

CP&L

Carolina Power & Light Company

Brunswick Nuclear Project
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U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D. C. 20555

BRUNSWICK STEAM ELECTRIC PLANT UNITS 1 AND 2
DOCKET NOS. 50-325 AND 50-324
LICENSE NOS. DPR-71 AND DPR-62
RESPONSE TO INFRACTIONS OF NRC REQUIREMENTS

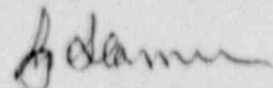
Gentlemen:

The Brunswick Steam Electric Plant (BSEP) has received NRC Inspection Report 50-325/90-06 and 50-324/90-06 and finds that it does not contain information of a proprietary nature.

This report identified one item that appeared to be in noncompliance with NRC requirements. Enclosed is Carolina Power & Light Company's response to this violation (Attachment 1).

In addition to the response to the Notice of Violation, CP&L was requested to submit an outline of actions being taken at BSEP to further improve the effectiveness of our ALARA program. Carolina Power & Light Company's response to that request is provided in Attachment 2 of this letter.

Very truly yours,



J. L. Harness, General Manager
Brunswick Nuclear Project

TH/

Enclosure

cc: Mr. S. D. Ebnetter
Mr. E. G. Tourigny
BSEP NRC Resident Office

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ATTACHMENT 1

BRUNSWICK STEAM ELECTRIC PLANT UNITS 1 AND 2 DOCKET NOS. 50-325 AND 50-324 LICENSE NOS. DPR-71 AND DPR-62 REPLY TO A NOTICE OF VIOLATION

VIOLATION

10 CFR 20.203(c)(2)(iii) requires that each entrance or access point to a high radiation area shall be maintained locked except during periods when access to the area is required, with positive control over each individual entry.

Technical Specification 6.12.2 requires that each high radiation area, in which the intensity is greater than 1,000 mrem/hr, have locked doors to prevent unauthorized entry.

Contrary to the above, on April 20, 1989, July 20, 1989, October 7, 1989, January 5, 1990, and January 20, 1990, licensee and/or NRC personnel while performing daily rounds identified entrances to, or access to, different high radiation areas with whole body radiation dose rates in excess of 1,000 mrem/hr, unlocked and unattended, with no positive control over each entry.

This is a Severity Level IV violation (Supplement IV).

Reference: Report Nos. 50-325/90-06 and 50-324/90-06

RESPONSE

I. Admission of the Violation

CP&L admits this violation occurred as described.

II. Reason for the Violation

The incidents noted above were due to a combination of personnel errors and mechanical problems with high radiation area door locking mechanisms. Each incident is discussed below.

The door found unsecured on April 20, 1989 was the access to the turbine area on the 70' elevation of the Unit 1 turbine building. This door was found to be mechanically malfunctioning due to a faulty lock set with a weak spring. This door is a mesh gate which has no self-closure mechanism. Regardless of the lack of a self-closure

mechanism, this gate would not have been unsecured if the individual exiting the gate had taken steps to confirm that the gate was adequately locked.

The door found open on July 20, 1989 provided access to the Reactor Water Cleanup (RWCU) valve room on the 77' elevation of the Unit 2 reactor building. The door was a mesh gate which was left blocked open due to personnel carelessness when contract personnel who had been constructing scaffolding in the valve room forgot to lock this door when they left to take a break.

The unsecured door found on October 7, 1989 was at the Electro Hydraulic Control (EHC) room entrance to the 20' elevation of the Unit 1 turbine building. This door's locking mechanism was found to be in correct working order. Apparently personnel exiting this door failed to confirm that the locking mechanism had engaged behind them. Specific individual responsibility could not be established for this personnel error.

The door found unsecured on January 5, 1990 was the southwest Moisture Separator/Reheater (MSR) gate on the 70' elevation of the Unit 1 turbine building. Investigation into this event concluded that this type of gate/door possesses a design deficiency in that these doors have a tendency to recoil off the door jams when slammed shut preventing the locking mechanism from engaging even though the gate appears to be closed. These gates also lack a self-closure mechanism. Regardless of the design deficiency, this gate would not have been unsecured if the individual exiting the gate had taken steps to confirm that the gate was adequately locked.

The unsecured door found on January 20, 1990 was the south door to the fuel pool cooling heat exchangers on the 80' elevation of the Unit 2 reactor building. This situation was caused by personnel error. In order for the gate to be locked, a padlock must be run through both the locking loop on the gate and the loop on the door latch. Through inattention to detail, the padlock was only pushed through one of the locking loops, which was determined to be possible due to the "play" built into the locking mechanism.

Isolated personnel errors contributed to each of the

incidents described above. The mesh gates, which were the recurrent problem due to mechanical design deficiencies in many of the incidents, also contributed to the reason for the violation.

III. Corrective Steps Taken and Results Achieved

For each incident described above, (1) each unlocked high radiation area door was immediately secured upon discovery; (2) other locked high radiation area doors were checked to ensure their safe status; and (3) a thorough investigation was conducted to establish root causes. When mechanical problems were identified, prompt repairs were effected by the maintenance staff. When personnel problems were identified, disciplinary actions were taken when responsible individuals were known. When responsible individuals could not be determined, special training of personnel was conducted and signs were put up to remind individuals of their responsibilities to assure that these doors lock properly.

IV. Corrective Steps to Preclude Recurrence and Date of Full Compliance

Carolina Power & Light Company is extremely dissatisfied with the frequency of locked high radiation area doors found unsecured during the last year. In order to make significant improvement, strong programmatic actions have been taken to preclude recurrence of these incidents.

Environmental and Radiation Control (E&RC) and Operations personnel have received special counseling of their responsibilities to confirm the proper closure of the locked high radiation area doors they pass through. These personnel, which are the primary users of locked high radiation area doors, have received this counseling through Real Time Training and management directive (both verbal and written).

E&RC Procedure 0040, "Locked High Radiation Area Key Control," has been revised to provide centralized issuance of locked high radiation area door keys by the E&RC group. Previously, these keys were issued primarily by E&RC, with the Operations group issuing keys to Operations personnel. In addition, a verification form has been developed to accompany each locked high radiation area key whenever a worker checks a key out. This form provides improved accountability by requiring a worker to document each locked

high radiation area door he accesses, and also document his verification that the door was properly locked after each entry/exit. This form is being implemented on an interim basis and its continued use will be evaluated following completion of any additional corrective actions that may result from the Human Performance Evaluation assessment discussed below.

A preventative maintenance program is being established for applicable locked high radiation area doors, with the intent of ensuring proper operation of these doors.

In addition to the above actions, a Human Performance Evaluation (HPE) assessment is being performed on the high radiation door issue. The HPE assessment is intended to identify additional corrective actions which may be necessary (i.e., additional training, improved door design, etc.) to maintain locked high radiation area security and to ensure proper door operation.

The HPE assessment and the development of the locked high radiation door preventative maintenance program will be complete by June 1, 1990. A supplement detailing the additional corrective actions determined necessary will be provided by June 29, 1990.

ATTACHMENT 2

BRUNSWICK STEAM ELECTRIC PLANT UNITS 1 AND 2

DOCKET NOS. 50-325 AND 50-324

LICENSE NOS. DPR-71 AND DPR-62

Response to Request for an Outline of BSEP ALARA Program Actions

As requested in NRC Inspection Report Nos. 50-325/90-06 and 50-324/90-06, CP&L is submitting an outline of actions we are taking both at the site and corporate levels to further improve the effectiveness of our ALARA program.

I. Corporate Dose Reduction Program

- A. A Company Dose Reduction Program is being developed to identify and implement dose reduction actions and programs. The Dose Reduction Program will consist of proactive initiatives that the Company's nuclear plants and their support departments will implement to lower the Company's collective dose.

The Dose Reduction Program will be managed and directed by two formally recognized groups: the Dose Reduction Steering Committee and the Dose Reduction Committee. The program will be implemented by the line management of the nuclear sites and their support departments.

1. The Dose Reduction Steering Committee is chaired by the Senior Vice President of Nuclear Generation, and includes Department Heads from each Nuclear Project, Nuclear Services, Nuclear Engineering, Corporate Quality Assurance and the Manager of the Corporate Health Physics and Chemistry Section serving as a non-voting, support member. The Dose Reduction Steering Committee is responsible for:
 - a. Assisting Senior Management in setting Company ALARA expectations.
 - b. Setting long range (5 year) collective person-rem dose goals for the Company and the nuclear plants.
 - c. Reviewing the nuclear plant's annual collective person-rem goals for consistency with the long range goals.
 - d. Approving the Company Dose Reduction Action Plan.
 - e. Reviewing Company ALARA Program audits and assessments and taking the appropriate corrective actions.

2. The Dose Reduction Committee is chaired by the Manager, Corporate Health Physics and Chemistry Section. Membership includes Environmental and Radiation Control Managers from each nuclear project, Nuclear Services Fuels and Nuclear Engineering representatives. Additional representation will be requested as necessary. The Dose Reduction Committee is responsible for:
 - a. Assisting the Dose Reduction Steering Committee in setting long range (5 year) collective person-rem dose goals for the Company and the nuclear plants.
 - b. Identifying candidate methods to achieve dose reduction, especially in the areas of source term reduction and personnel effectiveness.
 - c. Recommending a dose reduction action plan, including cost-effective methodology for attaining the dose reduction goals.
 - d. Providing assistance to line management in implementing elements of the dose reduction action plan.
 - e. Reviewing Company ALARA Program audits and assessments and recommending the corrective actions that are supported by the nuclear plant management.
3. The nuclear plant and nuclear support departments' line management are responsible for:
 - a. Setting annual plant collective person-rem goals that achieve the long range dose reduction goals.
 - b. Assisting the Dose Reduction Committee in identifying candidate methods to achieve dose reduction.
 - c. Recommending proactive, cost-effective dose reduction actions for attaining the dose reduction goals.
 - d. Implementing the Dose Reduction Action Plan.
4. The Company Dose Reduction Committee and Dose Reduction Steering Committee will evaluate both radiation source term reduction and personnel exposure reduction methods and programs as part of

formulating the Dose Reduction Action Plan.

II. Specific Site Improvements

- A. Revisions to Brunswick Site Procedure (BSP)-08, Brunswick Nuclear Project Radiation Exposure Budgeting.
 - 1. Require exposure budgeting be performed for the Sub-Unit level rather than at the Unit level.
 - 2. Require exposure updates monthly, including explanations for deviations, instead of quarterly.
 - 3. The noted revisions increase dose reduction visibility through more frequent and widespread reportability and accountability at BSEP.
- B. Revisions to Procurement and Materials Control Procedure (PMC)-25, Procurement of Non-Company Labor and Services
 - 1. Provides instructions to Contract Administrators to work closely with Corporate Contract Services to tie ALARA goals to penalty and incentive clause during development stages of the contract, in an effort to make contractors more accountable for their radiation exposures. Recirculation Pipe Replacement Project and Control Rod Drive Replacement are examples of major contracts which include these incentives.
 - 2. The Control and Administration at BSEP is currently providing training for BSEP personnel, including a presentation by the BSEP ALARA Coordinator concerning ALARA incentives in contract negotiations.
- C. Post outage critiques are being conducted by the Planning and Scheduling group, a subunit of the site Outage Management and Modification Unit.
 - 1. Post outage critique meetings are attended by site Unit and subunit Outage Directors, and include discussions of "lessons learned". The lessons learned are included in the turnover to the responsible Outage Directors for the upcoming outage.
 - 2. An outage report, detailing strengths and weaknesses in key areas of performance, is generated following completion of each outage.
- D. Increased BSEP ALARA Staff

1. An increase in BSEP ALARA staff for the recently completed refuel outage, allowing additional involvement in ongoing projects, resulted in significant exposure reduction during the outage. The increased involvement is expected to result in greater benefits in future outages.

E. Hot Spot Control Program

1. A Hot Spot Control Program has been developed to improve coordination of efforts in order to reduce the resulting exposure by integrating trending and historical data with source reduction techniques.

F. Rework Accountability

1. Accounting for exposure resulting from rework is being pursued. A consistent site definition of the term rework is being developed, in order to provide uniform identification of items and components which result in rework.

G. The ALARA Committee has formed three working teams to implement the following:

1. Increase involvement in the BNP dose reduction program by including the ALARA program with the site Safety Program, which is recognized as a successful program. This would ensure each employee's participation.
2. Provide incentive to individuals and groups meeting challenging dose reduction goals. A methodology is being developed to recognize outstanding performance and provide performance indicators on a timely basis.
3. Reduce exposure by effectively using \$50,000 that was budgeted to the ALARA Committee by the Project Manager of the Brunswick Nuclear Project for that purpose.

H. A Manager level task force is being established at the direction of site management to develop a Project Plan for dose reduction at the Brunswick plant.

I. Post Valve Maintenance Cobalt Cleanup

1. The Maintenance Unit will revise their valve cleanliness procedure (Maintenance Procedure-46), to change a suggested practice of a cleanup of

cobalt materials from inside valves and associated piping after valve maintenance, to a requirement. The requirement for cleanup will be for valves that are in systems where the fluid passes through the vessel and could therefore carry cobalt materials into the vessel and become activated.