Commonwealth Edison Company
Dresden Generating Station
6500 North Dresden Road
Morris, IL 60450
Tel 815-942-2920

ComEd

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

Subject: Dresden Nuclear Power Station Units 2 and 3
Core Spray System Flow Requirements
NRC Docket Nos. 50-237 and 50-249

References: (1) P. Piet letter to U.S. NRC, dated June 20, 1994; Dresden Unit 3 Core Spray Flaw Evaluation.

(2) P. Piet letter to U.S. NRC, dated September 12, 1995; Dresden Unit 2 Core Spray Flaw Evaluation.

The purpose of this letter is to provide information regarding the issue of Core Spray (CS) flow requirements inconsistencies and its effect on recent submittals to the NRC. In November of 1995, ComEd identified inconsistencies between various values for CS flow in the system Design Basis Document. The inconsistencies were associated with the treatment of CS system leakages in the piping within the reactor pressure vessel.

The inconsistencies raised potential concerns regarding the adequacy of the leakage calculations. Further investigations identified inconsistencies between the various values for CS flow in submittals to the NRC, e.g. references (1) and (2). Within Reference (1), ComEd utilized CS pump flows of 4700 gpm to support our evaluations. The flow rate of 4700 gpm was used to account for leakage flows and relied upon excess system capability, as stated within Reference (1). Within Reference (2), ComEd utilized CS pump flows of 4600 gpm, as well as a peak clad temperature (PCT) assessment, to support our evaluations. The flow rate of 4600 gpm was used to account for thermal sleeve design leakage flow and credited plant

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system operating surveillance flow rates. In both cases these flow rates exceed the Technical Specification surveillance requirements and Dresden UFSAR description for the CS system, which specify a pump flow rate of 4500 gpm.

A degree of informality existed in controlling the CS system design leakage parameters. In the past, the total design leakages per loop were in the range of 100 to 200 gpm, and were not well described in the original licensing and design bases. While most effects (e.g. core shroud and access-hole repair leakage) were addressed by assessing PCT effects, thermal sleeve design leakage and the CS piping flaw described in Reference (1) were accounted for with excess system flow capability.

ComEd concludes that it has been inconsistent in addressing the application of CS leakage - at times accounting for it in the LOCA analyses and at other times accounting for it in excess pump capacity. For the sake of clarity and consistency, ComEd has concluded it to be most appropriate to account for all CS leakages by assessing PCT affects in the LOCA analysis. Therefore the CS pump design flow will be maintained at a single value in the Technical Specifications, UFSAR, and Design Basis Documents.

ComEd recognized the need to reconstitute the design basis calculation for these leakages and has completed that effort. The reconstituted design basis calculations, and evaluations of previous analyses, demonstrate that the station has continuously complied with the requirements of 10 CFR 50.46, and the limits established in the Technical Specifications are appropriate and consistent with the input assumptions of the calculations. The CS submittals described in References (1) and (2), have been evaluated and these evaluations indicate the PCT of the analysis of record at that time (2045° F) would not have been exceeded.

The inconsistencies which were originally identified have been reviewed and resolved, specifically the PCT impact of CS flow and leakage rates is being reported in a separate 30 day 10 CFR 50.46 notification being provided concurrently with this letter. The revised LOCA analysis has been performed utilizing a nominal CS pump flow of 4500 gpm at the point on the CS pump curve corresponding to a reactor pressure of 90 psig. The Dresden LOCA analysis was performed in accordance with the approved methodology and does not include instrument flow uncertainties. The licensing basis requirements for the Siemens

Power Corporation LOCA analysis methods do not include instrument uncertainties for ECCS flow inputs. This is because of the conservatism inherent in using an approved 10CFR50, Appendix K evaluation model. However, ComEd will evaluate methods to address ECCS flow and pressure instrument uncertainties prior to March 31, 1997.

Changes to appropriate plant licensing and design basis documents are being initiated, and these changes will clarify and better define the actual design bases for the CS system flow rates. To clarify existing plant administrative controls regarding CS system flow requirements, the UFSAR, Technical Specification Bases and Design Bases Documents will be revised to ensure consistency in definition of appropriate plant CS pump flows. The UFSAR will be revised to include the appropriate LOCA analysis assumptions, including appropriate CS flows and flow leakages. The UFSAR revision will be included in the update scheduled for Spring 1997 and changes to other documents are scheduled for completion by March 31, 1997.

In summary, ComEd identified inconsistencies in CS flow requirements and the assessment of leakage effects. ComEd has verified that the CS pump flow requirements specified in the Technical Specifications are consistent with the pump performance assumed in the LOCA analysis and are sufficient to demonstrate margin to the 10 CFR 50.46 PCT acceptance criterion. ComEd has begun implementing actions to address the inconsistencies identified and evaluating the concerns identified for applicability to its other stations.

If there are any questions regarding this issue, please contact Frank Spangenberg, Dresden Station Regulatory Assurance Manager, (815) 942-2920, extension 3800.

Respectfully,

J. Stephen Perry
Dresden Site-Vice President

cc: A. W. Beach, Regional Administrator - RIII
J. F. Stang, Project Manager - NRR
C. L. Vanderniet, Senior Resident Inspector - Dresden
Office of Nuclear Facility Safety - IDNS