U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Report No. 50-412/82-12

Docket No. 50-412

License No. CPPR-105 Priority -- Category A

Licensee: Duquesne Light Company

435 Sixth Avenue

Pittsburgh, Pennsylvania 15219

Facility Name: Beaver Valley Power Station, Unit 2

Inspection at: Shippingport, Pennsylvania

Inspection conducted: October 5-7, 1982

Inspector: A. E. Finkel — Oct/27/1982
A. E. Finkel, Reactor Engineering Inspector — date signed

J. D. Ko, Korean Atomic Energy Bureau

Approved by: for S. N. Bhuta — 10/27/82
L. H. Bettenhausen, Acting Chief, Plant System Section, EPB — date signed

Inspection Summary:

Inspection on October 5-7, 1982 (Report No. 50-412/82-12)

Areas Inspected: Routine, unannounced inspection by one region-based inspector of activities pertaining to the installation of safety-related cables, cable trays/conduits and equipment. The inspection involved 30 inspector hours onsite for one region-based inspector.

Results: Of the three areas inspected, one violation was identified (1) Failure to provide adequate physical protection and in plant storage of safety-related electrical equipment.

DETAILS

1. Persons Contacted

Duquesne Light Company

* R. Coupland, Director QC
* C. Ewing, QA Manager
* R. Fedin, Compliance Engineer
* W. Glidden, Senior QA Engineer
* J. Hultz, Deputy Program Manager
* C. Majumdar, Senior QA Engineer
* H. Siegel, Engineering Manager
* R. Swiderski, Nuclear Construction Manager

Stone and Webster Engineering Corporation

* C. Bishop, Resident Manager
* R. Burgas, Site Lead Engineer
* R. Faust, Structural Engineer
* R. Tarr, Nuclear Engineer

Westinghouse Corporation

* E. Morris, Site Manager
* J. Zielinski, Process Control Engineer

USNRC

* G. Walton, Senior Resident Inspector

* Denotes personnel present at exit meeting.

2. Facility Tour

The inspector observed work activities in progress, completed work and construction status in various areas of the site. Work items were examined for obvious defects and for violations with regulatory requirements and licensee commitments. The presence of quality control inspectors was observed. Specific work activities and completed work observed by the inspector included installation of cable, cable trays and conduit and in plant electrical equipment.

No violations were identified.

3. Licensee Action on Previous Inspection Findings

(Open) Unresolved Item 82-05-01 pertaining to less restrictive raceway separation design criteria than NRC requirements. The licensee has not completed his review of the design separation criteria of IEEE-384-1971 with the design criteria specified in 2BVM-41 for the Beaver Valley Nuclear Unit 2.

This item remains unresolved.

4. Handling, Storage and Shipping

Storage of safety related electrical equipment was inspected for in-plant storage and compliance with site procedural requirements.

The in-plant storage of the Westinghouse electrical racks such as the Primary Process Racks and ITE 480 volt Motor Control Centers and York Main Control Board and Emergency Shutdown Panel were inspected for B level storage configuration by the inspector. B level is classified as those items that are sensitive to environmental conditions and require measures for protection from the effects of temperature extremes, humidity and vapors, g forces, physical damage and airborne contamination. The equipment inspected did not comply with the storage requirements of the following documents:

-- Stone and Webster procedure 2BSV-981 Storage and Maintenance During Storage of Permanent Plant Equipment During the Construction Phase, Addendum No. 4,

-- Stone and Webster procedure 2BSV-931 Electrical Installation Specification, Addendum No. 4,

-- ANSI N45.2.2 Packing, Shipping, Receiving, Storage and Handling of Items for Nuclear Power Plants, paragraph 2.7.2; level B Storage,

-- Westinghouse NSSS Component Receiving and Storage Criteria for Electrical Equipment, Volume II and,

-- ITE Imperial Corporation - Storage requirements

Specifically, there was inadequate physical protection and protection from airborne contamination for the equipment.

There was inadequate physical protection of the equipment in areas of heavy construction activity. Inspection of the Reactor Protection System electronic cabinets, the main control board and emergency shutdown panels revealed dirt and dust infiltration on the connectors, timers, relays and cabinet surfaces. All the motor control centers had dirt and dust in the cabinets and within some of the installed electronic equipment of the centers. Neither floor nor top entry penetration seals were in place, but the cabinets did have protective covers over them. The sealing of

the penetrations would not normally be required with this type of equipment except that construction dirt and dust was of such a level that to maintain the B level storage requirements for this equipment, conduit and floor seals as well as connector caps, plugs, etc. are necessary to be in place when not actively working on the equipment.

A similar condition was identified as a violation by the NRC in Inspection Report 50-412/82-08 where the Reactor Protection System Cabinets, Rod Position Indication Cabinets and Main Control Bench Boards, located in Level B storage areas, were not protected from airborne contamination.

Failure to provide B level protection of in-plant safety related equipment from airborne contamination is a violation (82-12-01).

5. Electrical Cable and Terminations - Records Review

The inspector reviewed the pertinent work and quality records of category 1 safety related cables to determine whether the records reflect work accomplishments consistent with NRC requirements and licensee commitments in the areas of receipt inspection, material certification and qualifications.

Documents reviewed for this determination include:

-- Purchase Orders for the 600 volt and 5KV power cables,
-- Certificate of Compliance statements,
-- Certified Electrical/Physical Test Reports and,
-- Vertical Flame Test Reports per IPCEA-66-524, Section 6.12B for received cables.

No violations were identified.

6. Calibration of Burndy Compression Tool

The inspection witness the testing and calibration of the Burndy Y39 Hydraulic Hypress tool. This tool was tested per Field Construction Procedure (FCP)410 Calibration of Crimping Tools and Scheduled Cable Termination Acceptance IP 8.5.2. The Burndy Y39 Hypress tool is used to make connections on cables which range in cable size from 6 - 750 MCM. For this site, cable size 6-750 MCM covers most of the power terminal sizes that will be used in the safety related circuits.

The Burndy MRE-G98 and MR-G98 are used on smaller size cables and are calibrated on a weekly schedule. The methods for calibration and testing Burndy tools specified in FCP410 meets the intent of Burndy catalog requirements HY78 and Nuclear Applications document NA-1.

No violations were identified.

7. Cable Separation

During the inspection of installed raceway, the inspector identified cable separation problems similar to those identified by the licensee. Violations of the engineering separation criteria specification 2BVS-931 are being identified by the quality control organization and listed in the Color Separation Violation Status Report which is issued on a monthly basis to licensee management.

During a meeting held with the licensee on October 6, 1982, to discuss the status of the separation problems identified in NRC Inspection Report 412/82-05-01 and the cable separation problems identified above, the following information was presented to the inspector.

(1) IR 412/82-05-01 - The licensee is still evaluating this item with their engineering organization.

(2) Color separation E and DCR 2PS-2-225 has been written, but the licensee has not reviewed the proposed change.

The inspector stated that the color separation item would be carried as an unresolved item pending review of the proposed E and DCR (412/82-12-02).

8. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, violations or deviations. An unresolved item disclosed during the inspection is discussed in paragraph 7.

9. Exit Interview

The inspector met with the licensee representatives denoted in paragraph 1 on October 7, 1982 and summarized the purpose, scope and findings of the inspection.