

DmB

Wayne H. Jens
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July 24, 1984
EF2-69,274

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

Dear Mr. Keppler:

- Reference:
- (1) Ferri 2
NRC Docket No. 50-341
 - (2) Letter, D. A. Wells to J. G. Keppler.
April 19, 1983, EF2-62624
 - (3) IE Information Notice No. 83-84: Cracked
and Broken Piston Rods in Brown Boveri
Electric Type 5HK Breakers

Subject: Final Evaluation of 10CFR50.55(e) Item 91
"Broken/Cracked Puffer Piston Rods in Brown
Boveri 5HK Circuit Breakers"

Detroit Edison has completed its investigation of Item 91 and has determined the deficiency is not reportable under 10CFR50.55(e). This item involved cracked and broken puffer piston rods in Brown Boveri Electric (BBE) Type 5HK Breakers.

Puffer pistons in the BBE 5HK breakers perform two functions. For low current interruptions the puffer is needed to assist the magnetic forces to move the arc into the interrupting chamber. The arc may not be extinguished if the puffer piston fails. The other function performed by the puffer piston is to provide a pneumatic cushion which reduces the shock forces imposed on the mechanism and current carrying parts upon opening. A failure of the puffer piston does not affect the breaker's ability to interrupt fault currents, but the resulting impairment of arc suppression at low currents could cause pitting of contact surfaces. A failure of the puffer piston could reduce the number of operations before maintenance on the breaker would be necessary.

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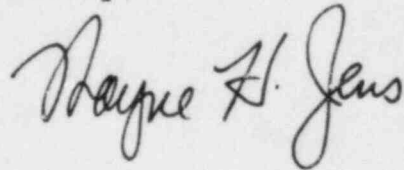
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Detroit Edison has concluded that this deficiency is not reportable under 10CFR50.55(e) because although the deficiency may shorten the maintenance interval, the deficiency would not adversely affect the safe operation of the plant. Detroit Edison, however, has followed the recommendations of IE Notice 83-84 and taken the following actions:

- o All Brown Boveri 5HK breakers used in safety-related applications have been identified.
- o All puffer piston shafts in breakers associated with safety-related equipment have been replaced with shafts made from a material more resistant to cracking.
- o Preventive maintenance procedures have been modified to require inspection of the puffer piston shafts.

This is considered the final report on this item. If you have any questions concerning this matter, please contact Mr. Lewis P. Bregni, (313) 586-5083.

Sincerely,



cc: Mr. P. M. Byron
Mr. R. C. DeYoung
Mr. R. C. Knop