

ATTACHMENT A
EXISTING TECHNICAL SPECIFICATIONS
UNIT 2

8502220181 850220
PDR ADOCK 05000361
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TABLE 5.7-1 (Continued)

COMPONENT CYCLIC OR TRANSIENT LIMITS

<u>COMPONENT</u>	<u>CYCLIC OR TRANSIENT LIMIT</u>	<u>DESIGN CYCLE OR TRANSIENT</u>
Reactor Coolant System	2 complete loss of secondary pressure cycles.	Loss of secondary pressure from either steam generator while in MODES 1, 2 or 3.

TABLE 5.7-1 (Continued)
COMPONENT CYCLIC OR TRANSIENT LIMITS

<u>COMPONENT</u>	<u>CYCLIC OR TRANSIENT LIMIT</u>	<u>DESIGN CYCLE OR TRANSIENT</u>
Reactor Coolant System		

Method for Calculating Pressurizer Spray Nozzle Cumulative Usage Factor

ΔT	N_A	N	N/N_A
150 - 200	50,000		
201 - 300	7,000		
301 - 400	2,000		
401 - 500	1,000		
501 - 600	800		

$\Sigma N/N_A$

Where:

ΔT = Temperature difference between pressurizer water and spray in °F.

N_A = Allowable number of spray cycles.

N = Number of cycles in ΔT range indicated.

TABLE 5.7-1 (Continued)
COMPONENT CYCLIC OR TRANSIENT LIMITS

<u>COMPONENT</u>	<u>CYCLIC OR TRANSIENT LIMIT</u>	<u>DESIGN CYCLE OR TRANSIENT</u>
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Reactor Coolant System

Calculational Method:

1. The spray cycle is defined as the opening and closing of a spray valve, either by main spray or auxiliary spray.
2. If the difference between the pressurizer water temperature and the spray water temperature exceeds 150°F, each spray cycle and the corresponding temperature difference is logged.
3. The spray nozzle usage factor is calculated as follows:
 - A. Fill in Column "N" above from plant records.
 - B. Calculate " N/N_A " (Divide N and N_A).
 - C. Add Column " N/N_A " to find $\Sigma N/N_A$.

$\Sigma N/N_A$ is the cumulative spray nozzle usage factor. If the calculated usage factor is equal to or less than 0.75, no further action is required.
4. If the calculated usage factor exceeds 0.75, subsequent pressurizer spray operation shall be restricted so that the difference between the pressurizer water temperature and the spray water temperature shall be limited to less than or equal to 150°F when spray is operated. An engineering evaluation of nozzle fatigue shall be performed and shall determine that the nozzle remains acceptable for additional service prior to removing this restriction.

REACTOR COOLANT SYSTEM

PRESSURIZER - HEATUP/COOLDOWN

LIMITING CONDITION FOR OPERATION

3.4.8.2 The pressurizer shall be limited to:

- a. A maximum heatup of 200°F in any one hour period,
- b. A maximum cooldown of 200°F in any one hour period.

APPLICABILITY: At all times.

ACTION:

With the pressurizer temperature limits in excess of any of the above limits, restore the temperature to within the limits within 30 minutes; perform an engineering evaluation to determine the effects of the out-of-limit condition on the structural integrity of the pressurizer; determine that the pressurizer remains acceptable for continued operation or be in at least HOT STANDBY within the next 6 hours and reduce the pressurizer pressure to less than 500 psig within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.4.8.2.1 The pressurizer temperatures shall be determined to be within the limits at least once per 30 minutes during system heatup or cooldown.

4.4.8.2.2 The spray water temperature differential shall be determined for use in Table 5.7-1 at least once per 12 hours during auxiliary spray operation.

ATTACHMENT C
EXISTING TECHNICAL SPECIFICATIONS
UNIT 3

TABLE 5.7-1 (Continued)COMPONENT CYCLIC OR TRANSIENT LIMITS

<u>COMPONENT</u>	<u>CYCLIC OR TRANSIENT LIMIT</u>	<u>DESIGN CYCLE OR TRANSIENT</u>
Reactor Coolant System	2 complete loss of secondary pressure cycles.	Loss of secondary pressure from either steam generator while in MODES 1, 2 or 3.

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TABLE 5.7-1 (Continued)COMPONENT CYCLIC OR TRANSIENT LIMITS

<u>COMPONENT</u>	<u>CYCLIC OR TRANSIENT LIMIT</u>	<u>DESIGN CYCLE OR TRANSIENT</u>
Reactor Coolant System		

Method for Calculating Pressurizer Spray Nozzle Cumulative Usage Factor

ΔT	N_A	N	N/N_A
150 - 200	50,000		
201 - 300	7,000		
301 - 400	2,000		
401 - 500	1,000		
501 - 600	800		

 $\Sigma N/N_A$

Where:

 ΔT = Temperature difference between pressurizer water and spray in °F. N_A = Allowable number of spray cycles. N = Number of cycles in ΔT range indicated.

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TABLE 5.7-1 (Continued)COMPONENT CYCLIC OR TRANSIENT LIMITS

<u>COMPONENT</u>	<u>CYCLIC OR TRANSIENT LIMIT</u>	<u>DESIGN CYCLE OR TRANSIENT</u>
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Reactor Coolant System

Calculational Method:

1. The spray cycle is defined as the opening and closing of a spray valve, either by main spray or auxiliary spray.
2. If the difference between the pressurizer water temperature and the spray water temperature exceeds 150°F, each spray cycle and the corresponding temperature difference is logged.
3. The spray nozzle usage factor is calculated as follows:
 - A. Fill in Column "N" above from plant records.
 - B. Calculate " N/N_A " (Divide N and N_A).
 - C. Add Column " N/N_A " to find $\Sigma N/N_A$.

$\Sigma N/N_A$ is the cumulative spray nozzle usage factor. If the calculated usage factor is equal to or less than 0.75, no further action is required.

4. If the calculated usage factor exceeds 0.75, subsequent pressurizer spray operation shall be restricted so that the difference between the pressurizer water temperature and the spray water temperature shall be limited to less than or equal to 150°F when spray is operated. An engineering evaluation of nozzle fatigue shall be performed and shall determine that the nozzle remains acceptable for additional service prior to removing this restriction.

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ATTACHMENT D
PROPOSED TECHNICAL SPECIFICATIONS
UNIT 3

REACTOR COOLANT SYSTEM

PRESSURIZER

LIMITING CONDITION FOR OPERATION

3.4.8.2 The pressurizer shall be limited to:

- a. A maximum heatup of 200°F in any one hour period.
- b. A maximum cooldown of 200°F in any one hour period.

APPLICABILITY: At all times.

ACTION:

With the pressurizer temperature limits in excess of any of the above limits, restore the temperature to within the limits within 30 minutes; perform an engineering evaluation to determine the effects of the out-of-limit condition on the structural integrity of the pressurizer; determine that the pressurizer remains acceptable for continued operation or be in at least HOT STANDBY within the next 6 hours and reduce the pressurizer pressure to less than 500 psig within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.4.8.2.1 The pressurizer temperatures shall be determined to be within the limits at least once per 30 minutes during system heatup or cooldown.

4.4.8.2.2 The spray water temperature differential shall be determined for use in Table 5.7-1 for each cycle of main spray when less than 4 reactor coolant pumps are operating and for each cycle of auxiliary spray operation.

TABLE 5.7-1 (Continued)

COMPONENT CYCLIC OR TRANSIENT LIMITS

COMPONENT	CYCLIC OR TRANSIENT LIMIT
Reactor Coolant System	2 complete loss of secondary pressure cycles.

Pressurizer Spray System Unlimited number of cycles.

Calculate cumulative usage factor.

Main spray (4 pumps operating) with $\Delta T \leq 200^\circ\text{F}$.
 Main spray (less than 4 pumps operating) with $\Delta T > 200^\circ\text{F}$.
 Auxiliary spray with $\Delta T \leq 200^\circ\text{F}$.
 Auxiliary spray with $\Delta T > 200^\circ\text{F}$.

where:

$\Delta T =$ Maximum temperature difference between pressurizer and pressurizer spray during the spray cycle.

TABLE 5.7-1 (Continued)

COMPONENT CYCLIC OR TRANSIENT LIMITS

**DESIGN CYCLE
OR TRANSIENT**

**CYCLIC OR
TRANSIENT LIMIT**

COMPONENT

Pressurizer Spray System

Pressurizer Spray System Usage Factor

ΔT	N_A	N	N/N_A
201 - 250	11,000		
251 - 300	4,000		
301 - 350	2,200		
351 - 400	1,300		
401 - 450	900		
451 - 500	500		
501 - 550	300		
551 - 600	200		

$$\Sigma N/N_A =$$

where:

ΔT = Maximum temperature difference between pressurizer and pressurizer spray during the spray cycle.

N_A = Allowable number of spray cycles

N = Number of cycles in ΔT range indicated

TABLE 5.7-1 (Continued)COMPONENT CYCLIC OR TRANSIENT LIMITS

<u>COMPONENT</u>	<u>CYCLIC OR TRANSIENT LIMIT</u>	<u>DESIGN CYCLE OR TRANSIENT</u>
Pressurizer Spray System		
Calculational Method:		
<ol style="list-style-type: none"> 1. The spray cycle is defined as any initiation and termination of main or auxiliary spray flow through the pressurizer spray nozzle. 2. If the maximum temperature difference between the pressurizer and the pressurizer spray during the spray cycle exceeds 200°F, each spray cycle and the corresponding temperature difference is logged. 3. The spray system usage factor is calculated as follows: <ol style="list-style-type: none"> A. Fill in Column "N" above. B. Calculate "N/N_A" (Divide N and N_A). C. Add Column "N/N_A" to find $\Sigma N/N_A$. This total is the cumulative usage factor. 4. <ol style="list-style-type: none"> A. If the cumulative usage factor is equal to or less than 0.65 no further action is required. B. If the cumulative usage factor exceeds 0.65, subsequent pressurizer spray operation shall continue to be monitored and an engineering evaluation of spray system fatigue shall be performed within 90 days. The evaluation shall determine that the spray system remains acceptable for additional service beyond the 90 day period or subsequent spray operation shall be restricted so that the maximum temperature difference between pressurizer and pressurizer spray during the spray cycle shall be limited to less than or equal to 200°F. 		

REACTOR COOLANT SYSTEM

PRESSURIZER - HEATUP/COOLDOWN

LIMITING CONDITION FOR OPERATION

3.4.8.2 The pressurizer shall be limited to:

- a. A maximum heatup of 200°F in any 1 hour period,
- b. A maximum cooldown of 200°F in any 1 hour period.

APPLICABILITY: At all times.

ACTION:

With the pressurizer temperature limits in excess of any of the above limits, restore the temperature to within the limits within 30 minutes; perform an engineering evaluation to determine the effects of the out-of-limit condition on the structural integrity of the pressurizer; determine that the pressurizer remains acceptable for continued operation or be in at least HOT STANDBY within the next 6 hours and reduce the pressurizer pressure to less than 500 psig within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.4.8.2.1 The pressurizer temperatures shall be determined to be within the limits at least once per 30 minutes during system heatup or cooldown.

4.4.8.2.2 The spray water temperature differential shall be determined for use in Table 5.7-1 at least once per 12 hours during auxiliary spray operation.