FNP Unit 1

Technical Specifications

Changed Pages

Unit 1	Revision
Page 2-6	Replace
Page 3/4 3-27	Replace
Page 3/4 3-28	Replace

TABLE 2.2-1 (Continued)

REACTOR TRIP SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	TRIP SETPOINT	ALLOWABLE VALUES
13. Steam Generator Water Level--Low-Low	≥ 25% of narrow range instrument span - each steam generator	≥ 23.3% of narrow range instrument span - each steam generator
14. Deleted	--------	--------
15. Undervoltage - Reactor Coolant Pumps	≥ 2680 volts - each bus	≥ 2640 volts - each bus
16. Underfrequency Reactor Coolant Pumps	≥ 57.0 Hz - each bus	≥ 56.9 Hz - each bus
17. Turbine Trip		
A. Low Auto Stop Pressure	≥ 45 psig	≥ 43 psig
B. Turbine Stop Valve Closure	Not Applicable	Not Applicable
18. Safety Injection Input from ESF	Not Applicable	Not Applicable
19. Reactor Coolant Pump Breaker Position Trip	Not Applicable	Not Applicable

TABLE 3.3-4 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	TRIP SETPOINT	ALLOWABLE VALUES
4. STEAM LINE ISOLATION		
a. Manual	Not Applicable	Not applicable
b. Automatic Actuation Logic	Not Applicable	Not Applicable
c. Containment Pressure--High-High	≤ 16.2 psig	≤ 17.5 psig
d. Steam Flow in Two Steam Lines--High, Coincident with Tavg--Low-Low	≤ A function defined as follows: A Δp corresponding to 40% of full steam flow between 0% and 20% load and then a Δp increasing linearly to a Δp corresponding to 110% of full steam flow at full load with $T_{avg} \geq 543°F$	≤ A function defined defined as follows: A Δp corresponding to 44% of full steam flow between 0% and 20% load and then a Δp increasing linearly to a Δp corresponding to 111.5% of full steam flow at full load with $T_{avg} \geq 540°F$
e. Steam Line Pressure--Low	≥ 585 psig	≥ 575 psig
5. TURBINE TRIP AND FEED WATER ISOLATION		
a. Steam Generator Water Level--High-High	≤ 79.2% of narrow range instrument span each steam generator	≤ 80.5% of narrow range instrument span each steam generator

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	TRIP SETPOINT	ALLOWABLE VALUES
6. AUXILIARY FEEDWATER		
a. Automatic Actuation Logic	N.A.	N.A.
b. Steam Generator Water Level--Low-Low	≥ 25% of narrow range instrument span each steam generator	≥ 23.3% of narrow range instrument span each steam generator
c. Undervoltage - RCP	≥ 2680 volts	≥ 2640 volts
d. S.I.	See 1 above (all SI setpoints)	
e. Trip of Main Feedwater Pumps	N.A.	N.A.
7. LOSS OF POWER		
a. 4.16 kv Emergency Bus Undervoltage (Loss of Voltage)	≥ 3255 volts bus voltage*	≥ 3222 volts bus voltage* ≤ 3418 volts bus voltage*
b. 4.16 kv Emergency Bus Undervoltage (Degraded Voltage)	≥ 3675 volts bus voltage*	≥ 3638 volts bus voltage* ≤ 3749 volts bus voltage*
8. ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INTERLOCKS		
a. Pressurizer Pressure, P-11	≤ 2000 psig	≤ 2010 psig
b. Low-Low T_{avg}, P-12		
(Increasing)	544°F	≤ 547°F
(Decreasing)	543°F	≥ 540°F
c. Steam Generator Level, P-14	(See 5. above)	
d. Reactor Trip, P-4	N.A.	N.A.

* Refer to appropriate relay setting sheet calibration requirements.

TABLE 2.2-1 (Continued)

REACTOR TRIP SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	TRIP SETPOINT	ALLOWABLE VALUES
13. Steam Generator Water Level--Low - Low	≥25% ~~15%~~ of narrow range instrument span - each steam generator	23.3% ≥ ~~14.4%~~ narrow range instrument span - each steam generator
14. Deleted	---	---
15. Undervoltage - Reactor Coolant Pumps	≥ 2680 volts - each bus	≥ 2640 volts - each bus
16. Underfrequency - Reactor Coolant Pumps	≥ 57.0 Hz - each bus	≥ 56.9 HZ - each bus
17. Turbine Trip		
A. Low Auto Stop Pressure	≥ 45 psig	≥ 43 psig
B. Turbine Stop Valve Closure	Not Applicable	Not Applicable
18. Safety Injection Input from ESF	Not Applicable	Not Applicable
19. Reactor Coolant Pump Breaker Position Trip	Not Applicable	Not Applicable

TABLE 3.3-4 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	TRIP SETPOINT	ALLOWABLE VALUES
4. STEAM LINE ISOLATION		
a. Manual	Not Applicable	Not Applicable
b. Automatic Actuation Logic	Not Applicable	Not Applicable
c. Containment Pressure--High-High	≤ 16.2 psig	≤ 17.5 psig
d. Steam Flow in Two Steam Lines--High, Coincident with T_{avg}--Low-Low	≤ A function defined as follows: A Δp corresponding to 40% of full steam flow between 0% and 20% load and then a Δp increasing linearly to a Δp corresponding to 110% of full steam flow at full load with $T_{avg} \geq 543°F$	≤ A function defined as follows: A Δp corresponding to 44% of full steam flow between 0% and 20% load and then a Δp increasing linearly to a Δp corresponding to 111.5% of full steam flow at full load with $T_{avg} \geq 540°F$
e. Steam Line Pressure--Low	≥ 585 psig	≥ 575 psig
5. TURBINE TRIP AND FEED WATER ISOLATION		
a. Steam Generator Water Level--High-High	≤ 79.2% of narrow range instrument span each steam generator	≤ 80.5% of narrow range instrument span each steam generator

TABLE 3.3-4 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	TRIP SETPOINT	ALLOWABLE VALUES
6. AUXILIARY FEEDWATER		
a. Automatic Actuation Logic	N.A.	N.A.
b. Steam Generator Water Level--Low-Low	≥ 25% of narrow range instrument span each steam generator	≥ 23.3% of narrow range instrument span each steam generator
c. Undervoltage - RCP	≥ 2680 volts	≥ 2640 volts
d. S. I.	See 1 above (all SI setpoints)	
e. Trip of Main Feedwater Pumps	N.A.	N.A.
7. LOSS OF POWER		
a. 4.16 kv Emergency Bus Undervoltage (Loss of Voltage)	≥ 3255 volts bus voltage*	≥ 3222 volts bus voltage* ≤ 3418 volts bus voltage*
b. 4.16 kv Emergency Bus Undervoltage (Degraded Voltage)	≥ 3675 volts bus voltage*	≥ 3638 volts bus voltage* ≤ 3749 volts bus voltage*
8. ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INTERLOCKS		
a. Pressurizer Pressure, P-11	≤ 2000 psig	≤ 2010 psig
b. Low-Low T_{AVG}, P-12		
(Increasing)	544°F	≤ 547°F
(Decreasing)	543°F	≥ 540°F
c. Steam Generator Level, P-14	(See 5. Above)	
d. Reactor Trip, P-4	N.A.	N.A.

*Refer to appropriate relay setting sheet calibration requirements.

FNP Unit 2

Technical Specifications

Changed Pages

Unit 2	Revision
Page 2-6	Replace
Page 3/4 3-27	Replace
Page 3/4 3-28	Replace

TABLE 2.2-1 (Continued)

REACTOR TRIP SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	TRIP SETPOINT	ALLOWABLE VALUES
13. Steam Generator Water Level--Low-Low	≥ 25% of narrow range instrument span - each steam generator	≥ 23.3% of narrow range instrument span - each steam generator
14. Deleted	--------	--------
15. Undervoltage - Reactor Coolant Pumps	≥ 2680 volts - each bus	≥ 2640 volts - each bus
16. Underfrequency Reactor Coolant Pumps	≥ 57.0 Hz - each bus	≥ 56.9 Hz - each bus
17. Turbine Trip		
A. Low Auto Stop Pressure	≥ 45 psig	≥ 43 psig
B. Turbine Stop Valve Closure	Not Applicable	Not Applicable
18. Safety Injection Input from ESF	Not Applicable	Not Applicable
19. Reactor Coolant Pump Breaker Position Trip	Not Applicable	Not Applicable

TABLE 3.3-4 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	TRIP SETPOINT	ALLOWABLE VALUES
4. STEAM LINE ISOLATION		
a. Manual	Not Applicable	Not applicable
b. Automatic Actuation Logic	Not Applicable	Not Applicable
c. Containment Pressure--High-High	≤ 16.2 psig	≤ 17.5 psig
d. Steam Flow in Two Steam Lines--High, Coincident with Tavg--Low-Low	≤ A function defined as follows: A Δp corresponding to 40% of full steam flow between 0% and 20% load and then a Δp increasing linearly to a Δp corresponding to 110% of full steam flow at full load with T_{avg} ≥ 543°F	≤ A function defined defined as follows: A Δp corresponding to 44% of full steam flow between 0% and 20% load and then a Δp increasing linearly to a Δp corresponding to 111.5% of full steam flow at full load with T_{avg} ≥ 540°F
e. Steam Line Pressure--Low	≥ 585 psig	≥ 575 psig
5. TURBINE TRIP AND FEED WATER ISOLATION		
a. Steam Generator Water Level--High-High	≤ 79.2% of narrow range instrument span each steam generator	≤ 80.5% of narrow range instrument span each steam generator

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	TRIP SETPOINT	ALLOWABLE VALUES
6. AUXILIARY FEEDWATER		
a. Automatic Actuation Logic	N.A.	N.A.
b. Steam Generator Water Level--Low-Low	≥ 25% of narrow range instrument span each steam generator	≥ 23.3% of narrow range instrument span each steam generator
c. Undervoltage - RCP	≥ 2680 volts	≥ 2640 volts
d. S.I.	See 1 above (all SI setpoints)	
e. Trip of Main Feedwater Pumps	N.A.	N.A.
7. LOSS OF POWER		
a. 4.16 kv Emergency Bus Undervoltage (Loss of Voltage)	≥ 3255 volts bus voltage*	≥ 3222 volts bus voltage* ≤ 3418 volts bus voltage*
b. 4.16 kv Emergency Bus Undervoltage (Degraded Voltage)	≥ 3675 volts bus voltage*	≥ 3638 volts bus voltage* ≤ 3749 volts bus voltage*
8. ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INTERLOCKS		
a. Pressurizer Pressure, P-11	≤ 2000 psig	≤ 2010 psig
b. Low-Low T_{avg}, P-12		
(Increasing)	544°F	≤ 547°F
(Decreasing)	543°F	≥ 540°F
c. Steam Generator Level, P-14	(See 5. above)	
d. Reactor Trip, P-4	N.A.	N.A.

* Refer to appropriate relay setting sheet calibration requirements.

TABLE 2.2-1 (Continued)

REACTOR TRIP SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	TRIP SETPOINT	ALLOWABLE VALUES
13. Steam Generator Water Level--Low - Low	≥ 25% of narrow range instrument span - each steam generator	≥ 23.3% narrow range instrument span - each steam generator
14. Deleted		
15. Undervoltage - Reactor Coolant Pumps	≥ 2650 volts - each bus	≥ 2640 volts - each bus
16. Underfrequency - Reactor Coolant Pumps	≥ 57.0 Hz - each bus	≥ 56.9 HZ - each bus
17. Turbine Trip		
A. Low Auto Stop Pressure	≥ 45 psig	≥ 43 psig
B. Turbine Stop Valve Closure	Not Applicable	Not Applicable
18. Safety Injection Input from ESF	Not Applicable	Not Applicable
19. Reactor Coolant Pump Breaker Position Trip	Not Applicable	Not Applicable

TABLE 3.3-4 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	TRIP SETPOINT	ALLOWABLE VALUES
4. STEAM LINE ISOLATION		
a. Manual	Not Applicable	Not Applicable
b. Automatic Actuation Logic	Not Applicable	Not Applicable
c. Containment Pressure--High-High	$\leq$ 16.2 psig	$\leq$ 17.5 psig
d. Steam Flow in Two Steam Lines--High, Coincident with T_{avg}--Low-Low	$\leq$ A function defined as follows: A Δp corresponding to 40% of full steam flow between 0% and 20% load and then a Δp increasing linearly to a Δp corresponding to 110% of full steam flow at full load with $T_{avg} \geq 543°F$	$\leq$ A function defined as follows: A Δp corresponding to 44% of full steam flow between 0% and 20% load and then a Δp increasing linearly to a Δp corresponding to 111.5% of full steam flow at full load with $T_{avg} \geq 540°F$
e. Steam Line Pressure--Low	$\geq$ 585 psig	$\geq$ 575 psig
5. TURBINE TRIP AND FEED WATER ISOLATION		
a. Steam Generator Water Level--High-High	$\leq$ 79.2% of narrow range instrument span each steam generator	$\leq$ 80.5% of narrow range instrument span each steam generator

TABLE 3.3-4 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	TRIP SETPOINT	ALLOWABLE VALUES
6. AUXILIARY FEEDWATER		
a. Automatic Actuation Logic	N.A.	N.A.
b. Steam Generator Water Level--Low-Low	≥ 25% of narrow range instrument span each steam generator	≥ 23.3% of narrow range instrument span each steam generator
c. Undervoltage - RCP	≥ 2680 volts	≥ 2640 volts
d. S. I.	See 1 above (all SI setpoints)	
e. Trip of Main Feedwater Pumps	N.A.	N.A.
7. LOSS OF POWER		
a. 4.16 kv Emergency Bus Undervoltage (Loss of Voltage)	≥ 3255 volts bus voltage*	≥ 3222 volts bus voltage* ≤ 3418 volts bus voltage*
b. 4.16 kv Emergency Bus Undervoltage (Degraded Voltage)	≥ 3675 volts bus voltage*	≥ 3638 volts bus voltage* ≤ 3749 volts bus voltage*
8. ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INTERLOCKS		
a. Pressurizer Pressure, P-11	≤ 2000 psig	≤ 2010 psig
b. Low-Low T_{AVG}, P-12		
(Increasing)	544°F	≤ 547°F
(Decreasing)	543°F	≥ 540°F
c. Steam Generator Level, P-14	(See 5. Above)	
d. Reactor Trip, P-4	N.A.	N.A.

*Refer to appropriate relay setting sheet calibration requirements.

ATTACHMENT II

Westinghouse letter CAW-94-600, dated March 17, 1994, "Application For Withholding Proprietary Information From Public Disclosure," with the following enclosures: Affidavit, Proprietary Information Notice, and Copyright Notice.

WCAP-13992, Proprietary Class 2, "Steam Generator Lower Level Tap Relocation Assessment For J. M. Farley Nuclear Plant Units 1 and 2."

WCAP-13993, Proprietary Class 3, "Steam Generator Lower Level Tap Relocation Assessment For J. M. Farley Nuclear Plant Units 1 and 2."