

U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Report Nos. 50-220/92-17
50-410/92-19

Docket Nos. 50-220
50-410


License Nos. DPR-63
NPF-54

Licensee: Niagara Mohawk Power Corporation
300 Erie Boulevard West
Syracuse, New York 13202

Facility Name: Nine Mile Point Units 1 and 2

Inspection At: Lycoming, New York

Inspection Conducted: June 15-19, 1992

Inspector: 

J. Furia, Senior Radiation Specialist,
Facilities Radiation Protection Section (FRPS),
Facilities Radiological Safety and Safeguards
Branch (FRSSB), Division of Radiation Safety
and Safeguards (DRSS) 6-22-92
date

Approved by: 

W. Pasciak, Chief, FRPS, FRSSB, DRSS 6-22-92
date

Areas Inspected: Unannounced inspection of the licensee's radiological protection programs during outage and normal operations including: management organization, ALARA, radiological controls, dosimetry records, transportation and implementation of the above programs:

Results: Strong radiological controls and ALARA performance during the Unit 1 maintenance outage was noted. Improvements in the Unit 2 ALARA performance and improved radiological housekeeping was also observed. One violation, in the area of radiological controls at Unit 2 was identified (Section 4).



DETAILS

1. Personnel Contacted

1.1 Licensee Personnel

- * D. Barcomb, General Supervisor, Radiation Protection Operations, Unit 2
- * G. Brownell, Site Licensing
- * K. Dahlberg, Plant Manager, Unit 1
 - A. DeSantos, Shipping Coordinator, Unit 1
 - T. Hogan, ALARA Supervisor, Unit 1
 - C. Leon, Supervisor, External Dosimetry
- * M. McCormick, Plant Manager, Unit 2
- * L. Nelson, Audit Lead, Plant Operations
 - K. Rowe, ALARA Supervisor, Unit 2
- * P. Sconzert, Quality Assurance, Unit 1
- * P. Smalley, General Supervisor, Radiation Protection Operations, Unit 1
- * P. Swafford, Radiation Protection Manager, Unit 2
- * R. Sylvia, Executive Vice President
- * W. Thompson, Radiation Protection Manager, Unit 1
- * J. Torbitt, Radwaste Supervisor, Unit 1

1.2 NRC Personnel

- R. Laura, Resident Inspector
- W. Schmidt, Senior Resident Inspector

* Denotes those present at the exit interview on June 19, 1992.

2. Purpose

The purpose of this safety inspection was to review the licensee's programs for radiological protection during both the maintenance outage at Unit 1, and during restart operations at Unit 2, ALARA, dosimetry records, and transportation programs.

3. Unit 1 Radiation Protection Program

The Unit 1 Radiation Protection Department restructured its staff organization in early June, 1992. Two General Supervisors, together with the ALARA Supervisor, now report directly to the Radiation Protection Manager. One General Supervisor was responsible for Radiological Controls, while a new General Supervisor was placed in charge of Radiological Engineering and Internal Dosimetry. This new General Supervisor's position was filled by a very experienced radiation protection professional.



3.1 ALARA

Due to the maintenance outage which was ongoing at the time of this inspection, the licensee was in the midst of completely revising its annual ALARA goal for Unit 1. The current maintenance outage will have the plant in a mid cycle outage several weeks longer than anticipated when the 1992 ALARA goal was established. In addition, the licensee anticipated moving the refueling outage scheduled for the end of the summer of 1992 into the early part of 1993.

ALARA planning for the maintenance outage was generally very good, with dose significant jobs in the areas of: reactor disassembly/assembly; replacement of the under vessel CRD tool; repairs to the Emergency Condenser system; CRD Pulling; and replacement of the #11 Reactor Recirculation Pump Gasket. At the time of this inspection, the under vessel CRD tool replacement had been completed for approximately half of its established ALARA goal, the reactor disassembly had been completed for slightly over its ALARA goal, and the Emergency Condenser repairs were proceeding at a pace that appeared to meet its ALARA goal.

Work on the Emergency Condenser system involved significant time and effort to be expended on the drywell 259' elevation, with the work including removal of valves and piping on two of the lines (Nos. 11 and 12). Due to the generally high general area dose rates (80-150 Mr/hr) even after shielding placement, extensive pre-job planning and work control was necessary in order to meet the established ALARA goal of 35.5 Person-Rem. In general, all decon work on the removed valves and piping, and preparatory work on the new valves and piping were done in the Large Equipment Decon Room located in the Turbine Building. Dose expended for the removal of the old valves and piping, prepping of the pipe ends, and welding of the new sections in place were done in a manner to reduce the number of personnel needed in the area, and the time spent in the area by needed personnel. While periodic radiation control coverage was necessary, between rounds the radiation controls personnel manning the access point at the drywell entrance could observe the ongoing work through the use of closed circuit television, which was also utilized by the welders whenever a remote welding or cutting tool could be utilized.

3.2 Radiation Control

During the maintenance outage, major work control areas included the drywell, refueling deck, turbine deck, and Large Equipment Decon Room. The licensee augmented its normal radiation control staff with a number of contractor technicians, approximately half of whom were brought over from Unit 2 as that refueling outage came to a conclusion. Hot particle controls



were established in the refueling cavity, drywell and Large Equipment Decon Room. Airborne contamination controls were established early in the turbine deck work, which involved disassembly of the high pressure turbine.

Tours of the Radiation Controlled Areas (RCA) indicated generally very good radiological housekeeping, with only minor deficiencies noted by the inspector. These deficiencies were promptly resolved by the licensee. In addition to the maintenance outage activities, the licensee was also continuing its facility improvements in the Old Radwaste Building, with the sludge lancing of tanks in that building ongoing at the time of this inspection.

As described in Section 3.1 above, the radiological controls established for work in the drywell, which at the time of this inspection included under vessel work to replace the CRD tool, and the Emergency Condenser Valve replacement were very good. Complicating the ALARA efforts on the Emergency Condenser (EC) work was the proximity of the #11 EC line to the Reactor Water Clean Up letdown line, which created unshielded general area dose rates of approximately 800 Mr/hr. Close monitoring by Radiation Controls personnel, via periodic direct surveillance and the use of closed circuit TV, has significantly enhanced the ALARA program established for this evolution.

3.3 Transportation

The licensee was storing a loaded IF-300 rail cask outside the Unit 1 reactor building at the time of this inspection. This cask has been utilized by the licensee during the past 18 months for a campaign to remove irradiated hardware stored in the Unit 1 Spent Fuel Pool. As documented in previous inspections at Nine Mile Point, the IF-300 had exhibited a tendency towards contamination "weepage" during transport, which the licensee has taken aggressive steps to alleviate or minimize. The cask currently at Nine Mile Point was loaded with irradiated hardware during the end of May and early June, 1992, and decontaminated principally via steam cleaning, prior to placement on its rail car, in anticipation of transport to the Richland, Washington Low-Level Waste Disposal Site. As part of its corrective actions to a previously identified violation involving weepage from this cask, the licensee has undertaken an extensive monitoring program prior to shipping. This monitoring program has indicated a weepage rate in excess of what was considered acceptable by the licensee, and thus the cask will be returned to the Unit 1 Reactor Building Rail Lock for further decontamination efforts. The inspector will review the actions taken by the licensee during a future inspection in this area.



4. Unit 2 Radiation Protection Program

At the time of this inspection, the licensee was commencing the restart of Unit 2 following its second refueling outage. Final dose expenditures for this outage were projected by the licensee to be approximately 270 Person-Rem, which is some 10% lower than the ALARA goal established for the outage, and some 179 Person-Rem less than the dose expended during the first refueling outage.

Also as part of this inspection, a review of the circumstances surrounding the contamination of a radiation worker and the temporary loss of access to the Unit 2 refueling floor was conducted. The NRC Resident Inspectors office was notified by the licensee in mid-May, 1992, of the basic series of events which occurred on the morning of May 19, 1992 which lead to the contamination and loss of access. During this inspection, a detailed review of the circumstances surrounding this event was conducted.

During the early morning hours of May 19, 1992, work was being performed on the Unit 2 refueling floor (353' elevation) in support of the second refueling outage. Specifically three tasks were being performed at that time: removal of protective reactor stud cans; general equipment decontamination efforts of equipment no longer needed for the outage; and vacuuming of the equipment pool, with the water suctioned being transferred to the spent fuel pool. At approximately 0130 hours, a contractor foreman informed the Radiation Controls (Radcon) technician assigned to cover work on the refuel floor that the workers in the reactor cavity who were removing stud cans were now wire brushing the studs. This was in direct violation of RWP 925052 under which the workers had entered the cavity, which required advanced notification of the Radiation Protection Office "prior to grinding, flapping, wire brushing, or system breach". Upon being informed by the contractor supervisor, the Radcon technician attempted to set up an air sampler to determine the extent of airborne contamination being caused by this activity. At approximately the same time, a radiation alarm located adjacent to the Spent Fuel Pool alarmed, delaying the Radcon technician approximately 2 minutes. At this time the technician approached the reactor cavity and observed a dust cloud in the cavity. At approximately the same time, the continuous air monitor for the refuel floor alarmed, and the vacuum hose being used in the equipment pool ruptured. The Radcon technician ordered an immediate evacuation of the refuel floor. Two contractor workers, who were performing the wire brushing exited the reactor cavity and were noted by the Radcon technician to be covered in dust. The technician ordered them to remove their outer set of protective clothing (PCs) and respirators at the step off pad. At this time one of the contractor workers informed the technician that he was wearing only one set of PCs, and the technician observed that the worker's respirator was not taped to his PCs. The worker was subsequently determined to be contaminated about his face, neck and right elbow, and via whole body counting determined to have received an uptake of zinc-65 leading to an internal uptake of approximately 2 Maximum



Permissible Concentration hours (MPC-hr). RWP 925052 required 2 sets of protective clothing for work in the reactor cavity, while licensee General Employee Training and Respiratory Protection Training instructs workers to tape their respirators to their protective clothing. Responsibilities of the facility staff and contractors in this area are set forth in the Nine Mile Point Radiation Protection Manual, which represents part of the licensee's commitment to meeting plant Technical Specification 6.11. These examples of failure to follow the RWP requirements by the contractor supervisor and worker are a violation of requirements of Technical Specification 6.11 (50-410/92-19).

5. Exit Interview

The inspector met with the licensee representatives denoted in Section 1 at the conclusion of the inspection on June 19, 1992. The inspector summarized the purpose, scope and findings of the inspection.

