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SUBJECT: Forwards justification for continued operation during time needed to provide info re adequacy of documentation for qualification of continental cable, per NRC request.

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Carolina Power & Light Company

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U. S. Nuclear Regulatory Commission
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H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2
DOCKET NO. 50-261
LICENSE NO. DPR-23
JUSTIFICATION FOR CONTINUED OPERATION - CONTINENTAL CABLE

Dear Sirs:

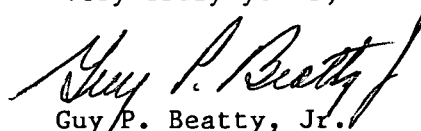
During the week of May 4 through May 8, 1987, the Nuclear Regulatory Commission conducted an onsite inspection of the H. B. Robinson Unit 2 10CFR50.49 Electric Equipment Environmental Qualification Program. During the inspection, a concern was raised regarding adequacy of documentation for qualification of safety-related cable in containment. In the following days, several conference calls and one meeting in NRC Region II offices were held to discuss the progress of Carolina Power & Light's efforts to provide additional information strengthening the qualification documentation of this cable. To date, all issues have been resolved with the exception of Continental cable. Although Carolina Power & Light Company believes that record search efforts and the resulting documentation assembled thus far demonstrate qualification of this cable, it has been indicated that additional information to strengthen this position is needed. Therefore, Carolina Power & Light Company was requested to provide a written justification for continued operation (JCO) prior to criticality to support operation during the time needed to provide further information regarding the Continental cable. Carolina Power & Light Company believes that the subject cable is qualified; however, to support this position, the data search will be expanded. This expanded effort may take up to three months to complete. Should the additional data not prove conclusive, further efforts involving testing and analysis of a sample of the Continental cable removed from Containment will be performed. This testing and analysis may take an additional three months.

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PDR ADOCK 05000261
Q PDR

ADYB
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The enclosed JCO demonstrates operability of existing cable and provides reasonable assurance that the equipment will perform its safety function for the six month period.

Very truly yours,



Guy P. Beatty, Jr.
Vice President

Robinson Nuclear Project Department

DBB:ac

Enclosure

cc: K. Eccleston
J. N. Grace
H. E. P. Krug

Justification for Continued Operation - Continental Cable

TER Item No: 25

Component: Electrical Cable Located in the Containment

Manufacturer: Continental Wire and Cable Company

Location: Inside Containment

Technical Discussion:

Identification and qualification of electrical cable inside containment is a requirement of 10CFR50.49. This requirement was addressed by Carolina Power and Light Company for the H. B. Robinson Plant by searching construction records and gathering test results from those vendors who supplied cable for use in containment. Recent inspections have raised concerns about the adequacy of these identification and qualification processes.

Additional efforts have been directed to obtaining reasonable assurance that the cable in question is, in fact, Continental cable. These efforts included:

- a. Review of construction records and consultation with available personnel who were involved in construction.
- b. Review of cable specifications, purchase orders, and inspection reports.
- c. Review of cable and conduit list.
- d. Physical inspections of cable inside containment.
- e. Review of plant modifications.
- f. Development of correlations of cable identification.

The results of these activities provide reasonable assurance that cable in-service, inside containment, is the cable purchased from Continental for that use.

Additional effort has also been directed toward establishing a high level of confidence that the Continental cable is qualified by supplementing the LOCA test data for that cable with results from tests performed on other silicon rubber insulated cables. Prior to 1979, it was not common practice to use insulation resistance during LOCA testing as a measurement of cable performance. Accordingly, the LOCA testing performed on Continental cable in 1970 utilized ability to maintain rated voltage and current during the test, coupled with acceptable insulation resistance measurements after the test, as the measurements of cable performance and insulation resistance measurements during the test were not recorded.

Testing of a number of silicon rubber cables, both methyl-vinyl and methyl-phenyl based, has been accomplished in the pre- and post-1979 periods. Several manufacturers, including Continental, Rockbestos, Cerro, Lewis, and Anaconda, are represented by these tests. Many of the tests were performed at test conditions well in excess of the accident environment postulated for H. B. Robinson. The cables tested in the pre-1979 period consistently demonstrated their ability to maintain rated voltage and current and exhibited good post-LOCA dielectric properties without insulation resistance measurements during testing. Similarly, cables tested in the post-1979 period for which insulation resistance measurements were obtained during the LOCA testing consistently exhibited insulation resistances in the 10^7 ohm range during the test.

While many types of cable insulation exhibit a wide range of variation in physical properties among manufacturers and compounds, this is not generally regarded to be the case in silicon rubber compounds. Silicon rubber is regarded as one of the highest quality insulation compounds available in cable manufacture. Based on the consistent good performance of silicon rubber insulated cables during LOCA tests, the inherent similarity of silicon rubber dielectric properties, and the satisfactory performance of the cable provided to H. B. Robinson in its LOCA testing without insulation resistance measurements during the test, a high level of confidence in the qualification of our cable has been demonstrated.

Reasonable assurance of the identity of our cable in containment as Continental cable with type CC2115 insulation has been established through correlation of our available records. Qualification of Continental cable with type CC2115 insulation has been demonstrated by actual testing and is further supported by testing of similar cable for which insulation resistance measurements were taken during the test. These conditions clearly justify continued operation of the H. B. Robinson Plant for a period of six months while a program of additional data retrieval, similarity analysis, and LOCA testing, if required, is implemented and evaluated.

The planning of these activities has already begun. The implementation and evaluation of the data retrieval and similarity analysis program are expected to be complete within three months after return to power operation.

The program for improving the qualification documentation for our Continental cable will include the following aspects as necessary:

- a. Review of archival information by CP&L and/or cable suppliers.
- b. Development of formal similarity analyses.
- c. Physical and/or chemical analysis of insulation material.

If evaluation of the results of this program does not adequately establish qualification of the cable, an environmental qualification testing program will be initiated to demonstrate qualification by test. It is anticipated that this program will require an additional three months to complete.