



William J. Cahill, Jr.  
Executive Vice President  
and Chief Nuclear Officer

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U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Mail Station P1-137  
Washington, DC 20555

Subject: James A. FitzPatrick Nuclear Power Plant  
Docket No. 50-333  
**NRC Letter On Radiological Concerns  
and Industrial Safety Deficiencies**

Reference: Letter from the NRC to the New York Power Authority dated February 1, 1995,  
from Mr. Richard W. Cooper, II, Director of Reactor Projects to Mr. William J.  
Cahill, Jr., Chief Nuclear Officer.

Dear Sir:

On February 6, 1995, the New York Power Authority (NYPA) received the above referenced letter requesting review and disposition, within 30 days of receipt, of the radiological and industrial safety deficiencies at the James A. FitzPatrick Nuclear Power Plant. The letter describes deficiencies that occurred during a refueling outage and were specifically related to the Main Condenser re-tubing job. The following is a disposition of the deficiencies as they appeared in the attachment to the above referenced letter.

Specific Radiological Concerns

**Concern 1:**

"Two individuals received an uptake while working in the condenser, which was subsequently detected by portal monitors while exiting the radiologically controlled area (RCA). Both Individual's nasal smears were contaminated, but only one individual received a whole body count."

**Disposition:**

A review of the plant records revealed that there were two separate cases of facial contamination for the condenser re-tube job. According to site procedure (RP-DOS-103, "Personnel Decontamination"), any facial contamination greater than 100 net counts per minute (ncpm) requires a whole body count (WBC). A review of plant records for December 1994 indicated that one contract worker had facial contamination above 100 ncpm (120 ncpm) for the condenser re-tube job.

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On December 12, 1994, an individual received contamination to the face due to pulling condenser tube stakes directly overhead. It is believed that when he exited the job area, prior to dressing, he entered the screenwell portal monitor and it subsequently alarmed. He then proceeded to the main access control point (Turbine Building 272 elevation next to the Radiation Protection Office) and informed Radiation Protection personnel. He then entered the main access area portal monitor and received an alarm. He was given a nasal smear and decontaminated. Following decontamination he was given a WBC. The WBC did show positive results (greater than Lower Limit of Detection (LLD)) for Mn-54, Co-58, and Co-60. The WBC results did not require a Committed Effective Dose Equivalent (CEDE) determination. However, if a CEDE determination was performed, it would have resulted in a calculated dose of approximately 7.0 millirem. A review of plant records and personnel interviews determined that the second individual in question did not receive facial contamination in excess of 100 ncprn and therefore did not require a WBC.

A review of the plant records for the entire condenser re-tube job showed one additional person with facial contamination. On January 21, 1995, a different contract worker had facial contamination of 500 ncprn. Whole body counts were performed. The CEDE determination from the Whole-body bioassay for this individual was calculated to be approximately 7.6 millirem.

#### **Concern 2:**

"Radiation technicians responding to the event did not know how to take a nasal smear."

#### **Disposition:**

The junior Radiation Protection (RP) technicians assigned to the main access point near the Radiation Protection Office were unsure of who (the RP technician or the contaminated worker) was required to take the cotton swab and insert it in the nose and perform the swipe. They requested help from the Chief Radiological Technician in the Radiation Protection Office. He assisted the junior technicians and informed the worker that he was to perform the actual smear. The junior RP technicians knew how to take a nasal smear and count it. They were unsure of who was to perform the action of inserting and swiping the nostril. It is practice that the individual who is suspected of being contaminated does this for personnel safety reasons. Seeking help for this event was appropriate.

#### **Concern 3**

"During initial disassembly of the condenser, workers shoes were getting contaminated, but instead of designating the area as contaminated and using a step-off pad, workers were directed to wear yellow rubbers."

#### **Disposition:**

There were Step-Off-Pads (SOPs) set up at the entrance to the condenser area (272 foot elevation), and the access point to the west waterbox area from the 272 to the 244

foot elevation. A clean area walkway was established in the east waterbox area to allow access through that area without protective clothing. The area was maintained below the threshold for controlling access as a contaminated area (less than 1000 dpm per 100 centimeters squared).

During disassembly of the condenser, workers were receiving shoe contamination alarms on the portal monitors at the exit from the Radiologically Controlled Area (RCA). Workers from other areas of the plant were also receiving these alarms. Confirmation surveys using hand held friskers did not indicate shoe contamination above 100 ncpm. Large area wipes were used to confirm the results of the routine 100 cm<sup>2</sup> smears taken per RP procedures. None of the large area wipes indicated contamination levels above background. Several weeks into the re-tube job, workers requested they be allowed to wear rubber shoe covers to help prevent these portal monitor alarms. The Radiation Protection Department agreed to allow the use of rubber shoe covers in certain areas of the turbine building even though these areas were not posted as contaminated areas.

It is suspected that radon daughters were causing the contamination alarms during the disassembly of the condenser. During this same period, contamination alarms were also encountered in other areas of the plant; e.g., Reactor Building. Investigation into the cause of the alarms in these areas verified the source as radon daughters. Monitoring to determine the radon daughter concentrations in the Turbine Building condenser area is ongoing.

#### Concern 4

"The general foreman for this job directed workers to use a written log vice the computer to sign in to the RWP if lines were long."

#### Disposition:

During the first week of the outage, the Radiation Protection Department allowed the use of Radiation Work Permit (RWP) login sheets, instead of the computer. Procedure RP-OPS-301, "Radiation Work Permit Procedure", allows the use of the RWP sign-in sheets.

#### Concern 5

"Various hoses and ropes were routinely passed back and forth over contaminated boundaries without precautions."

#### Disposition:

Items are allowed to be passed into the contaminated area, but are not allowed to pass from the contaminated area to the clean area without appropriate surveys. On several occasions the RP technicians counselled workers for boundary violations. As a result of repeated incidents, a Radiation Protection supervisor called a meeting with the day shift work crew. At this meeting the RP supervisor stressed the need and importance of respecting contaminated area boundaries. The RP supervisor also

stated that workers who violate the boundary would be removed from the Radiation Work Permit (RWP) and not allowed back on the job site. No contamination was found outside the contaminated area boundary as a result of these boundary infractions. (Other radiation worker practice deficiencies are discussed below in concern 7).

#### Concern 6

"Hydraulic fluid mixed with contaminated debris and entered the floor drain system."

#### Disposition:

The hydraulic fluid and contaminated debris never entered the floor drain system. There were four hydraulic tube cutting/pulling machines staged in the west waterbox area for the condenser re-tube job. A small amount of hydraulic fluid from one of the condenser tube pulling/cutting machines had leaked onto the floor. The hydraulic fluid combined with water and some debris from the condenser. This material was wiped up and placed in a 55 gallon drum with appropriate waste permit. A catch containment that funneled to a 55 gallon drum was put in place to catch any further fluid/debris.

The procedure for the job required covers to be installed over the condenser area floor drains to prevent debris and hydraulic oil from entering the floor drain system. This was controlled by Temporary Modification 94-275, West Condenser Area Floor Drain Covers. The floor drain covers were installed on December 13, 1994 and removed December 28, 1994.

There was also a cooling unit that had a hydraulic pump that leaked a few ounces of hydraulic fluid. This pump was in the condenser bay area on the 272 foot elevation in a non contaminated area. There was a floor drain located approximately four feet from the pump leak. The floor drain was protected with a dike made of absorbent material. The oil was wiped up and the pump removed from service. The floor drain was inspected for oil. There was no evidence that oil entered the floor drain.

#### Concern 7

"Overall radiation protection controls for this job were poor."

#### Disposition:

NYPA agrees that radiation work practices were less than adequate during portions of the condenser re-tube job. There were two Radiation Protection inspections performed by the NRC during this plant outage. The first inspection (50-333/94-30), was between December 12 and 16, 1994. The inspector noted that adequate Radiological and Environmental Services (RES) staff appeared to be available for the outage. However, he identified poor radiological work practices in several areas, including the condenser re-tubing work. As a result of this a mandatory stand-down meeting was performed on the afternoon of December 13, 1994. The NRC inspector cited the James A. Fitzpatrick plant for a violation (50-333/94-30-01).



The cause for the identified worker performance issues was determined to be that job performance standards were not adequately communicated nor routinely enforced.

The second inspection (50-333/95-03), was performed between January 23 and 27, 1995. On this inspection the inspector noted that the short term corrective action as a result of the violation 50-333/94-30-01, failure to follow procedures/poor radiological worker practices (above), appeared to be "generally effective as evidenced by the significantly improved radiological worker practices observed during the inspection".

#### Specific Industrial Safety Deficiencies

##### **Deficiency 1**

"Scaffolding for the job was inadequate"

##### **Deficiency 2**

"Where scaffolding was impractical, safety lines and ropes were not being used."

##### **Disposition:**

in response to similar concerns, a walkdown of the job-site for the condenser re-tube job was performed (December 23, 1994). The walkdown was performed by the Contractor Condenser Re-Tubing Project Manager, NYPA Condenser Re-Tubing Project Manager, and the NYPA Safety Supervisor. The focus of the walkdown was to examine existing scaffolding conditions and the use of fall protection.

The conclusion of the walkdown was as follows:

1. The assembly of the tubular welded frame scaffolding staged in front of the Condensers did not meet OSHA or AP-05.10 Standards. This scaffolding required frequent relocation and was constructed without toeboards and siderails. Fall protection was required to be worn as a condition to the construction.
2. Scaffolding that was being used to support work platforms in front of the Condensers at the 252' elevation met all OSHA and site requirements.
3. The primary scaffolding that was being constructed to support new tube installation met all OSHA and site requirements. There was also scaffolding that was being constructed to support new tube installation that would require frequent relocation. This scaffold did not meet all OSHA requirements and as such fall protection was required.
4. Fall protection was required in certain areas and was not always in use.

As a result of the walkdown, the following actions were taken to improve safety:

1. Employees working in the condenser area were instructed to work with safety belts or harnesses, as required.
2. Employees working inside the Condenser were required to wear hard hats. Removal required concurrence with their immediate supervisor.
3. The contractor reviewed work practices and site injuries for trends. The contractor did recognize a trend regarding hand injuries and took steps to address the problem. The contractor held meetings with all craft personnel and discussed the safety issues that resulted from the walkdown.
4. JAF safety department conducted weekly audits of site projects. These audits included the condenser re-tube project.

Safety statistics were reviewed as part of the job walkdown:

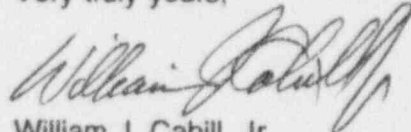
Review of the contractors injury records showed 15 people were treated for injuries; three of which involved recordable injuries. 30,170 manhours were accrued from October to December 26, giving the contractor an incident rate of 19.89.

As a result of the corrective actions from the safety walkdown, the contractor incident rate for the entire condenser re-tube job was more than halved to 8.32. There were no further injuries that required more than minor first-aid treatment.

This response contains no personal, privacy, propriety, or safeguards information and can be released to the public and placed in the NRC Public Document Room.

If you have any questions, please contact Mr. John Kelly.

Very truly yours,



William J. Cahill, Jr.  
Chief Nuclear Officer

cc: see next page

cc: Regional Administrator  
U.S. Nuclear Regulatory Commission  
475 Allendale Road  
King of Prussia, PA 19406

Mr. C. E. Carpenter, Project Manager  
Project Directorate I-1  
Division of Reactor Projects - I/II  
U.S. Nuclear Regulatory Commission  
Mail Stop 14 B2  
Washington, DC 20555

Office of the Resident Inspector  
U.S. Nuclear Regulatory Commission  
P.O. Box 136  
Lycoming, NY 13093

Mr. Richard W. Cooper, II  
Director of Reactor Projects  
U.S. Nuclear Regulatory Commission  
475 Allendale Road  
King of Prussia, PA 19406