January 28, 2004

NG-04-0037
10 CFR 50.90

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

DUANE ARNOLD ENERGY CENTER
DOCKET 50-331
LICENSE No DPR-49
TECHNICAL SPECIFICATION CHANGE REQUEST (TSCR-029): "ADOPTION OF NRC APPROVED GENERIC CHANGES TO IMPROVED TECHNICAL SPECIFICATIONS"
AFFECTED TECHNICAL SPECIFICATIONS: SECTIONS 1.4, 3.3.1.1, 5.5.2, 5.5.11

Pursuant to 10 CFR 50.90, Nuclear Management Company, LLC (NMC) hereby requests revision to the Technical Specifications (TS) for the Duane Arnold Energy Center (DAEC).

DAEC implemented Improved Technical Specifications (ITS) in 1998 via Amendment 223 using NUREG 1433, Revision 1 as a model. The Industry and the NRC Staff have been working to improve the ITS NUREGs and as a result, generic changes have been developed. The proposed amendment adopts the following selected NRC approved generic changes to the ITS NUREGs:

Technical Specification Task Force (TSTF) 264, deletion of flux monitors specific overlap surveillance requirements;
TSTF-273, Revision 2, Safety Function Determination Program Clarifications;
TSTF-284, Revision 3, Add "Met" versus "Perform" to Specification 1.4, Frequency;
TSTF-299, Administrative Controls Program 5.5.2.b Test Interval defined and allowance for 25 percent extension of frequency.

The Bases changes are included for information only for completeness relative to the TSTF process. Bases changes will be completed per the TS Bases Control Program (TS 5.5.10).

NMC requests approval of the proposed amendment by July 30, 2004, and 60 days for implementation of the amendment.

A001

This application has been reviewed by the DAEC Operations Committee. A copy of this submittal, along with the 10CFR50.92 evaluation of "No Significant Hazards Consideration," is being forwarded to our appointed state official pursuant to 10 CFR Section 50.91.

This letter makes no new commitments or changes to any existing commitments.

If you have any questions or require additional information, please contact Ms. Doreen Barta at (319) 851-7277.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on January 28, 2004.

Mark A. Peifer
Site Vice President, Duane Arnold Energy Center

Exhibits:
A) EVALUATION OF PROPOSED CHANGE
B) PROPOSED TECHNICAL SPECIFICATION AND BASES CHANGES (MARK-UP)
C) PROPOSED TECHNICAL SPECIFICATION PAGES (RETYPED)

cc: Regional Administrator, USNRC, Region III
NRR Project Manager
NRC Resident Inspector
D. McGhee (State of Iowa)

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EXHIBIT A
EVALUATION OF PROPOSED CHANGE

1. BACKGROUND:

The Duane Arnold Energy Center (DAEC) implemented Improved Technical Specifications (ITS) in 1998 via Amendment 223 using NUREG 1433, Revision 1 as a model. The Industry and the NRC Staff have been working to improve the ITS NUREGs and as a result, generic changes have been developed. The proposed amendment adopts selected NRC approved generic changes to the ITS NUREGs.

The four changes in this submittal come from the Technical Specification Task Force (TSTF) process developed by the Industry and the NRC. The Bases changes are included for completeness relative to the TSTF process.

Nuclear Management Company, LLC, Docket No. 50-331
Duane Arnold Energy Center, Linn County, Iowa
Date of Amendment Request: January 28, 2004

2. DESCRIPTION AND TECHNICAL ANALYSIS OF AMENDMENT REQUEST:

The following are the NRC approved generic changes which are requested for the DAEC. For each of the requested changes the following is provided:

- The TSTF number and title
- Description of change requested for the DAEC
- Comparison between the requested change and the TSTF
- Justification for the change based on the TSTF justification

TSTF-264, Revision 0: 3.3.9 and 3.3.10 - Delete flux monitors specific overlap requirement SRs

Description of Change

Delete surveillances that require verification of overlap of Source Range Monitor (SRM) and Intermediate Range Monitor (IRM) channels and verification of overlap of Intermediate Range Monitor and Average Power Range Monitor channels. Also, add a statement to Bases of CHANNEL CHECK for clarity of application.

Comparison to TSTF

The proposed change differs from the TSTF in the following ways:

1. In Bases SR 3.3.1.1.1 INSERT 4, overlap between SRMs and IRMs is defined based upon the plant's design basis.
2. In Bases SR 3.3.2.1.4 and 3.3.2.1.5, change SR 3.3.1.1.7 to SR 3.3.1.1.1.

Justification

Same as TSTF justification. These surveillances are unnecessary in that they duplicate the requirements of the CHANNEL CHECK surveillance, which has more appropriate criteria and actions. Bases change provides agreement criteria expectations regarding overlap.

TSTF-273, Revision 2: Safety Function Determination Program (SFDP) Clarifications

Description of Change

Add to LCO 3.0.6 Bases clarification of "appropriate LCO for loss of function" and clarify in the requirements for the SFDP that consideration does not have to be made for a loss of power in determining loss of function.

Comparison to TSTF

The proposed change is consistent with the TSTF, with one minor variation in BASES LCO 3.0.6. TSTF-71, Revision 2, which was incorporated with TS Amendment 234, added examples to LCO 3.0.6. Therefore, INSERT 1 for TSTF-273, Revision 2 is added after the example information in BASES LCO 3.0.6 added by Amendment 234. This is consistent with Revision 2 to NUREG-1433.

Justification

Same as TSTF justification. Clarify that the Actions for a single support system inoperability are addressed by that support system's Actions, without cascading to the supported system and clarify the SFDP to be consistent with the AC Sources-Operating LCO.

TSTF-284, Revision 3: Add "Met" vs. "Perform" to Specification 1.4, Frequency

Description of Change

Insert into Specification 1.4 a discussion paragraph and new example to facilitate the use and application of SR Notes that utilize "met" and "perform." This change also revises SRs as necessary to appropriately use "met " and "perform" exceptions. Examples of Surveillance Notes are added. The examples parallel the existing example 1.4-3 of Notes that allow for the SR to "Not required to be performed..."

Comparison to TSTF

The proposed change is consistent with the TSTF.

Justification

Same as TSTF justification. NUREG-1433 contains a discussion in Specification 1.4 regarding the use of "met" and "performed" in SR Notes. Similarly, the Writer's Guide provides a distinction between these phrases. Inserting this material will provide for better use, application, and understanding of these Notes. Furthermore, this change will establish consistency between the NUREGs. With this clarification, several exceptions that are unclear or have incorrect usage of "met" and "perform" are also corrected. The examples will alleviate misunderstanding and provide explicit direction for these types of SR Notes.

TSTF-299, Revision 0: Administrative Controls Program 5.5.2.b Test Interval and Exception

Description of Change

Program 5.5.2, "Primary Coolant Sources Outside Containment," is revised to clarify the intent of refueling cycle intervals with respect to the system integrated leak test requirements, (i.e., 24 month intervals) and to add the following sentence, "The provisions of SR 3.0.2 are applicable."

Comparison to TSTF

The proposed change is consistent with the TSTF.

Justification

Same as TSTF justification. TS 5.5.2.b provides integrated leak test requirements for each system at refueling cycle intervals or less. TS 5.5.2.b is revised to require integrated leak test requirements for each system at 24 month intervals or less. TS 5.5.2.b is essentially a Surveillance Requirement. Since normal "refueling cycle intervals" are 24 months, presenting the requirements in this manner achieves consistency with similar requirements in the TS. TS Surveillance Requirements specify "24 months" and not refueling cycle intervals for Surveillances performed at refueling intervals. This change also allows approved changes to TS 5.5.2.b associated with implementation of 24 month refueling cycles to be explicitly documented. As a result of explicitly stating the interval for the test, it will no longer be possible to account for

shutdowns or power reductions that may occur during the cycle in order to satisfy the interval requirements for the tests required by TS 5.5.2.b, i.e., a refueling cycle may be longer than 24 months, in order to achieve the required fuel burnup, but the testing of TS 5.5.2.b would be required to be performed once per 24 months. For consistency with normal Surveillance Requirements in the TS LCO Sections that allow a 25% extension of the Frequency in accordance with TS SR 3.0.2, TS 5.5.2.b is considered a Surveillance Requirement. TS 5.5.2 is revised to allow the provisions of TS SR 3.0.2 to be applicable to TS 5.5.2.b. The applicability of TS SR 3.0.2 must be explicitly stated in TS 5.5.2 since TS SR 3.0.2 only applies to TS LCO Sections.

3. PROPOSED CHANGE

PROPOSED CHANGE TSCR-029 TO THE DUANE ARNOLD ENERGY CENTER TECHNICAL SPECIFICATIONS

The holders of license DPR-49 for the Duane Arnold Energy Center propose to amend the Technical Specifications (TS) by deleting the referenced pages and replacing them with the enclosed new pages.

SUMMARY OF CHANGES BY TSTF NUMBER:

TSTF Number	TS Pages	BASES Pages
264	3.3-4 3.3-5 3.3-6 3.3-7 3.3-8 3.3-9	B 3.3-26 B 3.3-27 B 3.3-28 B 3.3-29 B 3.3-30 B 3.3-31 B 3.3-32 B 3.3-33 B 3.3-34 B 3.3-35 B 3.3-37 B 3.3-40 B 3.3-55
273	5.0-17	B 3.0-10
284	1.4-1 1.4-2 1.4-5	
299	5.0-8	

SUMMARY OF CHANGES BY PAGE NUMBER:

Page Number	TSTF Number
1.4-1	284
1.4-2	284
1.4-5	284
3.3-4	264
3.3-5	264
3.3-6	264
3.3-7	264
3.3-8	264
3.3-9	264
5.0-8	299
5.0-17	273
B 3.0-10	273
B 3.3-26	264
B 3.3-27	264
B 3.3-28	264
B 3.3-29	264
B 3.3-30	264
B 3.3-31	264
B 3.3-32	264
B 3.3-33	264
B 3.3-34	264
B 3.3-35	264
B 3.3-37	264
B 3.3-40	264
B 3.3-55	264

4. REGULATORY SAFETY ANALYSIS:

4.1 Basis for proposed No Significant Hazards Consideration:

The Commission has provided standards (10 CFR Section 50.92(c)) for determining whether a significant hazards consideration exists. A proposed amendment to an operating license for a facility involves no significant hazards consideration if operation of the facility in accordance with the proposed amendment would not (1) involve a significant increase in the probability or consequences of an accident previously evaluated; (2) create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) involve a significant reduction in a margin of safety.

On the following six pages, the requested TSTF changes are evaluated in groups based on the type of change being made. Based upon these evaluations, we have determined that the proposed amendment will not involve a significant hazards consideration. The three groups (types) and the associated TSTFs are as follows:

ADMINISTRATIVE CHANGES:
TSTF-273
TSTF-284

LESS RESTRICTIVE CHANGES - DELETION OF SURVEILLANCE REQUIREMENT:
TSTF-264

MORE RESTRICTIVE CHANGES - INCREASE IN TESTING FREQUENCY:
TSTF-299

10 CFR 50.92 EVALUATION FOR ADMINISTRATIVE CHANGES

The DAEC is adopting NRC approved TSTF-273 and 284 generic changes to the Improved Standard Technical Specifications (ISTS) as outlined in NUREG-1433, "Standard Technical Specifications, BWR/4 Plants." The proposed changes involve reformatting, renumbering, and rewording of Technical Specifications with no change in intent. These changes, since they do not involve technical changes to the Technical Specifications, are administrative.

This type of change is connected with the movement of requirements within the current requirements, or with the modification of wording that does not affect the technical content of the current Technical Specifications. These changes will also include non-technical modifications of requirements to conform to the Writer's Guide or provide consistency with the Improved Standard Technical Specifications in NUREG-1433. Administrative changes are not intended to add, delete, or relocate any technical requirements of the current Technical Specifications.

In accordance with the criteria set forth in 10CFR50.92, NMC has evaluated these proposed Technical Specification changes and determined they do not represent a significant hazards consideration. The following is provided in support of this conclusion.

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

Response: No.

The proposed change involves reformatting, renumbering, and rewording the existing Technical Specifications. The reformatting, renumbering, and rewording process involves no technical changes to the existing Technical Specifications. As such, this change is administrative in nature and does not affect initiators of analyzed events or assumed mitigation of accident or transient events. Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

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

Response: No.

The proposed change does not involve a physical alteration of the plant (no new or different type of equipment will be installed) or changes in methods governing normal plant operation. The proposed change will not impose any new or

eliminate any old requirements. Therefore, the proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Does this change involve a significant reduction in a margin of safety?

Response: No.

The proposed change will not reduce a margin of safety because it has no effect on any safety analyses assumptions. This change is administrative in nature. Therefore, the proposed change does not involve a significant reduction in a margin of safety.

10 CFR 50.92 EVALUATION FOR
LESS RESTRICTIVE CHANGES-
DELETION OF SURVEILLANCE REQUIREMENT

The DAEC is adopting NRC approved TSTF-264 generic changes to the Improved Standard Technical Specifications (ISTS) as outlined in NUREG-1433, "Standard Technical Specifications, BWR/4 Plants." The proposed changes involve deletion of Surveillance Requirements in the current Technical Specifications (TS).

The TS require safety systems to be tested and verified Operable prior to entering applicable operating conditions. These changes eliminate unnecessary TS Surveillance Requirements that do not contribute to verification that the equipment used to meet the LCO can perform its required functions. Thus, appropriate equipment continues to be tested in a manner and at a frequency necessary to give confidence that the equipment can perform its assumed safety function. These changes have been evaluated to not be detrimental to plant safety.

In accordance with the criteria set forth in 10 CFR 50.92, NMC has evaluated these proposed Technical Specification changes and determined they do not represent a significant hazards consideration. The following is provided in support of this conclusion.

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

Response: No.

The proposed change deletes Surveillance Requirements. Surveillances are not initiators to any accident previously evaluated. Consequently, the probability of an accident previously evaluated is not significantly increased. The equipment being tested is still required to be Operable and capable of performing the accident mitigation functions assumed in the accident analysis. As a result, the consequences of any accident previously evaluated are not significantly affected. Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

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

Response: No.

The proposed change does not involve a physical alteration of the plant (no new or different type of equipment will be installed) or a change in the methods

governing normal plant operation. The remaining Surveillance Requirements are consistent with industry practice and are considered to be sufficient to prevent the removal of the subject Surveillances from creating a new or different type of accident. Therefore, the proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Does this change involve a significant reduction in a margin of safety?

Response: No.

The deleted Surveillance Requirements do not result in a significant reduction in the margin of safety. As provided in the justification, the change has been evaluated to ensure that the deleted Surveillance Requirements are not necessary for verification that the equipment used to meet the LCO can perform its required functions. Thus, appropriate equipment continues to be tested in a manner and at a frequency necessary to give confidence that the equipment can perform its assumed safety function. Therefore, the proposed change does not involve a significant reduction in a margin of safety.

10 CFR 50.92 EVALUATION FOR MORE RESTRICTIVE CHANGES- INCREASE IN TESTING FREQUENCY

The DAEC is adopting NRC approved TSTF-299 generic changes to the Improved Standard Technical Specifications (ISTS) as outlined in NUREG-1433, "Standard Technical Specifications, BWR/4 Plants." The proposed changes involve adding more restrictive requirements to the existing Technical Specifications (TS) by making current requirements more stringent. Below are the description of this more restrictive change and the determination of No Significant Hazards Considerations.

Program 5.5.2, "Primary Coolant Sources Outside Containment," is revised to clarify the intent of refueling cycle intervals with respect to the system integrated leak test requirements (i.e., 24 month intervals) and to add the following sentence, "The provisions of SR 3.0.2 are applicable."

TS 5.5.2.b provides integrated leak test requirements for each system at refueling cycle intervals or less. TS 5.5.2.b is revised to require integrated leak test requirements for each system at 24 month intervals or less. TS 5.5.2.b is essentially a Surveillance Requirement. Since normal "refueling cycle intervals" are 24 months, presenting the requirement in this manner achieves consistency with similar requirements in the TS. The TS Surveillance Requirements specify "24 months" and not refueling cycle intervals for Surveillance performed at refueling intervals. This change also allows approved changes to TS 5.5.2.b associated with implementation of 24 month refueling cycles to be explicitly documented. As a result of explicitly stating the interval for the test, it will no longer be possible to account for shutdowns or power reductions that may occur during the cycle in order to satisfy the interval requirements for the tests required by TS 5.5.2.b, i.e., a refueling cycle may be longer than 24 months, in order to achieve the required fuel burnup, but the testing of TS 5.5.2.b would be required to be performed once per 24 months. For consistency with normal Surveillance Requirements in the TS LCO Sections that allow a 25% extension of the Frequency in accordance with TS SR 3.0.2, TS 5.5.2.b is considered a Surveillance Requirement. TS 5.5.2 is revised to allow the provisions of TS SR 3.0.2 to be applicable to TS 5.5.2.b. The applicability of TS SR 3.0.2 must be explicitly stated in TS 5.5.2 since TS SR 3.0.2 only applies to the TS LCO Sections.

In accordance with the criteria set forth in 10 CFR 50.92, NMC has evaluated these proposed Technical Specification changes and determined they do not represent a significant hazards consideration. The following is provided in support of this conclusion.

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

Response: No.

The proposed change provides more stringent requirements for operation of the facility. 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. The more restrictive requirements continue to ensure process variables, structures, systems, and components are maintained consistent with the safety analyses and licensing basis. Therefore, this change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

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

Response: No.

The proposed change does not involve a physical alteration of the plant (no new or different type of equipment will be installed) or changes in methods governing normal plant operation. The proposed change does impose different requirements. However, these changes are consistent with the assumptions in the safety analyses and licensing basis. Thus, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Does this change involve a significant reduction in a margin of safety?

Response: No.

The proposed change provides additional restrictions which enhance plant safety. This change maintains requirements within the safety analyses and licensing basis. Therefore, this change does not involve a significant reduction in a margin of safety.

CONCLUSION

Based on the preceding 10 CFR 50.92 evaluations, NMC concludes that the proposed amendment presents no significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of "no significant hazards consideration" is justified.

Attorney for Licensee: Jonathan Rogoff, Esquire, General Counsel, NMC, LLC, 700 First St., Hudson, WI, 54016

4.2 APPLICABLE REGULATORY REQUIREMENTS/CRITERIA:

By letter dated January 28, 2004, Nuclear Management Company, LLC (NMC) submitted a request for revision of the Technical Specifications for the Duane Arnold Energy Center (DAEC). The proposed amendment adopts selected NRC approved generic changes to the Improved Technical Specifications (ITS) NUREGs.

Evaluation:

The DAEC implemented ITS in 1998 via Amendment 223 using NUREG 1433, Revision 1 as a model. The Industry and the NRC Staff have been working to improve the ITS NUREGs and as a result, generic changes have been developed. The proposed amendment adopts selected NRC approved generic changes to the ITS NUREGs.

The four changes in this submittal come from the Technical Specification Task Force (TSTF) process developed by the Industry and the NRC. The Bases changes are included for completeness relative to the TSTF process.

The four changes have been determined to be of the following types:

Administrative Changes
Less Restrictive Changes - Deletion of Surveillance Requirement
More Restrictive Changes - Increase in Testing Frequency

Each of the four changes has been technically justified via the NRC approved TSTF process and determined to be applicable to the DAEC. In addition, these changes have been evaluated by type in accordance with 10 CFR 50.92 and found to not involve a significant hazards consideration.

In conclusion, based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public. Therefore, we have concluded that the proposed revision to the DAEC Technical Specifications is acceptable.

5.0 ENVIRONMENTAL CONSIDERATION:

10 CFR Section 51.22(c)(9) identifies certain licensing and regulatory actions which are eligible for categorical exclusion from the requirement to perform an environmental assessment. A proposed amendment to an operating license for a facility requires no environmental assessment if operation of the facility in accordance with the proposed amendment would not: (1) involve a significant hazards consideration; (2) result in a significant change in the types or significant increase in the amounts of any effluents that may be released offsite; and (3) result in a significant increase in individual or cumulative occupational radiation exposure. NMC has reviewed this request and determined that the proposed amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR Section 51.22(c)(9). Pursuant to 10 CFR Section 51.22(b), no environmental impact statement or environmental assessment needs to be prepared in connection with the issuance of the amendment. The basis for this determination follows:

Basis

The change meets the eligibility criteria for categorical exclusion set forth in 10 CFR Section 51.22(c)(9) for the following reasons:

1. As demonstrated in the 10 CFR 50.92 evaluations included in this exhibit, the proposed amendment does not involve a significant hazards consideration.

2. There is no significant change in the types or significant increase in the amounts of any effluents that may be released offsite. The proposed changes do not involve any physical alteration of the plant (no new or different type of equipment will be installed) or change in methods governing normal plant operation.

3. There is no significant increase in individual or cumulative occupational radiation exposure. The proposed changes do not involve any physical alteration of the plant (no new or different type of equipment will be installed) or change in methods governing normal plant operation.

6. REFERENCES:

1. TSTF-264, Revision 0, Delete Flux monitors specific overlap requirements SRs

2. TSTF-273, Revision 2, Safety Function Determination Program (SFDP) Clarifications

3. TSTF-284, Revision 3, Add "Met vs. Perform" to Specification 1.4, Frequency

4. TSTF-299, Revision 0, Administrative Control Program 5.5.2.b Test Interval and Exception

5. Letter dated July 26, 1999, from NRR to NEI, Status of TSTFs, (NRC Approval of TSTF-264, Revision 0).

6. Letter dated August 16, 1999, from NRR to NEI, Status of TSTFs, (NRC Approval of TSTF-273, Revision 2).

7. Letter dated February 16, 2000, from NRR to NEI, Status of TSTFs, (NRC Approval of TSTF-284, Revision 3).

8. Letter dated October 31, 2000, from NRR to NEI, Status of TSTFs, (NRC Approval of TSTF 299, Revision 0).

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EXHIBIT B
PROPOSED TECHNICAL SPECIFICATION AND BASES CHANGES (MARK-UP)

TSTF-264, Rev. 0
MARK-UP

SURVEILLANCE REQUIREMENTS (continued) <TSTF-264, Rev.0>

SURVEILLANCE		FREQUENCY
SR 3.3.1.1.5	Perform CHANNEL FUNCTIONAL TEST.	7 days
SR 3.3.1.1.6	Verify the Source Range Monitor (SRM) and Intermediate Range Monitor (IRM) channels overlap.	Prior to withdrawing SRMs from the fully inserted position
SR 3.3.1.1.7	----------NOTE---------- Only required to be met during entry into MODE 2 from MODE 1. ---------- Verify the IRM and APRM channels overlap.	7 days
SR 3.3.1.1.~~8~~ (6)	Calibrate the local power range monitors.	1000 MWD/T average core exposure
SR 3.3.1.1.~~9~~ (7)	Perform CHANNEL FUNCTIONAL TEST.	92 days
SR 3.3.1.1.~~10~~ (8)	Calibrate the trip units.	92 days
SR 3.3.1.1.~~11~~ (9)	Perform CHANNEL CALIBRATION.	92 days

(continued)

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SURVEILLANCE REQUIREMENTS (continued) <TSTF-264, Rev.0>

SURVEILLANCE	FREQUENCY
SR 3.3.1.1.~~12~~ 10	----------NOTES---------- 1. Neutron detectors are excluded. 2. For Function 2.a, not required to be performed when entering MODE 2 from MODE 1 until 12 hours after entering MODE 2. ---------- Perform CHANNEL CALIBRATION.	184 days
SR 3.3.1.1.~~13~~ 11	Perform CHANNEL FUNCTIONAL TEST.	24 months
SR 3.3.1.1.~~14~~ 12	----------NOTES---------- 1. Neutron detectors are excluded. 2. For Function 1, not required to be performed when entering MODE 2 from MODE 1 until 12 hours after entering MODE 2. ---------- Perform CHANNEL CALIBRATION.	24 months
SR 3.3.1.1.~~15~~ 13	Perform LOGIC SYSTEM FUNCTIONAL TEST.	24 months
SR 3.3.1.1.~~16~~ 14	Verify Turbine Stop Valve-Closure and Turbine Control Valve Fast Closure, Trip Oil Pressure - Low Functions are not bypassed when THERMAL POWER is ≥ 26% RTP.	24 months *

(continued)

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SURVEILLANCE REQUIREMENTS (continued) <TSTF-264, Rev.0>

SURVEILLANCE	FREQUENCY
SR 3.3.1.1.~~17~~ 15 Adjust the channel to conform to a calibrated flow signal.	24 months
SR 3.3.1.1.~~18~~ 16 Verify the RPS RESPONSE TIME is within limits.	24 months on a STAGGERED TEST BASIS
SR 3.3.1.1.~~19~~ 17 Verify the RPS logic system response time is within limits.	24 months on a STAGGERED TEST BASIS

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(TSTF-264, Rev.0)

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

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER TRIP SYSTEM	CONDITIONS REFERENCED FROM REQUIRED ACTION D.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Intermediate Range Monitors					
a. Neutron Flux - High	2	2	G	SR 3.3.1.1.1 SR 3.3.1.1.4 ~~SR 3.3.1.1.6~~ ~~SR 3.3.1.1.7~~ SR 3.3.1.1(14) – 12 SR 3.3.1.1(15) – 13 SR 3.3.1.1(16) – 17	≤ 125/125 divisions of full scale
	5(a)	2	H	SR 3.3.1.1.1 SR 3.3.1.1.5 SR 3.3.1.1(14) – 12 SR 3.3.1.1(15) – 13 SR 3.3.1.1(16) – 17	≤ 125/125 divisions of full scale
b. Inop	2	2	G	SR 3.3.1.1.4 SR 3.3.1.1(14) – 13 SR 3.3.1.1(16) – 17	NA
	5(a)	2	H	SR 3.3.1.1.5 SR 3.3.1.1(15) – 13 SR 3.3.1.1(16) – 17	NA
2. Average Power Range Monitors					
a. Neutron Flux - Upscale, Startup	2	2	G	SR 3.3.1.1.1 SR 3.3.1.1.4 ~~SR 3.3.1.1.7~~ SR 3.3.1.1(9) – 6 SR 3.3.1.1(12) – 10 SR 3.3.1.1(15) – 13 SR 3.3.1.1(16) – 17	≤ 16.6% RTP
b. Flow Biased - High	1	2	F	SR 3.3.1.1.1 SR 3.3.1.1.2 SR 3.3.1.1.3 SR 3.3.1.1(9) – 6 SR 3.3.1.1(10) – 7 SR 3.3.1.1(12) – 10 SR 3.3.1.1(15) – 13 SR 3.3.1.1(17) – 15 SR 3.3.1.1(16) – 17	≤ (0.55W + 67.7) [b] [c] *

(Continued)

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

(b) When reset for single loop operation per LCO 3.4.1, "Recirculation Loops Operating," the following Allowable Value applies: *

≤ (0.55W + 61.4) [c]

The trip setpoints may be reset by adjusting APRM gain or by recalibrating the APRMs.

(c) W is equal to the percentage of the drive flow, where 100% drive flow is that required to achieve 100% core flow at 100% RTP. *

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<TSTF-264, Rev.0>

Table 3.3.1.1-1 (page 2 of 3)
Reactor Protection System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER TRIP SYSTEM	CONDITIONS REFERENCED FROM REQUIRED ACTION D.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
2. Average Power Range Monitors (continued)					
c. High Value Clamp	1	2	F	SR 3.3.1.1.2 SR 3.3.1.1.3 SR 3.3.1.1.(8) 6 SR 3.3.1.1.(9) 7 SR 3.3.1.1.(12) 10 SR 3.3.1.1.(15) 13 SR 3.3.1.1.(19) 17	≤ 121.6% RTP
d. Inop	1,2	2	G	SR 3.3.1.1.3 SR 3.3.1.1.(9) 7 SR 3.3.1.1.(15) 13 SR 3.3.1.1.(19) 17	NA
3. Reactor Vessel Steam Dome Pressure - High	1,2	2	G	SR 3.3.1.1.3 SR 3.3.1.1.(9) 7 SR 3.3.1.1.(11) 9 SR 3.3.1.1.(15) 13 SR 3.3.1.1.(16) 16 SR 3.3.1.1.(19) 17	≤ 1069.2 psig
4. Reactor Vessel Water Level - Low	1,2	2	G	SR 3.3.1.1.1 SR 3.3.1.1.3 SR 3.3.1.1.(9) 7 SR 3.3.1.1.(14) 12 SR 3.3.1.1.(15) 13 SR 3.3.1.1.(16) 16 SR 3.3.1.1.(19) 17	≥ 165.6 inches
5. Main Steam Isolation Valve - Closure	1	4	F	SR 3.3.1.1.3 SR 3.3.1.1.(9) 7 SR 3.3.1.1.(14) 12 SR 3.3.1.1.(15) 13 SR 3.3.1.1.(19) 17	≤ 10% closed
6. Drywell Pressure - High	1,2	2	G	SR 3.3.1.1.3 SR 3.3.1.1.(9) 7 SR 3.3.1.1.(14) 12 SR 3.3.1.1.(15) 13 SR 3.3.1.1.(19) 17	≤ 2.2 psig

(continued)

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

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER TRIP SYSTEM	CONDITIONS REFERENCED FROM REQUIRED ACTION D.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE	
7. Scram Discharge Volume Water Level - High						
a. Resistance Temperature Detector	1,2	2	G	SR 3.3.1.1.3 SR 3.3.1.1(10)-8 SR 3.3.1.1(14)-11 SR 3.3.1.1(14)-12 SR 3.3.1.1(15)-13 SR 3.3.1.1(19)-17	≤ 769 ft – 3.0 inches	
	5(a)	2	H	SR 3.3.1.1.3 SR 3.3.1.1(10)-8 SR 3.3.1.1(14)-11 SR 3.3.1.1(14)-12 SR 3.3.1.1(15)-13 SR 3.3.1.1(19)-17	≤ 769 ft – 3.0 inches	
b. Float Switch	1,2	2	G	SR 3.3.1.1.3 SR 3.3.1.1(9)-7 SR 3.3.1.1(14)-12 SR 3.3.1.1(15)-13 SR 3.3.1.1(19)-17	≤ 769 ft – 2.8 inches	
	5(a)	2	H	SR 3.3.1.1.3 SR 3.3.1.1(9)-7 SR 3.3.1.1(14)-12 SR 3.3.1.1(15)-13 SR 3.3.1.1(19)-17	≤ 769 ft – 2.8 inches	
8. Turbine Stop Valve - Closure	≥ 26% RTP	4	E	SR 3.3.1.1.3 SR 3.3.1.1(9)-7 SR 3.3.1.1(14)-12 SR 3.3.1.1(15)-13 SR 3.3.1.1(16)-14 SR 3.3.1.1(19)-17	≤ 10% closed	*
9. Turbine Control Valve Fast Closure, Trip Oil Pressure - Low	≥ 26% RTP	2	E	SR 3.3.1.1.3 SR 3.3.1.1(9)-7 SR 3.3.1.1(14)-12 SR 3.3.1.1(15)-13 SR 3.3.1.1(16)-14 SR 3.3.1.1(19)-17	≥ 465 psig	*
10. Reactor Mode Switch – Shutdown Position	1,2	1	G	SR 3.3.1.1(12)-11 SR 3.3.1.1(15)-13	NA	
	5(a)	1	H	SR 3.3.1.1(12)-11 SR 3.3.1.1(15)-13	NA	
11. Manual Scram	1,2	1	G	SR 3.3.1.1(9)-7 SR 3.3.1.1(15)-13	NA	
	5(a)	1	H	SR 3.3.1.1(9)-7 SR 3.3.1.1(15)-13	NA	

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

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BASES (continued)

SURVEILLANCE REQUIREMENTS

As noted at the beginning of the SRs, the SRs for each RPS instrumentation Function are located in the SRs column of Table 3.3.1.1-1.

The Surveillances are modified by a Note to indicate that when a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours, provided the associated Function maintains RPS trip capability. Upon completion of the Surveillance, or expiration of the 6 hour allowance, the channel must be returned to OPERABLE status or the applicable Condition entered and Required Actions taken. This Note is based on the reliability analysis (Ref. 9) assumption of the average time required to perform channel Surveillance. That analysis demonstrated that the 6 hour testing allowance does not significantly reduce the probability that the RPS will trip when necessary.

SR 3.3.1.1.1

Performance of the CHANNEL CHECK once every 12 hours ensures that a gross failure of instrumentation has not occurred. A CHANNEL CHECK is normally a comparison of the parameter indicated on one channel to a similar parameter on other channels. It is based on the assumption that instrument channels monitoring the same parameter should read approximately the same value. Significant deviations between instrument channels could be an indication of excessive instrument drift in one of the channels or something even more serious. A CHANNEL CHECK will detect gross channel failure; thus, it is key to verifying the instrumentation continues to operate properly between each CHANNEL CALIBRATION.

Agreement criteria are determined by the plant staff based on a combination of the channel instrument uncertainties, including indication and readability. If a channel is outside the criteria, it may be an indication that the instrument has drifted outside its limit.

INSERT 4 (as modified) from TSTF-264, Rev.0

The Frequency is based upon operating experience that demonstrates channel failure is rare. The CHANNEL CHECK supplements less formal, but more frequent, checks of

(continued)

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INSERT 4 (as modified)

The agreement criteria includes an expectation of sufficient overlap when transitioning between neutron flux instrumentation. Overlap between IRMs and APRMs exists when sufficient IRMs and APRMs concurrently have onscale readings such that the transition between MODE 1 and MODE 2 can be made without either APRM downscale rod block, or IRM upscale rod block (i.e., approximately one-half decade of range). Overlap between SRMs and IRMs similarly exists when, prior to withdrawing the SRMs from the fully inserted position, IRMs are indicating at least 5/40 on range 1 before SRMs have reached 10^6 counts per second. The overlap between SRMs and IRMs must be demonstrated prior to withdrawing SRMs from the fully inserted position since indication is being transitioned from the SRMs to the IRMs. This will ensure that reactor power will not be increased into a neutron flux region without adequate indication. The overlap between IRMs and APRMs is of concern when reducing power into the IRM range (entry into MODE 2 from MODE 1). On power increases, the system design will prevent further increases (by initiating a rod block) if adequate overlap is not maintained.

If overlap for a group of channels is not demonstrated (e.g., IRM/APRM overlap), the reason for the failure of the Surveillance should be determined and the appropriate channel(s) declared inoperable. Only those appropriate channels that are required in the current MODE or condition should be declared inoperable.

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SURVEILLANCE REQUIREMENTS

SR 3.3.1.1.1 (continued)

channels during normal operational use of the displays associated with the channels required by the LCO.

SR 3.3.1.1.2

To ensure that the APRMs are accurately indicating the true core average power, the APRMs are calibrated to the reactor power calculated from a heat balance. LCO 3.4.1, "Recirculation Loops Operating," allows the APRMs to be reading greater than actual THERMAL POWER to effectively lower the APRM Flow Biased High setpoints by 3.5% for single recirculation loop operation. When this adjustment is made, the requirement for the APRMs to indicate within 2% RTP of calculated power is modified to require the APRMs to indicate within 2% RTP of calculated power plus 3.5%. The Frequency of once per 24 hours is based on minor changes in LPRM sensitivity, which could affect the APRM reading between performances of SR 3.3.1.1.~~8~~ 6.

A restriction to satisfying this SR when < 21.7% RTP is provided that requires the SR to be met only at ≥ 21.7% RTP because it is difficult to accurately maintain APRM indication of core THERMAL POWER consistent with a heat balance when < 21.7% RTP. At low power levels, a high degree of accuracy is unnecessary because of the large, inherent margin to thermal limits (MCPR and APLHGR). At ≥ 21.7% RTP, the Surveillance is required to have been satisfactorily performed within the previous 24 hours, in accordance with SR 3.0.2. A Note is provided which allows an increase in THERMAL POWER above 21.7% if the 24 hour Frequency is not met per SR 3.0.2. In this event, the SR must be performed within 12 hours after reaching or exceeding 21.7% RTP. Twelve hours is based on operating experience and in consideration of providing a reasonable time in which to complete the SR.

SR 3.3.1.1.3

The surveillance frequency extensions for various RPS functions are permitted by Reference 9, provided the automatic scram contactors are functionally tested weekly. There are four pairs of RPS automatic scram contactors (i.e., K14 relay contacts) with each pair associated with an automatic scram logic (A1, A2, B1, and B2). The automatic scram contactors can be functionally tested without the

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SURVEILLANCE REQUIREMENTS

SR 3.3.1.1.3 (continued)

necessity of using an automatic scram function trip. This functional test can be accomplished by placing the associated RPS Test Switch in the trip position, which will deenergize a pair of the automatic scram contactors and in turn, trip the associated RPS logic. The RPS Test Switches were not specifically credited in the accident analysis and thus, do not have any OPERABILITY requirements of their own. However, because the Manual Scram pushbuttons at the DAEC are not configured the same as the generic model used in Reference 9, (i.e., they are in a separate RPS logic - A3 and B3), the RPS Test Switches have been found to be functionally equivalent to the Manual Scram pushbuttons in the generic model for performing the weekly functional test of the automatic scram contactors required by Reference 9. If an RPS Test Switch(es) is (are) not available for performing this test, it is permissible to take credit for a CHANNEL FUNCTIONAL TEST of an automatic RPS trip function (i.e., SR 3.3.1.1.9), if performed within the required Frequency for this Surveillance, as it will also test the K14 relay contacts. (7)

The Frequency of 7 days is based upon the reliability analysis in Reference 9.

SR 3.3.1.1.4

A CHANNEL FUNCTIONAL TEST is performed on each required channel to ensure that the entire channel will perform the intended function. A successful test of the required contact(s) of a channel relay may be performed by the verification of the change of state of a single contact of the relay. This clarifies what is an acceptable CHANNEL FUNCTIONAL TEST of a relay. This is acceptable because all of the other required contacts of the relay are verified by other Technical Specifications and non-Technical Specifications tests at least once per refueling interval with applicable extensions. X

As noted, SR 3.3.1.1.4 is not required to be performed when entering MODE 2 from MODE 1, since testing of the MODE 2 required IRM and APRM Functions cannot be performed in MODE 1 without utilizing jumpers, lifted leads, or movable links.

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SURVEILLANCE REQUIREMENTS

SR 3.3.1.1.4 (continued)

This allows entry into MODE 2 if the 7 day Frequency is not met per SR 3.0.2. In this event, the SR must be performed within 12 hours after entering MODE 2 from MODE 1. Twelve hours is based on operating experience and in consideration of providing a reasonable time in which to complete the SR. A Frequency of 7 days provides an acceptable level of system average unavailability over the Frequency interval and is based on reliability analysis (Ref. 9).

SR 3.3.1.1.5

A CHANNEL FUNCTIONAL TEST is performed on each required channel to ensure that the entire channel will perform the intended function. A successful test of the required contact(s) of a channel relay may be performed by the verification of the change of state of a single contact of the relay. This clarifies what is an acceptable CHANNEL FUNCTIONAL TEST of a relay. This is acceptable because all of the other required contacts of the relay are verified by other Technical Specifications and non-Technical Specifications tests at least once per refueling interval with applicable extensions. A Frequency of 7 days provides an acceptable level of system average availability over the Frequency and is based on the reliability analysis using the concepts developed in Reference 10.

SR 3.3.1.1.6 and SR 3.3.1.1.7

These Surveillances are established to ensure that no gaps in neutron flux indication exist from subcritical to power operation for monitoring core reactivity status.

The overlap between SRMs and IRMs is required to be demonstrated to ensure that reactor power will not be increased into a neutron flux region without adequate indication. This is required prior to withdrawing SRMs from the fully inserted position since indication is being transitioned from the SRMs to the IRMs.

The overlap between IRMs and APRMs is of concern when reducing power into the IRM range. On power increases, the system design will prevent further increases (by initiating a rod block) if adequate overlap is not maintained.

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SURVEILLANCE REQUIREMENTS

SR 3.3.1.1.6 and SR 3.3.1.1.7 (continued)

Overlap between IRMs and APRMs exists when sufficient IRMs and APRMs concurrently have onscale readings such that the transition between MODE 1 and MODE 2 can be made without either APRM downscale rod block, or IRM upscale rod block (i.e., approximately one-half decade of range). Overlap between SRMs and IRMs similarly exists when, prior to withdrawing the SRMs from the fully inserted position, IRMs are indicating at least 5/40 on range 1 before SRMs have reached 10^6 counts per second.

As noted, SR 3.3.1.1.7 is only required to be met during entry into MODE 2 from MODE 1. That is, after the overlap requirement has been met and indication has transitioned to the IRMs, maintaining overlap is not required (APRMs may be reading downscale once in MODE 2).

If overlap for a group of channels is not demonstrated (e.g., IRM/APRM overlap), the reason for the failure of the Surveillance should be determined and the appropriate channel(s) declared inoperable. Only those appropriate channels that are required in the current MODE or condition should be declared inoperable.

A Frequency of 7 days is reasonable based on engineering judgment and the reliability of the IRMs and APRMs.

SR 3.3.1.1.~~8~~ 6

LPRM gain settings are determined using analytical methods with input from the axial flux profiles measured by the Traversing Incore Probe (TIP) System. This establishes the relative local flux profile for appropriate representative input to the APRM System. The 1000 MWD/T Frequency is based on operating experience with LPRM sensitivity changes.

SR 3.3.1.1.~~9~~ 7 and SR 3.3.1.1.~~13~~ 11

A CHANNEL FUNCTIONAL TEST is performed on each required channel to ensure that the entire channel will perform the intended function. A successful test of the required contact(s) of a channel relay may be performed by the verificiation of the change of state of a single contact of the relay. This clarifies what is an acceptable CHANNEL FUNCTIONAL TEST of a relay. This is acceptable because all

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BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.1.1.8 and SR 3.3.1.1.13 (continued)

of the other required contacts of the relay are verified by other Technical Specifications and non-Technical Specifications tests at least once per refueling interval with applicable extensions. The 92 day Frequency of SR 3.3.1.1.8 is based on the reliability analysis of Reference 9.

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

SR 3.3.1.1.10

Calibration of trip units provides a check of the actual trip setpoints. The channel must be declared inoperable if the trip setting is discovered to be less conservative than the Allowable Value specified in Table 3.3.1.1-1. If the trip setting is discovered to be less conservative than accounted for in the appropriate setpoint methodology, but is not beyond the Allowable Value, the channel performance is still within the requirements of the plant safety analysis. Under these conditions, the setpoint must be readjusted to be equal to or more conservative than accounted for in the appropriate setpoint methodology. The Frequency of 92 days is based on the reliability analysis of Reference 9.

SR 3.3.1.1.11, SR 3.3.1.1.12 and SR 3.3.1.1.14

A CHANNEL CALIBRATION is a complete check of the instrument loop and the sensor. This test verifies that the channel responds to the measured parameter within the necessary range and accuracy. CHANNEL CALIBRATION leaves the channel adjusted to account for instrument drifts between successive calibrations consistent with the plant specific setpoint methodology. The CHANNEL CALIBRATION for Functions 5 and 8 shall consist of the physical inspection and actuation of these position switches.

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SR 3.3.1.1.(11) (9) SR 3.3.1.1.(12) (10) and SR 3.3.1.1.(14) (12)

Note 1 states that neutron detectors are excluded from CHANNEL CALIBRATION because they are passive devices. with minimal drift. and because of the difficulty of simulating a meaningful signal. Changes in neutron detector sensitivity are compensated for by performing the calorimetric calibration (SR 3.3.1.1.2) every 24 hours and the 1000 MWD/T (6) LPRM calibration against the TIPs (SR 3.3.1.1.(8)). A second Note is provided that requires the APRM and IRM SRs to be performed within 12 hours of entering MODE 2 from MODE 1. Testing of the MODE 2 APRM and IRM Functions cannot be performed in MODE 1 without utilizing jumpers. lifted leads. or movable links. This Note allows entry into MODE 2 from MODE 1 if the associated Frequency is not met per SR 3.0.2. Twelve hours is based on operating experience and in consideration of providing a reasonable time in which to complete the SR.

The Frequency of SR 3.3.1.1.(11) (9) is based upon the assumption of a 92 day calibration interval in the determination of the magnitude of equipment drift in the setpoint analysis. (10) The Frequency of SR 3.3.1.1.(12) is based upon the assumption of a 184 day calibration interval in the determination of the magnitude of equipment drift in the setpoint analysis. (12) The Frequency of SR 3.3.1.1.(14) is based upon the assumption of a 24 month calibration interval in the determination of the magnitude of equipment drift in the setpoint analysis.

SR 3.3.1.1.(15) (13)

The LOGIC SYSTEM FUNCTIONAL TEST demonstrates the OPERABILITY of the required trip logic for a specific channel. The functional testing of control rods (LCO 3.1.3). and SDV vent and drain valves (LCO 3.1.8). overlaps this Surveillance to provide complete testing of the assumed safety function.

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

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SURVEILLANCE REQUIREMENTS (continued)

SR 3.3.1.1.~~16~~ 14

This SR ensures that scrams initiated from the Turbine Stop Valve – Closure and Turbine Control Valve Fast Closure, Trip Oil Pressure – Low Functions will not be inadvertently bypassed when THERMAL POWER is ≥ 26% RTP. This involves calibration of the bypass channels. Adequate margins for the instrument setpoint methodologies are incorporated into the actual setpoint. Because main turbine bypass flow, as well as other turbine steam loads, can affect this setpoint nonconservatively (THERMAL POWER is derived from turbine first stage pressure), the main turbine bypass valves must remain closed (except during required testing or upon actual demand) at THERMAL POWER ≥ 26% RTP to ensure that the calibration remains valid. If any bypass channel's setpoint is nonconservative (i.e., the Functions are bypassed at ≥ 26% RTP, either due to open main turbine bypass valve(s) or other reasons, such as changes in turbine steamload to the Main Steam Reheaters), then the affected Turbine Stop Valve – Closure and Turbine Control Valve Fast Closure, Trip Oil Pressure – Low Functions are considered inoperable. Alternatively, the bypass channel can be placed in the conservative condition (nonbypass). If placed in the nonbypass condition, this SR is met and the channel is considered OPERABLE.

The Frequency of 24 months is based on engineering judgment and reliability of the components.

SR 3.3.1.1.~~17~~ 15

The Average Power Range Monitor Flow Biased – High Function uses the recirculation loop drive flows to vary the trip setpoint. This SR ensures that the total loop drive flow signals from the flow units used to vary the setpoint is appropriately compared to a calibrated flow signal and, therefore, the APRM Function accurately reflects the required setpoint as a function of flow. Each flow signal from the respective flow unit must be ≤ 110% of the calibrated flow signal. If the flow unit signal is not within the limit, that flow unit may be bypassed, and its output to the low auction circuit will be maximum, making the low auction circuit select the input from the operating flow unit.

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SURVEILLANCE REQUIREMENTS

SR 3.3.1.1(17) (15) (continued)

The Frequency of 24 months is based on engineering judgment, operating experience, the reliability of this instrumentation, the other surveillances performed on the components of the flow biasing network, and the fact that a half scram will be present for an extended period of time during the performance of this surveillance.

SR 3.3.1.1(18) (16)

This SR ensures that the individual channel response times are less than or equal to the maximum values assumed in the accident analysis. The RPS Response Time test only applies to the Functions of Reactor Vessel Water Level - Low and Reactor Vessel Steam Dome Pressure - High. These RPS Functions are the only ones that were identified, in a program conducted prior to the first refueling outage, that require sensor response time testing. This test may be performed in one measurement or in overlapping segments, with verification that all components are tested. The RPS RESPONSE TIME acceptance criteria are included in Reference 13.

RPS RESPONSE TIME tests are conducted on a 24 month STAGGERED TEST BASIS. This Frequency is based on the logic interrelationships of the various channels required to produce an RPS scram signal. The 24 month Frequency is consistent with the typical industry refueling cycle and is based upon plant operating experience, which shows that random failures of instrumentation components causing serious response time degradation, but not channel failure, are infrequent occurrences.

SR 3.3.1.1(19) (17)

This SR ensures that the RPS logic system response times are less than or equal to the maximum value assumed in the accident analysis. The RPS logic system response time test is measured from the opening of the sensor contact up to and including the opening of the trip actuator contacts. As such, this test does not include the sensor response time. All RPS Functions except the RPS Manual Scram and Reactor Mode Switch - Shutdown Position are included in this test.

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SURVEILLANCE REQUIREMENTS

SR 3.3.1.1 (19) (17) (continued)

These two RPS Functions are excluded since they directly trip their scram solenoid relays without any intervening devices, thus there is nothing to response time test. This test may be performed in one measurement or in overlapping segments, with verification that all components are tested. The RPS logic system response time acceptance criteria are included in Reference 13. RPS logic system response time tests are conducted on a 24 month STAGGERED TEST BASIS. This Frequency is based on the logic interrelationships of the various channels required to produce an RPS scram signal. The 24 month Frequency is consistent with the typical industry refueling cycle and is based upon plant operating experience, which shows that random failures of instrumentation components causing serious response time degradation, but not channel failure, are infrequent occurrences.

REFERENCES

1. UFSAR, Figure 7.2-2.
2. UFSAR, Section 15.4.2.
3. NEDO-23842, "Continuous Control Rod Withdrawal in the Startup Range," April 18, 1978.
4. UFSAR, Section 5.2.2.
5. UFSAR, Section 15.4.7.
6. UFSAR, Section 6.3.3.
7. UFSAR, Chapter 15.
8. P. Check (NRC) letter to G. Lainas (NRC), "BWR Scram Discharge System Safety Evaluation," December 1, 1980.
9. NEDO-30851-P-A , "Technical Specification Improvement Analyses for BWR Reactor Protection System," March 1988.
10. Reliability of Engineered Safety Features as a Function of Testing Frequency, Volume 9, No. 4, July-August 1968.

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B 3.3 INSTRUMENTATION

B 3.3.1.2 Source Range Monitor (SRM) Instrumentation

BASES

BACKGROUND

The SRMs provide the operator with information relative to the neutron flux level at very low flux levels in the core. As such, the SRM indication is used by the operator to monitor the approach to criticality and determine when criticality is achieved. The SRMs are maintained fully inserted until the count rate is greater than a minimum allowed count rate (a control rod block is set at this condition). After SRM to Intermediate Range Monitor (IRM) overlap is demonstrated (as required by SR 3.3.1.1 ~~(6)~~ (1)), the SRMs are normally fully withdrawn from the core.

The SRM subsystem of the Neutron Monitoring System (NMS) consists of four channels. Each of the SRM channels can be bypassed, but only one at any given time, by the operation of a bypass switch. Each channel includes one detector that can be physically positioned in the core. Each detector assembly consists of a miniature fission chamber with associated cabling, signal conditioning equipment, and electronics associated with the various SRM functions. The signal conditioning equipment converts the current pulses from the fission chamber to analog DC currents that correspond to the count rate. Each channel also includes indication, alarm, and control rod blocks. However, this LCO specifies OPERABILITY requirements only for the monitoring and indication functions of the SRMs.

During refueling, shutdown, and low power operations, the primary indication of neutron flux levels is provided by the SRMs or special movable detectors (i.e., "dunking chambers") connected to the normal SRM circuits. The SRMs provide monitoring of reactivity changes during fuel or control rod movement and give the control room operator early indication of unexpected subcritical multiplication that could be indicative of an approach to criticality.

APPLICABLE SAFETY ANALYSES

Prevention and mitigation of prompt reactivity excursions during refueling and low power operation is provided by LCO 3.9.1, "Refueling Equipment Interlocks"; LCO 3.1.1, "SHUTDOWN MARGIN (SDM)"; LCO 3.3.1.1, "Reactor Protection

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ACTIONS

A.1 and B.1 (continued)

Provided at least one SRM remains OPERABLE, Required Action A.1 allows 4 hours to restore the required SRMs to OPERABLE status. This time is reasonable because there is adequate capability remaining to monitor the core, there is limited risk of an event during this time, and there is sufficient time to take corrective actions to restore the required SRMs to OPERABLE status or to establish flux monitoring capability by the IRMs. During this time, control rod withdrawal and power increase is not precluded by this Required Action. Having the ability to monitor the core with at least one SRM, proceeding to IRM Range 3 or greater (with overlap required by SR 3.3.1.1.8), and thereby exiting the Applicability of this LCO, is acceptable for ensuring adequate core monitoring and allowing continued operation.

verified (1)

With three required SRMs inoperable, Required Action B.1 allows no positive changes in reactivity (control rod withdrawal must be immediately suspended) due to inability to monitor the changes. Required Action A.1 still applies and allows 4 hours to restore monitoring capability prior to requiring control rod insertion. This allowance is based on the limited risk of an event during this time, provided that no control rod withdrawals are allowed, and the desire to concentrate efforts on repair, rather than to immediately shut down, with no SRMs OPERABLE.

C.1

In MODE 2 below IRM Range 3, if the required number of SRMs are not restored to OPERABLE status within the allowed Completion Time, the reactor shall be placed in MODE 3. With all control rods fully inserted, the core is in its least reactive state with the most margin to criticality. The allowed Completion Time of 12 hours is reasonable, based on operating experience, to reach MODE 3 from full power conditions in an orderly manner and without challenging plant systems.

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BASES (continued) <TSTF-264, Rev. 0>

SURVEILLANCE REQUIREMENTS (continued)

SR 3.3.2.1.4

The RBM setpoints are automatically varied as a function of power. Three Allowable Values are specified in Table 3.3.2.1-1, each within a specific power range. The power at which the control rod block Allowable Values, which are verified during the CHANNEL CALIBRATION, automatically change are based on the APRM signal's input to each RBM channel. Below the minimum power setpoint, the RBM is automatically bypassed. These power Allowable Values must be verified periodically to be within the specified ranges to ensure that the Analytical Limits for the ranges specified in Table 3.3.2.1-1 are met. If any power range setpoint is nonconservative, then the affected RBM channel is considered inoperable. Alternatively, the power range channel can be placed in the conservative condition (i.e., enabling the proper RBM setpoint). If placed in this condition, the SR is met and the RBM channel is not considered inoperable. As noted, neutron detectors are excluded from the Surveillance because they are passive devices, with minimal drift, and because of the difficulty of simulating a meaningful signal. Neutron detectors are adequately tested in SR 3.3.1.1.2 and SR 3.3.1.1.~~2~~ 1. The 184 day Frequency is based on the actual trip setpoint methodology utilized for these channels.

SR 3.3.2.1.5

A CHANNEL CALIBRATION is a complete check of the instrument loop and the sensor. This test verifies the channel responds to the measured parameter within the necessary range and accuracy. CHANNEL CALIBRATION leaves the channel adjusted to account for instrument drifts between successive calibrations consistent with the DAEC Instrument Setpoint Methodology.

As noted, neutron detectors are excluded from the CHANNEL CALIBRATION because they are passive devices, with minimal drift, and because of the difficulty of simulating a meaningful signal. Neutron detectors are adequately tested in SR 3.3.1.1.2 and SR 3.3.1.1.~~2~~ 1.

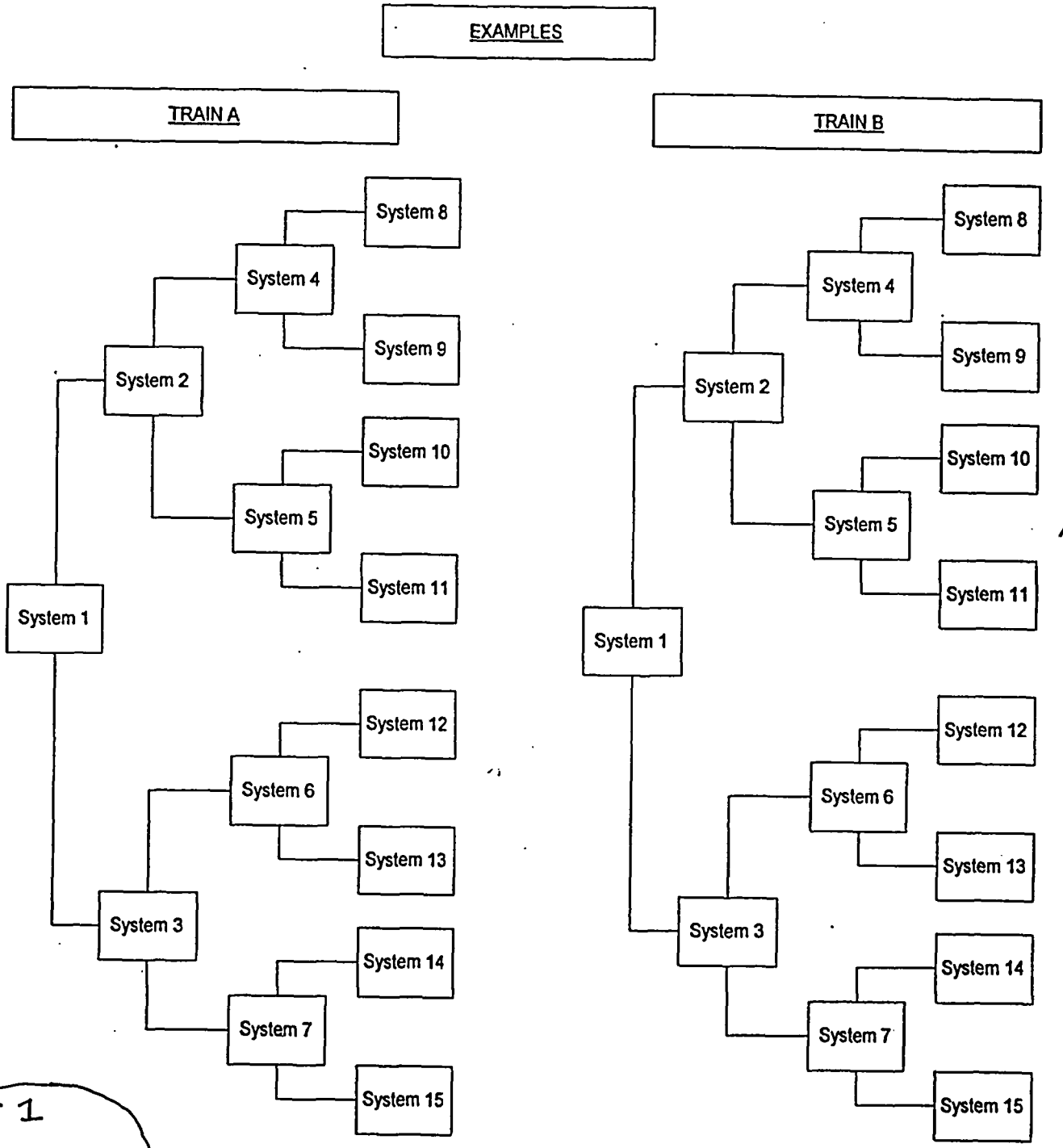
The Frequency is based upon the assumption of a 184 day calibration interval in the determination of the magnitude of equipment drift in the setpoint analysis.

(continued)

TSTF-273, Rev. 2
MARK-UP

BASES <TSTF-273, Rev. 2>

LCO 3.0.6
(continued)



INSERT 1
from
TSTF-273, Rev. 2

TSTF-273 Rev. 2
INSERT 1

This loss of safety function does not require the assumption of additional single failures or loss of offsite power. Since operation is being restricted in accordance with the ACTIONS of the support system, any resulting temporary loss of redundancy or single failure protection is taken into account. Similarly, the ACTIONS for inoperable offsite circuit(s) and inoperable diesel generator(s) provide the necessary restriction for cross train inoperabilities. This explicit cross train verification for inoperable AC electrical power sources also acknowledges that supported system(s) are not declared inoperable solely as a result of inoperability of a normal or emergency electrical power source (refer to the definition of OPERABILITY).

When a loss of safety function is determined to exist, and the SFDP requires entry into the appropriate Conditions and Required Actions of the LCO in which the loss of safety function exists, consideration must be given to the specific type of function affected. Where a loss of function is solely due to a single Technical Specification support system (e.g., loss of automatic start due to inoperable instrumentation, or loss of pump suction source due to low tank level) the appropriate LCO is the LCO for the support system. The ACTIONS for a support system LCO adequately addresses the inoperabilities of that system without reliance on entering its supported system LCO. When the loss of function is the result of multiple support systems, the appropriate LCO is the LCO for the supported system.

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5.5.11 Safety Function Determination Program (SFDP) (continued)

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

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

4. Other appropriate limitations and remedial or compensatory actions.

no concurrent loss of offsite power or no concurrent loss of onsite diesel generator(s),

b. A loss of safety function exists when, assuming no concurrent single failure, 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:

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

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

3. A required system redundant to support system(s) for the supported systems (1) and (2) above is also inoperable.

INSERT 2 from TSTF-273, Rev.2

c. 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.

5.5.12 Primary Containment Leakage Rate Testing Program

A program shall be established to implement the leakage rate testing of the primary 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, as modified by the following exception to NEI 94-01, Rev. 0, "Industry Guideline for Implementing Performance-Based Option of 10 CFR 50, Appendix J":

The first Type A test after the September 1993 Type A test shall be performed no later than September 2008.

(continued)

TSTF-273 Rev. 2
INSERT 2

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.

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MARK-UP

1.0 USE AND APPLICATION

<TSTF-284, Rev. 3>

1.4 Frequency

PURPOSE

The purpose of this section is to define the proper use and application of Frequency requirements.

DESCRIPTION

Each Surveillance Requirement (SR) has a specified Frequency in which the Surveillance must be met in order to meet the associated LCO. An understanding of the correct application of the specified Frequency is necessary for compliance with the SR.

The "specified Frequency" is referred to throughout this section and each of the Specifications of Section 3.0, Surveillance Requirement (SR) Applicability. The "specified Frequency" consists of the requirements of the Frequency column of each SR, as well as certain Notes in the Surveillance column that modify performance requirements.

Sometimes special situations dictate when the requirements of a Surveillance are to be met. They are "otherwise stated" conditions allowed by SR 3.0.1. They may be stated as clarifying Notes in the Surveillance, as part of the Surveillance, or both. Example 1.4-4 discusses these special situations.

Situations where a Surveillance could be required (i.e., its Frequency could expire), but where it is not possible or not desired that it be performed until sometime after the associated LCO is within its Applicability, represent potential SR 3.0.4 conflicts. To avoid these conflicts, the SR (i.e., the Surveillance or the Frequency) is stated such that it is only "required" when it can be and should be performed. With an SR satisfied, SR 3.0.4 imposes no restriction.

The use of "met" or "performed" in these instances conveys specific meanings. A Surveillance is "met" only when the acceptance criteria are satisfied. Known failure of the requirements of a Surveillance, even without a Surveillance specifically being "performed," constitutes a Surveillance not "met." "Performance" refers only to the requirement to specifically determine the ability to meet the acceptance

(continued)

INSERT 1A from TSTF-284, Rev. 3

<TSTF-284, Rev. 3>

DESCRIPTION (continued)

criteria. SR 3.0.4 restrictions would not apply if both the following conditions are satisfied:

a. The Surveillance is not required to be performed; and

b. The Surveillance is not required to be met or, even if required to be met, is not known to be failed.

EXAMPLES

The following examples illustrate the various ways that Frequencies are specified. In these examples, the Applicability of the LCO (LCO not shown) is MODES 1, 2, and 3.

EXAMPLE 1.4-1

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
Perform CHANNEL CHECK.	12 hours

Example 1.4-1 contains the type of SR most often encountered in the Technical Specifications (TS). The Frequency specifies an interval (12 hours) during which the associated Surveillance must be performed at least one time. Performance of the Surveillance initiates the subsequent interval. Although the Frequency is stated as 12 hours, an extension of the time interval to 1.25 times the interval specified in the Frequency is allowed by SR 3.0.2 for operational flexibility. The measurement of this interval continues at all times, even when the SR is not required to be met per SR 3.0.1 (such as when the equipment is inoperable, a variable is outside specified limits, or the unit is outside the Applicability of the LCO). If the interval specified by SR 3.0.2 is exceeded while the unit is in a MODE or other specified condition in the Applicability of the LCO, and the performance of the Surveillance is not

(continued)

TSTF-284 Rev. 3
INSERT 1A

Some Surveillances contain notes that modify the Frequency of performance or the conditions during which the acceptance criteria must be satisfied. For these Surveillances, the MODE-entry restrictions of SR 3.0.4 may not apply. Such a Surveillance is not required to be performed prior to entering a MODE or other specified condition in the Applicability of the associated LCO if any of the following three conditions are satisfied:

a. The Surveillance is not required to be met in the MODE or other specified condition to be entered; or

b. The Surveillance is required to be met in the MODE or other specified condition to be entered, but has been performed within the specified Frequency (i.e., it is current) and is known not to be failed; or

c. The Surveillance is required to be met, but not performed, in the MODE or other specified condition to be entered, and is known not to be failed.

Examples 1.4-3, 1.4-4, 1.4-5, and 1.4-6 discusses these special situations.

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EXAMPLES

EXAMPLE 1.4-3 (continued)

Once the unit reaches 25% RTP, 12 hours would be allowed for completing the Surveillance. If the Surveillance were not performed within this 12 hour interval, there would then be a failure to perform a Surveillance within the specified Frequency, and the provisions of SR 3.0.3 would apply.

EXAMPLE 1.4-4

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
----------NOTE---------- Only required to be met in MODE 1. ----------	
Verify leakage rates are within limits.	24 hours

Example 1.4-4 specifies that the requirements of this Surveillance do not have to be met until the unit is in MODE 1. The interval measurement for the Frequency of this Surveillance continues at all times, as described in Example 1.4-1. However, the Note constitutes an "otherwise stated" exception to the Applicability of this Surveillance. Therefore, if the Surveillance were not performed within the 24 hour interval (plus the extension allowed by SR 3.0.2), but the unit was not in MODE 1, there would be no failure of the SR nor failure to meet the LCO. Therefore, no violation of SR 3.0.4 occurs when changing MODES, even with the 24 hour Frequency exceeded, provided the MODE change was not made into MODE 1. Prior to entering MODE 1 (assuming again that the 24 hour Frequency were not met), SR 3.0.4 would require satisfying the SR.

INSERT 3 from TSTF-284, Rev.3

INSERT 4 from TSTF-248, Rev.3

INSERT 3

<TSTF-284 Rev3>

EXAMPLES (continued)

EXAMPLE 1.4~~-5~~

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
----------NOTE---------- Only required to be performed in MODE 1. ----------	
Perform complete cycle of the valve.	7 days

The interval continues, whether or not the unit operation is in MODE 1, 2, or 3 (the assumed Applicability of the associated LCO) between performances.

As the Note modifies the required performance of the Surveillance, the Note is construed to be part of the "specified Frequency." Should the 7 day interval be exceeded while operation is not in MODE 1, this Note allows entry into and operation in MODES 2 and 3 to perform the Surveillance. The Surveillance is still considered to be performed within the "specified Frequency" if completed prior to entering MODE 1. Therefore, if the Surveillance were not performed within the 7 day (plus the extension allowed by SR 3.0.2) interval, but operation was not in MODE 1, it would not constitute a failure of the SR or failure to meet the LCO. Also, no violation of SR 3.0.4 occurs when changing MODES, even with the 7 day Frequency not met, provided operation does not result in entry into MODE 1.

Once the unit reaches MODE 1, the requirement for the Surveillance to be performed within its specified Frequency applies and would require that the Surveillance had been performed. If the Surveillance were not performed prior to (entering) → MODE 1, there would then be a failure to perform a Surveillance within the specified Frequency, and the provisions of SR 3.0.3 would apply.

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<TSTF-284 Rev 3>

INSERT 4

EXAMPLE 1.4-~~6~~*

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
----------NOTE---------- Not required to be met in MODE 3. ----------	
Verify parameter is within limits.	24 hours

Example 1.4-~~6~~* specifies that the requirements of this Surveillance do not have to be met while the unit is in MODE 3 (the assumed Applicability of the associated LCO is MODES 1, 2, and 3). The interval measurement for the Frequency of this Surveillance continues at all times, as described in Example 1.4-1. However, the Note constitutes an "otherwise stated" exception to the Applicability of this Surveillance. Therefore, if the Surveillance were not performed within the 24 hour interval (plus the extension allowed by SR 3.0.2), and the unit was in MODE 3, there would be no failure of the SR nor failure to meet the LCO. Therefore, no violation of SR 3.0.4 occurs when changing MODES to enter MODE 3, even with the 24 hour Frequency exceeded, provided the MODE change does not result in entry into MODE 2. Prior to entering MODE 2 (assuming again that the 24 hour Frequency were not met), SR 3.0.4 would require satisfying the SR.

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TSTF-299, Rev. 0
MARK-UP

5.5 Programs and Manuals <TSTF-299, Rev.0>

5.5.1 Offsite Dose Assessment Manual (ODAM) (continued)

markings in the margin of the affected pages, clearly indicating the area of the page that was changed, and shall indicate the date (i.e., month and year) the change was implemented.

5.5.2 Primary Coolant Sources Outside Containment

This program provides controls to minimize leakage from those portions of systems outside containment that could contain highly radioactive fluids during a serious transient or accident to levels as low as practicable. The systems include Core Spray, High Pressure Coolant Injection, Residual Heat Removal, Reactor Core Isolation Cooling, Reactor Water Cleanup (only to second isolation valve). Post Accident Sampling (until such time as a modification eliminates PASS as a potential leakage path), Containment Atmospheric Monitoring, Control Rod Drive (scram discharge volume only) and Liquid Radwaste (only Reactor Building Floor and Equipment Drain sump pumps, piping, and tanks up to and including collector tanks). The program shall include the following: *

INSERT 1 from TSTF-299, Rev.0

a. Preventive maintenance and periodic visual inspection requirements; and

b. System leak test requirements for each system at ~~refueling cycle~~ intervals or less.

5.5.3 (Deleted) *

(continued)

TSTF-299 Rev. 0
INSERT 1

least once per 24 months.

The provisions of SR 3.0.2 are applicable.

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EXHIBIT C
PROPOSED TECHNICAL SPECIFICATION PAGES
(RETYPED)

1.0 USE AND APPLICATION

1.4 Frequency

PURPOSE

The purpose of this section is to define the proper use and application of Frequency requirements.

DESCRIPTION

Each Surveillance Requirement (SR) has a specified Frequency in which the Surveillance must be met in order to meet the associated LCO. An understanding of the correct application of the specified Frequency is necessary for compliance with the SR.

The "specified Frequency" is referred to throughout this section and each of the Specifications of Section 3.0, Surveillance Requirement (SR) Applicability. The "specified Frequency" consists of the requirements of the Frequency column of each SR, as well as certain Notes in the Surveillance column that modify performance requirements.

Sometimes special situations dictate when the requirements of a Surveillance are to be met. They are "otherwise stated" conditions allowed by SR 3.0.1. They may be stated as clarifying Notes in the Surveillance, as part of the Surveillance, or both.

Situations where a Surveillance could be required (i.e., its Frequency could expire), but where it is not possible or not desired that it be performed until sometime after the associated LCO is within its Applicability, represent potential SR 3.0.4 conflicts. To avoid these conflicts, the SR (i.e., the Surveillance or the Frequency) is stated such that it is only "required" when it can be and should be performed. With an SR satisfied, SR 3.0.4 imposes no restriction.

The use of "met" or "performed" in these instances conveys specific meanings. A Surveillance is "met" only when the acceptance criteria are satisfied. Known failure of the requirements of a Surveillance, even without a Surveillance specifically being "performed," constitutes a Surveillance not "met." "Performance" refers only to the requirement to specifically determine the ability to meet the acceptance

(continued)

1.4 Frequency

DESCRIPTION (continued)

criteria. Some Surveillances contain notes that modify the Frequency of performance or the conditions during which the acceptance criteria must be satisfied. For these Surveillances, the MODE-entry restrictions of SR 3.0.4 may not apply. Such a Surveillance is not required to be performed prior to entering a MODE or other specified condition in the Applicability of the associated LCO if any of the following three conditions are satisfied:

a. The Surveillance is not required to be met in the MODE or other specified condition to be entered; or

b. The Surveillance is required to be met in the MODE or other specified condition to be entered, but has been performed within the specified Frequency (i.e., it is current) and is known not to be failed; or

c. The Surveillance is required to be met, but not performed, in the MODE or other specified condition to be entered, and is known not to be failed.

Examples 1.4-3, 1.4-4, 1.4-5, and 1.4-6 discusses these special situations.

(continued)

1.4 Frequency (continued)

EXAMPLES

The following examples illustrate the various ways that Frequencies are specified. In these examples, the Applicability of the LCO (LCO not shown) is MODES 1, 2, and 3.

EXAMPLE 1.4-1

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
Perform CHANNEL CHECK.	12 hours

Example 1.4-1 contains the type of SR most often encountered in the Technical Specifications (TS). The Frequency specifies an interval (12 hours) during which the associated Surveillance must be performed at least one time. Performance of the Surveillance initiates the subsequent interval. Although the Frequency is stated as 12 hours, an extension of the time interval to 1.25 times the interval specified in the Frequency is allowed by SR 3.0.2 for operational flexibility. The measurement of this interval continues at all times, even when the SR is not required to be met per SR 3.0.1 (such as when the equipment is inoperable, a variable is outside specified limits, or the unit is outside the Applicability of the LCO). If the interval specified by SR 3.0.2 is exceeded while the unit is in a MODE or other specified condition in the Applicability of the LCO, and the performance of the Surveillance is not otherwise modified (refer to Examples 1.4-3 and 1.4-4), then SR 3.0.3 becomes applicable.

If the interval as specified by SR 3.0.2 is exceeded while the unit is not in a MODE or other specified condition in the Applicability of the LCO for which performance of the SR is required, the Surveillance must be performed within the Frequency requirements of SR 3.0.2 prior to entry into the MODE or other specified condition. Failure to do so would result in a violation of SR 3.0.4.

(continued)

1.4 Frequency

EXAMPLES (continued)

EXAMPLE 1.4-2

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
Verify flow is within limits.	Once within 12 hours after ≥ 25% RTP AND 24 hours thereafter

Example 1.4-2 has two Frequencies. The first is a one time performance Frequency, and the second is of the type shown in Example 1.4-1. The logical connector "AND" indicates that both Frequency requirements must be met. Each time reactor power is increased from a power level < 25% RTP to ≥ 25% RTP, the Surveillance must be performed within 12 hours.

The use of "once" indicates a single performance will satisfy the specified Frequency (assuming no other Frequencies are connected by "AND"). This type of Frequency does not qualify for the extension allowed by SR 3.0.2.

"Thereafter" indicates future performances must be established per SR 3.0.2, but only after a specified condition is first met (i.e., the "once" performance in this example). If reactor power decreases to < 25% RTP, the measurement of both intervals stops. New intervals start upon reactor power reaching 25% RTP.

(continued)

1.4 Frequency

EXAMPLES
(continued)

EXAMPLE 1.4-3

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
----------NOTE---------- Not required to be performed until 12 hours after ≥ 25% RTP. ----------	
Perform channel adjustment.	7 days

The interval continues whether or not the unit operation is < 25% RTP between performances.

As the Note modifies the required performance of the Surveillance, it is construed to be part of the "specified Frequency." Should the 7 day interval be exceeded while operation is < 25% RTP, this Note allows 12 hours after power reaches ≥ 25% RTP to perform the Surveillance. The Surveillance is still considered to be within the "specified Frequency." Therefore, if the Surveillance were not performed within the 7 day interval (plus the extension allowed by SR 3.0.2), but operation was < 25% RTP, it would not constitute a failure of the SR or failure to meet the LCO. Also, no violation of SR 3.0.4 occurs when changing MODES, even with the 7 day Frequency not met, provided operation does not exceed 12 hours with power ≥ 25% RTP.

Once the unit reaches 25% RTP, 12 hours would be allowed for completing the Surveillance. If the Surveillance were not performed within this 12 hour interval, there would then be a failure to perform a Surveillance within the specified Frequency, and the provisions of SR 3.0.3 would apply.

(continued)

EXAMPLES
(continued)

EXAMPLE 1.4-4

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
----------NOTE---------- Only required to be met in MODE 1. ----------	
Verify leakage rates are within limits.	24 hours

Example 1.4-4 specifies that the requirements of this Surveillance do not have to be met until the unit is in MODE 1. The interval measurement for the Frequency of this Surveillance continues at all times, as described in Example 1.4-1. However, the Note constitutes an "otherwise stated" exception to the Applicability of this Surveillance. Therefore, if the Surveillance were not performed within the 24 hour interval (plus the extension allowed by SR 3.0.2), but the unit was not in MODE 1, there would be no failure of the SR nor failure to meet the LCO. Therefore, no violation of SR 3.0.4 occurs when changing MODES, even with the 24 hour Frequency exceeded, provided the MODE change was not made into MODE 1. Prior to entering MODE 1 (assuming again that the 24 hour Frequency were not met), SR 3.0.4 would require satisfying the SR.

(continued)

EXAMPLES
(continued)

EXAMPLE 1.4-5

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
----------NOTE---------- Only required to be met in MODE 1. ----------	
Perform complete cycle of the valve	7 days

The interval continues, whether or not the unit operation is in MODE 1, 2 or 3 (the assumed Applicability of the associated LCO) between performances.

As the Note modifies the required performance of the Surveillance, the Note is construed to be part of the "specified Frequency." Should the 7 day interval be exceeded while operation is not in MODE 1, this Note allows entry into and operation in MODES 2 and 3 to perform the Surveillance. The Surveillance is still considered to be performed within the "specified Frequency" if completed prior to entering MODE 1. Therefore, if the Surveillance were not performed within the 7 day (plus the extension allowed by SR 3.0.2) interval, but operation was not in MODE 1, it would not constitute a failure of the SR or failure to meet the LCO. Also, no violation of SR 3.0.4 occurs when changing MODES, even with the 7 day Frequency not met, provided operation does not result in entry into MODE 1.

Once the unit reaches MODE 1, the requirement for the Surveillance to be performed within its specified Frequency applies and would require that the Surveillance had been performed. If the Surveillance were not performed prior to entering MODE 1, there would then be a failure to perform a Surveillance within the specified Frequency, and the provisions of SR 3.0.3 would apply.

(continued)

1.4 Frequency

EXAMPLES (continued)

EXAMPLE 1.4-6

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
----------NOTE---------- Not required to be in MODE 3. ----------	
Verify parameter is within limits.	24 hours

Example 1.4-6 specifies that the requirements of this Surveillance do not have to be met while the unit is in MODE 3 (the assumed Applicability of the associated LCO is MODES 1, 2, and 3). The interval measurement for the Frequency of this Surveillance continues at all times, as described in Example 1.4-1. However, the Note constitutes an "otherwise stated" exception to the Applicability of this Surveillance. Therefore, if the Surveillance were not performed within the 24 hour interval (plus the extension allowed by SR 3.0.2), and the unit was in MODE 3, there would be no failure of the SR nor failure to meet the LCO. Therefore, no violation of SR 3.0.4 occurs when changing MODES to enter MODE 3, even with the 24 hour Frequency exceeded, provided the MODE change does not result in entry into MODE 2. Prior to entering MODE 2 (assuming again that the 24 hour Frequency were not met), SR 3.0.4 would require satisfying the SR.

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.1.5	Perform CHANNEL FUNCTIONAL TEST.	7 days
SR 3.3.1.1.6	Calibrate the local power range monitors.	1000 MWD/T average core exposure
SR 3.3.1.1.7	Perform CHANNEL FUNCTIONAL TEST.	92 days
SR 3.3.1.1.8	Calibrate the trip units.	92 days
SR 3.3.1.1.9	Perform CHANNEL CALIBRATION.	92 days

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.1.10	----------NOTES---------- 1. Neutron detectors are excluded. 2. For Function 2.a, not required to be performed when entering MODE 2 from MODE 1 until 12 hours after entering MODE 2. ---------- Perform CHANNEL CALIBRATION.	184 days
SR 3.3.1.1.11	Perform CHANNEL FUNCTIONAL TEST.	24 months
SR 3.3.1.1.12	----------NOTES---------- 1. Neutron detectors are excluded. 2. For Function 1, not required to be performed when entering MODE 2 from MODE 1 until 12 hours after entering MODE 2. ---------- Perform CHANNEL CALIBRATION.	24 months
SR 3.3.1.1.13	Perform LOGIC SYSTEM FUNCTIONAL TEST.	24 months
SR 3.3.1.1.14	Verify Turbine Stop Valve-Closure and Turbine Control Valve Fast Closure, Trip Oil Pressure - Low Functions are not bypassed when THERMAL POWER is ≥ 26% RTP.	24 months

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.1.1.15	Adjust the channel to conform to a calibrated flow signal.	24 months
SR 3.3.1.1.16	Verify the RPS RESPONSE TIME is within limits.	24 months on a STAGGERED TEST BASIS
SR 3.3.1.1.17	Verify the RPS logic system response time is within limits.	24 months on a STAGGERED TEST BASIS

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

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER TRIP SYSTEM	CONDITIONS REFERENCED FROM REQUIRED ACTION D.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Intermediate Range Monitors					
a. Neutron Flux - High	2	2	G	SR 3.3.1.1.1 SR 3.3.1.1.4 SR 3.3.1.1.12 SR 3.3.1.1.13 SR 3.3.1.1.17	≤ 125/125 divisions of full scale
	5[a]	2	H	SR 3.3.1.1.1 SR 3.3.1.1.5 SR 3.3.1.1.12 SR 3.3.1.1.13 SR 3.3.1.1.17	≤ 125/125 divisions of full scale
b. Inop	2	2	G	SR 3.3.1.1.4 SR 3.3.1.1.13 SR 3.3.1.1.17	NA
	5[a]	2	H	SR 3.3.1.1.5 SR 3.3.1.1.13 SR 3.3.1.1.17	NA
2. Average Power Range Monitors					
a. Neutron Flux - Upscale, Startup	2	2	G	SR 3.3.1.1.1 SR 3.3.1.1.4 SR 3.3.1.1.6 SR 3.3.1.1.10 SR 3.3.1.1.13 SR 3.3.1.1.17	≤ 16.6% RTP
b. Flow Biased - High	1	2	F	SR 3.3.1.1.1 SR 3.3.1.1.2 SR 3.3.1.1.3 SR 3.3.1.1.6 SR 3.3.1.1.7 SR 3.3.1.1.10 SR 3.3.1.1.13 SR 3.3.1.1.15 SR 3.3.1.1.17	≤ (0.55W + 67.7) [b] [c]

(Continued)

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

(b) When reset for single loop operation per LCO 3.4.1, "Recirculation Loops Operating," the following Allowable Value applies:

≤ (0.55W + 61.4) [c]

The trip setpoints may be reset by adjusting APRM gain or by recalibrating the APRMs.

(c) W is equal to the percentage of the drive flow, where 100% drive flow is that required to achieve 100% core flow at 100% RTP.

Table 3.3.1.1-1 (page 2 of 3)
Reactor Protection System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER TRIP SYSTEM	CONDITIONS REFERENCED FROM REQUIRED ACTION D.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
2. Average Power Range Monitors (continued)					
c. High Value Clamp	1	2	F	SR 3.3.1.1.2 SR 3.3.1.1.3 SR 3.3.1.1.6 SR 3.3.1.1.7 SR 3.3.1.1.10 SR 3.3.1.1.13 SR 3.3.1.1.17	≤ 121.6% RTP
d. Inop	1,2	2	G	SR 3.3.1.1.3 SR 3.3.1.1.7 SR 3.3.1.1.13 SR 3.3.1.1.17	NA
3. Reactor Vessel Steam Dome Pressure - High	1,2	2	G	SR 3.3.1.1.3 SR 3.3.1.1.7 SR 3.3.1.1.9 SR 3.3.1.1.13 SR 3.3.1.1.16 SR 3.3.1.1.17	≤ 1069.2 psig
4. Reactor Vessel Water Level - Low	1,2	2	G	SR 3.3.1.1.1 SR 3.3.1.1.3 SR 3.3.1.1.7 SR 3.3.1.1.12 SR 3.3.1.1.13 SR 3.3.1.1.16 SR 3.3.1.1.17	≥ 165.6 inches
5. Main Steam Isolation Valve - Closure	1	4	F	SR 3.3.1.1.3 SR 3.3.1.1.7 SR 3.3.1.1.12 SR 3.3.1.1.13 SR 3.3.1.1.17	≤ 10% closed
6. Drywell Pressure - High	1,2	2	G	SR 3.3.1.1.3 SR 3.3.1.1.7 SR 3.3.1.1.12 SR 3.3.1.1.13 SR 3.3.1.1.17	≤ 2.2 psig

(continued)

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

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER TRIP SYSTEM	CONDITIONS REFERENCED FROM REQUIRED ACTION D.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
7. Scram Discharge Volume Water Level - High					
a. Resistance Temperature Detector	1,2	2	G	SR 3.3.1.1.3 SR 3.3.1.1.8 SR 3.3.1.1.11 SR 3.3.1.1.12 SR 3.3.1.1.13 SR 3.3.1.1.17	$\leq$ 769 ft – 3.0 inches
	5[(a)]	2	H	SR 3.3.1.1.3 SR 3.3.1.1.8 SR 3.3.1.1.11 SR 3.3.1.1.12 SR 3.3.1.1.13 SR 3.3.1.1.17	$\leq$ 769 ft – 3.0 inches
b. Float Switch	1,2	2	G	SR 3.3.1.1.3 SR 3.3.1.1.7 SR 3.3.1.1.12 SR 3.3.1.1.13 SR 3.3.1.1.17	$\leq$ 769 ft – 2.8 inches
	5[(a)]	2	H	SR 3.3.1.1.3 SR 3.3.1.1.7 SR 3.3.1.1.12 SR 3.3.1.1.13 SR 3.3.1.1.17	$\leq$ 769 ft – 2.8 inches
8. Turbine Stop Valve - Closure	$\geq$ 26% RTP	4	E	SR 3.3.1.1.3 SR 3.3.1.1.7 SR 3.3.1.1.12 SR 3.3.1.1.13 SR 3.3.1.1.14 SR 3.3.1.1.17	$\leq$ 10% closed
9. Turbine Control Valve Fast Closure, Trip Oil Pressure - Low	$\geq$ 26% RTP	2	E	SR 3.3.1.1.3 SR 3.3.1.1.7 SR 3.3.1.1.12 SR 3.3.1.1.13 SR 3.3.1.1.14 SR 3.3.1.1.17	$\geq$ 465 psig
10. Reactor Mode Switch – Shutdown Position	1,2	1	G	SR 3.3.1.1.11 SR 3.3.1.1.13	NA
	5[(a)]	1	H	SR 3.3.1.1.11 SR 3.3.1.1.13	NA
11. Manual Scram	1,2	1	G	SR 3.3.1.1.7 SR 3.3.1.1.13	NA
	5[(a)]	1	H	SR 3.3.1.1.7 SR 3.3.1.1.13	NA

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

5.5 Programs and Manuals

5.5.1 Offsite Dose Assessment Manual (ODAM) (continued)

markings in the margin of the affected pages, clearly indicating the area of the page that was changed, and shall indicate the date (i.e., month and year) the change was implemented.

5.5.2 Primary Coolant Sources Outside Containment

This program provides controls to minimize leakage from those portions of systems outside containment that could contain highly radioactive fluids during a serious transient or accident to levels as low as practicable. The systems include Core Spray, High Pressure Coolant Injection, Residual Heat Removal, Reactor Core Isolation Cooling, Reactor Water Cleanup (only to second isolation valve). Post Accident Sampling (until such time as a modification eliminates PASS as a potential leakage path), Containment Atmospheric Monitoring, Control Rod Drive (scram discharge volume only) and Liquid Radwaste (only Reactor Building Floor and Equipment Drain sump pumps, piping, and tanks up to and including collector tanks). The program shall include the following:

a. Preventive maintenance and periodic visual inspection requirements; and

b. System leak test requirements for each system at least once per 24 months.

The provisions of SR 3.0.2 are applicable.

5.5.3 [Deleted]

(continued)

5.5 Programs and Manuals

5.5.11 Safety Function Determination Program (SFDP) (continued)

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

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

4. Other appropriate limitations and remedial or compensatory actions.

b. 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:

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

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

3. A required system redundant to support system(s) for the supported systems (1) and (2) above is also inoperable.

c. 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.

5.5.12 Primary Containment Leakage Rate Testing Program

A program shall be established to implement the leakage rate testing of the primary 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, as modified

(continued)

5.5 Programs and Manuals

5.5.12 Primary Containment Leakage Rate Testing Program (continued)

by the following exception to NEI 94-01, Rev. 0, "Industry Guideline for Implementing Performance-Based Option of 10 CFR 50, Appendix J":

The first Type A test after the September 1993 Type A test shall be performed no later than September 2008.

The peak calculated containment internal pressure for the design basis loss of coolant accident, P_a, is 45.7 psig.

The maximum allowable primary containment leakage rate, L_a, at P_a, shall be 2.0% of primary containment air weight per day.

Leakage Rate acceptance criteria are:

a. Primary Containment leakage rate acceptance criterion is $\leq 1.0\ L_a$. During the first startup following testing in accordance with this program, the leakage rate acceptance criteria are: $\leq 0.60\ L_a$ for the Type B and Type C tests; and, $\leq 0.75\ L_a$ for the Type A tests; and

b. The air lock testing acceptance criterion is overall air lock leakage rate $\leq 0.05\ L_a$ when tested at $\geq P_a$.

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