

U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Report No. 50-219/82-11

Docket No. 50-219

License No. DPR-16 Priority - - - Category C

Licensee: GPU Nuclear Corporation

100 Interpace Parkway

Parsippany, New Jersey 07054

Facility Name: Oyster Creek Nuclear Generating Station

Inspection at: Forked River, New Jersey

Inspection conducted: April 8, 1982

Inspector: *Edward J. Greenman*
K. E. Plumlee, Radiation Specialist

8-25-82
date signed

date signed

Approved by: *Edward J. Greenman*
E. G. Greenman, Acting Chief, Facilities
Radiation Protection Section

8-25-82
date signed

Inspection Summary:

Inspection on April 8, 1982 (Report No. 50-219/82-11)

Areas Inspected: Special, unannounced safety inspection by a region based inspector to determine the causes and the circumstances regarding the radioactive contamination of the Service Air System; the planned decontamination efforts, replacement of contaminated system piping, and those steps taken or planned by the licensee to minimize the potential for contamination of the supplied breathing air. This inspection involved 9 inspector-hours on site by one region based NRC inspector.

Results: No violations were identified.

DETAILS

1. Persons Contacted

- D. Arbach, Radiological Support Manager
- * J. T. Carroll, Director of Station Operations
- B. Leavitt, Deputy Manager, Radiological Controls
- J. L. Sullivan, Unit Superintendent

*Denotes presence at telephone exit interview on August 23, 1982.

2. Background Information - IE Information Notice 79-08

IE Information Notice No. 79-08, dated March 28, 1979, "Interconnection of Contaminated Systems with Service Air Systems Used as the Source of Breathing Air," described instances when these interconnections resulted in Service Air Systems becoming contaminated. The IE Information Notice also recommended protective measures to safeguard the breathing air purity.

In response to this Information Notice, the licensee hired an outside consultant to evaluate the ongoing use of the Service Air System as the source of breathing air. (Spotts, Stevens & McCoy, Inc., "Analytical and Engineering Evaluation of the Oyster Creek Nuclear Generating Station's Service Air System for Breathing Air," April 18, 1980.)

3. Description of Service Air System Contamination

a. Internal Contamination of a Service Air Compressor

During repairs of a Service Air System Compressor in March of 1982 the licensee found up to 60,000 dpm/100 cm² of fixed internal contamination.

The licensee had investigated the possible causes and believes there could have been two sources of the contamination. During a followup telephone call with NRC Region I on June 7, 1982, the licensee stated the compressor contamination was similar, except for the absence of Cs-137, to the plateout found in the cooling water system supplying the compressor, which ties to the Turbine Building Closed Cooling Water (TBCCW) System. The licensee previously had determined by a review of air sample records for the area where the compressors are located in the Turbine Building, that no detectable airborne contamination had been found within the previous 36 months. Before that, airborne radioactive materials could possibly have been drawn into the compressor air intake due to steam leaks in the Turbine Building.

The licensee also maintains a sampling program to assure the purity and safety of the supplied breathing air. This includes sampling at each breathing air station prior to use, sampling the condensate blowdown from the compressed air storage tanks, and sampling of the Service Air System semi-annually and prior to each refueling outage. A licensee representative stated that no radioactive materials were detected as a result of these samples.

The licensee also routinely conducted whole body counts of each user of breathing air at least annually and upon termination of work assignments at the facility.

A licensee representative stated that no exposures of personnel to airborne radioactive materials via the breathing air supply have been identified based on the breathing air samples and whole body counts.

The licensee representative stated that a review of the breathing air supply system will be completed before the Service Air System is used again as the source of breathing air. This item will be followed up during a subsequent inspection. (82-11-01)

b. Internal Contamination of Reactor Building Service Air System-Supply

Piping

Contact dose rates of up to 7 R/hr were found along the Service Air System supply pipe to an air sparger in the Reactor Water Cleanup System Filter Sludge Tank (FST) at about 5:00 p.m. on April 2, 1982, after depressurizing the Reactor Building portion of the Service Air System in preparation for a Secondary Containment Leak Rate Test. The manually operated supply valve to the FST air sparger was inadvertently left open and there was no check valve at that point. No procedural provision had been made to close this valve. Water was flowing by gravity through about 100 ft. of Service Air System piping and spilling onto the floor at the 51 ft. elevation, Reactor Building. The spill was terminated. It was estimated that 18 gallons was spilled.

After the pipes were drained the horizontal runs had contact dose rates up to 5 R/hr (indicating poor drainage), and the vertical runs about 50 mR/hr.

The licensee also verified there was no breathing air use during this time, and prohibited further use of the system pending evaluation and corrective action.

The inspector reviewed several radiation work permits and the written prohibition of the use of airline respirators without management review. No examples were identified of any use of Service Air System for breathing air during or following April 2, 1982.

4. Licensee Corrective Actions

The licensee representative stated that the contaminated portion has been severed from the Service Air System piping and the severed pipe ends have been capped. The effort to decontaminate the pipe by a flush with a decon solution reduced the maximum contact dose rate to about 100 mr/hr. A repair order was initiated to replace the contaminated piping.

The licensee has a review in progress to determine what modifications such as check valves and vacuum breakers are necessary to prevent a recurrence of system contamination. Further, the licensee has initiated actions to install a separate breathing air system.

The planned actions are consistent with the recommendations contained in Information Notice, No. 79-08. The acceptability of and installation of the planned equipment will be reviewed on a subsequent inspection (82-11-02).

5. Review of Dosimetry and Respiratory Protection Procedures and Records

The inspector also reviewed selected personnel dosimetry records and recent whole body count results to determine adherence to the requirements of 10 CFR 20.101 and 20.103.

Respiratory protection procedures and selected records maintained pursuant to the procedures were reviewed to determine the adequacy of the licensee's procedures and practices.

The inspector conducted tours of the facility while onsite to observe the issuance, use, cleaning, maintenance and storage of respirators.

No violations were identified.

6. Control of Radiation Work and Access to Radiation Areas, High Radiation Areas, Contamination Areas and Airborne Radioactive Materials Areas

The Reactor Building was toured to verify adherence to regulatory requirements and procedures controlling access to Radiation Areas, High Radiation Areas, Contaminated Areas, and Airborne Radioactive Materials areas. The inspector conducted an independent survey of these areas to verify the accuracy of the licensee's posted information.

No violations were identified.

7. Exit Interview

The inspector conducted an exit interview with the licensee representative denoted in paragraph 1.

*The licensee reviewed the current status of the facility and described planned repairs and modifications to the Service Air System.

*Telephone conversations April 12, 13 and June 7, 1982.