U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Report/License No.: 50-244/95-04/DPR-18

Licensee: Rochester Gas and Electric Corporation
89 East Avenue
Rochester, New York 14649

Facility Name: Ginna Nuclear Power Plant

Inspection At: Ontario, New York

Inspection Conducted: January 30, 1995 through February 2, 1995

Inspector: J. Noggle, Senior Radiation Specialist

Approved by: R. Bores, Chief, Facilities Radiation Protection Section

Areas Inspected: This report documents the results of an announced inspection of the radwaste/transportation program.

Results: The licensee implemented a technically sound radwaste/transportation program. The processing, storage and shipping of solid radwaste and radioactive material were effectively implemented. The inspector identified for licensee evaluation and action, the storage of wooden boxes containing radioactive material in a shed that allowed rain water to intrude. No other safety concerns and no violations of regulatory requirements were observed.

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DETAILS

1.0 INDIVIDUALS CONTACTED

1.1 PRINCIPAL LICENSEE EMPLOYEES

* A. Harhay, Manager Radiation Protection and Chemistry
* T. Marlow, Superintendent Ginna Production
* F. Mis, Health Physicist, Radwaste
* R. Watts, Nuclear Assessment Manager
* J. Widay, Plant Manager

1.2 NRC EMPLOYEES

* T. Moslak, Senior Resident Inspector

* Denotes those present at the exit meeting on February 2, 1995.

The inspector also interviewed other licensee and contractor personnel.

2.0 PURPOSE OF INSPECTION

The inspection was an announced inspection of the Ginna Station radwaste/transportation program.

3.0 PREVIOUSLY IDENTIFIED ITEMS

3.1 (OPEN) INSPECTOR FOLLOWUP ITEM (50-244/93-14-01)

In a previous inspection[1], the inspector questioned the licensee's airborne radioactivity monitoring practice which departed from that specified in the licensee's updated final safety analysis report (UFSAR). In Section 12.3.3.2, the UFSAR states that one continuous air monitor (CAM) will be located on each of the three levels of the Auxiliary Building. At the time of the previous inspection, there was one CAM located next to the spent fuel pool and one CAM located in the basement of the Auxiliary Building. The licensee promptly moved the spent fuel pool area CAM to the top floor of the Auxiliary Building and added a stationary grab sampler to the middle level of the Auxiliary Building. The licensee indicated that a study would be initiated to evaluate the air flow characteristics in the accessible areas of the station and pursue any necessary UFSAR changes at that time.

During this inspection, the inspector reviewed a licensee-prepared design analysis of the Ginna Station air flow and CAM use, dated May 6, 1994. This study evaluated various plant ventilation system drawings to determine general air balance conditions in the Auxiliary and Intermediate Buildings of the station. This study evaluated the balance between air supply and air exhaust in building spaces. The study concluded that two out of the three Auxiliary Building CAMs were not needed due to retirement of the waste evaporator, which is no longer used for radwaste processing. Further, the study justifies the removal

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[1] Inspection No. 50-244/93-14 conducted on July 12-16, 1993

of CAMs from the Auxiliary Building due to the presence of various area radiation monitors with alarm setpoints of 30, 50, or 100 mR/hr and the study refers to these monitors as backups to the CAMs to further justify removal of the Auxiliary Building CAMs. However, the inspector noted that these area radiation monitors respond to gamma radiation exposure of high fluence values and do not provide the sensitivity required to indicate internal exposure hazards to personnel in the station. In the study, the licensee had not evaluated the station air flow with respect to a pressurized water reactor under normal, expected operating conditions. Also, no actual air flow measurements were taken. This issue was discussed with the licensee and remains open pending further licensee review.

3.2 INTERNAL EXPOSURE ASSIGNMENT PROCESS

An issue mentioned in a previous HP outage inspection report[2], reported up to three weeks of backlog in processing internal exposures based on air sampling data and described the paperwork assimilation process as cumbersome. The licensee has incorporated internal dose assignments into the Radose Access computer program. The inspector witnessed a demonstration of a simulated entry into the radiologically controlled area (RCA) under a radiation work permit that required the use of respiratory protection. The inspector verified that the computer program reviewed respiratory protection qualifications of the intended user and, following exit from the RCA, the computer program requested verification of respiratory protection use. A similuated air sample result was input into the Radose Access computer database and the inspector witnessed that the computer system accurately associated the air sample time with the worker entry time and correctly calculated an internal exposure associated with the entry. The internal dose assignment was practically instantaneous following air sample data entry. The inspector had some further questions with respect to non-coincident air sample collection times versus various worker entry times. These details will be reviewed in future inspections (IFI 50-244/95-04-01).

4.0 AUDITS AND SURVEILLANCES

The licensee conducted an audit of Ginna Station radwaste and 10 CFR 20 programs on July 18-22, 1994 (Audit No. 94-25-GFS). This audit included an outside technical reviewer. No findings or observations were noted. Among the comments, radwaste procedure weaknesses were described. This was also previously reported in NRC Inspection Report No. 50-244/93-01. Additionally, the audit indicated that the Process Control Program did not address waste form mishap contingencies. This appeared to be a good audit and provided a sufficient review of this program area.

The licensee conducts quality control inspections of each radioactive

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[2] Inspection Report No. 50-244/94-08 conducted on March 28 - April 1, 1994

material or radwaste shipment that leaves Ginna Station. The inspector reviewed the qualifications of the quality control inspectors and noted that the two individuals had continued to maintain training qualifications in the radioactive material and radwaste shipping regulations. The inspector also reviewed the inspection procedure, QCIP-21, "Inspection of Shipping Packages (Cask/Liners) for Radioactive Material". This procedure checklist is appropriately detailed to ensure normal shipping regulatory requirements are met. Each procedure step requires the quality control inspector's initials and date. During inspection of shipping records, the inspector verified that a copy of QCIP-21 was included, documenting that each shipment had been independently verified by a qualified individual prior to leaving the station. The inspector determined that very good management oversight was provided to ensure a high level of program quality was maintained.

5.0 RADWASTE MINIMIZATION INITIATIVES

The licensee generated approximately 15,800 ft^3 of radwaste during 1993 and reduced this down to 5,800 ft^3 during 1994 through the use of several radwaste minimization initiatives. In October 1993 a station-wide committee was formed to address the issue of radwaste minimization. As a result of this committee's efforts the following changes have been implemented.

- All disposable decontamination towels and disposable rags were replaced with launderable rags.
- Plastic laundry, radwaste, and radioactive material bags were replaced with launderable bags.
- The use of plastic sheeting was significantly reduced by substituting launderable tarps for containment tents and for providing surface coverings.
- Plastic protective clothing was replaced with launderable clothing. Masking tape used for taping protective clothing was replaced with launderable elastic bands for wrists and ankles.
- Clear plastic panel "Lexan" buildings were used to replace some containment tents.
- Reusable spray cans of decontamination solvent were used in conjunction with reusable mops and rags for surface and equipment decontamination.
- A radwaste minimization training video tape was developed and presented to all plant groups. In addition, General Employee Training was changed to incorporate current radwaste minimization techniques.

The licensee enlisted the services of the Electric Power Research

Institute (EPRI) to conduct a radwaste minimization audit of Ginna in July 1994, to obtain an independent review and recommendations for further radwaste reductions. The audit endorsed many of the above mentioned techniques and recommended that the licensee expand the radwaste advertisement of waste reduction goals. In summary, the licensee has produced a number of radwaste reduction initiatives and has shown excellent results in this area.

6.0 TRAINING

The inspector reviewed the licensee's training program for the radwaste shipping organization and appropriate quality control inspectors. The inspector reviewed training lesson plans and reviewed applicable training attendance records. The inspector verified that the three authorized shippers and the two radwaste quality control inspectors had received training in radioactive material shipping regulations during 1992 and in 1994. This training was a 24-hour vendor-provided course that covered the applicable regulations. No discrepancies were noted.

7.0 RADWASTE STREAMS, SAMPLING AND ANALYSIS

Radioactive liquids entering the waste disposal system of the plant are collected in sumps and tanks, are periodically sampled and analyzed and, depending on established release criteria, are either recycled in a plant system, are discharged from the plant, or enter the liquid radwaste processing system. Most of the radioactive liquids discharged from the reactor coolant system are processed and retained inside the plant by the chemical and volume control system. This minimizes liquid input to the waste disposal system which processes relatively small quantities of generally low activity level wastes. Liquid radwaste processing results in the deposition of radioactive contaminates on cartridge filters, on the surfaces of ion exchange bead resins, in the form of sludges, and contaminated oils. There are six types of solid waste generated by the licensee. These include: liquid radwaste system bead resin, primary system bead resin, sludge, oily waste, filters, and trash known as dry active waste (DAW). Bead resins, sludge, and filters are transfered into polyethlene liners and dewatered prior to storage on site. Oily waste and DAW are sent to an offsite vendor for processing. Ash residue from incineration is returned to the licensee for onsite storage.

The licensee has taken samples from the above mentioned six solid radwaste types and the inspector reviewed the associated vendor laboratory analyses of these samples. All sample results were current within two years except for the primary system bead resin, which has not been replaced in several years. The licensee samples the primary system bead resin during the transfer to the storage/disposal container and had these samples analyzed prior to resin storage. The licensee utilizes the RADMAN computer program to process the sample analytical results and derive applicable scaling factors for the difficult to measure radionuclides in the waste material. The RADMAN program was reviewed as a topical report by the NRC and has been found acceptable to derive

applicable scaling factors and to correctly determine waste classifications. The licensee has provided timely waste stream analyses within the time constraints specified in the NRC "Low-Level Waste Licensing Branch Technical Position on Radioactive Waste Classification", dated May 1983. No discrepancies with radwaste stream sampling or waste characterization were noted.

8.0 TRANSPORTATION

The inspector reviewed all of the radioactive material packaging, release and transportation procedures. Approximately one-half of the subject procedures had been rewritten in accordance with the licensee's procedure upgrade effort. Of these, approximately two-thirds of the procedures reflect various cask loading procedures. The "old" procedures continue to stipulate packaging, labeling and shipping in accordance with regulatory requirements without specifying the requirements. Several specific weaknesses of these "old" procedures were previously documented in a previous inspection report[3]. The licensee had committed to upgrade all of these procedures over a 3-year period. The "new" procedures included an improved Process Control Program and an improved procedure format that captures references and license and regulatory commitments. The inspector did note several minor procedure discrepancies with several of the new procedures. The licensee stated that these areas would be re-evaluated and appropriate actions would be taken.

The following shipping documentation was reviewed by the inspector.

Shipment No.	Activity (Ci)	Volume (ft^3)	Waste Type
94-28	12.7	170	Filters/Bead Resin
94-30	73.7	120	Filters/Bead Resin
94-31	119	20	Calibrator
94-43	7.3E-2	1336	Filters/DAW
95-01	8.3E-5	4	Samples
95-02	5.0E-4	1560	Laundry

All shipping records were determined to be complete, contained quality control inspection reports, and were found to meet the applicable requirements of 10 CFR Parts 20, 61, 71, and 49 CFR Parts 171-178. The inspector reviewed the shipping cask Certificates of Compliance and verified that all consignee licenses were on file as required. No safety concerns or violations were identified.

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[3] Inspection Report No. 50-244/93-01 conducted on January 19-22, 1993

9.0 ONSITE RADIOACTIVE MATERIAL/WASTE INVENTORIES

9.1 INTERIM RADWASTE STORAGE

In response to the closure of the nation's low-level radwaste disposal sites to out-of-compact burial at the end of June 1994, the licensee has developed a capacity for onsite storage of solid radwaste generated by Ginna Station. The inspector reviewed the radiological design basis and safety evaluation report (10 CFR 50.59) for the new high integrity container (HIC) storage facility. The inspector also toured this facility as well as the existing Upper Radwaste Storage Facility.

A 56-foot by 64-foot by 12-foot high HIC storage facility was constructed in early Fall 1994. This interim storage facility was built to contain 20 HICs contained within concrete onsite storage containers (OSSCs). These OSSCs are designed to allow liquid and air sampling surveillance from outside the containers. The facility consists of a gravel pad surrounded by a four-foot thick gravel-filled shield wall. The entrance to the storage area is protected by an L-shaped extension shield to provide continuous shielding around the storage facility. The facility was empty at the time of this inspection. The radiological design basis considered a 5 mrem/year limit for offsite locations and less than 100 mrem/year for occupationally exposed workers. The safety evaluation determined that the use of the new radwaste storage facility did not involve any unreviewed safety questions.

The existing Upper Radwaste Storage Facility (URSF) is a 91-foot by 50-foot building with 1-foot thick concrete lower walls enclosed by a sheet metal Butler building. This building will be used for storage of DAW. The licensee is currently sending all station-generated DAW to an offsite radwaste processor for segregation and incineration. All returned DAW ash and non-incinerable DAW radwaste will be stored in the URSF. At the time of this inspection, only a limited amount of high level radioactive DAW and a small inventory of liquid mixed wastes were stored in this building. The licensee is currently evaluating the disposal of the mixed wastes to further reduce the inventory.

The inspector determined that adequate provisions for onsite storage of radwaste have been established based on appropriate design criteria and safety considerations. At the time of this inspection, the licensee had accumulated negligible amounts of radwaste and had not yet developed procedures to address the transfer, storage, and surveillance of radwastes for long-term onsite storage. These procedures will be reviewed in a future inspection.

9.2 RADIOACTIVE MATERIAL STORAGE

The inspector reviewed the onsite storage of contaminated equipment to ensure radioactive material controls were in place and to ensure the radiological hazards to station employees were minimal.

Connected to the Auxiliary Building inside the RCA is the Contaminated

Storage Building (CSB). This building receives contaminated equipment after outages and provides decontamination, monitoring, and some storage capacity for routinely used outage equipment. The storage capacity of the building was improved by increasing the vertical storage capacity inside the building. The building was being well maintained at the time of this inspection. All equipment was stored in clean metal storage containers and generally secured from inadvertent opening. An inventory of equipment was maintained to allow effective reuse of the equipment. The inventory included two steam generator nozzle dam storage boxes that exhibited elevated dose rates of 20-30 mR/hr at 30 cm. All other storage containers exhibited external field dose rates of less than 1 mR/hr. Radiological hazards were low. No discrepancies were noted with respect to this radioactive material storage location.

The inspector reviewed the Radioactive Material Storage Building (RMSB). This building is separated from other plant buildings and is not normally occupied. The building is kept locked and a current inventory is maintained by the Radwaste Group. The radioactive material in this building was effectively stored in metal storage containers that were sealed and labeled. Due to the low occupancy of this storage building, radiological hazards associated with personnel exposure were also low. While this building was very full, it appeared to be well maintained and controlled. Outside of the RMSB, adjoining the east wall extending along the length of the building, is a shed that is open to the weather along its accessible length. This shed was full of wood storage boxes containing contaminated scaffold material. At the time of the inspection, all of the outside facing boxes were wet from rain and melting snow. Water runoff from the boxes fell onto the macadam roadway and onto the grass. The licensee surveyed the affected areas and did not detect any contamination. The inspector discussed with the licensee the potential spread of contamination by the intruding water. The licensee stated that this area would be reviewed and an effective barrier to the elements would be provided or the wooden radioactive material storage boxes would be moved to an appropriate storage location. This will be reviewed in a future inspection. No other discrepancies were noted.

10.0 EXIT MEETING

The inspector met with licensee representative (denoted in Section 1.0) on February 2, 1995. The inspector summarized the purpose, scope and findings of the inspection. The licensee acknowledged the inspection findings and committed to weatherproofing the Radioactive Material Storage Building shed or removing the storage boxes from this location.