U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Report No. 50-334/85-15

Docket No. 50-334

License No. DPR-66 Priority - Category C

Licensee: Duquesne Light Company
ATTN: Mr. J. J. Carey Vice President - Nuclear Group
P.O. Box 4
Shippingport, PA 15077

Facility Name: Beaver Valley Power Station, Unit 1

Inspection At: Shippingport, PA

Inspection Conducted: May 20 - 14, 1985

Inspectors: T. Dragoun, Radiation Specialist — 6/20/85 date

J. Cioffi, Radiation Specialist — 6/20/85 date

Approved by: M. Shanbaky, Chief, PWR Radiological Safety Section — 6/21/85 date

Inspection Summary: Inspection on May 20-24, 1985 (Report No. 50-334/85-15)

Areas Inspected: Routine, unannounced inspection of the radiation safety program including: new respiratory protection program; internal and external personnel dosimetry; and routine radiological surveys. The inspection involved 70 inspector-hours on site by two region I based inspectors.

Results: No violations were identified.

Details

1.0 Persons Contacted

During the course of this routine safety inspection the following personnel were contacted or interviewed:

1.1 Licensee Personnel

J. A. Kosmal, Manager - Radiological Controls
W. F. Wirth, Director - Radiation Safety Program
R. M. Vento, Radiation Programs Coordinator
D. G. Blair, Senior HP Specialist
E. D. Cohen, Senior HP Specialist
D. L. Swofford, Radcon Foreman
F. J. Lipchick, Senior Compliance Engineer
J. M. Markovich, QA Engineer
S. R. Stubbs, QA Engineer

1.2 NRC Personnel

W. Troskoski, Senior Resident Inspector

All personnel above attended the Exit Interview on May 24, 1985. Additional licensee personnel were interviewed.

2.0 Purpose

The purpose of this routine inspection was to review the licensee's radiation protection program with respect to the following elements:

- Respiratory Protection Program
- Personnel Dosimetry - Internal and External
- Routine Radiological Surveys

3.0 Respiratory Protection Program

The licensees implementation of a respiratory protection program was reviewed against the following criteria:

- CFR 20.103(b)(1) (use of engineering controls)
- CFR 20.103(b)(2) (40 hour control measure)
- CFR 20.103(c) (use of respiratory protection)
- Reg Guide 8.15 section C.1 (policy statement)

- Reg Guide 8.15 section C.3 (advice to respirator users)
- Reg Guide 8.15 section C.4.b (training program)
- Reg Guide 8.15 section C.4.C (fitting)
- Reg Guide 8.15 section C.4.d (maintenance program)
- Reg Guide 8.15 section C.4.e (control of issuance, use, and "return")
- Reg Guide 8.15 section C.8 (technical requirements)
- Radiological Control Manual Appendix 6 - Respiratory Protection Program.
- Radcon Procedures, Chapter 3 Part 10 procedures 10.1 through 10.10

The licensees performance relative to these criteria was determined by interviews with the Respiratory Protection Coordinator, Training Coordinator, and HP technicians; an inspection of facilities and equipment; and a review of assignments of responsibilities, policies, training center lesson plans, and selected records.

In a letter dated February 25, 1985 the licensee advised the Region I Administrator that use of respiratory protective equipment would begin at the Beaver Valley Station in accordance with 10 CFR 20.103(g). Within the scope of this review the inspector determined that the licensee has implemented a satisfactory respiratory protection program. The inspector was particularly impressed with a strong commitment to training of workers and technicians. However, the following improvement items were noted:

- There are four departments involved in the maintenance of respirators: Radcon, Operations, Maintenance, and House and Yard. Within each department, trained technicians are assigned to respirator work on a rotating basis. Under these conditions the technicians do not have the opportunity to become proficient in the repair and inspection of respirators. The foremen who supervise these technicians are not qualified for respirator work and therefore cannot provide adequate oversight. Only the Respirator Coordinator is capable of adequately reviewing the technicians performance. The lack of technician proficiency and inadequate supervisory oversight could be resolved by consolidation of responsibility into one department or a select group of personnel.

- Respirators are available to any qualified worker on demand even though a respirator is not required by the Radiation Work Permit. This has resulted in unnecessary use of respirators. The Radiological Control Manual Appendix 6 places emphasis on engineering controls rather than reliance on respirators as required by the regulations. This emphasis on engineering controls should be stressed to workers to eliminate misuse of respirators.

Licensee management advised that appropriate improvements to the respiratory protection program will be made. These matters will be reviewed in a future inspection. (85-15-01)

4.0 Personnel Monitoring - Internal and External

The licensee's program for personnel monitoring was reviewed against criteria contained in:

- 20 CFR 20.101, "Radiation dose standards for individuals in restricted area"
- 10 CFR 20.102, "Determination of prior dose"
- 10 CFR 20.202, "Personnel monitoring"
- 10 CFR 20.407, "Personnel monitoring reports"
- 10 CFR 20.408, "Reports of personnel monitoring on termination of employment or work"
- 10 CFR 20.409, "Notification and reports to individuals"
- Regulatory Guide 8.7, "Occupational Radiation Exposure Records Systems"
- ANSI N13.11 - 1983, "Criteria for Testing Personnel Dosimetry Performance"
- ANSI N18.1 - 1971, "Selection and Training of Nuclear Power Plant Personnel."

The licensee's performance related to the above criteria was determined by interviews with licensee personnel, a review of selected procedures and records of personnel exposures, review of data generated for the Panasonic system development, and a tour of the dosimetry processing facility and dosimetry issue booth.

The licensee will be converting the TLD dosimetry system from Harshaw to Panasonic badges on July 1, 1985.

4.1 Management Oversight and Personnel Selection and Training

Currently, the dosimetry department reports to the Supervisor of Radiation Protection Operations. Health Physics technicians are assigned on a temporary basis to perform dosimetry processing for the Harshaw dosimeters.

The licensee has selected a group of eight technicians from the radiation control technician staff for permanent assignment to perform the

dosimetry processing functions when they change to the Panasonic system. Each of the technicians selected is qualified according to the criteria contained in ANSI N18.1-1971, and each is currently participating in an eleven week training program for the Panasonic dosimetry system.

The inspector reviewed the course outlines and lesson plans for the dosimetry training. The training program is well documented and provides thorough training in theory and practical experience.

4.2 Internal Dosimetry

The licensee performs whole body counts and urinalysis for tritium bioassay to determine internal exposure.

The inspector observed that the licensee has initiated a system of flagging individuals for special urinalysis by the use of cards inserted in their dosimetry slots at the dosimetry issue booth. Personnel requiring a urinalysis are not issued dosimetry until they supply a sample. This will ensure that the licensee obtains the necessary bioassay information when elevated tritium levels are indicated in air samples.

Results of internal bioassays are retained in each individuals file. Additionally, the licensee tracks the date of the last bioassay on the corporate computer.

4.3 External Dosimetry

The dosimetry processing facility is located in the Emergency Response facility, which has been specially designed and shielded in the event of an accident.

The licensee will be using the Panasonic UD 812AS2 Model TLD in a specially designed holder. This badge contains 4 chips of lithium -7 borate. The licensee plans to continue using only neutron rem-meter measurements to assign neutron doses to personnel entering containment at power.

Daily external exposure dose values are obtained by pocket ion chamber measurements. Doses are recorded daily on a log and inserted into the corporate computer system. The results are compared to the quarterly TLD readings for discrepancies. If TLD readings greater than 100 millirem disagree with pocket ion chamber measurements by more than 25%, an evaluation is performed, and the most conservative dose is assigned. Records of all discrepancies are filed in each personnel file. The inspector noted that the licensee's methods for recordkeeping were redundant and cumbersome, but sufficient to prevent a loss of exposure records for personnel.

The inspector interviewed radiation control technicians at the dosimetry issue booth. It was found that although the technicians were

not familiar with the location and use of some of the paperwork, the licensee's procedures for issuing dosimetry were well defined and clearly posted for the technicians' reference.

The inspector found that the dosimetry issue booth was left unattended and unlocked during back shifts. This practice could lead to unauthorized use of dosimetry during these hours. Licensee representatives stated that the dosimetry issue booth was erected to provide positive control over the dosimetry. Prior to the use of the dosimetry issue booth, security personnel handled dosimetry issue which provided unsatisfactory control over dosimetry. Licensee representatives stated that positive control at all times over the dosimetry issue booth would be initiated. This matter will be reviewed in a future inspection. (50-334/85-15-02).

There were no items of non compliance found in this review.

5.0 Routine Radiological Surveys

The licensee's program for routine radiological surveys was reviewed against the criteria in:

- 10 CFR 20.105 Permissible levels of radiation in unrestricted areas.
- 10 CFR 20.201 Surveys
- 20 CFR 20.401 Records of surveys, radiation monitoring, and disposal.
- Technical Specification 6.10 Record Retention
- Radiological Control Manual Appendix 4 - Frequency of Airborne, Radiation and Contamination Surveys.
- Radiological Control Manual Chapter 1 - Standard's and Requirements, Part IV - Radiological Surveys.
- Radiological Control Manual Chapter 3 - Procedures 7.1 through 7.10

The licensee's performance relative to these criteria was determined by interviews with supervisors and HP technicians, a review of facilities and equipment, and review of survey records.

Within the scope of this review, no violations were identified. However, programmatic weakness was noted in the following areas:

- Radcon Manual Appendix 4 provides a schedule of the surveys to be conducted in various plant areas. The Woman's Locker Room, Primary Grade Water Pump Room, and the QS-TK-1 Area were not surveyed in accordance with this schedule. Supervisors also occasionally deleted surveys due to work interference or ALARA considerations.

However, the reason for a missed survey was not noted in the records. Floor plan maps are generally available with designated locations to be surveyed to allow comparison and trending of radiation levels. However 14 areas do not have maps available for use by the technicians.

- ANSI N18.1 - 1971 identifies radiation surveys as a function to be performed only by qualified personnel. The technicians at the Beaver Valley station are allowed to conduct surveys if they are knowledgeable of the survey procedures and instruments and are familiar with the area to be surveyed. The licensee does not ensure that a technician has 2 years of general experience required by ANSI N18.1 prior to independently performing a survey.

- Approximately 20% of the records of the daily surveys of the Service Building (map #5A) and 20% of the weekly surveys of the Decon shower Room (map #5) could not be located.

The inspector discussed with the licensee the need to perform and document the required surveys at the appropriate intervals using qualified technicians. The inspector noted that the licensee had identified problems with surveys in March 1985 and had instituted additional supervisory reviews of survey results. The licensee stated that this matter would receive immediate management attention. This matter will be reviewed in a future inspection. (85-15-03).

6.0 Exit Interview

The inspector met with the personnel denoted in section 1 at the conclusion of the inspection on May 24, 1985. The scope and findings of the inspection were discussed at that time. At no time during this inspection was written material provided to the licensee by the NRC inspector.