



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA STREET, N.W., SUITE 2900
ATLANTA, GEORGIA 30323-0199

September 14, 1995

Report Nos.: 50-325/95-17 and 50-324/95-17

Licensee: Carolina Power and Light Company
P. O. Box 1551
Raleigh, NC 27602

Docket Nos.: 50-325 and 50-324

License Nos.: DPR-71 and DPR-62

Facility Name: Brunswick 1 and 2

Inspection Conducted: August 14 - 18, 1995

Inspector: D. B. Forbes 9/7/95
D. B. Forbes Date Signed

Approved by: W. R. Rankin 9/11/95
W. R. Rankin, Chief Date Signed
Facilities Radiation Protection Section
Emergency Preparedness and Radiological Protection Branch
Division of Radiation Safety and Safeguards

SUMMARY

Scope:

This routine, announced inspection was conducted in the areas of radioactive waste storage, transportation of radioactive material, audits, and training.

Results:

In the areas inspected, no violations or deviations were identified.

The licensee had implemented adequate procedures for storing and labeling radwaste within the radiation controlled area (RCA) and was actively developing plans for providing additional radwaste storage capacity (Paragraph 3).

The licensee had implemented effective quality assurance and management control programs for packaging, preparation, and transport of radioactive material. No transportation incidents have occurred during the last three years which involved the licensee's shipments of radioactive material (Paragraph 4).

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The licensee had implemented an effective audit program for radioactive material transportation activities (Paragraph 5).

The licensee had implemented an effective training program for personnel involved in preparation of radioactive material for transport (Paragraph 6).

REPORT DETAILS

1. Persons Contacted

Licensee Employees

- *A. Brittain, Supervisor, Security
- *W. Campbell, Site Vice President
- *J. Cowan, Director Site Operations
- *R. Deacy, Maintenance Department
- *D. Griffith, Superintendent, Radwaste and Transportation
- *J. Gawron, Manager, Environmental and Radiation Control
- *D. Hicks, Manager, Regulatory Affairs
- D. Holder, Senior Specialist, Radwaste and Transportation
- *W. Levis, Plant Manager
- *R. Lopriore, Acting Manager, BESS
- *J. Lyash, Manager, Operations
- *W. Murray, Licensing Lead, Regulatory Affairs
- *S. Tabor, Senior Specialist-Investigator, Regulatory Affairs
- *J. Thompson, Acting Manager, Nuclear Assessment Department

Other licensee employees contacted during this inspection included engineers, technicians, and administrative personnel.

Nuclear Regulatory Commission

- *C. Patterson, Senior Resident Inspector
- *W. Rankin, Chief, Facilities Radiation Protection, Region II

*Attended exit interview

2. Organization (86750)

The inspector reviewed and discussed with licensee representatives changes made to the Radiation Control (RC) organization since the last inspection of this area conducted May 1-5, 1995, and documented in Inspection Report (IR) 50-325/95-12 and 50-324/95-12. The inspector was informed by the licensee that a reorganization had occurred resulting in changes to the RC organizational structure. At the time of the inspection the positions for Superintendent of Radiation Protection and Superintendent of Environmental & Chemistry were vacant and were temporarily being filled. The inspector also noted that the ALARA Manager position had been eliminated. The ALARA functions and the RC projects functions had been combined into one functional area designated as Environmental & Radiation Controls Programs. A Superintendent position had been created for the new functional area. The licensee informed the inspector that nine RC technician positions had been transferred to the plant Maintenance Department to support radiological work performed by the Maintenance Department. Work to be performed by the RC technicians would be directed by an RC supervisor also assigned to the Maintenance Department.

Based on discussions with licensee representatives and observations in progress, no concerns were identified with the licensee's RC organization and staffing.

No violations or deviations were identified.

3. Radioactive Waste Storage (84750)

10 CFR 20.1801 required the licensee to secure from unauthorized removal or access, licensed materials that are stored in controlled or unrestricted areas. 10 CFR 20.1904 required the licensee to ensure, except as provided for in 10 CFR 20.1905, that each container of licensed material bears a durable, clearly visible label bearing the radiation symbol and the words "CAUTION, RADIOACTIVE MATERIAL" or "DANGER, RADIOACTIVE MATERIAL." 10 CFR 20.1905 further specified that the labels must also provide sufficient information to permit individuals handling or using the containers, or working in the vicinity of the containers, to take precautions to avoid or minimize exposures.

The inspector reviewed licensee procedures related to sorting and labeling radioactive waste generated and stored within the Radiation Control Area (RCA). From that review it was determined that the procedures included instructions for: sorting all material, radioactive and non-radioactive, which was to be removed from the RCA; placing those materials in specific containers located in designated waste storage areas; and labeling those containers with the required information. The inspector toured the waste storage areas in which waste was accumulated, segregated, and stored while awaiting disposition and removal from the RCA. During the tour, the inspector discussed the use of storage containers in use with the licensee's cognizant RC Supervisor responsible for the Radwaste Building. The inspector noted separate containers were provided for contaminated and non-contaminated materials and the contaminated waste was further segregated based on radiation dose rates. The inspector observed that the waste had been stored and labeled in accordance with the licensee's procedures and in accordance with 10 CFR 20.1904. The inspector also observed licensee actions performed to properly secure and store materials in response to a hurricane watch and later a warning being issued for Hurricane Felix which subsequently bypassed the North Carolina Coast.

The inspector discussed with the licensee their implementation for storage of radwaste following the closure of the Barnwell, SC, land disposal facility to North Carolina facilities. Those plans were being addressed at the management level, with the involvement of cognizant radwaste personnel. The licensee was planning to temporarily store radioactive material in the onsite Low Level Radioactive Storage Building. The licensee has been shipping waste to a contractor for processing to reduce the volume of waste that would be stored onsite and to reduce the volume of waste that would eventually be buried at a land disposal facility.

Based on the above reviews and observations, it was concluded that the licensee had implemented adequate procedures for storing and labeling radwaste within the RCA and had developed plans for providing additional radwaste storage capacity.

No violations or deviations were identified.

4. Transportation of Radioactive Material (86750)

10 CFR 71 established the requirements for packaging, preparation for shipment, and transportation of licensed material. 10 CFR 71.5 required the licensee to comply with the applicable requirements of the Department of Transportation (DOT) in 49 CFR Parts 170 through 189 when transporting licensed material outside of the confines of the plant or other place of use, or when delivering licensed material to a carrier for transport. 10 CFR 71 Subpart H established the quality assurance (QA) program requirements applicable to transportation of radioactive materials. 10 CFR 20.2006 and Appendix F to 10 CFR 20 specified the requirements for control of transfers of radioactive waste intended for disposal at a land disposal facility and for establishing a manifest tracking system for those transfers. 10 CFR 61.55 and 61.56 establish the requirements for classification and characterization of radioactive waste shipped to a near-surface disposal site.

a. Management Controls

10 CFR 71.103 required, in part, the licensee to establish a QA program which clearly establishes and delineates in writing the authority and duties of persons and organizations performing safety-related functions of structures, systems, and components.

The inspector reviewed the Brunswick Nuclear Plant Quality Assurance Manual and determined that it identified the general organizational structure and functional responsibility assignments for implementing the QA program at the facility. Those functional responsibility assignments were further described and implemented through a licensee commitment matrix contained in Attachment 1 to the licensee's Nuclear Assessment department procedure NUA-NGGC-1510.

10 CFR 71.111 and 71.113 required the licensee to prescribe activities affecting quality by documented instructions, procedures, or drawings and to establish measures which assure that those documents, including changes thereto, were reviewed for adequacy and approved for release by authorized personnel.

The inspector determined that the licensee's policy regarding establishing, implementing, and control of procedures was described in the above referenced QA manual. The inspector reviewed selected licensee procedures applicable to shipment of radioactive material and determined that they had been approved for use by the Health Physics and Chemistry departmental manager.

b. Quality Assurance Program

10 CFR 71.101(c) required the licensee to obtain NRC approval of the QA program prior to the use of any package for shipment of licensed material subject to 10 CFR 71 Subpart H.

The inspector determined that the licensee's "QA Program-Brunswick Nuclear Plant Quality Assurance Manual" was approved by the Nuclear Regulatory Commission (NRC) Office of Nuclear Material Safety and Safeguards. "Quality Assurance Program Approval for Radioactive Material Packages No. 0521, Revision 3" was issued on May 25, 1994.

c. NRC Certificate of Compliance Packaging

10 CFR 71.12(c)(1) required the licensee to maintain copies of certificates of compliance (CoC) for NRC approved packages used for transport of radioactive material.

The inspector verified that the licensee possessed a current copy of the CoC Packages No. 0345 for shielded cask routinely used for shipments of radioactive material of low specific activity (LSA).

d. Registration of Use of NRC Approved Packages

10 CFR 71.12(c)(3) required the licensee to submit to the NRC, prior to the first use of an NRC approved package, the licensee's name and license number and the package identification number specified in the package approval.

The inspector reviewed an NRC issued letter dated December 5, 1994, which indicated that the licensee was a registered user of the above cask used for shipments of LSA and that the licensee maintained an approved QA program approval from NRC for the above package. The inspector also verified the licensee was a registered user for other types of containers and maintained CoCs for those containers.

e. Preparation of Packages for Shipment

10 CFR 71.85 and 71.87 required the licensee to perform preliminary determinations, prior to the first use of any packaging, and routine determinations, prior to each shipment, that the packaging has no physical defects which could significantly reduce the effectiveness of the packaging and that the package meets the applicable packaging and license requirements.

49 CFR 172.300, 172.400, and 172.500 required the licensee to mark and label each package of hazardous material offered for transport and to placard each vehicle used to transport hazardous material in the manner specified in 49 CFR 172 Subparts D, E, and F.

49 CFR 173.425(b) exempted packages containing LSA material from specified sections of the above marking and labeling requirements and specified that the packages be marked "Radioactive-LSA."

The inspector discussed preparation of packages for transport with the licensee. The licensee indicated that vendor services were used for preparation and transport of radwaste. The inspector reviewed detailed checklist prepared by the licensee and vendors at the time of shipments to ensure proper packaging, labeling, and placarding of vehicles had occurred prior to shipping radioactive material offsite. The vendor also certified that the high integrity container (HIC) and the cask provided to the licensee were in compliance with the CoC for the package. The inspector also reviewed a procedure checklist used by the licensee to ensure shipment casks were adequately prepared for shipment. Procedures reviewed by the inspector for licensee shipment of radioactive material included the following:

- OE&RC-0574, Shipment Of Radioactive Material - Type A Quantities, Revision 5, dated December 16, 1993
- OE&RC-0575, Shipment Of Radioactive Material - Type B Quantities, Revision 6, dated December 16, 1993
- OE&RC-0576, Shipment Of Radioactive Material - Highway Route Controlled Quantities, Revision 6, dated September 29, 1993
- OE&RC-0579, Documentation Of Radioactive Material Shipments, Revision 10, dated December 16, 1993

The inspector's review determined the licensee's procedures for shipment of radioactive material and determined that provisions for marking and labeling packages and for placarding vehicles were in accordance with the above requirements.

f. Radiation Monitoring

10 CFR 71.47, 10 CFR 71.87(i) and (j), 49 CFR 173.441, 49 CFR 173.443 and 49 CFR 173.475(i) delineated the limits for external radiation levels and for removable surface contamination levels of packages offered for shipment.

The inspector determined that licensee's procedures for shipping radioactive materials included provisions for performing the required surveys and for assuring that the radiation and contamination limits were met for each package offered for shipment. The inspector reviewed the licensee's records for several shipments of radioactive material and found that those records indicated that the required surveys had been performed and the radiation and contamination limits had been met.

g. Shipping Paper Documentation

49 CFR 172.200 required the licensee to prepare shipping papers describing hazardous materials offered for transport in the manner specified in 49 CFR 172 Subpart C. 10 CFR 20.2006 required the licensee to prepare shipping manifests for each shipment of radioactive waste to a licensed land disposal facility such that they meet the requirements of Appendix F to 10 CFR 20.

The inspector determined that the licensee's procedures included provisions for preparing shipping papers and manifests in accordance with the above requirements and for recording the required information thereon. The inspector also reviewed the shipping papers for selected shipments of radioactive materials and determined that they had been prepared in accordance with the above procedure.

h. Drivers Instructions for Exclusive Use Shipments

49 CFR 173.425(b)(9) and 173.441(c) required the licensee to provide specific written instructions for maintenance of the exclusive use shipment controls to the carrier of packages of radioactive material consigned as exclusive use. Those instructions were required to be included with the shipping paper information.

The inspector determined that the licensee's procedures for shipping radioactive materials included provisions for providing drivers with the required instructions and that the shipping papers for selected shipments included a copy of those instructions.

i. Advance Notifications

10 CFR 71.97 required the licensee to make prior notification to the governor of a state whenever specified packages and quantities of licensed material were being transported to, through, or across the state's boundaries to a disposal site.

The inspector determined that the licensee's procedures for shipping radioactive materials included provisions for making the required advance notifications and that the licensee's records for selected shipments included copies of the forms used to make the required notifications.

j. Records

10 CFR 71.91 required the licensee to maintain records of each shipment of licensed material for a period of three years after shipment.

The inspector reviewed selected shipping records and determined that the required information was being retained as required.

k. Radioactive Waste Classification and Characterization

10 CFR 20.2006(d) and Section III.A.1 of Appendix F to 10 CFR 20 required the licensee to prepare all radioactive waste shipped to a licensed land disposal facility or waste collector such that the waste is classified according to 10 CFR 61.55 and meets the waste characteristics requirements in 10 CFR 61.56.

The inspector reviewed selected shipping records and determined that the licensee classified and characterized waste shipments through the use of the RADMAN computer software. Radionuclide concentrations and physical description data for packaged waste were input to the computer and the program generated a manifest form. The printed manifest form included the information required to be included on waste manifests and the certifications that the waste had been properly classified, described, packaged, marked, and labeled and in proper condition for transport in accordance with applicable State and federal regulations.

Based on the above reviews and observations, it was concluded that the licensee had implemented effective QA and management control programs for packaging, preparation, and transport of radioactive material. No transportation incidents have occurred during the last three years which involved the licensee's shipments of radioactive material.

No violations or deviations were identified.

5. Audits of Radioactive Material Transportation Program (86750)

10 CFR 71.137 required the licensee to perform comprehensive, planned and periodic audits to verify compliance with all aspects of the QA program and to determine the effectiveness of the program. The audits were required to be performed in accordance with written procedures by appropriately trained personnel not having direct responsibilities in the areas being audited. The audit results were required to be documented and reviewed by management having responsibility in the area audited. Followup action was required to be taken for identified deficiencies.

The licensee's audit program was implemented by procedure NUA-NGGC-1510, Revision 0, dated May 30, 1995. The inspectors reviewed Audit Report No. B-ERC-94-01, Nuclear Assessment No. 94-296, "Brunswick Nuclear Plant Environmental and Radiation Control Assessment," dated December 2, 1994. The inspector determined the audits were being performed at the required frequency. The audit reviewed addressed the licensee's overall radioactive waste management program, including transportation. The audits were performed by personnel in the Nuclear Assessment Department (NAD), who are independent of the areas which they audit. The audits were performed via a written plan, and the audit reports were

distributed to affected management. The inspector determined findings were resolved in a timely manner. Discussions with NAD personnel and review of the above mentioned documentation indicated a comprehensive audit program.

Based on the above reviews, it was concluded that the licensee had implemented an effective audit program for radioactive material transportation activities.

No violations or deviations were identified.

6. Training Program for Transportation of Radioactive Material (86750)

10 CFR 71.105(d) required the licensee to provide for indoctrination and training of personnel performing activities affecting quality as necessary to assure that suitable proficiency is achieved and maintained. 49 CFR 172.702 required any hazmat employer to ensure that each of its hazmat employees is trained in accordance with the requirements prescribed in 49 CFR 172 Subpart H. 49 CFR 172.704(c) required each hazmat employer to provide each hazmat employee with initial training and recurrent training at least once every two years.

The inspector reviewed qualification training records for several RC technicians and the RC supervisor who were responsible for transportation activities at the time of this inspection. For those records reviewed, individual's qualifications were current. The inspector determined the licensee's program for recurrent training of personnel to handle hazardous material was being conducted on an assigned frequency at least once every two years. During conversations with licensee personnel involved in preparation of radioactive material for transport, the inspector noted that those personnel were well versed in the applicable NRC and DOT requirements.

Based on the above reviews, it was concluded that the licensee had implemented an effective training program for personnel involved in preparation of radioactive material for transport.

No violations or deviations were identified.

7. Exit Interview

The inspection scope and results were summarized on August 18, 1995, with those persons indicated in Paragraph 1. The inspector described the areas inspected and discussed in detail the inspection results listed above. No dissenting comments were received from the licensee. Proprietary information is not contained in this report.