# U. S. NUCLEAR REGULATORY COMMISSION REGION I

Report Nos.	50-277/89-28 50-278/89-28					
Docket Nos.	50-277 50-278					
License Nos.	DPR-44 DPR-56	Priority		-	Category _	c
Licensee: Phi 230 Phi	ladelphia Ele 1 Market Stre ladelphia, Pe	ctric Compan et nnsylvania	ny (PECo) 19101			
Facility Name	: Peach Bott	om Units 2 a	and 3			
Inspection At	: Delta, PA,	Wayne, PA	, and Westwo	od, New J	lersey	
Inspection Co	nducted: Dec	ember 11-18	1989			
Inspector:	Jason C. Jan Effluents R	g, Sr. Radia adiation Pro	lang ation Specia	Tist, tion	/- date	4-90
Approved by :	Robert J. B Protectio Safety an	ores, Chief n Section, I d Safeguard	, Effluents Division of	Radiation Radiation	/- date	<u>4-90</u>
Inspection Su	mmary : Insp Repo	ection on Dert Nos. 50-1	ecember 11-1 277/89-28 an	8, 1989 ( d 50-278/	Combined I 89-28)	nspection
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<u>Areas Inspected:</u> Routine, unannounced inspection of the licensee's programs for radioactive liquid and gaseous effluent controls, radiological environmental monitoring, and meteorological monitoring.

Results: Within the scope of this inspection, no violations were identified. However, some weaknesses in the area of radiation monitoring system calibrations were identified (See Section 4.1.3 of this inspection report).

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#### DETAILS

#### 1.0 Individuals Contacted

## 1.1 Peach Bottom Atomic Power Station, Delta, Pennsylvania

- \*N. Burkins, I&C Supervisor
- \*T. Cribbe, Regulatory Engineer
- \*M. Harmond, Maintenance/I&C Manager

- T. Herpen, I&C Engineer \*G. Hanson, Regulatory Engineer \*D. LeQuia, Superintendent, Plant Services \*R. Moore, Quality Assurance
- J. Mroz, Quality Control \*A. Odell, Senior Chemist
- \*R. Szczech, Regulatory Engineer
- B. Wargo, Chemist

#### 1.2 Corporate Office, Wayne, Pennsylvania

- J. Ballentine, Supervisor, Environmental Group, Radiation Control and Chemistry Department
- \*D. Oltmans, Director, Nuclear Chemistry Branch, Radiation Control and Chemistry Department
- G. Roach, Director, Radiation Control and Chemistry Department
- D. Wahl, Health Physicist, Environmental Group, Radiation Control and Chemistry Department

#### 1.3 NRC Personnel

\*J. Lyash, Senior Resident Inspector \*L. Myers, Pesident Inspector \*R. Urban, Resident Inspector

\*Denotes those present at the exit interview on December 15, 1989 at the Peach Bottom Site.

1.4 Teledyne Isotopes (Contractor Laboratory), Westwood, New Jersey

\*\*Dr. J. Martin, Vice President, Environmental Analysis \*\*Dr. H. Jeter, Manager, Radiochemistry, Environmental Analysis \*\*B. Campbell, Quality Assurance Manager \*\*A. Hogan, Project Manager, Environmental Analysis \*\*J. Ballentine, Environmental Group, Radiation Control and Chemistry Department, Philadelphia Electric Company

\*\*Denotes those present at the exit interview on December 18, 1989 at Teledyne Isotopes, Westwood, New Jersey.

# 2.0 Purpose

The purpose of this inspection was to review the licensee's programs in the following areas.

- o The licensee's ability to control and quantify release of radioactive liquids, gases, and particulates during normal and emergency operations.
- o The licensee's ability to implement its radiological environmental monitoring program during normal and emergency operations.

#### 3.0 Management Controls

#### 3.1 Audits

The inspector reviewed the following audits of the Radiological Environmental Monitoring Program and the Peach Bottom Effluent Control Program, including contractor laboratories, with respect to Technical Specification requirements.

- NQA Audit PA 89-28, Effluent Controls
  NQA Audit PA 89-31, Radiological Environmental Monitoring
  PECO QA Audit VA 89-23, Clean Harbors
- (4) PECo QA Audit VA 89-21, Teledyne Isotopes

Audits available appeared to cover the stated objectives and were thorough. There were no negative audit findings in the areas of effluent controls and radiological environmental monitoring program. The audits identified several findings requiring followup for the contractor laboratories, Clean Harbors and Teledyne Isotopes. Findings were good, but none were of safety significance. The licensee uses a tracking system for audit-identified followup items. No violations were noted in this area.

#### 3.2 Review of Semiannual and Annual Reports

The inspector reviewed the semiannual radioactive effluent release report for the first half of 1989. This report provided total released radioactivity for liquid effluents, including projected radiation dose to the public.

The inspector also reviewed the annual radiological environmental report for 1988. This report provided summaries of the results of the environmental sampling and analysis program. Sampling frequencies and analytical results for airborne pathways, ingestion pathways, and direct radiation measurements were reviewed. The inspector also reviewed the available new 1989 analytical results.

Through review of these reports, the inspector determined that the licensee met the Technical Specification requirements. No violations were identified in this area.

4.0 Radioactive Waste Systems

#### 4.1 Liquid and Gaseous Effluent Controls

#### 4.1.1 Program Changes

Since the previous inspection in this area (January 1989) there have been no significant changes in the licensee's program for handling liquid and gaseous effluents.

#### 4.1.2 Liquid and Gaseous Effluent Controls

The inspector reviewed the licensee's procedures and discharge permits to determine the implementation of the following technical specification requirements.

o Technical Specification 3/4.8.B, "Liquid Radwaste Effluents", o Technical Specification 3/4.8.C, "Gaseous Effluents" o Technical Specification 6.17, "Offsite Dose Calculation Manual(ODCM)", and o Technical Specification 6.9.2.h.(3), "Radiation Dose Assessment Report".

The inspector reviewed selected discharge permits to determine compliance with the above requirements. The inspector determined that the licensee was meeting the requirements for sampling and analysis at the frequencies and lower limits of detection established in Tables 4.8.1 (for liquid effluents) and 4.8.2 (for gaseous effluents) of the Technical Specifications. All reviewed discharge permits met the above requirements.

## 4.1.3 Calibration of Effluent/Process Monitors

The inspector reviewed the following radiation monitor calibration results to determine the implementation of the technical specification requirements.

- o Reactor Building Exhaust Vent Monitors for Units 2 and 3
- o Offgas Monitors for Units 2 and 3
- o Main Steam Line Monitors for Units 2 and 3
  - o Main Stack Noble Gas Monitor
  - o Liquid Effluent Radwaste Monitor

The Chemistry Department has the responsibility to perform the radiological calibration and the I&C Department has the responsibility to perform electronic calibration for the effluent and process monitors. The inspector reviewed the radiological calibration results during the previous inspection (January 1989). Consequently, during this inspection, the inspector reviewed the electronic calibration results in more detail than for the radiological calibration results.

The inspector noted that the electronic calibrations for the above monitors were performed as a result of Maintenance Request Form (MRF) generated by Chemistry. When the radiological calibration results were out of tolerance limits, Chemistry issued a MRF to I&C. After I&C completed the electronic calibration, the Chemistry Department performed the final radiological calibration.

The inspector also noted that the I&C Department had upgraded the monitor calibration procedures including the calibration frequency. The inspector noted that the calibration procedures for the liquid effluent radwaste monitor and the main stack noble gas monitor were not included in the upgraded procedures. The inspector discussed the calibration procedures for these monitors with the licensee. The licensee initiated an upgrade to the calibration procedures for these monitors (liquid effluent radwaste monitor and main stack noble gas monitor) during this inspection. The inspector stated that these procedures will be reviewed during a subsequent inspection.

Since the licensee has the responsibility to review radiological and electronic calibration results, the inspector discussed with the licensee the following: (1) issuance and resolution of MRFs; (2) calibration manuals supplied by the manufacturer; and (3) the adequacy of calibration procedures. The inspector noted that the licensee's representative was not familiar with the monitoring systems. The inspector noted further that this individual had occupied this position only about six months, and that his predecessor also was assigned to that position for only a short time. The inspector emphasized to management that this position is critically important in evaluating the adequacy of calibration results and the operability of the monitoring system. The inspector stated that an individual assigned that position should stay sufficiently long to accumulate knowledge and expertise relative to the monitoring systems, their operability and maintenance histories. The licensee stated that this item will be resolved in the near future.

Based on the above review, the inspector stated that management attention and support were needed to ensure ownership in the area of the radiation monitoring system calibration and maintenance.

#### 5.0 Radiological Environmental Monitoring Program (REMP)

#### 5.1 Program Changes

Due to a recent reorganization, the inspector reviewed the licensee's management controls for the REMP. The REMP is administered by the PECo Corporate Environmental Group Supervisor, who has responsibility for review of the contractor's performance of the REMP. The supervisor reports to the Manager of the Radiation Control and Chemistry Department. He, in turn, reports to the Vice President of Nuclear Services through the Manager of Nuclear Support Division. Radiological analyses of the REMP samples continue to be contracted to Teledyne Isotopes and Clean Harbors of Natick.

The inspector determined that the reorganization did not reduce or change the effectiveness of the REMP.

#### 5.2 Teledyne Isotopes Environmental Analysis Laboratory

The inspector reviewed the licensee's contractor laboratory (Teledyne Isotopes) organization, facilities, laboratory quality assurance and control, and selected procedures during this inspection.

The Environmental Analysis Laboratory is directed by the Vice President of the Environmental Analysis Department who supervises several groups (Project, Radiochemistry, Gas Analysis, Garma-ray Spectrometry, Radiocarbon and Tritium, Radon, Environmental TLD, Field Sampling, and other supporting groups).

The inspector toured the Teledyne Environmental Analysis Laboratory facilities including radiological environmental laboratories, in-plant radiochemistry laboratory, dosimetry laboratory, and counting laboratory. The radiological counting laboratory was equipped with gas flow proportional counters, beta-gamma coincidence counters, liquid scintillation counters, and alpha and gamma spectrometry systems.

The inspector also discussed analytical procedures for strontium and indine in the different sample media and environmental TLD procedures with the laboratory staff. The inspector discussed the implementation of QC in the counting laboratory, spike samples, split samples, and blind samples with the QA Manager.

Based on the above review and discussions with the staff members, the inspector concluded the following.

- o The Teledyne Environmental Analysis Laboratory was well-organized and had an effective, established control program for REMP samples. The laboratory was equipped with the state-of-the-art instrumentation.
- o The technical staff members understood the importance of QA/QC in the laboratory and were well trained and well versed in the procedures.
- o Based on the above findings, the Teledyne Environmental Analysis Laboratory was well qualified to support the REMP.

## 5.3 Implementation of the REMP

## 5.3.1 Direct Observation

The inspector examined selected environmental monitoring stations, including air samplers for iodines and particulates, TLD stations for the measurement of direct radiation, and milk sampling locations. All air sampling equipment at the selected stations was operational at the time of the inspection. TLDs were placed at the designated monitoring stations. Milk samples were available at the identified sampling stations.

#### 5.3.2 Implementation

The inspector reviewed the licensee's implementation of the REMP by means of discussions with licensee personnel, review of analytical procedures for iodine, strontium, and tritium and available 1989 REMP analytical results. The inspector found them to be satisfactory.

The inspector noted that the licensee had compared the licensee's data with the NRC's data for the collocated TLDs (three collocated TLD stations). The inspector reviewed these comparison data, and noted that although there are some minor differences between the licensee's and NRC's results, they are generally in good agreement with the exception of one collocated station (NRC Station Number 10 and Reach Bottom Station Number 33A). The NRC's results were higher than the licensee's results (about 25%). The inspector observed the TLD station during the direct observation tour and found that the licensee TLD station (33A) was installed in the fenced area of the radar tower. The foundation of the radar tower was well compacted and covered with stones and pebbles. The NRC TLD station (10) was installed outside the fenced area near a corn field. Even though they were only about 40 foet apart, the inspector determined that these stations should not be treated as collocated TLD stations, in that the radar tower foundation area with its backfill was not representative of the situation at the NRC monitoring location. The inspector recommended that the licensee and the NRC TLD Laboratory delete these from the collocated TLD station list.

The inspector determined that the licensee has an effective program to comply with technical specification requirements. No violations were identified in this area.

## 5.4 Implementation of Quality Assurance Program for REMP

The inspector reviewed the licensee's program for quality control of analytical measurements for the radiological analyses of environmental media including the EPA Cross-check Program. The inspector reviewed selected samples of quality control data submitted to the licensee by its two contractors, Teledyne Isotopes and Clean Harbor's of Natick. These data indicated, with few exceptions, agreement between EPA spike samples and the contractors' results. Where discrepancies were found, reasons for the differences were investigated and resolved satisfactorily. Based on these reviews, the inspector determined that the licensee was implementing the quality assurance program satisfactorily. No problems were noted in this area.

#### 5.5 Meteorological Monitoring Program

The inspector reviewed the most recent meteorological instrumentation calibration results for wind speed, wind direction, temperature, and delta-temperature. The licensee performed the calibration of meteorological equipment semi-annually for the primary system and the backup system. All calibration results were within the licensee's defined acceptance criteria. No violations were identified.

#### 6.0 Exit Interview

The inspector met with the licensee representatives denoted in Detail 1 at the Peach Bottom Atomic Power Station on December 15, 1989 and at the Teledyne Isotopes, Westwood, New Jersey on December 18, 1989. The inspector summarized the purpose and scope of the inspection, and discussed the inspection findings.