

TU ELECTRIC

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Executive Vice President

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U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION (CPSES)
DOCKET NOS. 50-445 AND 50-446
REVISION TO RCS WATER LEVEL FOR REDUCED INVENTORY CONDITIONS

REF: 1) Generic Letter 88-17, Loss of Decay Heat Removal, dated
October 17, 1988
2) Millstone 3 NRC Region I Inspection Report 50-423/89-08,
dated July 12, 1989

Gentlemen:

Generic Letter 88-17 (Reference 1) states that a "reduced inventory condition" exists when the Reactor Coolant System (RCS) water level is lower than three feet below the reactor vessel flange. The definition of reduced inventory condition was not specifically addressed in the TU Electric responses to the Generic Letter, thus indicating implicit acceptance. However, based on additional considerations described below, TU Electric has decided to change this definition to state that a reduced inventory condition exists when the RCS water level is lower than five feet below the reactor vessel flange.

Westinghouse Technical Bulletin, NSD-TB-87-02, Rev. 2, dated July 13, 1990, provides recommendations for prevention of reactor vessel head "O" ring leakage. One of the recommendations, for plants with the "inverted top hat" support plate upper internals design, is to reduce the reactor vessel water level during vessel head closure activities. The level recommended is lower than the level defined by Generic Letter 88-17 as reduced inventory conditions. Since entry into reduced inventory conditions imposes significant operational restrictions, the Westinghouse Bulletin suggests that an exception to the "three feet below the flange" GL 88-17 definition is justified. This is based on the low probability of losing decay heat removal capability due to air entrainment in the Residual Heat Removal (RHR) pumps when RCS level is above the top of the RCS hot legs (approximately six feet below the flange).

The results of the CPSES RHR vortex testing, conducted on CPSES Unit 1 in May, 1989, support this Westinghouse statement. During the vortex testing, RHR flow was increased to the point of excessive air entrainment based on a number of conservative criteria at each of four different levels within the RCS hot legs.

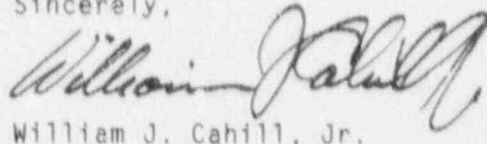
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The results demonstrate that at RHR pump vendor curve runout flow (5500 gpm) the minimum acceptable level is five inches above the actual mid-loop level (mid-loop is at 85.5 inches below the vessel flange). At RHR flows more representative of those expected during reduced inventory conditions, the minimum acceptable level to prevent excessive air entrainment is even lower. For example, at 2200 gpm, a level of 85.5 inches below the flange or higher is sufficient to prevent excessive air entrainment.

Based on the above, TU Electric has decided to revise the RCS water level at which reduced inventory conditions are set to lower than five feet below the reactor vessel flange. This level would provide a 20.5 inch margin above the level which vortex data indicate is acceptable to prevent excessive air entrainment for any RHR pump flow below vendor curve runout. Defining the reduced inventory level as lower than five feet below the vessel flange is also consistent with the definition accepted by the NRC for at least one other Westinghouse plant of similar design (Reference 2).

Should you have any questions in this matter please contact Bob Dacko at (214) 812-8228.

Sincerely,



William J. Cahill, Jr.

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