



Carolina Power & Light Company

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SEP 28 1992

R. B. STARKEY, JR.
Vice President
Nuclear Services Department

SERIAL: NLS-92-267
10 CFR 50.54(f)

United States Nuclear Regulatory Commission
ATTENTION: Document Control Desk
Washington, DC 20555

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NOS. 1 AND 2
DOCKET NOS. 50-325 & 50-324/LICENSE NOS. DPR-71 & DPR-62
CP&L RESPONSE TO NRC GENERIC LETTER 92-04, "RESOLUTION OF THE
ISSUES RELATED TO REACTOR VESSEL WATER LEVEL INSTRUMENTATION
IN BWRs PURSUANT TO 10 CFR 50.54(F)"

Gentlemen:

The purpose of this letter is to provide Carolina Power & Light Company's (CP&L) response to the requested actions of NRC Generic Letter No. 92-04, "Resolution of the Issues Related to Reactor Vessel Water Level Instrumentation in BWRs Pursuant to 10 CFR 50.54(f)" for the Brunswick Steam Electric Plant (BSEP), Unit Nos. 1 and 2. Generic Letter No. 92-04 was issued by the NRC on August 19, 1992, requesting licensee responses to specific actions regarding the adequacy of and corrective actions for BWR water level instrumentation with respect to the effects of non-condensable gases on system operation. Carolina Power & Light Company responses for BSEP for each requested action of the generic letter are provided in Enclosure 1 to this letter.

Please refer any questions regarding this submittal to Mr. M. R. Oates at (919) 546-6063.

Yours very truly,

R. B. Starkey, Jr.

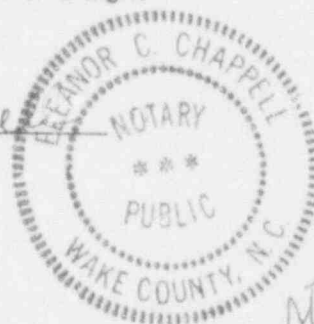
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Enclosure

R. B. Starkey, Jr., having been first duly sworn, did depose and say that the information contained herein is true and correct to the best of his information, knowledge and belief; and the sources of his information are officers, employees, contractors, and agents of Carolina Power & Light Company.

My commission expires: 2/6/94

Eleanor C. Chappell
Notary (Seal)



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cc: Mr. S. D. Ebner
Mr. R. H. Lo
Mr. R. L. Prevatte

ENCLOSURE 1

BRUNSWICK STEAM ELECTRIC PLANT, UNITS 1 AND 2
NRC DOCKET NOS. 50-325 & 50-324
OPERATING LICENSE NOS. DPR-71 & DPR-52
CP&L RESPONSE TO NRC GENERIC LETTER NO. 92-04

Requested Action 1.

1. In light of potential errors resulting from the effects of non-condensable gas, each licensee should determine:
 - a. The impact of potential level indication errors on automatic safety system responses during all licensing basis transients and accidents.
 - b. The impact of potential level indication errors on operators' short and long term actions during and after all licensing basis accidents and transients;
 - c. The impact of potential level indication errors on operator actions prescribed in emergency operating procedures or other affected procedures not covered in (b).

CP&L Response to Requested Action 1a.

The BWR Owners' Group (BWROG) provided to the NRC and each BWROG member utility BWROG Report-92074, "BWR Reactor Vessel Water Level Instrumentation, Revision 1," August 28, 1992 (Reference 1). This generic report addresses the safety impact of potential water level indication errors on automatic safety system response during all licensing basis transients and accidents. This analysis basis is contained in Section 6.0, Safety Analysis, of the report and is summarized in Section 2.2, Plant Response to Postulated Accident Scenarios. Carolina Power & Light Company recognizes that there are differences between the designs of BWR plants and systems; however, comparison of the BSEP Final Safety Analysis Report (FSAR), BSEP SAFER/GESTR Analysis (Reference 5), and the BSEP Engineering Analysis Description (Reference 6) to the BWROG Report-92074 reinforces CP&L's general understanding that the basic plant response to the design basis transients and accidents is sufficiently similar to obviate additional plant-unique re-analysis. The diverse initiating signal for low pressure Emergency Core Cooling System for BSEP requires both a high drywell pressure and a low reactor vessel pressure, rather than only a high drywell pressure as in the report. Since the two required signals are not dependent on reference leg inventory, the conclusions of the report are still valid.

CP&L Response to Requested Action 1b.

The BWROG report addresses, in Section 6.9, Operator Response, the anticipated operator actions to potential water level indication errors. In the short term, the report discusses in Section 6.0 that the automatic safety actions will be performed as necessary. Consistent with the recommendations addressed within the Emergency Procedures Committee (EPC) letter to plant operations superintendents dated August 19, 1992 (Reference 2), additional guidance will be provided to appropriate plant operations personnel as part of either licensed operator retraining or shift training prior to scheduled startup. This interim guidance information will sensitize the operators to the possible concerns with accurate water level readings following a rapid depressurization, while not necessitating a change to the existing long term guidance provided in the Emergency Operating Procedures (EOP).

CP&L Response to Requested Action 1c.

As stated in Section 6.9 of the report and the 1.b response above, the operators have adequate guidance in the present EOPs when augmented by the recent sensitization information provided within Reference 2. In addition, CP&L has reviewed and concurs with the response provided within the BWROG letter "Response To Third Requested Action of Generic Letter 92-04," dated September 24, 1992 (Reference 3). The EPC is continuing to review the potential need for any additional guidance in the Emergency Procedure Guidelines (EPG) to further address the potential water level indication errors. Such review will take into account the information from the BWROG program of analysis and testing regarding this issue.

Requested Action 2.

2. Based upon the results of (1) above, each licensee should notify the NRC of short term actions taken, such as:
 - a. Periodic monitoring of level instrumentation system leakage; and,
 - b. Implementation of procedures and operator training to assure that potential level errors will not result in improper operator actions.

CP&L Response to Requested Action 2.

Based upon the results of 1 above, CP&L has established the following interim operator training actions:

- Review of the EPC letter to plant operations superintendents dated August 19, 1992
- Development of operator training regarding the phenomenon of non-condensable gases coming out of solution. This training will include a description of depressurization (both slow and rapid) and probable level indication response.
- Review of expected operator actions for loss of level indication, including Technical Specification action statements, EOPs, etc.

These items will be implemented prior to scheduled startup.

CP&L is considering the following additional actions to monitor this phenomenon:

- Analysis of reactor water level data during future shutdowns.
- Performance of periodic instrument rack walkdowns.

Requested Action 3.

3. Each licensee should provide its plans and schedule for corrective actions, including any proposed hardware modifications necessary to ensure the level instrumentation system design is of high functional reliability for long term operation. Since this instrumentation plays an important role in plant safety and is required for both normal and accident conditions, the staff recommends that each utility implement its longer term actions to assure a level instrumentation system of high functional reliability at the first opportunity but prior to starting up after the next refueling outage commencing 3 months after the date of this letter.

CP&L Response to Requested Action 3.

Carolina Power & Light Company endorses the BWROG plans originally provided in the BWROG letter of August 12, 1992 (Reference 4). Carolina Power & Light Company also reaffirms support of the BWROG plan by endorsing the BWROG letter of September 24, 1992 (Reference 3). The BWROG testing and analytical development program should provide a more accurate estimate of the effects of non-condensables coming out of solution on reference legs under depressurization. Carolina Power & Light Company expects that the results of this investigation will show that BSEP has a level instrumentation system of high functional reliability. If the BWROG Program indicates that modifications are necessary to assure that the level instrumentation is of high functional reliability, such modification schedules will be provided to the NRC at that time. The next refueling outage (Reload 8, Cycle 9) for BSEP Unit No. 1 is currently scheduled to begin on March 4, 1993. The next refueling outage for BSEP Unit No. 2 (Reload 9, Cycle 10) is scheduled to begin on September 9, 1993.

References:

- 1) BWROG-92074 Report, "BWR Reactor Vessel Water Level Instrumentation, Revision 1," August 28, 1992
- 2) Letter, B. T. Williamson II (EPC) to BWR Owner's Group Members Plant Operations Superintendents, "Effects Of Non-Condensable Gases On BWR Cold Leg RPV Water Level Instrumentation," August 19, 1992
- 3) BWROG-92082, G. J. Beck (BWROG) to NRC, Response To Third Requested Action Of Generic Letter 92-04," September 24, 1992
- 4) BWROG-92072, G. J. Beck (BWROG) to W. T. Russell (NRC), "Reactor Vessel Water Level Instrumentation," August 12, 1992
- 5) GE NEDC-31824P, "Brunswick Steam Electric Plant Units 1 and 2 SAFER/GESTR-LOCA, Loss-Of-Coolant Accident Analysis," Revision 2, July 1990
- 6) GE Document No. EAS-62-1088, "Brunswick Steam Electric Plant Loss-Of-Coolant Accident Engineering Analysis Description," February 1990