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SUBJECT: Submits info re 890829 Generic Ltr 88-20, Suppl 1,
 "Individual Plant Exams."

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OCT 31 1989

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Nuclear Services Department

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

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2
DOCKET NO. 50-261/LICENSE NO. DPR-23

SHEARON HARRIS NUCLEAR POWER PLANT
DOCKET NO. 50-400/LICENSE NO. NPF-63

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NOS. 1 AND 2
DOCKET NOS. 50-325 & 50-324/LICENSE NOS. DPR-71 & DPR-62

RESPONSE TO GENERIC LETTER 88-20
INDIVIDUAL PLANT EXAMINATIONS

Gentlemen:

Carolina Power & Light Company supports the Individual Plant Examination (IPE) philosophy of allowing licensees to self-identify and resolve safety issues relevant to a specific plant. Accordingly, the Company plans to respond to the requirements of Generic Letter 88-20 in a manner consistent with the guidelines provided in NUREG-1335, integrated within an existing Company framework that currently uses a risk-based approach to identify, evaluate, and resolve nuclear safety issues. PRA technology-based analyses have been conducted by the Company which have resulted in reduction in plant risk through modifications and procedure and training enhancements. The Company views the requirements of Generic Letter 88-20 and NUREG-1335 as a logical extension of internal programs that have been evolving since 1983. The following discussion provides the information requested in Generic Letter 88-20, Supplement 1 dated August 29, 1989.

1. METHODOLOGY AND APPROACH

The methodology employed will be Probabilistic Risk Assessment (PRA) for each of the four licensed Carolina Power & Light Company nuclear units: the Brunswick Steam Electric Plant, Unit Nos. 1 and 2 (BSEP-1 and BSEP-2), the Shearon Harris Nuclear Power Plant (SHNPP), and the H. B. Robinson Steam Electric Plant, Unit No. 2 (HBR-2). The IPEs will be based on PRAs that are in various stages of completion for the Company's nuclear units. The BSEP Level 1 PRA has been submitted to the NRC for review. Independent peer reviews of the SHNPP and HBR-2 Level 1 PRAs have been completed.

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The front-end analysis phase of the IPEs will be conducted by using a Level 1 PRA consistent with the guidance provided in Generic Letter 88-20 and NUREG-1335. The back-end analysis phase will also be conducted consistent with the guidance provided in Generic Letter 88-20 and NUREG-1335. Any analyses of source term behavior will be based on appropriate codes including the Source Term Code Package (STCP) modified by Risk Management Associates (RMA) and the BWR SAR Code. Information from work performed in past PRAs (both NRC and Industry) will be used to the maximum extent possible.

2. DESCRIPTION

Front-End Analysis: The PRA methodology for the four units will use small functional event trees and large fault trees to model the plant response to postulated initiating events. The plant systems will be modelled using a modularized fault tree approach. Functional sequences defined by the event trees will be quantified by linking the fault trees for the appropriate front-line and support systems with the postulated initiators and solving the resulting functional fault tree for accident sequence cutsets.

These analyses, including equipment modelling, common cause analysis, human reliability analysis, and plant damage state analysis, will be performed in a manner consistent with the guidance provided in NUREG-1335.

Back-End Analysis: Containment event trees will be constructed to assess the performance of the containment for the plant damage states defined in the front-end analysis. The containment event trees will be developed to ensure sufficient detail to address important phenomenology and events that impact containment performance. Plant-specific information and data from similar PRAs will be used, where feasible, to determine containment failure modes, containment challenges, and containment failure times. Supporting analyses will be performed when existing data is not available or is not appropriate. The containment event trees will be quantified using thermal-hydraulic and source-term calculations, probabilistic ranges from similar PRAs, evaluations of the plant-specific characteristics of the containment, and from an understanding of the events under consideration. The overall analysis will be performed in a manner consistent with the guidance provided in NUREG-1335.

Documentation of the assumptions, results and insights will be consistent with the intent of NUREG-1335 guidance. Exceptions will be made for the BSEP-1 and BSEP-2 IPEs as discussed below.

BSEP DIFFERENCES

The BSEP IPE submittal is expected to differ from those for SHNPP and HBR-2 based on the formal PRA submitted to the NRC on May 12, 1988 and because of additional efforts required for BWRs with Mark I containments.

Since the submittal of the BSEP PRA to the NRC, the system models have been modified to provide consistency with the SHNPP and HBR-2 models and to increase quantification efficiency. These modifications have not resulted in any significant change in the results. The original BSEP PRA

submittal format will be retained to allow resources to be focused on analysis rather than rewrite. A cross-reference to NUREG-1335 documentation guidance will be provided to assist in your review of the BSEP IPE submittals. The Company is proceeding with development of the BSEP IPE in accordance with the methodology described above. However, it would be helpful for IPE analysis to have the results of NRC review of the original BSEP PRA submittals as soon as possible.

The Company expects that the BSEP IPEs will require more extensive plant-specific containment structural analysis than the SHNPP and HBR-2 IPEs. This will facilitate CP&L's assessment of the NRC staff proposals for Mark I containment modifications. Based on our current understanding of anticipated NRC guidance on other containment types, we expect to use available generic information for the SHNPP and HBR-2 containment evaluations.

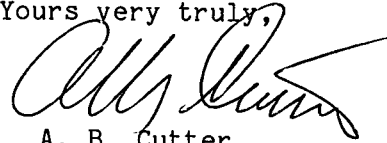
3. IDENTIFY SCHEDULE AND MILESTONES

The Company's approach to the IPE task will be to update and refine the existing Level I PRAs as discussed previously. This front-end analysis phase will be followed by transition to and completion of the back-end analysis phase. External events analysis will be addressed based on NRC guidance to be issued by a separate generic letter. Finally, extensive internal reviews are planned before final documentation and submittal to the NRC. To maximize the knowledge and appreciation of severe accidents gained during the IPE process, the Company plans to focus our internal expertise on IPE development. Outside assistance may be necessary to assist during the required independent reviews.

Attachment 1 to this letter provides the schedule for the major milestones of each IPE. The schedules were developed to allow maximizing, to the extent possible, retention of in-house knowledge of the analyses. The Company will provide additional information concerning these schedules and other features of the IPE project at your request.

Please refer any questions regarding this submittal to Mr. Leonard I. Loflin at (919) 546-6242.

Yours very truly,



A. B. Cutter

ABC/REM/1hr (516CRS)

cc: Mr. R. A. Becker
Mr. S. D. Ebnetter
Mr. L. Garner (NRC - HBR)
Mr. R. Lo
Mr. D. Modeen (NUMARC)
Mr. W. H. Ruland
Mr. J. E. Tedrow
Mr. E. G. Tourigny

ATTACHMENT 1

<u>Milestone</u>	<u>BSEP 1 & 2</u>	<u>SHNPP</u>	<u>HBR-2</u>
Complete Front-End Analysis	12/90	3/91	6/91
Complete Back-End Analysis	12/91	9/91	12/91
Complete External Events Analysis	*	*	*
Complete Internal Review	4/92	1/92	4/92
Submittal to NRC	8/92	8/92	8/92

* To be determined based on anticipated NRC generic letter.