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SOUTHERN COMPANY
Energy to Serve Your World℠

August 19, 1999

Docket Nos. 50-348
50-364

NEL-99-0293

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

Joseph M. Farley Nuclear Plant
Revised Response to Request for Additional Information Related to Conversion to the Improved Technical Specifications – Chapter 3.1 and
Response to Requests for Additional Information – Beyond Scope Issues - Chapters 3.5 and 3.8

Ladies and Gentlemen:

By letters dated March 12, 1998, and April 24, 1998, Southern Nuclear Operating Company (SNC) submitted the Farley Nuclear Plant (FNP) - specific Improved Technical Specifications (ITS) conversion documentation packages in accordance with 10 CFR 50.90. By letter dated August 20, 1998, SNC submitted an electronic copy of the Discussion of Changes (DOCs) and Significant Hazards Evaluations (SHEs) associated with the ITS conversion. By letter dated November 20, 1998, SNC submitted responses to a Request for Additional Information (RAI) for Chapters 3.6 and 5.0. By letter dated February 20, 1999, SNC submitted responses to a RAI for Chapter 3.4. By letters (2) dated April 30, 1999, SNC submitted responses to RAIs for Chapters 3.1, 3.2, 3.5, 3.7, 3.8, and 3.9. By letter dated May 28, 1999, SNC submitted responses to a RAI for Chapter 3.3. By letter dated June 30, 1999, SNC submitted responses to a RAI for Chapter 4.0 and revised responses to RAIs related to Chapters 3.4, 3.5, 3.6, 3.7, and 3.9. By letter dated July 27, 1999, SNC submitted responses to a RAI for a beyond scope issue in Chapter 3.5 and revised responses to RAIs related to Chapters 3.6 and 3.8. Included with the above responses were hard copies of changes to the original submittal to correct minor editorial errors and inconsistencies within the package and to reflect the SNC responses to the RAIs.

This letter addresses the following: 1) A revised response to a Chapter 3.1 RAI requested in an NRC conference call on July 26, 1999; 2) An RAI response related to a beyond scope issue for Chapter 3.5 requested by an NRC conference call on August 5, 1999; and 3) An RAI response related to beyond scope issues for Chapter 3.8 requested by NRC e-mails dated June 15, 1999 and July 27, 1999.

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During meetings held with the NRC on April 19-20, 1999, the Staff stated that it was not necessary to provide mark-ups of the Current Technical Specifications (CTS) in responses to RAIs. Therefore, the attached pages do not contain CTS mark-ups. Attachment I provides the SNC revised response to an NRC RAI question on Chapter 3.1 and responses to the beyond scope issues for Chapters 3.5 and 3.8. Attachment II includes revisions to the previously submitted license amendment request related to these RAIs, grouped by RAI number.

In response to these RAIs, some changes to the SHEs were required. As denoted in 10 CFR 50.92(c), SNC has determined the proposed changes to the FNP TS do not involve a significant hazards consideration. The revised SHEs are included in Attachment II. SNC has also determined that the proposed changes will not significantly affect the quality of the human environment. A copy of the proposed changes has been sent to Dr. D. E. Williamson, the Alabama State Designee, in accordance with 10 CFR 50.91(b)(i).

Clean-typed copies of the affected ITS pages are not included. A complete clean-typed copy of the FNP ITS will be re-submitted at the end of the NRC review process.

Mr. D. N. Morey states that he is a Vice President of Southern Nuclear Operating Company and is authorized to execute this oath on behalf of Southern Nuclear Operating Company and that, to the best of his knowledge and belief, the facts set forth in this letter and attachments are true.

If there are any questions, please advise.

Respectfully submitted,
SOUTHERN NUCLEAR OPERATING COMPANY

D N Morey

Dave Morey

Sworn to and subscribed before me this 19th *day of* August *1999*

Martha Gayle Dow

Notary Public

My Commission Expires: November 1, 2001

WAS/maf:ITSRAI_8.DOC
Attachments

I. SNC Revised Response to an NRC Request for Additional Information Related to Conversion to the Improved Technical Specifications - Chapter 3.1 and Responses to Beyond Scope Questions for Chapter 3.5 and 3.8.

II. SNC Revised Response to an NRC Request for Additional Information Related to Conversion to the Improved Technical Specifications - Chapter 3.1 and Responses to Beyond Scope Questions for Chapter 3.5 and 3.8 - Associated Package Changes Grouped by RAI Number.

cc: Southern Nuclear Operating Company
Mr. L. M. Stinson, General Manager – Farley

U. S. Nuclear Regulatory Commission, Washington, D. C.
Mr. L. M. Padovan, Licensing Project Manager – Farley

U. S. Nuclear Regulatory Commission, Region II
Mr. L. A. Reyes, Regional Administrator
Mr. T. P. Johnson, Senior Resident Inspector – Farley

Alabama Department of Public Health
Dr. D. E. Williamson, State Health Officer

ATTACHMENT I

SNC Revised Response to an NRC Request for Additional Information Related to Conversion to the Improved Technical Specifications – Chapter 3.1 and Responses to Beyond Scope Questions for Chapters 3.5 and 3.8

Chapter 3.1

ITS 3.1.7 – Rod Position Indication

NRC Question:

3.1.7-1 ITS 3.1.7 Rod Position Indication (RPI)
JFD 4 & JFD 1

STS and CTS allow one inoperable RPI. The ITS allows one or more RPI to be inoperable with the same required actions as one inoperable RPI. The STS permits 4 hours (Required Action B.1) to verify rod position after 24 steps of rod movement, while the CTS has an immediate requirement. The ITS grants 8 hours for this verification. **Comment**: The STS has recently been revised to allow more than one inoperable RPI, based upon approved similar Callaway and Wolf Creek RPI TS. The allowed Completion Time for verifying rod position after rod movement should be 4 hours. Recommend revising ITS 3.1.7, on RPI, accordingly.

Additional Comment: The 8 hour time is acceptable. However, the Staff requests that Farley adopt the additional new Condition B contained in TSTF 234, Rev.1 in lieu of the current Farley markup of Condition A with respect to more than one RPI inoperable per group.

SNC Response:

The ITS requires that action be taken to initiate verification of rod position immediately as opposed to allowing a delay. This is consistent with the CTS and ensures that actions are taken in an expeditious manner. The allowance of 8 hours to complete the rod position verification ensures that appropriately trained engineering personnel are available and that the incore system is placed in service and sufficient analysis time is permitted. Engineering personnel are normally at the station only during the normal daytime workweek. Therefore, a delay in response may occur. The incore system must be placed in service, energized, and warmed up prior to use. Maintenance support is required to install temporary recorders for the flux traces. There could also be cases where incore thimble paths are blocked or detectors are failed, necessitating use of alternate mapping strategies and significantly increasing the time required to verify the affected RCCA position(s). SNC believes that 4 hours will not provide adequate time to perform this surveillance under certain circumstances. Therefore, SNC intends to leave the LCO as currently submitted.

SNC Revised Response:

SNC will adopt TSTF 234, Rev. 1, with the exception of the 4 hour completion time to verify rod position after 24 steps of rod movement. As agreed to with the Staff, SNC will maintain the Completion Times of "Immediately" to initiate action to verify the position of rods with "8 hours" to complete the rod position verification.

Chapter 3.5

NRC Comment:

It is acceptable to use a graph for seal injection flow requirements for ITS LCO 3.5.5. However, the graph must be contained in the TS rather than the Bases.

SNC Response:

SNC has moved the graph into the TS.

Chapter 3.8

SNC Response to NRC RAI Related to Chapter 3.8
Beyond Scope Issue

NRC Question:

1. Farley ITS Surveillance Requirement (SR) 3.8.2.1 excludes performing SR 3.8.1.9.c.2 (energizing auto-connected shutdown loads through the automatic load sequencer). You indicated in a June 15, 1999 phone call that there is enough time for operators to manually add required emergency diesel generator (EDG) support loads (e.g., service water cooling) to prevent EDG damage following an automatic EDG start resulting from a loss of offsite power. Please explain how you concluded this.

   Additional Comment: The NRC Staff stated in a conference call on July 19, 1999 that they could not except the out-of-scope item that eliminated the sequencer in Modes 5 and 6. The Staff's reasoning was that after a loss-of-offsite-power, the diesels start automatically but need service water to operate. Without the sequencer, service water would have to be manually initiated. On a July 20, 1999 conference call, the Staff concluded that the issue was generic and should not be handled at this time on Farley. Instead, the TSTF process should be followed. The Staff indicated that SNC should incorporate the ITS which requires the sequencer in Modes 5 and 6.

SNC Response:

Alarms for low main Service Water (SW) header pressure exist in the Main Control Room (MCR). In addition, each EDG has local alarms for low SW flow that are relayed to the MCR as general EDG trouble alarms. These would alert the Operators to the need to establish SW flow. The Operators are trained to verify and/or establish SW flow to the EDGs once the EDGs are confirmed to be in Operation. The operating procedures for a Loss of Offsite Power (LOSP) include steps to verify SW flow immediately after EDG starts and to establish SW flow if required. Therefore, the EDGs would not be subjected to operation without SW flow for a period of time in which they would sustain damage.

SNC Revised Response:

SNC will incorporate the surveillance into TS 3.8.2 which verifies that the sequencer is capable of sequencing shutdown loads on for the DG required in MODES 5 and 6.

NRC Question:

2. The Farley ITS Bases note that during shutdown modes (consistent with LCO 3.8.10 requirements) portions of a second train of the distribution subsystems are required to be operable. The Farley ITS Bases also note that:

   a. required portions of the second train of AC power distribution subsystems may be energized from the associated inverter connected to the required DC bus, or the alternate Class 1E power source consisting of the inverter static transfer switch and the associated constant voltage transformer.

   b. required DC buses associated with the second train of distribution subsystems are energized from either an operable DC source consisting of one battery, one battery charger, and the corresponding control equipment and interconnecting cabling associated with that train or a battery charger using the corresponding control equipment and interconnecting cabling within the train.

Since the proposed Farley ITS do not require the above actions, they are considered to be voluntary actions. We suggest that you describe in the ITS Bases additional voluntary actions that you are already taking to assure that the desired level of shutdown risk is maintained if the second source connected is not a fully complimented Class 1E power source. Please note that utility voluntary actions beyond the current TSs, which include safety planning and assessment in shutdown, were an important part of the Commission's decision to cancel the shutdown rule. The following is an example of what another utility added to their ITS Bases to address this issue:

"In addition to the requirements established by the technical specifications, the plant staff must also manage shutdown tasks and electrical support to maintain risk at an acceptably low value.

As required by the technical specifications, one train of the required equipment during shutdown conditions is supported by one train of AC and DC power and distribution. The availability of additional equipment, both redundant equipment as required by the technical specifications and equipment not required by the specifications, contributes to risk reduction and this equipment should be supported by reliable electrical power systems. Typically the Class 1E power sources and distribution systems of the unit are used to power this equipment because these power and distribution systems are available and reliable. When portions of the Class 1E power or distribution systems are not available (usually as a result of maintenance or modifications), other reliable power sources or distribution are used to provide the needed electrical support. The plant staff assesses these alternate power sources and distribution systems to assure that the desired level of minimal risk is maintained (frequently referred to as maintaining a desired defense in depth). The level of detail involved in the assessment will vary with the significance of the equipment being supported. In some cases, prepared guidelines are used which include controls designed to manage risk and retain the desired defense in depth."

SNC Response:

The following sentences will be added to the FNP ITS Bases for ITS LCOs 3.8.8 and 3.8.10.

"Class 1E power and distribution systems are normally used because these systems are available and reliable. However, due to events such as maintenance or modification, portions of the Class 1E system may be temporarily unavailable. In such an instance the plant staff assesses the alternate systems to ensure that defense in depth is maintained and that risk is minimized."

ATTACHMENT II

SNC Revised Response to an NRC Request for Additional Information Related to Conversion to the Improved Technical Specifications - Chapter 3.1 and Responses to Beyond Scope Questions for Chapters 3.5 and 3.8

Associated Package Changes Grouped by RAI Number

Chapter 3.1

bc: Mr. J. D. Woodard
Mr. R. D. Hill
Mr. M. J. Ajluni
Mr. D. J. Shelton
Mr. G. P. Crone
Mr. J. W. Kale
Mr. G. W. Bouler
Unit 1 Control Room
Mr. K. W. McCracken
Mr. J. W. McGowan
Mr. J. A. Bailey
Mr. Mehdi Sheibani
Mr. D. M. Crowe
Mr. S. B. Tipps
Mr. W. A. Sparkman
NEL Reading File
NEL CATLIPS
SNC Document Management RTYPE: A4.54
NS File: A4000 T/S 3.1, 3.5, 3.8

Associated Package Changes for RAI – 3.1.7-1
Revised Response

CTS 3/4.1.3.2 POSITION INDICATING SYSTEMS - OPERATING

FNP ITS 3.1.7 ROD POSITION INDICATION

DOC NO	SHE	DISCUSSION
1	A	The CTS 3/4.1.3.2 Actions are modified by the addition of a Note and other action statement text consistent with the STS. The STS "separate Condition entry" note and associated action statement text "for one or more groups or banks" are added to the CTS Actions to provide a clarification of how the STS Conditions are entered for each inoperable rod position indicator per group. The inclusion of such notes in the STS conforms to the format and presentation of the rules of TS usage as explained in STS Section 1.3 (example 1.3-5). The Note which states "Separate Condition entry is allowed for each inoperable rod position indicator and each demand position indicator" and the associated action statement text "for one or more groups or banks" are consistent with the CTS actions which are also expressed on a per group and per bank basis. As this change is made to reflect the STS format and introduces no technical change to the STS, it is seen as an administrative change.
		RAI 3.1.7-1 Revised Response
1a	L	A new Condition, Condition B, is added consistent with the STS. When more than one DRPI per group is inoperable, additional actions are necessary to ensure that acceptable power distribution limits are maintained, minimum SDM is maintained, and the potential effects of rod misalignment on associated accident analyses are limited. However, in the STS, provided that the system can be restored within 24 hours such that a maximum of one DRPI per group is inoperable, no power reduction is required. The 24-hour Completion Time provides sufficient time to troubleshoot and restore the DRPI system to operation while avoiding the plant challenges associated with a shutdown without full rod position indication. Since the probability of simultaneously having a rod significantly out of position and an event sensitive to that rod position is small this change is acceptable for Farley. However, as this condition provides for additional actions not available in the CTS, its addition is seen as a less restrictive change.
2	LA	The CTS 3/4.1.3.2 LCO and Actions are revised consistent with the STS. Descriptive details regarding the operability of the digital rod position indication system are included in the bases for this TS. The STS bases includes a detailed description of the digital rod position indication system and what is required operable to meet the LCO. As such, the information in the CTS LCO and Actions is effectively addressed by the STS bases. The location of such information in the bases is consistent with the philosophy

CTS 3/4.1.3.2 POSITION INDICATING SYSTEMS - OPERATING

FNP ITS 3.1.7 ROD POSITION INDICATION

DOC NO	SHE	DISCUSSION
		for placement of descriptive or detailed information in the STS. Reliance on the information contained in the STS bases is acceptable since changes to the information in the bases is controlled by the Bases Control Program specified in the administrative controls section of the TS.
3		Not used.
4	A	The CTS 3/4.1.3.2 Action b.1 is revised consistent with the STS. This CTS action requires that all rod position indicators for the affected bank be verified operable. Strict compliance with this action would require performance of the associated surveillance test for each rod position indicator. The new STS surveillance would require that each rod be moved through its entire range of travel. Since in Mode 1 or 2, performance of this surveillance is not practical or desired, the STS includes the term "by administrative means" in this action. In this context the STS term "by administrative means" is intended to allow the operability of the affected rod position indicators to be verified by a review of existing information (previous surveillances, logs, etc.) and not require the performance of the associated surveillance test to meet the action. Since the addition of the STS term "by administrative means" provides a clarification of the appropriate required action, it is considered an administrative change necessary to conform with the new STS surveillance requirement for this LCO.
5	A	The CTS 3/4.1.3.2 action statement c is deleted consistent with the STS. The CTS action provided an exception to Specification 3.0.4 when verifying system operability following repair. The required actions of this LCO permit continued operation in Mode 1 or 2 with inoperable rod position indication. The new STS LCO 3.0.4 contains a "built in" exception for LCOs with actions that provide for continued operation of the plant. Therefore, Mode changes are permitted even when such actions are applicable. As such, a specific exception to LCO 3.0.4 in CTS 3/4.1.3.2 is no longer required. Since this change is made to conform to the new LCO 3.0.4 requirements and does not introduce a technical change to the CTS, it is considered administrative.
RAI 3.1.7-1 Revised Response		
6	M	The CTS 3/4.1.3.2 actions are revised by the addition of Actions Condition "E" consistent with the STS. The new Condition provides the required

CTS 3/4.1.3.2 POSITION INDICATING SYSTEMS - OPERATING

FNP ITS 3.1.7 ROD POSITION INDICATION

DOC NO	SHE	DISCUSSION
		actions that are applicable if the other actions and completion times of this LCO are not met. If the actions or completion times of an LCO are not met, and the LCO does not contain a condition such as the proposed Condition "E," LCO 3.0.3 would be applicable. As the proposed Condition "E" provides less total time than LCO 3.0.3 to place the plant in Mode 3, this change is considered more restrictive.
		RAI 3.1.7-1 Revised Response
7	A	The CTS surveillance 4.1.3.2 is retained in the FNP ITS Rod Group Alignment Limits LCO (as SR 3.1.4.1) consistent with the STS. This CTS surveillance verifies the agreement between the demand position indication and the DRPI. The limit (12 steps) for this surveillance is also the LCO limit for the Rod Group Alignment Limits LCO. As such, the surveillance is more appropriate in the Rod Group Alignment Limit LCO. Since this change only reorganizes the existing surveillance requirements it is considered an administrative change.
8	M	A new surveillance requirement (SR 3.1.7.1) is added to CTS 3/4.1.3.2 consistent with the STS. The new STS surveillance requires that the agreement between each DRPI and the demand position indication be verified for the full range of rod travel once prior to criticality after each removal of the reactor head. The STS surveillance provides assurance that the DRPI and demand position indication are properly calibrated and indicating correctly. As such, the STS surveillance is applicable and appropriate for FNP. However, the addition of this surveillance represents new a TS requirement for FNP and is therefore considered a more restrictive change.

III. SPECIFIC SIGNIFICANT HAZARDS EVALUATIONS

CTS 3/4.1.3.2 POSITION INDICATION SYSTEMS-OPERATING

FNP ITS 3.1.7 ROD POSITION INDICATION

1-L

Deleted

RAI 3.1.7-1
Revised
Response

III. SPECIFIC SIGNIFICANT HAZARDS EVALUATIONS

CTS 3/4.1.3.2 POSITION INDICATION SYSTEMS-OPERATING

FNP ITS 3.1.7 ROD POSITION INDICATION

RAI 3.1.7-1 Revised Response

1a-L

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

   The proposed change involves the addition of a new Condition "B" consistent with the STS which allows for multiple inoperable rod position indicators in a group for up to 24 hours. The rod position indicators are not directly assumed in any safety analysis but are the method used to determine the required rod position to verify the safety analysis assumptions (rod insertion and alignment limits). The STS Actions for multiple inoperable rod position indicators in a group require that the rod position be determined by using the incore detectors in addition to requiring other compensatory actions. The Actions adequately accomplish the function of the rod position indicators using a different method. As long as the rod position is known, the safety function of the position indicators is accomplished and the plant may continue to be operated in the same manner as before. In addition, time in this condition is limited, further reducing the likelihood of simultaneously having a rod significantly out of position and an event sensitive to the position of the same rod. Therefore the proposed change will not significantly affect the probability or consequences of any accident previously evaluated.

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

   The proposed change does not involve a physical alteration of the plant (no new or different types of equipment will be installed) or changes in parameters governing normal plant operation. The proposed change only affects the method used to verify rod positions and allows the incore instrumentation to perform this function when the indicators are inoperable. The Action requirements of the FNP ITS continue to ensure that rod positions are adequately verified. Therefore, the proposed change will not create the possibility of a new or different kind of accident than any previously evaluated.

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

   The FNP ITS Actions for inoperable rod position indication continue to ensure that rod position is adequately verified and must be met for each inoperable rod position indicator. The Actions ensure adequate compensatory measures are taken for each inoperable rod position indicator (rod position verified with incore detectors). As such, the assumptions of the safety analysis regarding the rod insertion limits and rod alignment limits continue to be adequately verified and confirmed. Therefore, the proposed change does not involve a significant decrease in any margin of safety.

3.1 REACTIVITY CONTROL SYSTEMS

3.1.8 Rod Position Indication

TSTF-136

LCO 3.1.8 The Digital Rod Position Indication (DRPI) System and the Demand Position Indication System shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

RAI 3.1.7-1 Revised Response

ACTIONS

NOTE

Separate Condition entry is allowed for each inoperable rod position indicator per group and each demand position indicator per bank.

TSTF-234, Rev. 1

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One DRPI per group inoperable for one or more groups.	A.1 Verify the position of the rods with inoperable position indicators by using movable incore detectors.	Once per 8 hours
	OR	
	A.2 Reduce THERMAL POWER to ≤ 50% RTP.	8 hours
B. One or more rods with inoperable position indicators have been moved in excess of 24 steps in one direction since the last determination of the rod's position.	B.1 Verify the position of the rods with inoperable position indicators by using movable incore detectors.	[4] hours
	OR	
	AND C.1.2 Complete rod position verification started in Required Action B.1.1.	8 hours

(continued)

INSERT N

TSTF-234, Rev. 1

Initiate action to

TSTF 234, Rev. 1

TSTF 243, Rev. 1

RAI 3.1.7-1 Revised Response

INSERT N
TO STS PAGE 3.1-17
NEW ITS CONDITION B
(TSTF-234, Rev. 1)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. More than one DRPI per group inoperable.	B.1 Place the control rods under manual control.	Immediately
	AND	
	B.2 Monitor and Record RCS T_{avg}.	Once per 1 hour
	AND	
	B.3 Verify the position of the rods with inoperable position indicators indirectly using the movable incore detectors.	Once per 8 hours
	AND	
	B.4 Restore the inoperable position indicators to OPERABLE status such that a maximum of one DRPI per group is inoperable.	24 hours

TSTF-234, Rev. 1

TSTF-136

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. (continued)	B.2 Reduce THERMAL POWER to ≤ 50% RTP.	8 hours
C. One demand position indicator per bank inoperable for one or more banks.	C.1.1 Verify by administrative means all DRPIs for the affected banks are OPERABLE.	Once per 8 hours
	AND	
	C.1.2 Verify the most withdrawn rod and the least withdrawn rod of the affected banks are ≤ 12 steps apart.	Once per 8 hours
	OR	
	C.2 Reduce THERMAL POWER to ≤ 50% RTP.	8 hours
D. Required Action and associated Completion Time not met.	D.1 Be in MODE 3.	6 hours

RAI 3.1.7-1
Revised
Response

STS 3.1.8 ROD POSITION INDICATION

FNP ITS 3.1.7 ROD POSITION INDICATION

JD NUMBER	JUSTIFICATION
1	The STS Condition C Required Action and Completion Time are revised to be more consistent with the corresponding CTS 3/4.1.3.2 action statement a.1 and 2. The CTS action requires that the position of non-indicating rods be verified immediately after any motion that exceeds 24 steps in one direction since the last determination of the rods position or reduce power to less than 50% RTP. The CTS requires that action begin immediately after the applicable rod motion and implies the action must be completed within 8 hours or power must be reduced. The STS is revised to reflect this CTS requirement. This change to the STS maintains consistency with the current licensing basis of FNP as specified in the CTS and preserves the format and presentation requirements of the STS.
2	The STS Conditions A, B and C are revised to use the term DRPI consistently within this LCO. The term DRPI is inserted in place of the generic term "position indicator" where appropriate. This change clearly identifies Conditions A, B and C with Digital Rod Position Indication consistent with the STS LCO and Condition A statements. This change clarifies the differences between Conditions A, B and C (which address DRPI) and Condition D which addresses the "demand position indicator." This change does not alter the intent or meaning of the CTS or STS requirements. This change is made solely to enhance clarity, utilize standard FNP terminology, and provide consistency within this STS LCO.
3	The Note above the Actions of FNP ITS LCO 3.1.7 is modified by the addition of the word "digital" to maintain consistency with the LCO statement and the Conditions." This change does not alter the intent or meaning of the CTS or STS requirements. This change is made solely to enhance clarity, utilize standard FNP terminology, and provide consistency within this STS LCO.
4	Not used.

RAI 3.1.7-1 Revised Response

LCO (continued)

OPERABILITY of the position indicator channels ensures that inoperable, misaligned, or mispositioned control rods can be detected. Therefore, power peaking, ejected rod worth, and SDM can be controlled within acceptable limits.

APPLICABILITY

TSTF-136

The requirements on the DRPI and step counters are only applicable in MODES 1 and 2 (consistent with LCO 3.1.5, LCO 3.1.6, and LCO 3.1.7), because these are the only MODES in which power is generated, and the OPERABILITY and alignment of rods have the potential to affect the safety of the plant. In the shutdown MODES, the OPERABILITY of the shutdown and control banks has the potential to affect the required SDM, but this effect can be compensated for by an increase in the boron concentration of the Reactor Coolant System.

RAI 3.1.7-1 Revised Response

ACTIONS

TSTF-234, Rev. 1

The ACTIONS table is modified by a Note indicating that a separate Condition entry is allowed for each inoperable rod position indicator per group and each demand position indicator per bank. This is acceptable because the Required Actions for each Condition provide appropriate compensatory actions for each inoperable position indicator.

affected

PSE

system (both A and B)

for one or more groups

PSE

A.1

indirectly

When one DRPI channel per group fails, the position of the rod can still be determined by use of the incore movable detectors. Based on experience, normal power operation does not require excessive movement of banks. If a bank has been significantly moved, the Required Action of B.1 or B.2 below is required. Therefore, verification of RCCA position within the Completion Time of 8 hours is adequate for allowing continued full power operation, since the probability of simultaneously having a rod significantly out of position and an event sensitive to that rod position is small.

May

C

The Required Action may also be satisfied by ensuring at least once per 8 hours that F_Q satisfies LCO 3.2.1, $F_{\Delta H}$ satisfies LCO 3.2.2, and SHUTDOWN MARGIN is within the limits provided in the COLR, provided the nonindicating rods have not been moved.

(continued)

ACTIONS (continued)

A.2

Reduction of THERMAL POWER to ≤ 50% RTP puts the core into a condition where rod position is not significantly affecting core peaking factors (Ref. 3).

The allowed Completion Time of 8 hours is reasonable, based on operating experience, for reducing power to ≤ 50% RTP from full power conditions without challenging plant systems and allowing for rod position determination by Required Action A.1 above.

INSERT O

TSTF-234, Rev. 1

B.1 and B.2

These Required Actions clarify that when one or more rods with inoperable position indicators have been moved in excess of 24 steps in one direction, since the position was last determined, the Required Actions of A.1 and A.2 are still appropriate but must be initiated promptly under Required Action B.1 to begin verifying that these rods are still properly positioned, relative to their group positions.

TSC 1

If, within (4) hours, the rod positions have not been determined, THERMAL POWER must be reduced to ≤ 50% RTP within 8 hours to avoid undesirable power distributions that could result from continued operation at > 50% RTP, if one or more rods are misaligned by more than 24 steps. The allowed Completion Time of (4) hours provides an acceptable period of time to verify the rod positions.

C.1.1 and C.1.2

RAI 3.1.7-1 Revised Response

With one demand position indicator per bank inoperable, the rod positions can be determined by the DRPI System. Since normal power operation does not require excessive movement of rods, verification by administrative means that the rod position indicators are OPERABLE and the most withdrawn rod and the least withdrawn rod are ≤ 12 steps apart within the allowed Completion Time of once every 8 hours is adequate.

(continued)

RAI 3.1.7-1 Revised Response

INSERT O
TO STS PAGE B 3.1-50
NEW BASES FOR ITS CONDITION B
(TSTF-234, Rev. 1)

B.1, B.2, B.3 and B.4

When more than one DRPI channel per group fails (Data A and Data B), additional actions are necessary to ensure that acceptable power distribution limits are maintained, minimum SDM is maintained, and the potential effects of rod misalignment on associated accident analyses are limited. Placing the Rod Control System in manual assures unplanned rod motion will not occur. Together with the indirect position determination available via movable incore detectors, this action will minimize the potential for rod misalignment. The immediate Completion Time for placing the Rod Control System in manual reflects the urgency with which unplanned rod motion must be prevented while in this Condition.

Monitoring and recording reactor coolant T_{avg} help assure that significant changes in power distribution and SDM are avoided. The once per hour Completion Time is acceptable because only minor fluctuations in RCS temperature are expected at steady state plant operating conditions.

The position of the rods may be determined indirectly by use of the movable incore detectors. The Required Action may also be satisfied by ensuring at least once per 8 hours that F_Q satisfies LCO 3.2.1, $F^N_{\Delta H}$ satisfies LCO 3.2.2, and SHUTDOWN MARGIN is within the limits provided in the COLR, provided the non-indicating rods have not been moved. Verification of control rod position once per 8 hours is adequate for allowing continued full power operation for a limited, 24 hour period, since the probability of simultaneously having a rod significantly out of position and an event sensitive to that rod position is small. The 24 hour Completion Time provides sufficient time to troubleshoot and restore the DRPI system to operation while avoiding the plant challenges associated with a shutdown without full rod position indication.

Based on operating experience, normal plant operation does not require excessive rod movement. If one or more rods has been significantly moved, the Required Action of C.1 or C.2 below is required.

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BASES

ACTIONS (continued)

D

C.2

specified in the COLR

Reduction of THERMAL POWER to ≤ 50% RTP puts the core into a condition where rod position is not significantly affecting core peaking factor limits (Ref. 3). The allowed Completion Time of 8 hours provides an acceptable period of time to verify the rod positions per Required Actions C.1.1 and C.1.2 or reduce power to ≤ 50% RTP.

TSTF-234, Rev. 1

E

D.1

RAI 3.1.7-1 Revised Response

If the Required Actions cannot be completed within the associated Completion Time, the plant must be brought to a MODE in which the requirement does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours. The allowed Completion Time is reasonable, based on operating experience, for reaching the required MODE from full power conditions in an orderly manner and without challenging plant systems.

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SURVEILLANCE REQUIREMENTS

SR 3.1.8.1

over the full indicated range

Verification that the DRPI agrees with the demand position within 12 steps ensures that the DRPI is operating correctly. Since the DRPI does not display the actual shutdown rod positions between 18 and 210 steps, only points within the indicated ranges are required in comparison.

PSC

INSERT M

The [18 month] Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for unnecessary plant transients if the SR were performed with the reactor at power. Operating experience has shown these components usually pass the SR when performed at a Frequency of once every [18 months.] Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

TSTF-89

REFERENCES

1. 10 CFR 50, Appendix A, GDC 13.
2. FSAR, Chapter 15.
3. FSAR, Chapter [15].

Chapter 3.5

Associated Package Changes for Beyond Scope Issue
Seal Injection Graph
Chapter 3.5

CTS 3/4.4.7.2 RCS OPERATIONAL LEAKAGE (CONTROLLED LEAKAGE ONLY)

FNP ITS 3.5.5 SEAL INJECTION FLOW

DOC NO	SHE	DISCUSSION
1		Not Used.
2	L	In separating the RCP seal injection flow limit (controlled leakage) from other RCS leakage limits in CTS LCO 3.4.7.2, RCS Operational Leakage, the Mode of applicability for the RCP seal injection limit was revised consistent with the STS. The CTS LCO 3.4.7.2 requirement to maintain this limit in Mode 4 was eliminated. The STS applicability for the RCP seal water injection flow limit is Modes 1-3. Additionally, the actions associated with this TS limit are also revised consistent with the STS to reflect the change in the Mode of applicability. If the actions are not met, the STS requires that the unit be placed in Mode 4 in the following 6 hours instead of Mode 5 in the following 30 hours as the CTS actions require. The revised actions are standard STS requirements for a TS with a Mode 1-3 applicability and are appropriate for FNP. The elimination of the Mode 4 requirement is based on the reduced significance of the RCP seal water injection flow to the applicable safety analyses. In Mode 4, high RCP seal water injection flow is less critical to the applicable safety analyses due to the lower initial RCS pressure and the reduced heat removal requirements in this Mode. Since the STS provides a separate LCO for the seal water injection flow limit, an appropriate individual applicability (Modes 1-3) and action (Mode 4) for this limit may be assigned.
3	A	The CTS 3.4.7.2, RCS Operational leakage, action statement b is revised consistent with the STS to be specific to the RCP seal water injection flow limit. The CTS action statement b becomes Condition A and B in the STS 3.5.5 for seal injection flow. Although the specific action required is revised consistent with the STS requirements, the basic requirement to restore the seal injection flow to within the limit and the time allowed to restore the seal injection flow to within the limit remain unchanged. As such, this change is considered administrative to conform with the format and presentation of the STS.
4	M	The CTS 3.4.7.2.e requirement for controlled leakage is revised consistent with the intent of the STS. The CTS requirement specifies a flow limit (31 gpm) and an RCS pressure (2235 ± 20 psig). The STS adds an additional parameter (charging pump discharge header pressure) to the LCO

Chap. 3.5 Beyond Scope Issue

CTS 3/4.4.7.2 RCS OPERATIONAL LEAKAGE (CONTROLLED LEAKAGE ONLY)

FNP ITS 3.5.5 SEAL INJECTION FLOW

DOC NO	SHE	DISCUSSION
		requirements. The addition of the charging pump discharge header pressure in conjunction with the currently specified RCS pressure allows a reference differential pressure to be established across the RCP seal water injection flow throttle valves. Establishing a reference differential pressure allows a more precise and repeatable verification of seal injection flow and proper throttle valve position. In the conversion to ITS, this change in the measurement of the seal injection flow is addressed by use of a graph from which the appropriate flow can be determined based on the delta between the RCS pressure and the charging discharge header pressure. The information in the CTS LCO and the additional requirement for charging discharge header pressure is contained as a single point on this graph. The points on the graph are based on FNP-specific safety analysis assumptions which provide the relationship between seal injection flow, RCS pressure, and charging discharge header pressure over a range of values for each of these parameters. The surveillance requirement will require the flow to be within ECCS safety analysis limits as expressed in the figure. Therefore, the figure must maintain those limits. The verification of seal water flow within the limit by establishing a reference differential pressure is more consistent with the method used to determine the seal water flow values assumed in the applicable ECCS safety analyses. As such, this change is applicable to FNP. Since this change introduces an additional requirement in the TS, it is considered more restrictive.
		Chap 3.5 Beyond Scope Issue
5	M	The CTS surveillance 4.4.7.2.1.c for verification of seal water flow is revised consistent with the STS. The CTS surveillance contains an exception to the provisions of Specification 4.0.4 for entry into modes 3 and 4. The CTS exception to specification 4.0.4 allowed the performance of this surveillance to be delayed until the RCS pressure was within the specified limits. The CTS surveillance contains no specific time limits for performing this surveillance after entering Modes 4 or 3. In the STS, there are no exceptions to the equivalent SR 3.0.4. Instead of specifying a blanket exception to the requirement to perform all surveillances prior to entering the Mode of applicability or other specified conditions, the STS specifies the conditions under which the surveillance must be performed and a specific time in which it should be performed after the specified conditions are met. In this way no exceptions for the performance of surveillance requirements are required in the STS. The STS surveillance SR 3.5.5.1 for verifying seal injection flow specifies the equivalent RCS

SURVEILLANCE REQUIREMENTS

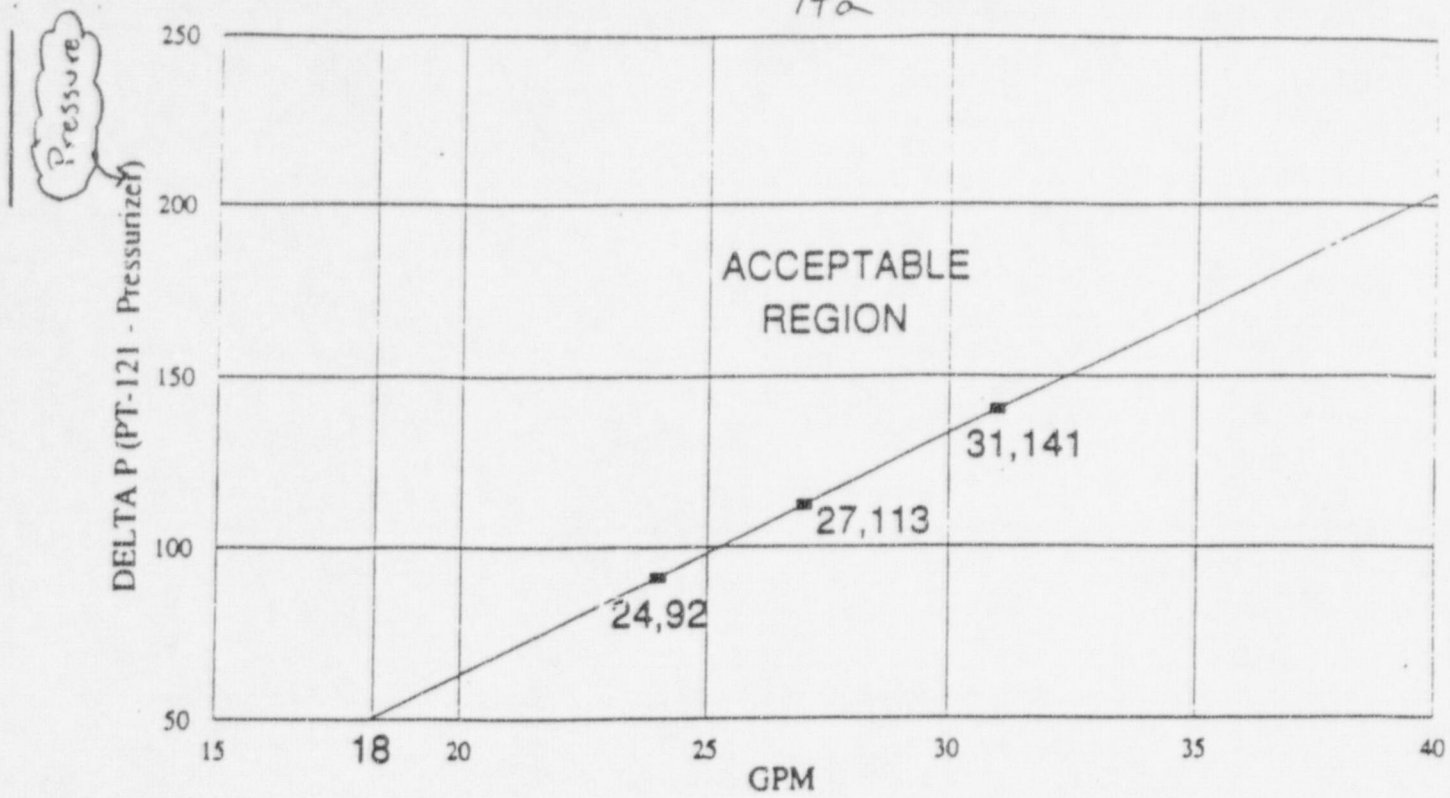
SURVEILLANCE		FREQUENCY
SR 3.5.5.1	----------NOTE---------- Not required to be performed until 4 hours after the Reactor Coolant System pressure stabilizes at ≥ 2215 psig and ≤ 2255 psig. ----------	
Chap. 3.5 Beyond Scope Issue	Verify manual seal injection throttle valves are adjusted to give a flow within limit with [centrifugal charging pump discharge header] pressure ≥ [2480] psig and the [charging flow] control valve full open.	31 days

the limits of Figure 3.5.5-1 with

1

Seal water injection flow

94a



Chap. 3.5
Beyond Scope
Issue

FIGURE 3.5.5-1
SEAL INJECTION FLOW LIMITS

STS 3.5.5 SEAL INJECTION FLOW

FNP ITS 3.5.5 SEAL INJECTION FLOW

JD NUMBER	JUSTIFICATION
1	LCO 3.5.5 for Seal Water Injection Flow is revised to utilize a graph to indicate the limits for seal injection flow. These limits are better expressed graphically than by a single point on a curve. The appropriate seal injection flow can be determined based on the difference between the Pressurizer pressure and the charging discharge header pressure. The points on the graph are based on FNP-specific safety analysis assumptions which provide the relationship between seal injection flow, Pressurizer pressure, and charging discharge header pressure over a range of values for each of these parameters. The surveillance requirement will require the flow to be within ECCS safety analysis limits as expressed in the figure. Therefore, the figure must maintain those limits. Hence, the TS requirements will continue to maintain ECCS performance within the envelope of the safety analysis.

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Beyond
Scope
Issue

BASES

APPLICABLE SAFETY ANALYSES (continued)

injection flow satisfies Criterion 2 of the NRC Policy Statement.

LCO

The intent of the LCO limit on seal injection flow is to make sure that flow through the RCP seal water injection line is low enough to ensure that sufficient centrifugal charging pump injection flow is directed to the RCS via the injection points (Ref. 2).

INSERT C

The LCO is not strictly a flow limit, but rather a flow limit based on a flow line resistance. In order to establish the proper flow line resistance, a pressure and flow must be known. The flow line resistance is determined by assuming that the RCS pressure is at normal operating pressure and that the centrifugal charging pump discharge pressure is greater than or equal to the value specified in this LCO. The centrifugal charging pump discharge header pressure remains essentially constant through all the applicable MODES of this LCO. A reduction in RCS pressure would result in more flow being diverted to the RCP seal injection line than at normal operating pressure. The valve settings established at the prescribed centrifugal charging pump discharge header pressure result in a conservative valve position should RCS pressure decrease. The additional modifier of this LCO, the control valve (charging flow for four loop units and air operated seal injection for three loop units) being full open, is required since the valve is designed to fail open for the accident condition. With the discharge pressure and control valve position as specified by the LCO, a flow limit is established. It is this flow limit that is used in the accident analyses.

PSC seal water injection flow

PSC resistance

resistance

PSC seal water injection

(Operation in the Acceptable Region of Figure 3.5.5-1)

The limit on seal injection flow, combined with the centrifugal charging pump discharge header pressure limit and an open wide condition of the charging flow control valve, must be met to render the ECCS OPERABLE. If these conditions are not met, the ECCS flow will not be as assumed in the accident analyses.

Chap. 3.5 Beyond Scope Issue

APPLICABILITY

In MODES 1, 2, and 3, the seal injection flow limit is dictated by ECCS flow requirements, which are specified for

(continued)

CHAPTER 3.5

INSERT C
TO LCO 3.5.5 BASES

established by adjusting the reactor coolant pump seal injection needle valves to provide a total seal injection flow in the Acceptable Region of Figure 3.5.5-1 at a given pressure differential between the charging header pressure and the pressurizer pressure.

Chap. 3.5
Beyond
scope Issue

BASES (continued)

PSC

SURVEILLANCE REQUIREMENTS

Chap. 3.5 Beyond Scope Issue

SR 3.5.5.1

(operation in the acceptable region of Figure 3.5.5-1)

Verification every 31 days that the manual seal injection throttle valves are adjusted to give a flow within the limits ensures that proper manual seal injection throttle valve position, and hence, proper seal injection flow, is maintained. The Frequency of 31 days is based on engineering judgment and is consistent with other ECCS valve Surveillance Frequencies. The Frequency has proven to be acceptable through operating experience.

INSERT D

PSC

As noted, the Surveillance is not required to be performed until 4 hours after the RCS pressure has stabilized within a ± 20 psig range of normal operating pressure. The RCS pressure requirement is specified since this configuration will produce the required pressure conditions necessary to assure that the manual valves are set correctly. The exception is limited to 4 hours to ensure that the Surveillance is timely.

REFERENCES

1. FSAR, Chapter ~~[6]~~ 15 and Chapter ~~[15]~~ 6.
2. 10 CFR 50.46.

Page 153 (graph)
Moved into
LCO

Chap. 3.5
Beyond Scope
Issue

Chapter 3.8

Associated Package Changes for Chapter 3.8 Beyond Scope Issue No. 1
Sequencer in Modes 5 and 6

CTS 3/4.8.1.2 ELECTRICAL POWER SYSTEMS SHUTDOWN

FNP ITS LCO 3.8.2 AC SOURCES - SHUTDOWN

DOC NO	SHE	DISCUSSION
		restrictive.
8	L	The CTS 4.8.1.2 surveillance is revised to eliminate the requirement to perform surveillances that demonstrate capabilities which are not required in Modes 5 and 6 consistent with the guidance provided in the STS. Since the surveillance requirements in AC Sources - Shutdown define and verify the operability requirements of the AC Sources required in Modes 5 and 6, the AC Sources - Shutdown surveillance requirement is revised to more clearly identify the applicable operability requirements and allow exceptions to be taken for those surveillances that demonstrate capabilities which are not required operable in Modes 5 and 6. The proposed exceptions are in addition to the existing CTS exception for 4.8.1.1.2.a.5 (STS 3.8.1.3) which is retained and are consistent with the definition of operability. The definition of Operability refers to the system or equipment being capable of performing its "required safety function". The surveillances proposed to be included in the STS exception for Modes 5 and 6 do not demonstrate any capability related to an AC Source's "required safety function" in Modes 5 and 6. The revised AC Sources - Shutdown surveillance does not require the excepted surveillances to be met or performed in Modes 5 and 6. The surveillances for which an exception is taken are those which require the following: The capability to transfer offsite circuits be demonstrated (only one offsite circuit is required in Modes 5 and 6), The AC Source response to an ESF actuation signal (SI) be demonstrated (SI is not a required safety function in Modes 5 and 6), That DG starting independence be verified (only one DG is required in Modes 5 and 6), and That automatic load sequence timing capabilities of emergency load sequencers be verified.
9	L	The CTS surveillance requirement 4.8.1.2 for AC Sources Shutdown is revised by the addition of a Note consistent with the STS. The Note is

Chap. 3.8 Beyond scope Issue No. 1

are applicable but (1)

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.8.2.1 ----------NOTE---------- The following SRs are not required to be performed: SR 3.8.1.3, SR 3.8.1.9 through SR 3.8.1.11, SR 3.8.1.13 through SR 3.8.1.16, [SR 3.8.1.18,] and SR 3.8.1.19. (2) ---------- For AC sources required to be OPERABLE, the SRs of Specification 3.8.1, "AC Sources — Operating," except SR 3.8.1.8, SR 3.8.1.17, and SR 3.8.1.20, are applicable.	In accordance with applicable SRs

SR 3.8.1.3
SR 3.8.1.7,
SR 3.8.1.10,
SR 3.8.1.15,
SR 3.8.1.16,
SR 3.8.1.17, and
SR 3.8.1.19,
(3)

Transfer offsite Circuits
SI Auto Start
SI over-ride Test mode
Sequencing intervals
LOSP + SI
Simultaneous start of DGs
60 min Loaded DG run

← Reviewers note

The following SRs are applicable and required to be performed: SR 3.8.1.1, SR 3.8.1.2, SR 3.8.1.4, SR 3.8.1.5, and SR 3.8.1.6.
(4)

SR 3.8.1.8, SR 3.8.1.9, SR 3.8.1.11, SR 3.8.1.12
SR 3.8.1.13, SR 3.8.1.14 and SR 3.8.1.18
(2)

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Beyond Scope
Issue No. 1

STS 3.8.2 AC SOURCES - SHUTDOWN

FNP ITS 3.8.2 AC SOURCES - SHUTDOWN

JD NUMBER	JUSTIFICATION
1	The Note modifying STS surveillance 3.8.2.1 is revised editorially for clarity. The Note is revised to clearly state the surveillances listed in the Note "are applicable". This editorially enhancement is completely consistent with the detailed STS bases explanation of this Note. The inclusion of this enhancement will help users to understand the intent of the Note more readily. The exception provided by the Note does not except the requirement for the DG to be capable of performing the particular function, just that the capability need not be demonstrated while that source of power is being relied on to meet the LCO.
2	The Note modifying STS surveillance 3.8.2.1 is revised to include the appropriate FNP ITS surveillance numbers. The numbers included correspond to the STS surveillances listed and are different due to changes in the numbering of the surveillances or the omission of surveillances from the FNP ITS. The revisions to the STS causing changes in surveillance numbering including the deletion of STS surveillances are discussed elsewhere in Enclosure 5 (STS 3.8.1 AC Sources Operating). In addition, SR 3.8.1.3 (the 60 minute full load DG run surveillance) is included as an exception to SR 3.8.2.1 in the body of the SR and not in the note. The inclusion of this SR as an exception in the body of the SR is consistent with the existing surveillance exception in CTS surveillance 4.8.1.2, and the intent of the STS exceptions which include surveillances that require periods of being synchronized to the offsite circuit. As such, the inclusion of SR 3.8.1.3 as an exception in the body of SR 3.8.2.1 instead of the note is consistent with the STS and maintains the FNP current licensing basis as specified in CTS 3/4.8.1.2 for DG testing. The surveillances included in the FNP ITS Note are those that meet the intent of the exception provided by the Note. The Note is intended to preclude requiring the operable DG from being paralleled with the offsite power network or otherwise rendered inoperable for the performance of a surveillance. Many of the surveillances required to be performed involve tests that would require the DG to be paralleled to offsite power. This condition (the only required DG and the only required offsite circuit connected) presents a significant risk of a single fault resulting in a station blackout. In an effort to consistently address this concern and to avoid other potential conflicts with testing and operability, the STS includes a note in the surveillance to except the requirement to perform certain surveillance tests. The exception provided by the Note does not except the requirement for the DG to be capable of performing the particular function, just that the capability need not be demonstrated while that source of power is being relied on to meet the LCO.
3	The STS SR 3.8.2.1 surveillance provides an exception for surveillances that

STS 3.8.2 AC SOURCES - SHUTDOWN

FNP ITS 3.8.2 AC SOURCES - SHUTDOWN

JD NUMBER	JUSTIFICATION

demonstrate capabilities which are not required in Modes 5 and 6. The list of surveillances in the STS for which the exception applies is not complete. The STS SR 3.8.2.1 surveillance is revised to include additional FNP ITS surveillances that demonstrate capabilities which are not required in Modes 5 and 6 consistent with the intent of the STS. Since the surveillance requirements in AC Sources - Shutdown define and verify the operability requirements of the AC Sources required in Modes 5 and 6, the AC Sources - Shutdown surveillance requirement is revised to more clearly identify the applicable operability requirements and allow exceptions to be taken for those surveillances that demonstrate capabilities which are not required operable in Modes 5 and 6. The proposed exceptions are consistent with the definition of Operability. The definition of Operability refers to the system or equipment being capable of performing its "required safety function". The surveillances proposed to be included in the STS exception for Modes 5 and 6 do not demonstrate any capability related to an AC Source's "required safety function" in Modes 5 and 6. The revised AC Sources - Shutdown surveillance does not require the excepted surveillances to be met or performed in Modes 5 and 6. The surveillances for which an exception is taken are those which require the following:

The capability to transfer offsite circuits be demonstrated (only one offsite circuit is required in Modes 5 and 6),

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The AC Source response to an ESF actuation signal (SI) be demonstrated (SI is not a required safety function in Modes 5 and 6),

That DG starting independence be verified (only one DG is required in Modes 5 and 6), and

That automatic load sequence timing capabilities of emergency load sequencers be verified.

In addition to the exceptions discussed above, SR 3.8.1.3 (the 60 minute full load DG run surveillance) is included as an exception to SR 3.8.2.1. The inclusion of this SR as an exception is consistent with the existing surveillance exception in CTS surveillance 4.8.1.2, and the intent of the STS exceptions which include surveillances that require periods of being synchronized to the offsite circuit. Therefore, the inclusion of SR 3.8.1.3 as an exception to SR 3.8.2.1 is consistent with the STS and maintains the FNP current licensing basis as specified in CTS 3/4.8.1.2 for DG testing.

BASES

LCO (continued)

provide electrical power support, assuming a loss of the offsite circuit. Together, OPERABILITY of the required offsite circuit and DG ensures the availability of sufficient AC sources to operate the unit in a safe manner and to mitigate the consequences of postulated events during shutdown (e.g., fuel handling accidents).

The qualified offsite circuit must be capable of maintaining rated frequency and voltage, and accepting required loads during an accident, while connected to the Engineered Safety Feature (ESF) bus(es). Qualified offsite circuits are those that are described in the FSAR and are part of the licensing basis for the unit.

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~~Offsite circuit #1 consists of Safeguards Transformer B, which is supplied from Switchyard Bus B, and is fed through breaker 52-3 powering the ESF transformer XNB01, which, in turn, powers the #1 ESF bus through its normal feeder breaker. The second offsite circuit consists of the Startup Transformer, which is normally fed from the Switchyard Bus A, and is fed through breaker PA 0201 powering the ESF transformer, which, in turn, powers the #2 ESF bus through its normal feeder breaker.~~

12 PSC

The DG must be capable of starting, accelerating to rated speed and voltage, and connecting to its respective ESF bus on detection of bus undervoltage. This sequence must be accomplished within [10] seconds. The DG must be capable of accepting required loads within the assumed loading sequence intervals, and continue to operate until offsite power can be restored to the ESF buses. These capabilities are required to be met from a variety of initial conditions such as DG in standby with the engine hot and DG in standby at ambient conditions.

the

manually

TSC-3

Proper sequencing of loads, including tripping of nonessential loads, is a required function for DG OPERABILITY.

~~In addition, proper sequencer operation is an integral part of offsite circuit OPERABILITY since its inoperability impacts on the ability to start and maintain energized loads required OPERABLE by LCO 3.8.10.~~

TSC-1

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Proper sequencer operation to sense loss of power or degraded voltage, initiate tripping of ESF bus offsite breakers and initiate DG start and DG output breaker closure and sequencing of shutdown loads are required functions for a DG to be considered OPERABLE

(continued)

Associated Package Changes for Chapter 3.8 Beyond Scope Issue No. 2
Bases Addition for LCOs 3.8.8 and 3.8.10

INSERT WW
TO STS 3.8.8 LCO BASES SECTION PAGE B 3.8-76
FNP SPECIFIC GUIDANCE TO CLARIFY THE REQUIREMENTS
FOR INVERTERS DURING SHUTDOWN MODES CONSISTENT WITH THE
REQUIREMENTS OF LCO 3.8.10

Per LCO 3.8.10, Distribution Systems - Shutdown," the necessary portions of the necessary AC vital bus electrical power distribution subsystems shall be OPERABLE to support equipment required to be OPERABLE. At a minimum, at least one train of AC vital bus electrical power subsystems energized from the associated inverters connected to the respective DC bus is required to be OPERABLE.

In the case where the requirements of LCO 3.8.10 call for portions of a second train of the distribution subsystems to be OPERABLE (e.g., to support two trains of RHR, two trains of CREFS, or instrumentation such as source range indication, containment purge and exhaust isolation actuation, or CREFS actuation), the required portions of the second train of AC vital bus electrical power distribution subsystems may be energized from the associated inverter(s) connected to the respective DC bus, or the alternate class 1E power source consisting of the inverter static transfer switch and the associated constant voltage transformer.

Class 1E power and distribution systems are normally used because these systems are available and reliable. However, due to events such as maintenance or modification, portions of the Class 1E system may be temporarily unavailable. In such an instance the plant staff assesses the alternate systems to ensure that defense in depth is maintained and that risk is minimized.

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Beyond Scope
Issue No. 2

CHAPTER 3.8

INSERT XX
TO STS 3.8.10 LCO BASES SECTION PAGE B 3.8-90
FNP SPECIFIC GUIDANCE TO CLARIFY THE REQUIREMENTS
FOR ENERGIZING THE REQUIRED DISTRIBUTION SYSTEMS DURING SHUTDOWN

The necessary portions of the AC electrical power distribution subsystems are considered OPERABLE if they are energized to their proper voltages.

The necessary portions of the DC electrical power subsystems are considered OPERABLE if the following criteria are satisfied:

- At least one train of the necessary portions of DC electrical subsystems are energized to the proper voltage by an OPERABLE train of DC sources consisting of one battery, one battery charger, and the corresponding control equipment and interconnecting cabling associated with that train, and

- In the case where portions of a second train of the DC electrical subsystems are required OPERABLE (to support two trains of RHR, two trains of CREFS, or instrumentation such as source range indication, containment purge and exhaust isolation actuation, or CREFS actuation), the required portions of the second train of DC electrical subsystems are OPERABLE when energized to the proper voltage from either:

  - an OPERABLE train of DC sources consisting of one battery, one battery charger, and the corresponding control equipment and interconnecting cabling associated with that train, or

  - a battery charger using the corresponding control equipment and interconnecting cabling within the train.

The necessary portions of the AC vital bus subsystems are considered OPERABLE if the following criteria are satisfied:

- At least one train of the necessary portions of AC vital bus electrical power subsystems are energized to the proper voltage by OPERABLE inverters connected to the respective DC bus, or

- In the case where portions of a second train of AC vital bus subsystems are required OPERABLE (to support two trains of RHR, two trains of CREFS, or instrumentation such as source range indication, containment purge and exhaust isolation actuation, or CREFS actuation), the required portions of the second train of AC vital bus electrical power distribution subsystems are OPERABLE when energized to the proper voltage from either:

  - OPERABLE inverter(s) connected to the respective DC bus, or

  - the alternate class 1E power source consisting of the inverter static transfer switch and the associated constant voltage transformer.

Chap. 3.8 Beyond Scope Issue No. 2

Class 1E power and distribution systems are normally used because these systems are available and reliable. However, due to events such as maintenance or modification, portions of the Class 1E system may be temporarily unavailable. In such an instance the plant staff assesses the alternate systems to ensure that defense in depth is maintained and that risk is minimized.