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Dr. Thomas E. Murley, Director
United States Nuclear Regulatory Commission
Office of Inspection and Enforcement, Region I
631 Park Avenue
King of Prussia, PA 19406

SUBJECT: Significant Deficiency Report #155
Final Report on Improperly Installed
Shaft Key and Loose Setscrews on the
Control Room Emergency Fresh Air Fans
Limerick Generating Station, Units 1 and 2
NRC Construction Permits Nos. 106 & 107

File: QUAL 2-10-2 (SDR #155)

Dear Dr. Murley:

In compliance with 10CFR50.55 (e), enclosed is the final report on the subject deficiency.

Sincerely,

John S. Kump

Copy to: Director of Inspection and Enforcement
United States Nuclear Regulatory Commission
Washington, DC 20555

S. K. Chaudhary, Resident NRC Inspector (Limerick)
J. Wiggins, Resident NRC Inspector (Limerick)

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Enclosure

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|---|---------------------------|
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| Judge Richard F. Cole | (w/enclosure) |
| Judge Christine M. Kohl | (w/enclosure) |
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Significant Deficiency Report - SDR No. 155
Improperly Installed Shaft Key and Loose Setscrews
on the Control Room Emergency Fresh Air Fans
Limerick Generating Station
NRC Construction Permit Nos. 106 and 107

Description of Deficiency

During preoperational tests performed in June, 1984 it was found that the "B" Control Room Emergency Fresh Air Fan had an improperly installed shaft key connecting the fan hub to the shaft and the corresponding setscrews were not tightened. Further investigation showed that the "A" Control Room Emergency Fresh Air Fan had the shaft key installed properly, however the corresponding setscrews were not tightened.

The cause of this problem was determined to be the result of field rework that was performed on these two fans. The fans had been disassembled and were not properly reassembled upon completion of work. These fans required disassembly and reassembly to meet specific gas tight requirements; shaft seals were added and internal and external stitch welding was completely seam welded. No other fans required this rework.

Corrective Action

The deficiencies found in both fans were corrected per the manufacturer's instructions. The fans were then tested under the preoperational test program and found to perform satisfactorily.

Since no other fans required field rework of this nature, none were assembled differently from the manufacturer's instructions, thereby precluding a repetition of this problem.

Safety Implications

The Control Room Emergency Fresh Air Fans are required to ensure Control Room habitability during an accidental radiological release. They provide a filtered (HEPA-Charcoal-HEPA) outside air supply to enable maintaining the Control Room at a positive pressure in relation to the surrounding area.

A failure of both these fans could have resulted in the inability of maintaining Control Room habitability during an accidental radiological release.