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SUBJECT: Forwards info for NRC to complete analysis of plant SPDS review program, per NUREG-0737, Suppl 1.

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 TITLE: OR/Licensing Submittal: Suppl 1 to NUREG-0737 (Generic Ltr 82-33)

NOTES: Application for permit renewal filed. 05000400

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Carolina Power & Light Company

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SERIAL: NLS-88-228

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

SHEARON HARRIS NUCLEAR POWER PLANT
UNIT NO. 1 - DOCKET NO. 50-400
SAFETY PARAMETER DISPLAY SYSTEM - NUREG-0737,
SUPPLEMENT 1 IMPLEMENTATION

REFERENCE 1: CP&L Letter from Mr. S. R. Zimmerman to Mr. H. R. Denton (NRR),
dated June 2, 1986, Serial: NLS-86-067

Gentlemen:

Carolina Power & Light Company (CP&L) hereby submits the information required by NUREG-0737, Supplement 1, for the staff to complete its analysis of the SHNPP Safety Parameter Display System (SPDS) review program. This material is submitted within the time frame as stated by Reference 1 and satisfies SHNPP License Condition 2.C(7).

The purpose of the SPDS is to assist operating personnel in evaluating the safety status of the plant. The SPDS provides a continuous indication of plant parameters or derived variables which are representative of the safety status of the plant during both normal and emergency use. The primary function of the SPDS is to aid in the rapid detection of abnormal operating conditions. Secondary functions include analyzing and diagnosing the abnormality and providing an informational basis for corrective action execution.

The SHNPP SPDS review was performed in two phases. The Verification and Validation phase was conducted during final design and installation of the SPDS and provides a technical evaluation as to how the system meets its own design requirements and the information needs of the operators. The second phase consisted of a review to assure the SPDS conforms to applicable human factors guidance. This phase was performed on a functional SPDS with operator/system interface.

Attachments 1 and 2 represent CP&L's analysis describing the basis for which the selected SPDS parameters are sufficient to assess the safety status of each identified function over a wide range of events, including symptoms of severe accidents.

Attachment 1 provides a summary of the Verification and Validation activities performed and the results thereof for the SHNPP Emergency Response Facility Information System (ERFIS), of which the SPDS is a subsystem. ERFIS/SPDS discrepancies identified by this review and a description of the action(s) taken to resolve each discrepancy, are summarized in Section 2.6 of Attachment 1.

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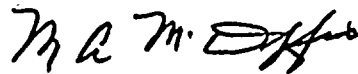
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Attachment 2 provides the methodology used and the results obtained from the SPDS dynamic operational and human factors evaluation. Attachment 3 delineates the resultant Human Engineering Discrepancies (HED) identified during this evaluation. A discussion addressing the criteria against which the HED was written and a disposition which describes the resolution of the discrepancy are provided with each HED listed. Please note that Attachment 3 includes those SPDS/ERFIS HEDS which could not be resolved as part of the SHNPP Detailed Control Room Design Review due to the then ongoing SPDS/ERFIS installation. The HED corrective actions have been completed, except for HED No. 31G1-6019 which is currently in progress.

Should you have any questions regarding this issue, please contact Mr. Arnold Schmich at (919) 836-8759.

Yours very truly,



M. A. McDuffie
Senior Vice President
Nuclear Generation

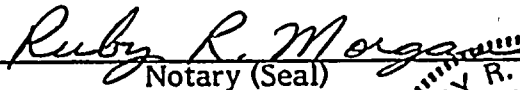
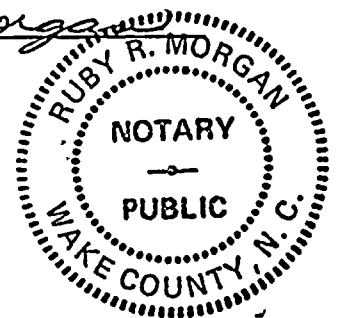
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Attachments: (1) ERFIS Verification and Validation Final Report
(2) SPDS Dynamic Operational/Human Factors Evaluation
(3) SPDS HED Summary

cc: Mr. W. H. Bradford
Mr. B. C. Buckley
Dr. J. Nelson Grace

M. A. McDuffie, 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: 11/27/89


Notary (Seal)

ATTACHMENT I TO NLS-88-228

ERFIS Verification and Validation Final Report