NOTICE OF VIOLATION

Consolidated Edison Company of New York, Inc.
Indian Point Nuclear Generating Station Unit 2

Docket No. 50-247
License No. DPR-26
EA 98-450

During an NRC Inspection conducted from June 1 through September 3, 1998, the following violations of NRC requirements were identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions," NUREG 1600, the violations are listed below:

A. 10 CFR 50, Appendix B, Criterion III, "Design Control," requires that design control measures shall be established to assure that applicable regulatory requirements and design basis for structures, systems, and components are correctly translated into specifications, drawings, and procedures and the design control measures shall provide for verifying or checking the adequacy of design.

Consolidated Edison (ConEd) procedure CI-240-1, "Quality Assurance Program for Operating Nuclear Power Plants," implements the 10 CFR 50, Appendix B requirements for Indian Point Unit 2. CI-240-1 states that "Engineering and/or Nuclear Power, as applicable, are responsible for establishing control measures including design review that assure adequacy of design." Section 5.16 of the Engineering Operations Manual "Preparation and Review of Design and Engineering Analysis," states "The calculation shall be reviewed to ensure that it is adequate to meet the purpose stated in the objective and that the results are valid."

Contrary to the above, prior to July 17, 1998, applicable regulatory requirements and the design basis associated with emergency core cooling systems were not correctly translated into procedures and the adequacy of the design was not correctly verified as evidenced by the following examples:

1. Design basis information for safety injection recirculation pump net positive suction head was not correctly translated into emergency operating procedure ES-1.3, "Transfer to Cold Leg Recirculation," Revision 29. Calculation FMX-00036-00, Revision 0, approved on January 5, 1998, based the acceptable net positive suction head conclusions for the recirculation pump core flow mode of operation on surveillance test data and calculated system friction losses through one residual heat removal heat exchanger. However, emergency operating procedure ES-1.3 allowed for throttling flow through both residual heat removal heat exchangers, thus invalidating the basis of the design.

2. The safety injection recirculation pump design was inadequate and associated net positive suction head calculations were invalid in that methods and assumptions used in calculation FMX-00036-00, Revision 1, dated April 7, 1998, were inconsistent with design basis information. Specifically, this calculation stated as one of its objectives, to determine the adequacy of the net positive suction head for the expected flowrates during

core cooling plus containment spray operation. An incorrect and non-conservative assumption of 200 degrees Fahrenheit containment sump water temperature was utilized as a design input. The non-conservative assumption of 200 degrees Fahrenheit resulted in an invalid conclusion that net positive suction head margins were satisfactory up to 3800 gpm.

3. Design basis information for the analyzed component cooling water heat exchanger system configuration, as documented in WCAP-12312, "Safety Evaluation for an Ultimate Heat Sink Temperature Increase to 95 Degrees Fahrenheit at Indian Point Unit 2," dated July 1989, was not correctly translated into emergency operating procedure ES-1.3, "Transfer to Cold Leg Recirculation," Revision 29. With river water temperature greater than 85 degrees Fahrenheit, the emergency operating procedure directed the operators to establish operation of 2 component cooling water pumps with only one service water pump available. However, this system configuration had not been previously analyzed and would result in increased component cooling water temperatures.

4. Design basis information for operation of a single recirculation pump in the cold leg recirculation mode of operation was not correctly translated into emergency operating procedure ES-1.3, "Transfer to Cold Leg Recirculation," Revision 29. The emergency operating procedure, due to potential instrument inaccuracies, directed the operators to establish external recirculation, for the condition where, only one pump was available and containment spray flow was required. The design basis, as stated in section 6.2.2.1.2 of the Updated Final Safety Analysis Report for single pump operation, was for an internal recirculation system configuration.

This is a Severity Level IV violation. (Supplement I)

B. 10 CFR 50.59 states that records of changes in procedures, to the extent that these constitute changes in the facility as described in the safety analysis report, must include a written safety evaluation which provides the bases for the determinations that the change does not involve an unreviewed safety question.

The Indian Point Unit 2 Updated Final Safety Analysis Report, Table 6.2-7 indicates that the design flow of a residual heat removal pump is 3000 gpm at a design head of 350 feet. Section 6.2.3.2, indicates that the emergency core cooling systems (with one residual heat removal pump) is designed so that delivery of full rated flow is reached within 27 seconds following a large break LOCA and safety injection signal. Updated Final Safety Analysis Report Section 14.3 describes the sequence, modeling and results of a large break LOCA transient, including the predicted flows to the core in the accident reflood phase via pumped injection. Westinghouse calculation of record (FSE/FSDA-1587/91) summarized expected residual heat removal system injection flow as a function of reactor coolant system pressure.

Contrary to the above, test procedure PT-V24D, "Residual Heat Removal Check Valve Testing," was revised on two occasions after March 1995 without performance of a written safety evaluation. Both the first revision, approved on March 20, 1995, and a later revision of PT-V24D approved on May 8, 1997, added procedural steps which affected the maximum opening settings for residual heat removal injection valves HCV-638 and 640. The position of these butterfly valves affect the hydraulic resistance and flowrate associated with modeling of the emergency core cooling injection flow as described in Section 14.3.3.1.1 of the Updated Final Safety Analysis Report. As a result of the improperly throttled positions, higher safety injection header resistances were created and lower expected flows than those assumed in calculations of record would have resulted.

This is a Severity Level IV violation. (Supplement I)

The NRC has concluded that information regarding the reasons for the above two violations, the corrective actions taken and planned to correct the violations and prevent recurrence, and the date when full compliance was achieved are already adequately addressed in Inspection Report No. 50-247/98-08 and other information on the docket (e.g., Licensee Event Reports). However, you are required to submit a written statement or explanation pursuant to 10 CFR 2.201 if the description therein does not accurately reflect your corrective actions or your position. In that case, or if you choose to respond, clearly mark your response as a "Reply to a Notice of Violation," and send it to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, D.C. 20555 with a copy to the Regional Administrator, Region I, and a copy to the NRC Resident Inspector at the facility that is the subject of this Notice, within 30 days of the date of the letter transmitting this Notice of Violation (Notice).

If you contest this enforcement action, you should also provide a copy of your response to the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, D.C. 20555-0001.

Because your response will be placed in the NRC Public Document Room (PDR), to the extent possible, it should not include any personal privacy, proprietary, or safeguards information so that it can be placed in the PDR without redaction. If personal privacy or proprietary information is necessary to provide an acceptable response, then please provide a bracketed copy of your response that identifies the information that should be protected and a redacted copy of your response that deletes such information. If you request withholding of such material, you must specifically identify the portions of your response that you seek to have withheld and provide in detail the bases for your claim of withholding (e.g., explain why the disclosure of information will create an unwarranted invasion of personal privacy or provide the information required by 10 CFR 2.790(b) to support a request for withholding confidential commercial or financial information). If safeguards information is necessary to provide an acceptable response, please provide the level of protection described in 10 CFR 73.21.

Dated at King of Prussia, Pennsylvania
this 16th day of October, 1998