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DMB

June 12, 1984

Mr. James G. Keppler
Regional Administrator
U.S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, IL 60137

Subject: Byron Generating Station Units 1 and 2
Electrical Conductor Butt Splices
NRC Docket Nos. 50-454 and 50-455

References (a): May 17, 1984 letter from D. L. Farrar to J. G. Keppler.

(b): May 25, 1984 letter from R. L. Spessard to Cordell Reed.

(c): June 6, 1984 letter from R. L. Spessard to Cordell Reed.

Dear Mr. Keppler:

On May 10, 1984 Commonwealth Edison notified the NRC of a deficiency potentially reportable pursuant to 10 CFR 50.55(e) regarding butt splices in electrical conductors at Byron Station. This letter provides an interim report to satisfy the 30-day reporting requirement. The results of the first phase of the reinspection program described in reference (a) is expected to be complete by June 20, 1984. Another interim report will be submitted at that time. For tracking purposes, this report is numbered 84-03.

Description of Deficiency

Deficiencies in butt splices in electrical conductors have recently been discovered through reinspection at other nuclear plants. To verify the acceptability of the Byron butt splices, a representative sample was inspected in March, 1984. The results were encouraging in that all of the splices were found to be generally sound. A number of splices were given a simple tug-test in the field to verify the mechanical effectiveness of the crimp. Excessive force was applied to one conductor and it parted at the splice. No problems were identified which would compromise the normal electrical load carrying capability of the conductor. Deviations from the manufacturer's acceptance criteria were identified, however, which could reduce the effectiveness of the electrical insulation at the splice. The results of that reinspection program are summarized in references (a) and (c).

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Analysis of Safety Implications

Case-by-case engineering analyses of the butt splice deficiencies are not complete as of this date. As described above, preliminary reviews indicate that the deficiencies would probably have no adverse impact upon plant safety.

Corrective Action Taken and Results Achieved

On April 5, 1984 the electrical installation contractor implemented new requirements for installation, inspection, and documentation of electrical butt splices. This should assure that future splices are made correctly.

A new program of butt splice reinspections has also been undertaken as described in reference (a). We are examining previously installed butt splices on the conductors of safety-related instrumentation and control cables in panels, switchgear, motor control centers and on both sides of electrical penetrations. This reinspection program is being conducted by the electrical contractor, Hatfield, in accordance with written procedures. As indicated in reference (b) the NRC is closely monitoring this project.

At present, over 900 butt splices have been reinspected. The program is about 75% omplete. Minor deviations from the established field inspection acceptance criteria have been found in approximately 14% of the butt splices checked. Approximately 8% were crimped using the wrong die, but are otherwise acceptable. About 6% of the splices have minor deficiencies such as exposed wire at the splice or improper conductor insertion into the splice. All of the splices inspected so far have been found to be generally sound. Engineering analysis of minor discrepancies will determine the safety significance of each discrepancy. All discrepant splices are being replaced in accordance with the new requirements.

Please address further questions regarding this matter to this office.

Very truly yours,

T. R. Tramm

T. R. Tramm
Nuclear Licensing Administrator

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cc: Director of Inspection and Enforcement

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