

## 3.18.1

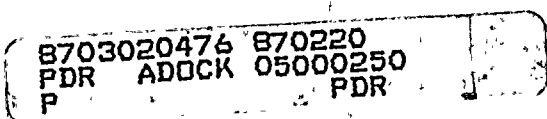
- a) Two independent auxiliary feedwater trains including 3 pumps as specified in Table 3.18-1 and associated flowpaths shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3

ACTION:

- 1) With one of the two required independent auxiliary feedwater trains inoperable, either restore the inoperable train to an OPERABLE status within 72 hours, or place the affected unit(s) in HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.
- 2) With both required auxiliary feedwater trains inoperable, within 2 hours either restore both trains to an OPERABLE status, or restore one train to an OPERABLE status and follow ACTION statement 1 above for the other train. If neither train can be restored to an OPERABLE status within 2 hours, verify the availability of both standby feedwater pumps and place the affected unit(s) in HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours. Otherwise, initiate corrective action to restore at least one auxiliary feedwater train to an OPERABLE status as soon as possible and follow ACTION statement 1 above for the other train. (See Note 1 below)
- 3) With a single auxiliary feedwater pump inoperable, within 4 hours, verify OPERABILITY of two independent auxiliary feedwater trains, and restore the auxiliary feedwater pump to an OPERABLE status, within 30 days, or place the operating unit(s) in HOT STANDBY within 6 hours and in HOT SHUTDOWN within the following 6 hours. (See Note 1 below)
- 4) The provisions of Specification 3.0.4 are not applicable to the third auxiliary feedwater pump, provided the 30 day limit as described in ACTION statement 3 above is not exceeded. (See Note 1 below)

NOTES: 1) Refer to Bases Page B3.18-1 for additional guidance.



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TABLE 3.18-1

## AUXILIARY FEEDWATER SYSTEM OPERABILITY

<u>Unit</u>	<u>Train</u>	<u>Steam Supply Flowpath</u>	<u>Pump</u>	<u>Discharge Water Flowpaths</u>
3	1	SG 3C via MOV-3-1405 or SG 3B via MOV-3-1404 <sup>(1)</sup>	A or C <sup>(2)</sup>	SG 3A via CV-3-2816 SG 3B via CV-3-2817 SG 3C via CV-3-2818
3	2	SG 3A via MOV-3-1403 or SG 3B via MOV-3-1404 <sup>(1)</sup>	B or C <sup>(2)</sup>	SG 3A via CV-3-2831 SG 3B via CV-3-2832 SG 3C via CV-3-2833
4	1	SG 4C via MOV-4-1405 or SG 4B via MOV-4-1404 <sup>(1)</sup>	A or C <sup>(2)</sup>	SG 4A via CV-4-2816 SG 4B via CV-4-2817 SG 4C via CV-4-2818
4	2	SG 4A via MOV-4-1403 or SG 4B via MOV-4-1404 <sup>(1)</sup>	B or C <sup>(2)</sup>	SG 4A via CV-4-2831 SG 4B via CV-4-2832 SG 4C via CV-4-2833

NOTES

- (1) Steam admission valves MOV-3-1404 and MOV-4-1404 can be aligned to either train to restore operability in the event MOV-3-1403 or MOV-3-1405, or MOV-4-1403 or MOV-4-1405 are inoperable.
- (2) During single and two unit operation, one pump shall be OPERABLE in each train and the third auxiliary feedwater pump shall be OPERABLE and capable of being powered from, and supplying water to either train, except as noted in ACTION 4 of Technical Specification 3.18. The third auxiliary feedwater pump (normally the "C" pump) can be aligned to either train to restore OPERABILITY in the event one of the required pumps is inoperable.

UNITED STATES DEPARTMENT OF THE INTERIOR

WATER RESOURCES DIVISION, WASHINGTON, D. C. 20242

TO: DIRECTOR, ARMY CORPS OF ENGINEERS, WASHINGTON, D. C. 20315

FROM: CHIEF, DIVISION OF HYDROLOGIC DATA, WASHINGTON, D. C. 20242

SUBJECT: REQUEST FOR INFORMATION CONCERNING THE

AVAILABILITY OF DATA FROM THE NATIONAL WATER RESEARCH INSTITUTE

FOR THE PURPOSES OF THE NATIONAL WATER RESEARCH INSTITUTE

AND THE NATIONAL WATER RESEARCH INSTITUTE

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### **B3.18 BASES - AUXILIARY FEEDWATER SYSTEM**

The OPERABILITY of the Auxiliary Feedwater System ensures that the Reactor Coolant System can be cooled down to less than 350°F from normal operating conditions in the event of a total loss of off-site power. Steam can be supplied to the pump turbines from either or both units through redundant steam headers. Two D.C. motor operated valves and one A.C. motor operated valve on each unit isolate the three main steam lines from these headers. Both the D.C. and A.C. motor operated valves are powered from safety related sources. Auxiliary feedwater can be supplied through redundant lines to the safety related portions of the main feedwater lines to each of the steam generators. Air operated fail closed flow control valves are provided to modulate the flow to each steam generator. Each steam driven auxiliary feedwater pump has sufficient capacity for single and two unit operation to ensure that adequate feedwater flow is available to remove decay heat and reduce the Reactor Coolant System temperature to less than 350°F when the Residual Heat Removal System may be placed into operation.

ACTION statement 2 describes the actions to be taken when both auxiliary feedwater trains are inoperable. The requirement to verify the availability of both standby feedwater pumps is to be accomplished by verifying that both pumps have successfully passed their monthly surveillance tests within the last surveillance interval. The requirement to complete this action before beginning a unit shutdown is to ensure that an alternate feedwater train is available before putting the affected unit through a transient. If no alternate feedwater trains are available, the affected unit is to stay at the same condition until an auxiliary feedwater train is returned to service, and then invoke ACTION statement 1 for the other train. If both standby feedwater pumps are made available before one auxiliary feedwater train is returned to an OPERABLE status, then the affected unit(s) shall be placed in HOT STANDBY within 6 hours and HOT SHUTDOWN within the following 6 hours.

ACTION statement 3 describes the actions to be taken when a single auxiliary feedwater pump is inoperable. The requirement to verify that two independent auxiliary feedwater trains are OPERABLE is to be accomplished by verifying that the requirements for Table 3.18-1 have been successfully met for each train within the last surveillance interval.

ACTION statement 4 states that the provisions of Specification 3.0.4 are not applicable to the third auxiliary feedwater pump provided it has not been inoperable for longer than 30 days. This means that a unit(s) can change OPERATIONAL MODES during a unit(s) heatup with a single auxiliary feedwater pump inoperable as long as the requirements of ACTION statement 3 are satisfied.

