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May 18, 1984

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

Subject: Byron Generating Station Units 1 and 2
Braidwood Generating Station Units 1 and 2
Diesel Generator Vibrations
NRC Docket Nos. 50-454, 50-455, 50-456 and 50-457

Reference (a): January 3, 1984 letter from T. R. Tramm to
H. R. Denton.

Dear Mr. Denton:

The purpose of this letter is to provide additional information regarding the design of the Byron/Braidwood emergency diesel generators. Clarification of the Byron SER is necessary to rectify an apparent misunderstanding regarding the design of the foundation with respect to the transmission of engine vibrations.

As described in the response to FSAR question 040.94, the effects of engine vibration upon the associated diesel generator control panel is minimized by proportioning the floor slab to the equipment mass. Reference (a) provided an advance copy of the revised response to that FSAR which will be incorporated into the FSAR at the next opportunity.

Page 9-46 of the Byron SER indicates that the diesel generator control panel is free-standing and is located in a vibration-free floor area. As noted above, the control panel is actually mounted on the same floor slab as the engine. The vibrations are, however, maintained at acceptably low levels.

Vibration levels at the control panel have been measured to confirm the validity of our design approach. Accelerometer data was taken at various points on the control panels of both Unit 1 diesel generators during recent testing at rated load. The panels were also inspected, both inside and out, during the tests. No abnormal vibrational effects were observed.

The vibration data have been reviewed in the context of the seismic testing which was performed for those panels. It was determined that the engine vibrations induced significant accelerations in the control panel only at frequencies which are well above the range which would be experienced in a seismic event. The qualification testing which was performed provided adequate margin to encompass both the seismic vibrations and the vibrations induced by operation of the diesel.

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Specifically, in the side-to-side direction (East-West), the measured zero period accelerations (ZPA) were 0.30g at the right front corner and 0.40g at the left front corner (the front is closest to the engine). The Required Response Spectra (RRS) gives 0.38g (sheet 24) while the Test Response Spectra (TRS) shows the panel was tested to 0.86g. The margin is 0.48g.

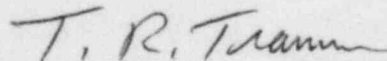
In the vertical direction, the ZPA's from testing are 0.35g at the right and 0.30g at the left corner. The RRS gives 0.84g (sheet 12) while the TRS shows the panel was tested to 1.41, for a margin of 0.57g.

In the front-to-back direction (North-South), the ZPA's from testing are 0.45g at the right and 0.30g at the left corners. The RRS gives 0.36g (sheet 23) while the TRS shows the panel was tested to 0.80g, for a margin of 0.44g.

Please address further questions regarding this matter to this office. Engineering personnel involved in the vibration testing and information on the seismic qualification of these panels can be made available on short notice.

One signed original and fifteen copies of this letter are provided for NRC review.

Very truly yours,



T. R. Tramm
Nuclear Licensing Administrator

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