

February 25, 2000

EA 99-319

Mr. A. Alan Blind  
Vice President - Nuclear Power  
Consolidated Edison Company of  
New York, Inc.  
Indian Point 2 Station  
Broadway and Bleakley Avenue  
Buchanan, New York 10511

SUBJECT: NOTICE OF VIOLATION AND PROPOSED IMPOSITION OF CIVIL PENALTY  
- \$88,000  
(NRC Inspection Report Nos. 50-247/99-08, 99-13, and 99-14)

Dear Mr. Blind:

This letter refers to three NRC inspections conducted to review the circumstances associated with the reactor trip event that occurred at Consolidated Edison's (Con Ed's) Indian Point Unit 2 (IP2) Station on August 31, 1999. The first of these inspections was an Augmented Team Inspection (AIT), conducted between September 2 and 27, 1999, to review the causes, safety implications, and your staff's actions related to the event. The reactor trip resulted from a spurious trip of one channel of the reactor protection system (RPS) over-temperature/delta-temperature (OTΔT) instrument, while maintenance was being performed on another channel of the OTΔT instrument. The event was complicated by the loss of offsite power to all four of the 480 Volt (V) vital busses needed for operation of the safety systems at the facility, as well as the subsequent loss of one of the emergency diesel generators (EDGs) that act as a backup to the offsite power supply. The loss of both offsite power and the one EDG (due to an output breaker tripping open) resulted in the loss of power to one of the vital busses. Ultimately, this led to the depletion of one of the four safety-related batteries and loss of most of the control room annunciators for safety-related systems.

The second inspection, conducted from September 20 through October 15, 1999, focused on your short term corrective actions and self-assessment activities as a result of the reactor trip event. The third inspection, conducted from November 15 to November 19, 1999, evaluated your compliance with NRC rules and regulations associated with the event. The results of the three inspections were discussed with you and members of your staff at the completion of the inspections. The exit meeting for the third inspection occurred on December 7, 1999. The inspection reports for the inspections were forwarded to you on October 19, 1999, December 21, 1999, and January 5, 2000, respectively.

During the third inspection, several apparent violations of NRC requirements associated with the reactor trip event were identified. In our January 5, 2000 letter, we informed you that, as a result of interactions with you and your staff, the NRC had sufficient information regarding the apparent violations and Con Ed's corrective actions to make an enforcement decision without a

predecisional enforcement conference or a written response from Con Ed. In a telephone conversation on January 10, 2000, Mr. J. McCann of your staff informed Mr. S. Barber of my staff that Con Ed did not believe that a predecisional enforcement conference or written response was needed.

Based on the information developed during the inspections, three violations of NRC requirements are being cited and are described in the enclosed Notice of Violation and Proposed Imposition of Civil Penalty (Notice). The violations involve: (1) failure to translate design basis requirements into procedures when a modification was made to the 480 V vital bus degraded voltage relays in 1995, which resulted in the loss of offsite power to the vital busses; (2) inadequate calibration of the EDG output breaker short time overcurrent trip setting, which caused the de-energization of the vital bus; and (3) failure to correct and prevent recurrence of spurious trips of a RPS OTΔT instrument, which led to initiation of the reactor trip. The first two of these violations also resulted in the extended simultaneous inoperability of both the 138 KV offsite power supply system and one of the EDGs.

The NRC review of this event, as well as your follow-up reviews, revealed three principal concerns, namely, (1) the failure to adequately control the configuration of certain plant equipment; (2) the failure to identify and correct several of these problems beforehand, despite prior opportunities to do so; and (3) weaknesses in management's initial response to the event, and its oversight of the subsequent recovery of safety-related equipment. These concerns were described in detail in the referenced inspection reports and letters transmitting them.

The reactor trip and loss of power to the vital busses was a risk significant event. In addition to the EDGs being challenged by the loss of offsite power, the loss of one of the vital busses resulted in the unavailability of power to some emergency core cooling equipment and a motor-driven AFW pump, as well as the loss of automatic control of an AFW flow control valve and control of a normally closed pressurizer power-operated relief valve (PORV) block valve. The loss of power to the PORV block valve degraded the capability of "bleed and feed" cooling of the reactor, had this method of cooling become necessary due to further degradation of the AFW and main feedwater systems. Given the risk significance of the event and the fact that one of the EDGs failed to perform its intended function when actually called upon, the violations associated with the event are categorized as a Severity Level II problem in accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions" (Enforcement Policy), NUREG-1600.

In accordance with the Enforcement Policy, a base civil penalty in the amount of \$88,000 is considered for a Severity Level II problem. Since Indian Point 2 has been the subject of escalated enforcement action within the last two years,<sup>1</sup> the NRC considered whether credit was warranted for *Identification* and *Corrective Action* in accordance with the civil penalty assessment process in Section VI.B.2 of the Enforcement Policy. No credit is warranted for identification because the violations were identified through an event and prior opportunities

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<sup>1</sup>e.g., A \$110,000 Civil Penalty was issued on July 6, 1998 for several Severity Level III violations involving inadequate corrective actions, test control, and emergency lighting (Reference: EAs 97-576, 98-192, and 98-056).

existed to have identified many of the problems.<sup>2</sup> Credit is warranted for corrective actions because your actions, once the violations were identified, were considered prompt and comprehensive. Those actions are described in your recovery plan, which was presented at a management meeting in the NRC Region I office on September 14, 1999, and revised as described in your November 8, 1999 submittal to the NRC.<sup>3</sup>

Therefore, to emphasize the importance of management maintaining the plant in its intended configuration; correcting conditions adverse to quality in a timely and thorough manner; and appropriately and adequately responding to events such that plant risk is minimized, I have been authorized, after consultation with the Director, Office of Enforcement, to issue the enclosed Notice of Violation and Proposed Imposition of Civil Penalty in the base amount of \$88,000.

You are required to respond to this letter and should follow the instructions specified in the enclosed Notice when preparing your response. Your response may reference or include previous docketed correspondence, if the correspondence adequately addresses the required response. The NRC will use your response, in part, to determine whether further enforcement action is necessary to ensure compliance with regulatory requirements.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response will be placed in the NRC Public Document Room (PDR).

Sincerely,

*/RA/*

Hubert J. Miller  
Regional Administrator

Docket No. 50-247

License No. DPR-26

Enclosure: Notice of Violation and Proposed Imposition of  
Civil Penalty

cc w/encl:

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<sup>2</sup>When the station auxiliary transformer load tap changer was placed in manual in September 1998, the condition was not evaluated for operability or safety impact. In addition, corrective actions for previous safety-related breaker failures, that, if implemented, may have identified the problem with the EDG output breaker overcurrent trip setting, had not been completed by the specified due date. Further, ConEd's setpoint control program did not identify the degraded voltage relay reset problem.

<sup>3</sup>Con Ed's short term corrective actions included, but were not limited to: (1) several event reviews and investigations; (2) extent of condition reviews in the areas of operations, engineering, and corrective actions; (3) repairs and testing of equipment, as well as revisions to procedures to address the specific equipment problems encountered during the event; and (4) establishment of a formal recovery organization accountable for all recovery activities leading to plant restart. Con Ed's long term corrective actions include plans to: (1) include risk assessment and review of industry operating experience into the process for approval of work activities; (2) revise processes and procedures, and provide training to address weaknesses in human performance, the corrective action program, work management, and configuration management; and (3) perform a review to evaluate the effectiveness of the corrective actions.

J. Groth, Senior Vice President - Nuclear Operations

J. Baumstark, Vice President, Nuclear Power Engineering

J. McCann, Manager, Nuclear Safety and Licensing

B. Brandenburg, Assistant General Counsel

C. Faison, Director, Nuclear Licensing, NYPA

J. Ferrick, Operations Manager

C. Donaldson, Esquire, Assistant Attorney General, New York Department of Law

P. Eddy, Electric Division, Department of Public Service, State of New York

T. Rose, NFSC Secretary

F. William Valentino, President, New York State Energy Research  
and Development Authority

J. Spath, Program Director, New York State Energy Research  
and Development Authority

Mr. A. Alan Blind

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NRC Resident Inspector - Indian Point 2

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DATE	01/24/2000	01/28/2000	01/27/2000	01/24/2000	01/28/2000	01/31/2000

ENCLOSURE

NOTICE OF VIOLATION  
AND  
PROPOSED IMPOSITION OF CIVIL PENALTY

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

Docket No. 50-247  
License No. DPR-26  
EA-99-319

During three NRC inspections conducted between September 2, 1999, and November 19, 1999, violations of NRC requirements were identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions," NUREG-1600, the NRC proposes to impose a civil penalty pursuant to Section 234 of the Atomic Energy Act of 1954, as amended (Act), 42 U.S.C. 2282, and 10 CFR 2.205. The particular violations and associated civil penalty are set forth below:

- A. 10 CFR 50, Appendix B, Criterion III, Design Control, requires that measures shall be established to assure that applicable regulatory requirements and the design basis are correctly translated into specifications, drawings, procedures, and instructions. Included in the design basis are the 480 Volt (V) vital bus degraded voltage relays described in Section 8.2.2.6 of the Updated Final Safety Analysis Report.

Technical Specification (TS) 3.7, Auxiliary Electrical Systems, specifies, in part, that the reactor shall not be made critical without 6.9 kV buses 5 and 6 energized from the 138 kV sources at Buchanan Substation through the 138/6.9 kV Station Auxiliary Transformer. TS 3.7.B.3 allows that power operation may continue for 24 hours, if the entire 138 kV source of power is lost.

Contrary to the above:

- Applicable regulatory requirements and the design basis were not correctly translated into specifications and procedures for a 1995 modification to the 480 V vital bus degraded voltage relays in that the correct reset values for the eight undervoltage relays were not established when the relays were replaced under modification EGP-91-06786E. Specifically, the information supporting License Amendment No. 165 dated September 22, 1993 associated with the degraded voltage relays specified a relay pickup (reset) setting of 429 Vac. However, the modification procedures did not specify pickup settings, and none were established in 1995 when the relays were calibrated and installed. Further, when the relays were calibrated in June 1997, the procedure did not include calibration of the relay reset points. As a result, the relays were unable to perform their design basis function and correctly reset, contributing to unnecessary transfer on August 31, 1999 of the 480 V vital busses from the normal offsite power supply to the emergency diesel generators (EDGs).
- Applicable regulatory requirements and the design basis were not correctly translated into specifications and procedures for a 1995 modification to the 480 V vital bus degraded voltage relays in that the requirement for automatic operation of the station auxiliary transformer (SAT) load tap changer (LTC) was

not translated into procedures. Specifically, calculation EGP-00110-00, "Summary of Degraded Voltage Study," which supported License Amendment No. 165 dated September 22, 1993, contains an analysis of 480 V bus performance that relied upon the SAT LTC to automatically adjust the voltage on the 480 V busses for the system to perform as designed. The licensee failed to translate the requirement for automatic operation of the LTC into station procedures. As a result, without procedural controls, the LTC was operated in manual from September 9, 1998 until August 31, 1999. With the LTC in manual, the 138 kV offsite power system was unable to perform its intended function in that the LTC was unable to respond automatically to a decrease in transformer output. When the unit main generator tripped on August 31, 1999, the decrease in transformer output caused an extended voltage drop that actuated the 480 V bus degraded voltage relays which isolated the 480 V busses from the normal offsite power supply. With the LTC in manual operation from September 9, 1998 until August 31, 1999, the 138 kV offsite power system was inoperable (lost) for greater than 24 hours contrary to TS 3.7.B.3. **(01012)**

- B. 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," requires, in part, that activities affecting quality be prescribed by documented instructions and procedures of a type appropriate to the circumstances. Instructions and procedures shall include appropriate quantitative or qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished.

Technical Specification (TS) 3.7, Auxiliary Electrical Systems, specifies, in part, that the reactor shall not be made critical without three emergency diesel generators (EDGs) operable. TS 3.7.B.1 allows power operation to continue for seven days if one EDG is unavailable.

Contrary to the above, on May 27, 1999, the licensee's procedure used to calibrate the Westinghouse Model DB-75 breaker trip units (Amptectors) for the EDGs, an activity affecting quality, was not adequate to ensure that the calibration was satisfactorily accomplished. Specifically, when the Amptector for the 23 EDG output breaker was calibrated on May 27, 1999, the method for adjusting the short time overcurrent trip setpoint did not ensure that the short time overcurrent trip setting was within specifications. The required setting for the 23 EDG output breaker short time overcurrent trip was 6000 Amperes (A)  $\pm$  2%. However, on August 31, 1999, the 23 EDG output breaker tripped on a short time overcurrent condition at approximately 3200A resulting in the EDG failing to perform its intended function of supplying power to one of the vital busses. As a result of the miscalibration, the EDG was inoperable during power operation from May 27, 1999 to August 31, 1999, contrary to TS 3.7.B.1. **(01022)**

- C. 10 CFR 50, Appendix B, Criterion XVI, Corrective Action, requires that measures shall be established to assure that conditions adverse to quality are promptly identified and corrected. In the case of significant conditions adverse to quality, the measures shall assure that the cause of the condition is determined and corrective action taken to preclude recurrence.

Contrary to the above, between January 1999 and August 31, 1999, a significant condition adverse to quality existed involving repetitive problems with channel 4 of the reactor protection system (RPS) over-temperature/delta-temperature (OTΔT) circuitry, and during that time, the condition was not promptly identified, the cause of the condition was not determined, and corrective actions were not taken to preclude recurrence, as evidenced by the following:

- In January 1999, the channel 4 OTΔT instrument setpoint was found to be lower than normal.
- In July 1999, a loop 4 OTΔT bistable failed when a 118 Volt ac vital inverter transferred to its alternate source.
- On August 26, 1999, a spurious trip of channel 4 of the OTΔT instrument occurred.

The cause of these repetitive problems was not determined and thus, the adverse condition was not corrected. As a result, on August 31, 1999, during maintenance on the channel 3 OTΔT instrument, the plant tripped due to a spurious trip of channel 4. **(01032)**

This is a Severity Level II Problem (Supplement I).  
Civil Penalty - \$88,000

Pursuant to the provisions of 10 CFR 2.201, Consolidated Edison (Licensee) is hereby required to submit a written statement or explanation to the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, within 30 days of the date of this Notice of Violation and Proposed Imposition of Civil Penalty (Notice). This reply should be clearly marked as a "Reply to a Notice of Violation" and should include for each alleged violation: (1) admission or denial of the alleged violation, (2) the reasons for the violation if admitted, and if denied, the reasons why, (3) the corrective steps that have been taken and the results achieved, (4) the corrective steps that will be taken to avoid further violations, and (5) the date when full compliance will be achieved. Your response may reference or include previous docketed correspondence, if the correspondence adequately addresses the required response. If an adequate reply is not received within the time specified in this Notice, an Order or a Demand for Information may be issued as why the license should not be modified, suspended, or revoked or why such other action as may be proper should not be taken. Consideration may be given to extending the response time for good cause shown. Under the authority of Section 182 of the Act, 42 U.S.C. 2232, this response shall be submitted under oath or affirmation.

Within the same time as provided for the response required above under 10 CFR 2.201, the Licensee may pay the civil penalty by letter addressed to the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, with a check, draft, money order, or electronic transfer payable to the Treasurer of the United States in the amount of the civil penalty proposed above, or the cumulative amount of the civil penalties if more than one civil penalty is proposed, or may protest imposition of the civil penalty in whole or in part, by a written answer addressed to the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission. Should the Licensee fail to answer within the time specified, an order imposing the civil penalty will be issued. Should



the Licensee elect to file an answer in accordance with 10 CFR 2.205 protesting the civil penalty, in whole or in part, such answer should be clearly marked as an "Answer to a Notice of Violation" and may: (1) deny the violation(s) listed in this Notice, in whole or in part, (2) demonstrate extenuating circumstances, (3) show error in this Notice, or (4) show other reasons why the penalty should not be imposed. In addition to protesting the civil penalty in whole or in part, such answer may request remission or mitigation of the penalty.

In requesting mitigation of the proposed penalty, the factors addressed in Section VI.B.2 of the Enforcement Policy should be addressed. Any written answer in accordance with 10 CFR 2.205 should be set forth separately from the statement or explanation in reply pursuant to 10 CFR 2.201, but may incorporate parts of the 10 CFR 2.201 reply by specific reference (e.g., citing page and paragraph numbers) to avoid repetition. The attention of the Licensee is directed to the other provisions of 10 CFR 2.205, regarding the procedure for imposing a civil penalty.

Upon failure to pay any civil penalty due which subsequently has been determined in accordance with the applicable provisions of 10 CFR 2.205, this matter may be referred to the Attorney General, and the penalty, unless compromised, remitted, or mitigated, may be collected by civil action pursuant to Section 234c of the Act, 42 U.S.C. 2282c.

The response noted above (Reply to Notice of Violation, letter with payment of civil penalty, and Answer to a Notice of Violation) should be addressed to: R. Borchardt, Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, One White Flint North, 11555 Rockville Pike, Rockville, MD 20852-2738, with a copy to the Regional Administrator, U.S. Nuclear Regulatory Commission, Region I and a copy to the NRC Resident Inspector at the facility that is the subject of this Notice.

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 this 25th day of February 2000