



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO SAFETY PARAMETER DISPLAY SYSTEM REVIEW ITEMS

CAROLINA POWER & LIGHT COMPANY

BRUNSWICK STEAM ELECTRIC PLANT, UNITS 1 AND 2

DOCKET NOS. 50-325 AND 50-324

1.0 BACKGROUND

In response to the provisions of Supplement 1 to NUREG-0737 (as transmitted by Generic Letter 82-33), Carolina Power & Light Company (CP&L, the licensee) submitted a Safety Analysis describing the Brunswick, Units 1 and 2 Safety Parameter Display System (SPDS) (Reference 1).

The staff reviewed the licensee's submittal and responded in a Safety Evaluation (SE) dated May 16, 1985 (Reference 2). As part of that SE, several issues were identified as confirmatory items requiring further information.

The licensee responded to the confirmatory items in its submittal of July 19, 1985 (Reference 3). The staff review of the licensee's responses are provided below.

2.0 EVALUATION

The staff finds the licensee's responses to its request for further information acceptable. Specific review results are provided in the text that follows.

NRC Request:

The licensee should provide a list of variables that provides input to the radiation box.

CP&L Response:

"The variables input to the radiation box will be consistent with the Radioactivity Release Control Guideline as it is implemented within the Brunswick Emergency Operating Procedures. These variables currently are: the mainstack radiation monitors, the Reactor Building ventilation radiation monitors, the Turbine Building ventilation radiation monitors, and the service water main effluent radiation monitors. The availability of necessary Emergency Operating Procedure radiation variables on the SPDS will be verified by the Control Room Design Review task analysis as stated in the Company's December 27, 1984 emergency response capability submittal."

NRC Conclusion:

This information was requested in order to clarify whether the appropriate radiation variables were included in the set of variables selected by CP&L for display on the SPDS. The staff finds the CP&L response acceptable and concludes that the variables selected for display on the Brunswick SPDS are acceptable.

NRC Request:

The licensee should assure that the SPDS developed for Brunswick by General Electric (GE) has taken into account plant-specific aspects.

CP&L Response:

"The plant-specific aspects discussed in Section III.D of the SER, including color-coding conventions, abbreviations, acronyms, equipment terminology, and symbology will be taken into more detailed account during the reviews of the preliminary color displays. In addition, such plant-specific aspects as ranges, units, and setpoints will be verified and corrected where necessary.

"The plant-specific Control Room Design Review task analysis will also be used for the verification and, if necessary, the review of the displays and their supporting parameters as recommended in Section 5.1.b(ii) of Supplement 1 to NUREG-0737."

NRC Conclusion:

The staff finds the licensee response acceptable.

NRC Request:

The licensee should consider drawing the display formats to identify the unit for which data is being reviewed or indicate why it is not desirable.

CP&L Response:

"The indication of the Brunswick unit for which data is being provided will be on the final SPDS displays. This distinction was not included in the original Safety Analysis submittal only because of the generic nature (i.e., covering both units) of the submittal."

NRC Conclusion:

The staff finds the licensee response acceptable.

NRC Request:

Some of the displays seem crowded and other options should be considered before deletion of system status information.

CP&L Response:

"The system status information to be deleted from the GE generic displays is adequately presented in the existing plant control room. Deletion of the system status information is not detrimental to the SPDS when compared to display readability and overall usefulness to the plant operators. Certain system status is not deemed as important as maintaining a concise display of critical plant variables.

"Inclusion of excessive system status information can also introduce difficulty in determining exactly what each status block means without a detailed knowledge of the software driving the block. Each block may have several variables as input (e.g., flows, valve positions, pump statuses); therefore, the plant operator would be forced under many conditions to look at other displays or instrumentation to determine what caused a block to change. A significant amount of additional training would be required to familiarize operators with the necessary status inputs. The operator must be able to operate the plant without SPDS; therefore, relying on SPDS to decide what instrumentation is needed to determine system status (e.g., if drywell cooling available) may be deleterious to plant operation without SPDS.

"A data link to the existing plant process computer will be part of the Emergency Response Facility Information System. The variables transferred by this data link, such as various system alarms, will be available for display."

NRC Conclusion:

The staff concurs in the licensee's decision not to jeopardize the usefulness of the SPDS displays by presenting too much information. The licensee's response is acceptable.

NRC Request:

Consideration should be given to other methods of simplifying the display.

CP&L Response:

"In addition to certain system status deletion as referenced in the preceding response, methods such as regrouping and color coding will be considered for improving display format."

NRC Conclusion:

The staff finds the licensee's response acceptable.

REFERENCES

1. Letter, E. E. Utley (CP&L) to D. B. Vassallo (NRC) with enclosures, dated December 27, 1984.

2. Letter, D. B. Vassallo (NRC) to E. E. Utley (CP&L) with enclosures, dated May 16, 1985.
3. Letter, A. B. Cutter (CP&L) to D. B. Vassallo (NRC) dated July 19, 1985.

Principal Contributors: G. Lapinsky and M. McCoy

Dated: November 20, 1985