Commonwealth Edison
Quad-Cities Nuclear Power Station
Post Office Box 2...
Cordova, Illinois 61242
Telephone 309/654-2241

NJK-76-118

April 1, 1976

J. Keppler, Regional Director
Office of Inspection and Enforcement
Region III
U. S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, Illinois 60137

Reference: Quad-Cities Nuclear Power Station
Docket No. 50-265, DPR-30, Unit 2

In response to your Inspection Report No. 050-265/76-04, the following report concerning possible generic problems related to Electro-Hydraulic Control (EHC) system oil migrating to the cable tunnel area is being submitted.

On October 9, 1975, station personnel were cleaning up EHC fluid which had been dripping on the Unit 2 cable tunnel floor. It was noticed not only had the EHC fluid been leaking onto the floor but also it had been leaking onto the cables in the surrounding cable pans. Closer inspection of the cables revealed puffing and plasticization of cables that the EHC fluid had made contact with. At the time of discovery, Unit 2 was in the cold shutdown condition.

Cables in the Unit 2 cable tunnel were utilized for both safety related and non-safety related functions. The EHC fluid leak had not rendered any safety or non-safety related systems inoperable.

The immediate action taken was to determine the extent of plasticization of the affected cables. All the cables and cable pans in the affected area of the Unit 2 cable tunnel were cleaned with a soap and water solution as recommended by information from the EHC fluid manufacturer. The cleaning of EHC fluid from the cables should eliminate further effects of plasticization. A small section of control cable, which was hand traced to identify its function, was cut out and analyzed. It was discovered that only the overall jacketing material had been affected by the EHC fluid.

Various cable manufacturers and the manufacturer of EHC fluid were consulted as to the effects of EHC fluid on various polymers used for cable. Polyvinylchloride (PVC) and neoprene were found to be affected severely by EHC fluid and not recommended for use around EHC fluid. Other polymers such as polyethylene, teflon, silicone rubber, nylon, and butyl rubber were acceptable for use around EHC fluid.

The rough slab serves as the ceiling in the Unit 2 cable tunnel and minor small cracks in the ceiling served as a leak path out of the concrete and onto the cable trays and floor. Portions of cables within these trays thus became saturated with the EHC fluid.

The upper cable trays did not contain all of the EHC fluid, even though the pans in the cable tunnel were of solid bottom construction. This was because the EHC fluid had leaked through the cable pan connecting joints and thus all the cable pans below were subjected to the EHC fluid. The cables closest to the bottom of the cable pans were most affected by the EHC fluid because these cables were in constant saturation with EHC fluid.

At the present time, all the cables in the affected area of the Unit 2 cable tunnel are being protected from the continuing EHC fluid leakage. The leakage has subsided and once it has stopped the ceiling area will be cleaned and a protective sealer will be applied to prevent any possible leakages.

The EHC fluid reservoir foundation must also be sealed with the same protective sealer once leakages have been resolved. The sealer has been ordered from the Carboline Company, type 187 HFP, which is a recommended EHC fluid sealant.

The station's technical staff has been performing a weekly inspection of the Unit 2 cable tunnel to assure that there is no leaking onto the cables.

A representative from the Region III, U. S. Nuclear Regulatory Commission reviewed the work package associated with the repairs and discussed his findings with the station.

If further information is desired, please contact the station.

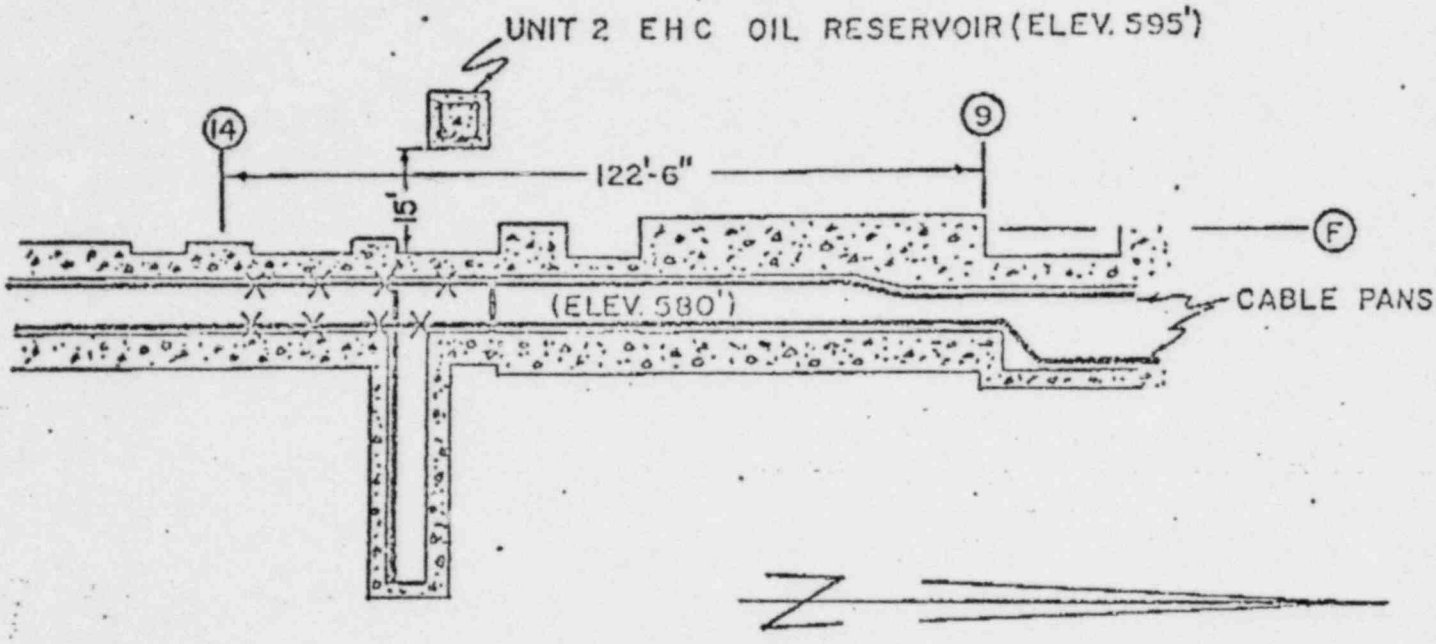
Sincerely yours,

N. J. Kalivianakis
Station Superintendent
Quad-Cities Nuclear Power Station

NJK/LLH/lk

FIGURE. I

UNIT 2 CABLE TUNNEL
PARTIAL PLAN



X- DENOTES AREAS WHERE THE EHC OIL HAD ACCUMULATED
REFERENCE DRAWING - SARGENT & LUNDY M-5

FIGURE. 2

UNIT 2 CABLE TUNNEL
CUT-AWAY