

Docket No. 50-423
B16624

Attachment 2

Millstone Nuclear Power Station Unit No. 3
Proposed Revision to Technical Specification
Instrumentation Surveillances
(PTSCR 3-30-97)
Marked Up Pages

October 1997

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MARKUP OF PROPOSED REVISION

Refer to the attached markup of the proposed revision to the Technical Specifications. The attached markup reflects the currently issued version of the Technical Specifications listed below. Pending Technical Specification revisions or Technical Specification revisions issued subsequent to this submittal are not reflected in the enclosed markup.

The following Technical Specification changes are included in the attached markup.

- The Technical Specification is replaced in its entirety. The new wording maintains the same Limiting Condition for Operation APPLICABILITY and incorporates the Westinghouse enhanced method of determining equipment operability without the restrictions of the 5 column technical specification.

2.2.1

- The table is revised to a two column format. The Trip setpoint column becomes a nominal trip setpoint column. The RTS trip setpoints remain unchanged with the exception of the RCP low shaft speed trip setpoint. Allowable values and Table Notes reflect the analysis of historical instrument data. Editorial changes have been made to certain Pressure values to reflect expression in PSIA instead of PSIG and for consistency in significant digits. Corrections for selected Westinghouse supplied Allowable Values are incorporated.

Table 2.2-1

- The Technical Specification is replaced in its entirety. The new wording maintains the same Limiting Condition for Operation APPLICABILITY and incorporates the Westinghouse enhanced method of determining equipment operability without the restrictions of the 5 column technical specification.

3.3.2

- The table is revised to a two column format. The Trip setpoint column becomes a nominal trip setpoint column. The ESFAS trip setpoints remain unchanged. Allowable values reflect the analysis of historical instrument data. Editorial changes have been made to certain Pressure values to reflect expression in PSIA instead of PSIG and for consistency in significant digits.

Table 3.3-4

- The wording is changed to accommodate the new operability requirements.

Bases 2.2.1, 3/4.3.1 and 3/4.3.2

SAFETY LIMITS AND LIMITING SAFETY SYSTEM SETTINGS2.2 LIMITING SAFETY SYSTEM SETTINGSREACTOR TRIP SYSTEM INSTRUMENTATION SETPOINTS

2.2.1 The Reactor Trip System Instrumentation and Interlock Setpoints shall be set consistent with the Trip Setpoint values shown in Table 2.2-1.

APPLICABILITY: As shown for each channel in Table 3.3-1.

ACTION:

- INSERT A*
- a. With a Reactor Trip System Instrumentation or Interlock Setpoint less conservative than the value shown in the Trip Setpoint column but more conservative than the value shown in the Allowable Value column of Table 2.2-1, adjust the Setpoint consistent with the Trip Setpoint value.
 - b. With the Reactor Trip System Instrumentation or Interlock Setpoint less conservative than the value shown in the Allowable Values column of Table 2.2-1, either:
 1. Adjust the Setpoint consistent with the Trip Setpoint value of Table 2.2-1 and determine within 12 hours that Equation 2.2-1 was satisfied for the affected channel, or
 2. Declare the channel inoperable and apply the applicable ACTION statement requirement of Specification 3.3.1 until the channel is restored to OPERABLE status with its Setpoint adjusted consistent with the Trip Setpoint value.

Equation 2.2-1

$$Z + R + S \leq TA$$

Where:

Z = The value from Column Z of Table 2.2-1 for the affected channel,

R = The "as measured" value (in percent span) of rack error for the affected channel,

S = Either the "as measured" value (in percent span) of the sensor error, or the value from Column S (Sensor Error) of Table 2.2-1 for the affected channel, and

TA = The value from Column TA (Total Allowance) of Table 2.2-1 for the affected channel.

SAFETY LIMITS AND LIMITING SAFETY SYSTEM SETTINGS

2.2 LIMITING SAFETY SYSTEM SETTINGS

REACTOR TRIP SYSTEM INSTRUMENTATION SETPOINTS

2.2.1 The Reactor Trip System Instrumentation Channel and Interlock Channel shall be OPERABLE.

APPLICABILITY: As shown for each channel in Table 3.3-1.

ACTION:

- a. With a Reactor Trip System Instrumentation Channel or Interlock Channel Nominal Trip Setpoint inconsistent with the value shown in the Nominal Trip Setpoint column of Table 2.2-1, adjust the Setpoint consistent with the Nominal Trip Setpoint value.
- b. With a Reactor Trip System Instrumentation Channel or Interlock Channel found to be inoperable, declare the channel inoperable and apply the applicable ACTION statement requirement of Specification 3.3.1 until the channel is restored to OPERABLE status.

TABLE 2.2-1
REACTOR TRIP SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	TOTAL ALLOWANCE (TA)	Z	SENSOR ERROR (S)	NOMINAL TRIP SETPOINT	ALLOWABLE VALUE
1. Manual Reactor Trip	N.A.	N.A.	N.A.	N.A.	N.A.
2. Power Range, Neutron Flux					
a. High Setpoint					
1) Four Loops Operating	7.5	4.56	0	$\leq 109\%$ of RTP**	$\leq 111.1\%$ of RTP** 109.6%
2) Three Loops Operating	7.5	4.56	0	$\leq 80\%$ of RTP**	$\leq 82.1\%$ of RTP** 80.6%
b. Low Setpoint					
1) Four Loops Operating	8.3	4.56	0	$\leq 25\%$ of RTP**	$\leq 27.1\%$ of RTP** 25.6%
2) Three Loops Operating	8.3	4.56	0	$\leq 25\%$ of RTP**	$\leq 27.1\%$ of RTP** 5.6%
3. Power Range, Neutron Flux, High Positive Rate	1.6	0.5	0	$\leq 5\%$ of RTP** with a time constant ≥ 2 seconds	$\leq 6.3\%$ of RTP** with a time constant ≥ 2 seconds
4. Deleted					
5. Intermediate Range, Neutron Flux	17.0	8.41	0	$\leq 25\%$ of RTP**	$\leq 30.9\%$ of RTP** 27.4%
6. Source Range, Neutron Flux	17.0	10.01	0	$\leq 10^{+5}$ cps $1 \times 10^{+5}$	$\leq 1.4 \times 10^{+5}$ cps 1.06
7. Overtemperature ΔT					
a. Four Loops Operating					
1) Channels I, II	10.0	8.14	1.61 + 1.33 (Temp + Press)	See Note 1	See Note 2
2) Channels III, IV	10.0	7.17	1.61 + 2.60 (Temp + Press)	See Note 1	See Note 2

**RTP = RATED THERMAL POWER

July 11, 1995

TABLE 2.2-1 (Continued)

REACTOR TRIP SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT

TOTAL
ALLOWANCE
(TA)

Z

SENSOR
ERROR
(SE)NOMINAL
TRIP SETPOINT

ALLOWABLE VALUE

b. Three Loops Operating

1) Channels I, II

10.0

6.80

1.71 + 1.33
(Temp + Press)

See Note 1

See Note 2

2) Channels III, IV

10.0

5.83

1.71 + 2.60
(Temp + Press)

See Note 1

See Note 2

8. Overpower AT (Four Loops Operating)

4.8

1.28

1.61

See Note 3

See Note 4

9. Pressurizer Pressure-Low

5.0

1.77

3.3

≥ 1900 psia

≥ 1890 psia

1897.6

10. Pressurizer Pressure-High

5.0

1.77

3.3

≤ 2385 psia

≤ 2395 psia

2387.4

11. Pressurizer Water Level-High

8.0

5.13

2.7

≤ 89% of instrument
span≤ 90.7% of instrument
span

89.3%

12. Reactor Coolant Flow-Low

2.5

1.52

0.78

≥ 90% of loop
design flow*≥ 89.1% of loop
design flow*

89.8

13. Steam Generator Water
Level Low-Low

18.10

16.64

1.50

≥ 18.10% of narrow
range instrument
span≥ 17.11% of narrow
range instrument
span

17.8

14. General Warning Alarm

N.A.

N.A.

N.A.

N.A.

92.4%

N.A.

92.2%

15. Low Shaft Speed - Reactor
Coolant Pumps

3.8

0.5

0

≥ 95.8% of rated
speed≥ 92.5% of rated
speed

May 23, 1995

*Minimum Measured Flow Per Loop = 1/4 of the RCS Flow Rate Limit as listed in Section 3.2.3.1.a (Four Loops Operating);
1/3 of the RCS Flow Rate Limit as listed in Section 3.2.3.2.a (Three Loops Operating)

REACTOR TRIP SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT

16. Turbine Trip

a. Low Fluid Oil Pressure

b. Turbine Stop Valve Closure

17. Safety Injection Input from ESF

18. Reactor Trip System Interlocks

a. Intermediate Range Neutron Flux, P-6

b. Low Power Reactor Trips Block, P-7

1) P-10 input (Note 5)

2) P-13 input

c. Power Range Neutron Flux, P-8

1) Four Loops Operating

2) Three Loops Operating

TOTAL ALLOWANCE (TA)	Z	SENSOR ERROR (S)
N.A.	N.A.	N.A.
N.A.	N.A.	N.A.
N.A.	N.A.	N.A.
N.A.	N.A.	N.A.
N.A.	N.A.	N.A.
N.A.	N.A.	N.A.
N.A.	N.A.	N.A.
N.A.	N.A.	N.A.
N.A.	N.A.	N.A.

NOMINAL TRIP SETPOINT

ALLOWABLE VALUE

≥ 500 psig

≥ 450 psig

≥ 1% open

≥ 1% open

N.A.

N.A.

≥ 1 x 10⁻¹⁰ amp≥ 9.0 x 10⁻¹¹ amp

≤ 11% of RTP**

≤ 12.1% of RTP**

≤ 10% RTP** Turbine Impulse Pressure Equivalent

≤ 12.1% RTP** Turbine Impulse Pressure Equivalent 10.6%

≤ 37.5% of RTP**

≤ 38.1% of RTP**

≤ 37.5% of RTP**

≤ 38.1% of RTP**

**RTP = RATED THERMAL POWER

10/25/93

REACTOR TRIP SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT

- d. Power Range Neutron Flux, P-9
- e. Power Range Neutron Flux, P-10 (Note 6)
19. Reactor Trip Breakers
20. Automatic Trip and Interlock Logic
21. Three Loop Operation Bypass Circuitry

TOTAL ALLOWANCE (TA)	Z	SENSOR ERROR (S)
N.A.	N.A.	N.A.
N.A.	N.A.	N.A.
N.A.	N.A.	N.A.
N.A.	N.A.	N.A.
N.A.	N.A.	N.A.

NOMINAL TRIP SETPOINT

≤ 51% of RTP**

≥ 9% of RTP**

N.A.

N.A.

N.A.

ALLOWABLE VALUE

≤ 53.1% of RTP**

≥ 7.9% of RTP**

N.A.

N.A.

N.A.

51.6%

8.4%

**RTP = RATED THERMAL POWER

TABLE 2.2-1 (Continued)

TABLE NOTATIONS

NOTE 1: OVERTEMPERATURE AT

$$\Delta T \frac{(1 + \tau_1 S)}{(1 + \tau_2 S)} \frac{1}{(1 + \tau_3 S)} \leq \Delta T_0 (K_1 - K_2 \frac{(1 + \tau_4 S)}{(1 + \tau_5 S)} [T \frac{1}{(1 + \tau_6 S)} - T'] + K_3 (P - P') - f_1(\Delta I))$$

Where:

- ΔT - Measured ΔT by Reactor Coolant System Instrumentation;
- $\frac{1 + \tau_1 S}{1 + \tau_2 S}$ - Lead-lag compensator on measured ΔT ;
- τ_1, τ_2 - Time constants utilized in lead-lag compensator for ΔT , $\tau_1 \geq 8$ s, $\tau_2 \leq 3$ s;
- $\frac{1}{1 + \tau_3 S}$ - Lag compensator on measured ΔT ;
- τ_3 - Time constants utilized in the lag compensator for ΔT , $\tau_3 = 0$ s;
- ΔT_0 - Indicated ΔT at RATED THERMAL POWER;
- K_1 - 1.20 (Four Loops Operating); 1.20 (Three Loops Operating);
- K_2 - 0.02456;
- $\frac{1 + \tau_4 S}{1 + \tau_5 S}$ - The function generated by the lead-lag compensator for T_{avg} dynamic compensation;
- τ_4, τ_5 - Time constants utilized in the lead-lag compensator for T_{avg} , $\tau_4 \geq 20$ s, $\tau_5 \leq 4$ s;
- T - Average temperature, °F;
- $\frac{1}{1 + \tau_6 S}$ - Lag compensator on measured T_{avg} ;
- τ_6 - Time constant utilized in the measured T_{avg} lag compensator, $\tau_6 = 0$ s;

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TABLE 2.2-1 (Continued)

TABLE NOTATIONS (Continued)

NOTE 1: (Continued)

- T' $\leq$ 587.1°F (Nominal T_{avg} at RATED THERMAL POWER);
- K_3 = 0.001311/psia;
- P = Pressurizer pressure, psia;
- P' = 2250 psia (Nominal RCS operating pressure);
- S = Laplace transform operator, s^{-1} ;

and $f_1(\Delta I)$ is a function of the indicated difference between top and bottom detectors of the power-range neutron ion chambers; with gains to be selected based on measured instrument response during plant startup tests such that:

- (1) For $q_t - q_b$ between -26% and +3%, $f_1(\Delta I) = 0$, where q_t and q_b are percent RATED THERMAL POWER in the top and bottom halves of the core respectively, and $q_t + q_b$ is total THERMAL POWER in percent of RATED THERMAL POWER;
- (2) For each percent that the magnitude of $q_t - q_b$ exceeds -26%, the AT Trip Setpoint shall be automatically reduced by 3.55% of its value at RATED THERMAL POWER; and
- (3) For each percent that the magnitude of $q_t - q_b$ exceeds +3%, the AT Trip Setpoint shall be automatically reduced by 1.98% of its value at RATED THERMAL POWER.

NOTE 2: The channel's maximum Trip Setpoint shall not exceed its computed Trip Setpoint by more than 1.4% AT span (Four Loop Operation); 2.7% AT span (Three Loop Operation).

THE MAXIMUM CHANNEL AS LEFT TRIP SETPOINT SHALL NOT EXCEED ITS COMPUTED TRIP SETPOINT BY MORE THAN THE FOLLOWING:

- (1) 0.4% ΔT SPAN FOR THE ΔT CHANNEL
- (2) 0.4% ΔT SPAN FOR THE T_{avg} CHANNEL
- (3) 0.4% ΔT SPAN FOR THE PRESSURIZER PRESSURE CHANNEL
- (4) 0.8% ΔT SPAN FOR THE $f(\Delta I)$ CHANNEL.

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Amendment No. 89, 114

May 23, 1995

TABLE 2.2-1 (Continued)

TABLE NOTATIONS (Continued)

NOTE 3: OVERPOWER AT

$$\Delta T \frac{(1 + \tau_1 S)}{(1 + \tau_2 S)} \left(\frac{1}{1 + \tau_2 S} \right) \leq \Delta T_0 (K_4 - K_5) \left(\frac{\tau_7 S}{1 + \tau_7 S} \right) \left(\frac{1}{1 + \tau_6 S} \right) T - K_6 \left[T \left(\frac{1}{1 + \tau_6 S} \right) - T^* \right] - f_s (\Delta T)$$

- Where:
- ΔT - As defined in Note 1,
 - $\frac{1 + \tau_1 S}{1 + \tau_2 S}$ - As defined in Note 1,
 - τ_1, τ_2 - As defined in Note 1,
 - $\frac{1}{1 + \tau_2 S}$ - As defined in Note 1,
 - τ_3 - As defined in Note 1,
 - ΔT_0 - As defined in Note 1,
 - K_4 - 1.09,
 - K_5 - 0.02/°F for increasing average temperature and 0 for decreasing average temperature,
 - $\frac{\tau_7 S}{1 + \tau_7 S}$ - The function generated by the rate-lag compensator for T_{avg} dynamic compensation,
 - τ_7 - Time constants utilized in the rate-lag compensator for T_{avg} , $\tau_7 \geq 10$ s,
 - $\frac{1}{1 + \tau_6 S}$ - As defined in Note 1,
 - τ_6 - As defined in Note 1,

NO CHANGE
INFORMATION ONLY

March 11, 1997

TABLE 2.2-1 (Continued)

TABLE NOTATIONS (Continued)

NOTE 3: (Continued)

- K_6 = 0.00180/ $^{\circ}$ F for $T > T^*$ and $K_6 = 0$ for $T \leq T^*$,
- T = As defined in Note 1,
- T^* = Indicated T_{avg} at RATED THERMAL POWER (Calibration temperature for ΔT instrumentation, $\leq 587.1^{\circ}$ F),
- S = As defined in Note 1, and
- $f_2(\Delta I)$ = 0 for all ΔI .

NOTE 4: The channel's maximum Trip Setpoint shall not exceed its computed Trip Setpoint by more than 2.7% ΔT span. (Four Loop Operation)

NOTE 5: Setpoint is for increasing power.

NOTE 6: Setpoint is for decreasing power.

THE MAXIMUM CHANNEL AS LEFT TRIP SETPOINT SHALL NOT EXCEED ITS COMPUTED TRIP SETPOINT BY MORE THAN 0.4% ΔT SPAN FOR THE ΔT CHANNEL AND 0.4% ΔT SPAN FOR THE T_{avg} CHANNEL.

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CASES2.2.1 REACTOR TRIP SYSTEM INSTRUMENTATION SETPOINTS

The Reactor Trip Setpoint Limits specified in Table 2.2-1 are the nominal values at which the Reactor trips, set for each functional unit. The Trip Setpoints have been selected to ensure that the core and Reactor Coolant System are prevented from exceeding their safety limits during normal operation and design basis anticipated operational occurrences and to assist the Engineered Safety Features Actuation System in mitigating the consequences of accidents. The Setpoint for a Reactor Trip System or interlock function is considered to be adjusted consistent with the nominal value when the "as measured" Setpoint is within the band allowed for calibration accuracy and instrument drift.

To accommodate the instrument drift assumed to occur between operational tests and the accuracy to which Setpoints can be measured and calibrated, Allowable Values for the Reactor Trip Setpoints have been specified in Table 2.2-1. Operation with Setpoints less conservative than the Trip Setpoint but within the Allowable Value is acceptable since an allowance has been made in the safety analysis to accommodate this error. An optional provision has been included for determining the OPERABILITY of a channel when its Trip Setpoint is found to exceed the Allowable Value. The methodology of this option utilizes the "as measured" deviation from the specified calibration point for rack and sensor components in conjunction with a statistical combination of the other uncertainties of the instrumentation to measure the process variable and the uncertainties in calibrating the instrumentation. In Equation 2.2-1, $Z + R + S \leq TA$, the interactive effects of the errors in the rack and the sensor, and the "as measured" values of the errors are considered. Z, as specified in Table 2.2-1, in percent span, is the statistical summation of errors assumed in the analysis excluding those associated with the sensor and rack drift and the accuracy of their measurement. TA or Total Allowance is the difference, in percent span, between the Trip Setpoint and the value used in the analysis for Reactor trip. R or Rack Error is the "as measured" deviation, in percent span, for the affected channel from the specified Trip Setpoint. S or Sensor Error is either the "as measured" deviation of the sensor from its calibration point or the value specified in Table 2.2-1, in percent span, from the analysis assumptions. Use of Equation 2.2-1 allows for a sensor drift factor, an increased rack drift factor, and provides a threshold value for REPORTABLE EVENTS.

The methodology to derive the Trip Setpoints is based upon combining all of the uncertainties in the channels. Inherent to the determination of the Trip Setpoints are the magnitudes of these channel uncertainties. Sensors and other instrumentation utilized in these channels are expected to be capable of operating within the allowances of these uncertainty magnitudes. Rack drift in excess of the Allowable Value exhibits the behavior that the rack has not met its allowance. Being that there is a small statistical chance that this will happen, an infrequent excessive drift is expected. Rack or sensor drift, in excess of the allowance that is more than occasional, may be indicative of more serious problems and should warrant further investigation.

July 11, 1995

LIMITING SAFETY SYSTEM SETTINGS

BASES

REPLACE WITH
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REACTOR TRIP SYSTEM INSTRUMENTATION SETPOINTS (Continued)

The various Reactor trip circuits automatically open the Reactor trip breakers whenever a condition monitored by the Reactor Trip System reaches a preset or calculated level. In addition to redundant channels and trains, the design approach provides a Reactor Trip System which monitors numerous system variables, therefore providing Trip System functional diversity. The functional capability at the specified trip setting is required for those anticipatory or diverse Reactor trips for which no direct credit was assumed in the safety analysis to enhance the overall reliability of the Reactor Trip System. The Reactor Trip System initiates a Turbine trip signal whenever Reactor trip is initiated. This prevents the reactivity insertion that would otherwise result from excessive Reactor Coolant System cooldown and thus avoids unnecessary actuation of the Engineered Safety Features Actuation System.

Manual Reactor Trip

The Reactor Trip System includes manual Reactor trip capability.

Power Range, Neutron Flux

In each of the Power Range Neutron Flux channels there are two independent bistables, each with its own trip setting used for a High and Low Range trip setting. The Low Setpoint trip provides protection during subcritical and low power operations to mitigate the consequences of a power excursion beginning from low power, and the High Setpoint trip provides protection during power operations to mitigate the consequences of a reactivity excursion from all power levels. The High Setpoint trip is reduced during three loop operation to a value consistent with the safety analysis.

The Low Setpoint trip may be manually blocked above P-10 (a power level of approximately 10% of RATED THERMAL POWER) and is automatically reinstated below the P-10 Setpoint.

Power Range, Neutron Flux, High Positive Rate

The Power Range Positive Rate trip provides protection against rapid flux increases which are characteristic of a rupture of a control rod drive housing. Specifically, this trip complements the Power Range Neutron Flux High and Low trips to ensure that the criteria are met for all rod ejection accidents.

INSERT "B" TO PAGE B 2-3

2.2.1 REACTOR TRIP SYSTEM INSTRUMENTATION SETPOINTS

The Nominal Trip Setpoints specified in Table 2.2-1 are the nominal values at which the reactor trips are set for each functional unit. The Allowable Values (Nominal Trip Setpoints $\pm$ the calibration tolerance) are considered the Limiting Safety System Settings as identified in 10CFR50.36 and have been selected to ensure that the core and Reactor Coolant System are prevented from exceeding their safety limits during normal operation and design basis anticipated operational occurrences and to assist the Engineered Safety Features Actuation System in mitigating the consequences of accidents. The Setpoint for a Reactor Trip System or interlock function is considered to be consistent with the nominal value when the measured "as left" Setpoint is within the administratively controlled ($\pm$) calibration tolerance identified in plant procedures (which specifies the difference between the Allowable Value and Nominal Trip Setpoint). Additionally, the Nominal Trip Setpoints may be adjusted in the conservative direction provided the calibration tolerance remains unchanged.

Measurement and Test Equipment accuracy is administratively controlled by plant procedures and is included in the plant uncertainty calculations as defined in WCAP-10991. Operability determinations are based on the use of Measurement and Test Equipment that conforms with the accuracy used in the plant uncertainty calculation.

The Allowable Value specified in Table 2.2-1 is the initial value for consideration of channel operability. If the process rack bistable setting is measured within the "as left" calibration tolerance, which specifies the difference between the Allowable Value and Nominal Trip Setpoint, then the channel is considered to be operable.

Additionally, an administratively controlled limit for operability of a device is determined by device drift being less than the value required for the surveillance interval. In the event the device exceeds the administratively controlled limit, operability of the device may be evaluated by other device performance characteristics, e.g., comparison to historical device drift data, calibration characteristics, response characteristics, and short-term drift characteristics. A device (R&D, relay, transmitter, process rack module, etc.), whose "as found" value is in excess of the calibration tolerance, but within the operability criteria (administratively controlled limit), is considered operable but must be recalibrated such that the "as left" value is within the two sided ($\pm$) calibration tolerance. Plant procedures set administrative limits ("as left" and "as found" criteria) to control the determination of operability by setting minimum standards based on the methodology in WCAP-10991 and the uncertainty values included in the determination of the Nominal Trip Setpoint, and allow the use of other device characteristics to evaluate operability. REPORTABLE EVENTS are identified when the minimum number of channels required to be operable are not met.

The methodology, as defined in WCAP-10991 to derive the Nominal Trip Setpoints, is based upon combining all of the uncertainties in the channels. Inherent in the determination of the Nominal Trip Setpoints are the magnitudes of these channel uncertainties. Sensors and other instrumentation utilized in

INSERT "B" TO PAGE B 2-3 (cont'd)

these channels should be capable of operating within the allowances of these uncertainty magnitudes. Occasional drift in excess of the allowance may be determined to be acceptable based on the other device performance characteristics. Device drift in excess of the allowance that is more than occasional, may be indicative of more serious problems and would warrant further investigation.

The various reactor trip circuits automatically open the reactor trip breakers whenever a condition monitored by the Reactor Trip System reaches a preset or calculated level. In addition to the redundant channels and trains, the design approach provides Reactor Trip System functional diversity. The functional capability at the specified trip setting is required for those anticipatory or diverse reactor trips for which no direct credit was assumed in the safety analysis to enhance the overall reliability of the Reactor Trip System. The Reactor Trip System initiates a turbine trip signal whenever reactor trip is initiated. This prevents the reactivity insertion that would otherwise result from excessive Reactor Coolant System cooldown and thus avoids unnecessary actuation of the Engineered Safety Features Actuation System.

INSTRUMENTATION

6/28/94

3/4.3.2 ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.2 The Engineered Safety Features Actuation System (ESFAS) instrumentation channels and interlocks shown in Table 3.3-3 shall be OPERABLE with their Trip Setpoints set consistent with the values shown in the Trip Setpoint column of Table 3.3-4.

APPLICABILITY: As shown in Table 3.3-3.

ACTION:

- INSERT C
- a. With an ESFAS Instrumentation or Interlock Trip Setpoint trip less conservative than the value shown in the Trip Setpoint column but more conservative than the value shown in the Allowable Value column of Table 3.3-4, adjust the Setpoint consistent with the Trip Setpoint value.
 - b. With an ESFAS Instrumentation or Interlock Trip Setpoint less conservative than the value shown in the Allowable Value column of Table 3.3-4, either:
 1. Adjust the Setpoint consistent with the Trip Setpoint value of Table 3.3-4, and determine within 12 hours that Equation 2.2-1 was satisfied for the affected channel, or
 2. Declare the channel inoperable and apply the applicable ACTION statement requirements of Table 3.3-3 until the channel is restored to OPERABLE status with its Setpoint adjusted consistent with the Trip Setpoint value.

Equation 2.2-1

$$Z + R + S \leq TA$$

Where:

Z = The value from Column Z of Table 3.3-4 for the affected channel,

R = The "as measured" value (in percent span) of rack error for the affected channel,

S = Either the "as measured" value (in percent span) of the sensor error, or the value from Column S (Sensor Error) of Table 3.3-4 for the affected channel, and

TA = The value from Column TA (Total Allowance) of Table 3.3-4 for the affected channel.

- c. With an ESFAS instrumentation channel or interlock inoperable, take the ACTION shown in Table 3.3-3.

Insert C to Page 3/4 3-15

3.3.2 The Engineered Safety Features Actuation System (ESFAS) instrumentation channels and interlocks shown in Table 3.3-3 shall be OPERABLE.

APPLICABILITY: As shown in Table 3.3-3.

ACTION:

- a. With an ESFAS Instrumentation Channel or Interlock Channel Nominal Trip Setpoint inconsistent with the value shown in the Nominal Trip Setpoint column of Table 3.3-4, adjust the Setpoint consistent with the Nominal Trip Setpoint value.
- b. With an ESFAS Instrumentation Channel or Interlock Channel found to be inoperable, declare the channel inoperable and apply the applicable ACTION statement requirements of Table 3.3-3 until the channel is restored to OPERABLE status.

TABLE 3.3-4

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	TOTAL ALLOWANCE (TA)	Z	SENSOR ERROR (S)	NOMINAL TRIP SETPOINT	ALLOWABLE VALUE
1. Safety Injection (Reactor Trip, Feedwater Isolation, Control Building Isolation (Manual Initiation Only), Start Diesel Generators, and Service Water)					
a. Manual Initiation	N.A.	N.A.	N.A.	N.A.	N.A.
b. Automatic Actuation Logic	N.A.	N.A.	N.A.	N.A. 17.7 PSIA	N.A. 17.9 PSIA
c. Containment Pressure--High 1	3.3	1.01	1.75	<u>≤ 3.0 psig</u>	<u>≤ 3.0 psig</u>
d. Pressurizer Pressure--Low					
1) Channels I and II	22.16	20.1	1.5	1892 PSIA <u>≥ 1877.3 psig</u>	1889.6 PSIA <u>≥ 1868.5 psig</u>
2) Channel III and IV	22.16	15.6	3.3	<u>≥ 1877.3 psig</u> 1892 PSIA	<u>≥ 1863.3 psig</u> 1889.6 PSIA
e. Steam Line Pressure--Low	17.7	15.6	2.2	<u>≥ 658.6 psig*</u>	<u>≥ 648.3 psig*</u> 654.7
2. Containment Spray (CDA)					
a. Manual Initiation	N.A.	N.A.	N.A.	N.A.	N.A.
b. Automatic Actuation Logic and Actuation Relays	N.A.	N.A.	N.A.	N.A.	N.A.
c. Containment Pressure--High-3	3.3	1.01	1.75	22.7 PSIA <u>≤ 0.0 psig</u>	22.9 PSIA <u>≤ 0.0 psig</u>
3. Containment Isolation					
a. Phase "A" Isolation					
1) Manual Initiation	N.A.	N.A.	N.A.	N.A.	N.A.

TABLE 3.3-4

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	TOTAL ALLOWANCE (TA)	Z	SENSOR ERROR (S)	NOMINAL TRIP SETPOINT	ALLOWABLE VALUE
3. Containment Isolation (Continued)					
2) Automatic Actuation Logic and Actuation Relays	N.A.	N.A.	N.A.	N.A.	N.A.
3) Safety Injection	See Item 1. above for all Safety Injection Trip Setpoints and Allowable Values.				
b. Phase "B" Isolation					
1) Manual Initiation	N.A.	N.A.	N.A.	N.A.	N.A.
2) Automatic Actuation Logic and Actuation Relays	N.A.	N.A.	N.A.	N.A.	N.A.
3) Containment Pressure--High-3	3.3	1.01	1.75	22.7 psia ≤ 8.0 psig	22.9 psia ≤ 8.8 psig
c. Purge Isolation	N.A.	N.A.	N.A.	≤ 1 R/h	≤ 1 R/h
4. Steam Line Isolation					
a. Manual Initiation	N.A.	N.A.	N.A.	N.A.	N.A.
b. Automatic Actuation Logic and Actuation Relays	N.A.	N.A.	N.A.	N.A.	N.A.
c. Containment Pressure--High-2	3.3	1.01	1.75	17.7 psia ≤ 3.0 psig	17.9 psia ≤ 3.8 psig
d. Steam Line Pressure--Low	17.7	15.6	2.2	≥ 658.6 psig*	≥ 648.3 psig*
e. Steam Line Pressure - Negative Rate--High	5.0	0.5	0	≤ 100 psi/s**	≤ 122.7 psi/s** 103.9

TABLE 3.3-4 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	TOTAL ALLOWANCE (TA) Z	SENSOR ERROR (S)	NOMINAL TRIP SETPOINT	ALLOWABLE VALUE
5. Turbine Trip and Feedwater Isolation				
a. Automatic Actuation Logic Actuation Relays	N.A.	N.A.	N.A.	N.A.
b. Steam Generator Water Level--High-High (P-14)	5.25	3.76	1.50	80.5% $\leq 80.45\%$ of narrow range instrument span.
c. Safety Injection Actuation Logic	See Item 1. above for all Safety Injection Trip Setpoints and Allowable Values.			
d. T _{ave} Low Coincident with Reactor Trip (P-4)				
1) Four Loops Operating	N.A.	N.A.	N.A.	
2) Three Loops Operating	N.A.	N.A.	N.A.	
6. Auxiliary Feedwater				
a. Manual Initiation	N.A.	N.A.	N.A.	
b. Automatic Actuation Logic and Actuation Relays	N.A.	N.A.	N.A.	
c. Steam Generator Water Level--Low-Low				
1) Start Motor-Driven Pumps	18.10	16.64	1.50	563.6°F $\geq 560.6^\circ\text{F}$ $\geq 560.6^\circ\text{F}$ 563.6°F 17.8% $\geq 17.11\%$ of narrow range instrument span.

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TABLE 3.3-4 (Continued)

ENGINEERED SAFETY FEATURES ACTIVATION SYSTEM INSTRUMENTATION TRIP SETPOINTS

<u>FUNCTIONAL UNIT</u>	<u>TOTAL ALLOWANCE (TA)</u>	<u>SENSOR ERROR (S)</u>	<u>NOMINAL TRIP SETPOINT</u>	<u>ALLOWABLE VALUE</u>
6. Auxiliary Feedwater (Continued)				
2) Start Turbine-Driven Pumps	18.10	16.64	1.50	$\geq 17.11\%$ of narrow range instrument span.
d. Safety Injection	See Item 1. above for all Safety Injection Trip Setpoints and Allowable Values.			
e. Loss-of-Offsite Power Start Motor-Driven Pumps	N.A.	N.A.	N.A.	$\geq 2800V$ $\geq 2720V$
f. Containment Depressurization Actuation (CDA) Start Motor-Driven Pumps	See Item 2. above for all CDA Trip Setpoints and Allowable Values.			
7. Control Building Isolation				
a. Manual Actuation	N.A.	N.A.	N.A.	N.A.
b. Manual Safety Injection Actuation	N.A.	N.A.	N.A.	N.A.
c. Automatic Actuation Logic and Actuation Relays	N.A.	N.A.	N.A.	N.A.
d. Containment Pressure--High 1	3.3	1.01	1.75	≤ 3.0 psig ≤ 3.8 psig
e. Control Building Inlet Ventilation Radiation	N.A.	N.A.	N.A.	$\leq 1.5 \times 10^{-5} \mu Ci/cc$ $\leq 1.5 \times 10^{-5} \mu Ci/cc$

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TABLE 3.3-4 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	TOTAL ALLOWANCE (TA)	Z	SENSOR ERROR (S)	NOMINAL TRIP SETPOINT	ALLOWABLE VALUE
8. Loss of Power					
a. 4 kV Bus Undervoltage (Loss of Voltage)	N.A.	N.A.	N.A.	≥ 2800 volts with a ≤ 2 second time delay.	≥ 2720 volts with a ≤ 2 second time delay.
b. 4 kV Bus Undervoltage (Grid Degraded Voltage)	N.A.	N.A.	N.A.	≥ 3730 volts with a ≤ 8 second time delay with ESF actuation or ≤ 300 second time delay without ESF actuation.	≥ 3706 volts with a ≤ 8 second time delay with ESF actuation or ≤ 300 second time delay without ESF actuation.
9. Engineered Safety Features Actuation System Interlocks					
a. Pressurizer Pressure, P-11	N.A.	N.A.	N.A.	1999.7 PSia ≤ 1985 psig	2002.1 PSia ≤ 1995 psig
b. Low-Low T_{avg} , P-12	N.A.	N.A.	N.A.	≥ 553°F	≥ 549.6°F
c. Reactor Trip, P-4	N.A.	N.A.	N.A.	N.A.	N.A. 552.6°F
10. Emergency Generator Load Sequencer	N.A.	N.A.	N.A.	N.A.	N.A.

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Amendment No. 72, 79, 98

March 11, 1997

NO CHANGE
FOR INFO ONLY

TABLE 3.3-4 (Continued)

TABLE NOTATIONS

- * Time constants utilized in the lead-lag controller for Steam Line Pressure-Low are $\tau_1 \geq 50$ seconds and $\tau_2 \leq 5$ seconds. CHANNEL CALIBRATION shall ensure that these time constants are adjusted to these values.
- ** The time constant utilized in the rate-lag controller for Steam Line Pressure-Negative Rate-High is greater than or equal to 50 seconds. CHANNEL CALIBRATION shall ensure that this time constant is adjusted to this value.

3/4.3 INSTRUMENTATIONBASES3/4.3.1 and 3/4.3.2 REACTOR TRIP SYSTEM INSTRUMENTATION and ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION

The OPERABILITY of the Reactor Trip System and the Engineered Safety Features Actuation System instrumentation and interlocks ensures that: (1) the associated ACTION and/or Reactor trip will be initiated when the parameter monitored by each channel or combination thereof reaches its Setpoint, (2) the specified coincidence logic is maintained, (3) sufficient redundancy is maintained to permit a channel to be out-of-service for testing or maintenance, and (4) sufficient system functional capability is available from diverse parameters.

The OPERABILITY of these systems is required to provide the overall reliability, redundancy, and diversity assumed available in the facility design for the protection and mitigation of accident and transient conditions. The integrated operation of each of these systems is consistent with the assumptions used in the safety analyses. The Surveillance Requirements specified for these systems ensure that the overall system functional capability is maintained comparable to the original design standards. The periodic surveillance tests performed at the minimum frequencies are sufficient to demonstrate this capability.

The Engineered Safety Features Actuation System Instrumentation Trip Setpoints specified in Table 3.3-4 are the nominal values at which the bistables are set for each functional unit. A Setpoint is considered to be adjusted consistent with the nominal value when the "as measured" Setpoint is within the band allowed for calibration accuracy.

To accommodate the instrument drift assumed to occur between operational tests and the accuracy to which Setpoints can be measured and calibrated, Allowable Values for the Setpoints have been specified in Table 3.3-4. Operation with Setpoints less conservative than the Trip Setpoint but within the Allowable Value is acceptable since an allowance has been made in the safety analysis to accommodate this error. An optional provision has been included for determining the OPERABILITY of a channel when its Trip Setpoint is found to exceed the Allowable Value. The methodology of this option utilizes the "as measured" deviation from the specified calibration point for rack and sensor components in conjunction with a statistical combination of the other uncertainties of the instrumentation to measure the process variable and the uncertainties in calibrating the instrumentation. In Equation 3.3-1, $Z + R \leq TA$, the interactive effects of the errors in the rack and the sensor, and the "as measured" values of the errors are considered. Z , as specified in Table 3.3-4, in percent span, is the statistical summation of errors assumed in the analysis excluding those associated with the sensor and rack drift and the accuracy of their measurement. TA or Total Allowance is the difference, in percent span, R or Rack Error is the "as measured" deviation, in the percent span, for the affected channel from the specified Trip Setpoint. S or Sensor Error is either the "as measured" deviation of

INSTRUMENTATIONBASESREACTOR TRIP SYSTEM INSTRUMENTATION and ENGINEERED SAFETY FEATURES ACTUATION
SYSTEM INSTRUMENTATION (Continued)

the sensor from its calibration point or the value specified in Table 3.3-4, in percent span, from the analysis assumptions. Use of Equation 3.3-1 allows for a sensor drift factor, an increased rack drift factor, and provides a threshold value for REPORTABLE EVENTS.

The methodology to derive the Trip Setpoints is based upon combining all of the uncertainties in the channels. Inherent to the determination of the Trip Setpoints are the magnitudes of these channel uncertainties. Sensor and rack instrumentation utilized in these channels are expected to be capable of operating within the allowances of these uncertainty magnitudes. Rack drift in excess of the Allowable Value exhibits the behavior that the rack has not met its allowance. Being that there is a small statistical chance that this will happen, an infrequent excessive drift is expected. Rack or sensor drift, in excess of the allowance that is more than occasional, may be indicative of more serious problems and should warrant further investigation.

The measurement of response time at the specified frequencies provides assurance that the Reactor trip and the Engineered Safety Features actuation associated with each channel is completed within the time limit assumed in the safety analyses. The RTS and ESF response times are included in the Operating Procedure OP-3273 "Technical Requirements--Supplementary Technical Specifications." Any changes to the RTS and ESF response times shall be in accordance with Section 50.59 of 10CFR50 and approved by the Plant Operations Review Committee. No credit was taken in the analyses for those channels with response times indicated as not applicable. Response time may be demonstrated by any series of sequential, overlapping, or total channel test measurements provided that such tests demonstrate the total channel response time as defined. Sensor response time verification may be demonstrated by either: (1) in place, on-site, or off-site test measurements, or (2) utilizing replacement sensors with certified response time. Detector response times may be measured by the in situ on line noise analysis-response time degradation method described in the Westinghouse Topical Report, "The Use of Process Noise Measurements to Determine Response Characteristics of Protection Sensors in U.S. Plants," August 1983.

INSERT D →

INSERT "D" TO PAGES B3/4 3-1 AND B3/4 3-2

The Engineered Safety Features Actuation System Nominal Trip Setpoints specified in Table 3.3-4 are the nominal values of which the bistables are set for each functional unit. The Allowable Values (Nominal Trip Setpoints $\pm$ the calibration tolerance) are considered the Limiting Safety System Settings as identified in 10CFR50.36 and have been selected to mitigate the consequences of accidents. A Setpoint is considered to be consistent with the nominal value when the measured "as left" Setpoint is within the administratively controlled ($\pm$) calibration tolerance identified in plant procedures (which specifies the difference between the Allowable Value and Nominal Trip Setpoint). Additionally, the Nominal Trip Setpoints may be adjusted in the conservative direction provided the calibration tolerance remains unchanged.

Measurement and Test Equipment accuracy is administratively controlled by plant procedures and is included in the plant uncertainty calculations as defined in WCAP-10991. Operability determinations are based on the use of Measurement and Test Equipment that conforms with the accuracy used in the plant uncertainty calculation.

The Allowable Value specified in Table 3.3-4 is the initial value for consideration of channel operability. If the process rack bistable setting is measured within the "as left" calibration tolerance, which specifies the difference between the Allowable Value and Nominal Trip Setpoint, then the channel is considered to be operable.

Additionally, an administratively controlled limit for operability of a device is determined by device drift being less than the value required for the surveillance interval. In the event the device exceeds the administratively controlled limit, operability of the device may be evaluated by other device performance characteristics, e.g., comparison to historical device drift data, calibration characteristics, response characteristics, and short-term drift characteristics. A device (RTD, relay, transmitter, process rack module, etc.), whose "as found" value is in excess of the calibration tolerance, but within the operability criteria (administratively controlled limit), is considered operable but must be recalibrated such that the "as left" value is within the two sided ($\pm$) calibration tolerance. Plant procedures set administrative limits ("as left" and "as found" criteria) to control the determination of operability by setting minimum standards based on the methodology in WCAP-10991 and the uncertainty values included in the determination of the Nominal Trip Setpoint, and allow the use of other device characteristics to evaluate operability. REPORTABLE EVENTS are identified when the minimum number of channels required to be operable are not met.

The methodology, as defined in WCAP-10991 to derive the Nominal Trip Setpoints, is based upon combining all of the uncertainties in the channels. Inherent in the determination of the Nominal Trip Setpoints are the magnitudes of these channel uncertainties. Sensors and other instrumentation utilized in these channels should be capable of operating within the allowances of these uncertainty magnitudes. Occasional drift in excess of the allowance may be determined to be acceptable based on the other device performance

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characteristics. Device drift in excess of the allowance that is more than occasional, may be indicative of more serious problems and would warrant further investigation.

The above Bases do not apply to the two radiation monitors in the ESF Table (Item 3C and Item 7E). For these radiation monitors the allowable values are essentially nominal values. Due to the uncertainties involved in radiological parameters, the methodologies of WCAP-10991 were not applied. Actual trip setpoints will be reestablished below the allowable value based on calibration accuracies and good practices.

Docket No. 50-423
B16624

Attachment 3

Millstone Nuclear Power Station Unit No. 3
Proposed Revision to Technical Specification
Instrumentation Surveillances
(PTSCR 3-30-97)
Retyped Pages

October 1997

RETYPE OF PROPOSED REVISION

Refer to the attached retype of the proposed revision to the Technical Specifications. The attached retype reflects the currently issued version of the Technical Specifications. Pending Technical Specification revisions or Technical Specification revisions issued subsequent to this submittal are not reflected in the enclosed retype. The enclosed retype should be checked for continuity with Technical Specifications prior to issuance.

SAFETY LIMITS AND LIMITING SAFETY SYSTEM SETTINGS

2.2 LIMITING SAFETY SYSTEM SETTINGS

REACTOR TRIP SYSTEM INSTRUMENTATION SETPOINTS

2.2.1 The Reactor Trip System Instrumentation Channel and Interlock Channel shall be OPERABLE.

APPLICABILITY: As shown for each channel in Table 3.3-1.

ACTION:

- a. With a Reactor Trip System Instrumentation Channel or Interlock Channel Nominal Trip Setpoint inconsistent with the value shown in the Nominal Trip Setpoint column of Table 2.2-1, adjust the Setpoint consistent with the Nominal Trip Setpoint value.
- b. With a Reactor Trip System Instrumentation Channel or Interlock Channel found to be inoperable, declare the channel inoperable and apply the applicable ACTION statement requirement of Specification 3.3.1 until the channel is restored to OPERABLE status.

TABLE 2.2-1

REACTOR TRIP SYSTEM INSTRUMENTATION TRIP SETPOINTS

<u>FUNCTIONAL UNIT</u>	<u>NOMINAL TRIP SETPOINT</u>	<u>ALLOWABLE VALUE</u>
1. Manual Reactor Trip	N.A.	N.A.
2. Power Range, Neutron Flux		
a. High Setpoint		
1) Four Loops Operating	109% of RTP**	$\leq 109.6\%$ of RTP**
2) Three Loops Operating	80% of RTP**	$\leq 80.6\%$ of RTP**
b. Low Setpoint	25% of RTP**	$\leq 25.6\%$ of RTP**
3. Power Range, Neutron Flux, High Positive Rate	5% of RTP** with a time constant ≥ 2 seconds	$\leq 5.6\%$ of RTP** with a time constant ≥ 2 seconds
4. Deleted		
5. Intermediate Range, Neutron Flux	25% of RTP**	$\leq 27.4\%$ of RTP**
6. Source Range, Neutron Flux	1×10^5 cps	$\leq 1.06 \times 10^5$ cps
7. Overtemperature ΔT		
a. Four Loops Operating		
1) Channels I, II	See Note 1	See Note 2
2) Channels III, IV	See Note 1	See Note 2

**RTP = RATED THERMAL POWER

TABLE 2.2-1 (Continued)

REACTOR TRIP SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	NOMINAL TRIP SETPOINT	ALLOWABLE VALUE
b. Three Loops Operating		
1) Channels I, II	See Note 1	See Note 2
2) Channels III, IV	See Note 1	See Note 2
8. Overpower ΔT (Four Loops Operating)	See Note 3	See Note 4
9. Pressurizer Pressure-Low	1900 psia	≥ 1897.6 psia
10. Pressurizer Pressure-High	2385 psia	≤ 2387.4 psia
11. Pressurizer Water Level-High	89% of instrument span	$\leq 89.3\%$ of instrument span
12. Reactor Coolant Flow-Low	90% of loop design flow*	$\geq 89.8\%$ of loop design flow*
13. Steam Generator Water Level Low-Low	18.1% of narrow range instrument span	$\geq 17.8\%$ of narrow range instrument span
14. General Warning Alarm	N.A.	N.A.
15. Low Shaft Speed - Reactor Coolant Pumps	92.4% of rated speed	$\geq 92.2\%$ of rated speed

*Minimum Measured Flow Per Loop = 1/4 of the RCS Flow Rate Limit as listed in Section 3.2.3.1.a (Four Loops Operating); 1/3 of the RCS Flow Rate Limit as listed in Section 3.2.3.2.a (Three Loops Operating)

TABLE 2.2-1 (Continued)

REACTOR TRIP SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	NOMINAL TRIP SETPOINT	ALLOWABLE VALUE
16. Turbine Trip		
a. Low Fluid Oil Pressure	500 psig	≥ 450 psig
b. Turbine Stop Valve Closure	1% open	$\geq 1\%$ open
17. Safety Injection Input from ESF	N.A.	N.A.
18. Reactor Trip System Interlocks		
a. Intermediate Range Neutron Flux, P-6	1×10^{-10} amp	$\geq 9.0 \times 10^{-11}$ amp
b. Low Power Reactor Trips Block, P-7		
1) P-10 input (Note 5)	11% of RTP**	$\leq 11.6\%$ of RTP**
2) P-13 input	10% RTP** Turbine Impulse Pressure Equivalent	$\leq 10.6\%$ RTP** Turbine Impulse Pressure Equivalent
c. Power Range Neutron Flux, P-8		
1) Four Loops Operating	37.5% of RTP**	$\leq 38.1\%$ of RTP**
2) Three Loops Operating	37.5% of RTP**	$\leq 38.1\%$ of RTP**

 **RTP = RATED THERMAL POWER

TABLE 2.2-1 (Continued)

REACTOR TRIP SYSTEM INSTRUMENTATION TRIP SETPOINTS

<u>FUNCTIONAL UNIT</u>	<u>NOMINAL TRIP SETPOINT</u>	<u>ALLOWABLE VALUE</u>
d. Power Range Neutron Flux, P-9	51% of RTP**	$\leq 51.6\%$ of RTP**
e. Power Range Neutron Flux, P-10 (Note 6)	9% of RTP**	$\geq 8.4\%$ of RTP**
19. Reactor Trip Breakers	N.A.	N.A.
20. Automatic Trip and Interlock Logic	N.A.	N.A.
21. Three Loop Operation Bypass Circuitry	N.A.	N.A.

**RTP = RATED THERMAL POWER

TABLE 2.2-1 (Continued)

TABLE NOTATIONS (Continued)

NOTE 1: (Continued)

T'	$\leq 587.1^{\circ}\text{F}$ (Nominal T_{avg} at RATED THERMAL POWER);
K_3	$= 0.001311/\text{psi}$;
P	$=$ Pressurizer pressure, psia;
P'	$= 2250$ psia (Nominal RCS operating pressure);
S	$=$ Laplace transform operator, s^{-1} ;

and $f_1(\Delta I)$ is a function of the indicated difference between top and bottom detectors of the power-range neutron ion chambers; with gains to be selected based on measured instrument response during plant startup tests such that:

- (1) For $q_t - q_b$ between -26% and $+3\%$, $f_1(\Delta I) = 0$, where q_t and q_b are percent RATED THERMAL POWER in the top and bottom halves of the core respectively, and $q_t + q_b$ is total THERMAL POWER in percent of RATED THERMAL POWER;
- (2) For each percent that the magnitude of $q_t - q_b$ exceeds -26% , the ΔT Trip Setpoint shall be automatically reduced by 3.55% of its value at RATED THERMAL POWER; and
- (3) For each percent that the magnitude of $q_t - q_b$ exceeds $+3\%$, the ΔT Trip Setpoint shall be automatically reduced by 1.98% of its value at RATED THERMAL POWER.

NOTE 2: The maximum channel as left trip setpoint shall not exceed its computed trip setpoint by more than the following:

- (1) 0.4% ΔT span for the ΔT channel
- (2) 0.4% ΔT span for the T_{avg} channel
- (3) 0.4% ΔT span for the pressurizer pressure channel
- (4) 0.8% ΔT span for the $f(\Delta I)$ channel

TABLE 2.2-1 (Continued)

TABLE NOTATIONS (Continued)

NOTE 3: (Continued)

K_6	=	$0.00180/^{\circ}\text{F}$ for $T > T^*$ and $K_6 = 0$ for $T \leq T^*$,
T	=	As defined in Note 1,
T^*	=	Indicated T_{avg} at RATED THERMAL POWER (Calibration temperature for ΔT instrumentation, $\leq 587.1^{\circ}\text{F}$),
S	=	As defined in Note 1, and
$f_2(\Delta I)$	=	0 for all ΔI .

NOTE 4: The maximum channel as left trip setpoint shall not exceed its computed trip setpoint by more than 0.4% ΔT span for the ΔT channel and 0.4% ΔT span for the T_{avg} channel.

NOTE 5: Setpoint is for increasing power.

NOTE 6: Setpoint is for decreasing power.

2.2 LIMITING SAFETY SYSTEM SETTINGS

BASES

2.2.1 REACTOR TRIP SYSTEM INSTRUMENTATION SETPOINTS

The Nominal Trip Setpoints specified in Table 2.2-1 are the nominal values at which the reactor trips are set for each functional unit. The Allowable Values (Nominal Trip Setpoints $\pm$ the calibration tolerance) are considered the Limiting Safety System Settings as identified in 10CFR50.36 and have been selected to ensure that the core and Reactor Coolant System are prevented from exceeding their safety limits during normal operation and design basis anticipated operational occurrences and to assist the Engineered Safety Features Actuation System in mitigating the consequences of accidents. The Setpoint for a Reactor Trip System or interlock function is considered to be consistent with the nominal value when the measured "as left" Setpoint is within the administratively controlled ($\pm$) calibration tolerance identified in plant procedures (which specifies the difference between the Allowable Value and Nominal Trip Setpoint). Additionally, the Nominal Trip Setpoints may be adjusted in the conservative direction provided the calibration tolerance remains unchanged.

Measurement and Test Equipment accuracy is administratively controlled by plant procedures and is included in the plant uncertainty calculations as defined in WCAP-10991. Operability determinations are based on the use of Measurement and Test Equipment that conforms with the accuracy used in the plant uncertainty calculation.

The Allowable Value specified in Table 2.2-1 is the initial value for consideration of channel operability. If the process rack bistable setting is measured within the "as left" calibration tolerance, which specifies the difference between the Allowable Value and Nominal Trip Setpoint, then the channel is considered to be operable.

Additionally, an administratively controlled limit for operability of a device is determined by device drift being less than the value required for the surveillance interval. In the event the device exceeds the administratively controlled limit, operability of the device may be evaluated by other device performance characteristics, e.g., comparison to historical device drift data, calibration characteristics, response characteristics, and short-term drift characteristics. A device (RTD, relay, transmitter, process rack module, etc.), whose "as found" value is in excess of the calibration tolerance, but within the operability criteria (administratively controlled limit), is considered operable but must be recalibrated such that the "as left" value is within the two sided ($\pm$) calibration tolerance. Plant procedures set administrative limits ("as left" and "as found" criteria) to control the determination of operability by setting minimum standards based on the methodology in WCAP-10991 and the uncertainty values included in the determination of the Nominal Trip Setpoint, and allow the use of other device characteristics to evaluate operability. REPORTABLE EVENTS are identified when the minimum number of channels required to be operable are not met.

2.2 LIMITING SAFETY SYSTEM SETTINGS

BASES

REACTOR TRIP SYSTEM INSTRUMENTATION SETPOINTS (Continued)

The methodology, as defined in WCAP-10991 to derive the Nominal Trip Setpoints, is based upon combining all of the uncertainties in the channels. Inherent in the determination of the Nominal Trip Setpoints are the magnitudes of these channel uncertainties. Sensors and other instrumentation utilized in these channels should be capable of operating within the allowances of these uncertainty magnitudes. Occasional drift in excess of the allowance may be determined to be acceptable based on the other device performance characteristics. Device drift in excess of the allowance that is more than occasional, may be indicative of more serious problems and would warrant further investigation.

The various reactor trip circuits automatically open the reactor trip breakers whenever a condition monitored by the Reactor Trip System reaches a preset or calculated level. In addition to the redundant channels and trains, the design approach provides Reactor Trip System functional diversity. The functional capability at the specified trip setting is required for those anticipatory or diverse reactor trips for which no direct credit was assumed in the safety analysis to enhance the overall reliability of the Reactor Trip System. The Reactor Trip System initiates a turbine trip signal whenever reactor trip is initiated. This prevents the reactivity insertion that would otherwise result from excessive Reactor Coolant System cooldown and thus avoids unnecessary actuation of the Engineered Safety Features Actuation System.

Manual Reactor Trip

The Reactor Trip System includes manual Reactor trip capability.

Power Range Neutron Flux

In each of the Power Range Neutron Flux channels there are two independent bistables, each with its own trip setting used for a High and Low Range trip setting. The Low Setpoint trip provides protection during subcritical and low power operations to mitigate the consequences of a power excursion beginning from low power, and the High Setpoint trip provides protection during power operations to mitigate the consequences of a reactivity excursion from all power levels. The High Setpoint trip is reduced during three loop operation to a value consistent with the safety analysis.

The Low Setpoint trip may be manually blocked above P-10 (a power level of approximately 10% of RATED THERMAL POWER) and is automatically reinstated below the P-10 Setpoint.

2.2 LIMITING SAFETY SYSTEM SETTINGS

BASES

REACTOR TRIP SYSTEM INSTRUMENTATION SETPOINTS (Continued)

Power Range, Neutron Flux, High Positive Rate

The Power Range Positive Rate trip provides protection against rapid flux increases which are characteristic of a rupture of a control rod drive housing. Specifically, this trip complements the Power Range Neutron Flux High and Low trips to ensure that the criteria are met for all rod ejection accidents.

INSTRUMENTATION

3/4.3.2 ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.2 The Engineered Safety Features Actuation System (ESFAS) instrumentation channels and interlocks shown in Table 3.3-3 shall be OPERABLE.

APPLICABILITY: As shown in Table 3.3-3.

ACTION:

- a. With an ESFAS Instrumentation Channel or Interlock Channel Nominal Trip Setpoint inconsistent with the value shown in the Nominal Trip Setpoint column of Table 3.3-4, adjust the Setpoint consistent with the Nominal Trip Setpoint value.
- b. With an ESFAS Instrumentation Channel or Interlock Channel found to be inoperable, declare the channel inoperable and apply the applicable ACTION statement requirements of Table 3.3-3 until the channel is restored to OPERABLE status.

TABLE 3.3-4

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	NOMINAL TRIP SETPOINT	ALLOWABLE VALUE
1. Safety Injection (Reactor Trip, Feedwater Isolation, Control Building Isolation (Manual Initiation Only), Start Diesel Generators, and Service Water)		
a. Manual Initiation	N.A.	N.A.
b. Automatic Actuation Logic	N.A.	N.A.
c. Containment Pressure--High 1	17.7 psia	≤ 17.9 psia
d. Pressurizer Pressure--Low		
1) Channels I and II	1892 psia	≥ 1889.6 psia
2) Channel III and IV	1892 psia	≥ 1889.6 psia
e. Steam Line Pressure--Low	658.6 psig*	≥ 654.7 psig*
2. Containment Spray (CDA)		
a. Manual Initiation	N.A.	N.A.
b. Automatic Actuation Logic and Actuation Relays	N.A.	N.A.
c. Containment Pressure--High-3	22.7 psia	≤ 22.9 psia
3. Containment Isolation		
a. Phase "A" Isolation		
1) Manual Initiation	N.A.	N.A.

TABLE 3.3-4

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	NOMINAL TRIP SETPOINT	ALLOWABLE VALUE
3. Containment Isolation (Continued)		
2) Automatic Actuation Logic and Actuation Relays	N.A.	N.A.
3) Safety Injection	See Item 1. above for all Safety Injection Trip Setpoints and Allowable Values.	
b. Phase "B" Isolation		
1) Manual Initiation	N.A.	N.A.
2) Automatic Actuation Logic and Actuation Relays	N.A.	N.A.
3) Containment Pressure-- High-3	22.7 psia	≤ 22.9 psia
c. Purge Isolation	≤ 1 R/h	≤ 1 R/h
4. Steam Line Isolation		
a. Manual Initiation	N.A.	N.A.
b. Automatic Actuation Logic and Actuation Relays	N.A.	N.A.
c. Containment Pressure--High-2	17.7 psia	≤ 17.9 psia
d. Steam Line Pressure--Low	658.6 psig*	≥ 654.7 psig*
e. Steam Line Pressure - Negative Rate--High	100 psi/s**	≤ 103.9 psi/s**

TABLE 3.3-4

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	NOMINAL TRIP SETPOINT	ALLOWABLE VALUE
5. Turbine Trip and Feedwater Isolation		
a. Automatic Actuation Logic Actuation Relays	N.A.	N.A.
b. Steam Generator Water Level--High-High (P-14)	80.5% of narrow range instrument span.	$\leq 80.8\%$ of narrow range instrument span.
c. Safety Injection Actuation Logic	See Item 1. above for all Safety Injection Trip Setpoints and Allowable Values.	
d. T _{ave} Low Coincident with Reactor Trip (P-4)		
1) Four Loops Operating	564°F	$\geq 563.6^\circ\text{F}$
2) Three Loops Operating	564°F	$\geq 563.6^\circ\text{F}$
6. Auxiliary Feedwater		
a. Manual Initiation	N.A.	N.A.
b. Automatic Actuation Logic and Actuation Relays	N.A.	N.A.
c. Steam Generator Water Level--Low-Low		
1) Start Motor-Driven Pumps	18.1% of narrow range instrument span.	$\geq 17.8\%$ of narrow range instrument span.

TABLE 3.3-4 (Continued)
ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	NOMINAL TRIP SETPOINT	ALLOWABLE VALUE
6. Auxiliary Feedwater (Continued)		
2) Start Turbine-Driven Pumps	18.1% of narrow range instrument span.	$\geq 17.8\%$ of narrow range instrument span.
d. Safety Injection	See Item 1. above for all Safety Injection Trip Setpoints and Allowable Values.	
e. Loss-of-Offsite Power Start Motor-Driven Pumps	2800V	$\geq 2720V$
f. Containment Depressurization Actuation (CDA) Start Motor-Driven Pumps	See Item 2. above for all CDA Trip Setpoints and Allowable Values.	
7. Control Building Isolation		
a. Manual Actuation	N.A.	N.A.
b. Manual Safety Injection Actuation	N.A.	N.A.
c. Automatic Actuation Logic and Actuation Relays	N.A.	N.A.
d. Containment Pressure--High 1	17.7 psia	≤ 17.9 psia
e. Control Building Inlet Ventilation Radiation	$\leq 1.5 \times 10^{-5} \mu\text{Ci/cc}$	$\leq 1.5 \times 10^{-5} \mu\text{Ci/cc}$

TABLE 3.3-4 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION TRIP SETPOINTS

<u>FUNCTIONAL UNIT</u>	<u>NOMINAL TRIP SETPOINT</u>	<u>ALLOWABLE VALUE</u>
8. Loss of Power		
a. 4 kV Bus Undervoltage (Loss of Voltage)	2800 volts with $a \leq 2$ second time delay.	≥ 2720 volts with $a \leq 2$ second time delay.
b. 4 kV Bus Undervoltage (Grid Degraded Voltage)	3730 volts with $a \leq 8$ second time delay with ESF actuation or ≤ 300 second time delay without ESF actuation.	≥ 3706 volts with $a \leq 8$ second time delay with ESF actuation or ≤ 300 second time delay without ESF actuation.
9. Engineered Safety Features Actuation System interlocks		
a. Pressurizer Pressure, P-11	1999.7 psia	≤ 2002.1 psia
b. Low-Low T_{avg} , P-12	553°F	$\geq 552.6^\circ\text{F}$
c. Reactor Trip, P-4	N.A.	N.A.
10. Emergency Generator Load Sequencer	N.A.	N.A.

3/4.3 INSTRUMENTATION

BASES

3/4.3.1 and 3/4.3.2 REACTOR TRIP SYSTEM INSTRUMENTATION and ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION

The OPERABILITY of the Reactor Trip System and the Engineered Safety Features Actuation System instrumentation and interlocks ensures that: (1) the associated action and/or Reactor trip will be initiated when the parameter monitored by each channel or combination thereof reaches its setpoint, (2) the specified coincidence logic is maintained, (3) sufficient redundancy is maintained to permit a channel to be out of service for testing or maintenance, and (4) sufficient system functional capability is available from diverse parameters.

The OPERABILITY of these systems is required to provide the overall reliability, redundancy, and diversity assumed available in the facility design for the protection and mitigation of accident and transient conditions. The integrated operation of each of these systems is consistent with the assumptions used in the safety analyses. The Surveillance Requirements specified for these systems ensure that the overall system functional capability is maintained comparable to the original design standards. The periodic surveillance tests performed at the minimum frequencies are sufficient to demonstrate this capability.

The Engineered Safety Features Actuation System Nominal Trip Setpoints specified in Table 3.3-4 are the nominal values of which the bistables are set for each functional unit. The Allowable Values (Nominal Trip Setpoints $\pm$ the calibration tolerance) are considered the Limiting Safety System Settings as identified in 10CFR50.36 and have been selected to mitigate the consequences of accidents. A Setpoint is considered to be consistent with the nominal value when the measured "as left" Setpoint is within the administratively controlled ($\pm$) calibration tolerance identified in plant procedures (which specifies the difference between the Allowable Value and Nominal Trip Setpoint). Additionally, the Nominal Trip Setpoints may be adjusted in the conservative direction provided the calibration tolerance remains unchanged.

Measurement and Test Equipment accuracy is administratively controlled by plant procedures and is included in the plant uncertainty calculations as defined in WCAP-10991. Operability determinations are based on the use of Measurement and Test Equipment that conforms with the accuracy used in the plant uncertainty calculation.

The Allowable Value specified in Table 3.3-4 is the initial value for consideration of channel operability. If the process rack bistable setting is measured within the "as left" calibration tolerance, which specifies the difference between the Allowable Value and Nominal Trip Setpoint, then the channel is considered to be operable.

INSTRUMENTATION

BASES

3/4.3.1 and 3/4.3.2 REACTOR TRIP SYSTEM INSTRUMENTATION and ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION (Continued)

Additionally, an administratively controlled limit for operability of a device is determined by device drift being less than the value required for the surveillance interval. In the event the device exceeds the administratively controlled limit, operability of the device may be evaluated by other device performance characteristics, e.g., comparison to historical device drift data, calibration characteristics, response characteristics, and short-term drift characteristics. A device (RTD, relay, transmitter, process rack module, etc.), whose "as found" value is in excess of the calibration tolerance, but within the operability criteria (administratively controlled limit), is considered operable but must be recalibrated such that the "as left" value is within the two sided ($\pm$) calibration tolerance. Plant procedures set administrative limits ("as left" and "as found" criteria) to control the determination of operability by setting minimum standards based on the methodology in WCAP-10991 and the uncertainty values included in the determination of the Nominal Trip Setpoint, and allow the use of other device characteristics to evaluate operability. REPORTABLE EVENTS are identified when the minimum number of channels required to be operable are not met.

The methodology, as defined in WCAP-10991 to derive the Nominal Trip Setpoints, is based upon combining all of the uncertainties in the channels. Inherent in the determination of the Nominal Trip Setpoints are the magnitudes of these channel uncertainties. Sensors and other instrumentation utilized in these channels should be capable of operating within the allowances of these uncertainty magnitudes. Occasional drift in excess of the allowance may be determined to be acceptable based on the other device performance characteristics. Device drift in excess of the allowance that is more than occasional, may be indicative of more serious problems and would warrant further investigation.

The above Bases do not apply to the two radiation monitors in the ESF Table (Item 3C and Item 7E). For these radiation monitors the allowable values are essentially nominal values. Due to the uncertainties involved in radiological parameters, the methodologies of WCAP-10991 were not applied. Actual trip setpoints will be reestablished below the allowable value based on calibration accuracies and good practices.

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B16624

Attachment 4

Milestone Nuclear Power Station Unit No. 3
Proposed Revision to Technical Specification
Instrumentation Surveillances
(PTSC R 3-30-97)
Background and Safety Assessment

October 1997

Background

Northeast Nuclear Energy Company (NNECO) is proposing to modify the Technical Specifications to reflect a two column format and to revise the allowable values based on the Westinghouse analyses of historical instrument data contained in Westinghouse Report Nos. WCAP-14354 (May 1995) and WCAP-10991 Rev. 5 (August 1997)

Safety Assessment

Currently Millstone Unit No. 3 Technical Specifications utilize the concept of an allowable value in combination with a total allowance for drift and other inaccuracies as a means of triggering an operability determination for a channel. This does not accurately satisfy the plant procedures and practices for determining equipment operability. Based on Millstone Unit No. 3 equipment performance, Westinghouse has developed an enhanced method of determining equipment operability without the restrictions of the 5 column technical specification.

Based on the evaluation of equipment drift data for Millstone Unit No. 3 over the past 4 cycles, the need to reduce Technical Specification changes and the objective of the future increase of the surveillance intervals, from the current 18 month interval to a nominal 24 month interval, for RTS and ESFAS functions, NNECO proposes to use the allowable value as a means for establishing the initial acceptance criteria for the process rack bistable operability criteria in the Millstone Unit 3 Technical Specifications.

Additional operability criteria for sensors and racks would be included in the Millstone Unit No. 3 administrative procedures (surveillance procedures), controlled by NNECO and be based on the following:

- The identification of trigger points based on actual channel instrumentation drift.
- Ability to recalibrate the hardware with acceptable calibration tolerances.
- The evaluation of equipment performance over time utilizing actual plant drift performance data as part of a monitoring program.

To accomplish the Operability Criteria, NNECO has collected RTS/ESFAS function hardware data over the past four (4) operating cycles of Millstone Unit No. 3, in accordance with Generic Letter 91-04 Enclosure 2. This data was further analyzed by Westinghouse, utilizing enhanced methods of determining equipment operability.

Analysis has demonstrated that adequate margin for nominal trip setpoints exist and safety analysis limits are preserved in all RTS/ESFAS functions.

Based on this analysis, NNECO is proposing that the Millstone Unit No. 3 Technical Specification reflect nominal trip setpoints and allowable values for RTS/ESFAS Table 2.2-1 and Table 3.3-4.

In addition, the proposed change decreases the reactor trip setpoint for the reactor coolant pump (RCP) low shaft speed (underspeed trip setpoint) from 95.8 percent to 92.4 percent of rated speed.

Changing the RCP low shaft speed trip setpoint will not change the probability of occurrence or consequences of a loss of forced RC flow event. The existing accident analysis (Millstone Unit No. 3 FSAR section 15.3.2) of the complete loss of forced reactor coolant flow remains valid for the proposed change. The Safety Analysis Limit, 92% of Rated Normal Speed (RNS), has not been changed. The Nominal Trip Setpoint was reduced from 95.8% RNS to 92.4% RNS to decrease the incidence of inadvertent tripping caused by transient power line frequency variations. The Allowable Value has been changed to bring it closer to the Nominal Trip Setpoint. The reduction in the number of challenges to the Reactor Coolant Pump Underspeed Trip Channels caused by transient power line frequency variations increases the reliability of the trip channels. Although the Nominal Trip Setpoint is now closer to the Safety Analysis Limit, the Margin between the Total Allowance and the Channel Statistical Allowance remains unchanged. Therefore, the change to the RCP low shaft speed trip setpoint does not increase the probability or consequences of any previously analyzed malfunction.

NNECO is also requesting the Bases Section, 2.2.1, for RTS and Bases Section 3/4.3 for ESFAS be changed to accommodate the operability requirements for the RTS and ESFAS respectively.

Based on the above, the proposed Technical Specification change is safe.

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Attachment 5

Millstone Nuclear Power Station Unit No. 3
Proposed Revision to Technical Specification
Instrumentation Surveillances
(PTSCR 3-30-97)

Significant Hazards Consideration and Environmental Considerations

October 1997

Significant Hazards Consideration

NNECO has reviewed the proposed revision in accordance with 10CFR50.92 and has concluded that the revision does not involve a significant hazards consideration (SHC). The basis for this conclusion is that the three criteria of 10CFR50.92(c) are not satisfied. The proposed revision does not involve a SHC because the revision would not:

1. Involve a significant increase in the probability, or consequence of an accident previously evaluated.

The proposed changes to Tables 2.2-1 and 3.3-4 involve changes from a five column format to a two column format. The RTS trip setpoints and ESFAS trip setpoints remain unchanged with the exception of the RCP low shaft speed trip setpoint discussed below. Detailed operability criteria will be moved to surveillance procedures and analysis has demonstrated that an adequate margin for normal trip setpoints exist and safety analysis limits are preserved in all RTS/ESFAS functions.

Changing the RCP low shaft speed trip setpoint will not change the probability of occurrence of the event. The existing accident analysis (Millstone Unit No. 3 FSAR section 15.3.2) of the complete loss of forced reactor coolant flow remains valid for the proposed change. Therefore, the change to the RCP low shaft speed trip setpoint does not increase the probability or consequences of any previously analyzed accident.

In addition, the proposed changes to Tables 2.2-1 and 3.3-4 do not alter the intent or method by which the surveillances are conducted. Therefore, the scope of evaluation performed gives reasonable assurance that there will not be an adverse impact on the consequences or the probability of any previously analyzed accident.

Therefore, the proposed revision does not involve a significant increase in the probability or consequence of an accident previously evaluated.

2. Create the possibility of a new or different kind of accident from any accident previously evaluated.

The existing design basis adequately covers the plant response with the proposed change to the RCP low shaft speed trip setpoint. The change does not introduce new failure modes

The proposed changes to Tables 2.2-1 and 3.3-4 do not modify the design or operation of any plant system. The proposed changes do not alter the intent or

method by which the surveillances are conducted, other than adjusting the allowable values to reflect historical instrument performance data. Therefore, the proposed revision does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Involve a significant reduction in a margin of safety.

The proposed changes to Tables 2.2-1 and 3.3-4 modify the existing five column format to a two column format to show the RTS and ESFAS nominal trip setpoints and the process rack bistable allowable values for individual functions. Detailed operability criteria will be moved to the surveillance procedures. With the exception of the low shaft speed trip discussed below, the RTS and ESFAS setpoints remain unchanged and analysis has demonstrated that an adequate margin for normal trip setpoints exist and safety analysis limits are preserved in all RTS/ESFAS functions.

Since the safety limits of the design are still met, the proposed change to the RCP low shaft speed trip setpoint does not reduce the margin of safety.

Therefore, the proposed revision does not involve a significant reduction in a margin of safety.

In conclusion, based on the information provided, it is determined that the proposed revision does not involve an SHC.

Environmental Considerations

NNECO has reviewed the proposed license amendment against the criteria of 10CFR51.22 for environmental considerations. The proposed revision does not involve a SHC, does not significantly increase the type and amounts of effluents that may be released offsite, nor significantly increase individual or cumulative occupational radiation exposures. Based on the foregoing, NNECO concludes that the proposed revision meets the criteria delineated in 10CFR51.22(c)(9) for categorical exclusion from the requirements for environmental review.

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10CFR2-790
MATERIAL

Attachment 6

Millstone Nuclear Power Station Unit No. 3
Proposed Revision to Technical Specification
Instrumentation Surveillances
(PTSCR 3-30-97)
Westinghouse Supporting Information

October 1997

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