



Commonwealth Edison

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October 30, 1979

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

Subject: Dresden Station Units 1, 2 and 3
Quad-Cities Station Units 1 and 2
Zion Station Units 1 and 2
LaSalle County Station Units 1 and 2
Byron Station Units 1 and 2
Braidwood Station Units 1 and 2
Response to IE Bulletin 79-24
"Freeze Protection for Safety-Related
Process, Instrument and Sampling Lines"
NRC Docket Nos. 50-10/237/249, 50-254/265,
50-295/304, 50-373/374, 50-454/455 and
50-456/457

- References (a): J. G. Keppler letter to B. Lee, Jr. dated
September 27, 1979 (Operating Plants)
- (b): J. G. Keppler letter to B. Lee, Jr. dated
September 27, 1979 (Plants in Construction)

Dear Mr. Keppler:

In response to the directive contained in References
(a) and (b), Commonwealth Edison has reviewed the subject
plants to confirm that adequate protective measures have been
taken to assure that safety-related process, instrument and
sampling lines will not freeze during extremely cold weather.
Enclosed are the results of that review.

If there are any further questions in this regard,
please direct them to this office.

Very truly yours,

L. D. Del Sarge
for/ D. L. Peoples

Director of Nuclear Licensing

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Commonwealth Edison

RESPONSE TO IE BULLETIN 79-24

NRC DOCKET NOS. 50-10/237/249,
50-254/265, 50-295/304, 50-373/374,
50-454/455 AND 50-456/457

The subject bulletin has been reviewed by Commonwealth Edison, and the following responses are provided.

A. Dresden Station Units 1, 2 and 3

1. The event involving frozen lines in a portion of the HPCI System and any safety-related process, instrument and sampling lines has never occurred at Dresden Station.
2. Presently, the ECCS lines entering the Dresden 2/3 contaminated condensate storage tanks above ground are well insulated, heat traced, and contained in an insulated permanent enclosure. The remainder of the ECCS lines are buried 5 to 6 feet below surface grade and have experienced no anomalies during the past two record-breaking sub-zero winters.
3. The Unit 1 HPCI injection line and storage fill line will be buried 5 to 6 feet below grade with exposed portions insulated and heat traced, but only the HPCI injection line will have a low temperature alarm system installed since the storage fill line is considered non-safety related.

A three and one-half foot (3 1/2') section of line will be exposed to cold temperatures in the area between the heated HPCI valve building and the containment sphere enclosed by the transit skirt circumscribing the sphere. Three inches of insulation and a gortiseal boot will protect the heat-traced line from cold temperatures and moisture. A heat-tracing description has been provided in the submittal to P. O'Connor by R. F. Janeczek dated April 9, 1979, outlining redundant safety related low temperature alarms located on the section of pipe exposed to the coldest temperatures and a locally mounted control thermostat.

4. In addition, all other safety-related process instrument and sampling lines for Units 1, 2 and 3 are indoors and not exposed to sub-freezing temperatures.

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B. Quad-Cities Station Units 1 and 2

1. Service Water Suction for Diesel Generator Cooling Water and RHR Service Water (common 24-inch line).

These lines are underground, except for a very small portion in the intake bay. This water is kept above freezing due to mixing of the return water from the spray canal during full and partial closed-cycle cooling operations. During full open-cycle operation, the intake water is kept warm by the 96-inch ice melt line in the intake bay. This warm service water assures adequate freezing protection, and no freezing problems have occurred for these lines.

2. Suction Lines for RHR, Core Spray, HPCI, and RCIC from CCST.

For RHR and Core Spray, the CCST is the backup manual suction path as compared to the Suppression Pool. These 24 inch lines (one per tank) are heavily insulated and heat traced. Only a small portion (2 ft. 6 in. from Pipe C_L to grade level) is above ground, and the horizontal pipe runs are 8 ft. below ground level. The 24-inch HPCI suction lines (one per tank) are heavily insulated and heat traced. Only a small portion (2 ft. from Pipe C_L to grade level) is above ground, and the horizontal pipe runs are 9 ft. 6 in. below ground level. The 12-inch RCIC suction lines (one per tank) are heavily insulated and heat traced. Only a small portion (1 ft. 6 in. from Pipe C_L to grade level) is above ground, and the horizontal pipe runs are 7 ft. 6 in. below ground level. For all of the above lines, there are insulated flanges at the tanks, and the heat tracing extends 2 ft. below grade level. The tanks themselves are heated during the cold weather months. No freezing problems have occurred for these lines.

3. HPCI/RCIC Test Return Lines to CCST

These 18-inch lines (one per tank) are heavily insulated and heat traced, extending 2 ft. below grade level. The pipes run mostly underground, and the horizontal pipe runs are 12 ft. below ground level. There are insulated flanges at the tanks, and the tanks are heated during the cold weather months. The lines themselves are empty except during surveillance testing, and they are only used during testing. Contrary to the HPCI minimum flow recirculation line mentioned in Bulletin 79-24, the Quad-Cities HPCI and RCIC pumps' minimum flow recirculation path is to the suppression pool. No freezing problems have occurred for these lines.

4. CCST Level Column Lines

The columns themselves containing the level switches for HPCI pump suction change-over to the suppression pool are located inside the plant. The 10-inch column from each tank is heat traced and heavily insulated. The heat tracing extends 2 ft. below grade level, and there are insulated flanges at the tanks. Only a small portion (3 ft. 6 in. from Pipe C_L to grade level) is above ground, and the horizontal pipe runs are 13 ft. below ground level. No freezing problems have occurred for these lines.

5. Main Chimney Sample Isokinetic Probe and Return Line

These lines are heat traced, and sample gases in the main chimney. Only a small portion of these lines is located outside the chimney and sample house. The lines, for the most part, are located within the chimney and are kept warm by the ventilation exhausts from the Turbine Building, Radwaste Building, and the Off-Gas Filter Building. Freezing of this sample line occurred on one occasion on December 8, 1972 and was reported to the AEC on December 18, 1972 (Ref. letter BBS-72-25). The line had not been insulated before this occurrence and after the ice was blown out it was insulated with fiberglass. No problems with the lines have occurred since the above event.

C. Zion Station Units 1 and 2

1. Zion Station has conducted a review of the plant to determine if adequate protective measures have been taken to assure that safety-related process, instrument, and sampling lines do not freeze in extremely cold weather.
2. With the exception of some instrumentation located in the main steam safety valve rooms, all safety-related process, instrument, and sampling lines are located indoors and are not subject to freezing. The review indicated that the Station's current program for preparing for cold weather has been adequate in precluding freezing conditions in the main steam safety valve rooms. To ensure its continued effectiveness, this program is being developed into a formal surveillance procedure to document performance of the necessary activities.

D. LaSalle County Station Units 1 and 2

All outside lines at LaSalle County Station located above the frost line are heat traced and, where exposed, have been covered by doghouses. There are, however, two areas to which the above does not apply. First, at certain points the water table is higher than the frost line. A special heat tracing and insulating design has been installed at these points to ensure that freezing will not occur. Second, the Core Spray Cooling System (CSCS) outlet pipe discharges to atmosphere and is exposed to cold weather. However, due to the size of this pipe, no freezing is anticipated. During the 1978-1979 winter, the pipe was observed and was found to be free of freezing throughout the winter. Since the conditions during a preoperational period are more likely to result in freezing (i.e., low and infrequent flow with the cooling lake temperature much lower than anticipated during operation), it is expected that during plant operation the potential for freezing in the CSCS outlet pipe is very small.

E. Byron and Braidwood Stations Units 1 and 2

There are no safety-related lines located outside at the Byron and Braidwood Stations that have the potential for freezing. However, the Refueling Water Storage Tanks (RWST) are located outside of the auxiliary buildings. The lines connected to the tank are located in a tunnel which is approximately 14 feet below grade level. Due to this, we anticipate no freezing problems. To further ensure that the temperature of the water stored in the RWST does not fall below 35°F, heaters will be designed and installed in the tanks.

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