
Industry/TSTF Standard Technical Specification Change Traveler

Allows the Use of Generic Shape Annealing Matrix Elements

Priority/Classification 5) Plant Variation

NUREGs Affected: 1430 1431 1432 1433 1434

Description:

SR 3.3.1.2 (Digital) requires that the Shape Annealing Matrix (SAM) elements be determined. This change will allow the verification of the existing SAM elements.

Justification:

This change allows the use of generic SAM elements. If a generic SAM is used, the matrix elements are validated each cycle during startup testing and must meet the same acceptance criteria as cycle-specific SAM elements. This ensures that the axial power shapes generated by the Core Protection Calculators (CPCs) will trip the reactor and that the minimum DNBR and peak linear heat rate are not violated in the event of an AOO. If these criteria are not met, a cycle specific SAM will be calculated.

The use of generic SAM elements has been previously approved by the NRC.

Revision History

OG Revision 0

Revision Status: Active

Next Action:

Revision Proposed by: Palo Verde

Revision Description:
Original Issue

Owners Group Review Information

Date Originated by OG: 22-Aug-96

Owners Group Comments
(No Comments)

Owners Group Resolution: Approved Date: 22-Aug-96

TSTF Review Information

TSTF Received Date: 27-Sep-96 Date Distributed for Review: 27-Sep-96

OG Review Completed: BWOG WOG CEOG BWROG

TSTF Comments:

BWOG - Not applicable, accepts
BWROG - Not applicable, accepts
WOG - Not applicable, accepts

TSTF Resolution: Approved Date: 21-Oct-96

4/2/98

NRC Review Information

NRC Received Date: 23-Jan-97 NRC Reviewer: Schulten, C.

NRC Comments:

3/11/97 - SRXB and reviewer recommend approval.

3/17/97 - To C. Grimes for disposition.

Final Resolution: NRC Approves

Final Resolution Date: 11-Apr-97

Incorporation Into the NUREGs

File to BBS/LAN Date:

TSTF Informed Date:

TSTF Approved Date:

NUREG Rev Incorporated:

Affected Technical Specifications

SR 3.3.1.12 RPS Instrumentation - Operating (Digital)

SR 3.3.1.12 Bases RPS Instrumentation - Operating (Digital)

TSTF-148

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.3.1.8 -----NOTE----- Neutron detectors are excluded from the CHANNEL CALIBRATION. -----</p> <p>Perform CHANNEL CALIBRATION of the power range neutron flux channels.</p>	92 days
<p>SR 3.3.1.9 -----NOTE----- Not required to be performed until 2 hours after THERMAL POWER \geq 55% RTP. -----</p> <p>Perform CHANNEL FUNCTIONAL TEST for Loss of Load Function.</p>	92 days
<p>SR 3.3.1.10 -----NOTE----- Neutron detectors are excluded from CHANNEL CALIBRATION. -----</p> <p>Perform CHANNEL CALIBRATION on each channel, including bypass removal functions.</p>	[18] months
<p>SR 3.3.1.11 Perform a CHANNEL FUNCTIONAL TEST on each CPC channel.</p>	[18] months
<p>SR 3.3.1.12 Using the incore detectors, ^{verify} determine the shape annealing matrix elements to be used by the CPCs.</p>	Once after each refueling prior to exceeding 70% RTP

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BASES

SURVEILLANCE
REQUIREMENTSSR 3.3.1.11 (continued)

monitoring function and checks for a small set of failure modes that are undetectable by the self monitoring function. Operating experience has shown that undetected CPC or CEAC failures do not occur in any given [18] month interval.

SR 3.3.1.12

The three excore detectors used by each CPC channel for axial flux distribution information are far enough from the core to be exposed to flux from all heights in the core, although it is desired that they only read their particular level. The CPCs adjust for this flux overlap by using the predetermined shape annealing matrix elements in the CPC software.

After refueling, it is necessary to re-establish ^{or verify} the shape annealing matrix elements for the excore detectors based on more accurate incore detector readings. This is necessary because refueling could possibly produce a significant change in the shape annealing matrix coefficients.

Incore detectors are inaccurate at low power levels. THERMAL POWER should be significant but < 70% to perform an accurate axial shape calculation used to derive the shape annealing matrix elements.

By restricting power to $\leq 70\%$ until shape annealing matrix elements are verified, excessive local power peaks within the fuel are avoided. Operating experience has shown this frequency to be acceptable.

SR 3.3.1.13

SR 3.3.1.13 is a CHANNEL FUNCTIONAL TEST similar to SR 3.3.1.7, except SR 3.3.1.13 is applicable only to bypass functions and is performed once within 92 days prior to each startup. Proper operation of bypass permissives is critical during plant startup because the bypasses must be in place to allow startup operation and must be removed at the appropriate points during power ascent to enable certain reactor trips. Consequently, the appropriate time to verify bypass removal function OPERABILITY is just prior to

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