

U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

Region I

Report No. 50-244/79-18Docket No. 50-244License No. DPR-18Priority --Category CLicensee: Rochester Gas and Electric Company89 East AvenueRochester, New York 14649Facility Name: R. E. Ginna Nuclear Power PlantInspection at: Ontario, New YorkInspection conducted: December 3-6, 1979Inspectors: G P Yuhas Per
R. S. Markowski, Reactor Inspector1-31-80
date signedG P Yuhas
G. P. Yuhas, Radiation Specialist1-31-80
date signedApproved by: H. W. Crocker
H. W. Crocker, Acting Chief
Radiation Support Section

date signed

2/1/80
date signedInspection Summary:Inspection on December 3-6, 1979 (Report No. 50-244/79-18)

Areas Inspected: Special unannounced inspection by regional based inspectors of the licensee's response to IE Bulletin 79-19, "Packaging of Low-Level Radioactive Waste for Transport and Burial". Areas inspected included: regulatory requirements, burial site requirements, procedures, training audits, inspection of packages and review of records. In addition, the inspector reviewed actions taken by the licensee in response to previous inspection findings and to the indications of a primary to secondary steam generation leak that occurred on December 1, 1979.

Upon arrival at 4:15 p.m., December 3, 1979 areas of the plant including; the reactor containment building, auxiliary building, control room and outside radioactive material storage areas were toured by the inspectors. The inspection involved 66 inspector-hours on site by two NRC regional based inspectors.

Results: Of the ten areas inspected, no items of noncompliance were identified in six areas; two apparent items of noncompliance were identified in one area (Infraction - failure to comply with 10 CFR 71.3 when delivering licensed material to a carrier for transport, Infraction - failure to comply with 10 CFR 71.5, Paragraph 11); and one apparent item of noncompliance was identified in each of the following areas; (Inspection - failure to have written procedures 10 CFR 71 Appendix E, Criteria 5, Paragraph 7; Infraction - failure to respond to audit findings, 10 CFR 71 Appendix E, Criteria 16, Paragraph 9; Infraction - failure to comply with a requirement of the Security Plan, Paragraph 13).

DETAILS

1. Persons Contacted

*C. Anderson, Manager Quality Assurance
J. Brown, Shift Foreman
*W. Dillion, Security
*D. Filkins, Supervisor, Chemistry and Health Physics
*E. Gordon, Health Physicist
R. Morrill, Training Coordinator
B. Quinn, Health Physicist
*T. Schuler, Quality Control Engineer
S. Spector, Maintenance Engineer
*B. Snow, Plant Superintendent
*R. Wood, Security

The inspector also talked with several other licensee employees including members of the health physics, operations and maintenance staffs.

*denotes those present at the exit interview on December 6, 1979.

2. Licensee Action on Previous Inspection Findings

(Closed) Noncompliance (50-244/76-18-01) Failure to comply with back shift requirements for radiation protection coverage. The licensee has assigned health physics technicians to each shift to insure around-the-clock radiation protection coverage.

(Closed) Previously Identified Item (50-244/79-13-01) Qualifications of the Supervisor, Chemistry and Health Physics. From interviews with the individual the inspector determined that his qualifications (Bachelor of Science (Chemistry), University courses in health physics, eleven and one half years of nuclear power plant experience, five of which involved applied radiation protection) meet the requirement of Technical Specification 6.3.

3. Review of Licensee's Response to IE Bulletin 79-19

The inspector reviewed Rochester Gas and Electric Corporation's response dated September 25, 1979 to assure that all information required by the bulletin was included and to ascertain that corrective action commitments were made.

4. Organization

Procedure A-201, "Ginna Station Administrative and Engineering Staff Responsibilities", Revision 1, dated July 18, 1979 places responsibility for the control of solid, liquid and gaseous radioactive wastes with the Supervisor, Chemistry and Health Physics.

The procedure places responsibility to prepare procedures for handling and shipping solid radioactive waste with the Health Physicist. He is also assigned responsibility to oversee these operations.

The Operations Engineer is responsible for directing operations involving radioactive waste.

No mention of radwaste responsibilities is made in regard to the Maintenance Engineer. Maintenance personnel routinely construct shipping containers for low specific activity material. They also are responsible for preparation of 17H drums used for solidification. Maintenance personnel stated that these actions are performed under the direction of the health physics staff.

The inspector noted that processing and shipment of radioactive waste is a collateral responsibility of each of the professionals noted above.

5. Regulatory Documents

The inspector verified that the licensee has a current set of DOT and NRC regulations. The licensee subscribes to a commercial service that provides bi-weekly updates of regulatory changes and related matters.

The inspector noted that no formal procedure has been implemented to assure that these notifications of regulatory changes are implemented as appropriate into facility procedures.

6. Burial Site Requirements

At this time the licensee ships radioactive waste only to the South Carolina burial site. The inspector reviewed the licensee's copy of Chem-Nuclear Systems, Inc. South Carolina Radioactive Material License No. 097, Amendment No. 26 dated October 30, 1979. This is the most recent revision of that license.

The licensee also maintains a copy of the "Barnwell Site Disposal Criteria" issued September 28, 1979 and effective December 1, 1979.

7. Procedures

In response to IE Bulletin 79-19, the licensee stated that approved procedures for waste process operations and shipment of radioactive material had been established.

The inspector reviewed the following procedures:

- RD-9, Preparing Waste for Shipment or Storage, Revision 4, dated February 10, 1979
- RD-10, Shipping Radioactive Material, Revision 7, dated February 28, 1979
- RD-11, Receipt of Radioactive Materials, Revision 1, dated July 9, 1979
- S-4.1, Drumming Waste Evaporator Bottoms, Revision 9, dated November 19, 1979
- S-4.4, Spent Resin Removal to Shipping Casks, Revision 19, dated October 11, 1979
- S-4.4.1, Spent Resin Package - Site Receipt and Shipment, Revision 5, dated February 10, 1979
- S-4.6, Operation of the Radioactive Waste Press, Revision 2, dated October 29, 1976
- M-18.1, Drum Preparation for Waste Evaporator Bottoms, Revision 0, dated February 20, 1976
- QCIP-21, Shipping Package ATCOR LL-50-100 Inspection, Revision 2, dated December 4, 1979
- QCIP-22, Shipping Package HN-100 Series 1 Inspection, Revision 1, dated April 1979

-- QCIP-23, Shipping Package 6144 Inspection, Revision 0, dated May 29, 1979

- a. Based on this review the inspector concluded that procedures RD9 and RD10 were in need of revision in order to eliminate confusion and inconsistencies with the "Barnwell Site Disposal Criteria". The Health Physicist presented documents indicating these two procedures are currently in the process of revision and upgrade.

Procedures RD9 and RD10 will be reviewed in a subsequent inspection (50-244/79-18-01).

- b. 10 CFR 71 Appendix E, Criterion 5, "Instructions, Procedures and Drawings" states that: "Activities affecting quality shall be prescribed by documented instructions, procedures, or drawings of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings. These shall include appropriate quantitative or qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished."

The licensee routinely uses three different NRC certified shipping containers (Certificate of Compliance (C of C) Nos. 6144, 6601, 9086). Procedures S-4.4.1 state that shipping casks be prepared in accordance with the suppliers instructions.

Based on a review of documentation maintained and discussions with licensee representatives, no written procedures were provided by the cask supplier or developed by the licensee that directed the loading or closure of these packages when utilized on February 1, 1979, (C of C 6601) and May 29, 1979 (C of C 6144) to ship 86 Ci and 19.88 Ci of licensed radioactive material to the waste burial site.

Failure to utilize written procedures for activities affecting quality such as loading and closure of a shipping package represents noncompliance with 10 CFR 71 Appendix E, Criteria 5 (50-244/79-18-02).

The inspector reviewed documentation generated pursuant to procedure QCIP-21 for the February 1, 1979, and QCIP-31 for the May 29, 1979 shipment of radioactive materials. These Quality Control Inspection Procedures appear adequate to assure that most of the requirements expressed in 10 CFR 71.54 "Routine determinations" have been met, however, neither of these procedures verify that the package has been loaded and closed in accordance with written procedures.

Procedures QCIP-21 and QCIP-22 will be reviewed in a subsequent inspection (50-244/79-18-03).

8. Training

References:

- A-101, Ginna Quality Assurance Program Implementation, Revision 0;
 - A-102.6; R. E. Ginna Systems Familiarization Program; Revision 0;
 - A-102.7, R. E. Ginna Auxiliary Operator Qualification Program, Revision 0;
 - A-102.9, Maintenance Training Program, Revision 0;
 - A-102.10, Health Physics Technician Training and Responsibility Limits, Revision 1; and
- A-1002, Qualification of Surveillance and Inspection Personnel, Revision 1

The inspector reviewed procedure A-101 to establish those onsite organizations which participate in the transfer, packaging and shipping of low level radioactive material. It was noted that operations, health physics, quality control and maintenance personnel are involved in this activity.

The above procedures as well as lesson plans, lecture outlines, and/or examinations were reviewed on a sampling basis to assure that the training program was designed to provide sufficient familiarity with the appropriate operating procedures, and methods were specified to assure that personnel have a sufficient degree of familiarity with operating procedures to assure safe operations.

The findings in this area were:

- a. The response to items 5 and 6 of IE Bulletin 79-19 dated September 25, 1979 stated that training in the operating procedures would be completed by January 1, 1980.



During the review of Audit No. 79-33:CA, the inspector noted that a finding of the audit (AFCAR 1) indicated that maintenance department personnel did not have procedures and had not received training to date (i.e. October 5, 1979) in the preparation of drums and boxes as required by 49 CFR 178.

During the sampling review of the lesson plans associated with radioactive waste systems and training conducted by the Health Physicist in NRC Part 71 and DOT regulations, the inspector noted that preparation of drums and boxes was not specifically itemized as a lecture topic.

During the review of procedures detailed in Paragraph 7, it was identified that procedural coverage associated with the assemblage of licensed casks had not been developed, and therefore had not been incorporated into the training outlines reviewed by the inspector.

The inspector discussed the incorporation of training in DOT and NRC shipping regulations into the operator and systems training program by January 1, 1980 as stated in the response with the Training Co-ordinator. He stated that the incorporation would occur as scheduled.

- b. Item 4 of IE Bulletin 79-19 stated the licensee is expected to provide procedures which provide special attention to controls associated with the chemical and physical form of the low level radioactive material. Item 6 stated that training is expected to be provided for processing waste into an acceptable chemical and physical form.

Item 4 of the response to this bulletin indicated that a process control system is being developed coincident with the impending Environmental Technical Specifications which will further define controls for physical and chemical packaging.

- c. Review of training provided to those individuals responsible for the radioactive waste shipping program indicated the following:



- The Supervisor, Chemistry and Health Physics and the Health Physicist attended a two day seminar on transportation of radioactive materials in August 1978
- The Health Physicist attended a training session on shipment of radioactive material at the American Nuclear Society Meeting in November 1979. He also participated in a meeting of the American Industrial Forum's Sub-Committee on Reactor Waste Solidification in Washington, D.C. on November 1, 1979

Assessment of these training programs provided by a licensee representative indicated, that although, they were informative, they did not provide detailed specific guidance frequently necessary to permit compliance with federal regulations.

Training of individuals involved in processing and shipment of radioactive materials will be reviewed in a subsequent inspection (50-244/79-18-04).

9. Audit Program

References

- Quality Assurance Manual - Ginna Station; various sections;
- QA 1801 GS, Qualification of Auditing Personnel, Revision 6;
- QA 1802 GS, Audit Scheduling and Planning; Revision 7;
- QA 1804 GS, Reporting and Followup of RG&E Audit Findings, Revision 6; and,
- A1801, Ginna Station Response to Internal Audits, Revision 0

The above references were reviewed to verify that an audit program had been established of all activities associated with the transfer, packaging and transport of low level radioactive wastes. The above procedures provide general provisions for: qualification of audit personnel; a system for assuring that corrective actions are taken on audit findings; audit scheduling; and formal audit reports and their distribution to management.



The inspector further reviewed internal audits report nos. 79-25:GS and 79-33:CA dated September 10, 1979 and October 11, 1979 respectively. The audits were reviewed to: assess the scope of the audit program related to radioactive waste shipments; and, verify that corrective action was administrated in accordance with established procedures.

The findings in this area were as detailed in the following subparagraphs:

- a. Audits were conducted as stated in item 8 of the response to IE Bulletin 79-19 dated September 25, 1979.
- b. The scope of the above referenced audits included a review of the maintenance of regulations; organizational and procedural coverage; training; and, shipping records.
- c. During the conduct of the audit associated with report no. 79-33:CA, the auditor had identified that training and procedures had not been developed in the preparation of drums and boxes for shipping as required by 49 CFR 178.

The finding had been formally documented (AFCAR 1) and transmitted to the site organization responsible. AFCAR 1 specified a due date of November 12, 1979.

Administrative procedure, A1801 requires the submittal of the response to an audit finding on or before the due date. As of December 5, 1979, a response had not been submitted. This is contrary to 10 CFR 71, Appendix E, Criterion 16 and procedure A1801 and is an item of noncompliance (50-244/79-18-05).

- d. The inspector discussed the training provided to auditors with the Quality Assurance Manager. It was noted that no specialized training had been provided in low level radioactive waste shipping. The Quality Assurance Manager stated that during previous audits, an outside specialist had been utilized. The inspector discussed the advisability of providing some specialized training to the appropriate RG&E personnel who perform internal audits, inspections and/or surveillances in this area with the Quality Assurance Manager.

10. Onsite Observation

During the inspection, a 55 gallon 17H drum containing waste evaporator bottoms solidified in accordance with procedure S-4.1 was selected for examination of potential free standing water.

The lid plug was removed and the drum inverted over a drip pan assembly. The drum remained in this position for two hours. The inspector did not observe any visible water from this drum.

11. Records of Shipments

The inspector reviewed records of shipments of radioactive materials made in the period from March 1978 to December 1979. The findings of this review are noted below:

- a. The Semiannual Effluent Release Report submitted in accordance with Technical Specification 6.9.3.b and referenced in Item 9 of the response to IE Bulletin 79-19 for the period January thru May, 1979 was found to have an inconsistency. The first page states, "The solid waste shipped included 219.23 curies of activity in 64,152 cu. ft. The tabulation of shipments of solid waste attached to the report indicates a total curie content of 136.76 and total volume of 6,415.2 cu. ft. The inspector audited the 1979 solid waste shipping records and found the total activity to be 136.76 curies and 6,415 cu. ft. This matter was brought to the attention of the Supervisor, Chemistry and Health Physics.

The Supervisor, Chemistry and Health Physics stated the matter will be resolved and a correction submitted as appropriate.

The correction will receive NRC:RI in office review (50-244/79-18-06).

- b. 10 CFR 71.3 requires that no licensee deliver licensed material to a carrier for transport except as authorized in a general or specific license issued by the Commission or as exempted.

A general license is issued to ship licensed material pursuant to 10 CFR 71.12(b) in a package for which a Certificate of Compliance has been issued provided that the shipper has a copy of the Certificate of Compliance, all documents referred to in that Certificate and complies with the terms and conditions of that Certificate.

- (1) The inspector reviewed the Certificate of Compliance No. 6601, Revision 3 and 5 for the Model No. LL-50-100 cask. Both revisions of this Certificate of Compliance reference Drawing No. 1042-B-0004 Rev. C. Records of solid radioactive waste shipments indicate 262 Ci and 86 Ci of licensed material were delivered to a carrier for transport in this cask on June 26, 1978 and February 1, 1979. Inspection of documents maintained by the licensee did not include Drawing No. 1042-B-0004 Rev. C. A licensee representative acknowledged that they did not have a copy of this drawing.

A facsimile of Drawing No. 1042-B-0004 Rev. C was received by the licensee on December 5, 1979.

- (2) The inspector reviewed the Certificate of Compliance No. 6144 Revision 3 for the Model CNSI-6144 cask. Referred to in this Certificate of Compliance is a document titled, "Chem-Nuclear Systems, Inc. supplement dated November 1, 1977. Records of solid radioactive waste shipments indicate that 19.88 Ci of licensed material were delivered to a carrier for transport in this cask on May 29, 1979. Inspection of documents maintained by the licensee did not reveal the "Chem-Nuclear Systems, Inc. supplement dated November 1, 1977." A licensee representative acknowledged that they did not have a copy of this document.

Failure to have a copy of all documents referred to in a Certificate of Compliance for a package as required by 10 CFR 71.12(b) represents noncompliance with 10 CFR 71.3 (50-244/79-18-07).

- c. 10 CFR 71.5 requires that no licensee deliver licensed material for transport unless the licensee complies with the applicable requirements of the regulations appropriate to the mode of transportation as they relate to marking and labeling of packages. 49 CFR 172, Subpart C - "Shipping Papers" states in section 172.203 that for: "(d) Radioactive material (1) the description for a shipment of radioactive material must include the following additional entries as appropriate:

- (i) The name of each radionuclide in the radioactive material that is listed in § 173.390 of this subchapter. Abbreviations, e.g. "⁹⁹Mo" are authorized..."

The inspector reviewed the licensee's Radioactive Materials Shipment Record No. 79-2 and the Chem-Nuclear Systems, Inc., Radioactive Shipment Record Form No. 2955 for the February 1, 1979 shipment of Type B quantities radioactive materials to the Barnwell, South Carolina burial site. These forms listed the below radionuclides to be present in the radioactive material.

Nuclide	Quantity
¹³⁴ Cs	11,140 millicuries
¹³⁷ Cs	58,740 millicuries
⁶⁰ Co	16,060 millicuries
Total of 86,000 millicuries	

This shipment consisted of dewatered spent resins in a NRC certified cask. Spent resins are likely to contain many radionuclides typically present at a nuclear facility. One radionuclide expected in spent resins is Strontium 90. A licensee representative calculated an estimate of 90 Sr present in the resins. This documented estimate indicates that 58 millicuries of 90 Sr were present. The licensee added this value to the sum of other radionuclides known to be present and documented a total content of 86,000 millicuries on both shipping forms.

Review of the June 26, 1978 shipment of spent resins also indicate that 30 millicuries of 90 Sr were calculated to be present, but were not indicated on the shipping forms.

Failure to list Type B quantities of 90 Sr on the shipping papers as required in 49 CFR 172.203(d) represents noncompliance with 10 CFR 71.5 (50-244/79-18-08).

- d. 10 CFR 20.205, "Procedures for picking up receiving, and opening packages." requires that each licensee who expects to receive a package containing quantities of radioactive material in excess of Type A quantities must comply with several requirements involving timely receipt, survey and notification of deficiencies. The licensee has established and implemented procedure RD11 to insure these requirements are met.

Review of records indicates that the licensee received one shipment on March 9, 1979 of a Type B quantity of radioactive material. The package was received and surveyed in accordance with procedure RD11. No notifications were required based on survey results since all applicable requirements were complied with.

12. Tube Leak in "B" Steam Generator (LER-79-022)

On December 1, 1979, at approximately 9:00 p.m., the onshift licensed operators noted an increase in the Air Ejector Radiation Monitor (R-15). Subsequent followup action resulted in confirming that a leak of 0.007 gallons/minute had developed in the "B" Steam Generator. A plant shutdown was commenced at 9:05 a.m. on December 2, 1979 to effect repairs.

During this inspection, the inspectors reviewed the actions taken subsequent to the identification of the leak. This review consisted of discussion with the personnel onshift at the time and plant supervision; and, review of the Official Record, Shift Foreman's Log, Procedure 0-6.10, Revision 2 (PCN 79-2583) and records of radioanalysis of the Steam Generator.

The inspector determined that:

- notification to licensee management and the NRC had been made;
- the procedures utilized to operate the plant subsequent to the identification of the leak were compatible with the calculated leak rate;
- sufficient sampling was conducted to assess the magnitude of the leak and the offsite releases; and,
- preliminary calculations performed by the inspector indicated that the release to the environment was less than 1% of the values specified by the Technical Specifications in section 3.92.

No items of noncompliance were identified.



13. Plant Tour

- a. The inspectors conducted a general plant tour. The areas toured consisted of the external areas inside the security fence, the Auxiliary Building, the Containment Vessel and the Control Room.

During the conduct of this tour the inspectors observed/determined:

- general housekeeping and cleanliness;
- temporary storage of low level radioactive waste;
- general posting of radiation areas;
- general control of step off pads, disposal of protective clothing, observation of calibration status of personnel monitoring devices, and Radiation and Special Work Permits;
- control room manning;
- discussions were conducted with control room operators pertaining to reasons for selected lighted annunciators;
- security measures associated with the plant outage; and,
- verification by use of an NRC instrument on a sampling basis that radiation area posting was consistent with dose rate levels



- b. THIS PAGE HAS BEEN INTENTIONALLY DELETED; IT CONTAINED 10 CFR 2.790(d) INFORMATION - NOT FOR PUBLIC DISCLOSURE.



14. Exit Interview

The inspector met with licensee representatives (denoted in paragraph 1) at the conclusion of the inspection on December 6, 1979. The inspector summarized the scope and findings of the inspection.

The inspector expressed concern with the licensee's program for packaging and shipment of low level radioactive waste. The inspector expressed the need for additional management attention in this area prior to future shipments of radioactive materials.

The licensee representatives stated that to his knowledge no shipment of radioactive material had left the facility prepared in a manner that would not have afforded the designed containment or had arrived at its destination with radiation or contamination levels in excess of any applicable limits. He also stated that the radioactive material shipping program is presently being upgraded and that all shipments made during this period will be carefully scrutinized to insure compliance is maintained with all applicable requirements.

