



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

FEB 25 1986

Docket Nos. 50-456/457

MEMORANDUM FOR: James G. Partlow, Director
Division of Inspection Programs
Office of Inspection and Enforcement

THRU: Vincent S. Noonan, Director *CWA*
PWR Project Directorate #5
Division of PWR Licensing-A

FROM: Janice A. Stevens, Project Manager
PWR Project Directorate #5
Division of PWR Licensing-A

SUBJECT: CAT INSPECTION FOR BRAIDWOOD STATION, UNITS 1 AND 2

In your March 15, 1985 memorandum to Hugh L. Thompson, Jr., you requested NRR assistance in reviewing several deficiencies regarding electrical separation that were revealed during the Braidwood Station Construction Appraisal Team (CAT) inspection.

In response to your request, NRR has reviewed the CAT inspection report 50-456/84-44, 50-457/84-40, dated February 20, 1985, with regard to the deficiencies related to the physical separation between safety-related cables and nonsafety-related cables. These deficiencies derive from exceptions to the recommendations of R.G. 1.75.

NRR reevaluated this item and has reviewed the deviations from R.G. 1.75 in a separate SSER (Enclosed). We have summarized below the results of our evaluation on cable separation as it relates to the separation of safety-related cables and nonsafety-related cables.

The Byron/Braidwood raceway design is based on the standard separation criteria contained in IEEE 384-1974 as endorsed by R.G. 1.75. However, the separation criteria between the non-Class 1E and Class 1E cables is less than the standard separation distance recommended by R.G. 1.75. In order to provide justification for these lesser separation distances, the applicant instituted a test program conducted by Wyle Laboratories. The test program methodology and results, submitted by the applicant by letters dated August 6 and October 22, 1985, were reviewed by the staff. The proposed criteria for separation of Class 1E and non-Class 1E cables which the staff has evaluated in the SSER are as follows:

1. Separation distances of twelve (12) inches vertical and three (3) inches horizontal between safety-related and nonsafety-related raceways.

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2. Separation of safety-related cables routed in free-air in contact with a raceway containing nonsafety-related cables, and separation of nonsafety-related cables routed in free-air in contact with a raceway containing safety-related cables.
3. Vertical or horizontal free-air cable in parallel with vertical or horizontal free-air cable with six (6) inches horizontal and vertical separation.

Based on our evaluation, as documented in the enclosed SSER, the above separation criteria are acceptable. These criteria address the deficiencies which the CAT identified and resolve their concerns to the satisfaction of the staff. The applicant is required to specify these lesser cable separation criteria in the Byron/Braidwood Stations FSAR.

Another issue identified during the CAT inspection involved the applicant's use of the term "quasi safety-related." The applicant has stated that this term is used to identify safety-related circuits qualified to Class 1E requirements which are installed in a non-Seismic Category 1 building. The applicant is required to have this term defined in the Sargent and Lundy design criteria manual.

Janice A. Stevens, Project Manager
 PWR Project Directorate #5
 Division of PWR Licensing-A

Enclosure: SSER on Cable Separation

cc: I. Olshan
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