

ATTACHMENT 1

PLANT SYSTEMS

BASES

- U = Maximum number of inoperable safety valves per operating steam line
- 106.5 = Power Level-High Trip Setpoint for two loop operation
- 46.8 = Power Level-High Trip Setpoint for single loop operation with two reactor coolant pumps operating in the same loop
- X = Total relieving capacity of all safety valves per steam line in lbs/hour
- Y = Maximum relieving capacity of any one safety valve in lbs/hour

3/4.7.1.2 AUXILIARY FEEDWATER SYSTEM

The OPERABILITY of the auxiliary feedwater system ensures that the Reactor Coolant System can be cooled down to less than 300°F from normal operating conditions in the event of a total loss of offsite power. A capacity of 400 gpm is sufficient to ensure that adequate feedwater flow is available to remove decay heat and reduce the Reactor Coolant System temperature to less than 300°F when the shutdown cooling system may be placed into operation.

Flow control valves, installed in each leg supplying the steam generators, maintain a nominal flow setpoint of 320 gpm plus or minus 10 gpm for operator setting band. The nominal flow setpoint of 320 gpm incorporates a total instrument loop error band of plus 47 gpm (377 gpm total flow per leg) and minus 60 gpm (250 gpm total flow per leg).

In the spectrum of events analyzed in which automatic initiation of auxiliary feedwater occurs the nominal setting of 320 gpm allows a minimum of 10 minutes before operator action is required. At 10 minutes after automatic initiation of flow the operator is assumed to be available to increase or decrease auxiliary feedwater flow to that required for existing plant conditions.

ATTACHMENT 2

TABLE 3.3-5 (Continued)

ENGINEERED SAFETY FEATURES RESPONSE TIMES

<u>INITIATING SIGNAL AND FUNCTION</u>	<u>RESPONSE TIME IN SECONDS</u>
6. <u>Steam Generator Pressure-Low</u>	
a. Main Steam Isolation	± 6.9
b. Feedwater Isolation	± 80
7. <u>Refueling Water Tank-Low</u>	
a. Containment Sump Recirculation	± 80
8. <u>Reactor Trip</u>	
a. Feedwater Flow Reduction to 5%	± 20
9. <u>Loss of Power</u>	
a. 4.16 kv Emergency Bus Undervoltage (Loss of Voltage)	± 2.2***
b. 4.16 kv Emergency Bus Undervoltage (Degraded Voltage)	± 8.4***
10. <u>Steam Generator Level - Low</u>	
a. Steam Driven AFW Pump	± 54.5
11. <u>Steam Generator Δ P-High</u>	
a. Auxiliary Feedwater Isolation	± 20.0

TABLE NOTATION

- * Diesel generator starting and sequence loading delays included.
- ** Diesel generator starting and sequence loading delays not included.
Offsite power available.
- *** Response time measured from the incidence of the undervoltage condition to the diesel generator start signal.

ATTACHMENT 3

TABLE 3.3-10POST-ACCIDENT MONITORING INSTRUMENTATION

<u>INSTRUMENT</u>	<u>MINIMUM CHANNELS OPERABLE</u>
1. Containment Pressure	2
2. Wide Range Logarithmic Neutron Flux Monitor	2
3. Reactor Coolant Outlet Temperature	2
4. Pressurizer Pressure	2
5. Pressurizer Level	2
6. Steam Generator Pressure	2/steam generator
7. Steam Generator Level (Wide Range)	2/steam generator
8. Auxiliary Feedwater Flow Rate	1/steam generator
9. RCS Subcooled Margin Monitor	1
10. PORV/Safety Valve Acoustic Flow Monitoring	1/valve
11. PORV Solenoid Power Indication	1/valve

AUXILIARY FEEDWATER SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.1.2 At least two steam turbine driven steam generator auxiliary feedwater pumps and associated flow paths shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTION:

- a. With one steam driven pump inoperable restore at least two steam driven pumps to OPERABLE status within 72 hours or be in HOT SHUTDOWN within the next 12 hours.
 - b. Whenever a subsystem (consisting of one pump, piping, valves and controls in the direct flow path) required for operability is inoperable for the performance of periodic testing (e.g. manual discharge valve closed for pump Total Dynamic Head test) a dedicated operator will be stationed at the local station with direct communication to the Control Room. Upon completion of any testing, the subsystem required for operability will be returned to its proper status and verified in its proper status by an independent operator check.
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ATTACHMENT 5

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS

- 4.7.1.2 Each auxiliary feedwater flowpath shall be demonstrated OPERABLE:
- a. At least once per 31 days by:
 1. Verifying that each steam driven pump develops a Total Dynamic Head of ≥ 2800 ft. on recirculation flow. (If verification must be demonstrated during startup, surveillance testing shall be performed upon achieving an RCS temperature $\geq 300^{\circ}\text{F}$ and prior to entering MODE 1).
 2. Cycling each testable, remote operated valve that is not in its operating position through at least one complete cycle.
 3. Verifying that each valve (manual, power operated or automatic) in the direct flow path is in its correct position. The AFW flow control valves may be verified by observing a 320 gpm setpoint on the flow indicator controller in Control Room.
 - b. Before entering MODE 3 after a COLD SHUTDOWN of at least 14 days by completing a flow test that verifies the flow path from the condensate storage tank to the steam generators.
 - c. At least once per 18 months by verifying that each automatic valve in the flow path actuates to its correct position and each auxiliary feedwater pump automatically starts and delivers a modulated flow of 320 gpm ± 10 gpm to each flow leg upon receipt of each auxiliary feedwater actuation system (AFAS) test signal.