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 DENTON, H.R. Office of Nuclear Reactor Regulation, Director

SUBJECT: Forwards addl info re periodic testing of instrument air quality in response to Auxiliary Sys Branch SER open Item 7.

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Carolina Power & Light Company

JUN 21 1984

SERIAL: NLS-84-261

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
United States Nuclear Regulatory Commission
Washington, DC 20555

SHEARON HARRIS NUCLEAR POWER PLANT
UNIT NO. 1 - DOCKET NO. 50-400
PERIODIC TESTING OF INSTRUMENT AIR QUALITY

Dear Mr. Denton:

Carolina Power & Light Company (CP&L) hereby submits additional information concerning Periodic Testing of Instrument Air Quality at the Shearon Harris Nuclear Power Plant. This information is in response to Safety Evaluation Report Open Item No. 7 from the Auxiliary Systems Branch.

If you have any questions or require additional information, please feel free to contact me.

Yours very truly,

S. R. Zimmerman
Manager

Nuclear Licensing Section

ESS/mf (238NLU)
Attachment

- | | |
|---------------------------------|----------------------------|
| cc: Mr. B. C. Buckley (NRC) | Mr. Wells Eddleman |
| Mr. G. F. Maxwell (NRC-SHNP) | Mr. John D. Runkle |
| Mr. Norm Wagner (NRC-ASB) | Dr. Richard D. Wilson |
| Mr. J. P. O'Reilly (NRC-RII) | Mr. G. O. Bright (ASLB) |
| Mr. Travis Payne (KUDZU) | Dr. J. H. Carpenter (ASLB) |
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Shearon Harris Nuclear Power Plant
SER Open Item No. 7
Periodic Testing of Instrument Air Quality

Open Item:

The accumulators associated with isolation valves in the containment cooling system are safety related. The safety-related accumulators and lines from them to the valves they serve are all designed to seismic Category I, Quality Group standards. However, the applicant has not met the full requirements for periodic air quality testing as recommended in ANSI MC11.1-1976 (ISA S7.3). This standard requires a maximum particle size of 3 micrometers, while the filters used are 5 microns. Although the applicant has agreed to install 3 micron filters in the instrument air systems, the applicant has not committed to periodic testing of instrument air quality to ensure quality is maintained in accordance with the recommendations of the standard to maintain operability of the safety-related accumulators.

RESPONSE

CP&L's previous response on instrument air testing was submitted on November 4, 1983 and contained the following commitments with regard to instrument air quality which are summarized below:

1. Testing of air quality down stream of the air dryer after filter.
2. Installation of air filters at valve operators for valves powered from safety related air accumulators and valves which are required to fail safe on loss of instrument air.
3. Surveillance of filters in components identified in Item 2 above.

Based on discussions with the NRC in a meeting on April 27, 1984, CP&L understands that NRC requires further discussion of other contaminants which may damage instrument air. In addition, CP&L is revising and supplementing its position on the November 1983 submittal. These items are addressed below:

Contaminants - The NRC requested CP&L to address contaminants in the air system that may have entered or occurred in the system during construction of the system and cannot be measured directly by sampling for particulates, moisture or hydrocarbons. The instrument air system is undergoing a flush with high quality air from the air compressor, dryer and filter trains used during normal operation. The purpose of the flush is to remove loose material in the system that accumulated during construction. The acceptance criteria utilized for the quality of the air exiting the system during the flush is given in the Start-up Manual and includes criteria for particulates and organic material. Because of the component filters, which are being installed for the safety-related valve operators, the flush criteria are considered suitable for instrument air. This flush uses a combination of air flow rates and duration which are greater than the system will experience during normal operation.



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Clarification to Item 1 - Testing of instrument air quality downstream of the dryer after filter will be done to verify the proper operation of the compressor, air dryer and after filter. Since component filters are provided as discussed in the November 1983 submittal, the dryer after filter is not relied upon to prevent introduction of particles to the subject valve operators. The sampling for particles at the after filter will be done to verify proper operation of the filter and determine replacement/cleaning schedule for the filter. Therefore, the 3 micron level will be used as a goal and not an acceptance criteria for the system.

Sampling and testing for dewpoint and hydrocarbons will be conducted in accordance with ANSI-MC 11.1-1976 downstream of the air dryer after filter. This testing will be conducted at least once every refueling outage. The acceptance criteria for dewpoint will be -20°F at a normal air system pressure and less than 1 ppm w/w or v/v for hydrocarbons. This commitment was originally submitted to the NRC on October 11, 1983.

Clarification to Item 2 - Those air-operated valves which will have filters installed will include those air operated valves listed in FSAR Appendix 3.9D. This list specifies those valves that are included in the ASME Section XI valve operability program and are relied upon to fail safe on loss of instrument air or, in the case of the 3 valves listed in FSAR Table 9.3.1-2, are relied upon to perform some function.

Clarification to Item 3 - The filters installed in components denoted in Item 2 will be periodically inspected and cleaned. Those filters will be sized to meet or exceed the minimum recommendations of the valve manufacturers. An intact filter of the proper size can be expected to absolutely limit particles larger than the maximum size allowable. Periodic inspections to determine that the filters are intact will provide ample assurance that the filters will perform satisfactorily.



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