PSE&G Public Service Electric and Gas Company

80 Park Plaza, Newark, NJ 07101 / 201 430-8217 MAILING ADDRESS / P.O. Box 570, Newark, NJ 07101

Robert L. Mittl General Manager
Nuclear Assurance and Regulation

September 23, 1985

Director of Nuclear Reactor Regulation
United States Nuclear Regulatory Commission
7920 Norfolk Avenue
Bethesda, Maryland 20814

Attention: Mr. Walter Butler, Chief
Licensing Branch 2
Division of Licensing

Gentlemen:

POWER ASCENSION PROGRAM
FSAR CHANGES
HOPE CREEK GENERATING STATION
DOCKET NO. 50-354

PSE&G's September 20, 1985 Power Ascension letter included an incorrect FSAR markup (Attachment 2). Please find attached to this letter the corrected FSAR markup which should be utilized in lieu of attachment 2 to the September 20, 1985 letter.

Very truly yours,

R.L. Mittl/BA Rusty

Attachment

C D.H. Wagner
USNRC Licensing Project Manager

A.R. Blough
USNRC Senior Resident Inspector

B001
1/1

Additions to FSAR Page 1.8-42

Appendix A
Paragraph 5.0

No startup tests will be performed with the reactor operating at natural circulation conditions since this is not an intended mode of operation for the plant. Technical Specifications also place limits on natural circulation operation resulting from an abnormal operational transient (two reactor recirculation pump trip).

TEST NO. (22)	TEST NAME	OPEN VESSEL	HEAT UP	1	2	3	[redacted]	5	6	WARRANTY
1	Chemical and Radiochemical	X	X	X		X		X	X	
2	Radiation Measurement	X	X	X		X			X	
3	Fuel Loading	X								
4	Full Core Shutdown Margin	X								
5	Control Rod Drive	X	X	X(2)	X(2)	X(2)			X(2)	
6	SRM Performance	X								
8	IRM Performance		X	X						
9	LPRM Calibration		[redacted]	X		X			X	
10	APRM Calibration		X	X	X	X		X	X	
11	Process Computer	X	X	X(3)		X		X		
12	RCIC		X	X						
13	HPCI		X			X				
14	Selected Process Temp		[redacted]			X	[redacted]		[redacted]	
14	Water Level Ref Leg Temp		X			X			X	
15	System Expansion	X	X	X		X			X	
16	TIP Uncertainty					X			X	
17	Core Performance			X	X	X		X	X	X
18	Steam Production									X
19	Core Pwr-Void Mode Response							X		
20	Pressure Regulator			X	X	X		X	X	
21	Feed Sys-Setpoint Changes		X	X	X	X		X	X	
21	Feed Sys-Loss FW Heating								X(5)	
21	Feedwater Pump Trip								X(6)	
21	Max FW Runout Capability								X(7)	
22	Turbine Valve Surveillance					X(8)		X(9)	X(10)	
23	MSIV Functional Test		X	X(11)	X(12)			X(13)		
23	MSIV Full Isolation								X	
24	Relief Valves		X	X(20)	X	X(20)			X(20)	
25	Turbine Trip & Load Rejection				X(15)	X(16)			X(17)	
26	Shutdown Outside CRC				X					
27	Recirculation Flow Control				X(14)			X(18)		
28	Recirc-One Pump Trip					X			X	
28	RPT Trip-Two Pumps					X(19)				
28	Recirc System Performance				X	X	[redacted]		X	
28	Recirc Pump Runback					X				
28	Recirc Sys Cavitation					X				
30	Loss of Offsite Pwr			X						
31	Pipe Vibration		X	X	X	X			X	
29	Recirc Flow Calibration					X			X	
32	RWCU		X							
33	RHR				X				X(21)	
34	Drywell & Steam Tunnel Cooling		X	X		X			X	
35	Gaseous Radwaste			X		X			X	
38	SACS Performance					X			X	
40	Confirmatory In-Plant Test				X					

(1) Test conditions refer to plant conditions on Figure 14.2-4

(2) Perform Test 5, timing of 4 slowest control rods, in conjunction with expected scrams

(3) Dynamic System Test Case to be completed between test conditions 1 and 3

[redacted]

(5) Between 80 and 90 percent thermal power, and near 100 percent core flow

(6) Max FW Runout Capability & Recirc Pump Runback must have already been completed

(7) Reactor power between 80 and 90 percent

(8) Reactor power between 45 and 65 percent

(9) Reactor power between 75 and 90 percent

(10) At maximum power that will not cause scram

(11) Perform between test conditions 1 and 3

(12) Reactor power between 40 and 55 percent

(13) Reactor power between 60 and 85 percent

(14) Between test conditions 2 and 3

(15) Generator load rejection, within bypass valve capacity

(16) Reactor power between 60 and 80 percent at core flow $\geq$ 95 percent - turbine trip

(17) Load rejection

(18) Between test conditions 5 and 6

(19) >50% power and $\geq$95 core flow, and performed before Turbine Trip & Load Rejection

(20) Check SRV set points during major scram tests

(21) Performed during cooldown from test condition 6

(22) The test number correlates to FSAR Section 14.2.12.3.x where x is the indicated test number.

HOPE CREEK
GENERATING STATION
FINAL SAFETY ANALYSIS REPORT

TEST SCHEDULE AND CONDITIONS

FIGURE 14.2-5

Amendment 10 05/85

above the reactor pressure to simulate the largest expected pipeline pressure drop. This CST testing is done to demonstrate general system operability and for making ~~meet~~ speed controller adjustments.

Reactor vessel injection tests follow to complete the controller adjustments and to demonstrate automatic starting from a cold standby condition. "Cold" is defined as a minimum 72 hours without any kind of RCIC operation. Data will be taken to determine the RCIC high steam flow isolation trip setpoint while injecting at rated flow to the reactor vessel.

After all final controller and system adjustments have been determined, a defined set of demonstration tests must be performed with that one set of adjustments. Two consecutive reactor vessel injections starting from cold conditions in the automatic mode must satisfactorily be performed to demonstrate system reliability. Following these tests, a set of CST injections are done to provide a benchmark for comparison with future surveillance tests.

After the auto start portion of certain of the above tests is completed, and while the system is still operating, small step disturbances in speed and flow command are input (in manual and automatic mode respectively) in order to demonstrate satisfactory stability. This is to be done at both low (above minimum turbine speed) and near rated flow initial conditions to span the RCIC operating range.

A demonstration of extended operation of up to two hours (or until pump and turbine oil temperature is stabilized) of continuous running at rated flow conditions is to be scheduled at a convenient time during the startup test program.

Depressing the manual initiation pushbutton is defined as automatic starting or automatic initiation of the RCIC system.

d. Acceptance Criteria

Level 1:

1. Following automatic initiation, the pump discharge flow must be equal to or greater than rated flow as specified in Section 5.4.6 within the time specified by the GE startup test specification.

1. By flow injection into a test line leading to the condensate storage tank (CST), and

2. By flow injection directly into the reactor vessel.

The earlier set of CST injection tests consist of manual and automatic mode starts at 200 psig and near rated reactor pressure conditions. The pump discharge pressure during these tests is throttled to be 100 psi above the reactor pressure to simulate the largest expected pipeline pressure drop. This CST testing is done to demonstrate general system operability and for making ~~most~~ speed controller adjustments.

Reactor vessel injection tests follow to complete the controller adjustments and to demonstrate automatic starting from a cold standby condition. "Cold" is defined as a minimum 72 hours without any kind of HPCI operation. Data will be taken to determine the HPCI high steam flow isolation trip setpoint while injecting at rated flow to the reactor vessel. Depressing the manual initiation pushbutton is defined as automatic starting or automatic initiation of the HPCI system.

After all final controller and system adjustments have been determined, a defined set of demonstration tests must be performed with that one set of adjustments. Two consecutive reactor vessel injections starting from cold conditions in the automatic mode must satisfactorily be performed to demonstrate system reliability. Following these tests, a set of CST injections are done to provide a benchmark for comparison with future surveillance tests.

After the auto start portion of certain of the above tests is completed, and while the system is still operating, small step disturbances in speed and flow command are input (in manual and automatic modes respectively) in order to demonstrate satisfactory stability. This is to be done at both low (above minimum turbine speed) and near rated flow initial conditions to span the HPCI operating range.

A continuous running test is to be scheduled at a convenient time during the startup test program. This demonstration of extended operation should be for up to 2 hours or until steady turbine and pump conditions are

reached or until limits on plant operation are encountered.

d. Acceptance Criteria

Level 1:

1. Following automatic initiation, the pump discharge flow must be equal to or greater than the rated flow, and within the time specified in Section 6.3.2.2.1.

2. The HPCI turbine shall not isolate or trip during automatic or manual start tests.

Level 2:

1. The speed and flow control loops are adjusted to meet the decay ratio specified in the GE startup test specification.

2. The turbine gland seal system is capable of preventing steam leakage to the atmosphere.

3. The delta-pressure setpoints for HPCI steam supply line high flow shall be calibrated to technical specification requirements using actual flow conditions.

4. In order to provide overspeed and isolation trip avoidance margin, the transient start speed peaks must not exceed the requirements of the GE startup test specification.

14.2.12.3.14 Selected Process and Water Level Reference Leg Temperatures

a. Objectives

1. To establish low speed limits for the recirculation pumps to avoid coolant temperature stratification in the reactor pressure vessel (RPV) bottom head region

1. To ensure that the measured bottom head drain temperature corresponds to bottom head coolant temperature during normal operation.

2. To measure the reactor water level instrument reference leg temperature and recalibrate the affected indicators if the measured temperature is different than expected.

b. Prerequisites

The plant is in a hot standby condition. System and test instrumentation have been installed.

c. Test Method

The bottom head drain line temperature sensor calibration will be verified by comparison with the recirculation loop coolant temperature when core flow is 100% of rated flow.

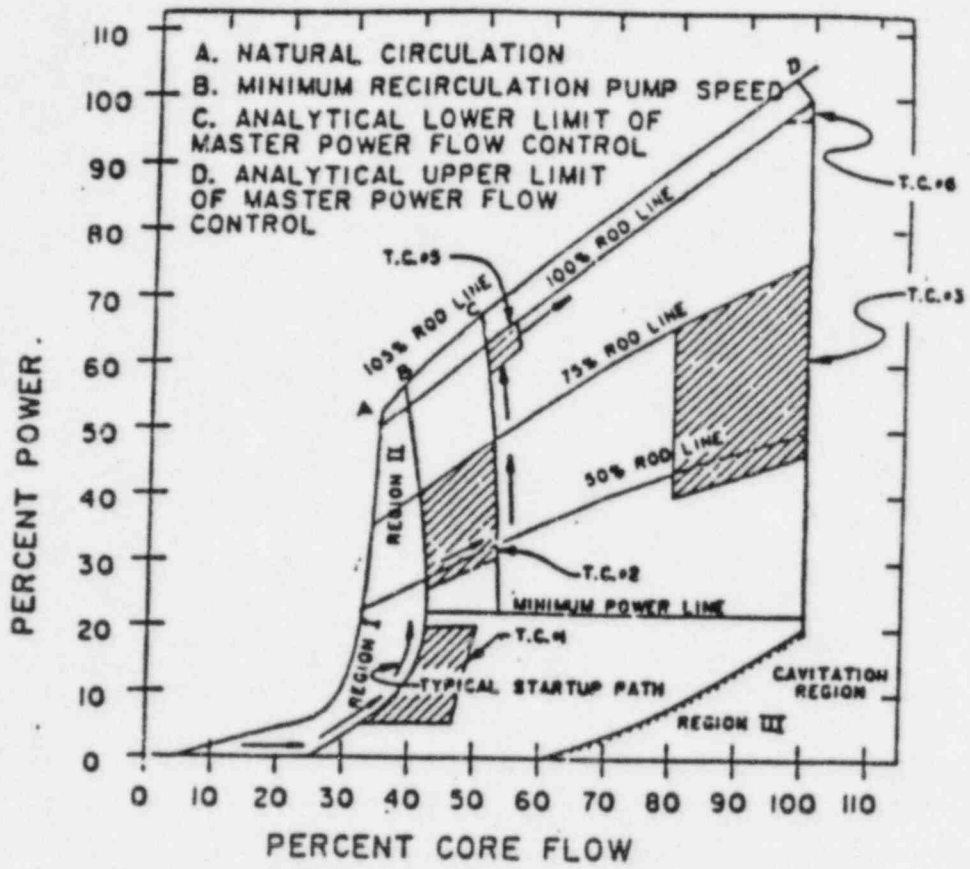
During initial heatup at hot standby conditions, the bottom drain line temperature and applicable reactor parameters are monitored as the recirculation pump speed is slowly lowered to determine the proper setting of the low speed limiter. The parameters above are also monitored during planned recirculation pump trips to determine if temperature stratification occurs in the idle loop(s) and to assure that idle loop-to-bulk coolant temperature differentials are within Technical Specification limits prior to restarting the pump(s). The bottom drain line temperature and applicable parameters are monitored when core flow is 100% of rated flow.

A test is also performed at rated temperature and pressure under steady state conditions to verify that the reference leg temperature of the level instrumentation is the value assumed during initial calibration. Recalibration will be performed if necessary.

d. Acceptance Criteria

Level 1:

1. The reactor recirculation pumps shall not be started unless the loop to loop delta-temperatures and steam dome to bottom drain delta-temperatures are within the technical specification limits.



TEST CONDITION (TC) REGION DEFINITIONS

TEST CONDITION NO.	POWER-FLOW MAP REGION AND NOTES
1	BEFORE OR AFTER MAIN GENERATOR SYNCHRONIZATION BETWEEN 5.% AND 20.% THERMAL POWER-WITHIN ±10.% OF M-G SET MINIMUM OPERATING SPEED LINE IN LOCAL MANUAL MODE.
2	AFTER MAIN GENERATOR SYNCHRONIZATION BETWEEN THE 45.% AND 75.% POWER ROD LINES BETWEEN M-G SET MINIMUM SPEEDS FOR LOCAL MANUAL AND MASTER MANUAL MODES THE LOWER POWER CORNER MUST BE LESS THAN BYPASS VALVE CAPACITY.
3	BETWEEN THE 45.% and 75.% POWER ROD LINES – CORE FLOW BETWEEN 80% AND 100.% OF ITS RATED VALUE.
4	Deleted.
5	WITHIN +0, -5% OF THE 100.% POWER ROD LINE – WITHIN 5.% OF THE ANALYTICAL OF THE LOWER LIMIT OF MASTER FLOW CONTROL.
6	WITHIN +0, -5% OF RATED 100.% POWER – WITHIN +0, -5% OF RATED 100.% CORE FLOW RATE.

HOPE CREEK
GENERATING STATION
FINAL SAFETY ANALYSIS REPORT

OPERATIONAL POWER/FLOW MAP

FIGURE 14.2-4

Amendment 1,8/83