

Industry/TSTF Standard Technical Specification Change Traveler

Decrease Frequency to 92 days for CMI and CEA Deviation Circuit Functional Test

Priority/Classification 3) Improve Specifications

NUREGs Affected: 1430 1431 1432 1433 1434

Description:

The Frequencies for SR 3.1.5.3 and SR 3.1.5.4 are being decreased from 31 days to 92 days.

Justification:

SR 3.1.5.3 is the verification that the CEA Motion Inhibit (CMI) is Operable and SR 3.1.5.4 is the verification that the CEA Deviation Circuit is Operable. Verification that the CMI and Deviation Circuit are Operable requires movement of the CEAs. Both these SRs are performed in conjunction with the CEA freedom of movement test, which proves trippability of the CEAs. A typical example of how these SRs are performed is as follows. The CEAs are inserted in the core until the CEA Deviation Circuit causes a CMI (at less than the exercise limit). The CMI is then bypassed and the CEA is inserted to the exercise limit. At the exercise limit with the CMI not bypassed, an attempt is made to further insert the CEA and it is verified that CMI prevents further CEA insertion. The CEA is then withdrawn even with its group. This sequence of events verifies that the CEA deviation circuit (SR 3.1.5.3) and CMI (SR 3.1.5.4) is Operable, and verifies the CEA freedom of movement (SR 3.1.5.5). These steps are then repeated for each individual CEA.

In NUREG-1366, the NRC recommended that the CEA freedom of movement test be performed on a quarterly basis. NUREG-1432 adopted this recommendation because, as stated in NUREG-1366, "The test causes reactor trips, dropped rods, and unnecessary challenges to safety systems." Therefore, since the CMI and Deviation Circuit Operability verification requires movement of each individual CEA and is performed in conjunction with the CEA freedom of movement test, the Frequencies for all three tests should be consistent.

The CMI and CEA Deviation circuits have an excellent testing history and decreasing the surveillance frequency from 31 to 92 days will have no adverse effect on their overall reliability.

Revision History

OG Revision 0

Revision Status: Closed

Revision Proposed by: Calvert Cliffs

Revision Description:
Original Issue

Owners Group Review Information

Date Originated by OG: 29-May-96

Owners Group Comments
(No Comments)

Owners Group Resolution: Approved Date: 04-Jun-96

4/2/98

TSTF Review Information

TSTF Received Date: 01-Jul-96 Date Distributed for Review 31-Jul-96

OG Review Completed: BWOG WOG CEOG BWROG

TSTF Comments:

BWOG - Not applicable, BWOG accepts

WOG - Not applicable, WOG accepts

BWROG - Not applicable, BWROG accepts

TSTF Resolution: Approved Date: 10-Oct-96

NRC Review Information

NRC Received Date: 22-Jan-97 NRC Reviewer: Tjader, R.

NRC Comments:

3/3/97 - Justification is not adequate as it is based on rod movement SR frequency, not equipment reliability. Referred to HICB.

3/18/97 - TSTF agreed to provide additional justification in a revision.

10/1/97 - Revision provided to NRC.

Final Resolution: Supceded by Revision

Final Resolution Date: 01-Oct-97

TSTF Revision 1**Revision Status: Active****Next Action:**

Revision Proposed by: NRC

Revision Description:

Added additional information on the effect of the change on the reliability of the CMI and CEA deviation circuits to address NRC questions.

TSTF Review Information

TSTF Received Date: 01-Oct-97 Date Distributed for Review 01-Oct-97

OG Review Completed: BWOG WOG CEOG BWROG

TSTF Comments:

(No Comments)

TSTF Resolution: Approved Date: 01-Oct-97

NRC Review Information

NRC Received Date: 02-Oct-97 NRC Reviewer: Tjader, R.

NRC Comments:

(No Comments)

Final Resolution: NRC Approves

Final Resolution Date: 02-Oct-97

Incorporation Into the NUREGs

File to BBS/LAN Date:

TSTF Informed Date:

TSTF Approved Date:

NUREG Rev Incorporated:

4/2/98

Affected Technical Specifications

SR 3.1.5.3 CEA Alignment

SR 3.1.5.3 Bases CEA Alignment

SR 3.1.5.4 CEA Alignment

SR 3.1.5.4 Bases CEA Alignment

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ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. Required Action and associated Completion Time not met. <u>OR</u> One or more CEAs untrippable. <u>OR</u> Two or more CEAs misaligned by > [15 inches].	E.1 Be in MODE 3.	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.1.5.1 Verify the indicated position of each CEA to be within [7 inches] of all other CEAs in its group.	12 hours
SR 3.1.5.2 Verify that, for each CEA, the OPERABLE CEA position indicator channels, reed switch, and plant computer CEA position indication indicate within [5 inches] of each other.	12 hours
SR 3.1.5.3 Verify the CEA motion inhibit is OPERABLE.	92 days

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SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
SR 3.1.5.4 Verify the CEA deviation circuit is OPERABLE.	92 days
SR 3.1.5.5 Verify CEA freedom of movement (trippability) by moving each individual CEA that is not fully inserted into the reactor core [5 inches] in either direction.	92 days
SR 3.1.5.6 Perform a CHANNEL FUNCTIONAL TEST of the reed switch position transmitter channel.	18 months
SR 3.1.5.7 Verify each CEA drop time is \leq [3.1] seconds.	Prior to reactor criticality, after each removal of the reactor head

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BASES

ACTIONS

E.1 (continued)

MODE 3 from full power conditions in an orderly manner and without challenging plant systems.

SURVEILLANCE
REQUIREMENTS

SR 3.1.5.1

Verification that individual CEA positions are within [7 inches] (indicated reed switch positions) of all other CEAs in the group at a 12 hour Frequency allows the operator to detect a CEA that is beginning to deviate from its expected position. The specified Frequency takes into account other CEA position information that is continuously available to the operator in the control room, so that during CEA movement, deviations can be detected, and protection can be provided by the CEA motion inhibit and deviation circuits.

SR 3.1.5.2

OPERABILITY of at least two CEA position indicator channels is required to determine CEA positions, and thereby ensure compliance with the CEA alignment and insertion limits. The CEA "full in" and "full out" limits provide an additional independent means for determining the CEA positions when the CEAs are at either their fully inserted or fully withdrawn positions.

The 12 hour Frequency takes into consideration other information continuously available to the operator in the control room, so that during CEA movement, deviations can be detected, and protection can be provided by the CEA motion inhibit and deviation circuits.

SR 3.1.5.3

Demonstrating the CEA motion inhibit OPERABLE verifies that the CEA motion inhibit is functional, even if it is not regularly operated. The ⁹² day Frequency takes into account other information continuously available to the operator in the control room, so that during CEA movement, deviations

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BASES

SURVEILLANCE
REQUIREMENTS

SR 3.1.5.3 (continued)

can be detected, and protection can be provided by the CEA deviation circuits.

SR 3.1.5.4

Demonstrating the CEA deviation circuit is OPERABLE verifies the circuit is functional. The ⁹² day Frequency takes into account other information continuously available to the operator in the control room, so that during CEA movement, deviations can be detected, and protection can be provided by the CEA motion inhibit.

SR 3.1.5.5

Verifying each CEA is trippable would require that each CEA be tripped. In MODES 1 and 2, tripping each CEA would result in radial or axial power tilts, or oscillations. Therefore, individual CEAs are exercised every 92 days to provide increased confidence that all CEAs continue to be trippable, even if they are not regularly tripped. A movement of [5 inches] is adequate to demonstrate motion without exceeding the alignment limit when only one CEA is being moved. The 92 day Frequency takes into consideration other information available to the operator in the control room and other surveillances being performed more frequently, which add to the determination of OPERABILITY of the CEAs. Between required performances of SR 3.1.5.5, if a CEA(s) is discovered to be immovable, but remains trippable and aligned, the CEA is considered to be OPERABLE. At any time, if a CEA(s) is immovable, a determination of the trippability (OPERABILITY) of the CEA(s) must be made, and appropriate action taken.

SR 3.1.5.6

Performance of a CHANNEL FUNCTIONAL TEST of each reed switch position transmitter channel ensures the channel is OPERABLE and capable of indicating CEA position over the entire length of the CEA's travel. Since this Surveillance must be performed when the reactor is shut down, an 18 month Frequency to be coincident with refueling outage was

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