50-325/324

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

April 22, 1994

The Honorable Vic Fazio
United States House of
Representatives
Washington, DC 20515-0503

Dear Congressman Fazio:

I am replying to your letter of February 22, 1994, in which you requested the Nuclear Regulatory Commission (NRC) to address the concerns raised by Ms. S. K. Adair in her letter to you regarding the past performance and reliability of the Brunswick Steam Electric Plant (Brunswick), Units 1 and 2, operated by Carolina Power & Light Company (CP&L). Ms. Adair's letter covered a broad range of issues which we will address generally in the order she presented them. First, however, we will provide you with our overall assessment of Brunswick.

After a year-long shutdown to correct structural steel deficiencies and inadequate seismic response and maintenance issues that initially began with problems with the interior masonry walls in the diesel generator building, the NRC concurred with the restart of Brunswick Unit 2 on April 29, 1993. The NRC closely monitored CP&L's execution of the Unit 2 restart ascension plan and, being satisfied with the performance, concurred CP&L to resume normal unit operation on June 3, 1993. The restart of the unit proceeded without significant technical difficulty, and the unit operated continuously until the start of the refueling outage on March 26, 1994. Regarding Brunswick Unit 1, CP&L decided to conduct a refueling outage and perform a repair modification on the reactor core shroud that delayed its restart until January 28, 1994. The restart of Unit 1 also proceeded well, and the unit is online and performing properly. Throughout this period, the NRC has observed that CP&L has continued to make progress in improving the overall material condition of the plant.

The NRC has observed notable progress in Brunswick's performance, overall plant condition, and equipment maintenance, particularly of the emergency diesel generators. These changes were, in part, due to increased management oversight by CP&L, the effective system readiness reviews by the CP&L system engineers and operators, and the new work control process at Brunswick. On December 6, 1993, the NRC issued its Systematic Assessment of Licensee Performance (SALP) report for the period from November 1, 1992, to November 6, 1993. As indicated in this report, the NRC has observed positive signs of improvement during the period, especially in plant operations. The NRC gave Brunswick Category 1 (superior) ratings in both operations and plant support and Category 2 (good) ratings in maintenance/surveillance and engineering. Ms. Adair has received a copy of the SALP report forwarded by Congressman Neal in response to similar concerns raised earlier by Ms. Adair.

Although the NRC noted a significant improvement in the management and operation of Brunswick, NRC management has decided to keep this facility on the list of those facilities requiring additional NRC attention. The NRC

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staff will reconsider its decision after observing the operation of Brunswick Unit 1, which recently resumed operation.

Ms. Adair highlighted some of the concerns the NRC stated in the December 6, 1993, SALP report. The NRC noted these areas for CP&L to ensure adequate management attention and will monitor them to verify that satisfactory improvements are realized. Along with these items, Ms. Adair lists some concerns that she characterizes as recently discovered dangers not adequately corrected. The first concern is cracks in both reactors. In July 1993, CP&L informed the NRC of numerous cracks in the core shroud of Brunswick Unit 1 that were discovered during visual examinations of the core shroud during the July 1993 refueling outage. The visual examinations were performed in accordance with the recommendations in the General Electric Company (GE) Rapid Information Communication Service Information Letter 054, "Core Support Shroud Crack Indications," which was issued as a result of cracking previously discovered in the core shroud of a foreign-owned GE boiling water reactor. The core shroud is a cylindrical barrel inside the reactor vessel that directs the flow of reactor feedwater up through the core. It does not form a part of the reactor vessel pressure-retaining boundary. After conducting a detailed engineering analysis of the cracks, CP&L installed a design modification. The NRC reviewed the modification and the CP&L engineering analysis and found them satisfactory. During the Brunswick Unit 2 refueling outage, CP&L will inspect the Unit 2 core shroud and will install the same modification as completed on Unit 1 even if the inspection results show that it is unnecessary at this time.

Ms. Adair's second concern is the presence of Thermo-Lag 330-1 fire barrier systems. The NRC staff has three principal concerns regarding the use of Thermo-Lag 330-1 barriers: (1) the fire endurance capability of fire barriers, (2) the ampacity derating of cables enclosed in this material, and (3) the evaluation and application of the results of tests conducted to determine the fire endurance ratings and ampacity derating factors of these barriers. The NRC is concerned that the Thermo-Lag 330-1 fire barriers may not provide the level of fire endurance that licensees intend for specific applications. The NRC is working with all affected licensees and the Nuclear Energy Institute to determine the qualification of each type of fire barrier installation for which Thermo-Lag is used. All licensees will be required to ensure that these qualification tests bound the designs of their fire barrier installations. Additional actions will be required should they have fire barrier configurations that are not qualified by these tests. Ms. Adair also indicates that Thermo-Lag is a combustible material. The issue of combustibility remains under staff review and is included in the NRC staff's action plan for addressing the issues regarding the use of Thermo-Lag. It should be noted that compensatory measures such as the maintenance of fire watches are required when a fire barrier is found to be degraded. The NRC considers these measures as an appropriate response until a permanent solution is implemented.

Another of Ms. Adair's concerns is faulty water level instrumentation. This is a reference to the problem noted in NRC Bulletin 93-03 regarding reactor

vessel water level instruments during depressurization transients. Before the restart of Brunswick Unit 1, CP&L installed a modification that the NRC staff considers satisfactory to eliminate the potential problem. The same modification will be made during the upcoming Brunswick Unit 2 refueling outage.

With regard to Ms. Adair's concern about the vulnerability of the Brunswick plant to hurricanes, the NRC staff considered this environmental factor thoroughly during the design-basis review of the facility and found it to be satisfactory. Additionally, it has reviewed CP&L's procedures for this natural occurrence, as part of its normal inspection process, and has found them to be acceptable.

Ms. Adair also raises a concern that the hardened wetwell vent system (HWWVS) installed at Brunswick will allow more radioactive steam to escape to help reduce containment pressure and to lessen the likelihood of more serious releases. In addition to a valve kept closed during plant operation, the HWWVS design incorporates a device called a rupture disc that provides a second leaktight barrier to further prevent the transport of the atmosphere in the wetwell to the outside. The HWWVS is not in use during normal plant operation, nor is it expected to be used during anticipated transient conditions. Its installation along with the procedures for its use will reduce the likelihood of a core melt from accident sequences involving the loss of long-term decay heat removal. Further, as a severe accident mitigation measure, it is a reliable means of pressure relief through a path with significant scrubbing of fission products. The HWWVS is a capability that is beyond the required licensing basis for the facility. It is an improvement that the NRC staff recommended in its Mark I Containment Performance Improvement Program, which identified plant modifications that could enhance the capability to both prevent and mitigate the consequences of severe accidents.

Because of a GE recommendation regarding the intergranular stress corrosion cracking of reactor vessel internals, CP&L has included the addition of hydrogen in its reactor vessel water chemistry program. The addition of hydrogen does increase the radiation in the main steam system. However, CP&L has conducted thorough radiation surveys and added appropriate radiation shielding to compensate for the increased radiation levels in and around the turbine building so that worker doses are maintained as low as is reasonably achievable (ALARA). In any regard, the NRC has found that CP&L is in compliance with the NRC requirements for the radiation protection of the public and workers.

Finally, Ms. Adair states that the organization, Public Citizen, contends that 40 percent of the problems identified in evaluations conducted by the Institute for Nuclear Operations (INPO) for Brunswick have not been corrected. Since no specific information was provided on either the Public Citizen report or the particular INPO evaluations upon which Public Citizen based its contention, the NRC cannot do a detailed analysis to investigate this contention. However, the NRC is aware that INPO does follow up on licensee

responses to their evaluation findings during subsequent plant evaluations and emphasizes the need to resolve their findings. The NRC staff periodically reviews the INPO evaluation reports, and it is an NRC regulation that licensees report significant safety matters to the NRC. The NRC is, therefore, confident that any significant safety issues identified by INPO have been reported to the NRC by licensees. In particular, for Brunswick, no significant safety issues have been identified by INPO as part of their evaluation process.

The NRC is unable to address Ms. Adair's questions regarding the utility rates for electric service supplied by CP&L and the capital cost recovery for Brunswick. The process of setting these rates and evaluating the basis is the responsibility of the North Carolina Public Utilities Commission. As with her previous correspondence on this subject, the NRC will forward copies of her February 11, 1994, letter to this State agency. Ms. Adair's concerns regarding Martin Marietta Aggregates' permit application to operate a limestone quarry had previously been forwarded to the State of North Carolina, Department of Environment, Health, and Natural Resources.

I hope that this information responds to the questions raised by Ms. Adair.

Sincerely,

Original signed by
James M. Taylor

James M. Taylor
Executive Director
for Operations

cc: See next page

*See previous concurrence

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DATE	04/12/94	04/13/94	03/15/94	04/13/94	03/18/94	03/18/94

OFFICE	C:SPLB*	C:PRPB*	AD:DRPE	D:DRPE	RA:R-II	ADP
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OFFICE	D:NRR	D:NRR	EDO	OCA		
NAME	FMiraglia	WRussell	JTaylor	DRathbun		
DATE	04/14/94	04/18/94	04/20/94	04/22/94		

Document Name: G:\BRUNSWIC\BR9812.GRN

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and 50-324
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ACTION

EDO Principal Correspondence Control

FROM: Rep. Vic Fazio

DUE: 03/14/94

EDO CONTROL: 0009812
DOC DT: 02/22/94
FINAL REPLY:

TO:

Chairman Selin

FOR SIGNATURE OF : ** GRN **

CRC NO: 94 0183

Executive Director

DESC:

ENCLOSES LETTER FROM SANDY ADAIR RE BRUNSWICK NUCLEAR FACILITY

ROUTING:

Taylor
Milhoan
Thompson
Blaha
Ebneter, RII

DATE: 03/01/94

ASSIGNED TO: NRR

CONTACT: Russell

SPECIAL INSTRUCTIONS OR REMARKS:

NRR RECEIVED: March 1, 1994
NRR ACTION: DRPE:VARGA

NRR ROUTING:
WR/FJM
AT
LR
DC
FG
NRR MAIL ROOM

ACTION
DUE TO NRR DIRECTOR'S OFFICE
BY March 9

Extension 3/21 by M. Bridgers
on 3/3/93

OFFICE OF THE SECRETARY
CORRESPONDENCE CONTROL TICKET

PAPER NUMBER: CRC-94-0183 LOGGING DATE: Feb 28 94

ACTION OFFICE: EDO

AUTHOR: VIC FAZIO
AFFILIATION: U.S. HOUSE OF REPRESENTATIVES

ADDRESSEE: CHAIRMAN SELIN

LETTER DATE: Feb 22 94 FILE CODE: IDR-5 BRUNSWICKS

SUBJECT: PROBLEMS SURROUNDING THE BRUNSWICK NUCLEAR FACILITY

ACTION: Direct Reply

DISTRIBUTION: OCA TO ACK, DSB

SPECIAL HANDLING: NONE

CONSTITUENT: SANDY ADAIR

NOTES:

DATE DUE: Mar 14 94

SIGNATURE: . DATE SIGNED:
AFFILIATION: