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Edison**

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February 29, 1984
QA-84-326

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

Subject: Report of 10CFR50.55(e) Item on Potential Design Deficiency
by Allowing Freezing of Buried Piping Systems (#116)

Dear Mr. Keppler:

On January 31, 1984, Detroit Edison's Mr. W.R. Wingfield, Quality Engineer - Construction Quality Assurance telephoned Mr. P.M. Byron of NRC Region III to report a potential design deficiency that allowed freezing of buried piping systems at the Fermi 2 site.

During the severe cold weather experienced in January, the service water for the Division I Fire Protection System in the Residual Heat Removal (RHR) building was found to be inoperable. The situation was later identified as ice in the pipe between the underground 12" ring header which circles the Reactor/Auxiliary/Turbine building and the fire plugs located in the RHR building. Immediately after this was identified to the Nuclear Production Department, the system was made operable by opening the emergency cross tie valve which connects Division I and II. The Division II fire protection piping originates from the same underground 12" ring header, but it is routed separately into the RHR building. The exact area of freezing could not be substantiated due to the subsequent warming spell, but the potential areas in which freezing could have occurred were identified.

In addition to the fire protection line freezing, the demineralized water line was inoperable and later confirmed to be frozen. Since this line enters the RHR building at approximately the same location as the RHR Service Water (RHRSW) and the Emergency Equipment Service Water (EESW), the service water in these lines were also suspected to be frozen so they were reported as potentially frozen. These lines were then checked and found to be operable with no evidence of any freezing. The demineralized water line is not safety related and is therefore not reportable, however, corrective action will be taken to prevent the potential freezing of the line.

The safety implications of the fire protection lines being inoperable was the potential to disable the Emergency Diesel Generators in

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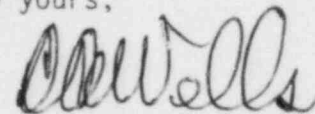
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Division I in the event of a fire. These Diesel Generators supply electrical power to the Safety Related Equipment in Division I during a postulated loss of off site power.

The corrective action, to prevent any additional freezing of the fire protection line, includes both an interim and long term action. The interim action has been to pass water through this line, from the underground 12" ring header to the RHR building for both the Division I and II lines once a shift while the potential for freezing exists. The long term solution has not yet been established but it will prevent freezing from occurring by installing any necessary equipment and/or following any prescribed procedure and/or instruction which will be necessary. The entire length of pipe in question will be reviewed, and any area which has the potential to result in freezing will be identified and corrective action will be taken to prevent the event from recurring.

An additional report will be sent when further information becomes available. If you have any questions concerning this matter, please contact Mr. G.M. Trahey, Assistant Director - Project Quality Assurance.

Very truly yours,



cc: Mr. Richard DeYoung, Director
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Mr. Paul Byron, Senior Resident Inspector
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