

## INSTRUMENTATION

### ACCIDENT MONITORING INSTRUMENTATION

#### LIMITING CONDITION FOR OPERATION

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3.3.3.3 The accident monitoring instrumentation channels shown in Table 3.3-5 shall be OPERABLE.

APPLICABILITY: As shown in Table 3.3-5.

ACTION:

- a. As shown in Table 3.3-5.
- b. The provisions of Specification 3.0.4 are not applicable to ACTIONS in Table 3.3-5 that require a shutdown.
- c. Separate Action entry is allowed for each Instrument.

#### SURVEILLANCE REQUIREMENTS

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4.3.3.3 Each accident monitoring instrumentation channel shall be demonstrated OPERABLE by performance of the CHANNEL CHECK and CHANNEL CALIBRATION at the frequencies shown in Table 4.3-4.

TABLE 3.3-5 (Continued)

ACTION STATEMENTS

- ACTION 31 With the number of OPERABLE accident monitoring instrumentation channel(s) less than the Total Number of Channels either restore the inoperable channel(s) to OPERABLE status within 30 days, or submit a Special Report to the Commission pursuant to Specification 6.9.2 within the next 14 days outlining the action taken, the cause of the inoperability, and the plans and schedule for restoring the system to OPERABLE status.
- ACTION 32 With the number of OPERABLE accident monitoring instrumentation channels less than the Minimum Channels OPERABLE, either restore the inoperable channel(s) to OPERABLE status within 7 days, or be in at least HOT STANDBY within the next 6 hours and in at least HOT SHUTDOWN within the following 6 hours.
- ACTION 33 Close the associated block valve and open its circuit breaker.
- ACTION 34 With the number of OPERABLE Channels less than required by the Minimum Channels OPERABLE requirements, initiate the preplanned alternate method of monitoring the appropriate parameter(s), within 72 hours, and:
- 1) Either restore the inoperable channel(s) to OPERABLE status within 7 days of the event, or
  - 2) Prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within the next 14 days outlining the action taken, the cause of the inoperability, and the plans and schedule for restoring the system to OPERABLE status.
- ACTION 35 DELETED
- ACTION 36 With the number of OPERABLE accident monitoring instrumentation channels less than the Minimum Channel OPERABLE, either restore the inoperable channel to OPERABLE status within 30 days, or be in at least HOT STANDBY within the next 6 hours and in at least HOT SHUTDOWN within the following 6 hours.
- ACTION 37 With the number of OPERABLE channels one less than the Total Number of Channels, restore the system to OPERABLE status within 30 days. If repairs are not feasible without shutting down, prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within the next 14 days outlining the action taken, the cause of the inoperability and the plans and schedule for restoring the system to OPERABLE status.

TABLE 3.3-5 (Continued)

ACTION STATEMENTS

ACTION 38 With the number of OPERABLE channels less than the Minimum Channels OPERABLE requirements, restore the inoperable channel(s) to OPERABLE status within 7 days. If repairs are not feasible without shutting down: |

1. Initiate an alternate method of monitoring the reactor vessel inventory; and
2. Prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within the next 14 days outlining the action taken, the cause of the inoperability and the plans and schedule for restoring the system to OPERABLE status; and |
3. Restore at least one channel to OPERABLE status at the next scheduled refueling.

ACTION 39 With the number of OPERABLE channels less than the Minimum Channels OPERABLE requirement, verify position by an alternate means (e.g. administrative controls, ERDADS, alternate position indication, or visual observation) within 2 hours, and restore the inoperable channel(s) within 7 days, or comply with the provisions of Specification 3.6.4 for an inoperable containment isolation valve. |

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## ATTACHMENT 1

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### TECHNICAL SPECIFICATION BASES

#### 3/4.3 INSTRUMENTATION (Continued)

##### 3/4.3.3.3 ACCIDENT MONITORING INSTRUMENTATION

The OPERABILITY of the accident monitoring instrumentation ensures that sufficient information is available on selected plant parameters to monitor and assess these variables following an accident. This capability is consistent with the recommendations of Regulatory Guide 1.97, Revision 3, "Instrumentation for Light-Water-Cooled Nuclear Power Plants to Assess Plant Conditions During and Following an Accident," May 1983 and NUREG-0737, "Clarification of TMI Action Plan Requirements," November 1980.

Action c states that separate Action entry is allowed for each Instrument. This Action has been added for clarification. The Actions of this Specification may be entered independently for each Instrument listed on Table 3.3-5. Allowable outage time(s) of the inoperable channel(s) of an Instrument will be tracked separately for each Instrument starting from the time the Action was entered for that Instrument.

TS Table 3.3-5, Accident Monitoring Instrumentation, instrument item 3, Reactor Coolant Outlet Temperature, T-hot and instrument item 4 Reactor Coolant Inlet Temperature, T-cold, utilize the terms "detector" and "channel". The term channel ( in the context of the specification) refers to one of the two channels of QSPDS. Each channel has three detectors as inputs, one from each loop. For example, Resistance Temperature Detectors TE-3-413A, TE-3-423A, and TE-3-433A are the three detectors which feed QSPDS Channel A for Unit 3. The TOTAL NUMBER OF CHANNELS is two (with two of the three detectors required). The MINIMUM CHANNELS OPERABLE is one (with two of the three detectors.) To call a channel operable, it must have at least two of its three detectors operable. Although the minimum channels operable is one (of two), having one channel inoperable invokes Action Statement 31 (restore in 30 days or submit a Special Report in the next 14 days).

The QSPDS is configured into two channels, but it is often referred to as having two "trains". In general, the term "train" applies only to Reactor Protection System (RPS) / Engineering Safety Feature Actuation System (ESFAS) actuation signals, i.e., there are two trains of reactor protection; each train will trip one reactor trip breaker. "Train" is not appropriate to QSPDS, since QSPDS serves no automatic protection function.

Technical Specification Table 3.3-5, Item 14, Incore Thermocouples (Core Exit Thermocouples), utilizes the term channel. There are no "channels" of Incore Thermocouples as stated previously, the term Channel refers to one of the two QSPDS channels. NUREG 0737, Section II.F.2, Attachment 1, Item (3) describes what is required from instrumentation standpoint: "A...display...should be provided with the capability for selective reading of a minimum of 16 operable thermocouples, 4 from each core quadrant...." This description is the basis for our Technical Specification, and clarifies the requirement for Incore Thermocouples. If we have fewer than 4 thermocouples per core quadrant, Action 31 applies. If we have fewer than 2 thermocouples per quadrant, Action 32 applies. There is no regulatory requirement that these 2 or 4 thermocouples per core quadrant be assigned to or divided between the two channels of QSPDS. The column heading "TOTAL NO. OF CHANNELS," is also misleading for the Incore Thermocouples. There are more than 4 thermocouples in every core quadrant. It takes 4 thermocouples per core quadrant to satisfy the Technical Specifications and unrestricted operation with fewer than the "TOTAL" but at least the "MINIMUM" is not allowed. For example, if there are only 3 operable thermocouples in a quadrant, in 30 days one must be fixed or a Special Report submitted within the next 14 days.