

Docket No. 50-423  
B17818

Attachment 1

Millstone Nuclear Power Station, Unit No. 3

Marked Up Technical Specification Page

July 1999

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## BASES

ECCS SUBSYSTEMS (Continued)

The Surveillance Requirements provided to ensure OPERABILITY of each component ensures that at a minimum, the assumptions used in the safety analyses are met and that subsystem OPERABILITY is maintained. Surveillance Requirements for throttle valve position stops and flow balance testing provide assurance that proper ECCS flows will be maintained in the event of a LOCA. Maintenance of proper flow resistance and pressure drop in the piping system to each injection point is necessary to: (1) prevent total pump flow from exceeding runout conditions when the system is in its minimum resistance configuration, (2) provide the proper flow split between injection points in accordance with the assumptions used in the ECCS-LOCA analyses, and (3) provide an acceptable level of total ECCS flow to all injection points equal to or above that assumed in the ECCS-LOCA analyses.

Surveillance Requirement 4.5.2.b.1 requires verifying that the ECCS piping is full of water. The ECCS pumps are normally in a standby, nonoperating mode, with the exception of the operating centrifugal charging pump(s). As such, the ECCS flow path piping has the potential to develop voids and pockets of entrained gases. Maintaining the piping from the ECCS pumps to the RCS full of water ensures that the system will perform properly when required to inject into the RCS. This will also prevent water hammer, pump cavitation, and pumping of noncondensable gases (e.g., air, nitrogen, or hydrogen) into the reactor vessel following an SI signal or during shutdown cooling.

This Surveillance Requirement is met by:

- venting ECCS pump casings and the accessible discharge piping high points including the ECCS pump suction crossover piping (i.e., downstream of valves 3RSS\*MV8837A/B and 3RSS\*MV8838A/B to safety injection and charging pump suction).
- venting of the nonoperating centrifugal charging pumps & the suction line test connection. The nonoperating centrifugal charging pumps do not have casing vent connections and venting the suction pipe will assure that the pump casing does not contain voids and pockets of entrained gases.
- using an external water level detection method for the water filled portions of RSS piping upstream of valves 3RSS\*MV8837A/B and 3RSS\*MV8838A/B, since venting would breach the containment pressure boundary. Alternatively and when deemed necessary by the external water level detection method, venting may be used after entering LCO action statement 3.6.2.2 and after establishing sufficient head pressure.

*replace with  
Figure A*

The following ECCS subsections are exempt from this Surveillance:

- the operating centrifugal charging pump(s) and associated piping - as an operating pump is self venting and cannot develop voids and pockets of entrained gases.

### INSERT A

- using an external water level detection method for the water filled portions of the RSS piping upstream of valves 3RSS\*MV8837A/B and 3RSS\*MV8838A/B. When deemed necessary by an external water level detection method, filling and venting to reestablish the acceptable water levels may be performed after entering LCO action statement 3.6.2.2 since venting without isolation of the affected train would result in a breach of the containment pressure boundary.

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Attachment 2

Millstone Nuclear Power Station, Unit No. 3

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July 1999

## EMERGENCY CORE COOLING SYSTEMS

### BASES

#### ECCS SUBSYSTEMS (Continued)

The Surveillance Requirements provided to ensure OPERABILITY of each component ensures that at a minimum, the assumptions used in the safety analyses are met and that subsystem OPERABILITY is maintained. Surveillance Requirements for throttle valve position stops and flow balance testing provide assurance that proper ECCS flows will be maintained in the event of a LOCA. Maintenance of proper flow resistance and pressure drop in the piping system to each injection point is necessary to: (1) prevent total pump flow from exceeding runout conditions when the system is in its minimum resistance configuration, (2) provide the proper flow split between injection points in accordance with the assumptions used in the ECCS-LOCA analyses, and (3) provide an acceptable level of total ECCS flow to all injection points equal to or above that assumed in the ECCS-LOCA analyses.

Surveillance Requirement 4.5.2.b.1 requires verifying that the ECCS piping is full of water. The ECCS pumps are normally in a standby, nonoperating mode, with the exception of the operating centrifugal charging pump(s). As such, the ECCS flow path piping has the potential to develop voids and pockets of entrained gases. Maintaining the piping from the ECCS pumps to the RCS full of water ensures that the system will perform properly when required to inject into the RCS. This will also prevent water hammer, pump cavitation, and pumping of noncondensable gases (e.g., air, nitrogen, or hydrogen) into the reactor vessel following an SI signal or during shutdown cooling.

This Surveillance Requirement is met by:

- venting ECCS pump casings and the accessible discharge piping high points including the ECCS pump suction crossover piping (i.e., downstream of valves 3RSS\*MV8837A/B and 3RSS\*MV8838A/B to safety injection and charging pump suction).
- venting of the nonoperating centrifugal charging pumps at the suction line test connection. The nonoperating centrifugal charging pumps do not have casing vent connections and venting the suction pipe will assure that the pump casing does not contain voids and pockets of entrained gases.
- using an external water level detection method for the water filled portions of the RSS piping upstream of valves 3RSS\*MV8837A/B and 3RSS\*MV8838A/B. When deemed necessary by an external water level detection method, filling and venting to reestablish the acceptable water levels may be performed after entering LCO action statement 3.6.2.2 since venting without isolation of the affected train would result in a breach of the containment pressure boundary.

The following ECCS subsections are exempt from this Surveillance:

- the operating centrifugal charging pump(s) and associated piping - as an operating pump is self venting and cannot develop voids and pockets of entrained gases.