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 FACIL: 50-261 H. B. Robinson Plant, Unit 2, Carolina Power and Light 05000261
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 ZIMMERMAN, S. R. Carolina Power & Light Co.
 RECIP. NAME RECIPIENT AFFILIATION
 VARGA, S. A. Operating Reactors Branch 1

SUBJECT: Forwards complete response to 810907 request for addl info re requirements of NUREG-0737 Item II.E.1.2, auxiliary feedwater sys initiation & flow.

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Carolina Power & Light Company

December 23, 1981



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Office of Nuclear Reactor Regulation
ATTN: Mr. Steven A. Varga, Chief
Operating Reactors Branch No. 1
United States Nuclear Regulatory Commission
Washington, D.C. 20555

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2
DOCKET NO. 50-261
LICENSE NO. DPR-23
REQUEST FOR ADDITIONAL INFORMATION
AUXILIARY FEEDWATER AUTOMATIC INITIATION
AND FLOW INDICATION

Dear Mr. Varga:

In your letter of September 7, 1981, you requested additional information regarding the requirements of NUREG-0737 Item II.E.1.2, "Auxiliary Feedwater System Initiation and Flow". Carolina Power & Light Company (CP&L) provided part of the requested information in our letter dated October 29, 1981, and indicated that the remaining information would be provided on or before December 31, 1981. This letter provides the complete response to your original request of September 7, 1981.

If you have any questions regarding this matter, please contact my staff.

Yours very truly,

S. R. Zimmerman

Manager

Licensing & Permits

FMG/DCW/lr (7201)

Enclosure

cc: Mr. W. J. Ross

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RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION
ROBINSON 2 AUXILIARY FEEDWATER (AFW) AUTOMATIC
INITIATION AND FLOW INDICATION

Request 1:

Provide Westinghouse drawings: 500B452, Sheets 191, 274, 275, 277, 615, 620, 627, 628, 637, 655, 660. (Sheets 615, 655, and 660 were provided in illegible conditions by letter dated December 31, 1979).

Response 1:

This information was provided in our letter to S. A. Varga dated October 29, 1981.

Request 2:

Are there any operating bypasses associated with the automatic initiation logic/circuitry during start-up or operation of the reactor? If so, how are these bypasses removed (automatically, procedurally, etc.)?

Response 2:

During power operation, there are no operating bypasses associated with the automatic initiation logic/circuitry for AFWS. However, during cooldown from hot shutdown and heatup to hot shutdown, the automatic initiation signals from "Steam Generator Low Level" and "Main Feedwater Pump Breaker Open" are bypassed with jumpers. This is done so that the steam generator blowdown valves can be opened when the main feedwater pumps are off. This enhances the secondary system chemistry and enables the steam generators to be drained for maintenance. During this time, the AFW pumps are controlled manually to maintain the appropriate water level in the steam generators. In addition, the automatic initiation signal from "Low Level in 2 Out of 3 Steam Generators" is still operable. The bypass is controlled procedurally through the safety related Jumper Log. This Log is required to be reviewed prior to power operation which precludes operation with the AFWS automatic initiation channels bypassed.

Request 3:

Describe the control room indication/annunciation available to alert the operator of the inoperable status of the AFWS when either bypassed or removed from service due to maintenance or test.

Response 3:

There are no alarms in the control room when the bypass conditions described in response 2 are present. As described in response 2, the bypass jumpers are controlled procedurally by the Jumper Log. If AFWS equipment is removed for maintenance, a Local Clearance and Test Request form must be completed and the out of service equipment is "tagged-out". In addition, when a motor driven AFW pump breaker or control fuse is pulled or fails or the control fuses to the steam driven AFW pump controls or the backup controls are pulled or fail, an annunciation is received for each pump in the control room.

Request 4:

Are any components or any portion of the AFWS automatic initiation system or circuitry used for any function other than automatic initiation (e.g., control functions)? If so, describe the isolation provided between the safety and non-safety circuits.

Response 4:

The relay logic contacts which form the AFWS automatic initiation does not provide any other functions.

Request 5:

Describe the channel independence (physical separation and electrical isolation) provided between the redundant AFWS automatic initiation channels.

Response 5:

Both trains of AFWS automatic initiation from the Engineered Safeguard Racks to the individual pieces of equipment are physically separated. All three instrumentation channels which provide signals through the Hagan Racks to the Engineered Safeguard Racks are also physically separated. This results in complete physical separation of electrical signals from the sensing instruments to the AFWS equipment. This separation meets the requirements of IEEE-279, 1968, as stated in the FSAR.

Request 6:

Describe the steam generator level instrumentation at the Robinson facility. This description should include:

- a. Type and number of level channels per steam generator including the range of each channel.
- b. The specific source (vital bus) from which each of these channels is powered.
- c. The type of indication available in the control room for each channel (indicator, recorder, etc.)

Response 6a:

The steam generator level instrumentation at Robinson consists of three channels of safety grade protection per generator with identical ranges of 108 inches of water. One wide range channel on each generator with a range of 513 inches of water is available for cold shutdown conditions and has no protective functions.

Response 6b:

The steam generator level protection channels I, II, and III are powered from vital instrument busses I, II, and III respectively. The wide range channel on A, B, and C steam generators are powered from vital instrument busses I, II, and III respectively.

Response 6c:

All the steam generator level protection channels have an indicator in the control room. Channel III of each generator is, also, on a recorder which it shares with steam flow and feedwater flow for the same generator. The wide range level channels for the three generators share a three pen recorder.