

U. S. NUCLEAR REGULATORY COMMISSION
REGION I

Docket Nos. 50-387; 50-388

License Nos. NPF-14; NPF-22

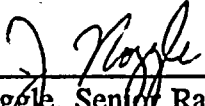
Licensee: Pennsylvania Power and Light Company
2 North Ninth Street
Allentown, Pennsylvania 18101

Facility Name: Susquehanna Steam Electric Station, Units 1 & 2

Inspection At: Berwick, Pennsylvania

Inspection Conducted: June 7-10, 1993

Inspector:



J. Noggle, Senior Radiation Specialist
Facilities Radiation Protection Section

7/8/93
date

Approved by:



W. Pasciak, Chief, Facilities
Radiation Protection Section

7-9-93
date

Areas Inspected: Areas covered in this inspection included a review of: previously identified items, organization changes, audits and surveillances, Quality Control (QC) reports, training, solid radwaste processing, shipping radioactivity determinations, shipping records, and the adequacy of on site storage of radwastes.

Results: Within the scope of the inspection, no violations were identified. One weakness was identified relative to the lack of radioactive shipping regulations training provided to your authorized radwaste shipping personnel.

DETAILS

1.0 Personnel Contacted

1.1 Licensee Personnel

- * T. Dalpiaz, Manager of Plant Services
- * D. Hagan, Health Physics Supervisor
- * G. Kuczynski, Manager of Nuclear System Engineering
- * C. Markley, Effluents Management Supervisor
- * D. McGann, Nuclear Compliance Supervisor
- * D. Rarick, Quality Control Specialist Supervisor
- * G. Stanley, Superintendent of Plant

1.2 NRC Personnel

- * G. Barber, Senior Resident Inspector
- * D. Galvin, Intern Inspector

1.3 Pennsylvania Department of Environmental Resources

- * D. Ney, Inspector

* Denotes those present at the exit interview on June 10, 1993.

Other licensee employees were contacted and interviewed during this inspection.

2.0 Purpose

The purpose of this routine inspection was to review the licensee's program for the collection, handling and storage of radioactive waste, for the preparation, packaging and shipment of licensed radioactive material, and for quality control and audit activities in this area.

3.0 Organization and Program Changes

The previous Effluents Management Supervisor, who managed the radwaste and transportation program areas, was replaced by Mr. Curt Markley. While no specific regulations or requirements exist for the qualifications of someone filling this position, Mr. Markley has spent 15 years working in various technical capacities at Susquehanna Station, including: startup engineer, maintenance, nuclear assessment,

diesel generator system engineer, outage systems engineer, and most recently, Chemistry Systems Supervisor. Although Mr. Markley has no direct background or experience in radwaste/transportation, he does bring a broad range of plant systems and chemistry knowledge to this program area. Under him is a well qualified staff of radwaste engineers and foremen to provide the experience and technical expertise required to implement the radwaste/transportation program.

The licensee recently changed the onsite radwaste processing vendor. The new vendor, Pacific Nuclear Systems Incorporated (PNSI), was in the process of testing their installed wet resin processing system at the time of this inspection. The inspector reviewed the process control program (PCP) procedures, and the personnel training program relative to the new radwaste processing vendor's operation. The inspector determined that the licensee's PCP had been revised to adequately reflect the current radwaste processing system. The inspector observed that PNSI was administering a training program to the lead radwaste resin processing technician that provided adequate detail to ensure that equipment was operated in accordance with PCP requirements. No discrepancies were noted.

4.0 Transportation and Radwaste

4.1 Quality Assurance / Quality control

The Quality Assurance (QA) and Quality Control (QC) programs at Susquehanna involved biennial QA audits of the PCP and biennial audits of all radwaste vendors, occasional QA surveillances, and QC inspections of all radwaste or radioactive material shipments leaving the station. The last audit of the licensee's PCP that was done was on November 4 - 18, 1991, NQA Audit No. 91-110. This audit resulted in three findings of minor safety significance. The audit was comprehensive and of good quality.

NQA Audit No. 92-056 reviewed the effectiveness of Alaron Corporation to provide metal decontamination and reclamation services. This audit was conducted on May 26-27, 1992 and resulted in four non-safety related findings.

NQA Audit No. 93-064 reviewed the effectiveness of PNSI to provide resin dewatering and drying services. This audit was conducted on April 12-15, 1993. No significant finds were reported in the audit report.

NQA Audit No. 91-047 reviewed the effectiveness of Scientific Ecology Group, Incorporated (SEG), for providing on-site resin dewatering services and off-site Dry Active Waste (DAW) sorting, compaction or incineration, and disposal. This audit was conducted on August 19 - 23, 1991 and resulted in six findings. The findings are as follows: (1) a weak commercial grade parts dedication program; (2) a weak weld process controls program; (3) an incomplete audit of SEG design controls; (4) incomplete training records for two employees; (5) inadequate training for a driver; and (6) a lack of procedures governing HP instrument calibrations. The licensee effectively tracked and closed out each of the findings.

The QC radwaste/radioactive material shipment inspections were in the form of checklists and specific procedure signoff steps, which generally accompanied the shipping records. In general, the QA and QC audit and inspection activities were very comprehensive and well implemented.

4.2 Transportation

The inspector reviewed training records of selected radwaste/transportation personnel. The licensee provided a six hour radwaste course to all of the radwaste shipment technicians on an annual basis. This course provided an overview of select radioactive shipping regulations. The licensee has one principal authorized radwaste shipper and one back-up person with the responsibility to sign radioactive material shipment records and radwaste shipment manifests. The principal radwaste shipper had not been retrained in all of the applicable NRC and DOT radioactive shipment regulations since 1988. The back-up person had received this training in 1990. Inspection and Enforcement Bulletin 79-19 requires periodic retraining of individuals who have responsibility in performing transportation activities. The licensee did not respond to IE Bulletin 79-19 as the bulletin was issued prior to startup of the station, and therefore, is not committed to the Bulletin's requirement for periodic retraining of workers involved in transportation activities of radioactive waste. The inspector stated that the lack of a program for retraining the responsible radwaste transportation workers in the regulatory requirements in this area is a significant program weakness. The licensee agreed to provide this training in the near future. This issue will be reviewed during future inspections.

As part of this inspection, the following radioactive material shipment records and radioactive waste manifests were reviewed.

SHIPMENT NO.	ACTIVITY Ci	VOLUME FT ³	TYPE
92-160	1.2E+3	73.4	RWCU RESIN
92-184	2.6E+1	178	SLUDGE
93-14	6.8E-1	195	BEAD RESIN
93-27	2.6E-2	943	LAUNDRY
93-33	2.0E-4	0.5	SAMPLES
93-37	4.1E+1	179	URC RESIN
93-45	5.4E-4	256	EQUIPMENT
93-47	8.8E-2	356	BEAD RESIN
93-48	5.3E+1	179	RW RESIN
93-49	9.1E-2	2560	DAW

All records were found to be complete, and to accurately classify the material in accordance with 10 CFR 71 and 49 CFR Parts 100 - 179. In addition, five destination licenses were verified and Certificates of Compliance were verified for registered shipping casks utilized by the licensee. No discrepancies were noted.

In addition, the inspector reviewed the following transportation procedures.

NDAP-QA-0640, Rev. 1, "Conduct of Effluents Management"

NDAP-QA-0646, Rev. 1, "Solid Radioactive Waste Process Control Program"

WM-PS-100, Rev. 0, "Shipment of Radioactive Waste"

WM-PS-110, Rev. 0, "General Shipment of Radioactive Material"

WM-RP-008, Rev. 0, "Solid Radioactive Waste Sampling"

WM-RP-101, Rev. 0, "Transfer and Dewatering Bead Resin in Radlok High Integrity Containers"



WM-RP-105, Rev. 0, "Cartridge Filter Processing and Packaging in High Integrity Containers"

WM-PS-155, Rev. 0, "10CFR61 Sample Shipping and Correlation Factor Determination"

WM-PS-160, Rev. 1, "Radwaste Curie Calculations"

WM-PS-310, Rev. 0, "Use of the SEG HN-142 Shipping Package"

WM-PS-316, Rev. 1, "Use of the SEG 14-215 Shipping Package"

WM-RP-301, Rev. 0, "Biocide Injection to Deplete Waste Stream Biological Growth and Methane Gas Generation"

These procedures were determined to be complete and to accurately reflect current transportation operations.

4.3 Solid Radwaste

Since December 1988, Susquehanna has not used the waste evaporator for processing of solid radwastes. The evaporator system was flushed out, drained, and isolated. Since then, various resin demineralizer systems have replaced their function. Resin filtering and dewatering has been the method of choice for liquid radwaste solidification. There were five liquid radwaste waste streams producing spent resins that were independently characterized for radionuclide analysis as follows:

1. Sump Sludge was sampled and characterized on January 19, 1993.
2. Ultrasonic Resin Cleaner (URC) Sludge was characterized on January 19, 1993.
3. Bead Resin was sampled and characterized on January 19, 1993.
4. Liquid Radwaste Filter Media was characterized on January 19, 1993.
5. Reactor Water Clean-Up (RWCU) media was characterized on June 29, 1992.

In addition to these spent resin waste streams, a tritium analysis was determined on March 12, 1993 and DAW characterization was last performed on March 13, 1993. These seven waste stream analyses provide the basis for radioactivity determinations for all radioactive material shipments using a three year averaging of waste stream sample data from each waste stream. Each of the five spent resin waste streams were sampled and a gamma isotopic analysis yielded results of the gamma producing

radionuclides. Using the Cobalt-60 results, the non-gamma emitting radionuclides produced by activation were estimated by correlation with the characterized waste stream. The gamma isotopic analysis results for Cesium-137 were used with appropriate waste stream correlation factors to estimate the non-gamma emitting radionuclides produced through fission events. Class A wastes are recharacterized approximately annually and Class B wastes and above are characterized biennially. The tritium content of radwastes is determined from reactor water analysis and correlated to each waste by water content.

The inspector witnessed the final survey, final vehicle inspection, and completion of the radioactive material shipment records of two sea-land containers that were bulk loaded with DAW, shipment no. 93-49.

No discrepancies relative to NRC or DOT transportation regulations was observed.

5.0 Exit Meeting

The inspectors met with licensee representative at the conclusion of this inspection, on June 10, 1993. The inspector reviewed the purpose and scope of the inspection and reported no inspection findings.

