CP&L

Carolina Power & Light Company

SERIAL: NLS-84-002

FEB 03 1984

Director of Nuclear Reactor Regulation
Attention: Mr. D. B. Vassallo, Chief
Operating Reactors Branch No. 2
Division of Licensing
United States Nuclear Regulatory Commission
Washington, DC 20555

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NOS. 1 AND 2
DOCKET NOS. 50-325 AND 50-324
LICENSE NOS. DPR-71 AND DPR-62
RESPONSE TO THE TECHNICAL EVALUATION REPORT OPEN ITEMS
CONCERNING CONTROL OF HEAVY LOADS

Dear Mr. Vassallo:

In a letter dated November 3, 1983, Carolina Power & Light Company (CP&L) received a copy of the draft Technical Evaluation Report (TER) concerning the Control of Heavy Loads issue at the Brunswick Steam Electric Plant (BSEP) Units 1 and 2. As part of the above letter, CP&L was asked to respond to the open issues discussed in the TER.

Please find enclosed our responses to the open issues. Should you have any questions concerning this letter, please do not hesitate to contact a member of our licensing staff.

Yours very truly,

S. R. Zimmerman
Manager
Nuclear Licensing Section

PPC/cfr (9218PPC)

cc: Mr. D. O. Myers (NRC-BSEP)
Mr. J. P. O'Reilly (NRC-RII)
Mr. M. Grotenhuis (NRC)



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CAROLINA POWER & LIGHT COMPANY

BRUNSWICK STEAM ELECTRIC PLANT

RESPONSE

TO

PART I TECHNICAL EVALUATION REPORT

FOR

NUREG-0612
CONTROL OF HEAVY LOADS

TER Page 9, Section 2.1.2, Item C.1

"provide suitable visual aids to operators to ensure movement of loads along established load path"

Response

As previously stated in the November 16, 1982 submittal, safe load paths are indicated in drawings and are referenced in various plant operating procedures. The procedures refer maintenance and operations personnel to the applicable load path drawing. The load paths follow the safest and shortest routes with consideration given to going around fuel and safety-related equipment. During crane operator training and requalification, crane operators are instructed regarding these load paths. The work is performed in accordance with the written approved procedures by experienced personnel and supervised by competent foremen. Prior to initiating the work activities in the procedure, the foreman critiques the procedure with his men to assure each one knows the correct methods to be followed. Electrical interlocks, as well as written instructions in the plant procedures, prevent loads from being handled over the spent fuel and reactor except during specific operations.

In addition, to provide suitable alternatives to the permanent marking of load paths, CP&L will:

1. Revise the appropriate operations and maintenance procedures to not only reference the applicable load path drawing but to include a copy of the drawing.

2. Revise MP-06 to require that the signalman and operator review the load path prior to a load movement and walk the designated load path to the extent physically possible.



(9218PPC/cfr)

TER Page 9, Section 2.1.2, Item C-2

"verify that deviations from established load paths require written alternatives which are approved by the plant safety review committee"

Response

Plant procedures will be revised to include a precautionary statement that any movement requiring a deviation from the established load path must be done under a Special Procedure prepared by the BSEP Engineering staff. Special Procedures (temporary changes to procedures) are reviewed in accordance with Technical Specification 6.5.



(9218PPC/cfr)

TER Page 10, Section 2.1.3, Item C

"upon completion of procedures for replacement of the fuel storage racks, these procedures should be readily available for review by the NRC staff."

Response

The instaliation of the new fuel storage racks is currently in progress. Movements of the new and existing racks are conducted in accordance with approved procedures. These procedures are available for your review at the Brunswick site.

TER Page 10, Section 2.1.4, Item C

"provisions should be made to monitor crane operator conduct in accordance with ANSI B30.2-1976."

Response

As previously stated in the November 16, 1982 submittal, crane operators are trained in accordance with the requirements of ANSI B30.2-1976.

Crane operators are required to receive classroom instruction and gain practical operating experience under the direction of other qualified operators for each crane on which they are to become qualified. In addition to a physical examination by a medical doctor, each operator trainee must pass a written examination. Crane operators are required to requalify annually. The crane operator training program plays an important part in assuring safe handling of the loads at BSEP and, therefore, is carefully administered by the maintenance supervisor or his designee.

Carolina Power & Light Company believes that the qualification and requalification programs at Brunswick provide adequate monitoring of operator conduct. In addition, it is the responsibility of the crane operator's and signalman's immediate supervisor to ensure that he conducts himself in an appropriate manner in accordance with applicable standards and procedures.

TER Page 15, Section 2.1.5, Item C.1

"Demonstrate that programs exist for lifting device acceptance testing, maintenance, and continued compliance for the spent fuel cask yoke and the shielded personnel lifting apparatus."

Response

The acceptance testing and maintenance program for the spent fuel cask is in compliance with Section 5 of ANSI N14.6-1978; however, exception is taken to the visual inspection frequency of Section 5.3.7 due to infrequent usage. The spent fuel cask yoke is inspected by maintenance personnel prior to use.

The acceptance testing and maintenance program for the shielded personnel lifting apparatus is in compliance with Section 5 of ANSI N14.6-1978 with the exception of the deficiency in the requirements for the load testing, which states that a 600 lbs. load be raised one foot off the floor and lowered again in a controlled manner. In order to achieve compliance with ANSI N14.6-1978, Section 5, the weight of the test load will be increased and the time the test load is suspended will be specified. Exception is also taken to the inspection frequency of Section 5.3.7 due to infrequent usage. The shielded personnel lifting apparatus is inspected by maintenance personnel prior to use.

TER Page 15, Section 2.1.5, Item C.2

"Evaluate the head strongback, dryer separator sling, stud tensioner frame, and invessel service platform strongback in accordance with criteria identified in the evaluation of ANSI N14.6-1978 or demonstrate that a failure analysis indicates that these devices have a load-handling reliability equivalent to that provided by compliance with ANSI N14.6."

Response

Evaluation of the Head Strongback, Dryer Separator Sling, Stud Tensioner Frame and the Invessel Service Platform Strongback was provided in Revision 1, Section 2.1(3)d of our Part I report and in our Part II response to 2.2.(1), (2), and (3). Table 3-2 (included with our Part II response) supports CP&L's conclusion that the above lifting devices have sufficient design safety factors to meet the requirements of ANSI-N14.6 and provide a load handling reliability equivalent to that provided in ANSI N14.6.

However, the acceptance testing and maintenance program presently in effect at BSEP for these special lifting devices does not comply with ANSI N14.6-1978. In order to achieve compliance with Section 5 of ANSI N14.6-1978, a program will be developed for the above equipment to include the requirements of Section 5.3.1, 5.3.2, 5.3.3, 5.3.4, and 5.3.5. The requirement of Section 5.3.6 (visual inspection prior to use) is satisfied at BSEP.

TER Page 16, Section 2.1.6, Item C

1. base sling selection upon the sum of the static and maximum dynamic loads

2. mark slings with the "static load" which produces the maximum static and maximum dynamic loads

3. clearly mark slings restricted in use to only certain cranes.

Response

1. The safe working load shall be reduced by 15% to account for maximum dynamic loading.

2. Slings shall be marked with the reduced value identified in 1 above to show the maximum safe working load for that sling.

3. Presently, there are no restrictions on sling to crane connection.

RESPONSE TO T.E.R.

T.E.R. Page 20, Item 2.2.3 - "Special Review for Heavy Loads Handled Over Core [Interim Protection Measure 6, NUREG-0612, Section 5.3(6)]

(6)In addition to the above, special attention should be given to procedures, equipment, and personnel for the handling of heavy loads over the core, such as vessel internals or vessel inspection tools. This special review should include the following for these loads: (1) review of procedures for installation of rigging of lifting devices and movement of the load to assure that sufficient detail is provided and that instructions are clear and concise; (2) visual inspections of load bearing components of cranes, slings, and special lifting devices to identify flaws or deficiencies that could lead to failure of the component; (3) appropriate repair and replacement of defective components; and (4) verify that crane operators have been properly trained and are familiar with specific procedures used in handling these loads, e.g. hand signals, conduct of operations, and content of procedures."

Response:

"Interim Actions for Control of Heavy Loads" as identified in Enclosure 2 of the NRC Request for Information dated December 22, 1980 were implemented by CP&L at the Brunswick Steam Electric Plant in May of 1981.

An "Interim Action" report was prepared in accordance with Enclosure 2 of the NRC request for information. The report identifies the actions taken to determine the extent of compliance to NUREG-0612 and provides recommended changes to procedures and drawings necessary to implement the requirements of Enclosure 2. Item 5 of Enclosure 2 corresponds to Interim Protection Measure (6) of NUREG-0612.

A review of BSEP procedures was performed and checklists used to document the results. Minor revisions were made to plant procedures for: inclusion of and/or reference to load paths, inspection of lifting devices, use of trained and qualified operators, repair and replacement of defective components with approved replacement parts and procedures.

Carolina Power & Light Company's BSEP procedures conform to the requirements of NUREG-0612 and Standards referenced therein.

The "Interim Action" report is on file and available for review in CP&L's Nuclear Plant Engineering Department. The report responds to all of the questions included in Enclosure 2 of the December 22, 1980 request for information.