U.S. NUCLEAR REGULATORY COMMISSION REGION I

50-220/92-05 Report Nos. <u>50-410/92-05</u>

50-220 Docket Nos. <u>50-410</u>

DPR-63 License Nos. <u>NPF-54</u>

Licensee: <u>Niagara Mohawk Power Corporation</u> <u>300 Erie Boulevard West</u> <u>Syracuse, New York 13202</u>

Facility Name: <u>Nine Mile Point Units 1 and 2</u>

Inspection At: Lycoming, New York

Inspection Conducted: <u>February 3-7, 1992</u>

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)

date

 $\frac{7 \cdot 1C - 4}{\text{date}}$

Approved by:

<u>Areas Inspected</u>: Inspection of the radwaste processing, radioactive materials transportation and radiological protection programs including: management organization, Process Control Plan, documentation, procedures, training, quality assurance, and implementation of the above programs.

W. Pasciak, Chief, FRPS, FRSSB, DRSS

<u>Results</u>: Within the areas inspected, two violations were identified in the area of access to High Radiation Areas (Section 3). Continued good performances in the radwaste and transportation programs were noted.

9202210079 920211 PDR ADDCK 05000220 Q PDR

·

.

. .

•

. .

-

·

.

,

P I

.

•

DETAILS

Personnel Contacted

1.

1.1 Licensee Personnel

- * W. Allen, MATS Radiological Assessment Manager
 - J. Burton, Manager, QA Operations, Unit 1
- * R. Cole, General Supervisor Radwaste, Unit 2
- * A. Curren, Compliance Engineer
- * C. Gerber, Program Manager, Radwaste Storage
- * C. Merritt, Supervisor Radwaste, Unit 2
 - W. Scholtens, Shipping Coordinator, Unit 2
 - P. Smalley, Radiation Protection Supervisor, Unit 1
- * P. Swafford, Radiation Protection Manager, Unit 2
- * W. Thomson, Radiation Protection Manager, Unit 1
- * J. Torbitt, General Supervisor Radwaste, Unit 1
 - C. Ware, Training Supervisor

1.2 <u>NRC Personnel</u>

- * L. Myers, Acting Resident Inspector
 - W. Schmidt, Senior Resident Inspector

* Denotes those present at the exit interview on February 7, 1992.

2. <u>Purpose</u>

The purpose of this safety inspection was to review the licensee's programs for the processing and packaging of radwaste, transport of radioactive materials, and a review of radiation protection practices during normal operations.

3. <u>Radiation Protection</u>

On October 23, 1991, five operations personnel entered the Unit 2 Northeast and Northwest Condenser Areas on the 277' elevation of the Turbine Building in order to take corrective actions to mitigate and terminate a loss of condenser vacuum. This area was a posted High Radiation Area, and in accordance with plant Technical Specification 6.12 required that personnel making entry were required to be on a Radiation Work Permit (RWP), and that each individual or group of individuals. entering have a survey meter, alarming dosimeter or be accompanied by a Radiation Protection Technician having a survey meter. This entry was made without being on an RWP, and the five operations personnel did not have the appropriate radiation detection equipment or coverage by a Radiation Protection Technician. While one operator did have a survey instrument, the licensee's own investigation of the event does not take credit for its presence, as no evidence could be found to indicate that a survey of the area entered was performed, or that the results of any survey were communicated

r. I • · · . .

.

.

to the other members of the group entering the High Radiation Area. This is an apparent violation (50-410/92-05-01).

On December 16, 1992, three operations personnel entered the Unit 1 South Condenser Moisture Separator Room on the 277' elevation of the Turbine Building in order to take corrective actions to mitigate and terminate a loss of condenser vacuum. This area was a posted High Radiation Area, and in accordance plant Technical Specification 6.12 required that with personnel making entry were required to be on a Radiation Work Permit (RWP), and that each individual or group of individuals entering have a survey meter, alarming dosimeter or be accompanied by a Radiation Protection Technician having a survey meter: This entry was made without being on an RWP, and the five operations personnel did not have the appropriate radiation detection equipment or coverage by a Radiation Protection Technician. This is an apparent violation (50-220/92-05-01).

In both instances, the operations personnel made the High Radiation Area entries in order to keep the plant from tripping off line due to a loss of condenser vacuum. The problems in both instances were a lack of notification to the Radiation Protection Department, and a lack of available alarming dosimeters to the operators.

4. <u>Radwaste and Transportation</u>

4.1 Management and Organization

Processing of plant water and preparation of radioactive wastes for disposal was the responsibility of each unit's Radwaste Section of the Operations Department. At Unit 1, the General Supervisor - Radwaste position had been filled by the former Radwaste Assistant Supervisor since the time of the last inspection. At Unit 2, the General Supervisor - Radwaste position had changed twice since the last inspection, and was also now filled by a former Radwaste Assistant Supervisor. Staffing levels at each unit appeared adequate for the level of work. In addition, each unit's radwaste staff included contractor personnel hired to process the waste streams into an acceptable waste form for disposal.

4.2 Unit 1 Radwaste

Since the last inspection, Unit 1 had undertaken to repair various plant radwaste systems located in the Old Radwaste Building, and to decontaminate general areas in this structure below the 269' elevation. Although not yet completed, this program has significantly improved the work environment for the radwaste operators.

.

u.

Unit 1 processed floor drain water through a waste evaporator, with the bottoms solidified in cement, processed primary and condensate waters through the demineralizer beds, and collected Dry Active Waste (DAW) for bulk shipment to Quadrex. Spent resins, both of the powder and bead types were dewatered in polyethylene liners, with the dewatering process and the solidification services for evaporator bottoms provided by Chem Nuclear Systems, Inc.

At the time of this inspection, the licensee was examining several options to improving plant water processing and waste minimization, most notably by evaluating the potential to replace the waste evaporator with a demineralizer system, and replacing the precoat filters with mechanical septums that would require no precoat.

4.3 <u>Unit 2 Radwaste</u>

Since the last radwaste inspection, the licensee had twice replaced the General Supervisor - Radwaste, with the position filled at the time of this inspection by a former radwaste operator, who had also worked as a training instructor for radwaste personnel. As at Unit 1, the General Supervisor - Radwaste reported through the Operations Manager to the Plant Manager.

At the time of this inspection, all wastes generated by the licensee from its clean-up of plant water systems were solidified in Portland Type II cement. This included diatomaceous earth from its flatbed filter, waste evaporator bottoms, and all resins. DAW was collected from throughout the plant and brought to the radwaste facility where it was compacted into B-25 boxes for eventual shipment to a disposal site.

At the time of this inspection, the licensee was investigating several options to improve its radwaste program. These included conducting a test of the Chem Nuclear Systems, Inc. Advanced Liquid Processing System (ALPS), first as a temporary replacement for the flatbed filter and waste evaporator utilized in the floor drain system. The waste evaporator will be unavailable during the upcoming refueling outage due to maintenance. If this test proves successful, then the licensee would consider making the ALPS a permanent replacement for the originally designed floor drain processing system. The licensee was also in the process of replacing the existing cement solidification system with a Chem Nuclear Systems, Inc. RDS-1000 resin dewatering system. The system was on site at the time of this inspection,

.

;

·

· ·



awaiting final engineering analysis and approval prior to installation and system testing. Operation of this system should result in a significant reduction in the amount of radwaste shipped for disposal by the licensee. Finally, the licensee had decided to lay up the existing extruder/evaporator system, which had been tested but never placed into full time use.

4.4 Transportation

As described above preparation of radwaste for shipment to waste processors or a disposal site was the responsibility of each unit's Radwaste Operations Section. Preparation of non-waste radioactive materials for shipment, including laundry, was the responsibility Protection each units Radiation of Department. Previously, the responsibility for preparing all waste manifests and transportation documents rested with a site Shipping Coordinator. This position was abolished late in 1991, and the responsibilities transferred to each unit's Radiation Protection Operations Section. The former site Shipping Coordinator was assigned to Unit 2, while staff at Unit 1 was designated to receive appropriate training to provide this support. Until the necessary staffing was in place, the Unit 2 coordinator also supported Unit 1.

The licensee continued to prepare shipping documentation utilizing a self-developed spreadsheet, although at the time of this inspection, it was in the process of changing over to utilizing the Radman code (WMG, Inc.)

As part of this inspection, the following shipping records were reviewed.

<u>Shipment #</u>	<u>Activity (Ci)</u>	<u>Volume (cu f</u>	<u>t) Type</u>
1291-113	1.02E+01	194.1	Evap Bottoms
91-114	5.41E+04	76.0	Hardware
1291-114	7.83E+00	194.1	Evap Bottoms
0192-084	3.02E+03	14.9	Hardware
0192-024	1.59E+01	194.1	Evap Bottoms
0192-105	1.31E+01	205.8	Resin
0192-106	1.09E+00	170.8	Resin
1091-126	2.11E+01	181.7	Resin
1091-174	2.42E+01	181.7 [.]	Resin
1191-154	7.99E+00	181.7	Resin
1291-286	2.75E-01	900.0	DAW
0192-141	1.16E+00	181.7	Resin
0292-092	2.74E+01	181.7	Resin

All records were determined to be complete and to meet



,

all the appropriate requirements of 10 CFR Parts 20, 61 and 71, and 49 CFR Parts 100-177.

4.5 <u>Interim Radwaste Storage</u>

In 1991, the licensee assigned the former Unit 1 Radwaste General Supervisor to head a group to plan for the longterm storage of radwaste at the plant, in anticipation of the January 1, 1993 shutdown of the three existing burial sites. Since that time, the licensee has examined two principle options, the use of existing Unit 1 and Unit 2 facilities for the storage of wastes, and the construction of an On Site Storage Container (OSSC) farm or pad.

Currently the licensee has two large existing areas available for radwaste storage. For spent resins and other higher activity wastes, the Stock Storage Area in the Unit 1 New Radwaste Building might be made available with certain modifications. This facility was specifically designed to store 55 gallon barrels of cement solidified radwastes generated by the Stock processing system. Its use to store both unit's radwastes would, however, probably require an amendment to the Unit 1 license to allow Unit 2 wastes to be stored at Unit 1. For the storage of containerized DAW, a large area on the 245' elevation of the Unit 2 Radwaste Building, under the radwaste truck loading area, would be available. Its use would probable also require an amendment, this to the Unit 2 license to provide for storage of Unit 1 waste.

Given the short time remaining before loss of access to the existing disposal sites, the licensee needs to be more aggressive in making its decisions on which waste storage option to use, and to perform the necessary safety analysis, facility modifications, and initiate the necessary licensing actions.

4.6 <u>Training</u>

Since the last radwaste inspection, the training of radwaste operators has been removed from the Non-Licensed Operators training, and placed into the technical training area, together with the training program management for the health physics chemistry and The training program consists of both an technicians. initial and continuing training program for both the radwaste and health physics personnel, with both types of training involving in-house classroom, vendor supplied training and on-the-job training. This training program meets the requirements for training as set forth in NRC

r **y** '' , 4 -

\$

.

U. <u>.</u> 2

-

۶ ۲ .

IE Bulletin 79-19.

4.7 <u>Assurance of Quality</u>

The licensee's program for the assurance of quality in the radwaste and transportation programs involved vendor audits, in-plant audits, surveillances and quality control reviews of all radwaste shipments.

Audits of vendors supplying NRC approved shipping containers and other radwaste services were conducted by the licensee's corporate vendor audit group. Chem Nuclear Systems, Inc. was approved to remain on the approved supplier listing in June, 1989, based upon the results of a Nuclear Utilities Procurement Issues Council (NUPIC) audit conducted by representatives from Wolf Creek Nuclear Generating Station. This approval was valid for three years, and requires annual review. The most recent annual review was conducted in September, 1991, and recommended continued use based upon the results of a second NUPIC sponsored audit, conducted by the Nebraska Public Power District, in November, 1990, and a subsequent audit follow-up conducted by Carolina Electric & Gas Company in April, 1991. Similar documentation exists for General Atomics, which has the lead contract for the spent fuel pool activities at Unit 1, with the triennial approval based upon a Yankee Atomic Electric Company audit conducted in 1989.

The licensee had conducted its annual audit of radwaste activities in November, 1991, with the audit report (#91017-RG/IN), issued December 12, 1991. This audit included radwaste activities, chemistry, radiation protection, Quality Assurance Operations and environmental monitoring programs for both units. This performance based audit had no findings or deficiencies identified, however several items for improvement were documented.

The licensee conducted periodic surveillances at both units, and documented their findings in Surveillance Reports. The scope and number of reports conducted at Unit 1 was exceptional, and although the number of surveillances at unit 2 was somewhat less, it was also noteworthy.

Quality Control inspection reports were on record for each radwaste shipment reviewed. These document Quality Control type activities which typically included review and inspection of disposal liners, shipping casks, transport vehicles, radiation protection activities in support of radwaste shipping, and verification of

r

ч •

paperwork and documentation.

5. Exit Interview

The inspector met with the licensee representatives denoted in Section 1 at the conclusion of the inspection on February 7, 1992. The inspector summarized the purpose, scope and findings of the inspection.

85

. .

ı

,