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September 23, 1982

Mr. James G. Keppler, Regional Administrator
Directorate of Inspection and
Enforcement - Region III
U.S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, IL 60137

Subject: Braidwood Station Unit 2
Containment Post-Tensioning
Bushing Thread Failure
NRC Docket No. 50-457

Dear Mr. Keppler:

On August 20, 1982, Commonwealth Edison Company notified Mr. R. Knopp of your office of a containment post-tensioning bushing thread failure which is reportable pursuant to 50.55(e). For your tracking purposes this deficiency is numbered 82-06. This report satisfies the 30-day reporting requirement of 50.55(e).

Description of Deficiency

During the stressing of Braidwood 2 containment hoop tendon 45FE, a failure occurred in the threads joining bushing SK259 and jack coupler C5. The failure occurred at approximately two-thirds of overstress at buttress E.

An inspection revealed the following:

1. The bushing was properly engaged with the coupler in accordance with INRYCO's recommendations.
2. The measured major diameter of the bushing was considerably less than that measured and documented earlier by INRYCO.
3. The coupler may have been larger than measured earlier by INRYCO. However, because of the thread deformation produced by the failure, exact measurement of the coupler was difficult to obtain.
4. All threads but the lead thread showed some damage, measurements show that approximately 33% of the threads were not damaged in the failure.

The cause of the failure is attributable to the undersize major thread diameter of the bushing. INRYCO has predicted the strength of the combination that failed on the basis of the post failure thread measurements. INRYCO's predicted failure load matched well, within 16% of the actual estimated failure load.

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The remaining components of tendon 45FE were inspected to determine acceptability. The wires, the bearing plates and the buttonheads and anchorage shop head and bushing at the end away from the failure were inspected by INRYCO. The INRYCO inspection revealed no damage to these items. Inspection of the concrete was performed by Sargent and Lundy, and the concrete showed no significant structural damage.

Analysis of Safety Implications

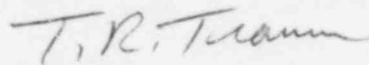
These threads carry no load after tensioning of a tendon and the failure has no long term safety implications.

Corrective Action Taken

To avoid future thread failures, the previous thread measurements will be verified for each anchorhead before stressing. The measurements to be verified are: the major diameter for the field and shop anchorhead and exterior bushing and the minor diameter for the jack coupler and interior bushing. The verification measurements will be required to match those taken previously within the accuracy of the measuring device. If they do not match, the component will be remeasured and its acceptability for use reestablished.

Please address further correspondence regarding this matter to this office.

Very truly yours,



Tom R. Tramm
Nuclear Licensing Administrator