

U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Report No. 50-412/85-01

Docket No. 50-412

License No. CPPR-105

Priority --

Category B

Licensee: Dusquesne Light Company
435 Sixth Avenue
Pittsburgh, Pennsylvania 15219

Facility Name: Beaver Valley Power Station, Unit 2

Inspection At: Shippingport, Pennsylvania

Inspection Conducted: January 7-11, 1985

Inspectors: H. Nicholas
H. Nicholas, Lead Reactor Engineer

2/7/85
date

H. F. VanKessel
H. F. VanKessel, Reactor Engineer

2/7/85
date

L. Gesalta
L. Gesalta, Philippine AEC (Observer)

2/7/85
date

Approved by: L. H. Bettenhausen
L. H. Bettenhausen, Chief,
Test Programs Section

2/6/85
date

Inspection Summary: Inspection on January 7-11, 1985 (NRC Report No. 50-412/85-01)

Areas Inspected: Routine, announced inspection of the preoperational test and operational preparedness inspection program including schedule of testing activities, construction program status, test program requirements, responsibilities and involvement of quality assurance and quality control, preoperational test procedure status, test procedure review and verification, and tours of the facility. The inspection involved 72 hours on site by two region based inspectors.

Results: No items of noncompliance were identified.

DETAILS

1.0 Persons Contacted

Dusquesne Light Company (DLC)

- *F. Arnold, Staff Engineer, Startup Group (SUG)
- *R. Coupland, Director, QC
- *J. Dusenberry, Director SOV Testing (SUG)
- J. Evans, Supervisor NSSS - Construction Startup Group (CSUG)
- *R. Flodstrom, Assistant Director QC
- *D. Hunkele, Director QA Operations
- *J. Kasunick, Director Maintenance, (SUG)
- J. King, Startup Engineer, NSSS - (CSUG)
- *C. Kiechner, Senior QA Engineer
- S. Mejudar, Assistant Director QA
- *T. Noonan, Beaver Valley 2 Station Superintendent, (SUG)
- *M. Pavlick, Director Milestone Management (SUG)
- *C. Smith, Director Administrative Section, (SUG)
- *R. Swiderski, Startup Manager, (SUG)
- *J. Waslonsky, Senior QA Engineer
- *R. Williams, Supervisor Test and Plant Performance, (SUG)

- M. Korin, Senior Startup Engineer (SQC)

United States Nuclear Regulatory Commission

- D. Johnson, Resident Inspector, Beaver Valley 1
- *L. Prividy, Resident Inspector, Beaver Valley 2
- *W. Troskoski, Senior Resident Inspector, Beaver Valley 1
- *G. Walton, Senior Resident Inspector, Beaver Valley 2

*Denotes those present at exit interview on January 11, 1985

2.0 Preoperational Test Program

References:

- Beaver Valley 2, FSAR, Chapter 14, "Initial Test Program"
- Beaver Valley 2, FSAR, Chapter 17, "Quality Assurance"
- ANSI N45.2.6-1978, Qualifications of Inspection, Examination and Testing Personnel for Nuclear Power Plants
- Stone and Webster Engineering Corp. (SWEC) Field Construction Procedure (FCP)-80, Conduct of Phase-1 Test Program, Change 0
- "Quality Assurance Program Manual" Beaver Valley Power Station
- Regulatory Guide 1.58, Rev. 1, "Qualification of Nuclear Power Plant Inspection, Examination and Testing Personnel", September 1980
- 10 CFR 50, Appendix B, "Quality Assurance Criteria for Nuclear Power Plants"
- Regulatory Guide 1.68, "Initial Test Programs for Water Cooled Nuclear Power Plants"

- SWEC Field Construction Procedure FCP-51
- System/Subsystem Turnover to DLL-CSUG, Change No. 3, July 30, 1984
- SWEC Field Construction Procedure FCP-29 "Exception Work Tracking", Change 8, August 6, 1984

2.1 Preoperational Test Program Scope

The NRC inspector met with the Beaver Valley Unit 2 Startup Manager and his staff to discuss the Unit 2 preoperational test program. Areas addressed included all segments of the preoperational testing and operational preparedness phase of the light water reactor inspection program of the NRC. Test program requirements, implementation, mandatory tests, primal tests, and Category I, II and III tests, procedure reviews and verification, test witnessing, and test results evaluations were discussed.

The inspector requested access to the licensee's materials pertinent to the pre-operational test program. The inspector noted the need for early availability of test procedures for NRC review in accordance with Regulatory Guide 1.68 in order to determine the administrative and technical adequacy of the procedures.

Discussion

Since the preoperational (and startup) test program is administratively governed by the startup manual, a review of the Beaver Valley 2 Startup Manual was initiated during this inspection. Only portions of the startup manual, in the form of independent procedures, were available for this review. The inspector could not review the full implementation of FSAR Chapter 14 requirements nor of the applicable regulatory guides at this time.

Findings

The startup manual is being assembled but is not now available to the NRC for review. This item is designated as an unresolved item (412/85-01-01). This item will be reviewed on a subsequent inspection.

2.2 Test Procedure Review and Verification

The approved preoperational test and system operability verification (SOV) test procedures listed in Attachment A were reviewed for administrative and technical adequacy and for verification that adequate testing is planned to satisfy regulatory guidance and licensee commitments.

The procedures were examined for management review and approval, procedure format, clearly stated test objectives, prerequisites, environmental conditions, acceptance criteria, source of acceptance criteria, references, initial conditions, achievement of test objectives, performance documentation and verification, detailed instructions for performance of test, restoration of system to normal conditions after

testing, identification of personnel conducting the test, evaluation of test data, independent verification of critical steps or parameters, quality assurance and quality control interface and involvement.

Findings

The inspector ascertained that the procedures are consistent with regulatory requirements, guidance, and licensee commitments. The review of preoperational test procedure PO-2.59.01, 2-1 and 2-2, "Batteries, Inverters and Chargers Test", revealed that a change was made to the procedure deleting inverter testing. Many lines in the procedure were crossed out, hand written note inserted, and a statement on inverter testing saying "later". This procedure was reviewed, accepted, and approved by the Joint Test Group and was designated as Revision 1. It was not a clean working test procedure and had not been retyped as a revised procedure. Since the startup manual had not been completed, the administrative requirements for these are not yet clear. In addition, an approved test procedure for the inverters has not been issued to date. This item is designated as an unresolved item (412/85-01-02) to be reviewed on a subsequent inspection. The inspector had no further questions on the adequacy of the test procedures reviewed.

3.0 Quality Assurance (QA) and Quality Control (QC)

Reference

- Quality Assurance Program Manual

Discussion

A meeting was held to review test program quality assurance and quality control, and its implementation from construction through preoperational and startup testing to the operational phase.

The inspector noted that areas to be reviewed and inspected in detail on subsequent inspections, will include QA organization, QA program, QC for testing, and the transition phases from construction to preoperational/startup testing and to plant operations.

Findings

The inspector had no questions at this time.

4.0 Plant Tours

The NRC Inspector made tours of the Unit #2 facility including the Control Building, the Auxiliary Building and the Reactor Building. Specific attention was paid to the status of construction, the housekeeping, fire protection, ongoing system modifications and jurisdictional and safety tagging of systems.

During these tours, the inspectors had discussions with startup personnel on such items as construction status, system turnovers, integrated project schedules and test sequencing schedules.

No discrepancies were noted in these areas.

Findings

Cable tray fill was found to be low. Progress in cable pulling is lagging other construction activities. This is recognized as a major critical path item by the licensee. Progress in the Control room reflects the overall status of turnover of systems from Construction to the Startup Group (SUG). The inspector was informed that the overall program is behind the latest schedule (level 2).

The licensee is working on an Integrated Project Schedule (IPS) which emphasizes the need for a switchover from Construction scheduling to startup scheduling. In the former, the accent is on bulk progress in Construction (by plant building areas) while in the latter, the accent is on the preparation of systems for preoperational testing. The new milestone in the IPS is the secondary side hydrostatic test of the Steam Generators.

Complex modifications were in progress for the Emergency Shutdown Panel. Switches and instruments were being replaced in accordance with approved modification drawings.

It was noted by the inspector that the logic cabinets for the Annunciation System, which has been turned over to SUG, were properly tagged for SUG jurisdiction. The same system also was tagged for SUG jurisdiction in the control room. Other items checked for jurisdictional tagging in the control room included components of the Component Cooling Water System and the Service Water System Subsystems which have been turned over to date.

5.0 Exit Interview

At the conclusion of the site inspection on January 11, 1985, an exit meeting was conducted with the licensee's senior site representatives (denoted in paragraph 1). The findings were identified and discussed.

ATTACHMENT A
PROCEDURE REVIEWS

- (1) PO-2.15B.01 Revision 0, Approved April 30, 1984
Neutron Shield Tank Cooling Test
- (2) PO-2,1303 Revision 0, Approved August 24, 1984
Quench and Recirculation Spray Nozzle Air Flow Test
- (3) PO-2.13.02 Revision 0, Approved August 21, 1984
Quench Spray System Pumps and Controls Test
- (4) PO-2.13.04 Revision 0, December 18, 1984
Refueling Water Storage Tank Test
- (5) PO-2.47.05 Revision 0, Approval November 29, 1984
Containment Type B Leak Rate Test for Fuel Transfer Tube Flange
- (6) PO-2.06-04 Revision 0, Approved November 14, 1984
Reactor Coolant Loop Isolation Valves Initial Checkout
- (7) PO-2.39.01 Revision 1, Approved September 26, 1984
2-1 and 2-2 Batteries, Inverters, and Chargers Test
- (8) PO-2.39.03 Revision 0, Approved September 20, 1984
2-3 and 2-4 Batteries, Inverters, and Chargers Test
- (9) SOV-2.33C.03 Revision 0, Approved July 17, 1984
Booster Fire Pump Test
- (10) SOV-2.33C.01 Revision 0, Approved March 3, 1984
Fire Hydrant Flow and Pressure Test
- (11) SOV-2.11A.01 Revision 0, Approved May 18, 1984
Hydrostatic Test Pump Test
- (12) SOV-2.39.01 Revision 0, Approved September 6, 1984
2-5 and 2-6 Batteries, Inverters and Chargers Test
- (13) SOV-2.32A.01 Revision 0, Approved June 26, 1984
Demineralized Water System Test
- (14) SOV-2.33D.01 Revision 0, Approved July 19, 1984
Fire Detection System Test
- (15) SOV-2.45E.01 Revision 0, Approved March 15, 1984
Electric Fault Recording Test

- (16) SOV-2.41C.01 Revision 0, Approved February 17, 1984
Domestic Water System Test
- (17) SOV-2.44C.01 Revision 0, Approved July 25, 1984
Control Rod Drive Mechanism Shroud Cooling System
- (18) SOV-2.39.02 Revision 0, Approved March 2, 1984
Instrumentation, Annuncitaor Circuitry, and Emergency Lighting Systems Test