

U. S. NUCLEAR REGULATORY COMMISSION
REGION I

Report/License Nos.: 50-220/95-20 and 50-410/95-20
DPR-63, NPF-69

Licensee: Niagara Mohawk Power Corporation
300 Erie Boulevard
Syracuse, New York 13212

Facility Name: Nine Mile Point Nuclear Station, Units 1 and 2

Inspection At: Scriba, New York

Inspection Conducted: July 24-28, 1995

Inspector: *L. Eckert* 8/16/95
L. Eckert, Radiation Specialist Date

Approved By: *R. Bores* 8/16/95
R. Bores, Chief Date
Facilities Radiation Protection Section

Areas Inspected: The audit and surveillance, training and qualifications, instrumentation, external and internal exposure controls, contamination control, and plant radiological housekeeping programs were inspected.

Results: Generally effective radiological controls were established and implemented for power operations at both units. The inspector concluded that the audit program and management support for professional development to enhance health physics expertise were strengths. Although no major weaknesses were noted, an area for enhancement associated with instrument calibration was noted.

DETAILS

1.0 PERSONNEL CONTACTED

1.1 LICENSEE PERSONNEL

- * R. Abbott, Plant Manager, Unit 1
- B. Aiken, ALARA Supervisor, Unit 2 (acting)
- * J. Aldrich, Maintenance Manager
- M. Balduzzi, Operations General Supervisor
- * C. Beckham, Quality Assurance Manager
- D. Bosnic, Operations General Supervisor, Unit 2
- * R. Carlson, Dosimetry Supervisor, Unit 2 (acting Unit 2 RPM)
- * H. Christensen, Nuclear Security Manager
- B. Connolly, Quality Assurance Audit Supervisor
- * J. Conway, Operations Manager, Unit 2 (acting Plant Manager, Unit 2)
- * G. Corell, Chemistry Manager, Unit 1
- L. Dick, Quality Assurance Supervisor
- P. Dunn, Radiation Protection Supervisor, Unit 1
- * J. Helker, Maintenance
- T. Hogan, Radiation Protection Supervisor, Unit 1
- * J. Kinsley, Technical Support Manager
- D. Lundeen, Maintenance Support Lead, Unit 1
- * P. Mangano, Plant Support Supervisor
- M. McCormick, Vice President
- G. Montgomery, Calibrations Supervisor, Unit 2
- J. Moser, Chemistry Supervisor, Unit 1
- S. Nicholas, General Supervisor Maintenance Support, Unit 2
- * C. Nielsen, Technical Support, Unit 1
- * N. Rademacher, Operations Manager, Unit 1
- * D. Richards, Operations (acting Operations Manager, Unit 2)
- * P. Smalley, Radiation Protection Manager, Unit 1
- V. Schuman, Radiation Protection Supervisor, Unit 1
- P. Swafford, Maintenance Manager, Unit 2
- K. Sweet, Technical Support
- C. Wave, Chemistry Manager, Unit 2
- * D. Wolniak, Licensing Manager
- * W. Yaeger, Engineering Manager, Unit 1
- * A. Zallnick, Licensing Engineer

1.2 NRC EMPLOYEES

- * B. Norris, Senior Resident Inspector
- * W. Schmidt, Senior Resident Inspector - Peach Bottom Atomic Power Station

* Denotes those present at the exit meeting on July 28, 1995.

The inspector also interviewed other licensee and contractor personnel.

2.0 PURPOSE OF THE INSPECTION

This inspection was conducted to evaluate the licensee's radiation protection program during routine power operations. Areas inspected included audits and surveillances, training and qualifications, instrumentation, external and internal exposure controls, contamination controls, and plant radiological housekeeping.

3.0 AUDITS AND APPRAISALS

Nuclear Quality Assurance (NQA) Audit 94035, "ALARA and Chemistry Programs", issued January 19, 1995, was reviewed. The audit team included a technical expert. The ALARA program portion of the audit concentrated on planning and preparation, incorporation of lessons learned, temporary shielding, and records management. The audit report noted that ALARA performance in 1994 had been strong. Deviation event reports were issued to address ALARA records management problems, as appropriate.

The inspector reviewed a listing and synopsis of all surveillances performed at both units since June 1, 1994. These surveillances included assessments of radiation protection department activities or how other departments had implemented expected radiation protection practices. The inspector concluded that the surveillances had targeted a wide range of radiation protection department activities with special emphasis on problem areas. The surveillances were performance-based (direct work observation) in nature. The inspector concluded that surveillances were effective in augmenting the NQA audits.

The inspector reviewed self-assessments conducted by the licensee's radiation protection department personnel since January 1, 1994. The self-assessments tracked various performance indicators such as collective radiation exposure and personnel contaminations. A review of Deviation Event Reports (DERs; the station discrepancy resolution system) was also detailed in the self-assessments in an effort to identify recurring causal factors denoted in the DERs.

The inspector reviewed a self-assessment approved on March 29, 1995, by the Unit 1 and Unit 2 radiation protection managers (RPMs). The self-assessment was intended to address the requirement of 10 CFR 20.1101(c) to periodically (at least annually) review the radiation protection program content and implementation. In summary, the licensee took credit for existing audits and surveillances and no additional programmatic review was conducted. This is an acceptable way of meeting the regulatory requirement. This self-assessment also detailed areas which were expected to be reviewed during 1995 and 1996. No discrepancies were noted by the inspector.

In conclusion, the inspector considered this program area to be a strength.

4.0 TRAINING AND QUALIFICATIONS OF PERSONNEL

Since the last routine inspection in this program area, a number of individuals have served on an interim basis in the position of the Unit 2 RPM. The inspector concluded that the individuals who had served on the Unit 2 Station Operations Review Committee in the position of RPM met the licensee's technical specification qualification requirements.

The inspector discussed changes in Unit 1 radiation protection supervisors with the Unit 1 RPM. No discrepancies were noted.

One individual at the Nine Mile Point Nuclear Station had been certified by the American Board of Health Physics. Thirty-two individuals had been certified by the National Registry of Radiation Protection Technologists. At the time of this inspection, the licensee was supporting several individuals in their efforts of continuing education and professional certification.

The inspector also discussed with the Unit 1 RPM the licensee's efforts to enhance personnel qualifications/expertise. The Unit 1 RPM provided a list of such efforts from June 1993 until July 1995. The inspector considered these efforts extensive and included participation in audits/peer reviews and attendance at various workshops/seminars.

The Unit 1 RPM and a Radiation Protection Supervisor briefed the inspector on training enhancements planned to enhance technical knowledge of radiation protection personnel. The inspector considered these efforts to be a good licensee initiative.

5.0 INSTRUMENTATION

The area of instrumentation was previously reviewed during NRC Combined Inspection Nos. 50-220/94-11 and 50-410/94-13.

During the current inspection, the inspector determined that a sufficient stock of portable survey instrumentation and calibration and check sources were available for use at both units. The inspector noted that the radiation protection department at each unit was responsible for portable instrumentation equipment maintenance and that the Unit 2 radiation protection calibration section remained responsible for maintaining the station area radiation monitoring system which consisted of over 100 monitors. Further, the inspector noted that, the licensee provided documentation which demonstrated the traceability to the National Institute of Standards and Technology (NIST), or a foreign equivalent for all calibration sources selected by the inspector. The licensee stated that sources used to check the performance of instruments were NIST traceable. The inspector considered this to be a good initiative on the part of the licensee.

The inspector selected several sources at both units to determine whether the source accountability logs were accurate and leak checks conducted as appropriate. No discrepancies were noted.

During NRC Combined Inspection Nos. 50-220/94-19 and 50-410/94-21, a concern was noted regarding recognition of the basis of the Derived Air Concentration (DAC) for beta emitters. In summary, the report noted that changes in plant conditions had the potential to affect the validity of the DAC established by licensee procedures. Similarly, the inspector noted that changes in plant conditions have the potential to affect the licensee's instrumentation program. American National Standards Institute (ANSI) standard ANSI N323-1978, Section 4.3.2, "Radiation Energy", states that "calibration shall be performed with a standard source or sources providing radiation fields similar to those in which the instrument will be used". Technicium-99 (Tc-99) sources were used to calibrate the licensee's portable frisking meters (Eberline RM-14s) at both stations. The inspector questioned licensee personnel on the basis for selecting Tc-99 as the isotope for calibration and performance checking at both units because Unit 2 has injected natural zinc for several years into the reactor coolant system while Unit 1 did not. The injection of zinc has the potential to affect the relative abundances of radionuclides. It was not readily apparent to the inspector that the licensee had reevaluated the use of Tc-99 as the most appropriate isotope for use in calibrating and performance checking RM-14s. Licensee representatives stated that this matter would be reviewed.

The inspector discussed with licensee personnel whether the annual 10 CFR 61 scaling factor analysis was used to facilitate periodic evaluation of the appropriateness of the isotopes selected for instrument calibration and performance checks. The inspector was informed that the procedures controlling the instrumentation program did not specify periodic re-evaluation of the isotopes used. The inspector assessed this matter as an area for improvement.

The inspector was informed that Unit 2 will be building a dedicated calibration facility. The inspector assessed that the facility plans appeared to be spacious enough to achieve a "free-space geometry" as defined by ANSI N323-1978, Section 6.2. The inspector considered this to be a significant initiative on the part of the licensee and will be reviewed in future inspections.

The inspector also reviewed the December 29, 1994, audit report concerning Eberline Instruments, a vendor which provided instrumentation and services to the licensee's radiation protection program. The audit was conducted by members of the Niagara Mohawk Power Corporation. The audit was thorough and assessed the overall state of the vendor's quality assurance program for instruments. The inspector concluded that the licensee implemented the guidance described in NRC Regulatory Guide 8.2, "Guide for Administrative Practices in Radiation Monitoring", which adopts ANSI N13.2-1969 (in particular Section 4.7.2) as an acceptable means of implementing a radiation monitoring program.

In summary, the licensee's instrumentation program was considered to be good.

6.0 EXTERNAL OCCUPATIONAL EXPOSURE CONTROL AND PERSONAL DOSIMETRY

At the time of the inspection, the licensee's thermoluminescent dosimetry (TLD) program had been accredited in all eight test categories. The inspector was informed that a National Voluntary Laboratory Accreditation Program (NVLAP) on-site audit was scheduled for the week following the inspector's review. This review will have special importance in that this audit will be the first NVLAP audit under the new revision to ANSI N13.11 (additional test categories were added). The inspector will review the audit findings during a future inspection.

The inspector noted that dissemination of current dose status to workers was very timely, as it was provided upon each radiologically controlled area entry (the licensee has installed a computerized access control system at both units).

The Unit 2 radiologically controlled area access points were well established, with discrete ingress and egress points and stations.

During plant tours, the inspector noted no discrepancies regarding posting and labeling.

In summary, those portions of the external exposure controls program reviewed by the inspector were assessed as excellent.

7.0 INTERNAL EXPOSURE CONTROL

The inspector's primary focus in this program area was respiratory protection. At the time of the inspection, the licensee rented full-facepiece respirators from INS. A respirator test bench was available on site to support respirator maintenance activities, if it becomes necessary in the future. However, the unit would have to be calibrated prior to such use.

The licensee possessed two TSI Portacount Model 8010 fit test meters at each unit. The inspector reviewed calibration documentation of the Unit 1 fit test meters. The calibration was performed by TSI and the licensee's documentation indicated that each meter passed the manufacturer's specifications.

Irritant smoke fit testing was discussed with licensee personnel. While this method is no longer used at NMP, it is still discussed in licensee procedures. The licensee agreed to review this matter. Use of irritant smoke for qualitative fit tests is no longer favored by NIOSH. This position was disseminated in NIOSH Health Hazard Evaluation Report (HETA) 93-040-2315, "Anchorage Fire Department - Anchorage, Alaska".

The inspector requested clarification regarding the licensee's basis for the frequency of conducting respirator fit tests. At the time of the inspection, the licensee had established a biennial frequency for fit testing of workers who were prescribed to use respirators in protection against radioactive materials. Current NRC guidance (NUREG-0041) does not specify a test frequency, however, more recent ANSI standards recommend an annual fit test. Licensee representatives stated that they would review this matter.

The licensee informed the inspector that it had maintained its practice of DOP testing high efficiency particulate air (HEPA) units, with no unit being considered operable unless tested within 12 months. This was considered a good initiative on the licensee's part.

Several cases were selected and reviewed in which the licensee's investigation determined a need for updating the dose of record from internal exposure evaluations. No inadequacies were noted in the assumptions and methodologies used in calculating committed effective dose equivalent (CEDE) for the reports reviewed. The inspector verified that actions were taken to ensure that dose history records had been appropriately modified in accordance with licensee procedures and federal requirements.

In summary, those portions of the internal exposure controls program reviewed by the inspector were assessed as being well implemented.

8.0 PLANNED SPECIAL EXPOSURES

The licensee has established a program for reviewing and approving planned special exposures. At the time of the inspection, no individual had sustained a planned special exposure.

9.0 CONTROL OF RADIOACTIVE MATERIALS AND CONTAMINATION, SURVEYS AND MONITORING

The licensee used several small article monitors (SAMs) to survey material leaving the radiologically controlled area. The SAMs use multiple plastic scintillation detectors. The inspector was informed that a decision had been made to upgrade all SAMs to be equivalent to SAM 9 models. The inspector considered this to be a good initiative as the SAM-9 models were less affected by changes in background.

The inspector toured the Unit 1 and Unit 2 reactor buildings and accompanied a Unit 1 auxiliary operator on the Unit 1 reactor building morning rounds. No inadequacies with plant radiological housekeeping were noted. The inspector concluded that a good effort had been made towards making areas more readily accessible. Most areas of the Unit 1 reactor building were either directly accessible or accessible with booties and gloves.

The inspector reviewed several reports which had been generated to review and assess skin doses from personnel contaminations. No inadequacies were noted in the assumptions and methodologies used in calculating skin exposures for the reports reviewed. The inspector verified that actions had been taken to ensure that dose history records had been appropriately modified in accordance with licensee procedures and federal requirements.

10.0 EXIT MEETING

The inspector met with licensee representatives at the end of the inspection, on July 28, 1995. The inspector reviewed the purpose and scope of the inspection and discussed the findings. Licensee management acknowledged the inspection findings.