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Linda Bruemmer (MDH)

J E Silberg

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Ken Albrecht
Ted Amundson
Steve Frost
Mike Hall
Mike Johnson
Scott Marty – manifest only
Chris Mundt
Tim Allen
Ruthie VanTassell (original attachments)
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Licensing Library
PITC Library
PI OSRC File

NL Administrative:
Gene Eckholt
Jeff Kivi
Jack Leveille
Dale Vincent
NL File - cover page
TS History file
PI Records Mgmt

USAR File	No
Commitment	No
Design Change	No
Fire Protection	No

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Improved Technical Specifications
Supplement dated 12/12/01

Revision 5 Change Page List

UPDATING INSTRUCTIONS

Remove				Insert			
Chapter/ Section	**Part**	**Page**	**Revision/ Date**	**Chapter/ Section**	**Part**	**Page**	**Revision/ Date**
Supplement dated 11/12/01	Attachment 1	60	9/4/01	Supplement dated 11/12/01	Attachment 1	60	May 25, 2001
3.3	D	31	12/11/00	3.3	D	31	Repaginated
	D	57	9/4/01		D	57	9/4/01
	D	60	9/4/01		D	60	9/4/01
3.5	B	3.5.2-2	12/11/00	3.5	B	3.5.2-2	11/1/01
	B	3.5.2-3	12/11/00		B	3.5.2-3	Repaginated
	B	B 3.5.1-1	12/11/00		B	B 3.5.1-1	11/1/01
	B	B 3.5.1-2	12/11/00		B	B 3.5.1-2	11/1/01
	B	B 3.5.1-3	12/11/00		B	B 3.5.1-3	11/1/01
	B	B 3.5.1-4	12/11/00		B	B 3.5.1-4	Repaginated
	B	B 3.5.1-5	12/11/00		B	B 3.5.1-5	Repaginated
	B	B 3.5.1-6	12/11/00		B	B 3.5.1-6	Repaginated
	B	B 3.5.1-7	12/11/00		B	B 3.5.1-7	Repaginated
	B	B 3.5.1-8	12/11/00		B	B 3.5.1-8	Repaginated
	B	B 3.5.1-9	12/11/00		B	B 3.5.1-9	11/1/01
	B	---	---		B	B 3.5.1-10	12/11/00
	B	B 3.5.2-1	12/11/00		B	B 3.5.2-1	11/1/01
	B	B 3.5.2-3	12/11/00		B	B 3.5.2-3	11/1/01
	B	B 3.5.2-8	12/11/00		B	B 3.5.2-8	11/1/01
	B	B 3.5.2-9	12/11/00		B	B 3.5.2-9	Repaginated
	B	B 3.5.2-10	12/11/00		B	B 3.5.2-10	Repaginated
	B	B 3.5.2-11	12/11/00		B	B 3.5.2-11	Repaginated
	B	B 3.5.2-12	12/11/00		B	B 3.5.2-12	Repaginated
	B	B 3.5.2-13	12/11/00		B	B 3.5.2-13	11/1/01
	B	B 3.5.4-4	12/11/00		B	B 3.5.4-4	11/1/01
	C	1 of 10	2		C	1 of 10	5
	C	2 of 10	---		C	2 of 10	5
	C	3 of 10	---		C	3 of 10	5
	C	4 of 10	---		C	4 of 10	5
	C	7 of 10	2		C	7 of 10	5
	D	1A	5/1/01		---	---	---
	D	1	12/11/00		D	1	5/1/01
	D	2	12/11/00		D	2	11/1/01
	D	3	12/11/00		D	3	Repaginated

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Revision 5 Change Page List

UPDATING INSTRUCTIONS

Remove				Insert			
Chapter/ Section	Part	Page	Revision/ Date	Chapter/ Section	Part	Page	Revision/ Date
	D	4	12/11/00		D	4	Repaginated
	D	6	12/11/00		D	6	11/1/01
	D	8	12/11/00		D	8	Repaginated
	D	9	12/11/00		D	9	11/1/01
	D	10	12/11/00		D	10	Repaginated
	D	11	12/11/00		D	11	Repaginated
	D	12	12/11/00		D	12	Repaginated
	D	13	12/11/00		D	13	Repaginated
	D	14	12/11/00		D	14	Repaginated
	D	---	---		D	15	12/11/00
	D	---	---		D	16	11/1/01
	D	---	---		D	17	11/1/01
	D	---	---		D	18	11/1/01
	D	---	---		D	19	11/1/01
	D	---	---		D	20	11/1/01
	D	---	---		D	21	11/1/01
	D	---	---		D	22	11/1/01
	E	3.5.2-2			E	3.5.2-2	Repaginated
	E	3.5.2-3	2		E	3.5.2-3	5
	E	3.5.2-4	2		E	3.5.2-4	Repaginated
	E	---	---		E	3.5.2-5	5
	E	B 3.5.1-1			E	B 3.5.1-1	5
	E	B 3.5.1-2			E	B 3.5.1-2	5
	E	B 3.5.1-3	1		E	B 3.5.1-3	5
	E	B 3.5.1-4			E	B 3.5.1-4	Repaginated
	E	B 3.5.1-5			E	B 3.5.1-5	Repaginated
	E	B 3.5.1-6			E	B 3.5.1-6	Repaginated
	E	B 3.5.1-7			E	B 3.5.1-7	Repaginated
	E	B 3.5.1-8			E	B 3.5.1-8	Repaginated
	E	B 3.5.1-9			E	B 3.5.1-9	Repaginated
	E	B 3.5.1-10			E	B 3.5.1-10	5
	E	B 3.5.2-1			E	B 3.5.2-1	5
	E	B 3.5.2-3			E	B 3.5.2-3	5
	E	B 3.5.2-9			E	B 3.5.2-9	5
	E	B 3.5.2-10			E	B 3.5.2-10	5
	E	B 3.5.2-15	2		E	B 3.5.2-15	5
	E	B 3.5.2-16			E	B 3.5.2-16	5

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Revision 5 Change Page List

UPDATING INSTRUCTIONS

Remove				Insert			
Chapter/ Section	Part	Page	Revision/ Date	Chapter/ Section	Part	Page	Revision/ Date
	E	B 3.5.4-7			E	B 3.5.4-7	5
	F	5	5/1/01		F	5	11/1/01
	F	6	5/1/01		F	6	11/1/01
	F	9	12/11/00		F	9	Repaginated
	F	10	12/11/00		F	10	11/1/01
	F	11	12/11/00		F	11	12/11/00
	F	12	12/11/00		F	12	Repaginated
	F	13	12/11/00		F	13	11/1/01
	F	14	12/11/00		F	14	Repaginated
	F	15	12/11/00		F	15	11/1/01
	F	16	12/11/00		F	16	Repaginated
	F	17	12/11/00		F	17	11/1/01
	F	18	12/11/00		F	18	Repaginated
	F	19	12/11/00		F	19	Repaginated
	F	20	12/11/00		F	20	Repaginated
	F	---	---		F	21	11/1/01
	G	1	5/1/01		G	1	11/1/01
	G	3	12/11/00		G	3	11/1/01
	G	11	12/11/00		G	11	11/1/01
	G	12	12/11/00		G	12	Repaginated
	G	13	12/11/00		G	13	Repaginated
	G	14	12/11/00		G	14	Repaginated
	G	15	12/11/00		G	15	Repaginated
	G	16	12/11/00		G	16	Repaginated
	G	17	12/11/00		G	17	5/1/01
	G	18	5/1/01		G	18	Repaginated
	G	19	5/1/01		G	19	Repaginated
	G	20	5/1/01		G	20	11/1/01
	G	21	12/11/00		G	21	11/1/01
	G	---	---		G	22	11/1/01
	G	---	---		G	23	11/1/01
	G	---	---		G	24	11/1/01
	G	---	---		G	25	12/11/00
3.6	E	B 3.6.1-4	2	3.6	E	B 3.6.1-4	2
5.5	B	5.0-14	12/11/00	5.5	B	5.0-14	Repaginated

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Revision 5 Change Page List

UPDATING INSTRUCTIONS

Remove				Insert			
Chapter/ Section	**Part**	**Page**	**Revision/ Date**	**Chapter/ Section**	**Part**	**Page**	**Revision/ Date**
5.5	B	5.0-15	12/11/00	5.5	B	5.0-15	11/1/01
	B	5.0-16	5/1/01		B	5.0-16	12/11/00
	B	5.0-17	5/1/01		B	5.0-17	Repaginated
	B	5.0-18	12/11/00		B	5.0-18	5/1/01
	B	5.0-19	5/1/01		B	5.0-19	12/11/00
	B	5.0-20	12/11/00		B	5.0-20	5/1/01
	B	5.0-21	12/11/00		B	5.0-21	Repaginated
	B	5.0-22	12/11/00		B	5.0-22	Repaginated
	B	5.0-23	12/11/00		B	5.0-23	Repaginated
	B	5.0-24	12/11/00		B	5.0-24	Repaginated
	B	5.0-25	12/11/00		B	5.0-25	Repaginated
	B	5.0-26	12/11/00		B	5.0-26	Repaginated
	B	5.0-27	12/11/00		B	5.0-27	Repaginated
	B	5.0-28	12/11/00		B	5.0-28	Repaginated
	B	5.0-29	12/11/00		B	5.0-29	Repaginated
	B	5.0-30	12/11/00		B	5.0-30	Repaginated
	B	5.0-31	12/11/00		B	5.0-31	Repaginated
	B	---	---		B	5.0-32	12/11/00
	C	25 of 41			C	25 of 41	5
	E	5.0-20			E	5.0-20	5
	F	4	12/11/00		F	4	11/1/01

NMC
Committed to Nuclear Excellence

Nuclear Management Company, LLC
Prairie Island Nuclear Generating Plant
1717 Wakonade Dr. East
Welch, MN 55089

December 12, 2001

10 CFR Part 50
Section 50.90

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

PRAIRIE ISLAND NUCLEAR GENERATING PLANT
Docket Nos. 50-282 License Nos. DPR-42
50-306 DPR-60

Supplement to License Amendment Request dated December 11, 2000
Conversion to Improved Technical Specifications (ITS)

By letter dated, December 11, 2000, Prairie Island submitted a License Amendment Request (LAR) to convert the current Technical Specifications (CTS) using the guidance of NUREG-1431, Revision 1 as amended by NRC and industry Technical Specification Task Force (TSTF) documents. This letter supplements the subject LAR.

By letter dated December 6, 2001, the NRC Staff sent NMC requests for additional information (RAIs) regarding our LAR dated December 11, 2000 to convert to Improved Technical Specifications. Attachment 1 to this letter contains the NRC RAIs for ITS Section 3.5, "Emergency Core Cooling Systems (ECCS)", and the Nuclear Management Company (NMC) answers to these RAIs.

NMC also proposes to make review changes and corrections, identified as E15, E16 and E17. Changes designated as E15 provide changes to ITS Chapter 5.0 made in response to NRC requests for information in Generic Letter 99-02. Changes designated as E16 and E17 make miscellaneous corrections to the ITS submittal.

Attachment 2, Page List by RAI Q, provides a cross-reference of RAIs and other sources of page changes to the pages that they changed.

Attachment 3 to this letter contains Revision 5 change pages which implement answers to Section 3.5 RAIs and the Review Change/Errata changes designated as E15, E16 and E17. Changes to the Revision 5 pages are sidelined in the right margin beside the line(s) which have been revised. Change Pages from Parts A, B, D, F, G or Cross-References are dated 11/1//01. Change Pages from Parts C and E are marked as Revision 5 with a small textbox below the revision sideline which contains "R-5".

The Significant Hazards Determinations and Environmental Assessments, as presented in the original December 11, 2000 submittal and as supplemented March 6, 2001, July 3, 2001, August 13, 2001, November 12, 2001 and by the Part G change pages in Attachment 3 of this letter, bound the proposed license amendment.

NMC is notifying the State of Minnesota of this LAR supplement by transmitting a copy of this letter and attachments to the designated State Official.

To the best of my knowledge and belief, the statements contained in this document are true and correct. In some respects these statements are not based on my personal knowledge, but on information furnished by other Prairie Island Nuclear Generating Plant (PINGP) and NMC employees, contractor employees, and/or consultants. Such information has been reviewed in accordance with company practice, and I believe it to be reliable.

In this letter NMC has not made any new or revised any Nuclear Regulatory Commission commitments. Please address any comments or questions regarding this matter to myself or Mr. Dale Vincent at 1-651-388-1121.

Mano Nazar
Site Vice President
Prairie Island Nuclear Generating Plant

C: Regional Administrator - Region III, NRC
Senior Resident Inspector, NRC
NRR Project Manager, NRC
James Bernstein, State of Minnesota
J E Silberg

(Attachments listed on Page 3)

Attachments:
Affidavit

1. NRC RAIs for ITS Section 3.5, "Emergency Core Cooling Systems (ECCS)" and NMC Responses
2. Page List by RAI Q
3. Revision 5 Change Pages

UNITED STATES NUCLEAR REGULATORY COMMISSION

NUCLEAR MANAGEMENT COMPANY, LLC

PRAIRIE ISLAND NUCLEAR GENERATING PLANT DOCKET NO. 50-282
50-306

REQUEST FOR AMENDMENT TO
OPERATING LICENSES DPR-42 & DPR-60

SUPPLEMENT TO LICENSE AMENDMENT REQUEST DATED DECEMBER 11, 2000
CONVERSION TO IMPROVED TECHNICAL SPECIFICATIONS (ITS)

By letter dated December 12, 2001, Nuclear Management Company, LLC, a Wisconsin corporation, is submitting additional information in support of the License Amendment Request originally submitted December 11, 2000.

This letter contains no restricted or other defense information.

NUCLEAR MANAGEMENT COMPANY, LLC

By M. K. Nazar

Mano Nazar
Site Vice President
Prairie Island Nuclear Generating Plant

State of Minnesota

County of Goodhue

On this 13th day of December 2001 before me a notary public acting in said County, personally appeared Mano Nazar, Site Vice President, Prairie Island Nuclear Generating Plant, and being first duly sworn acknowledged that he is authorized to execute this document on behalf of Nuclear Management Company, LLC, that he knows the contents thereof, and that to the best of his knowledge, information, and belief the statements made in it are true.

Marlys E. Davis

MARLYS E. DAVIS
NOTARY PUBLIC-MINNESOTA
My Commission Expires Jan. 31, 2005

Prairie Island Nuclear Generating Plant

Attachment 1

to
Supplement dated December 12, 2001
to License Amendment Request dated December 11, 2000
Conversion to Improved Technical Specifications (ITS)

NRC RAIs for ITS Section 3.5, "Emergency Core Cooling Systems (ECCS)" and NMC Responses

Staff Evaluation Review - Request for Additional Information
Discussion of Changes
Section 3.5 - Emergency Core Cooling Systems

Prairie Island ITS Section 3.5 RAI

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1. Not used

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2. ITS 3.5.1 Action C

ITS 3.5.1 Action C requires the unit to be in MODE 3 in 6 hours and reduce RCS pressure to less than 1000 psig in 12 hours if the Required Action and Completion Time of Conditions A or B not met. The CTS mark up does not include ITS 3.5.1 Action C. No JFD was provided for adding ITS 3.5.1 Action C.

Comment: Mark up the CTS and provide the associated JFD for ITS 3.5.1 Action C. Justification of proposed completion time is also required.

NMC Response:
Parts affected by this change:
Part C - CTS markup
Part D - DOC M3.5-308
Part G - NSHDs
Cross-Ref CTS
Cross-Ref ITS

The CTS has been revised to add LCO 3.5.1, Condition C stating, if required Action and associated Completion Time of Condition A and B are not met, be in MODE 3 within 6 hours and reduce RCS pressure to $\leq$ 1000 psig within 12 hours. In addition, DOC M3.5-308 has been added. This is considered to be a More Restrictive change since the CTS would require entry into LCO 3.0.C which gives a total of 37 hours to complete entry into MODE 5 whereas NUREG-1431, Rev. 1, only allows a total of 36 hours.

3. ITS 3.5.1 Action D

ITS 3.5.1 Action D requires immediate entrance into LCO 3.0.3 is two accumulators are inoperable. The CTS mark up does not include ITS 3.5.1 Action D. No JFD was provided for adding ITS 3.5.1 Action D.

Comment: Mark up the CTS and provide the associated JFD for ITS 3.5.1 Action D.

NMC Response:
Parts affected by this change:
Part C - CTS markup
Part D - DOC A3.5-309
Part G - NSHDs
Cross-Ref CTS
Cross-Ref ITS

The CTS has been revised specifically adding LCO 3.5.1, Condition D which requires that LCO 3.0.3 (reactor shutdown) be entered in the event that two accumulators are inoperable at the same time. As a result, DOC A3.5-309 has been added. This is considered to be an administrative change. The CTS does not have a specific Action for the condition two accumulators are inoperable at the same time. Under the rules of useage for the CTS, if the plant were in this condition, LCO 3.0.C (ITS LCO 3.0.3) would be entered, thus initiating a reactor shutdown. CTS rules of useage require entry into LCO 3.0.C if the plant is in a condition that is not identified in the CTS. The same philosophy exists with the ITS. The only difference is that the ITS specifically has a Condition, Required Action, and Completion Time identified. Since the actions are the same per the CTS and ITS, this is considered to be an administrative change. Differences between the ITS 3.0.3 and CST LCO 3.0.C are discussed and justified in Section 3.0, DOCs A3.0-01, A3.0-02, M3.0-03, and A3.0-04.

4. ITS SR 3.5.1.1
CL3.5-32
CTS 3.3.A.1.b
ITS SR 3.5.1.1 BASES
ITS LCO BASES
CL3.5-84

ITS SR 3.5.1.1 proposes to add the words "motor operated" to the surveillance requirement. The propose change is not in the CTS and is generic in nature. The proposed change should be proposed through the TSTF process.

Comment: Maintain the STS SR 3.5.1.1 wording or provide plant specific justification for the proposed change.

NMC Response:
Parts affected by this change:
None

A review of the USAR drawings, plant (P&ID) drawings, and design documentation for the accumulator system has been performed. That review verified that in the accumulator system, there are two motor operated valves (Unit 1 - MV32071 and M32072, Unit 2 M32174 and 32175 (Westinghouse valve numbers 8800A and 8800B respectively)) and two check valves in series. ISTS SR 3.5.1.1 required that once per 12 hours, each accumulator isolation valve is fully open. Based on the design of a check valve, they are either open or closed based on the pressure placed on the check valve at that time. The other two valves in the system are motor operated valves and verification that they are fully opened can be accomplished every 12 hours. Since the isolation valves referred to in the SR are motor operated, the SR and associated Bases were revised stating "motor operated" to accurately describe the valves being verified and to avoid potential confusion. As a result, no changes were made to our submittal.

5. ITS 3.5.2 Note

ITS 3.5.2 Note allows both safety injection pump flow paths to be isolated for up to 2 hours to perform pressure isolation valve testing per SR 3.4.15.1. The CTS mark up does not include ITS 3.5.2 Note. No JFD was provided for adding ITS 3.5.2 Note.

Comment: Mark up the CTS and provide the associated JFD for ITS 3.5.2 Note.

NMC Response:

Parts affected by this change:
Part C - CTS markup
Part D - DOC L3.5-310
Part G - NSHDs
Cross-Ref CTS
Cross-Ref ITS

CTS 3.3 has been marked up showing the subject Note stating that in MODE 3, both safety injection (SI) pump flow paths may be isolated by closing the isolation valves for up to 2 hours in order to perform pressure isolation valve testing in accordance with SR 3.4.15.1. In addition, DOC L3.5 -310 and NSHD were added providing additional justification and evaluation for isolating the SI pump flow for up to 2 hours. This change is considered to be Less Restrictive since the CTS does not allow any relaxation for the SI flow paths to be isolated for up to 2 hours. As discussed in the NSHD, isolating the SI pump flow for up to 2 hours would not have an adverse affect nor reduce the margin of safety to the plant. This is due to the low probability of an event occuring during this period. In addition, these isolated valves are easily opened from the control room in the event they were needed to support immediate plant response.

6. ITS 3.5.2 Action A
CTS 3.3.A.2.f
L3.5-17
TA3.5-40

L3.5-17 revises CTS 3.3.A.2.f with the addition of the words "at least 100% ECCS flow equivalent to a single OPERABLE ECCS train is available." This revision was not included in ITS 3.5.2 Action A. TA3.5-40 states that the proposed changes to ITS 3.5.2 Action A are based on TSTF 325 which does not include the AND statement. It is not clear as to what is being revised.

Comment: Correct the CTS or ITS markups and associated JFDs to match the actual changes that are being made.

NMC Response:

Parts affected by this change:
Part C - CTS markup
Part D - DOC L3.5-17
Part G - NSHDs
Cross-Ref CTS
Cross-Ref ITS

The CTS markup was revised in accordance with TSTF-325, thus deleting the reference for DOC L3.5-17.

7. ITS 3.5.2 Action B
CTS 3.3.A.2
L3.5-13

The marked up CTS 3.3.A.2 states that during MODES 1, 2, and 3, STARTUP OPERATION is discontinued until OPERABILITY is restored. If OPERABILITY is not restored within the time specified, be in at least MODE 3 within the next 6 hours and MODE 4 within 12 hours. The marked up CTS 3.3.A.2 is associated with LCO 3.5.2 (Action B - although not stated this way on the mark up). CTS 3.3.A.2 is modified by JFD L3.5-13. L3.5-13 refers to a new specification 3.5.3 and describes placing the plant in MODE 4 within an additional 6 hours in leiu of 30 hours which is a more restrictive change. It is not clear what is being revised in the CTS and how it is applicable to the ITS and whether the change is more or less restrictive.

Comment: Correct L3.5-13 to describe the CTS change. Add an M DOC if necessary to describe a more restrictive change. Provide clarification on the proposed changes to CTS 3.3.A.2.

NMC Response:

Parts affected by this change:

Part C - CTS markup
Part D - DOC L3.5-13 and M3.5-314
Part G - NSHDs
Cross-Ref CTS
Cross-Ref ITS

DOC L3.5-13 and associated NSHD have been revised to reference LCO 3.5.2 instead of 3.5.3. LCO 3.5.3 Conditions are discussed in DOC M3.5-312. In addition, DOC L3.5-13 has been divided into two DOCS, L3.5-13 and M3.5-314. The Less Restricitive change is that the ITS only requires the plant to be brought to Mode 4 vs Mode 5 per the CTS. The More Restricitive change is that the ITS requires the plant operators to be in Mode 4 within 12 hours vs the CTS allowing 30 hours for shutdown actions to be completed. The reduction in time, even though only going to Mode 4, is more restrictive.

8. ITS 3.5.2 Action C
TA3.5-40

ITS 3.5.2 Action C is not in the CTS. TA3.5-40 states that it incorporates the changes made by TSTF-325 Rev. 0. The marked up CTS does not show that this change is being incorporated.

Comment: Revise the CTS mark up to show the incorporation of TSTF-325.

NMC Response:

Parts affected by this change:
Part C - CTS markup
Part D - DOC A3.5-17 and L3.5-315
Part G - NSHDs
Cross-Ref CTS
Cross-Ref ITS

The CTS was revised adding LCO 3.5.2, Condition C. This revision to the CTS markup is consistent with TSTF-325, Rev.0. In addtion L3.5-17 has been changed to A3.5-17 and DOC L3.5-315 has been added.

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9. ITS SR 3.5.2.1
CTS 3.3.A.1.g(1)
CTS 3.3.A.1.g(2)
CL3.5-42

CTS 3.3.A.1.g(1) and (2) list safety injection valves 8801A, 8801B, 8806A, 8816A, and 8816B. In ITS SR 3.5.2.1, the valve designations are not the same as they are in the CTS. CL3.5-42 states that the PI designated valve numbers for each unit are provided for the ease of use. This change is confusing since it not clear how the valves are labeled in the control room and whether this change would confuse operators.

Comment: Provide further explanation/justification for changing the valve numbers in the CTS to the ITS.

NMC Response:

Parts affected by this change:
Part B - final ITS pages
Part C - CTS markup
Part D - DOC A3.5-316
Part E - ISTS markup

Part G - NSHDs

Plant flow drawings show both Westinghouse valve numbers 8801A, 8801B, 8806A, 8816A and 8816B along with PI specific Unit 1 valve numbers 32070, 32068, 32073, 32206, 32207, and Unit 2 valve numbers 32173, 32171, 32176, 32208, and 32209 which are the same valves. Westinghouse generic valve numbers were used in the CTS since the one Westinghouse valve number was used for the same valve on both PI Units. In the ITS, both the Westinghouse and PI valve numbers are used. This is appropriate since both valve numbers appear in the control room, on valve tags, and plant procedures. Providing both numbers in the ITS will avoid any confusion.

10. ITS SR 3.5.2.3
CTS 3.3.A.1.g(1)
CTS 3.3.A.1.g(2)
X3.5-43
CL3.5-41

ITS SR 3.5.2.3 requires the verification that power to the valve operator has been removed for each valve listed in ITS SR 3.5.2.1 every 31 days. X3.5-43 states that this new SR is in lieu of the STS SR 3.5.2.1. STS SR 3.5.2.1 requires the verification that power is removed from the valve operator every 12 hours. CTS 3.3.A.1.g(1) and (2) requires that the motor control center supply breakers are physically locked in the off position. Since verifying that power to the valve operator has been removed for each valve listed in ITS SR 3.5.2.1 is a new requirement, a plant specific justification is required for the 31 day frequency.

Comment: Provide plant specific justification for the 31 day surveillance frequency.

NMC Response:

Parts affected by this change:
Part F - JFD X3.5-43
Part G - NSHDs
Cross-Ref CTS
Cross-Ref ITS

Additional justification has been provided in JFD X3.5-43.

11. ITS SR 3.5.2.6
CTS 4.5.A.1
A3.5-302

A3.5-302 states that CTS 4.5.A.1 title has been changed to ECCS. Although the CTS mark up shows this change, the change is not identified with the appropriate JFD.

Comment: The CTS mark up should identify JFD A3.5-302 for 4.5.A.1. Provide a copy of the revised CTS mark up.

NMC Response:

Parts affected by this change:
Part C - CTS markup

The CTS has been revised by adding DOC A3.5-302 next to the changes made to CTS 4.5.A.1. See CTS markup.

12. ITS SR 3.5.2.7
ITS SR 3.5.2.8
CTS 4.5.B.3.g.3
X3.5-46
ITS SR 3.5.2.7 BASES
ITS SR 3.5.2.8 BASES

X3.5-46 is the JFD for ITS SR 3.5.2.7 and ITS SR 3.5.2.8. X3.5-46 states that this is either a new SR for Prairie Island and therefore the SR Frequency can be set to 24 months or this SR in CTS was on an 18 month cycle and the 24 month cycle has been justified in a NSHD. This is confusing. Two separate JFDs should be provided since ITS SR 3.5.2.7 is in the CTS and ITS SR 3.5.2.8 is a new SR.

Comment: Provide the appropriate JFD for each SR interval.

NMC Response:

Parts affected by this change:
Part E - ISTS markup
Part F - JFD PA3.5-142 and X3.5-46

JFD PA3.5-142 has been added to ITS SR 3.5.2.8 discussing that this is a new SR being added to the CTS. In addition, JFD X3.5-46 has been deleted from the subject SR.

13. ITS 3.5.3 APPLICABILITY
ITS 3.5.3 APPLICABILITY BASES
CTS 3.3.A.4
CL3.5-48

CL3.5-48 states that both SI pumps have to be made incapable of automatically injecting into the RCS when any RCS cold leg temperature drops below the SI pump disable temperature specified in the COLR. CTS 3.3.A.4 states that no SI pumps shall be capable of injecting into the RCS whenever RCS temperature is less then the temperature specified in the PTLR for disabling both SI pumps. ITS 3.5.3 APPLICABILITY is MODE 4 when both RCS cold leg temperatures are > SI pump disable temperature specified in the PTLR.

Comment: CL3.5-48 should be consistent with CTS 3.3.A.4 and ITS 3.5.3 Applicability (and BASES).

NMC Response:

Parts affected by this change:
Part F - JFD CL3.5-48

JFD CL3.5-48 has been revised changing the reference using the COLR to the PTLR. The PTLR is the correct reference since the PTLR contains information about pressure and temperature limits for various systems whereas the COLR contains information concerning the core limits.

14. ITS 3.5.3 Action A
L3.5-09

ITS 3.5.3 Action A is a new condition, required action and completion time. L3.5-09 does not discuss the new Action A. Since ITS 3.5.3 Action A is not in the CTS, a JFD should be provided which discusses the appropriateness of the new Action at PI.

Comment: Provide a JFD for adopting ITS 3.5.3 Action A.

NMC Response:

Parts affected by this change:
Part C - CTS markup
Part D - DOC M3.5-312
Part G - NSHDs
Cross-Ref CTS
Cross-Ref ITS

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The CTS has been revised adding the appropriate LCO 3.5.3, Conditions. In addition, DOC M3.5-312 has been added justifying the addition of the appropriate Conditions.

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15. ITS 3.5.3 Action B
L3.5-09
CL3.5-49

ITS 3.5.3 Action B is a new condition, required action and completion time. L3.5-09 and CL3.5-49 do not discuss the new Action B. Since ITS 3.5.3 Action B is not in the CTS, a JFD should be provided which discusses the appropriateness of the new Action at PI.

Comment: Provide a JFD for adopting ITS 3.5.3 Action B

NMC Response:

Parts affected by this change:
Part D - DOC M3.5-312
Cross-Ref CTS
Cross-Ref ITS

Reference Response in RAI Item 3.5-14 above.

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16. ITS 3.5.3 Action C
L3.5-09

ITS 3.5.3 Action C is a new condition, required action and completion time. L3.5-09 does not discuss the new Action C. Since ITS 3.5.3 Action C is not in the CTS, a JFD should be provided which discusses the appropriateness of the new Action at PI.

Comment: Provide a JFD for adopting ITS 3.5.3 Action C.

NMC Response:

Parts affected by this change:
Part C - CTS markup
Part D - DOC M3.5-312

Reference response to RAI 3.5-14 above.

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17. ITS SR 3.5.3.1
M3.5-10

The CTS markup describes a new SR which invokes SRs 3.5.2.1, 3.5.2.3, 3.5.2.4, 3.5.2.7, and 3.5.2.8 when operating in MODE 4 with the RCS temperature above the SI pump disable temperature. The new SR was proposed for consistency to NUREG-1431. However, STS SR 3.5.3.1 is applicable for all of MODE 4, not just above a certain temperature. Plant specific justification for the difference was not provided.

Comment: Provide plant specific justification as to why it is acceptable not to perform the proposed SR below the SI disable temperature while in MODE 4.

NMC Response:

Parts affected by this change:
None

The SRs are to verify that the systems, structures, or components (SSCs) are OPERABLE during the Modes of APPLICIBILITY. ITS 3.5.3 has an Applicability of Mode 4 when both RCS cold leg temperatures are > SI pump disable temperature specified in the PTLR. This is justified in CL3.5-48 which is consistent with PI current licensing basis (CLB). SR 3.5.3.1 requires specific SRs to be performed. SRs 3.5.2.1, 3.5.2.3 and 3.5.2.7 are all bracketed in the NUREG. These brackets were removed in the ITS since they are applicable, however, only during the Mode of Applicability, which is Mode 4 > SI pump disable temperature, and in accordance with plant design. Again, this is consistent with PI design and design documents such as the PTLR.

18. ITS 3.5.4 Action A
CL3.5-51
STS SR 3.5.4.1
ITS 3.5.4 BACKGROUND BASES
ITS 3.5.4 APPLICABLE SAFETY ANALYSES BASES
ITS 3.5.4 LCO BASES

STS 3.5.4 Action A states that with the RWST boron concentration not within limits or RWST borated water temperature not within limits, restore RWST to OPERABLE status within 8 hours. STS SR 3.5.4.1 requires that the RWST water temperature is between [35°F] and [100°F] every 24 hours. CL3.5-51 states that the RWST is in the Auxiliary Building and is not subject to the

temperature extremes which would require an action statement and surveillance requirements. While the Auxiliary Building may provide sufficient protection from the elements outside, it is not

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clear that the air temperature is maintained via air condition and/or heating inside the Auxiliary Building.

Comment: Provide additional information which supports not adopting the OR statement of STS 3.5.4 Action A.

NMC Response:

Parts affected by this change:
None

As discussed in JFD CL3.5-51, Specification requirements have not been necessary because the plant design located the RWST in the Auxiliary Building which shelters it from temperature extremes. The RWST does not have temperature indication available to the operators and a modification would be required to provide RWST temperature indication. For these reasons, NMC is not proposing to include RWST temperature Specifications or associated Bases. Prairie Island does not have requirements for Refueling Water Storage Tank (RWST) temperatures in the current Technical Specifications and therefore the Nuclear Management Company (NMC) is not obligated to provide new Specifications in the ITS for RWST temperature. No changes have been made to the ITS submittal in response to this RAI.

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19. ITS 3.5.4 Action C

ITS 3.5.4 Action C requires the unit to be in MODE 3 in 6 hours and MODE 5 in 36 hours if the Required Action and associated Completion Time not met. The CTS mark up does not include ITS 3.5.4 Action C. No JFD was provided for adding ITS 3.5.4 Action C.

Comment: Mark up the CTS and provide the associated JFD for ITS 3.5.4 Action C.

NMC Response:

Parts affected by this change:
Part C - CTS markup
Part D - DOC M3.5-313
Part G - NSHD M3.5-313

The CTS markup has been revised to show new Condition C and a new DOC M3.5-313 is provided to justify the changes associated with this new Condition.

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20. ITS 3.5.4 Action C

ITS 3.5.4 Action C requires the unit to be in MODE 3 in 6 hours and MODE 5 in 36 hours if the Required Action and associated Completion Time not met. Since ITS 3.5.4 Action B was changed to meet the requirements of CTS 3.3.A.1.a, ITS 3.4.5 Action C needs to be modified to address the Required Action and associated Completion Time of Conditions A or B not met.

Comment: Revise ITS 3.5.4 Action C to address the Required Action and associated Completion Time of Conditions A or B not being met.

NMC Response:

Parts affected by this change:
None

The ITS changes made to Specification 3.5.4 Conditions A and B do not change the requirements for entry into Condition C. In accordance with the guidance of the Writer's Guide, paragraph 4.1.6.i.5.ii, "No listing [of specific Conditions] is provided if any/all Required Action failures would lead to entering this Condition." Since both Conditions A and B lead to entering Condition C, specific listing is not required. No changes have been made to the ITS submittal in response to this RAI.

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21. ITS SR 3.5.4.1
CTS 3.3.A.1.a
CL3.5-53
M3.5-05

ITS SR 3.5.4.1 requires the verification of the RWST borated water volume every 7 days. M3.5-05 and CL3.5-53 discuss the new SR requirement but do not justify the 7 day frequency as it applies to PI.

Comment: Provide justification for the 7 day surveillance frequency.

NMC Response:
Parts affected by this change:
Part C - CTS markup
Part D - DOC 3.5.M-02

SR 3.5.4.1 is a new SR for Prairie Island, thus any Frequency is more restrictive than CTS which do not require performance of this SR at any time. The 7 day Frequency was adopted for the reasons listed in the Bases, that is, the RWST volume is stable, the RWST is located in the Auxiliary Building where operators can readily observe leakage and industry operating experience has shown this to be an acceptable Frequency.

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22. ITS 3.5.1 Bases Background
PA3.5-63

PA3.5-63 states that the description of the blowdown phase events has been removed from the refill phase and included in the blowdown discussion. As part of this relocation, the phrase "the core is essentially in adiabatic heatup," was deleted. No JFD was provided for this deletion.

Comment: Provide a plant specific JFD for the deleted phrase or revise the ITS 3.5.1 Bases Background to include the phrase.

NMC Response:

Parts affected by this change:
Part B - Final ITS pages
Part E - ISTS markup Bases 3.5.1, Background Section

The ITS has been revised to incorporate the statement that the "core is essentially in adiabatic heatup" as in accordance with the NUREG.

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23. ITS 3.5.1 Bases Background
CL3.5-66

The ITS 3.5.1 Bases Background mark up shows the addition of the following: "(Unit 1 - MV 32071 and MV 32072, Unit 2 - MV 32174 and MV 32175) ... maintained open with AC power removed under administrative control when RCS pressure is > 2000 psig." CL3.5-66 states that specific details from PI CTS have been relocated to this Bases Background. CL3.5-66 was not specific as to where in the CTS the above words came from. The above words could not be located in the marked up CTS for section 3.5.

Comment: Provide specific details as to which CTS is being relocated to the ITS Bases 3.5.1 and provide the CTS mark up and associated JFD for the relocation.

NMC Response:
Parts affected by this change:
Part B - Final ITS pages

Part E - ISTS markup
Part F - JFD CL3.5-66

Plant flow drawings show that Unit 1 valves MV32071 and 32072, Unit 2 - MV32174 and MV 32175 are the same as valves 8800A and 8800B. Both the Westinghouse and associated PI valve numbers are used in the ITS. JFD 3.5 CL-66 was revised to better explain the changes.

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24. ITS 3.5.1 Bases Applicable Safety Analyses
CL3.5-71

The ITS 3.5.1 Bases Applicable Safety Analyses mark up proposed to delete the following sentence: "The delay time is conservatively set with an additional 2 seconds to account for SI signal generation." CL3.5-71 states that the discussion of ECCS initiation delay has been generalized so these numbers will not require a Bases change. This proposed change is generic and applicable to other Westinghouse PWRs.

Comment: Provide plant specific justification for the proposed change or maintain the STS Bases.

NMC Response:

Parts affected by this change:
Part B - Bases 3.5.1
Part E - Bases 3.5.1
Part F - JFD CL3.5-71

The deleted NUREG sentence is not true for Prairie Island since the analysis calculates an SI signal generation time for each case. A new sentence is included in the subject Bases stating that an "approximate" 2 second delay time is used. In some cases, PI has a range of 2.17 - 2.23 seconds. These ranges are supported in the Westinghouse WCAP-13919, Amendment 1. Based on PI CLB, we cannot provide a specific number or even a range of numbers, therefore, the Bases have been revised to add approximately 2 seconds.

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25. ITS 3.5.1 Bases Applicable Safety Analyses
ITS 3.5.2 Bases Applicable Safety Analyses
CL3.5-73

ITS 3.5.1 and 3.5.2 Bases Applicable Safety Analyses mark up proposed to change the wording to describe the acceptance criteria established for the ECCS by 10CFR50.46. CL3.5-73 states that the discussion of the 10CFR50.46 ECCS performance criteria has been revised to be the same as the PI USAR presentation. However, the revised presentation of ECCS performance criteria in ITS 3.5.1 and 3.5.2 Bases does not match the discussion in PI USAR Section 6 Rev. 21 page 6.2-2. In fact, the proposed deleted description in ITS 3.5.1 and 3.5.2 Bases is more

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similar to the description provided in the PI USAR than the proposed ITS 3.5.1 and 3.5.2 Bases wording.

Comment: The STS 3.5.1 and 3.5.2 Bases should be retained since it is almost identical to the wording presented in the PI USAR Section 6 Rev. 21 page 6.2-2.

NMC Response:

Parts affected by this change:
None

The ITS was revised to be consistent with the PI USAR Section 6 and identical to USAR Section 14 Rev. 22 page 14.6-1. Since Chapter 14 is the safety analysis section of the USAR and this wording in question is in the Applicable Safety Analysis section of the Bases, NMC believes it is important to be more closely aligned with the discussion in Section 14. Therefore, no changes are being made.

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26. ITS 3.5.1 Bases Applicable Safety Analyses
ITS 3.5.2 Bases Applicable Safety Analyses
ITS 3.5.3 Bases Applicable Safety Analyses
ITS 3.5.4 Bases Applicable Safety Analyses

ITS 3.5.1, 3.5.2, 3.5.3, and 3.5.4 Bases Applicable Safety Analyses mark up proposed to replace the phrase "the NRC Policy Statement" with "10 CFR 50.36(c)(2)(ii)." No JFD was provided for this change.

Comment: Provide JFD for the proposed change.

NMC Response:

Parts affected by this change:
None

Changing the reference statement 'the NRC Policy Statement" with "10CFR50.36(c)(2)(ii)" falls under JFD PA3.5-61. This is a generic change that has been made throughout the ITS and is consistent with the 10CFR50.36. This change has also been made in the draft of NUREG-1431, Rev. 2. In addtion, other utilities that have had their ITS submitted and approved have not provided separate justification for making this change. No additional JFDs are provided to justify this generic change.

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27. ITS SR 3.5.1.1 BASES
CL3.5-84
LR3.5-21
CTS 4.5.A.1.a and b

ITS SR 3.5.1.1 BASES proposes to add the phrase "use of control board indication (position monitor lights and alarms) for valve position is an acceptable verification" to the BASES. CL3.5-84 states that it is explicitly allowed to use control board indication for valve position verification. It is not clear where in the CTS this explicit allowance is stated. CTS 4.5.A.1.a and b describe acceptable ECCS system tests that are performed during refueling shutdown not every 12 hours as specified in ITS SR 3.5.1.1.

Comment: Provide further justification for the addition of the phrase described above in the ITS SR 3.5.1.1 BASES.

NMC Response:

Parts affected by this change:
None

CTS 3.3.A.1.g (3) requires that the accumulator discharge valves shall have position monitor lights and alarms OPERABLE. These are located in the control room and must be OPERABLE in order for the system to be OPERABLE. Therefore, the subject valves are essentially continuously monitored. In addition, these alarms and lights will be used to perform SR 3.5.1.1 at the specified Frequency.

28. ITS SR 3.5.1.2 and 3.5.1.3 BASES
PA3.5–86

ITS SR 3.5.1.2 and 3.5.1.3 BASES proposes to add the phrase "Main control board instrumentation and alarms are available for verification of these accumulator parameters. PA3.5-86 does not provide sufficient justification for this addition.

Comment: Provide further plant specific justification for the addition of the phrase described above in the ITS SR 3.5.1.2 and 3.5.1.3 BASES.

NMC Response:

Parts affected by this change:
Part B - Final ITS pages
Part E - ISTS markup
Part F - JFD CL3.5-88
Cross-Ref CTS
Cross-Ref ITS

The ITS Bases SR 3.5.1.2 and 3.5.1.3 have been changed by deleting the subject statement. The ITS is now consistent with the NUREG. In addition CL3.5-86 has been deleted.

29. ITS 3.5.2 Background BASES

ITS 3.5.2 Background BASES (a.) is modified with the word "with." This proposed change appears to change the meaning of the sentence. No JFD was provided for this change.

Comment: Provide a plant specific JFD for the proposed change.

NMC Response:

Parts affected by this change:
Part B - Final ITS pages
Part E - ISTS markup

ITS Bases 3.5.2 Background Section has been revised by deleting the word "with" in the subject sentense. The ITS is now consistent with the NUREG.

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30. ITS 3.5.2 Background BASES
ITS 3.5.2 LCO BASES
ITS 3.5.3 LCO BASES
CL3.5-88

ITS 3.5.2 Background states that during the injection phase, water from the RWST is injected into the RCS through the cold legs and the reactor vessel upper plenum. CL3.5-88 states that injection may be into the RCS cold legs or the reactor vessel upper plenum. CL3.5-88 is not consistent with the discussion in the BASES (Specifically page B 3.5.2-1). This comment also applies the ITS 3.5.2 and 3.5.3 LCO BASES pages 3.5.2-7 and 3.5.3-2.

Comment: Clarify whether the current licensing basis allows injection into the RCS cold legs and reactor vessel upper plenum (implying injection at both places at the same time), or whether the CLB allows injection into the RCS cold legs or reactor vessel upper plenum.

NMC Response:

Parts affected by this change:
None

PI has re-evaluated the appropriate Bases and believes for our design the statements are accurate as is. Depending on the plant condition and the reactor pressure, injection can occur either through the cold legs or the reactor vessel upper plenum. This is in accordance with PI design. Therefore, no changes are being made.

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31. ITS 3.5.2 Background BASES
PA3.5-101

PA3.5-101 proposes to delete the word "negative" from the STS BASES since it is redundant in the sentence.

Comment: Maintain the STS Bases wording or provide a plant specific justification for deleting "negative" from the ITS 3.5.2 BASES.

NMC Response:

Parts affected by this change:
Part B - Final ITS pages
Part E - ISTS markup
Part F - JFD PA3.5-101

The ITS has been revised adding the word "negative" consistent with the NUREG, although PI believes this to be confusing. PI can have a positive or a negative MTC and felt that the NUREG only allowed a negative MTC as it was discussed. Adding the word "negative" was made based on NRC request, however, as stated above, PI can also have a positive MTC. The ITS is now consistent with the NUREG. In addition, JFD PA3.5-101 has been deleted.

32. ITS 3.5.2 Background BASES

The second to the last paragraph of ITS 3.5.2 Background BASES (page B 3.5.2-4) proposes changes which are not consistent with the STS and no JFD was provided.

Comment: Provide JFD for the proposed wording changes.

NMC Response:

Parts affected by this change:
None.

PI believes that the proposed wording in the ITS is justified under JFD PA3.5-61. No other justification is provided.

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33. ITS 3.5.2 Applicability BASES
CL3.5-88

ITS 3.5.2 Applicability BASES discusses that the SI pump performance requirements are based on a small LOCA "and meet required parameters for mitigation of a secondary side loss of fluid accident." CL3.5-88 does not discuss the proposed words in quotes above. Additionally, a description or discussion of a secondary side loss of fluid accident could not be located in Section 6 or Section 14 of the PI USAR.

Comment: Provide justification and explanation for the proposed wording in the ITS 3.5.2 Applicability BASES.

NMC Response:

Parts affected by this change:
None

This sentence in the Bases states the basis for SI pump performance requirements. At Prairie Island, the small LOCA is not the only basis for pump performance. Thus the clause, "and meet required parameters for mitigation of a secondary side loss of fluid accident." is included for completeness since this is another basis for SI pump performance. The USAR does not specifically discuss the SI pump using these words, however USAR Section 6.2.1.1 (Page 6.2-2) states, "For any rupture of a steam pipe and the associated uncontrolled heat removal from the core, the Safety Injection System adds shutdown reactivity so that with a stuck rod, with or without offsite power and minimum engineered safety features, there is no consequential damage to the Reactor Coolant System and the core remains in place and intact." Section 14.5.5, Rupture of a Steam Pipe, discusses secondary side loss of fluid accidents and the role the SI system plays in mitigation of these accidents. No changes have been made to the ITS submittal in response to this RAI.

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34. ITS 3.5.2 Applicability BASES
PA3.5-111

PA3.5-111 proposes to delete the discussion of ECCS operability requirements below MODE 3. No plant specific justification was provided for the proposed change.

Comment: Maintain the STS wording or provide a plant specific justification for the proposed change.

NMC Response:

Parts affected by this change:
Part F - JFD PA3.5-111

The NUREG statement about operation below Mode 3 is not applicable in 3.5.2 ECCS - OPERATING and is therefore deleted to avoid confussion. ITS 3.5.3 is for ECCS Shutdown and should not be discussed in ITS 3.5.2. The discussion for PA3.5-111 has been revised stating the above.

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35. ITS 3.5.2 Bases Note
CL3.5-37

Page B 3.5.2-9 of the marked up Bases shows the first paragraph as not being included in the Bases. The JFD for this change is CL3.5-37. CL3.5-37 does not exist in the JFDs.

Comment: Provide the correct JFD for the proposed change.

NMC Response:

Parts affected by this change:
Part E - ISTS markup

ITS Bases 3.5.2 Applicability section has been revised by changing the JFD reference from CL3.5-37 to TA3.5-37.

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36. ITS 3.5.2 Applicability BASES
CL3.5-111

CL3.5-111 is listed as the JFD for proposed additions in the ITS 3.5.2 Applicability BASES. CL3.5-111 does not exist (should be PA3.5-111?). No plant specific justification was provided for the proposed wording changes.

Comment: Maintain the STS wording or provide a plant specific justification for the proposed change.

NMC Response:
Parts affected by this change:
Part E - ISTS markup

ITS Bases 3.5.2 Applicability section has been revised changing CL3.5-111 to PA3.5-111.

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37. ITS 3.5.2 Action A.1 BASES

Paragraph two of ITS 3.5.2 Action A.1 BASES proposes to add "required" before supporting systems. No JFD was provided for this change.

Comment: Maintain the STS wording or provide a plant specific justification for the proposed change.

NMC Response:

Parts affected by this change:
None.

No changes were made. Adding the word "required" falls under JFD PA-61.

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38. ITS 3.5.2 Action A.1 BASES
PA3.5-112

PA3.5-112 removes the sentence "Reference 6 describes situations in which one component, such as an RHR crossover valve, can disable both ECCS trains." PA3.5-112 states that the operator does not need to know this information.

Comment: Maintain the STS wording or provide a plant specific justification for the proposed change.

NMC Response:

Parts affected by this change:
Part B - Final ITS pages
Part E - ISTS markup

Part F - JFD PA3.5-112

ITS Bases 3.5.2 Actions A.1 section has been revised by adding back in the subject paragraph. In addition, the Reference was changed to Reference 5 both in this section and in the Reference section of the ITS. PA3.5-112 has been deleted.

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39. ITS SR 3.5.2.1 BASES
CL3.5-113

ITS adds the phrase "use of control board indication for valve position is an acceptable verification. CL3.5-113 states that guidance is provided that control board indication is an acceptable means of performing these SRs. The basis for this guidance was not provided.

Comment: Maintain the STS wording or provide a plant specific justification for the proposed change.

NMC Response:

Parts affected by this change:
None

Reference response to RAI 3.5-27.

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40. ITS SR 3.5.2.1 BASES
CL3.5-114

CL3.5-114 states that CTS details on control of valves which could affect ECCS performance have been relocated to the BASES. These CTS details could not be located in the marked up copies of CTS provided with Section 3.5. Additionally, no justification was provided for the deletion of the STS wording.

Comment: Provide specific information as to which CTS details are being relocated to the ITS BASES and provide the appropriate marked up pages. Also provide a plant specific JFD for the deletion of the STS wording in the same area.

NMC Response:

Parts affected by this change:
None

CTS 3.3.A.1.g(1) and 3.3.A.g(2) provide the statements about the valve monitoring lights which were relocated to the applicable Bases. Maintaining these requirements is current licensing basis.

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41. ITS SR 3.5.2.4 BASES

ITS SR 3.5.2.5 BASES replaces 'only one' with 'a single.' No JFD was provided for the change.

Comment: Maintain the STS wording or provide a plant specific justification for the proposed change.

NMC Response:

Parts affected by this change:
None

The subject change is catergorized as a PA3.5-61.

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42. ITS SR 3.5.2.7 BASES
CL3.5-122

CL3.5-122 states that the CTS Bases discussion replaces NUREG-1431 which does not apply to PI.

Comment: Provide specific information as to which CTS Bases are being relocated to the ITS BASES and provide the appropriate marked up pages.

NMC Response:

Parts affected by this change:
None

CTS Bases page 4.5-2 contains the information provided in the ITS.

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43. ITS 3.5.3 Applicable Safety Analyses BASES
CL3.5-126

CL3.5-126 proposes to replace the ASA to state that there are no Applicable Safety Analyses which specify ECCS operability requirements in MODE 4 due to the stable conditions associated with operation in MODE 4. This is not acceptable. The STS should be maintained.

Comment: Maintain the STS 3.5.3 Applicable Safety Analyses BASES wording.

NMC Response:

Parts affected by this change:
None

The subject NUREG words have been deleted since they do not specifically apply to PI. In the current world of literal compliance, this deleted section cannot be adhered to. The subject statements have been deleted to avoid potential compliance problems.

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44. ITS 3.5.4 Applicable Safety Analyses BASES
CL3.5-134

CL3.5-134 proposed to delete the following from the ITS 3.5.4 Applicable Safety Analyses BASES: "For units with no BIT or reduced BIT boron requirements, the minimum boron concentration limit is an important assumption in ensuring the required shutdown capability. CL3.5-134 states that PI does not have a BIT. As such, the above phrase should be retained in the ITS since it describes units without a BIT.

Comment: Maintain the STS wording which discusses plants that do not have a BIT.

NMC Response:

Parts affected by this change:
None

As stated in JFD CL3.5-93, Prairie Island does not have a BIT, therefore, this discussion is not included. NMC believes that including discussion of plant equipment which Prairie Island does not have could cause operator confusion and therefore the NUREG-1431 discussion of BIT is not included. No changes have been made to the ITS submittal in response to this RAI.

---

45. ITS 3.5.4 Applicable Safety Analyses BASES (Page B 3.5.4-4)
CL3.5-51

CL3.5-51 states that the PI RWST is located within the Auxiliary Building and is not subject to temperature extremes which would require an action statement and surveillance requirement. However, the proposed wording in the ITS 3.5.4 Applicable Safety Analyses BASES (page B 3.5.4-4) states that "temperatures above freezing in the RWST in combination with the maximum boron concentration ensure that the boron will remain soluble while in the RWST." The proposed wording in the BASES does not appear to be consistent with not having an Action Statement or surveillance requirement on RWST temperature.

Comment: PI should consider adopting the Action statement and surveillance requirement for the RWST temperature.

NMC Response:

Parts affected by this change:
None

The ITS 3.5.4 Bases statement, "Temperatures above freezing in the RWST in combination with the maximum boron concentration ensure that the boron will remain soluble while in the RWST." is included for completeness and further supports the position that temperature Specifications and Surveillances on the RWST are not necessary. For a number of reasons, the Auxiliary Building in which the RWST stands, will not freeze. During the MODES of applicability for the RWST, core heat is removed from the reactor via steam lines or the RHR system. These pipes and systems bring heat into the Auxiliary Building and assure that it does not freeze. The intent of this Bases statement was to show that even at the most extreme temperature conditions with the maximum required boron concentration, the boron in the RWST is still soluable. This is not a statement about possible temperatures which the RWST may experience. The RWSTs are located in the Auxiliary Building which is sheltered from extreme temperatures and current Prairie Island Technical Specifications do not have RWST temperature requirements. The RWST does not have temperature indication available to the operators and a modification would be required to provide RWST temperature indication. Therefore, NMC is not proposing to include RWST temperature Specifications in the ITS. No changes have been made to the ITS submittal in response to this RAI.

---

46. ITS 3.5.4 Applicable Safety Analyses BASES (Page B 3.5.4-5)
CL3.5-51

Page B 3.5.4-5 shows the deletion of the discussion of water temperature, either containment spray or RWST, assumed in ECCS analyses. As stated above, CL3.5-51 states that the RWST is not subject to extreme temperatures. CL3.5-51 does not provide sufficient justification for the deletion of the ECCS analyses discussion.

Comment: Maintain the STS words or provide a plant specific justification for the deletions described on page B 3.5.4-5.

NMC Response:

Parts affected by this change:
None

See response to RAI 3.5 -18.

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47. ITS 3.5.4 Action A.1 BASES
ITS SR 3.5.4.1
CL3.5-132

STS 3.5.4 Action A.1 Bases states that with the RWST inoperable, neither the ECCS nor the containment spray system can perform its design function. ITS 3.5.4 Action A.1 Bases proposes to delete the discussion of containment spray. CL3.5-132 states that the containment spray is not operated in recirculation mode. Since the containment spray is aligned to the RWST during MODES 1, 2, 3, and 4 (and during injection following a LOCA), RWST is required to be operable. Therefore, if the RWST is not operable, then the containment spray cannot perform its function.

Comment: The STS wording should be maintained.

NMC Response:

Parts affected by this change:
Part B - Final ITS pages

Staff Evaluation Review - Request for Additional Information
Discussion of Changes
Section 3.5 - Emergency Core Cooling Systems

Part E - ISTS markup
Cross-Ref CTS
Cross-Ref ITS

Bases 3.5.4, Required Action A.1 has been revised to consistent with NUREG-1431, Rev.1.

The responsible supervisor identifies when to make a report.

- IF a question arises as to which organization transmits the report; THEN the responsible supervisor should contact Site Licensing.

IF personnel identify corrections, additions, or deletions to the reporting requirements, THEN they initiate a change (PINGP 436) to this Instruction and/or N1ACD 2.5.

Collect, store, and maintain the Records Management System Records as identified in Table 2 through Table 4 per 5AWI 3.4.0 for the period indicated.

Prairie Island Nuclear Generating Plant

Attachment 2

to
Supplement dated December 12, 2001
to License Amendment Request dated December 11, 2000
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3.5-09	3.5	E	3.5.2-3
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3.5-16	3.5	D	19
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3.5-21	3.5	D	2
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3.5-22	3.5	E	B 3.5.1-1
3.5-23	3.5	B	B 3.5.1-2
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3.5-23	3.5	F	10
3.5-23	3.5	G	1
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Prairie Island Nuclear Generating Plant

Attachment 3

to
Supplement dated December 12, 2001
to License Amendment Request dated December 11, 2000
Conversion to Improved Technical Specifications (ITS)

Revision 5 Change Pages

3.3.1-54 TA 155 This change incorporates TSTF-169, Rev. 0. The Bases has also been revised accordingly. Bases changes account for PI design. Unique at PI, P-7 and P-8 are both approximately the same power level, approximately 10%, so that a power operating region of >P-7 and <P-8 does not exist.
Comment: Document the safety basis for including P-7 (approximately 10% power interlock) in STS Action M.2 and N.2. See Comment on CL-158

NMC Response:

Parts affected by this change:
None

RAIs 3.3.1-54 (TA3.3-155), 3.3.1-55 (CL3.3-158) and 3.3.1-67 (CL3.3-189) collectively question the validity of specifying both RTS interlocks P-7 and P-8 in ITS applicability note "f" and ITS 3.3.1 Required Actions K.2, L.2 and M.2 (ISTS 3.3.1 M.2, N.2 and O.2).

Applicability note "f" modifies the MODE 1 Applicability of Function 10, Reactor Coolant Flow-Low, Function 11a, Loss of Reactor Coolant Pump (RCP) – RCP Breaker Open, and Function 11b, Loss of Reactor Coolant Pump. The Prairie Island applicability note "f" states, "Above the P-8 (Power Range Neutron Flux) or P-7 (Low Power Reactor Trips Block)". Thus the PI ITS will require Functions 10, 11a and 11b to be OPERABLE in MODE 1 above P-7 or P-8 RTS interlock setpoints. NUREG-1431, as modified by approved TSTF-169, Revision 1, requires Function 10 to be OPERABLE in MODE 1 above P-8. NUREG-1431 Functions 11a and 11b do not directly compare to the PI ITS since the NUREG specifies requirements for Reactor Coolant Pump Breaker Position for Single Loop and Two Loop. The NUREG requires Single Loop (Function 11a) OPERABILITY above P-8 and Two Loop (Function 11b) OPERABILITY above P-7 and below P-8.

NSHD category	Change number 3.3-	Discussion of Change
L	058	Table 3.5-2B, Action 21. CTS allows high-high containment pressure channels to be inoperable provided they are placed in a tripped position. However, with two channels in the tripped position, the containment spray system could actuate on a single spurious signal. The ITS will allow two channels to be inoperable with one channel tripped and one channel bypassed. This is desirable because it prevents the containment spray system from actuating on a single spurious signal. This change is acceptable since only two additional high-high pressure signals are required to actuate the system (compared to three normally). This change involves both more restrictive and less restrictive requirements; thus this is treated as a less restrictive change.
M	059	CTS 3.7.A. Current TS do not explicitly require the automatic load sequencers to be operable. For the purpose of completeness and consistency with NUREG-1431 requirements, new specification requirements including an LCO statement, action statements and supporting Bases have been included in the PI ITS. This new specification implements the intent of ISTS 3.8.1 and its action statements. However, as discussed in Part F, Change X3.3-312, this new specification requirement is included in PI ITS LCO 3.3.4. Since this is new specification requirement in the TS, this is a more restrictive change. This new specification requirement is consistent with current plant practices for equipment operability and testing and therefore will not cause any unsafe plant operations or testing.
M	060	CTS Table 3.5-2B, Action 28. To be consistent with the guidance of NUREG-1431, a new requirement to reduce power to MODE 4 or shut the main steam isolation valves is included. This change is more restrictive in that it requires additional actions or reduction of plant power within 18 hours. This change is acceptable since it will maintain the plant in a safe condition and not introduce any unsafe plant operating conditions or tests.

NSHD category	Change number 3.3-	Discussion of Change
A	133	CTS 2.3.A.2.g. CTS specifies RCP bus undervoltage as a percent of "normal voltage". ITS specifies RCP bus (Unit 1 buses 11 and 12; Unit 2 buses 21 and 22) as the percent of "bus voltage" in Table 3.3.1-1, Function 12 and Table 3.3.2-1, Function 6d. Both of these functions monitor the large motor buses, Bus 11 and 12 (Unit 2 Buses 21 and 22). This change is made to be consistent with the guidance of NUREG-1431, Table 3.3.2-1, Function 6d. This is an administrative change since both of these terms are understood as the nominal voltage, 4160 V, of these buses. This discussion of change addresses the change of terminology since L3.3-31 addresses the change from 75% to 76%.
A	134	CTS 2.3.A.3.a and 2.3.A.3.b The CTS limits for high pressurizer water level and low-low steam generator water level are specified as a percentage "of narrow range instrument span". ITS does not include the phrase "of narrow range instrument span" as a modifier of the limit. For the pressurizer, there is only narrow range instrumentation, therefore it is unnecessary to specify "narrow range instrument span". For the steam generator there is narrow range and wide range instrumentation. However, since only the narrow range instrumentation provides input to the reactor trip and engineered safety features systems, it is not possible to have confusion on which instrumentation is providing input and therefore unnecessary to specify "of narrow range instrument span". Since this change does not change plant operations, this is an administrative change.

NSHD category	Change number 3.3-	Discussion of Change
L	138	CTS Table 4.1-1A, Function 6b. CTS requires quarterly verification in MODES 3, 4 and 5 that P-6 and P-10 are in their required state for existing plant conditions associated with a COT on the source range neutron flux (Modes 3, 4 and 5 with the reactor trip breakers closed and control rods capable of withdrawal) instrumentation . ITS requires verification that P-6 and P-10 are in their required state for existing plant conditions associated with the COT on power range, flux low, intermediate range and source range (MODE 2 below P-6). This change is consistent with the guidance of NUREG-1431. Since this change does not require verification of interlocks associated with the source range instrumentation in Modes 3, 4, and 5, this is a less restrictive change. This change is acceptable because these interlocks do not function in Modes 3, 4, and 5 and, per the requirements of ITS SR 3.3.1.8, the verification will be performed prior to or soon after entry into Modes 1 and 2 when the interlocks are required to perform their function. See M3.3-73.
A	139	Table 4.1-1A, Note 6. CTS requires, "Single point comparison . . ." of incore to excore nuclear instrumentation for axial off-set. ITS does not include this descriptive clause in the SR requirement statement. This method is discussed in detail in USAR Section 7.3.4.8. Since the USAR is under the regulatory controls of 10 CFR 50.59, changes in methodology are controlled and thus, this clause is unnecessary in the TS description. Since this change does not involve any changes in test requirements or methods for Prairie Island, this is an administrative change. This change is consistent with the guidance of NUREG-1431.
	140	Not used.

SURVEILLANCE REQUIREMENTS

SURVEILLANCE				FREQUENCY
SR 3.5.2.1	Verify the following valves are in the listed position.			12 hours
Unit 1 Valve Number	Westing-house Valve Number	Position	Function	
32070	8801A	OPEN	SI Injection to RCS Cold Leg A	
32068	8801B	OPEN	SI Injection to RCS Cold Leg B	
32073	8806A	OPEN	SI Cold Leg Injection Line	
32206	8816A	CLOSED	SI Pump Suction from RHR	
32207	8816B	CLOSED	SI Pump Suction from RHR	
Unit 2 Valve Number	Westing-house Valve Number	Position	Function	
32173	8801A	OPEN	SI Injection to RCS Cold Leg A	
32171	8801B	OPEN	SI Injection to RCS Cold Leg B	
32176	8806A	OPEN	SI Cold Leg Injection Line	
32208	8816A	CLOSED	SI Pump Suction from RHR	
32209	8816B	CLOSED	SI Pump Suction from RHR	
SR 3.5.2.2	Verify each ECCS manual, power operated, and automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, is in the correct position.			31 days
SR 3.5.2.3	Verify power to the valve operator has been removed for each valve listed in SR 3.5.2.1.			31 days

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.2.4	Verify each ECCS pump's developed head at the test flow point is greater than or equal to the required developed head.	In accordance with the Inservice Testing Program
SR 3.5.2.5	Verify each ECCS automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	24 months
SR 3.5.2.6	Verify each ECCS pump starts automatically on an actual or simulated actuation signal.	24 months
SR 3.5.2.7	Verify each ECCS throttle valve listed below is in the correct position. Unit 1 Valve Number / Unit 2 Valve Number SI-15-6 / 2SI-15-6 SI-15-7 / 2SI-15-7 SI-15-8 / 2SI-15-8 SI-15-9 / 2SI-15-9	24 months
SR 3.5.2.8	Verify, by visual inspection, each ECCS train containment sump suction inlet is not restricted by debris and the suction inlet trash racks and screens show no evidence of structural distress or abnormal corrosion.	24 months

B 3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

B 3.5.1 Accumulators

BASES

BACKGROUND

The functions of the ECCS accumulators are to supply water to the reactor vessel during the blowdown phase of a large break loss of coolant accident (LOCA), to provide inventory to help accomplish the refill and reflood phases that follow thereafter, and to provide Reactor Coolant System (RCS) makeup for a small break LOCA.

The blowdown phase of a large break LOCA is the initial period of the transient during which the RCS departs from equilibrium conditions, and heat from fission product decay, hot internals, and the vessel continues to be transferred to the reactor coolant. The reactor coolant inventory is vacating the core during this phase through steam flashing and ejection out through the break. The blowdown phase of the transient ends when the RCS pressure falls to a value approaching that of the containment atmosphere.

In the refill phase of a LOCA, which immediately follows the blowdown phase, reactor coolant inventory has vacated the core through steam flashing and ejection out through the break. The core is essentially in adiabatic heatup. The balance of accumulator inventory is available to help fill voids in the lower plenum and reactor vessel downcomer, and to help the ongoing reflood of the core with the addition of emergency core cooling system (ECCS) water.

The accumulators are pressure vessels partially filled with borated water and pressurized with nitrogen gas. The accumulators are passive components, since no operator or control actions are required in order for them to perform their function. Internal accumulator tank pressure is sufficient to discharge the accumulator contents to the RCS, if RCS pressure decreases below the accumulator pressure.

BASES

BACKGROUND (continued)

Each accumulator is piped into an RCS cold leg via an accumulator line and is isolated from the RCS by a motor operated isolation valve and two check valves in series. The motor operated isolation valves (Unit 1 - MV 32071 and MV 32072 (Westinghouse valve numbers 8800A and 8800B respectively), Unit 2 - MV 32174 and MV 32175 (Westinghouse valve numbers 8800A and 8800B respectively)) are maintained open with AC power removed under administrative control when RCS pressure is > 2000 psig.

The accumulator size, water volume, and nitrogen cover pressure are selected so that one of the two accumulators is sufficient to partially cover the core before significant clad melting or zirconium water reaction can occur following a LOCA. The need to ensure that one accumulator is adequate for this function is consistent with the LOCA assumption that the entire contents of one accumulator will be lost via the RCS pipe break during the blowdown phase of the LOCA.

APPLICABLE SAFETY ANALYSES

The accumulators are assumed OPERABLE in both the large and small break LOCA analyses at full power (Ref. 1). These are the Design Basis Accidents (DBAs) that establish the acceptance limits for the accumulators. Reference to the analyses for these DBAs is used to assess changes in the accumulators as they relate to the acceptance limits.

In performing the LOCA calculations, conservative assumptions are made concerning the availability of ECCS flow. In the early stages of a large break LOCA, with or without a loss of offsite power, the accumulators provide the sole source of makeup water to the RCS. The assumption of loss of offsite power is required by regulations and conservatively imposes a delay wherein the ECCS pumps cannot deliver flow until the emergency diesel generators start, come to rated speed, and go through their timed loading sequence. In cold leg break scenarios, the entire contents of one accumulator are assumed to be lost through the break.

BASES

APPLICABLE SAFETY ANALYSES (continued)

The limiting large break LOCA is a double ended guillotine break at the discharge of the reactor coolant pump. During this event, the accumulators discharge to the RCS as soon as RCS pressure decreases to below accumulator pressure.

As a conservative estimate, no credit is taken for ECCS pump flow until an effective delay has elapsed. This delay accounts for safety injection (SI) signal generation, the diesels starting and the pumps being loaded and delivering full flow. The SI signal generation occurs approximately 2 seconds into the transient. During this time, the accumulators are analyzed as providing the sole source of emergency core cooling. No operator action is assumed during the blowdown stage of a large break LOCA.

The worst case small break LOCA analyses also assume a time delay before pumped flow reaches the core. For the larger range of small breaks, the rate of blowdown is such that the increase in fuel clad temperature is terminated solely by the accumulators, with pumped flow then providing continued cooling. As break size decreases, the accumulators and safety injection pumps both play a part in terminating the rise in clad temperature. As break size continues to decrease, the role of the accumulators continues to decrease until they are not required and the safety injection pumps become solely responsible for terminating the temperature increase.

This LCO helps to ensure that the following acceptance criteria established for the ECCS by 10 CFR 50.46 will be met following a LOCA:

a. The calculated peak fuel element cladding temperature is below the requirement of 2200 °F;

b. The cladding temperature transient is terminated at a time when the core geometry is still amenable to cooling. The localized cladding oxidation limits of 17% are not exceeded during or after quenching;

BASES

APPLICABLE SAFETY ANALYSES (continued)

c. The amount of hydrogen generated by fuel element cladding that reacts chemically with water or steam does not exceed an amount corresponding to interaction of 1% of the total amount of Zircaloy in the reactor; and

d. The core remains amenable to cooling during and after the break.

Since the accumulators discharge during the blowdown phase of a LOCA, they do not contribute to the long term cooling requirements of 10 CFR 50.46.

For the large break LOCA analyses, a nominal contained accumulator water volume of 1270 cubic feet is used based on minimum and maximum volumes of 1250 cubic feet (25% indicated level) and 1290 cubic feet (91% indicated level).

The contained water volume is the same as the deliverable volume for the accumulators, since the accumulators are emptied, once discharged. For large breaks, an increase in water volume can be either a peak clad temperature penalty or benefit, depending on downcomer filling and subsequent spill through the break during the core reflooding portion of the transient. Prairie Island is a two loop plant with Upper Plenum Injection (UPI) LOCA analyses. For UPI plant small breaks, a decrease in water volume is a peak clad temperature penalty; thus a minimum contained water volume is assumed. Both large and small break analyses use a nominal accumulator line water volume from the accumulator to the check valve.

The minimum boron concentration setpoint is used in the post LOCA boron concentration calculation. The calculation is performed to assure reactor subcriticality in a post LOCA environment. Of particular interest is the large break LOCA, since no credit is taken for control rod assembly insertion. A reduction in the accumulator minimum boron concentration would produce a subsequent

BASES

APPLICABLE SAFETY ANALYSES (continued)

reduction in the available containment sump concentration for post LOCA shutdown and an increase in the maximum sump pH. For conservatism, the accumulators are not considered in the boron build up analyses since their inclusion would dilute the sump concentration.

The small break LOCA analyses are performed at the minimum nitrogen cover pressure, since sensitivity analyses have demonstrated that higher nitrogen cover pressure results in a computed peak clad temperature benefit. The large break analyses utilize the nominal nitrogen cover pressure as per approved methods (Ref. 1). The maximum nitrogen cover pressure limit prevents accumulator relief valve actuation, and ultimately preserves accumulator integrity.

The effects on containment mass and energy releases from the accumulators are accounted for in the appropriate analyses (Refs. 1 and 2).

The accumulators satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

The LCO establishes the minimum conditions required to ensure that the accumulators are available to accomplish their core cooling safety function following a LOCA. Two accumulators are required to ensure that 100% of the contents of one accumulator will reach the core during a LOCA. This is consistent with the assumption that the contents of one accumulator spill through the break. If less than one accumulator is injected during the blowdown phase of a LOCA, the ECCS acceptance criteria of 10 CFR 50.46 could be violated.

For an accumulator to be considered OPERABLE, the motor-operated isolation valve must be fully open, power removed above 2000 psig, and the limits established in the SRs for contained volume, boron concentration, and nitrogen cover pressure must be met.

BASES (continued)

APPLICABILITY

In MODES 1 and 2, and in MODE 3 with RCS pressure > 1000 psig, the accumulator OPERABILITY requirements are based on full power operation. Although cooling requirements decrease as power decreases, the accumulators are still required to provide core cooling as long as elevated RCS pressures and temperatures exist.

This LCO is only applicable at pressures > 1000 psig. At pressures ≤ 1000 psig, the rate of RCS blowdown is such that the ECCS pumps can provide adequate injection to ensure that peak clad temperature remains below the 10 CFR 50.46 limit of 2200°F.

In MODE 3, with RCS pressure ≤ 1000 psig, and in MODES 4, 5, and 6, the accumulator motor operated isolation valves are closed to isolate the accumulators from the RCS. This allows RCS cooldown and depressurization without discharging the accumulators into the RCS or requiring depressurization of the accumulators.

ACTIONS

A.1

If the boron concentration of one accumulator is not within limits, it must be returned to within the limits within 72 hours. In this Condition, ability to maintain subcriticality may be reduced. The boron in the accumulators contributes to the assumption that the combined ECCS water in the partially recovered core during the early reflooding phase of a large break LOCA is sufficient to keep that portion of the core subcritical. One accumulator below the minimum boron concentration limit, however, will have no effect on available ECCS water and an insignificant effect on core subcriticality during reflood since the accumulator water volume is very small when compared to RCS and RWST inventory. Boiling of ECCS water in the core during reflood concentrates boron in the saturated liquid that remains in the core. In addition, current analysis

BASES

ACTIONS

A.1 (continued)

techniques demonstrate that the accumulators are not expected to discharge following a large main steam line break. Even if they do discharge, their impact is minor and not a design limiting event. Thus, 72 hours is allowed to return the boron concentration to within limits.

B.1

If one accumulator is inoperable for a reason other than boron concentration, the accumulator must be returned to OPERABLE status within 24 hours. In this Condition, the required contents of one accumulator cannot be assumed to reach the core during a LOCA.

Due to the severity of the consequences should a LOCA occur in these conditions, the 24 hour Completion Time to open the valve, remove power to the valve, or restore the proper water volume or nitrogen cover pressure ensures that prompt action will be taken to return the inoperable accumulator to OPERABLE status. The Completion Time minimizes the potential for exposure of the plant to a LOCA under these conditions. The 24 hours allowed to restore an inoperable accumulator to OPERABLE status were justified in Reference 3.

C.1 and C.2

If the accumulator cannot be returned to OPERABLE status within the associated Completion Time, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the

BASES

ACTIONS

C.1 and C.1 (continued)

plant must be brought to MODE 3 within 6 hours and RCS pressure reduced to ≤ 1000 psig within 12 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.

D.1

If both accumulators are inoperable, the plant is in a condition outside the accident analyses; therefore, LCO 3.0.3 must be entered immediately.

SURVEILLANCE REQUIREMENTS

SR 3.5.1.1

Each accumulator motor operated valve should be verified to be fully open every 12 hours. Use of control board indication (position monitor lights and alarms) for valve position is an acceptable verification. This verification ensures that the accumulators are available for injection and ensures timely discovery if a valve should be less than fully open. If an isolation valve is not fully open, the rate of injection to the RCS would be reduced. Although a motor operated valve position should not change with power removed, a closed or not fully open valve could result in not meeting accident analyses assumptions. This Frequency is considered reasonable in view of other administrative controls that ensure a mispositioned isolation valve is unlikely.

BASES

SURVEILLANCE REQUIREMENTS

SR 3.5.1.2 and SR 3.5.1.3 (continued)

Every 12 hours, borated water volume and nitrogen cover pressure are verified for each accumulator. This Frequency is sufficient to ensure adequate injection during a LOCA. Because of the static design of the accumulator, a 12 hour Frequency usually allows the operator to identify changes before limits are reached. Operating experience has shown this Frequency to be appropriate for early detection and correction of off normal trends.

SR 3.5.1.4

The boron concentration should be verified to be within required limits for each accumulator every 31 days since the static design of the accumulators limits the ways in which the concentration can be changed. The 31 day Frequency is adequate to identify changes that could occur from mechanisms such as stratification or inleakage.

SR 3.5.1.5

Verification every 31 days that power is removed from each accumulator isolation valve operator when the RCS pressure is $\geq$ 2000 psig ensures that an active failure could not result in the undetected closure of an accumulator motor operated isolation valve. If this were to occur, only one accumulator would be available for injection given a single failure coincident with a LOCA. Since power is removed under administrative control, the 31 day Frequency will provide adequate assurance that power is removed.

This SR allows power to be supplied to the motor operated isolation valves when RCS pressure is < 2000 psig, thus allowing operational flexibility by avoiding unnecessary delays to manipulate the breakers during plant startups or shutdowns.

BASES (continued)

REFERENCES

1. USAR, Section 14.

2. USAR, Section 6.2.

3. WCAP-15049-A, Revision 1, "Risk-Informed Evaluation of an Extension to Accumulator Completion Times," April 1999.

B 3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

B 3.5.2 ECCS-Operating

BASES

BACKGROUND The function of the ECCS is to provide core cooling and negative reactivity to ensure that the reactor core is protected after any of the following accidents:

a. Loss of coolant accident (LOCA), coolant leakage greater than the capability of the normal charging system;

b. Loss of secondary coolant accident, including uncontrolled steam release; and

c. Steam generator tube rupture (SGTR).

The addition of negative reactivity is designed primarily for the loss of secondary coolant accident where primary cooldown could add enough positive reactivity to achieve criticality and return to significant power.

There are two phases of ECCS operation: injection and recirculation. In the injection phase, water is taken from the refueling water storage tank (RWST) and injected into the Reactor Coolant System (RCS) through the cold legs and reactor vessel upper plenum. When sufficient water is removed from the RWST to ensure that enough boron has been added to maintain the reactor subcritical and the containment sump has enough water to supply the required net positive suction head to the RHR pumps, suction is switched to containment Sump B for recirculation. When post accident RCS pressure drops below the RHR pump shutoff head, the RHR flow is directed into the reactor vessel upper plenum to reduce the boiling in the top of the core and any resulting boron precipitation.

BASES

BACKGROUND (continued)

During the recirculation phase of LOCA recovery, RHR pump suction is manually transferred to the containment sump. Initially, recirculation is through the same paths as the injection phase. The RHR pumps provide flow to the reactor vessel upper plenum. If the RCS pressure limits RHR flow, then the RHR pumps supply the SI pumps which provide flow to the cold legs.

The SI subsystem of the ECCS also functions to supply borated water to the reactor core following increased heat removal events, such as a main steam line break (MSLB). The limiting design conditions occur when the negative moderator temperature coefficient is highly negative, such as at the end of each cycle.

During low temperature conditions in the RCS, limitations are placed on the maximum number of ECCS pumps that may be OPERABLE. Refer to the Bases for LCOs 3.4.12, "Low Temperature Overpressure Protection (LTOP) > Safety Injection (SI) Pump Disable Temperature," and 3.4.13, "Low Temperature Overpressure Protection (LTOP) ≤ Safety Injection (SI) Pump Disable Temperature," for the basis of these requirements.

The ECCS subsystems are actuated upon receipt of an SI signal. The actuation of safeguards loads is accomplished in a programmed time sequence. If offsite power is available, the safeguards loads start immediately in the programmed sequence. If offsite power is not available, the safeguards buses shed normal operating loads and are connected to the emergency diesel generators (EDGs). Safeguards loads are then actuated in the programmed time sequence. The time delay associated with diesel starting, sequenced loading, and pump starting determines the length of time before pumped flow is available to the core following a LOCA.

The active ECCS components, along with the passive accumulators and the RWST covered in LCO 3.5.1, "Accumulators," and LCO 3.5.4, "Refueling Water Storage Tank (RWST)," provide the cooling water necessary to meet AEC GDC 44 (Ref. 1).

BASES

ACTIONS

A.1 (continued)

not capable of performing their design function or required supporting systems are not available.

The LCO requires the OPERABILITY of a number of independent subsystems. Due to the redundancy of trains and the diversity of subsystems, the inoperability of one component in a train does not render the ECCS incapable of performing its function. Neither does the inoperability of two different components, each in a different train, necessarily result in a loss of function for the ECCS. This allows increased flexibility in plant operations under circumstances when components in opposite trains are inoperable.

An event accompanied by a loss of offsite power and the failure of an EDG can disable one ECCS train until power is restored. A reliability analysis (Ref. 4) has shown that the impact of having one full ECCS train inoperable is sufficiently small to justify continued operation for 72 hours.

Reference 5 describes situations in which one component, such as an RHR crossover valve, can disable both ECCS trains. With one or more component(s) inoperable such that 100% of the flow equivalent to a single OPERABLE ECCS train is not available, the facility is in a condition outside the accident analysis. Therefore, LCO 3.0.3 must be immediately entered.

B.1 and B.2

If the inoperable trains cannot be returned to OPERABLE status within the associated Completion Time, the plant must be brought to

BASES

ACTIONS

B.1 and B.2 (continued)

a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to MODE 3 within 6 hours and MODE 4 within 12 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.

C.1

Condition A is applicable with one or more trains inoperable. The allowed Completion Time is based on the assumption that at least 100% of the ECCS flow equivalent to a single OPERABLE ECCS train is available. With less than 100% of the ECCS flow equivalent to a single OPERABLE ECCS train available, the facility is in a condition outside of the accident analyses. Therefore, LCO 3.0.3 must be entered immediately.

SURVEILLANCE REQUIREMENTS

SR 3.5.2.1

Verification of proper valve position ensures that the flow path from the ECCS pumps to the RCS is maintained. Use of control board indication for valve position is an acceptable verification. Misalignment of these valves could render one or both ECCS trains inoperable. These valves are secured in position by physically locking the motor control center supply breakers in the off position with the valve position monitor lights OPERABLE to assure that they cannot change position as a result of an active failure or be inadvertently misaligned. Verification of the valve breakers is performed by SR 3.5.2.3.

A 12 hour Frequency is considered reasonable in view of other administrative controls that ensure a mispositioned valve is unlikely.

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.5.2.2

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 seal is a device that must be destroyed to allow a status change of the component to which it is applied). A valve that receives an actuation signal is allowed to be in a nonaccident position provided the valve will automatically reposition within the proper stroke time. This Surveillance does not require any testing or valve manipulation. Rather, it involves verification that those valves capable of being mispositioned are in the correct position. The 31 day Frequency is appropriate because the valves are operated under administrative control, and an improper valve position would only affect a single train. This Frequency has been shown to be acceptable through operating experience.

SR 3.5.2.3

Verification every 31 days that the motor control center supply breakers are physically locked in the off position for each valve specified in SR 3.5.2.1 ensures that an active failure could not result in an undetected misposition of a valve. Since power is removed under administrative control and valve position is verified every 12 hours, the 31 day Frequency will provide adequate assurance that power is removed.

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.5.2.4

Periodic surveillance testing of ECCS pumps to detect gross degradation caused by impeller structural damage or other hydraulic component problems is required by Section XI of the ASME Code. This type of testing may be accomplished by measuring the pump developed head at a single point of the pump characteristic curve. This verifies both that the measured performance is within an acceptable tolerance of the original pump baseline performance and that the performance at the test flow is within the performance assumed in the plant safety analysis. SRs are specified in the Inservice Testing Program, which encompasses Section XI of the ASME Code. Section XI of the ASME Code provides the activities and Frequencies necessary to satisfy the requirements.

SR 3.5.2.5 and SR 3.5.2.6

These Surveillances demonstrate that each automatic ECCS valve actuates to the required position on an actual or simulated SI signal and that each ECCS pump starts on receipt of an actual or simulated SI signal. This test is met when control board indications and visual observations indicate that all components have received the safety injection signal in the proper sequence and timing, the appropriate pump breakers have opened and closed, and all automatic valves have been placed in the proper position required to establish a safety injection flow path to the reactor coolant system.

This Surveillance is not required for valves that are locked, sealed, or otherwise secured in the required position under administrative controls. The 24 month Frequency is based on the need to perform these Surveillances under the conditions that apply during a plant outage and the potential for unplanned plant transients if the

BASES

SURVEILLANCE REQUIREMENTS

SR 3.5.2.5 and SR 3.5.2.6 (continued)

Surveillances were performed with the reactor at power. The 24 month Frequency is also acceptable based on consideration of the design reliability (and confirming operating experience) of the equipment. The actuation logic is tested as part of Engineered Safety Feature (ESF) Actuation System testing, and equipment performance is monitored as part of the Inservice Testing Program.

SR 3.5.2.7

Surveillance requirements on ECCS throttle valves provide assurance that proper ECCS flows are maintained in the event of a LOCA. Proper flow resistance and pressure drop in the piping system to each injection point in the SI System is necessary to: 1) prevent total pump flow from exceeding runout conditions when the system is in its minimum resistance configuration; 2) provide the proper flow split between injection points in accordance with the assumptions used in the ECCS LOCA analyses; and 3) provide an acceptable level of total ECCS flow to all injection points equal to or above that assumed in the ECCS LOCA analyses. The 24 month Frequency is based on the same reasons as those stated in SR 3.5.2.5 and SR 3.5.2.6.

SR 3.5.2.8

Periodic inspections of the containment sump suction inlet to the RHR System ensure that it is unrestricted and stays in proper operating condition. The 24 month Frequency allows this Surveillance to be performed under the conditions that apply during a plant outage. This Frequency has been found to be sufficient to detect abnormal degradation and is confirmed by operating experience.

BASES (continued)

REFERENCES

1. AEC "General Design Criteria for Nuclear Power Plant Construction Permits," Criterion 44, issued for comment July 10, 1967, as referenced in USAR Section 1.2.

2. USAR, Section 6.2.

3. USAR, Section 14.

4. NRC Memorandum to V. Stello, Jr., from R.L. Baer, "Recommended Interim Revisions to LCOs for ECCS Components," December 1, 1975.

5. IE Information Notice No. 87-01.

BASES

LCO (continued)

to ensure adequate level in the containment sump to support ECCS pump operation in the recirculation mode.

To be considered OPERABLE, the RWST must meet the water volume and boron concentration limits established in the SRs.

APPLICABILITY

In MODES 1, 2, 3, and 4, RWST OPERABILITY requirements are dictated by ECCS and Containment Spray System OPERABILITY requirements. Since both the ECCS and the Containment Spray System must be OPERABLE in MODES 1, 2, 3, and 4, the RWST must also be OPERABLE to support their operation. Core cooling requirements in MODE 5 are addressed by LCO 3.4.7, "RCS Loops MODE 5, Loops Filled," and LCO 3.4.8, "RCS Loops MODE 5, Loops Not Filled." MODE 6 core cooling requirements are addressed by LCO 3.9.5, "Residual Heat Removal (RHR) and Coolant Circulation High Water Level," and LCO 3.9.6, "Residual Heat Removal (RHR) and Coolant Circulation Low Water Level."

ACTIONS

A.1

With RWST boron concentration not within limits, it must be returned to within limits within 8 hours. Under these conditions neither the ECCS nor the Containment Spray System can perform its design function. Therefore, prompt action must be taken to restore the tank to OPERABLE condition. The 8 hour limit to restore the RWST boron concentration to within limits was developed considering the time required to change the boron concentration and the fact that the contents of the tank are still available for injection.

B.1

With the RWST water volume not within limits, it must be restored to OPERABLE status within 1 hour.

3.3 ENGINEERED SAFETY FEATURES

A3.5-00

R-2

~~Applicability~~

~~Applies to the operating status of the engineered safety features.~~

A3.5-301

~~Objective~~

~~To define those limiting conditions that are necessary for operation of engineered safety features: (1) to remove decay heat from the core in an emergency or normal shutdown situations, and (2) to remove heat from containment in normal operating and emergency situations.~~

Specifications

A. ECCS ~~Safety Injection and Residual Heat Removal Systems~~

A3.5-302

1. A reactor shall not be in MODE 1, 2, 3 and 4 ~~made or maintained critical nor shall reactor coolant system average temperature exceed 200°F~~ unless the following conditions are satisfied ~~(except as specified in 3.3.A.2 below):~~

A3.5-303

LCO~~3.5.4~~

a. The refueling water tank shall be OPERABLE.

A3.5-01

SR3.5.4.1 New SR, verify RWST water level (the volume which contains not less than 200,000 gallons of water) with a

M3.5-02

SR3.5.4.2 boron concentration of at least 2600~~2500~~ ppm~~.~~ but less than or equal to 3500 ppm every 7 days.

A3.5-20

M3.5-03

R-5

LCO3.5.1 b. Each reactor coolant system accumulator shall be OPERABLE when reactor coolant system pressure is greater than 1000 psig.

~~OPERABILITY requires:~~

A3.5-04

SR3.5.1.1
SR3.5.1.2
SR3.5.1.3
SR3.5.1.5

New SRs requiring verification that isolation valves fully open, water level within limits, cover pressure within limits, and power removed from isolation valve operators.

M3.5-05

SR3.5.1.1 (1) The isolation valve is open

SR3.5.1.2 (2) Volume is 1250 to 1290~~1270 ± 20~~ cubic feet of borated water

SR3.5.1.4 (3) A minimum boron concentration of 1900 ppm

A3.5-304

SR3.5.1.3 (4) A nitrogen cover pressure of 710 to 770~~740 ± 30~~ psig

~~Overflow TS.3.3-1~~

M3.5-06

LCO3.5.2

c. Two ECCS trains ~~safety injection~~ ~~pumps~~ are OPERABLE ~~except as specified in Sections 3.3.A.3 and 3.3.A.4~~ when in MODES 1, 2, and 3.

A3.5-07

LCO3.5.2 NOTE

In MODE 3, both safety injection (SI) pump flow paths may be isolated by closing the isolation valves for up to 2 hours to perform pressure isolation valve testing per SR 3.4.15.1.

L3.5-310

R-5

~~d. Two residual heat removal pumps are OPERABLE.~~

M3.5-06

~~e. Two residual heat exchangers are OPERABLE.~~

SR3.5.2.1
SR3.5.2.2
SR3.5.2.3
SR3.5.2.8

New SRs which require verification of MOV positions, all system valve positions, MOV breaker positions and containment sumps clear of debris.

M3.5-08

LCO3.5.3

New Specification which requires one ECCS train OPERABLE during operations in MODE 4 with both RCS cold legs > SI pump disable temperature specified in the PTLR.

L3.5-09

SR3.5.3.1

New SR which requires performance of SRs 3.5.2.1, 3.5.2.3, 3.5.2.4, 3.5.2.7 and 3.5.2.8.

M3.5-10

3.3.A.1.f. ~~Manual valves in the above systems that could (if one is improperly positioned) reduce injection flow below that assumed for accident analyses, shall be blocked and tagged in the proper position for injection.~~ LR3.5-11

LCO3.5.3 LCO Note

RHR system valves, however, may be positioned as necessary to regulate plant heatup or cooldown rates when the reactor is subcritical. ~~All changes in valve position shall be under direct administrative control.~~ LR3.5-11

~~g. The following valve conditions shall exist:~~

LR3.5-12

SR3.5.2.1 SR3.5.2.3

(1) Safety injection system motor-operated valves 8801A, 8801B, 8806A (PI Unit 1 valve numbers Unit 1 32070, 32068, and 32073, Unit 2 valve numbers 32173, 32171, and 32176 respectively) ~~shall have valve position monitor lights OPERABLE and~~ shall be locked in the open position by having the motor control center supply breakers physically locked in the off position. A3.5-316 LR3.5-12

SR3.5.2.1 SR3.5.2.3

(2) Safety injection system motor-operated valves 8816A and 8816B (PI Unit 1 valve numbers 32206 and 32207, Unit 2 valve numbers 32208 and 32209 respectively) shall be closed~~,~~ ~~shall have valve position monitor lights OPERABLE,~~ and shall have the motor control center supply breakers physically locked in the off position. R-5

~~(3) Accumulator discharge valves 8800A and 8800B shall have position monitor lights and alarms OPERABLE.~~ M3.5-18

~~(4) Residual Heat Removal System valves 8701A and 8701B shall have normal valve position indication OPERABLE.~~ LR3.5-12

A3.5-303

2. During MODES 1, 2 and 3 ~~STARTUP OPERATION or POWER OPERATION, any one of the following conditions of inoperability may exist provided~~ A3.5-306
STARTUP OPERATION is discontinued until OPERABILITY is restored. If OPERABILITY is not restored within the time specified, be in at least MODE 3~~HOT SHUTDOWN~~ within the next 6 hours

LCO3.5.2

A3.5-303

and in MODE 4 ~~COLD SHUTDOWN~~ within ~~the following~~ 12 ~~30~~ hours. L3.5-13

M3.5-314

~~a. One safety injection pump may be inoperable for 72 hours.~~ R-5

~~b. One residual heat removal pump may be inoperable for 72 hours.~~ LR3.5-14

~~c. One residual heat exchanger may be inoperable for 72 hours.~~ M3.5-308

LCO3.5.1 COND C

If Required Action and associated Completion Time of Condition A and B are not met, be in MODE 3 within 6 hours and reduce RCS pressure to < 1000 psig within 12 hours.

R-5

A3.5-309

LCO3.5.1 COND D

If two accumulators are inoperable, enter LCO 3.0.3 immediately.

R-5

~~d. Any redundant valve in the system required for safety injection, may be inoperable for 72 hours.~~

LR3.5-14

LCO3.5.1 e. One accumulator may be inoperable for reasons other than boron concentrations not within limits

A3.5-15

for 24 ~~one~~ hours whenever pressurizer pressure is greater than 1000 psig.

A3.5-307

One accumulator may be inoperable with the boron concentration not within limits for 72 hours

L3.5-16

L3.5-315

LCO3.5.2 f. One or more ECCS trains ~~safety injection system and one residual heat system~~ may be inoperable for 72 hours ~~provided the redundant safety injection system and heat removal system required for functioning during accident conditions is OPERABLE~~.

LCO3.5.2 Cond. C

A3.5-17

Add Condition C: Less than 100% of the ECCS flow equivalent to a single OPERABE ECCS Train available, enter LCO 3.0.3 immediately.

LCO3.5.3 Cond. A

M3.5-312

Add LCO 3.5.3 Condition A: Required ECCS RHR subsystem inoperable, initiate action to restore required ECCS RHR subsystem to OPERABLE status immediately.

LCO3.5.3 Cond. B

M3.5-312

Add LCO 3.5.3 Condition B: Required ECCS SI subsystem inoperable, restore required ECCS SI subsystem to OPERABLE status within 1 hour.

LCO3.5.3 Cond. C

M3.5-312

Add LCO 3.5.3 Condition C: Required Action and associated Completion Time of Condition B not met, be in MODE 5 within 24 hours.

LCO3.5.4 Cond. C

M3.5-313

Adds LCO 3.5.4 Condition C: Required Action and associated Completion Time not met, be in MODE 3 within 6 hours and MODE 5 within 36 hours.

R-5

4.5 ENGINEERED SAFETY FEATURES

A3.5-00

R-2

~~Applicability~~

~~Applies to testing of the Emergency Core Cooling System and the Containment Cooling Systems.~~

A3.5-301

~~Objective~~

~~To verify that the subject systems will respond promptly and perform their design functions, if required~~

Specification

A. System Tests

A3.5-302

1. ECCS ~~Safety Injection System~~

SR3.5.2.6

a. System tests shall be performed during each reactor refueling shutdown. ~~With the Reactor Coolant System pressure less than or equal to 350 psig and temperature less than or equal to 350°F,~~ a test safety injection signal will be applied to initiate operation of the system. ~~The safety injection and residual heat removal pumps need not be operable for this test.~~

R-5

LR3.5-21

b. ~~The test will be considered satisfactory if control board indications and visual observations indicate that all components have received the safety injection signal in the proper sequence and timing, the appropriate pump breakers have opened and closed, and all automatic valves have been placed in the proper position required to establish a safety injection flow path to the reactor coolant system.~~

2. Containment Spray System

a. System tests shall be performed during each reactor refueling shutdown. The tests shall be performed with the isolation valves in the spray supply lines at the containment and the spray additive tank isolation valves blocked closed. Operation of the system is initiated by tripping the normal actuation instrumentation.

b. The spray nozzles shall be checked for proper functioning at least every ten years.

c. The test will be considered satisfactory if visual observations indicate all components have operated satisfactorily.

Addressed Elsewhere

Part D

PACKAGE 3.5

EMERGENCY CORE COOLING SYSTEMS (ECCS)

DISCUSSION OF CHANGES TO CURRENT TECHNICAL SPECIFICATIONS

The proposed changes to PI Operating License Appendix A, TS are discussed below and the specific wording changes are shown in Parts B, C and E.

For ease of review, all package parts and discussions are organized according to the proposed PI ITS Table of Contents.

NSHD category	Change number 3.5-	Discussion Of Change
A	00	CTS 3.3, Table TS.4.1-2B, and 4.5 throughout these Sections. All reformatting, renumbering, and editorial rewording is in accordance with the Westinghouse Standard Technical Specifications, NUREG-1431. During the development certain wording preferences, Plant terminology, system names, or English language conventions were adopted. As a result, the Technical Specifications (TS) should be more readily readable, and therefore understandable, by plant operators and other users. During the reformatting, renumbering, and rewording process, no technical changes (either actual or interpretational) to the TS were made unless they were identified and justified. These changes are considered administrative changes since they do not change or delete any technical requirements.

NSHD category	Change number 3.5-	Discussion Of Change
A	01	CTS 3.3.A.1.a. Specific details of RWST OPERABILITY requirements have been relocated to the Surveillance Requirements. Since these requirements remain within the TS, this change is administrative.
M	02	A new SR, 3.5.4.1, is included which requires verification of the RWST water volume every 7 days. Operators are currently required to verify the RWST water volume in accordance with plant procedures; however, since this is now a formal TS requirement it is more restrictive on plant operations. Since the RWST volume is normally stable and the RWST is located in the Auxiliary Building which provides leak detection capability, a 7 day Frequency is appropriate and has been shown to be acceptable through operating experience. This more restrictive change is included to make the PI ITS complete. This change is consistent with the guidance of NUREG-1431.
M	03	CTS 3.3.A.1.a. PI currently limits the upper boron concentration in the RWST to 3500 ppm to assure analysis assumptions are met. However this is not a requirement in the CTS. For completeness, this limit is included in the ITS. This is also consistent with the guidance of NUREG-1431.
A	04	CTS 3.3.A.1.b. The details of ECCS Accumulators OPERABILITY requirements have been relocated to the Surveillance Requirements. Since these requirements remain in TS, this change is administrative.

NSHD category	Change number 3.5-	Discussion Of Change
M	05	Four new SRs, 3.5.1.1, 3.5.1.2, 3.5.1.3 and 3.5.1.5, have been included which require verification that the isolation valves are fully open, the water volume is within limits, the cover pressure is within limits and power is removed from the ECCS accumulator isolation valves. Some of these requirements are currently part of the Specification requirements. Operators are currently required to verify these parameters in accordance with plant procedures; however, since these are now formal TS Surveillance Requirements it is more restrictive on plant operations. These more restrictive changes are included to make the PI ITS complete. These changes are consistent with NUREG-1431 guidance and are included to make the ITS complete.
M	06	CTS 3.3.A.1.c, 3.3.A.1.d and 3.3.A.1.e. This Specification is revised to require "ECCS trains" OPERABLE which is more inclusive of equipment than the specific requirement for SI pumps to be OPERABLE. "ECCS trains" also envelopes the details of Specifications 3.3.A.1.d and e. The details of equipment included in the ECCS subsystems is included in the USAR and the Bases and therefore is unnecessary in this specification. These changes are consistent with the guidance of NUREG-1431. Since the term "ECCS trains" is a general, more inclusive term, the proposed ITS specification requires more plant equipment to be OPERABLE; therefore, this change is more restrictive. These more restrictive changes are included to make the PI ITS complete.

NSHD category	Change number 3.5-	Discussion Of Change
A	07	CTS 3.3.A.1.c. This change restricts the applicability of the Specification requiring two trains to be OPERABLE to RCS MODES 1, 2 and 3 (RCS temperatures above 350°F). The Specification requirements for operation above 350°F are not changed; therefore, this change is considered administrative. ECCS specifications for operations in MODE 4 (RCS temperatures below 350°F) are addressed in a new specification which is discussed below. Since the exceptions "specified in Sections 3.3.A.3 and 3.3.A.4" only apply during temperatures below 350°F, this clause has not been included. This change is consistent with the guidance of NUREG-1431.
M	08	Four new SRs, 3.5.2.1, 3.5.2.2, 3.5.2.3, and 3.5.2.8, have been added to the PI ITS. These SRs require verification of ECCS MOV positions, non-MOV positions, MOV breaker positions and containment sumps clear of debris. Some of these requirements are currently part of the Specification requirements. While many of these verifications are currently performed as part of plant practices, these SRs may make the plant safer through formal TS Surveillance Requirements. These new SRs place more restrictions on plant operations and therefore these changes are more restrictive. These more restrictive changes are included to make the PI ITS complete. These changes are also consistent with the guidance of NUREG-1431.

NSHD category	Change number 3.5-	Discussion Of Change
LR	11	CTS 3.3.A.1.f. Specific details on control of valve positions are relocated to the Bases. These details are not necessary in the TS since the LCO requirement that the systems are OPERABLE envelopes these requirements. This change is consistent with the guidance of NUREG-1431. Since the ITS Bases (under the Bases Control Program in Section 5.5 of the ITS) and plant procedures are licensee controlled, this change is less restrictive.
LR	12	3.3.A.1.g. and 3.3.A.2.g Specific details on position indication monitoring light and alarm OPERABILITY are relocated to the TRM. These details are not necessary in the TS since the LCO requirement that the systems are OPERABLE envelopes these requirements. This change is consistent with the guidance of NUREG-1431. Since the TRM is licensee controlled under the USAR 10 CFR 50.59 requirements, this change is less restrictive.
L	13	CTS 3.3.A.2. A new Condition B for LCO 3.5.2 has been included which requires that if one or more trains of ECCS are inoperable for longer than the 72 hours allowed by Condition A, than the plant must be placed in Mode 3 within 6 hours and Mode 4 within 12 hours. By reducing RCS temperatures to Mode 4, the plant is in a mode in which the LCO does not apply. Further reduction in RCS temperatures to cold shutdown is unnecessary and may be unsafe since RHR operability is required at lower temperatures. Therefore, only requiring the plant to go to MODE 4 vs the CTS requiring the plant to go to Cold Shutdown (Mode 5) is a Less Restrictive change. These changes are consistent with the guidance of NUREG-1431.

NSHD category	Change number 3.5-	Discussion Of Change
L	16	A new Action Statement is included which allows the boron concentration in one accumulator to be outside its limits for up to 72 hours. This increase in the allowed outage time for boron concentration is acceptable because the boron concentration in the accumulators is not specifically evaluated in the injection phase of the LOCA analysis. Although the boron concentration of the accumulators is considered in the recirculation phase, the impact of a single accumulator's borated water volume is not significant when compared to the total borated water volume present during the recirculation phase. The proposed change is also acceptable based on the small probability of an event requiring the accumulator to function occurring in 72 hours. Also, the current 1 hour allowed outside the limits does not provide a reasonable time in which to restore and verify boron concentration if it is found out of limits. The proposed change allows sufficient time to correct a problem and therefore reduces the potential for a plant transient due to boron concentration being found outside the TS limits. This change is consistent with the guidance of NUREG-1431.

NSHD category	Change number 3.5-	Discussion Of Change
A	17	CTS 3.3.A.2.f. New Condition is added stating that if ECCS flow is less than 100% of the ECCS flow equivalent to a single OPERABLE ECCS train available, enter LCO 3.0.3 immediately. This new Action Statement is acceptable because it continues to require OPERABLE flow capacity equivalent to one ECCS train or 100% of the required flow. Thus the loss of function is limited to a single train of ECCS which is functionally equivalent to the CTS requirements. In addition, requiring the unit to be placed in LCO 3.0.3 is consistent with the CTS since the CTS would also require entry into LCO 3.0.C since the CTS does not have a specific action requirement associated with this condition. This change is consistent with the guidance of NUREG-1431.
M	18	CTS 3.3.A.3.g. CTS requirements to assure that the accumulator isolation valves are open through reliance on valve position indication lights and alarms has not been included in the ITS and instead more restrictive NUREG-1431 requirements to remove power from the isolation valves has been adopted. This change has been implemented through the addition of new SR 3.5.1.5, which requires verification that isolation valve power has been removed, and supporting discussion in the Bases. This change is consistent with the guidance of NUREG-1431 and is included to improve plant safety.

NSHD category	Change number 3.5-	Discussion Of Change
L	19	A new Action Statement is included which allows 8 hours to restore the RWST boron concentration to within its limits. CTS do not specify an allowable time to restore RWST boron concentration. Thus, the plant would enter CTS LCO 3.0.C which would require restoring RWST boron concentration within 1 hour and the plant would be shutdown within an additional 6 hours if the boron concentration could not be restored within that time. This change is acceptable since the RWST is still available for injection and the RWST is a very large volume of water which assures that the concentration is unlikely to be significantly outside the boron concentration limits. Eight hours is a reasonable time in which the concentration can be restored. This change is consistent with the guidance of NUREG-1431.
A	20	CTS 3.3.A.1.a, Table 4.1-2B, Test 10, 4.5.B.3.a and 4.5.B.3.c. These Specifications were revised by LAR entitled, "Removal of Boric Acid Storage Tanks from the Safety Injection System," submitted April 17, 2000. Since these changes were justified in that submittal, they are considered administrative changes in this submittal.

NSHD category	Change number 3.5-	Discussion Of Change
LR	21	CTS 4.5.A.1.a and 4.5.A.1.b. Specific test parameters, conditions and acceptance criteria have been relocated to the Bases. This level of detail is not consistent with the guidance of NUREG-1431. Since the ITS Bases (under the Bases Control Program in Section 5.5 of the ITS) are licensee controlled, this change is less restrictive. The provision which allows the SI and RHR pumps to be inoperable when this test is performed has been deleted since it is contradictory to the requirements of SR 3.5.2.6. This change reduces plant flexibility and is therefore more restrictive. This change is acceptable since it assures that these pumps will start as required and is consistent with current plant test practices.
A	22	CTS 4.5.B.1.a. CTS 4.2 require plant equipment testing in accordance with the IST Program; thus, this is an administrative change which is consistent with the guidance of NUREG-1431.
LR	23	CTS 4.5.B.1.a and 4.5.B.3.b. The requirements to test specific components such as pumps and valves have been relocated to the IST Program (under the IST Program requirements in Section 5.5 of the ITS). This change is consistent with the guidance of NUREG-1431. Since the IST Program is licensee controlled, this change is less restrictive.

NSHD category	Change number 3.5-	Discussion Of Change
LR	24	CTS 4.5.B.3.g.1 and 4.5.B.3.g.2. Requirements for verifying ECCS throttle valve stop position after each stroking or maintenance are relocated to the TRM. In accordance with NUREG-1431 guidance, post-maintenance test requirements have been completely removed from the PI ITS. This change is less restrictive since the TRM is under licensee control. However this change is acceptable since the TRM is under the controls of 10 CFR 50.59.
L	25	CTS 4.5.B.3.g.3. The surveillance interval for throttle valve position verification is increased from 18 months to 24 months to accommodate extended refueling cycles. In accordance with SR 3.0.2 this surveillance interval is fixed at this maximum and is not allowed to be extended beyond 24 months. This change is acceptable because there are no time dependent degradation mechanisms that affect the position of manual throttle valves. This change is consistent with the guidance of GL 91-04.
LR	26	CTS 4.5.B.3.h. Requirements for performing ECCS post-modification flow tests are relocated to the TRM. This change is consistent with the guidance of NUREG-1431. In accordance with this guidance, post-modification test requirements have been completely removed from the PI ITS. This change is less restrictive since the TRM is under licensee control. However this change is acceptable since the TRM is under the controls of 10CFR50.59.

NSHD category	Change number 3.5-	Discussion Of Change
	27 - 300	Not used in Part D.
A	301	CTS 3.3 and 4.5 Applicability and Objectives. The beginning of each CTS section contains general statements of Applicability and Objectives for that TS section. This Applicability states the plant operations to which the specifications apply, which is a different meaning than the Applicability in NUREG-1431. Since the ITS clearly states within each specification the operations to which it applies, administratively these statements have been incorporated. Likewise, the CTS Objectives statement provides an overall purpose for the specifications within the section. These objectives are administratively incorporated in general through the statement of the ITS specification LCO and the supporting Bases. Since these general CTS statements do not establish any regulatory requirements and are incorporated in a broad sense in the ITS, these are considered administrative changes.
A	302	CTS 3.3.A, 4.5.A.1, 4.5.B.1.a and 4.5.B.3.f. In ITS, these specification requirements apply to the ECCS. Thus the title has been changed to ECCS. The ITS Action Statements and SRs apply to ECCS rather than subsystem components; thus the title for these components has also been changed to ECCS. Since the ITS applies to the same equipment as CTS and no Specification changes have been made, these are administrative changes.

NSHD category	Change number 3.5-	Discussion Of Change
A	303	CTS 3.3.A.1 and 3.3.A.2. The CTS contain prose descriptions of the conditions for which the specification is applicable. This description has been replaced with the equivalent MODES of applicability for the ITS. Since the plant conditions to which this specification apply have not changed, this is an administrative change.
A	304	CTS 3.3.A.1.b. CTS provides the operable range for accumulator parameters in terms of a median value plus or minus the allowable variation. In accordance with the guidance of NUREG-1431, this presentation has been replaced by a simple range over which the parameters are acceptable without requiring the operators to perform any calculations. Since the required range for the parameters has not changed, this is an administrative change.
	305	Not used.

NSHD category	Change number 3.5-	Discussion Of Change
A	306	CTS 3.3.A.2. CTS states that. "any one of the following conditions of inoperability may exist . . ." This requirement prevents two or more of the listed conditions from existing at the same time. The limitation that only one condition of inoperability may exist is not explicitly stated in ITS. In ITS, these conditions may be in more than one specification. However, in the NUREG-1431 format, the SFDP exists to provide a mechanism to assure that entry into multiple TS Conditions will not result in loss of safety function. Thus the SFDP limits these conditions from simultaneous existence when there is a loss of safety function. The Maintenance Rule will also assure that multiple equipment inoperabilities are evaluated for reduction of plant safety. Since the ITS includes provisions to address this clause, there is no net change in plant safety and this is an administrative change.
A	307	CTS 3.3.A.2.e. CTS allows an accumulator to be inoperable for 1 hour, after which plant shutdown is required. This change proposes to allow an accumulator to be inoperable for 24 hours before plant shutdown is required. This change is based on WCAP-15049 which has been reviewed and approved by the NRC. Each plant which chooses to implement this WCAP must demonstrate that the plant meets certain criteria. PI will submit an separate LAR which demonstrates that PI meets the criteria as required by WCAP-15049. Since another LAR will justify this change, in this ITS conversion LAR the accumulator AOT extension is considered an administrative change.

NSHD category	Change number 3.5-	Discussion Of Change
M	308	CTS 3.3.A.1. The CTS requires that the reactor shall not be made or maintained critical nor reactor coolant system average temperature exceed 200 degrees F unless the following conditions are satisfied. CTS 3.3.A.1(b) also requires that each reactor coolant system accumulator shall be OPERABLE when reactor coolant system pressure is greater than 1000 psig. In the event that an accumulator cannot be restored to OPERABLE within 24 hours, the CTS does not provide additional Actions. Therefore, CTS LCO 3.0.C would be entered. CTS LCO 3.0.C allows one hour to initiate reactor shutdown, an additional 6 hours to be in MODE 3 and another 30 hours (total 37 hours) to be in MODE 5. ITS LCO 3.5.1, Required Action A allows an accumulator to be inoperable for 72 hours or Condition B allows the accumulator to be inoperable for 24 hours. Both these Conditions require that if the inoperable accumulator cannot be restored to OPERABLE, within the associated Completion Time, then the reactor will be placed in MODE 3 within 6 hours and $\leq$ 1000 psig within 12 hours. Although the resultant Actions for both the CTS and ITS are the same, the ITS does not allow the additional hour, as in the CTS, to initiate action for the reactor shutdown. Therefore; the ITS is more restrictive, thus making this a More Restrictive change. This change is safe because the 6 hours and 12 hours provide adequate time to safely bring the plant to MODE 3 and $\leq$ 1000 psig respectively. This change is consistent with NUREG-1431, Rev. 1.

NSHD category	Change number 3.5-	Discussion Of Change
A	309	CTS 3.3.A.1.(b) requires both accumulators to be OPERABLE when the reactor pressure is greater than 1000 psig. In the event both accumulators become inoperable, LCO 3.0.C (ITS 3.0.3) would be entered since there is no specific Required Action stated. ITS adds Condition D which specifically requires LCO 3.0.3 to be entered if two accumulators are inoperable. This is considered to be an administrative change since the intent and actions of the CTS are the same as the ITS. The only difference being that the ITS provides a specific Condition statement. The difference between the CTS 3.0.C and ITS 3.0.3 is discussed in the DOC for ITS Section 3.0. This change is consistent with NUREG-1431, Rev. 1.
L	310	CTS 3.3. Added a Note stating that in MODE 3, both SI pump flow paths may be isolated by closing the isolation valves for up to 2 hours to perform pressure isolation valve testing per SR 3.4.15.1. This isolation function will be performed in the control room under supervision and plant procedures. The CTS does not allow this relaxation. This isolation is acceptable due to the low probability of an accident occurring that would require the SI system to function. In addition, isolating the SI flow system would be under a controlled condition to where the flow paths would be readily restored from the control room in the event they are needed for accident mitigation. This change is consistent with NUREG-1431, Rev. 1.
	311	Not used.

NSHD category	Change number 3.5-	Discussion Of Change
M	312	CTS 3.3.A.1. New LCO 3.5.3 Conditions A, B, and C are included. These new Conditions provide restoration and Completion Time requirements for an inoperable ECCS RHR subsystem and SI subsystem. In Condition A with one ECCS RHR subsystem inoperable, there are no ECCS RHR systems OPERABLE. Therefore, the plant is not prepared to respond to a LOCA or to continue cooldown using RHR pumps and heat exchangers. This is a more restrictive change since the CTS does not provide a specific Completion Time to restore the RHR subsystem to OPERABLE, whereas the ITS provides Completion Time of immediately to initiate actions that would restore at least one ECCS RHR subsystem to OPERABLE status. The Completion Time of immediately ensures that prompt action is taken to restore the required cooling capacity. With both RHR pumps and heat exchangers inoperable, it would be unwise to require the plant to go to MODE 5, where the only available heat removal system is the RHR. Therefore, the appropriate action is to initiate measures to restore one ECCS RHR subsystem and to continue the actions until the subsystem is restored to OPERABLE status. In Condition B with no ECCS SI subsystem OPERABLE (neither train), due to inoperability of the SI pump or flow path from the RWST, the plant is not prepared to provide high pressure response to Design Basis Events requiring SI. This is acceptable since the 1 hour Completion Time to restore at least one SI subsystem to OPERABLE

NSHD category	Change number 3.5-	Discussion Of Change
M	312	(cont.)

status ensures that prompt action is taken to provide the required cooling capacity or to initiate actions to place the plant in MODE 5, where an ECCS train is not required. This is a more restrictive change since the CTS does not provide a specific Completion Time to restore at least one SI subsystem to OPERABLE, whereas the ITS provides a Completion Time of 1 hour.

In Condition C when the Required Actions of Condition B cannot be completed within the required Completion Time, a controlled shutdown should be initiated. The CTS does not provide any specific action in this condition; therefore, the plant would enter LCO 3.0.C. The CTS LCO 3.0.C allows one hour to initiate reactor shutdown, an additional 6 hours to be in MODE 3 and another 30 hours (total 37 hours) to be in MODE 5. ITS 3.5.3 Condition C allows 24 hours to be in MODE 5. This is a more restrictive change since the CTS would allow a total of 37 hours to be in MODE 5 whereas the ITS only allows 24 hours. Although the resultant Actions for both the CTS and ITS are the same, the ITS does not allow the additional hour, as in the CTS, to initiate action for the reactor shutdown. Twenty-four hours is a reasonable time, based on operating experience, to reach MODE 5 in an orderly manner and without challenging plant systems or operators.

NSHD category	Change number 3.5-	Discussion Of Change
M	313	CTS 3.3.A.2. New Required Action and Completion Time LCO 3.5.4, Condition C is included. This new requirement states that if the RWST cannot be returned to OPERABLE status within the associated 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 6 hours and to MODE 5 within 36 hours. The CTS would require the plant to enter LCO 3.0.C. However, the CTS allows one hour to initiate reactor shutdown, an additional 6 hours to be in MODE 3 and another 30 hours (total 37 hours) to be in MODE 5. Although the resultant Actions for both the CTS and ITS are essentially the same, the ITS does not allow the additional hour, as in the CTS, to initiate action for the reactor shutdown. Therefore, the ITS is more restrictive. The allowed Completion Times are reasonable, based on operating experience, to reach plant conditions from full power conditions in a orderly manner and without challenging plant systems. This change is consistent with NUREG-1431, Rev.1.

NSHD category	Change number 3.5-	Discussion Of Change
M	314	CTS 3.3.A.2 A new Condition B for LCO 3.5.2 has been included which requires that if one or more trains of ECCS are inoperable for longer than the 72 hours, allowed by Condition A, than the plant must be placed in Mode 3 within 6 hours and Mode 4 within 12 hours. Reducing RCS temperatures to Mode 4 in 12 hours is more restrictive than the CTS allowing 30 hours to be in Mode 5. Although the ITS only requires the plant to go to Mode 4 (DOC L3.5-13 above), a shorter time of 12 hours is now required for the Operators to take shutdown actions vs the current 30 hours. This reduction in time is considered to be more restrictive. This change is acceptable since the 6 hours and 12 hours provide adequate time to safely bring the plant to MODE 3 and MODE 4 without increasing the probability of an unexpected transient or unnecessarily cycling the plant. This change is consistent with NUREG-1431, Rev. 1
L	315	CTS 3.3.A.2.f. This Action Statement is revised to allow combinations of ECCS components or subsystems to be inoperable provided at least 100% ECCS flow equivalent to a single ECCS train remains OPERABLE (ITS LCO 3.5.2 Condition C). This condition envelopes all other CTS conditions for ECCS equipment inoperability. This change may be less restrictive because it allows a combination of components or subsystems (which could include parts of both ECCS trains) to be inoperable, while CTS restricted inoperability to one ECCS train. This revised Action Statement is acceptable because it continues to require OPERABLE flow capacity equivalent to one ECCS train or 100% of the required flow. This change is consistent with NUREG-1431.

NSHD category	Change number 3.5-	Discussion Of Change
A	316	CTS 3.3.A.1.g.(1) and (2). These Action Statements were revised to include the PI specific valve numbers with their associated Westinghouse valve numbers. Both numbers are utilized in the control room. Therefore; to avoid confusion, both numbers are included in the ITS.

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 4.	6 hours 12 hours
C. Less than 100% of the ECCS flow equivalent to a single OPERABLE ECCS train available.	C.1 Enter LCO 3.0.3.	Immediately TA3.5-40

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.5.2.1 Verify the following valves are in the listed position ~~with power to the valve operator removed~~.	12 hours

Unit 1 Valve Number	Westinghouse Valve Number	Position	Function
32070	~~8801A~~	~~OPEN~~	~~SI Injection to RCS Cold Leg A~~
32068	~~8801B~~	~~OPEN~~	~~SI Injection to RCS Cold Leg B~~
32073	8806A	OPEN	SI Cold Leg Injection Line~~...~~
32206	8816A	CLOSED	SI Pump Suction from RHR~~...~~
32207	8816B	CLOSED	SI Pump Suction from RHR~~...~~

Unit 2 Number	Westinghouse Valve Number	Position	Function
32173	8801A	OPEN	SI Injection to RCS Cold Leg A
32171	8801B	OPEN	SI Injection to RCS Cold Leg B
32176	8806A	OPEN	SI Cold Leg Injection Line~~...~~
32208	8816A	CLOSED	SI Pump Suction from RHR~~...~~
32209	8816B	CLOSED	SI Pump Suction from RHR~~...~~

CL3.5-41

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SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.2.2	Verify each ECCS manual, power operated, and automatic valve in the flow path, that is not locked, sealed, or otherwise secured in position, is in the correct position.	31 days CL3.5-42
SR 3.5.2.3	Verify power to the valve operator has been removed for each valve listed in SR 3.5.2.1 ~~ECCS piping is full of water~~.	31 days X3.5-43
SR 3.5.2.4	Verify each ECCS pump's developed head at the test flow point is greater than or equal to the required developed head.	In accordance with the Inservice Testing Program
SR 3.5.2.5	Verify each ECCS automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	~~24 [18]~~ months CL3.5-44 R-2
SR 3.5.2.6	Verify each ECCS pump starts automatically on an actual or simulated actuation signal.	~~24 [18]~~ months CL3.5-44 R-2

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.2.7	Verify~~, for~~ each ECCS throttle valve listed below~~, each position stop~~ is in the correct position. Unit 1 Valve Number — Unit 2 Valve Number ~~[~~SI-15-6 ~~]~~ — 2SI-15-6 ~~[~~SI-15-7 ~~]~~ — 2SI-15-7 SI-15-8 — 2SI-15-8 SI-15-9 — 2SI-15-9 ~~[ ]~~	24~~[18]~~ months X3.5-46 R-2 CL3.5-45
SR 3.5.2.8	Verify, by visual inspection, each ECCS train containment sump suction inlet is not restricted by debris and the suction inlet trash racks and screens show no evidence of structural distress or abnormal corrosion.	24~~[18]~~ months PA3.5-142 R-5

B 3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

B 3.5.1 Accumulators

PA3.5-61

BASES

BACKGROUND

The functions of the ECCS accumulators are to supply water to the reactor vessel during the blowdown phase of a large break loss of coolant accident (LOCA), to provide inventory to help accomplish the refill and reflood phases that follows thereafter, and to provide Reactor Coolant System (RCS) makeup for a small break LOCA.

CL3.5-62

The blowdown phase of a large break LOCA is the initial period of the transient during which the RCS departs from equilibrium conditions, and heat from fission product decay, hot internals, and the vessel continues to be transferred to the reactor coolant. The reactor coolant inventory is vacating the core during this phase through steam flashing and ejection out through the break. The blowdown phase of the transient ends when the RCS pressure falls to a value approaching that of the containment atmosphere.

PA3.5-63

In the refill phase of a LOCA, which immediately follows the blowdown phase, reactor coolant inventory has vacated the core through steam flashing and ejection out through the break. The core is essentially in adiabatic heatup. The balance of accumulator inventory is ~~then~~ available to help fill voids in the lower plenum and reactor vessel downcomer, ~~so as to establish a recovery level at the bottom of the core~~ and to help the ongoing reflood of the core with the addition of emergency core cooling system (ECCS)~~safety injection (SI)~~ water.

R-5

CL3.5-62

The accumulators are pressure vessels partially filled with borated water and pressurized with nitrogen gas. The

(continued)

accumulators are passive components, since no operator or control actions are required in order for them to perform

BASES

BACKROUND (continued)

their function. Internal accumulator tank pressure is sufficient to discharge the accumulator contents to the RCS, if RCS pressure decreases below the accumulator pressure.

Each accumulator is piped into an RCS cold leg via an accumulator line and is isolated from the RCS by a motor operated isolation valve and two check valves in series. The motor operated isolation valves (Unit 1 - MV 32071 and MV 32072 (Westinghouse valve numbers 8800A and 8800B respectively), Unit 2 - MV 32174 and MV 32175 (Westinghouse valve numbers 8800A and 8800B respectively)) are maintained open with AC power removed under administrative control when RCS pressure is > 2000 psig. ~~interlocked by P-11 with the pressurizer pressure measurement channels to ensure that the valves will automatically open as RCS pressure increases to above the permissive circuit P-11 setpoint.~~

CL3.5-66

TA3.5-67

R-5

TA3.5-67

~~This interlock also prevents inadvertent closure of the valves during normal operation prior to an accident. The valves will automatically open, however, as a result of an SI signal. These features ensure that the valves meet the requirements of the Institute of Electrical and Electronic Engineers (IEEE) Standard 279-1971 (Ref. 1) for "operating bypasses" and that the accumulators will be available for injection without reliance on operator action.~~

CL3.5-62

The accumulator size, water volume, and nitrogen cover pressure are selected so that one~~three~~ of the two~~four~~ accumulators is~~are~~ sufficient to partially cover the core before significant clad melting or zirconium water reaction can occur following a LOCA. The need to ensure that

(continued)

one~~three~~ accumulator~~s~~ is~~are~~ adequate for this function is consistent with the LOCA assumption that the entire contents of one accumulator will be lost via the RCS pipe break during the blowdown phase of the LOCA.

BASES (continued)

APPLICABLE SAFETY ANALYSES

The accumulators are assumed OPERABLE in both the large and small break LOCA analyses at full power (Ref. ~~1~~2). These are the Design Basis Accidents (DBAs) that establish the acceptance limits for the accumulators. Reference to the analyses for these DBAs is used to assess changes in the accumulators as they relate to the acceptance limits. CL3.5-62 R-1

In performing the LOCA calculations, conservative assumptions are made concerning the availability of ECCS flow. In the early stages of a large break LOCA, with or without a loss of offsite power, the accumulators provide the sole source of makeup water to the RCS. The assumption of loss of offsite power is required by regulations and conservatively imposes a delay wherein the ECCS pumps cannot deliver flow until the emergency diesel generators start, come to rated speed, and go through their timed loading sequence. In cold leg break scenarios, the entire contents of one accumulator are assumed to be lost through the break.

The limiting large break LOCA is a double ended guillotine break at the discharge of the reactor coolant pump. During this event, the accumulators discharge to the RCS as soon as RCS pressure decreases to below accumulator pressure. CL3.5-71

As a conservative estimate, no credit is taken for ECCS pump flow until an effective delay has elapsed. This delay accounts for safety injection (SI) signal generation, the diesels starting and the pumps being loaded and delivering full flow. The SI signal generation occurs~~delay time is conservatively set with an additional~~ approximately 2 seconds into the transient~~to account for SI signal~~ R-5

(continued)

~~generation~~. During this time, the accumulators are analyzed as providing the sole source of emergency core cooling. No operator action is assumed during the blowdown stage of a large break LOCA.

The worst case small break LOCA analyses also assume a time delay before pumped flow reaches the core. For the larger range of small breaks, the rate of blowdown is such that the increase in fuel clad temperature is terminated solely by

CL3.5-72

BASES

APPLICABLE SAFETY ANALYSIS (continued)

the accumulators, with pumped flow then providing continued cooling. As break size decreases, the accumulators and safety injection~~centrifugal charging~~ pumps both play a part in terminating the rise in clad temperature. As break size continues to decrease, the role of the accumulators continues to decrease until they are not required and the safety injection~~centrifugal charging~~ pumps become solely responsible for terminating the temperature increase.

CL3.5-73

This LCO helps to ensure that the following acceptance criteria established for the ECCS by 10 CFR 50.46~~ (Ref. 3)~~ will be met following a LOCA:

a. The calculated peak fuel element cladding temperature is below the requirement of~~Maximum fuel element cladding temperature is ≤~~ 2200°F;

b. The cladding temperature transient is terminated at a time when the core geometry is still amenable to cooling. The localized cladding oxidation limits of 17% are not exceeded during or after quenching~~Maximum cladding oxidation is ≤ 0.17 times the total cladding thickness before oxidation~~;

c. The amount of hydrogen generated by fuel element cladding that reacts chemically with water or steam does not exceed an amount corresponding to interaction of 1% of the total amount of Zircaloy in the reactor~~Maximum hydrogen generation from a zirconium water reaction is ≤ 0.01 times the hypothetical~~

(continued)

~~amount that would be generated if all of the metal in the cladding cylinders surrounding the fuel, excluding the cladding surrounding the plenum volume, were to react~~; and CL3.5-73

d. The core remains amenable to cooling during and after the break~~Core is maintained in a coolable geometry~~.

BASES

APPLICABLE SAFETY ANALYSES (continued)

Since the accumulators discharge during the blowdown phase of a LOCA, they do not contribute to the long term cooling requirements of 10 CFR 50.46.

For ~~both~~ the large ~~and small~~ break LOCA analyses, a nominal contained accumulator water volume of 1270 cubic feet is used based on minimum and maximum volumes of 1250 cubic feet (25% indicated level) and 1290 cubic feet (91% indicated level). The contained water volume is the same as the deliverable volume for the accumulators, since the accumulators are emptied, once discharged. ~~For small breaks, an increase in water volume is a peak clad temperature penalty.~~ For large breaks, an increase in water volume can be either a peak clad temperature penalty or benefit, depending on downcomer filling and subsequent spill through the break during the core reflooding portion of the transient. Prairie Island is a two loop plant with Upper Plenum Injection (UPI) LOCA analyses. For UPI plant small breaks, a decrease in water volume is a peak clad temperature penalty; thus a minimum contained water volume is assumed. Both large and small break analyses use a nominal accumulator line water volume from the accumulator to the check valve.~~The analysis makes a conservative assumption with respect to ignoring or taking credit for line water volume from the accumulator to the check valve. The safety analysis assumes~~ CL3.5-74 CL3.5-74 PA3.5-76

(continued)

~~values of [6468] gallons and [6879] gallons. To allow for instrument inaccuracy, values of [6520] gallons and [6820] gallons are specified.~~

The minimum boron concentration setpoint is used in the post LOCA boron concentration calculation. The calculation is performed to assure reactor subcriticality in a post LOCA environment. Of particular interest is the large break LOCA, since no credit is taken for control rod assembly insertion. A reduction in the accumulator minimum boron concentration would produce a subsequent reduction in the

BASES

APPLICABLE SAFETY ANALYSES (continued)

post sump pH. considered

available containment sump concentration for LOCA shutdown and an increase in the maximum

CL3.5-77

For conservatism, the accumulators are not in the boron buildup analyses since their inclusion would dilute the sump concentration. ~~The maximum boron concentration is used in determining the cold leg to hot leg recirculation injection switchover time and minimum sump pH.~~

The ~~large and~~ small break LOCA analyses are performed at the minimum nitrogen cover pressure, since sensitivity analyses have demonstrated that higher nitrogen cover pressure results in a computed peak clad temperature benefit. The large break analyses utilize the nominal nitrogen cover pressure as per approved methods (Ref. 1). The maximum nitrogen cover pressure limit prevents accumulator relief valve actuation, and ultimately preserves accumulator integrity.

CL3.5-81

The effects on containment mass and energy releases from the accumulators are accounted for in the appropriate analyses (Refs. 1~~-2~~ and ~~2~~4).

The accumulators satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii) ~~the NRC Policy Statement~~.

(continued)

LCO

The LCO establishes the minimum conditions required CL3.5-62 to ensure that the accumulators are available to accomplish their core cooling safety function following a LOCA. Two~~Four~~ accumulators are required to ensure that 100% of the contents of one~~three of the~~ accumulator~~s~~ will reach the core during a LOCA. This is consistent with the assumption that the contents of one accumulator spill through the break. If less than one~~three~~ accumulator~~s~~ is~~are~~ injected during the blowdown phase of a LOCA, the ECCS acceptance criteria of 10 CFR 50.46 ~~(Ref. 3)~~ could be violated.

For an accumulator to be considered OPERABLE, CL3.5-32 the

BASES

LCO (Continued)

motor-operated isolation valve must be fully open, power removed above ~~[~~2000~~]~~ psig, and the limits established in the SR~~s~~s for contained volume, boron concentration, and nitrogen cover pressure must be met.

APPLICABILITY

In MODES 1 and 2, and in MODE 3 with RCS pressure > 1000 psig, the accumulator OPERABILITY requirements are based on full power operation. Although cooling requirements decrease as power decreases, the accumulators are still required to provide core cooling as long as elevated RCS pressures and temperatures exist.

This LCO is only applicable at pressures > 1000 psig. At pressures ≤ 1000 psig, the rate of RCS blowdown is such that the ECCS pumps can provide adequate injection to ensure that peak clad temperature remains below the 10 CFR 50.46 ~~(Ref. 3)~~ limit of 2200°F.

In MODE 3, with RCS pressure ≤ 1000 psig, and in MODES 4, 5, and 6, the accumulator motor operated isolation valves are closed to isolate the accumulators from the RCS. This

BASES

allows RCS cooldown and depressurization without discharging the accumulators into the RCS or requiring depressurization of the accumulators.

ACTIONS A.1

If the boron concentration of one accumulator is not within limits, it must be returned to within the limits within CL3.5-82

72 hours. In this Condition, ability to maintain subcriticality ~~or minimum boron precipitation time~~ may be reduced. The boron in the accumulators contributes to the assumption that the combined ECCS water in the partially

ACTIONS A.1 (continued)

recovered core during the early reflooding phase of a large break LOCA is sufficient to keep that portion of the core subcritical. One accumulator below the minimum boron concentration limit, however, will have no effect on available ECCS water and an insignificant effect on core subcriticality during reflood since the accumulator water volume is very small when compared to RCS and RWST inventory. Boiling of ECCS water in the core during reflood concentrates boron in the saturated liquid that remains in the core. In addition, current analysis techniques demonstrate that the accumulators are~~do~~ not expected to discharge following a large main steam line break ~~for the majority of plants~~. Even if they do discharge, their impact is minor and not a design limiting event. Thus, 72 hours is allowed to return the boron concentration to within limits. CL3.5-82

~~B~~A.1

If one accumulator is inoperable for a reason other than boron concentration, the accumulator must be returned to OPERABLE status within ~~24~~ hours. In this Condition, the required contents of ~~one~~three accumulator~~s~~ cannot be assumed to reach the core during a LOCA. Due to the severity of the consequences should a LOCA occur in these conditions, the ~~24~~ hour Completion Time to open the valve, remove power to the valve, or restore the proper water volume or nitrogen cover pressure ensures that prompt action will be taken to return the inoperable accumulator to OPERABLE status. The Completion Time minimizes the potential for exposure of the plant to a LOCA under these conditions. The 24 hours allowed to restore an inoperable accumulator to OPERABLE status were justified in Reference 3.

X3.5-34

BASES

ACTIONS (continued)

C.1 and C.2

If the accumulator cannot be returned to OPERABLE status within the associated 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 MODE 3 within 6 hours and RCS~~pressurizer~~ pressure reduced to ≤ 1000 psig within 12 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.

TA3.5-31

D.1

CL3.5-62

If both~~more than one~~ accumulators are~~is~~ inoperable, the plant is in a condition outside the accident analyses; therefore, LCO 3.0.3 must be entered immediately.

X3.5-34

SURVEILLANCE REQUIREMENTS

SR 3.5.1.1

Each accumulator motor operated valve should be verified to be fully open every 12 hours. Use of control board indication (position monitor lights and alarms) for valve position is an acceptable verification. This verification ensures that the accumulators are available for injection and ensures timely discovery if a valve should be less than fully open. If an isolation valve is not fully open, the rate of injection to the RCS would be reduced. Although a motor operated valve position should not change with power removed, a closed or not fully open valve could result in not meeting accident analyses assumptions. This Frequency is considered reasonable in view of other administrative controls that ensure a mispositioned isolation valve is unlikely.

CL3.5-32

CL3.5-84

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.5.1.2 and SR 3.5.1.3

Every 12 hours, borated water volume and nitrogen cover pressure are verified for each accumulator. This Frequency is sufficient to ensure adequate injection during a LOCA. Because of the static design of the accumulator, a 12 hour Frequency usually allows the operator to identify changes before limits are reached. Operating experience has shown this Frequency to be appropriate for early detection and correction of off normal trends.

R-5

SR 3.5.1.4

The boron concentration should be verified to be within required limits for each accumulator every 31 days since the

B 3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

B 3.5.2 ECCS Operating

PA3.5-61

BASES

BACKGROUND The function of the ECCS is to provide core cooling and negative reactivity to ensure that the reactor core is protected after any of the following accidents:

a. Loss of coolant accident (LOCA), coolant leakage greater than the capability of the normal charging system; R-5

CL3.5-87

~~b. Rod ejection accident;~~

be. Loss of secondary coolant accident, including uncontrolled steam release ~~or loss of feedwater~~; and

cd. Steam generator tube rupture (SGTR).

The addition of negative reactivity is designed primarily for the loss of secondary coolant accident where primary cooldown could add enough positive reactivity to achieve criticality and return to significant power.

There are two~~three~~ phases of ECCS operation: injection~~, cold leg recirculation,~~ and ~~hot leg~~ recirculation. In the injection phase, water is taken from the refueling water storage tank (RWST) and injected into the Reactor Coolant System (RCS) through the cold legs and reactor vessel upper plenum. When sufficient water is removed from the RWST to ensure that enough boron has been added to maintain the reactor subcritical and the containment sump~~s~~ has~~have~~ enough water to supply the required net positive suction head to the RHR~~ECCS~~ pumps, suction is switched to ~~the~~ containment S~~s~~ump B for ~~cold leg~~ recirculation. When post accident RCS pressure drops below the RHR pump shutoff head, the RHR flow is directed into the reactor vessel upper plenum to~~After approximately 24 hours,~~

CL3.5-88

eachthe SI pump divides and feeds an injection line to each of the RCS cold legs. and RHR pumps divides and feeds an injection line to each of the RCS cold legs. ThrottleControl

BASES

BACKROUND (continued)

valves are set to balance the flow to the RCS. CL3.5-94 This balance ensures sufficient flow to the core to meet the analysis assumptions following a LOCA in one of the RCS cold legs. The discharge from each RHR pump divides and feeds an injection line to the reactor vessel upper plenum.

For LOCAs that are too small to depressurize the RCS below the shutoff head of the SI pumps, the steam generators provide core coolingcentrifugal charging pumps supply water until the RCS pressure decreases CL3.5-96 below the SI pump shutoff head. During this period, the steam generators are used to provide part of the core cooling function.

During the recirculation phase of LOCA recovery, RHR pump suction is manually transferred to the containment sump. The RHR pumps then supply the other ECCS pumps. CL3.5-97 Initially, recirculation is through the same paths as the injection phase. The RHR pumps provide flow to the reactor vessel upper plenum. If the RCS pressure limits RHR flow, then the RHR pumps supply the SI pumps which provide flow to CL3.5-88 theSubsequently, recirculation alternates injection between the hot and cold legs.

The SIcentrifugal charging subsystem of the ECCS also functions to supply borated water to the CL3.5-72 reactor core following increased heat removal events, such as a main steam line break (MSLB). The limiting design conditions occur when the negative moderator temperature coefficient is highly negative, such as at the end of each cycle. R-5

During low temperature conditions in the RCS,

~~As indicated in Note 1, the flow path may be isolated for 2 hours in MODE 3, under controlled conditions, to perform pressure isolation valve testing per SR 3.4.14.1. The flow path is readily restorable from the control room.~~ TA3.5-37 R-5

~~As indicated in Note 2, operation in MODE 3 with ECCS trains declared inoperable pursuant to LCO 3.4.12, "Low Temperature Overpressure Protection (LTOP) System," is necessary for plants with an LTOP arming temperature at or near the MODE 3 boundary temperature of 350EF. LCO 3.4.12 requires that certain pumps be rendered inoperable at and below the LTOP arming temperature. When this temperature is at or near the MODE 3 boundary temperature, time is needed to restore the inoperable pumps to OPERABLE status.~~ CL3.5-39

In MODES 4, 5 and 6, plant conditions are such that the probability of an event requiring ECCS injection is extremely low. MODE 4 core cooling requirements are addressed by LCO 3.5.3, "ECCS - Shutdown," and LCO 3.4.6, "RCS Loops - MODE 4." Core cooling requirements in MODE 5 are addressed by LCO 3.4.7, "RCS Loops - MODE 5, Loops Filled," and LCO 3.4.8, "RCS Loops - MODE 5, Loops Not Filled." MODE 6 core cooling requirements are addressed by LCO 3.9.5, "Residual Heat Removal (RHR) and Coolant Circulation - High Water Level," and LCO 3.9.6, "Residual Heat Removal (RHR) and Coolant Circulation - Low Water Level." PA3.5-111 R-5

BASES

ACTIONS

A.1

With one or more trains inoperable and at least 100% of the ECCS flow equivalent to a single OPERABLE ECCS train available, the inoperable components must be returned to OPERABLE status within 72 hours. The 72 hour Completion Time is based on an NRC reliability evaluation (Ref. ~~45~~) and is a reasonable time for repair of many ECCS components.

An ECCS train is inoperable if it is not capable of

delivering design flow to the RCS. Individual components are inoperable if they are not capable of performing their design function or required supporting systems are not available.

The LCO requires the OPERABILITY of a number of independent subsystems. Due to the redundancy of trains and the diversity of subsystems, the inoperability of one component in a train does not render the ECCS incapable of performing its function. Neither does the inoperability of two different components, each in a different train, necessarily result in a loss of function for the ECCS. ~~The intent of this Condition is to maintain a combination of equipment such that 100% of the ECCS flow equivalent to a single OPERABLE ECCS train remains available.~~ This allows increased flexibility in plant operations under circumstances when components in opposite trains are inoperable.

TA3.5-40

An event accompanied by a loss of offsite power and the failure of an EDG can disable one ECCS train until power is restored. A reliability analysis (Ref. ~~45~~) has shown that the impact of having one full ECCS train inoperable is sufficiently small to justify continued operation for 72 hours.

Reference ~~56~~ describes situations in which one component, such as an RHR crossover valve, can disable both ECCS trains. ~~-~~With one or more component(s) inoperable such that 100% of the flow equivalent to a single OPERABLE ECCS train is not

R-5

BASES

ACTIONS

A.1 (continued)

available, the facility is in a condition outside the accident analysis. Therefore, LCO 3.0.3 must be immediately entered.

B.1 and B.2

If the inoperable trains cannot be returned to OPERABLE

acceptable

BASES

SURVEILLANCE REQUIREMENTS

SR 3.5.2.7 (continued) CL3.5-122

level of total ECCS flow to all injection points equal to or above that assumed in the ECCS LOCA analyses. ~~Realignment of valves in the flow path on an SI signal is necessary for proper ECCS performance. These valves have stops to allow proper positioning for restricted flow to a ruptured cold leg, ensuring that the other cold legs receive at least the required minimum flow. This Surveillance is not required for plants with flow limiting orifices.~~ The 24~~18~~ month Frequency is based on the same reasons as those stated in SR 3.5.2.5 and SR 3.5.2.6. X3.5-46 R-2

SR 3.5.2.8 PA3.5-123

Periodic inspections of the containment sump suction inlet to the RHR System ensure that it is unrestricted and stays in proper operating condition. The 24~~18~~ month Frequency allows~~is based on the need to perform~~ this Surveillance to be performed under the conditions that apply during a plant outage~~, on the need to have access to the location, and because of the potential for an unplanned transient if the Surveillance were performed with the reactor at power~~. This Frequency has been found to be sufficient to detect abnormal degradation and is confirmed by operating experience. PA3.5-124 R-5 PA3.5-123 CL3.5-103

REFERENCES

1. AEC "General Design Criteria for Nuclear Power Plant Construction Permits," Criterion 44, issued for comment July 10, 1967, as referenced in USAR Section 1.2~~10 CFR 50, Appendix A, GDC 35~~.

2. USAR, Section 6.2~~10 CFR 50.46~~.

3. UFSAR, Section [4]~~Section [ ]~~.

4. ~~FSAR, Chapter [15], "Accident Analysis."~~

BASES

REFERENCES (continued)

~~5.~~ NRC Memorandum to V. Stello, Jr., from R.L. Baer, "Recommended Interim Revisions to LCOs for ECCS Components," December 1, 1975.

~~6~~5. IE Information Notice No. 87-01.

R-5

Loops – MODE 5, Loops Not Filled." MODE 6 core cooling requirements are addressed by LCO 3.9.5, "Residual Heat Removal (RHR) and Coolant Circulation – High Water Level," and LCO 3.9.6, "Residual Heat Removal (RHR) and Coolant Circulation – Low Water Level."

ACTIONS

A.1

With RWST boron concentration ~~or borated water temperature~~ not within limits, ~~it~~they must be returned to within limits within 8 hours. Under these conditions neither the ECCS nor the Containment Spray System can perform its design function. Therefore, prompt action must be taken to restore the tank to OPERABLE condition. The 8 hour limit to restore the RWST ~~temperature or~~ boron concentration to within limits was developed considering the time required to change ~~either~~ the boron concentration ~~or temperature~~ and the fact that the contents of the tank are still available for injection.

CL3.5-51

R-5

B.1

With the RWST water volume not within limits ~~inoperable for reasons other than Condition A (e.g., water volume)~~, it must be restored to OPERABLE status within 1 hour.

In this Condition, neither the ECCS nor the Containment Spray System can perform its design function. Therefore, prompt action must be taken to restore the tank to OPERABLE status or to place the plant in a MODE in which the RWST is not required. The short time limit of 1 hour to restore the RWST to OPERABLE status is based on this condition simultaneously affecting redundant trains.

CL3.5-52

(continued)

Difference Category	Difference Number 3.5-	Justification for Differences
CL	42	The listing of valves for new SR 3.5.2.1 was developed based on CTS 3.3.A.1.g.(1) and (2). The PI designated valve numbers for each unit are provided for ease of operator use.
X	43	ISTS SR 3.5.2.3 is not included in the PI ITS or Bases since this requirement is not contained in the CTS and is not considered necessary to ensure operability of the ECCS systems. The periodic testing of the ECCS systems in accordance with the IST program provides sufficient means to eliminate gas accumulation in these systems. A new SR 3.5.2.3 with Bases is included which requires verification of breaker positions for the valves listed in SR 3.5.2.1. This new SR is in lieu of the ISTS SR 3.5.2.1 requirement to verify breaker position every 12 hours (see discussion above). The 31 day Frequency is appropriate because Administrative controls would prevent their operation or repositioning. These valves are also verified to be in their correct position every 12 hours which adds further assurance that the valves are in their correct position. In view of these controls, mispositioning of the valves would be very unlikely. These deviations are consistent with the approved GITS.
CL	44	PI proposes to extend its refueling outages up to 24 month intervals and therefore this change is made to accommodate the PI proposal to extend its refueling cycles.

Difference Category	Difference Number 3.5-	Justification for Differences
CL	45	The wording for this SR was revised to eliminate the term "position stop" since this is not a term which is familiar to the plant operators. The list of unit valve numbers is taken from the CTS.
X	46	The interval for this SR is increased to 24 months to support the proposed Prairie Island operating cycle. This CTS SR was on an 18 month cycle and has been increased to a 24 month cycle which has been justified in a "No Significant Hazards Determination".
TA	47	This change incorporates approved TSTF-90, Rev.1.
CL	48	At PI, both SI pumps have to be made incapable of automatically injecting into the RCS when any RCS cold leg temperature drops below the SI pump disable temperature specified in the PTLR. The SI pump disable temperature as of the date of this ITS LAR submittal is 218°F. Therefore, when the RCS temperature drops to 218 F, a complete train of ECCS can not be OPERABLE. Accordingly, the Applicability for Specification 3.5.3 and the Bases have been modified to only require an ECCS train OPERABLE when the RCS temperature is greater than the SI pump disable temperature. Operation with the RCS temperature less than or equal to the SI pump disable temperature is addressed by Specification 3.4.6. An OPERABLE ECCS train is not required because the RHR subsystem is OPERABLE, pressure is low enough for RHR injection, and the SI pumps remain manually available for injection into the RCS.

Difference Category	Difference Number 3.5-	Justification for Differences
PA	61	During the development of ITS, certain wording preferences, English conventions, reformatting, renumbering, providing additional descriptive information as related to PI, or editorial rewording consistent with plant specific nomenclature, system names, design, or current licensing bases were adopted. As a result of these changes, the TS should be more readily readable by, and therefore understandable to plant operators and other users. During this process, no technical changes were made to the TS unless they were identified and justified.
CL	62	The PI units are two loop Westinghouse reactors and NUREG-1431 was written for hypothetical four loop reactors. Therefore, these Bases have been revised to accurately describe the accidents and accident phases for which PI credits accumulators.
PA	63	The description of blowdown phase events has been removed from the refill phase and included in the blowdown discussion where it is more appropriate.
	64	Not used.
	65	Not used.

Difference Category	Difference Number 3.5-	Justification for Differences
CL	66	Specific details from PI CTS have been relocated to this Bases Background. PI USAR Figures 6.2-1A and 6.2-2A identify valves for the SI system including the accumulators. For the accumulators, these drawings show both the Westinghouse and PI valve numbers. To avoid confusion, both the Westinghouse valve numbers (8800A and 8800B) and associated PI valve numbers (MV32071 and MV32072 (Unit 1), and MV32174 and MV32175 (Unit 2) were used. Although different numbers, they are the same valves.
TA	67	This change incorporates approved TSTF-316, Rev. 1.
	68	Not used.
	69	Not used.
	70	Not used.
CL	71	The discussion of ECCS initiation delay has been generalized by changing the sentence to use the word "approximately". The Prairie Island (PI) analyses do not “set” a time but rather calculate a time for each case. In some cases at PI the time delay has a range of 2.17 - 2.23 seconds. These ranges are supported by WCAP-13919, Amendment 1. Based on CLB and literal compliance, PI cannot make the statement that there is a set 2 second time delay in all cases.

Difference Category	Difference Number 3.5-	Justification for Differences
CL	72	PI does not have centrifugal charging pumps and does not use the charging pumps as part of the ECCS; thus the discussion has been revised to accurately describe the PI design.
CL	73	The discussion of 10 CFR 50.46 ECCS performance criteria have been revised to be the same as the PI USAR presentation of these criteria. Identical presentations in the Bases and USAR will eliminate confusion.
CL	74	NUREG-1431 discussion is based on a hypothetical four loop plant. PI is a two loop plant with upper plenum injection and the LOCA scenario is based on WCOBRA/TRAC analyses. Thus this discussion has been revised to reflect the PI specific design and analyses.
	75	Not used.
PA	76	The discussion of instrument uncertainty is not applicable to PI and is not included. Other accumulator instrument uncertainties are not discussed in the Bases for the accumulators; thus this discussion is not necessary.

Difference Category	Difference Number 3.5-	Justification for Differences
CL	77	This discussion has been revised to reflect the PI design and analyses. Maximum accumulator boron concentration is not used in boron buildup analyses since this would be less conservative for PI as discussed in the Bases.
	78	Not used.
	79	Not used.
	80	Not used.
CL	81	The accumulator pressure used in the analyses varies depending on the accident under consideration; thus reference is made to the USAR.
CL	82	The Bases discussion has been modified to describe why low boron concentration will not significantly impact core subcriticality at PI. Also, PI specific results for MSLB are included and "for the majority of plants" is deleted. Since a maximum accumulator boron concentration is not included, the Required Action will not affect the "minimum boron precipitation time" and thus this clause is not included.
	83	Not used.

Difference Category	Difference Number 3.5-	Justification for Differences
CL	84	Clarification has been included that only motor operated valves are require position verification every 12 hours. Also, it is explicitly allowed to use control board indication for valve position verification. Clarification is also provided that a valve that is not fully open will also result in not meeting the analyses.
	85	Not used.
	86	Not used
CL	87	The rod ejection accident and loss of feedwater accident are not included since the PI analyses do not consider these events with ECCS.
CL	88	PI only has two phases of ECCS operation: injection and recirculation. Injection may be into the RCS cold legs reactor vessel upper plenum. Thus the Bases discussion has been revised to accurately describe the PI design and analyses.
	89	Not used.
	90	Not used.

Difference Category	Difference Number 3.5-	Justification for Differences
PA	91	Interconnection of subsystems would only be implemented as necessitated by system conditions; therefore, clarification is provided.
	92	Not used.
CL	93	PI does not have a boron injection tank (BIT), therefore, this discussion is not included.
CL	94	Discussion of the standard NUREG-1431 plant design features have been replaced by discussion of PI specific design features.
	95	Not used.
CL	96	PI does not have centrifugal charging pumps and does not take credit for the charging pumps during a LOCA, which does not depressurize the RCS; therefore this discussion has been replaced with discussion of the steam generators which provide cooling for these LOCAs.
CL	97	PI does not have capability to automatically transfer RHR suction from the RWST to containment sump B; therefore "manually" is included and "automatic" is deleted as applicable.

Difference Category	Difference Number 3.5-	Justification for Differences
	98	Not used.
	99	Not used.
	100	Not used.
	101	Not used.
PA	102	As discussed in Package 3.4, the PI ITS changed the title of Specification 3.4.12 and introduced a new Specification 3.4.13. These changes have been incorporated into these Bases.
CL	103	Reference to the General Design Criteria (GDC) contained in 10CFR50 Appendix A is replaced by reference to the Atomic Energy Commission (AEC) proposed GDC which is the PI licensing basis. PI was licensed to the proposed AEC GDC which pre-dated the 10CFR50 App A GDC. Some text changes may have been made in some locations to conform to the actual requirements of the AEC GDC.
	104	Not used.

Difference Category	Difference Number 3.5-	Justification for Differences
	105	Not used.
CL	106	Clarification is provided that the RHR pump is transferred upon receipt of an alarm. PI does not have automatic transfer and therefore the RHR pump is transferred when the operators observe the low-low level alarm.
CL	107	CTS details on control of valves which could affect ECCS performance have been relocated to the Bases.
PA	108	Description of PI blocking and locking conventions is provided to assure these terms are understood as used in the ITS.
	109	Not used.
	110	Not used.

Difference Category	Difference Number 3.5-	Justification for Differences
PA	111	ITS Bases 3.5.2, Applicability discussion pertains to ECCS-OPERATING and ITS 3.5.3 pertains to ECCS-Shutdown. Providing a discussion in ITS Bases 3.5.2 about ECCS operability below mode 3 is not appropriate in this section. Leaving this discussion about the ECCS below Mode 3 would be confusing.
	112	Not used.
CL	113	Guidance is provided that control board indication is an acceptable means of performing these SRs.
CL	114	CTS details on control of valves which could affect ECCS performance have been relocated to the Bases. Reference to 3.5.2.3 is included since it contains the related requires for verification of breaker position.
	115	Not used.
PA	116	Description of PI use of the term "seal" is provided to assure this term is understood as used in the ITS.

Difference Category	Difference Number 3.5-	Justification for Differences
CL	117	Changed "greater than or equal to" to "within" since the flow could be too high and not meet test requirements.
	118	Not used.
	119	Not used.
	120	Not used.
CL	121	Test condition and acceptance criteria from CTS 4.5.A.1 have been relocated to the Bases.
CL	122	CTS Bases discussion replaces NUREG-1431 discussion which does not apply to PI.
PA	123	Clarification is provided that the containment sump suction requiring inspection is the inlet to the RHR System. Discussion of the need to perform this SR during outages is not included since it is not accurate for PI.
CL	124	For completeness, containment sump B is included as part of the ECCS flow path.

Difference Category	Difference Number 3.5-	Justification for Differences
	125	Not used.
CL	126	NUREG-1431 discussion of Applicable Safety Analyses has been replaced with statements which are appropriate for PI.
CL	127	PI specific justification is provided for time delays in aligning RHR for ECCS operation.
	128	Not used.
	129	Not used.
	130	Not used.
CL	131	The NUREG-1431 discussion of the VCT, RWST interlock valves and centrifugal changing pumps is not applicable to PI and therefore is not included.
CL	132	Since PI does not operate the containment spray pumps in the recirculation mode, they are not included in this discussion. For completeness, the SI pump and Auxiliary Building were included in the discussion of releases from the RWST.

Difference Category	Difference Number 3.5-	Justification for Differences
CL	133	At PI the correct basis for RWST and containment sump water levels is RHR pump NPSH; thus the Bases have been modified.
CL	134	The NUREG-1431 discussion of RWST maximum boron has been replaced with appropriate statements for PI.
	135	Not used.
CL	136	The NUREG-1431 discussion of maximum boron concentration has been modified to be accurate for PI.
CL	137	The NUREG-1431 discussion of MSLB analysis delays for VCT and RWST valve interlocks does not apply to PI and therefore is not included.
	138	Not used.
	139	Not used.
	140	Not used.

Difference Category	Difference Number 3.5-	Justification for Differences
CL	141	PI does not have an alarm to alert operators to RWST leakage. However this tank is located in the auxiliary building where operators perform inspections each shift and would observe RWST leakage if it were to occur.
PA	142	SR 3.5.2.8 is a new surveillance that has been added to the CTS. This SR requires verification that each ECCS train containment sump suction inlet is not restricted by debris and the suction inlet trash racks and screens show no evidence of structural distress. This SR is acceptable since it ensures that the containment sump remains unrestricted and stays in proper operating order. The 24 month Frequency allows this SR to be performed under the conditions that apply during a plant outage. In the event a mid-cycle outage was performed, plant procedures would require a containment inspection, including the sumps, be performed prior to the containment being closed. The 24 month Frequency has been found to be sufficient to detect abnormal degradation and is confirmed by operating experience.

Part G

PACKAGE 3.5

EMERGENCY CORE COOLING SYSTEMS (ECCS)

NO SIGNIFICANT HAZARDS DETERMINATION AND ENVIRONMENTAL ASSESSMENT

NO SIGNIFICANT HAZARDS DETERMINATION

The proposed changes to the Operating License have been evaluated to determine whether they constitute a significant hazards consideration as required by 10CFR Part 50, Section 50.91 using the standards provided in Section 50.92.

For ease of review, the changes are evaluated in groupings according to the type of change involved. A single generic evaluation may suffice for some of the changes while others may require specific evaluation in which case the appropriate reference change numbers are provided.

A - Administrative (GENERIC NSHD)
(A3.5-00, A3.5-01, A3.5-04, A3.5-07, A3.5-15, A3.5-17, A3.5-20, A3.5-22, A3.5-301, A3.5-302, A3.5-303, A3.5-304, A3.5-306, A3.5-307, A3.5-309, A3.5-316)

Most administrative changes have not been marked-up in the Current Technical Specifications, and may not be specifically referenced to a discussion of change. This No Significant Hazards Determination (NSHD) may be referenced in a discussion of change by the prefix "A" if the change is not obviously an administrative change and requires an explanation.

These proposed changes are editorial in nature. They involve reformatting, renaming, renumbering, or rewording of existing Technical Specifications to provide consistency

M - More restrictive (GENERIC NSHD)
(M3.5-02, M3.5-03, M3.5-05, M3.5-06, M3.5-08, M3.5-10, M3.5-18, M3.5-308, M3.5-312, M3.5-313, M3.5-314)

This proposed Technical Specifications revision involves modifying the Current Technical Specifications to impose more stringent requirements upon plant operations to achieve consistency with the guidance of NUREG-1431, correct discrepancies or remove ambiguities from the specifications. These more restrictive Technical Specifications have been evaluated against the plant design, safety analyses, and other Technical Specifications requirements to ensure the plant will continue to operate safely with these more stringent specifications.

1. The proposed amendment will not involve a significant increase in the probability or consequences of an accident previously evaluated.

   The proposed changes provide more stringent requirements for operation of the plant. These more stringent requirements do not result in operation that will increase the probability of initiating an analyzed event and do not alter assumptions relative to mitigation of an accident or transient event.

   These more restrictive requirements continue to ensure process variables, structures, systems, and components are maintained consistent with the safety analyses and licensing basis. Therefore, these changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. The proposed amendment will not create the possibility of a new or different kind of accident from any accident previously analyzed.

   The proposed changes do not involve a physical alteration of the plant, that is, no new or different type of equipment will be installed, nor do they change the methods governing normal plant operation.

   These more stringent requirements do impose different operating restrictions. However, these operating restrictions are consistent with the boundaries established by the assumptions made in the plant safety analyses and licensing bases. Therefore, these changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

Specific NSHD for Change L3.5-13

ITS LCO 3.5.2 Condition B will require a unit to be placed in MODE 4 within 12 hours due to ECCS equipment inoperability rather than the CTS requirements to place it in MODE 5 within 30 hours.

1. The proposed amendment will not involve a significant increase in the probability or consequences of an accident previously evaluated.

   LCO 3.5.2 Condition B requires that in MODES 1, 2, and 3, two ECCS trains are to be OPERABLE. Condition B requires that if the inoperable ECCS train(s) cannot be restored to OPERABLE within the 72 hours, then the unit must be in MODE 3 within 6 hours and MODE 4 within 12 hours. Once the Unit is in MODE 4, it is out of the LCO. ITS LCO 3.5.3 only requires one train of ECCS to be OPERABLE. Once the unit has been placed in MODE 4, the ECCS is no longer the subject of any applicable safety analyses; thus, this change does not involve a significant increase in the probability or consequences of a previously evaluated accident. Requiring the unit to be placed in a Mode which is not applicable further ensures that the change does not propose a significant increase in the probability or consequences of any accident previously evaluated.

2. The proposed amendment will not create the possibility of a new or different kind of accident from any accident previously analyzed.

   The ECCS system is not an accident initiator; thus, maintaining the unit in MODE 4 with one ECCS train inoperable does not create the possibility of a new or different kind of accident. In accordance with new Specification 3.5.3, only one train of ECCS is required OPERABLE in MODE 4; thus, in this mode the Specification LCO is met.

Specific NSHD for Change L3.5-13 (continued)

3. The proposed amendment will not involve a significant reduction in the margin of safety.

   In MODE 4 the probability of occurrence of a transient or accident is not significantly higher than MODE 5. Furthermore, the energy in the core in MODE 4 is not significantly higher than in MODE 5 which means the operators have almost as much time for manual actuation of the ECCS to mitigate the consequences of a transient or accident. Thus, this change does not involve a significant reduction in the margin of safety.

Therefore it is concluded this proposed change does not involve a significant hazards consideration. This change is consistent with the guidance of NUREG-1431.

Specific NSHD for Change L3.5-16

This change establishes a specific condition of inoperability that will allow the boron concentration in one accumulator to be outside of specification limits up to 72 hours. CTS do not distinguish between different types of inoperability and limits inoperability to 1 hour. This change is acceptable because the boron concentration in the accumulators is not specifically evaluated in the injection phase of the LOCA analysis. Although the boron concentration of the accumulators is considered in the recirculation phase, the impact of a single accumulator's borated water volume is not significant when compared to the total borated water volume present during the recirculation phase. This change is consistent with the guidance of NUREG-1431.

1. The proposed amendment will not involve a significant increase in the probability or consequences of an accident previously evaluated.

   The accumulators are not assumed to be an initiator of any analyzed event. The role of the accumulators is to mitigate and thereby limit the consequences of accidents. With the proposed change in TS, the accumulators will remain capable of mitigating DBA as described in the USAR and the results of the analyses in the USAR remain bounding. This proposed change does not impose any new safety analysis limits or alter the plant's ability to detect and mitigate accidents. Therefore, this change does not involve a significant increase in the probability or consequences of an accident.

2. The proposed amendment will not create the possibility of a new or different kind of accident from any accident previously analyzed.

   This proposed change does not involve a physical alteration of the plant, that is, no new or different type of equipment will be installed. This proposed change does not introduce any new mode of plant operation or change the methods governing normal plant operation. Thus, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

Specific NSHD for Change L3.5-16 (continued)

3. The proposed amendment will not involve a significant reduction in the margin of safety.

This proposed accumulator specification is based on the importance of the water volume and associated boron content of a single accumulator in mitigating the consequences of a postulated accident. With this change, the accumulators will function when necessary within the bounds of the applicable safety analyses. In addition, increasing the allowed outage time from 1 hour to 72 hours reduces the potential for requiring a unit shutdown and the concomitant potential for plant transient. Thus any reduction in the margin of safety is insignificant and offset by the reduction in potential plant transients. Overall this change does not result in a significant reduction in the margin of safety.

Therefore it is concluded this proposed change does not involve a significant hazards consideration. This change is consistent with the guidance of NUREG-1431.

Specific NSHD for Change L3.5-19

This change will add a new Action Statement which allows 8 hours to restore RWST boron concentration to within its limits rather than shut down the unit under the requirements of Specification 3.0.C (CTS equivalent of proposed ITS 3.0.3).

1. The proposed amendment will not involve a significant increase in the probability or consequences of an accident previously evaluated.

   This change does not involve any physical changes to the plant or operating procedure changes. The RWST is not assumed to be an initiator of any analyzed accident. Thus, changing the Completion Time to restore the RWST to OPERABLE status does not affect the probability of an accident. Since the RWST is very large, any violation of the boron limits would likely result from minor deviations from the specified requirements. The contents of the tank are still available for injection and the accident analyses contain calculational margins; thus, the consequences of a previously analyzed accident are not significantly increased.

2. The proposed amendment will not create the possibility of a new or different kind of accident from any accident previously analyzed.

   This proposed change does not involve a physical alteration of the plant, that is, no new or different type of equipment will be installed. The proposed change will only provide an additional 7 hours Completion Time to restore the RWST to OPERABLE status before shutting down. Thus, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

Specific NSHD for Change L3.5-19 (continued)

3. The proposed amendment will not involve a significant reduction in the margin of safety.

The proposed additional 7 hours allowed Completion Time to restore the RWST to OPERABLE status prior to requiring unit shutdown is based on the fact that the contents of the tank remain available for injection and that a violation of these limits would likely result from minor deviations from the specified concentration. Also, the probability of an event requiring the RWST as a source of water during this time period is small. Allowing 8 hours to return the RWST to OPERABLE will also minimize the potential for plant transients that can occur during the shutdown that might otherwise be required by the previous 1 hour Completion Time. Therefore, the reduction in the margin of safety due to this change is insignificant and is offset by avoiding an unnecessary plant transient.

Therefore it is concluded this proposed change does not involve a significant hazards consideration. This change is consistent with the guidance of NUREG-1431.

Specific NSHD for Change L3.5-25

This change will extend the allowed surveillance interval from 18 months to 24 months for verification of ECCS throttle valve positions. CTS require SR to be performed each outage or at 18 month intervals and allow this to be extended to 24 months under the provisions of CTS 4.0.A. CTS also specify that intervals between tests scheduled for refueling shutdowns shall not exceed two years and proposed SR 3.0.2 will retain this restriction.

1. The proposed amendment will not involve a significant increase in the probability or consequences of an accident previously evaluated.

   This change clarifies and codifies the acceptability of repeatedly performing this surveillance at 24 month intervals when the CTS requires them to be performed every 18 months and in any case not to exceed 24 months. The maximum CTS interval (CTS 3.0.A) of 24 months, is not changed by this proposed specification. The consequences of a previously analyzed event are dependent upon the initial conditions assumed for the analysis, the availability and successful functioning of the equipment assumed to operate in response to the analyzed event, and the setpoints at which these additions are initiated. This change does not affect the performance of any credited equipment or involve any instrumentation setpoints. This proposed change only requires a verification of each ECCS automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal. Since this SR only requires receipt of an actuation signal, no new instrument drift, error, supporting calculation assumptions, instrument calibration nor setpoints are introduced. This SR does not generate any input signals or parameters that would be affected by extending the SR Frequency to the 24 months. These valves are not initiator for any previously analyzed accidents; therefore, this change does not increase the probability of any previously analyzed accident.

   A review of the historical data supports conclusion that the safety will not be compromised by extending the interval of the surveillance not to exceed 24 months. Changing surveillance intervals does not change any plant conditions which would contribute to accident releases. There are no time dependent degradation mechanisms which would affect the position of manual throttle valves and these valves are not readily accessible for accidental repositioning. Thus this change does not involve a significant increase in the consequences of a previously analyzed accident.

Specific NSHD for Change L3.5-25 (continued)

2. The proposed amendment will not create the possibility of a new or different kind of accident from any accident previously analyzed.

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

Based upon the past historical data the ECCS throttle valves have demonstrated a high degree of reliability to correctly be positioned when receiving a safety injection signal. Thus, these changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

Specific NSHD for Change L3.5-25 (continued)

3. The proposed amendment will not involve a significant reduction in the margin of safety.

For any particular refueling cycle this change does not impact any margins of safety because CTS allows a maximum surveillance interval for all affected surveillances. Over many years of operation with the proposed specifications, these surveillances may be performed less times; that is, over the remaining licensed life of the plant these surveillances may be performed 2 times less than with CTS. Given the demonstrated reliability of the ECCS throttle valves correctly positioning upon receipt of a SI signal it is concluded that the margin of safety has not been significantly diminished. These valves have their handwheels removed and are located inside containment; therefore, it is very unlikely that the position will be inadvertently changed between surveillances. Furthermore, there are no degradation mechanisms which would result in the position changing. Thus, extending the surveillance interval does not involve a significant reduction in the margin of safety.

Therefore it is concluded this proposed change does not involve a significant hazards consideration. This proposed change is consistent with the guidance of NRC issued Generic Letter 91-04.

Specific NSHD for Change L3.5-310

This change adds a Note allowing in MODE 3, both safety injection (SI) pump flow paths may be isolated by closing the isolation valves for up to 2 hours to perform pressure isolation valve testing per SR 3.4.15.1. The CTS currently does not specifically allow isolation of both SI pump flow paths during operation.

1. The proposed amendment will not involve a significant increase in the probability or consequences of an accident previously evaluated.

   This change adds a Note allowing the SI pump flow isolation valves to be isolated for up to 2 hours for RCS pressure isolation valve testing. The CTS does not allow for this isolation. The consequences of a previously analyzed event are dependent upon the initial conditions assumed for the analysis, the availability and successful functioning of the equipment assumed to operate in response to the analyzed event, and the setpoints at which these additions are initiated. Allowing the SI pump isolation valves to be isolated, for up to 2 hours for testing, is acceptable since they would be administratively controlled, thus capable of being opened at any time from the control room. The time required for the operator to take action to open the valves, in the event of an accident, is minimal. These valves have demonstrated an extremely high reliability of correctly positioning upon receipt of a SI signal or when operated from the control room. These valves are not initiators for any previously analyzed accidents; therefore, this change does not significantly increase the probability of any previously analyzed accident. Based on the above, the consequences of an accident have not significantly increased.

Specific NSHD for Change L3.5-310 (continued)

2. The proposed amendment will not create the possibility of a new or different kind of accident from any accident previously analyzed.

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

Based upon the past historical data, the SI pump flow isolation valves have demonstrated a high degree of reliability to correctly be positioned when receiving a safety injection signal or operated from the control room. Thus, these changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

Specific NSHD for Change L3.5-310 (continued)

3. The proposed amendment will not involve a significant reduction in the margin of safety.

Allowing the SI pump isolation valves to be isolated, for up to 2 hours for testing, is acceptable due to the low probability of an accident occurring during this period and that the valves would be administratively controlled, thus capable of being opened at any time from the control room. The time required for the operator to take action to open the valves, in the event of an accident, is minimal. Given the very low probability of an accident occurring during this time when the valves are isolated, the flow path could be restored almost immediately from the control room if they are needed. Given the demonstrated reliability of the SI pump isolation valves correctly positioning upon receipt of a SI signal or when operated from the control room it is concluded that the margin of safety has not been significantly diminished. Thus, allowing the SI pump flow paths to be inoperable for 2 hours does not involve a significant reduction in the margin of safety.

Therefore it is concluded this proposed change does not involve a significant hazards consideration.

Specific NSHD for Change L3.5-315

This change will allow combinations of ECCS components or subsystems to be inoperable provided at least 100% flow equivalent to single ECCS trains remains OPERABLE. The CTS only allows one SI system and one RHR system inoperable provided the redundant SI system and RHR system required for functioning during accident conditions is OPERABLE.

1. The proposed amendment will not involve a significant increase in the probability or consequences of an accident previously evaluated.

This change does not involve any physical plant changes. The ECCS components addressed by this TS are not assumed to be initiators of any analyzed accident. Therefore, this change does not involve a significant increase in the probability of an accident previously evaluated. The change would allow combinations of ECCS components or subsystems to be inoperable for up to 72 hours providing the remaining OPERABLE ECCS components can provide the flow equivalent to a single OPERABLE train which will ensure 100% of the flow assumed in the safety analyses. Since the ability of the ECCS to perform its safety function is not lost or degraded, this change does not involve a significant increase in the consequences of an accident previously evaluated.

2. The proposed amendment will not create the possibility of a new or different kind of accident previously analyzed.

The proposed change does not involve a physical alteration of the plant, that is, no new or different type of equipment will be installed. The proposed change will only more accurately define the minimum equipment required to be OPERABLE to perform the ECCS function while in this Condition. Therefore, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

Specific NSHD for Change L3.5-315

3. The proposed change will not involve a significant reduction in the margin of safety.

The proposed change, which allows operation to continue for up to 72 hours with components inoperable in both ECCS trains, is acceptable based on the remaining ECCS components providing 100% of the required ECCS flow, the small probability of an accident occurring in 72 hours that would require ECCS, and the reduced potential for a unit transient resulting from the shutdown required by current TS for a second inoperable ECCS train. The proposed allowed outage time of 72 hours for this condition is consistent with the time currently allowed for one train of ECCS to be inoperable. Since 100% flow equivalent to a single train remains OPERABLE, the margin of safety is not significantly reduced. The plant risk of a small probability accident requiring ECCS during this time is insignificant and offset by the benefit gained through avoiding unnecessary plant transients. Therefore, this change does not involve a significant reduction in margin of safety.

Therefore it is concluded this proposed change does not involve a significant hazards consideration. This change is consistent with the guidance of NUREG-1431.

ENVIRONMENTAL ASSESSMENT

The Nuclear Management Company has evaluated the proposed changes and determined that:

1. The changes do not involve a significant hazards consideration, or

2. The changes do not involve a significant change in the types or significant increase in the amounts of any effluents that may be released offsite, or

3. The changes do not involve a significant increase in individual or cumulative occupational radiation exposure.

Accordingly, the proposed changes meet the eligibility criteria for categorical exclusion set forth in 10 CFR Part 51 Section 51.22(c)(9). Therefore, pursuant to 10 CFR Part 51 Section 51.22(b), an environmental assessment of the proposed changes is not required.

the establishment of containment OPERABILITY.

The containment satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii)~~the NRC Policy Statement~~.

LCO

Containment OPERABILITY is maintained by limiting leakage to $\leq 1.0\ L_a$, except prior to the first startup after performing a required Containment Leakage Rate Testing Program~~10 CFR 50, Appendix J,~~ leakage test. At this time, the applicable leakage rate limits must be met~~combined Type B and C leakage must be $< 0.6\ L_a$, and the overall Type A leakage must be $< 0.75\ L_a$~~. CL3.6-102 R-2

Compliance with this LCO will ensure a containment configuration, including equipment hatches, that is structurally sound and that will limit leakage to those leakage rates assumed in the safety analysis.

Individual leakage rates specified for the containment air lock (LCO 3.6.2) ~~E~~, purge valves with resilient seals, and secondary bypass leakage (LCO 3.6.3)~~I~~ are not specifically part of the acceptance criteria of 10 CFR 50, Appendix J. Therefore, leakage rates exceeding these individual limits only result in the containment being inoperable when the leakage results in exceeding the overall acceptance criteria of $1.0\ L_a$~~Appendix J~~ or exceeding the total maximum allowable secondary containment bypass leakage rates. CL3.6-102 R-2

APPLICABILITY

In MODES 1, 2, 3, and 4, a DBA could cause a release of radioactive material into containment. In MODES 5 and 6, the probability and consequences of these events are reduced due to the pressure and temperature limitations of these MODES. Therefore, containment is not required to be

5.5 Programs and Manuals

5.5.8 Steam Generator (SG) Program (continued)

5.5.8.4 Tube Repair Criteria and Repair Methods

Tube repair criteria and repair methods shall be described in and implemented by the SG Program. Repair criteria and repair methods may be implemented after review and approval by the NRC. In addition, repair criteria and repair methods approved generically by the NRC may be used subject to the limitations and conditions set forth in the staff's approving document. Demonstration of satisfaction of the generic limitations and conditions must be documented in a safety evaluation prepared in accordance with 10 CFR 50.59. Note that tube plugging is not a repair and does not need to be reviewed or approved by the NRC.

5.5.9 Ventilation Filter Testing Program (VFTP)

A program shall be established to implement the following required testing of Engineered Safety Feature (ESF) filter ventilation systems and the Spent Fuel Pool Special and Inservice Purge Ventilation System each operating cycle (18 months for shared systems).

Demonstrate for the Auxiliary Building Special Ventilation, Shield Building Ventilation, Control Room Special Ventilation, and Spent Fuel Pool Special and Inservice Purge Ventilation Systems that:

a. An inplace DOP test of the high efficiency particulate air (HEPA) filters shows a penetration and system bypass < 1% (for DOP, particles having a mean diameter of 0.7 microns);

b. A halogenated hydrocarbon test of the inplace charcoal adsorber shows a penetration and system bypass < 1% (for DOP, particles having a mean diameter of 0.7 microns);

5.5 Programs and Manuals

5.5.9 Ventilation Filter Testing Program (VFTP) (continued)

c. A laboratory test of a sample of the charcoal adsorber, when obtained as described in Regulatory Guide 1.52, Revision 2, shows the methyl iodide penetration less than 15% penetration (less than 5% penetration for the Control Room Special Ventilation System) when tested in accordance with ASTM D3803-1989 at a temperature of 30°C and 95% relative humidity (RH) (or 70% RH with humidity controls if the humidity controls are capable of maintaining the humidity of the air entering the charcoal less than or equal to 70% RH under worst-case design-basis conditions); and

d. The pressure drop across the combined HEPA filters and the charcoal adsorbers is less than 6 inches of water at the system flowrate ±10%.

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the VFTP test frequencies.

5.5.10 Explosive Gas and Storage Tank Radioactivity Monitoring Program

This program provides controls for potentially explosive gas mixtures contained in the waste gas holdup system, the quantity of radioactivity contained in gas storage tanks, and the quantity of radioactivity contained in unprotected outdoor liquid storage tanks.

The program shall include:

a. The limits for concentrations of oxygen in the waste gas holdup system and a surveillance program to ensure the limits are maintained. Such limits shall be appropriate to the system's design criteria;

b. A surveillance program to ensure that the quantity of radioactivity contained in each gas storage tank is less than or equal to 78,800 curies of noble gas (considered as dose equivalent Xe-133); and

5.5 Programs and Manuals

5.5.10 Explosive Gas and Storage Tank Radioactivity Monitoring Program (continued)

c. A surveillance program to ensure that the quantity of radioactivity contained in each of the following tanks shall be limited to 10 curies, excluding tritium and dissolved or entrained noble gases:

Condensate storage tanks
Outside temporary tanks

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Explosive Gas and Storage Tank Radioactivity Monitoring Program surveillance frequencies.

5.5.11 Diesel Fuel Oil Testing Program

A diesel fuel oil testing program to implement required testing of both new fuel oil and stored fuel oil shall be established. The program shall include sampling and testing requirements, and acceptance criteria, all in accordance with the limits specified in Table 1 of ASTM D975-77 when checked for viscosity, water, and sediment. Acceptability of new fuel oil shall be determined prior to addition to the safeguards storage tanks. Testing of diesel fuel oil stored in the safeguards storage tanks shall be performed at least every 31 days.

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Diesel Fuel Oil Testing Program test frequencies.

5.5 Programs and Manuals (continued)

5.5.12 Technical Specifications (TS) Bases Control Program

This program provides a means for processing changes to the Bases of these Technical Specifications.

a. Changes to the Bases of the TS shall be made under appropriate administrative controls and reviews.

b. Licensees may make changes to Bases without prior NRC approval provided the changes do not require either of the following:

1. a change in the TS incorporated in the license; or

2. a change to the USAR or Bases that requires NRC approval pursuant to 10 CFR 50.59.

c. The Bases Control Program shall contain provisions to ensure that the Bases are maintained consistent with the USAR.

d. Proposed changes that meet the criteria of Specification 5.5.12 b above shall be reviewed and approved by the NRC prior to implementation. Changes to the Bases implemented without prior NRC approval shall be provided to the NRC on a frequency consistent with USAR updates.

5.5 Programs and Manuals (continued)

5.5.13 Safety Function Determination Program (SFDP)

This program ensures loss of safety function is detected and appropriate actions taken. Upon entry into LCO 3.0.6, an evaluation shall be made to determine if loss of safety function exists. Additionally, other appropriate actions may be taken as a result of the support system inoperability and corresponding exception to entering supported system Conditions and Required Actions. This program implements the requirements of LCO 3.0.6. The SFDP shall contain the following:

a. Provisions for cross train checks to ensure a loss of the capability to perform the safety function assumed in the accident analysis does not go undetected;

b. Provisions for ensuring the plant is maintained in a safe condition if a loss of function condition exists;

c. Provisions to ensure that an inoperable supported system's Completion Time is not inappropriately extended as a result of multiple support system inoperabilities; and

d. Other appropriate limitations and remedial or compensatory actions.

A loss of safety function exists when, assuming no concurrent single failure, no concurrent loss of offsite power or no concurrent loss of onsite diesel generator(s), a safety function assumed in the accident analysis cannot be performed. For the purpose of this program, a loss of safety function may exist when a support system is inoperable, and:

a. A required system redundant to the system(s) supported by the inoperable support system is also inoperable; or

b. A required system redundant to the system(s) in turn supported by the inoperable supported system is also inoperable; or

c. A required system redundant to the inoperable support system(s) for the supported systems (a) and (b) above is also inoperable.

5.5 Programs and Manuals

5.5.13 Safety Function Determination Program (SFDP) (continued)

The SFDP identifies where a loss of safety function exists. If a loss of safety function is determined to exist by this program, the appropriate Conditions and Required Actions of the LCO in which the loss of safety function exists are required to be entered. When a loss of safety function is caused by the inoperability of a single Technical Specification support system, the appropriate Conditions and Required Actions to enter are those of the support system.

5.5.14 Containment Leakage Rate Testing Program

a. A program shall be established to implement the leakage rate testing of the containment as required by 10 CFR 50.54(o) and 10 CFR 50, Appendix J, Option B, as modified by approved exemptions. This program shall be in accordance with the guidelines contained in Regulatory Guide 1.163, "Performance-Based Containment Leak-Test Program," dated September 1995.

b. The peak calculated containment internal pressure for the design basis loss of coolant accident is less than the containment internal design pressure, P_a, of 46 psig.

c. The maximum allowable primary containment leakage rate, L_a, at P_a, shall be 0.25% of primary containment air weight per day. For pipes connected to systems that are in the auxiliary building special ventilation zone, the total leakage shall be less than 0.1% of primary containment air weight per day at pressure P_a. For pipes connected to systems that are exterior to both the shield building and the auxiliary building special ventilation zone, the total leakage past isolation valves shall be less than 0.01% of primary containment air weight per day at pressure P_a.

d. Leakage Rate acceptance criteria are:

5.5 Programs and Manuals

5.5.14 Containment Leakage Rate Testing Program (continued)

1. Primary containment leakage rate acceptance criterion is $\leq 1.0\ L_a$. Prior to unit startup, following testing in accordance with the program, the combined leakage rate acceptance criteria are $\leq 0.60\ L_a$ for all components subject to Type B and Type C tests and $\leq 0.75\ L_a$ for Type A tests.

2. Air lock testing acceptance criteria are:

   a) Overall air lock leakage rate is $\leq 0.05\ L_a$ when tested at ≥ 46 psig.

   b) For each door intergasket test, leakage rate is $\leq 0.01\ L_a$ when pressurized to ≥ 10 psig.

e. The provisions of SR 3.0.3 are applicable to the Containment Leakage Rate Testing Program.

f. Nothing in these Technical Specifications shall be construed to modify the testing Frequencies required by 10 CFR 50, Appendix J.

5.5.15 Battery Monitoring and Maintenance Program

This Program provides for restoration and maintenance of the 125V plant safeguards batteries and service building batteries, which may be used instead of the safeguards batteries during shutdown conditions in accordance with manufacturer's recommendations, as follows:

a. Actions to restore battery cells with float voltage < 2.13 V will be in accordance with manufacturer's recommendations, and

b. Actions to equalize and test battery cells that had been discovered with electrolyte level below the minimum established design limit.

5.0 ADMINISTRATIVE CONTROLS

5.6 Reporting Requirements

The following reports shall be submitted in accordance with 10 CFR 50.4.

5.6.1 Occupational Exposure Report

----------NOTE----------
A single submittal may be made for the plant. The submittal should combine sections common to both units.

A tabulation on an annual basis of the number of station, utility, and other personnel (including contractors) for whom monitoring was performed, receiving an annual deep dose equivalent > 100 mrem and the associated collective deep dose equivalent (reported in person-rem) according to work and job functions, e.g., reactor operations and surveillance, inservice inspection, routine maintenance, special maintenance (describe maintenance), waste processing, and refueling. This tabulation supplements the requirements of 10 CFR 20.2206. The dose assignments to various duty functions may be estimated based on pocket ionization chamber, thermoluminescent dosimeter (TLD), electronic dosimeter, or film badge measurements. Small exposures totaling < 20% of the individual total dose need not be accounted for. In the aggregate, at least 80% of the total deep dose equivalent received from external sources should be assigned to specific major work functions. The report covering the previous calendar year shall be submitted by April 30 of each year.

5.6 Reporting Requirements (continued)

5.6.2 Annual Radiological Environmental Monitoring Report

----------NOTE----------
A single submittal may be made for the plant. The submittal should combine sections common to both units.

The Annual Radiological Environmental Monitoring Report covering the operation of the plant during the previous calendar year shall be submitted by May 15 of each year. The report shall include summaries, interpretations, and analyses of trends of the results of the radiological environmental monitoring program for the reporting period. The material provided shall be consistent with the objectives outlined in the Offsite Dose Calculation Manual (ODCM), and in 10 CFR 50, Appendix I, Sections IV.B.2, IV.B.3, and IV.C.

The Annual Radiological Environmental Monitoring Report shall include summarized and tabulated results, in the format of Regulatory Guide 4.8, December 1975, of all radiological environmental samples taken during the report period. In the event that some individual results are not available for inclusion with the report, the report shall be submitted noting and explaining the reasons for the missing results. The missing data shall be submitted in a supplementary report as soon as possible.

The report shall also include the following: a summary description of the radiological environmental monitoring program; a map of sampling locations keyed to a table giving distances and directions from the reactor site; and the results of licensees participation in the Interlaboratory Comparison Program defined in the ODCM.

5.6 Reporting Requirements (continued)

5.6.3 Radioactive Effluent Report

----------NOTE----------
A single submittal may be made for the plant. The submittal shall combine sections common to both units.

The Radioactive Effluent Report covering the operation of the plant during the previous calendar year shall be submitted by May 15 of each year. The report shall include a summary of the quantities of radioactive liquid and gaseous effluents and solid waste released from the plant. The material provided shall be consistent with the objectives outlined in the ODCM and in conformance with 10 CFR 50.36a and 10 CFR 50, Appendix I, Section IV.B.1.

5.6.4 Monthly Operating Reports

Routine reports of operating statistics and shutdown experience shall be submitted on a monthly basis no later than the 15th of each month following the calendar month covered by the report.

5.6.5 CORE OPERATING LIMITS REPORT (COLR)

a. Core operating limits shall be established prior to each reload cycle, or prior to any remaining portion of a reload cycle, and shall be documented in the COLR for the following:

LCO 3.1.1, "SHUTDOWN MARGIN (SDM)";
LCO 3.1.3, "Isothermal Temperature Coefficient (ITC)";
LCO 3.1.5, "Shutdown Bank Insertion Limits";
LCO 3.1.6, "Control Bank Insertion Limits";
LCO 3.1.8, "PHYSICS TESTS Exceptions - MODE 2";

5.6 Reporting Requirements

5.6.5 CORE OPERATING LIMITS REPORT (COLR) (continued)

LCO 3.2.1, "Heat Flux Hot Channel Factor ($F_Q(Z)$)";
LCO 3.2.2, "Nuclear Enthalpy Rise Hot Channel Factor ($F^N_{\Delta H}$);
LCO 3.2.3, "AXIAL FLUX DIFFERENCE (AFD)";
LCO 3.4.1, "RCS Pressure, Temperature, and Flow - Departure from Nucleate Boiling (DNB) Limits"; and
LCO 3.9.1, "Boron Concentration".

b. The analytical methods used to determine the core operating limits shall be those previously reviewed and approved by the NRC, specifically those described in the following documents:

1. NSPNAD-8101-PA, "Qualification of Reactor Physics Methods for Application to PI Units" (latest approved version);

2. NSPNAD-8102-PA, "Prairie Island Nuclear Power Plant Reload Safety Evaluation Methods for Application to PI Units"(latest approved version);

3. NSPNAD-97002-PA, "Northern States Power Company's "Steam Line Break Methodology", (latest approved version);

4. WCAP-9272-P-A, "Westinghouse Reload Safety Evaluation Methodology", July, 1985;

5. WCAP-10054-P-A, "Westinghouse Small Break ECCS Evaluation Model using the NOTRUMP Code", August, 1985;

6. WCAP-10924-P-A, "Westinghouse Large Break LOCA Best-Estimate Methodology", December, 1988;

7. WCAP-10924-P-A, Volume 1, Addendum 4, "Westinghouse Large Break LOCA Best Estimate Methodology", August, 1990;

5.6 Reporting Requirements

5.6.5 CORE OPERATING LIMITS REPORT (COLR) (continued)

8. XN-NF-77-57 (A), XN-NF-77-57, Supplement 1 (A), "Exxon Nuclear Power Distribution Control for Pressurized Water Reactors Phase II", May, 1981;

9. WCAP-13677, "10 CFR 50.46 Evaluation Model Report: W-COBRA/TRAC 2-Loop Upper Plenum Injection Model Update to Support ZIRLO$_{TM}$ Cladding Options", April 1993 (approved by NRC SE dated November 26, 1993);

10. NSPNAD-93003-A, "Transient Power Distribution Methodology", (latest approved version).

c. The core operating limits shall be determined such that all applicable limits (e.g., fuel thermal-mechanical limits, core thermal-hydraulic limits, Emergency Core Cooling Systems (ECCS) limits, nuclear limits such as SDM, transient analysis limits, and accident analysis limits) of the safety analysis are met.

d. The COLR, including any midcycle revisions or supplements, shall be provided upon issuance for each reload cycle to the NRC.

5.6.6 Reactor Coolant System (RCS) PRESSURE AND TEMPERATURE LIMITS REPORT (PTLR)

a. RCS pressure and temperature limits for heat-up, cooldown, low temperature operation, criticality, and hydrostatic testing, LTOP arming, PORV lift settings and Safety Injection Pump Disable Temperature as well as heatup and cooldown rates shall be established and documented in the PTLR for the following:

LCO 3.4.3, "RCS Pressure and Temperature (P/T) Limits";
LCO 3.4.6, "RCS Loops - MODE 4";
LCO 3.4.7, "RCS Loops - MODE 5, Loops Filled";
LCO 3.4.10, "Pressurizer Safety Valves";

5.6 Reporting Requirements

5.6.6 Reactor Coolant System (RCS) PRESSURE AND TEMPERATURE LIMITS REPORT (PTLR) (continued)

LCO 3.4.12, "Low Temperature Overpressure Protection (LTOP) > Safety Injection Pump (SI) Pump Disable Temperature";
LCO 3.4.13, "Low Temperature Overpressure Protection (LTOP) ≤ Safety Injection Pump (SI) Pump Disable Temperature"; and
LCO 3.5.3, "ECCS - Shutdown".

b. The analytical methods used to determine the RCS pressure and temperature limits and Cold Overpressure Mitigation System setpoints shall be those previously reviewed and approved by the NRC, specifically those described in the following document:

WCAP-14040-NP-A, Revision 2, "Methodology Used to Develop Cold Overpressure Mitigating System Setpoints and RCS Heatup and Cooldown Limit Curves" (includes any exemption granted by NRC to ASME Code Case N-514).

c. The PTLR shall be provided to the NRC upon issuance for each reactor vessel fluence period and for any revision or supplement thereto. Changes to the curves, setpoints, or parameters in the PTLR resulting from new or additional analysis of beltline material properties shall be submitted to the NRC prior to issuance of an updated PTLR.

5.6.7 Steam Generator Tube Inspection Report

If the results of the steam generator inspection indicate greater than 1% of the inspected tubes in any steam generator exceed the repair criteria in accordance with the requirements of the Steam Generator Program, a Special Report shall be submitted within 120 days after the initial entry into MODE 4 following completion of the inspection.

5.6 Reporting Requirements

5.6.7 Steam Generator Tube Inspection Report (continued)

The report shall summarize:

a) The scope of inspections performed on each steam generator inspected in the affected unit during the current outage;

b) Active degradation mechanisms found;

c) NDE techniques utilized for each degradation mechanism;

d) Location, orientation (if linear) and measured sizes (if available) of service induced indications;

e) Number of tubes plugged or repaired during the inspection outage for each active degradation mechanism;

f) Repair method utilized and the number of tubes repaired by each repair method;

g) Total number and percentage of tubes plugged or repaired to date;

h) The effective plugging percentage for all plugging and tube repairs in each steam generator; and

i) The results of condition monitoring including the results of tube pulls and in-situ testing.

5.0 ADMINISTRATIVE CONTROLS

5.7 High Radiation Area

As provided in paragraph 20.1601(c) of 10 CFR Part 20, the following controls shall be applied in place of the controls required by paragraph 10 CFR 20.1601(a) and (b) of 10 CFR 20:

5.7.1 High Radiation Areas accessible to personnel in which radiation levels could result in an individual receiving a deep dose equivalent **less than** 1.0 rem in one hour at 30 centimeters from the radiation source or from any surface that the radiation penetrates

a. Each entryway to such an area shall be barricaded and conspicuously posted as a high radiation area. Such barricades may be opened as necessary to permit entry or exit of personnel or equipment.

b. Access to, and activities in each such area shall be controlled by means of a Radiation Work Permit (RWP) or equivalent that includes specification of radiation dose rates in the immediate work area(s) and other appropriate radiation protection equipment and measures.

c. Individuals qualified in radiation protection procedures and personnel continuously escorted by such individuals may be exempted from the requirement for an RWP or equivalent while performing their assigned duties provided they are otherwise following plant radiation protection procedures for entry to, exit from, and work in such areas.

d. Each individual or group entering such an area shall possess:

1. A radiation monitoring device that continuously displays radiation dose rates in the area; or

2. A radiation monitoring device that continuously integrates the radiation dose rates in the area and alarms when the device's dose alarm setpoint is reached, with an appropriate alarm setpoint; or

5.7 High Radiation Area

5.7.1 High Radiation Areas accessible to personnel in which radiation levels could result in an individual receiving a deep dose equivalent **less than** 1.0 rem in one hour at 30 centimeters from the radiation source or from any surface that the radiation penetrates (continued)

3. A radiation monitoring device that continuously transmits dose rate and cumulative dose information to a remote receiver monitored by radiation protection personnel responsible for controlling personnel radiation exposure within the area; or

4. A self-reading dosimeter (e.g., pocket ionization chamber or electronic dosimeter) and,

   (i) Be under the surveillance, as specified in the RWP or equivalent, while in the area, of an individual qualified in radiation protection procedures, equipped with a radiation monitoring device that continuously displays radiation dose rates in the area, who is responsible for controlling personnel exposure within the area; or

   (ii) Be under the surveillance as specified in the RWP or equivalent, while in the area, by means of closed circuit television, of personnel qualified in radiation protection procedures, responsible for controlling personnel radiation exposure in the area, and with the means to communicate with individuals in the area who are covered by such surveillance.

e. Except for individuals qualified in radiation protection procedures, or personnel continuously escorted by such individuals, entry into such areas shall be made only after dose rates in the area have been determined and entry personnel are knowledgeable of them. These continuously escorted personnel will receive a pre-job briefing prior to entry into such areas. This dose rate determination, knowledge, and pre-job briefing does not require documentation prior to initial entry.

5.7 High Radiation Area (continued)

5.7.2 High Radiation Areas accessible to personnel in which radiation levels could result in an individual receiving a deep dose equivalent **in excess of** 1.0 rem in one hour at 30 centimeters from the radiation source or from any surface that the radiation penetrates, but less than 500 rad in one hour at one meter from the source

a. Each entryway to such an area shall be conspicuously posted as a high radiation area and shall be provided with a locked or continuously guarded door or gate that prevents unauthorized entry, and, in addition:

1. All such door and gate keys shall be maintained under the administrative control of the shift supervisor, radiation protection manager, or their designee.

2. Doors and gates shall remain locked except during periods of personnel or equipment entry or exit.

b. Access to, and activities in, each such area shall be controlled by means of an RWP or equivalent that includes specification of radiation dose rates in the immediate work area(s) and other appropriate radiation protection equipment and measures.

c. Individuals qualified in radiation protection procedures may be exempted from the requirement for an RWP or equivalent while performing radiation surveys in such areas provided they are otherwise following plant radiation protection procedures for entry to, exit from, and work in such areas.

d. Each individual or group entering such an area shall possess:

1. A radiation monitoring device that continuously integrates the radiation dose rates in the area and alarms when the device's dose alarm setpoint is reached, with an appropriate alarm setpoint; or

5.7 High Radiation Area

5.7.2 High Radiation Areas accessible to personnel in which radiation levels could result in an individual receiving a deep dose equivalent **in excess of** 1.0 rem in one hour at 30 centimeters from the radiation source or from any surface that the radiation penetrates, but less than 500 rad in one hour at one meter from the source (continued)

2. A radiation monitoring device that continuously transmits dose rate and cumulative dose information to a remote receiver monitored by radiation protection personnel responsible for controlling personnel radiation exposure within the area with the means to communicate with and control every individual in the area; or

3. A self-reading dosimeter (e.g., pocket ionization chamber or electronic dosimeter) and,

   (i) Be under the surveillance, as specified in the RWP or equivalent, while in the area, of an individual qualified in radiation protection procedures, equipped with a radiation monitoring device that continuously displays radiation dose rates in the area, who is responsible for controlling personnel exposure within the area; or

   (ii) Be under the surveillance as specified in the RWP or equivalent, while in the area, by means of closed circuit television, of personnel qualified in radiation protection procedures, responsible for controlling personnel radiation exposure in the area, and with the means to communicate with and control every individual in the area.

4. In those cases where options (2) and (3), above are impractical or determined to be inconsistent with the "As Low As is Reasonably Achievable" principle, a radiation monitoring device shall be used that continuously displays radiation dose rates in the area.

5.7 High Radiation Area

5.7.2 High Radiation Areas accessible to personnel in which radiation levels could result in an individual receiving a deep dose equivalent **in excess of** 1.0 rem in one hour at 30 centimeters from the radiation source or from any surface that the radiation penetrates, but less than 500 rad in one hour at one meter from the source (continued)

e. Except for individuals qualified in radiation protection procedures, or personnel continuously escorted by such individuals, entry into such areas shall be made only after dose rates in the area have been determined and entry personnel are knowledgeable of them. These continuously escorted personnel will receive a pre-job briefing prior to entry into such areas. This dose rate determination, knowledge, and pre-job briefing does not require documentation prior to initial entry.

f. Such individual areas that are located within a larger area where no enclosure exists for the purpose of locking and where no enclosure can be reasonably constructed around the individual area, that individual area need not be controlled by a locked door or gate, nor continuously guarded, but shall be barricaded, conspicuously posted, and a flashing light shall be activated at the area as a warning device.

penetration and system bypass < 1% (for DOP, particles having a mean diameter of 0.7 microns);

5.5.9

LR5.0-22

b. A halogenated hydrocarbon test of the inplace charcoal adsorber shows a penetration and system bypass < 1% (for DOP, particles having a mean diameter of 0.7 microns);

c. A laboratory test of a sample of the charcoal adsorber, when obtained as described in Regulatory Guide 1.52, Revision 2, shows the methyl iodide penetration less than 15% penetration (less than 5% penetration for the Control Room Special Ventilation System) when tested in accordance with ASTM D3803-1989 at a temperature of 30°C and 95% relative humidity (RH) (or 70% RH with humidity controls if the humidity controls are capable of maintaining the humidity of the air entering the charcoal less than or equal to 70% RH under worst-case design-basis conditions); and

R-5

d. The pressure drop across the combined HEPA filters and the charcoal adsorbers is less than 6 inches of water at the system flowrate ±10%.

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the VFTP test frequencies.

5.5.10~~J.~~ Explosive Gas and Storage Tank Radioactivity Monitoring Program

5.5.10

This program provides controls for potentially explosive gas mixtures contained in the waste gas holdup system, the quantity of radioactivity contained in gas storage tanks, and the quantity of radioactivity contained in unprotected outdoor liquid storage tanks.

The program shall include:

a~~1~~. The limits for concentration of oxygen in the waste gas holdup system and a surveillance program to ensure the limits are maintained. Such limits shall be appropriate to the system's design criteria;

b~~2~~. A surveillance program to ensure that the quantity of radioactivity contained in each gas storage tank is less than or equal to 78,800 curies of noble gases (considered as dose equivalent Xe-133); and

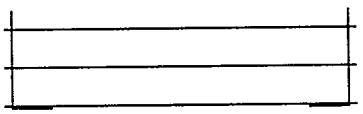
c~~3~~. A surveillance program to ensure that the quantity of radioactivity contained in each of the following tanks shall be limited to 10 curies, excluding tritium and dissolved or entrained noble gases:

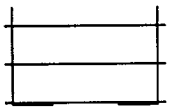
Condensate storage tanks
Outside temporary tanks

A5.0-06

~~4.~~ The provisions of SR 3.0.2 and SR 3.0.3~~TS 4.0~~ are applicable to the Explosive Gas and Storage Tank Radioactivity Monitoring Program test ~~surveillance~~ frequencies.

5.5 Programs and Manuals (continued)

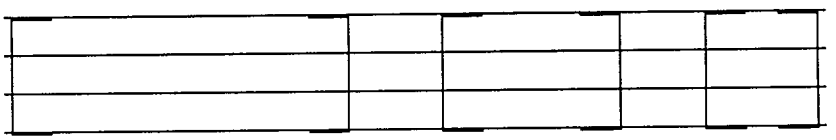




CL5.0-66

c. ~~Demonstrate for each of the ESF systems that a~~A laboratory test of a sample of the charcoal adsorber, when obtained as described in ~~[~~Regulatory Guide 1.52, Revision 2~~]~~, shows the methyl iodide penetration less than 15% penetration (less than 5% penetration for the Control Room Special Ventilation System)~~the value specified below~~ when tested in accordance with ~~[~~ASTM D3803-1989~~]~~ at a temperature of ~~≤ [~~30°C ~~]~~and 95% ~~greater than or equal to the~~ relative humidity (RH) (or 70% RH with humidity controls if the humidity controls are capable of maintaining the humidity of the air entering the charcoal less than or equal to 70% RH under worst-case design-basis conditions); and~~specified below.~~

~~ESF Ventilation System Penetration RH~~



R-5

~~Reviewer's Note: Allowable penetration = [100% - methyl iodide efficiency for charcoal credited in staff safety evaluation]/ (safety factor).~~
~~Safety factor = [5] for systems with heaters.~~
~~= [7] for systems without heaters.~~

d. ~~Demonstrate for each of the ESF systems that~~T~~t~~he pressure drop across the combined HEPA filters~~, the prefilters,~~ and the charcoal adsorbers is less than 6 inches of water at ~~the value specified below when tested in accordance with [Regulatory Guide 1.52,~~

CL5.0-66

~~5.5.11 Ventilation Filter Testing Program (VFTP) (continued)~~

~~Revision 2, and ASME N510-1989] at~~ the system flowrate ~~specified below [±~~ 10%~~]~~.

(continued)

Difference Category	Difference Number 5.0-	Justification for Differences
TA	63	This change incorporates TSTF-279.
CL	64	The CTS SG program requirements are provided as required by the Reviewer's Note in NUREG-1431. The format and content of these requirements are consistent with the latest NRC and industry guidance (dated August 24, 2000) available on September 27, 2000.
	65	Not used.
CL	66	In conformance with the guidance of NUREG-1431, program definition for the VFTP is provided. The format and contents of the Program requirements have been changed to incorporate CTS requirements for these systems and incorporate the requirements of NRC Generic Letter 99-02.
TA	67	This change incorporates TSTF-118.
PA	68	The Note in brackets has been modified to correctly apply to PI.
PA	69	A new test interval of "Semiquarterly" has been included to allow accelerated testing of equipment that fails a quarterly test as required by the ASME test program.
	70	Not used.