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United States Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555

SUBJECT: Beaver Valley Power Station Unit No. 2
Docket No. 50-412
BVPS-2 FSAR Chapter 14, Test Change Status Report

Gentlemen:

Forwarded to NRC is the fourth status report identifying changes to the Initial Test Program as described in Chapter 14, of the FSAR. These changes are made in accordance with the provisions of 10CFR50.59 and reported to NRC in accordance with 50.59(b) within one month of initiating changes per BVPS-2 Facility Operating License Condition C.(3).

DUQUESNE LIGHT COMPANY

J. J. Carey
Senior Vice President

WRB/ijr
M11/WRB/NRC/STATUS
Attachment
AR/NAR

cc: Mr. P. Tam, Project Manager (w/a)
Mr. J. Beall, NRC Sr. Resident Inspector (w/a)
Mr. P. Wen, NRC Reactor Engineer, Region I (w/a)
INPO Records Center (w/a)

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BVPS-2 FSAR Chapter 14 Test Change Status Report

References: (a) DLC letter 2NRC-7-172, dated July 6, 1987, Mr. J. J. Carey to U. S. Nuclear Regulatory Commission

(b) DLC letter 2NRC-7-205, dated September 30, 1987, Mr. J. J. Carey to U. S. Nuclear Regulatory Commission

	FSAR Section	Title
1)	14.2.12.48.01 (SOV 2.33A.01)	Main Plant Carbon Dioxide Fire Protection System Test (SOV)

Reference (a) provided a commitment to complete acceptance testing of CO_2 suppression system proposed modifications including pressure relief paths by September 30, 1987. Reference (b) identified this testing was deferred until December 31, 1987 due to the inability to complete modification on time. Compensatory measures are provided as identified in reference (b). There are no Technical Specification requirements associated with this system.

2)	14.2.12.6.6 (IST-2.04.04)	Load Swing Test (IST)

This test abstract is being revised per Attachment A to delete the ~ 10% power load swing at 75% power. Credit for this load swing is obtained by the scheduled performance of IST-2.04.05 "Large Load Reduction Test For Turbine Runback" at 75% power with a 50% load reduction. This change does not affect any Technical Specification requirements.

3)	14.2.12.4.8	Incore/Excore Detector Calibration for Axial Offset Measurement (IST)

Test IST-2.02.07 was scheduled to be performed at 75% power to meet the intent of this abstract. Test procedure BVT 2.1-2.2.3 "Nuclear Power Range Calibration" was performed at 50% power which also meets the intent of this abstract and is used to satisfy part of Technical Specification 4.3.1.1.1. Westinghouse concurred with the use of BVT 2.1-2.2.3 at 50% power in place of IST-2.02.07 at 75% power. Therefore, this test abstract is being revised per Attachment B to reflect this change.

	FSAR Section	Title
4)	14.2.12.73.02	Non-QA Category I Heat Tracing System Test (SOV)

Test SOV-2.45D.01 was scheduled to be completed during the Power Ascention Program. The systems involved are operable however, only 75% of the circuits are successfully tested. Final testing is scheduled to be completed prior to December 15, 1987. There are no Technical Specification requirements associated with these systems.

5)	14.2.12.6.7 (IST-2.04.05)	Large Load Reduction Test for Turbine Runback (IST)

This test abstract is being revised per Attachment C to delete the 50% load reduction at 100% power. Regulatory Guide 1.68, "Initial Test Programs for Water-Cooled Nuclear Power Plants" has been reviewed and does not require this test. This change does not affect any Technical Specification requirements.

4. The turbine-driven auxiliary feedwater pump will be verified to cold, quick start automatically and operate for at least 1/2 hour or until the plant stabilizes with loss of all offsite power.

Acceptance Criteria

1. The ability of the plant to sustain a turbine trip coincident with loss-of-offsite power at load has been demonstrated.

2. The turbine-driven auxiliary feedwater pump automatically, quick starts, and remains within design limits with respect to bearing/bearing oil temperatures and vibration. Pump room ambient conditions (temperature, humidity) do not exceed environmental qualification limits for safety-related equipment in the room.

14.2.12.6.6 Load Swing Test (IST)

Test Objectives

To verify the proper transient response of the plant and the automatic control systems during step and ramp load changes at various plant power levels and to demonstrate the ability of the charging system to respond to step load changes.

Prerequisites

1. Required plant control systems are in the automatic control mode.

2. The plant is in operational mode 1 with reactor power level established as required.

Test Methods

1. Design step and ramp load changes will be applied at each power level (approximately 30, 75, and 100 percent) during power ascension testing.

2. The primary and secondary plant parameters will be monitored as required to verify the proper response of the plant and its automatic control systems.

Acceptance Criteria

Plant parameters remain within design specifications throughout the application of each load change, and the automatic control systems re-establish stable operation at each new power level.

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Acceptance Criteria

The extrapolated 100 percent value of ΔT and T_{avg} for each channel is within acceptable limits of the average of all channels.

14.2.12.4.7 Thermal Power Calorimetric Measurements (IST)

Test Objectives

To determine the reactor core thermal power output from secondary side calorimetric measurements at approximately 30-, 50-, 75-, 90-, and 100-percent power levels.

Prerequisites

The plant is in operational mode 1 with reactor power level established as required.

Test Methods

1. The plant will be verified to be at steady state conditions. Secondary plant calorimetric data, such as steam pressure, feedwater flow, and feedwater temperature will be measured. Steam generator blowdown operating parameters will be measured if the system is not isolated.

2. Reactor core thermal power output will be calculated from the calorimetric data accounting for heat losses and heat gains from the reactor coolant pumps.

Acceptance Criteria

Not applicable

14.2.12.4.8 Incore/Excore Detector Calibration for Axial Offset Measurement (IST) *

Test Objectives

1. To demonstrate that the response of the excore power range detectors is linear with respect to incore axial power distribution.

2. To calibrate the excore power range detector input and excore power range detector signals.

Prerequisites

Test data is available from a minimum of three movable detector flux maps obtained over a range of incore axial offsets, of at least 15 percent. *

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Test Methods

1. Calculations, utilizing prior test data, will be performed to demonstrate that the response of the excore power range detectors is linear with respect to incore axial power distribution.

2. The excore power range detector input will be calibrated to the ΔT reactor trip set point calculator.

3. The excore power range detector signals to the axial flux difference, Δq, meters, and flux recorders will be calibrated.

Acceptance Criteria

1. The response of the excore power range detectors is linear with respect to incore axial power distribution.

2. The excore power range detector input and excore power range detector signals are properly calibrated.

14.2.12.5 Reactor Incore Instrumentation System

14.2.12.5.1 Incore Moveable Detector System Checkout (IST)

Test Objectives

1. To demonstrate system operation for incore flux mapping.

2. To provide a check of the associated leak detection and gas purge subsystems.

Prerequisites

1. The applicable general prerequisites, as listed in Section 14.2.12.1.1, are met.

2. Fuel loading is complete.

Test Methods

1. Prior to initial criticality, each detector drive assembly will be tested in the insert and withdrawal mode for each detector path to demonstrate proper operability of the system. The top and bottom core set points will be established for each detector path within the core.

2. The leak detection system will be checked for proper operation by manually simulating a leak with the float pressure switch and verifying that the drain valve opens and the alarm actuates.

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14.2.12.6.7 Large Load Reduction Test For Turbine Runback (IST)

Test Objectives

To verify the proper transient response of the plant and the automatic control systems during the load reduction as a result of a turbine runback and to demonstrate the ability of the charging system to respond to large step load reductions.

Prerequisites

The plant is in operational mode 1 at a steady state power level of approximately 75 and 100 percent power, as required.

*

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Test Methods

1. At power levels of approximately 75 and 100 percent, a 50-percent power decrease will be initiated by rapidly closing the turbine governor valve until the primary plant reaches the desired power level. The rate of power change should be approximately 200 percent per minute.

2. The transient plant parameters will be monitored as required to verify the proper response of the plant and its automatic control systems.

3. When the lower power level is reached, the reactor control rods will be manually adjusted for plant operation at the new load.

Acceptance Criteria

1. The reactor and turbine do not trip during the test.

2. The automatic control systems return the plant to a stable operating condition, and the plant operating parameters are within design specifications.

14.2.12.6.8 Verification Of Plant Performance Following Plant Load Rejection/Trip From Power (IST)

Test Objectives

To verify the proper transient response of the automatic control systems following a net load rejection from 50 and 100 percent power and a plant trip from 100 percent power.

Prerequisites

1. The plant is in operational mode 1 near 50 percent or 100 percent rated thermal power as appropriate.

2. Plant trips at lower power levels have been performed during power ascension testing.

Test Methods

1. At 50 and then 100 percent power, a net load rejection will be initiated by tripping the main transformer 345 kV power circuit breakers. At 100 percent power, a plant trip will be initiated by tripping the main turbine.

2. The plant parameters will be monitored as required to verify the proper operation of the plant and automatic control systems.