ATTACHMENT 1

Technical Specification Changes

to Steam Generator Emergency Heat Removal

(T.S. Section 3.7 and 4.7)

Pages Modified: iii, viii, ix, x, 156, 158, 159, 161, 162, 163

Pages Added: 159a, 161a, 162a

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LIST OF TABLES

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LIST OF TABLES (Continued)

LIST OF TABLES (Continued)

LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENT
3.7 STEAM GENERATOR EMERGENCY HEAT REMOVAL	4.7 STEAM GENERATOR EMERGENCY HEAT REMOVAL
Applicability:	Applicability:
Applies to auxiliary feedwater pump system, auxiliary feedwater supply system, and steam generator safety valves.	Applies to surveillance of auxiliary feedwater pump system, auxiliary feedwater supply system and steam generator safety valves.
Objective:	Objective:
To insure adequate plant cooldown capabilities upon loss of normal feedwater flow and loss of main condenser vacuum.	To insure availability of the above system and valves.
Specification:	Specification:
1. Steam Line Safety and Relief Valves, per unit A. Twenty ASME code safety valves (5 per steam generator) shall be operable whenever the reactor is heated above 350 °F except as specified in 3.7.1.C, 3.7.1.D, and 3.7.1.E	1. Steam Line Safety and Relief Valves per unit. A. Ten steam generator safety valves per unit shall be tested for set pressure at each refueling outage. Testing shall be done by a calibrated auxiliary lifting device or by bench testing on compressed gas. At least two of the valves tested shall be from each orifice size ("Q" or "R"). All valves on a unit shall have been tested at the end of each second refueling outage. The valves and the corresponding set pressures and orifice sizes are identified in Table 4.7-1.
B. Deleted	B. Deleted

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LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENT
3.7.1 E. When the reactor is operating on 3 loops, at least two code safety valves associated with the remaining steam generator must be operable.	4.7.1 E. Not applicable
F. If these conditions cannot be met the the reactor shall be brought to the hot shutdown conditions within four hours. After a maximum of 48 hours in the hot shutdown conditions, if the system is not operable the reactor shall be brought to the cold shutdown condition within 24 hours.	F. Not applicable
2. Auxiliary feedwater pump system, per unit.	2. Auxiliary Feedwater pump system, per unit (Table 4.7-2)
A. Three auxiliary feedwater pump systems shall be operable whenever the reactor is above 350°F except as specified in 3.7.2.B, 3.7.2.C, and 3.7.2.D.	A. Surveillance and testing of the auxiliary feedwater pump systems shall be performed as follows; the auxiliary feedwater pumps shall be started manually from the control room each month. Performance will be acceptable if: 1) the pump starts upon actuation, operates for at least 15 minutes on recirculation flow, and the discharge pressure and flow are within ±10% of a point on the pump head curve, and 2) the pump provides at least 105 gallons per minute flow to each steam generator.

LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENT
3.7.2.B. Whenever the reactor is above 350°F, the turbine-driven auxiliary feedwater pump system shall be operable except that verification by testing need not be completed until required by Section 4.7.2.B.	4.7.2.B The surveillance and testing of the turbine driven auxiliary feedwater pump as required by 4.7.2.A need not be performed prior to exceeding 350°F but must be performed within 4 hours after achieving hot standby.
C. From and after the date that one or the three auxiliary feedwater pump systems is made or found to be inoperable for any reason, reactor operation is permissible only during the succeeding 7 days provided that during these 7 days the two remaining auxiliary feedwater pump systems are operable.	C. No additional surveillances are required.
D. If the conditions in 3.7.2.C cannot be met the reactor shall be brought to hot shutdwon and below 350°F within the next 12 hours.	D. Not applicable

LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENT
3.7.3 Auxiliary feedwater supply system	4.7.3 Auxiliary feedwater supply system (Table 4.7-3)
A. The condensate storage tank(s) shall be operable with a minimum contained volume of 170,000 gallons of water lined up to each unit with its reactor above 350 °F, except as specified in 3.7.3.B and 3.7.3.C.	A. Surveillance and testing of the auxiliary feedwater supply system shall be as follows: 1) The contained water volume shall be verified to be within its limits at least every 12 hours. 2) The manual valves for the lined-up tank(s) for each unit shall be verified locked open each month.
B. From and after the time that the conditions in 3.7.3.A cannot be met, continued reactor operation is permissible provided that at least one of the two following criteria are met: 1) Within the next four hours the conditions of 3.7.3.A are restored, or 2) Within the next four hours the operability of the service water system as a backup supply to the auxiliary feedwater pumps is demonstrated, and that the condensate storage tanks(s) are restored to operable status within the next 7 days.	B. When the service water system is the required supply system, the system shall be demonstrated operable at least daily by stroking the power-operated service water supply valves to at least two operable auxiliary feedwater pumps from the control room. Performance will be acceptable if valve motion is indicated upon actuation.
C. If the conditions in 3.7.3.A and 3.7.3.B cannot be met the reactor(s) shall be brought to hot shutdown and below 350 °F within the next 12 hours.	C. Not applicable

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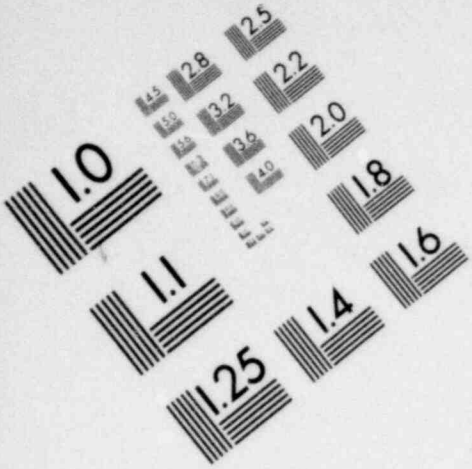


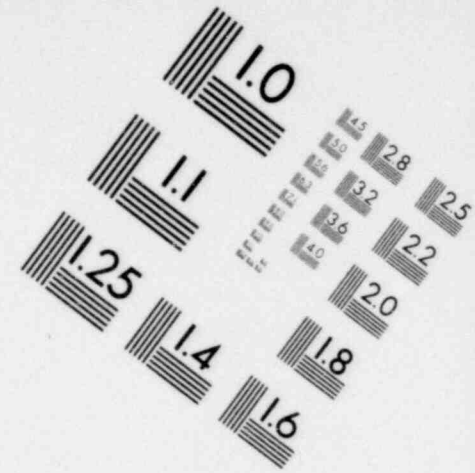
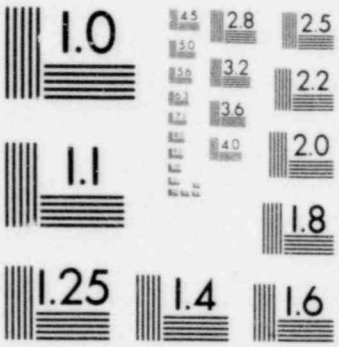
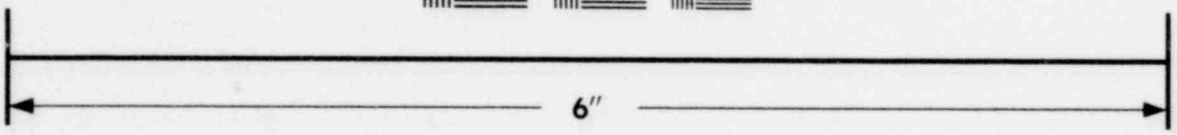
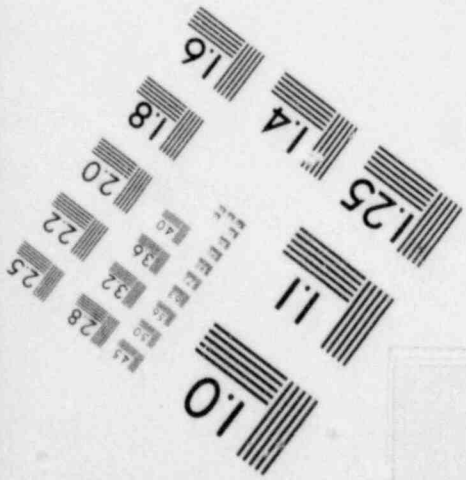
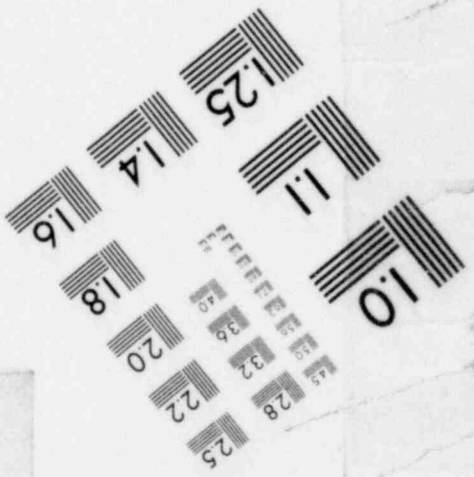


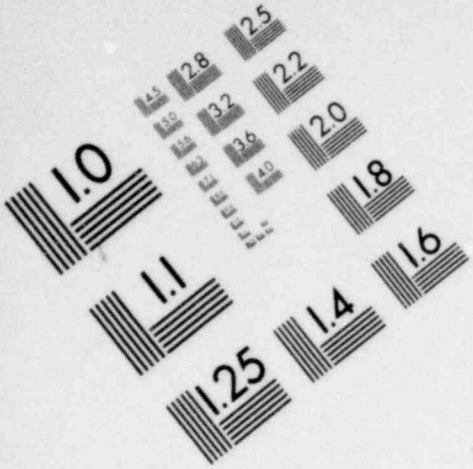
IMAGE EVALUATION TEST TARGET (MT-3)











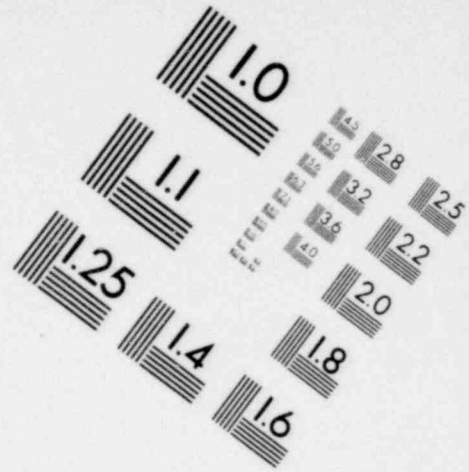
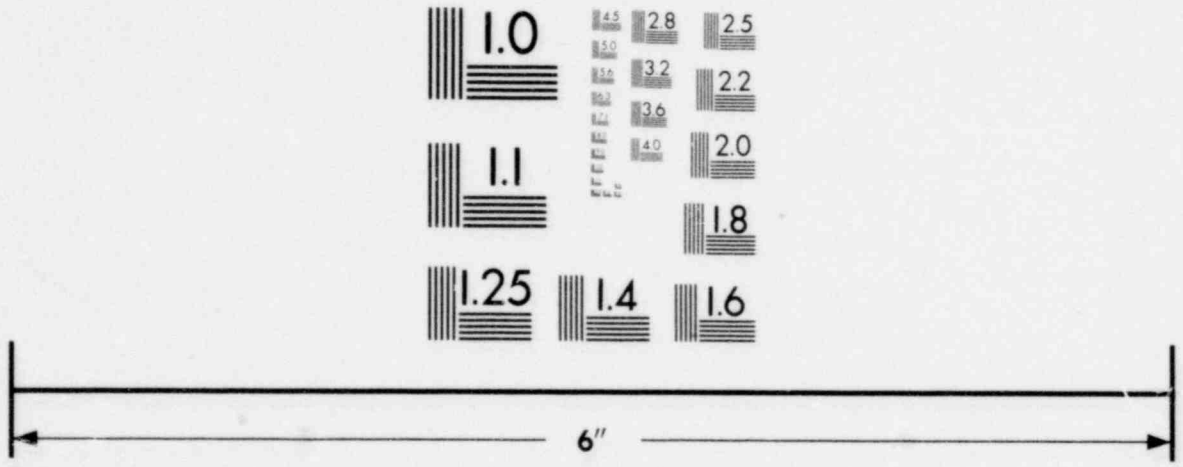
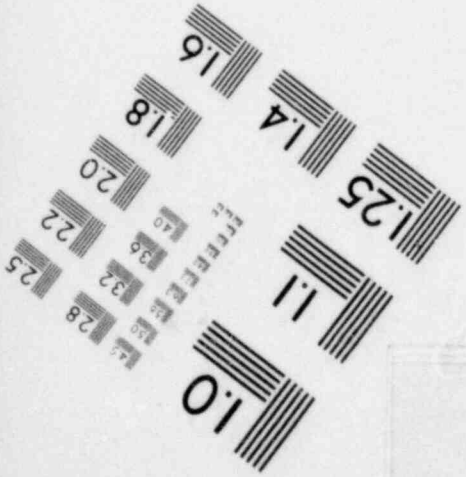
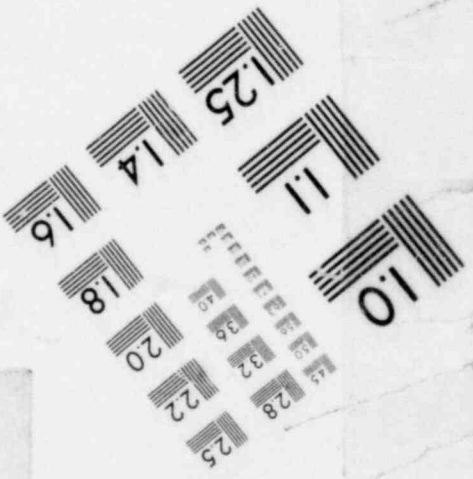


IMAGE EVALUATION TEST TARGET (MT-3)







Component Name	Component Number
Auxiliary Feedwater Pump-1A (2A) (turbine driven)	FW004
Auxiliary Feedwater Pump-1B (2B) (motor driven)	FW005
Auxiliary Feedwater Pump-1C (2C) (motor driven)	FW006

Auxiliary Feedwater Pump System

TABLE 4.7-2

Component Name	Component Number
Condensate Storage Tank	SC001
Auxiliary Feedwater Pump -1A (2A) service water supply valve	MOV-SW0102
Auxiliary Feedwater Pump -1B (2B) service water supply valve	MOV-SW0101
Auxiliary Feedwater Pump - 1B (2B) service water supply valve	MOV-SW0104
Auxiliary Feedwater Pump - 1C (2C) service water supply valve	MOV-SW0103
Auxiliary Feedwater Pump - 1C (2C) service water supply valve	MOV-SW0105

Auxiliary Feedwater Supply System

TABLE 4.7-3

Bases:

3.7 The twenty code steam safety valves per unit have a total combined capacity to relieve the total steam flow of one unit. These valves assure code overpressure protection is provided (1). In the event that one or more of the safety valves are inoperable, the loop steam flows are restricted to the maximum relieving capacity of the most restrictive operating loop. This is accomplished by reduction of the Power Range Neutron Flux High Setpoint Trip such that reactor power is limited to be less than the thermal power required to produce steam flow in excess of the relieving capacity of the most restrictive loop. The reactor trip setpoints are derived on the following basis:

For 4 loop operation:

$$SP = \frac{TSVC-ISVC}{TSVC} \times 109\%$$

For 3 loop operation:

$$SP = \frac{TSVC-ISVC}{TSVC} \times 75\%$$

where:

SP = Reactor Trip Setpoint
TSVC = Total safety valve relieving capacity per steam generator
ISVC= Inoperable safety valve relieving capacity per steam generator.

During 3 loop operation, at least two safety valves are retained in service for any unlikely pressurization on the non-operating steam generator.

Although not required for safe operation of the unit, the four atmospheric steam relief valves per unit, provide additional decay heat removal capability. These valves, which are air or electric motor operated, are also manually controllable from the control room, and are installed to prevent unnecessary operation of the steam generator safety valves. (1)

The auxiliary feedwater pump systems provide a very reliable source of flow to the steam generators for decay heat removal. Either the steam driven auxiliary feedwater pump or one of the two motor driven auxiliary feedwater pumps can supply the required flow of a unit. (2)

Suction to the auxiliary feedwater pumps is provided by the condensate storage tank or, as a backup, the service water system. A minimum of 170,000 gallons are required to provide for 2 hours at hot standby followed by 4 hours cooldown at 50°F per hour with steam discharge to the atmosphere concurrent with total loss of offsite power. (3) This is sufficient to reduce the reactor coolant system temperature to below 350°F when the Residual Heat Removal System may be placed in operation.

(1) FSAR, Section 10.3
(2) FSAR, Section 14.1.9
(3) FSAR, Section 6.7.2

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Manually operated valves are available which will allow the condensate storage tanks to be cross connected. Therefore, water for the auxiliary feedwater pumps may be supplied from either tank. However, when operated in a cross-connected mode, the supply lines will be lined up such that the minimum of 170,000 gallons of water will be drawn upon immediately without additional actions. When a condensate storage tank is shared by both units operating above 350 ^{o}F, a minimum volume of 340,000 gallons shall be available.

Bases:

4.7 The testing of at least two safety valves of each orifice size assures that a representative sample of valves is tested at each refueling. The testing interval assures the availability of the safety valves and of the auxiliary feedwater pump system.

The four hour delay in the surveillance and testing of the turbine driven auxiliary feedwater pump until the reactor has reached the hot standby condition is to prevent unnecessary cooldown of the reactor coolant system during periods when the reactor is not available as a heat source.