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August 28, 1991

Re: Indian Point Unit No. 2
Docket No. 50-247

Deputy Director, Office of Enforcement
US Nuclear Regulatory Commission
Attn.: Document Control Desk
Washington, DC 20555

SUBJECT Response to the Demand for Information (NRC Office of Investigations Report No. 1-89-005)

This letter is in response to Deputy Executive Director for Nuclear Reactor Regulation, Regional Operations and Research, James H. Sniezek's letter of February 11, 1991, which enclosed a Demand for Information as a result of an investigation conducted by the NRC Office of Investigations at Indian Point Unit No. 2 in the spring of 1989. This Demand for Information required Con Edison to provide an assessment to the NRC within 30 days of the completion of the recent refueling outage. We consider this refueling outage to have been completed on July 29, 1991.

Enclosed herewith is our Assessment in response to the Demand for Information. We believe that the in-place programs described herein, many in excess of regulatory requirements, provide a high level of assurance that the events set forth in the referenced investigations report will not recur.

Should you or your staff have any questions concerning our response, we would welcome the opportunity to discuss them with you.

Very truly yours,

Enclosure

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ASSESSMENT IN RESPONSE TO DEMAND FOR INFORMATION

CONSOLIDATED EDISON CO. OF NY, INC.
INDIAN POINT UNIT NO. 2
DOCKET NO. 50-247
AUGUST, 1991

Section

1. INTRODUCTION

A February 11, 1991 letter from James H. Sniezek, Deputy Executive Director for Nuclear Reactor Regulation, Regional Operations and Research, discussed a Notice of Violation and an Imposition of Civil Penalty related to the installation of Solenoid Operating Valve (SOV) 1035 during a refueling outage at Indian Point in the spring of 1989. The letter required Consolidated Edison to submit:

- a response to the Notice, and
- an Assessment in Response to a Demand For Information.

A Con Edison letter dated March 8, 1991 contained a response to the Notice of Violation. The letter identified our belief that violations resulting from the installation of SOV-1035 were not a result of any deliberate intent to deviate from procedures or falsify documents. The letter also identified several corrective actions that had been taken to address the violation.

The February 11, 1991 letter also required an Assessment in Response to a Demand for Information to be submitted within 30 days of the completion of the refueling outage which began on February 1, 1991. The refueling outage was completed on July 29, 1991. The scope of the Assessment was required to include:

"1. the effectiveness of QA/QC controls for ensuring that maintenance procedures are properly implemented, records are accurately completed, and concerns, when they exist, are surfaced to appropriate management for resolution; and

2. the effectiveness of [Con Edison's] corrective actions for the violations set forth in the Notice."

An Assessment was carried out in response to the above requirements. The assessment findings, scope and methodology, assessment details, and conclusions are described in subsequent sections of this submittal.

2. ASSESSMENT FINDINGS

The principal findings resulting from the Assessment are as follows:

a. Although past QA audits and surveillances have identified cases of a lack of procedural adherence relative to maintenance, current evaluations have noted considerable improvements in this area.

b. The Maintenance Quality Improvement Program (MQIP) (See Section 4.2) has contributed to improving maintenance work practices. Data from this program indicates an ongoing improvement in maintenance work practices in the areas of procedural adherence, signoffs and adequacy of work packages.

c. Changes in key administrative procedures and employee training courses were warranted and were made to more fully include the SOV-1035 considerations.

d. Additional training in the use of Open Item Reports (OIRs) was warranted and conducted. OIRs identifying maintenance performance deficiencies, including inspections that were not documented, have been initiated during the recent outage by a cross section of personnel, indicating an increased awareness of the OIR system.

e. The Nuclear Safety Ombudsman Program (See Section 4.5) has been used effectively by personnel to report potential safety concerns.

f. Work packages demonstrate, in general, that maintenance procedures are properly implemented, records are complete and accurate, and concerns are reported and appropriately resolved. However, continued management attention is needed to minimize errors in work documentation.

3. ASSESSMENT SCOPE AND METHODOLOGY

The QA/QC controls and related activities for assuring proper implementation of maintenance procedures, accurate completion of maintenance records and appropriate escalation of concerns include:

- audits and surveillances.
- Maintenance Quality Improvement Program (MQIP).
- Maintenance and QA administrative procedures.
- Maintenance and QA personnel training.
- the Nuclear Safety Ombudsman Program.
- reviews of maintenance work packages.
- use of OIRs to identify, resolve and document maintenance procedural performance deficiencies.

The following corrective actions were identified in the March 8, 1991 Con Edison letter:

- the establishment of a training course to describe the maintenance work process;
- a revision to a maintenance Temporary Procedure Change (TPC) Policy to provide a more effective means of correcting procedural deficiencies;
- enhanced application of the Maintenance Quality Improvement Program;
- the development of a "Standard of Excellence in Maintenance" policy;

- o the clarification of a Quality Assurance Procedure to require issuance of an "Open Item Report" (OIR) to resolve cases where required inspections were not documented in maintenance procedures;

- o promoting enhanced awareness of the Nuclear Safety Ombudsman Program to allow individuals to express their safety concerns in a confidential manner.

The QA/QC controls, related activities and corrective actions above were assessed to evaluate the maintenance work process with regard to the key SOV-1035 issues including procedural adherence, significance of signatures, complete and accurate records, escalation of concerns, use of OIRs to resolve procedural performance deficiencies and procedure validation.

The assessments were carried out by on-site and off-site personnel who had no direct or supervisory responsibilities associated with the SOV-1035 incident.

The assessments included the following actions:

1. Conduct of special surveillances of current maintenance work.

2. Review of MQIP and its results.

3. Review of key QA and Maintenance administrative procedures.

4. Review of the training course contents relating to conduct of maintenance and general employee training.

5. Interviews with the Ombudsman and maintenance personnel regarding the Ombudsman program and the use of OIRs to resolve procedural performance deficiencies.

6. Review of completed maintenance work packages for current work.

7. Review of OIRs to evaluate their use in resolving procedural performance deficiencies.

4. ASSESSMENT DETAILS

This section discusses the conclusions of assessments made of the QA/QC controls and related activities and corrective actions identified in the Con Edison March 8, 1991 letter.

4.1 Audits And Surveillances

Audits conducted over approximately the past two years were reviewed to determine if they identified any of the key issues raised by the SOV-1035 incident. Six audits were identified which addressed maintenance, inspection and testing. These six audits did not identify matters that bear significantly on the SOV-1035 incident. Two incidents of noncompliance with procedures and one case where an inspector's qualification records were not completed were noted. Each was satisfactorily resolved. None involved falsification of records, or misapplication of signatures.

Additionally, the annual summary reports of surveillances which were done in 1989 and 1990 were reviewed.

The 1989 summary report identified observations within maintenance procedures of lack of procedure signoffs during ongoing work and departure from procedural steps without issuing Temporary Procedure Changes. The frequency of those observations in 1989 were less frequent than in 1988. The report also stated that surveillances identified missing signatures and incomplete data entries in work packages, but that the frequency of such observations was also down from the previous year.

The 1990 summary report identified an improvement in the attention to detail in completing work packages with further improvement needed. The report did not identify any missing signatures or incomplete data entries indicating continued improvement from 1989.

Eleven special surveillances were conducted of 10 diverse ongoing jobs over the last six months. Three instances of procedural noncompliance were identified involving radiological rules, torquing and a burning permit. These were considered isolated anomalies and primarily due to inattention to detail. Overall procedural adherence was evident. Procedural questions were resolved by either the procedure being returned to Planning or by the issuance of Temporary Procedure Changes, or by clarifying information being provided by Engineering. Discussions with field workers indicated improvement in their understanding of the significance of their signatures on procedural steps. Record reviews showed that work packages were complete and signed off appropriately.

In summary, past surveillances identified certain problems during work completion such as lack of signoffs, departure from procedures, and incomplete work packages but improvement was noted. The general absence of comparable problems in recent surveillances of ongoing field work demonstrates that continued improvements have been made.

4.2 Maintenance Quality Improvement Program (MQIP)

The MQIP commenced in the fall of 1989 to objectively evaluate and, where necessary, improve maintenance work practices. The MQIP uses a knowledgeable individual to observe the major phases of a particular job ranging from initial planning through completion of work documentation. Data resulting from these observations are developed. When the job is finished a critique is held by the observer, the workers and the supervisor.

Statistics are kept that identify areas where improvements can be made. A statistical baseline was established for the first three quarters of the MQIP (9/89 - 6/90) and a comparison can be made between the baseline data and the succeeding quarters.

The MQIP was assessed by reviewing the MQIP checklist, discussions with key maintenance and QA personnel directly involved in the process and the results of the MQIP to date. This assessment concluded that the MQIP checklist covers the phases of a job in detail and data are accurate and readily available. The MQIP is supported by management of the organizations involved and is considered beneficial by the key participants. Additionally, other utilities have expressed interest in the MQIP particularly since it was described in a nationally distributed trade magazine in mid 1990.

MQIP data were reviewed, comparing baseline data and data from the last four quarters (7/90 - 6/91). The data show that in the areas of procedural adherence, signoffs and adequacy of completed work packages, consistent improvements have been made in the maintenance work process. In the last four quarters fewer instances of areas requiring improvement have been identified via the MQIP as compared to the baseline data.

Based upon current experience the company intends to continue the MQIP. It is anticipated that continued improvements in the overall maintenance work process will be objectively evaluated and demonstrated via the MQIP.

4.3 Administrative Procedures

Key maintenance and quality assurance administrative procedures related to the development or implementation of maintenance work procedures were reviewed to determine if the procedures contain sufficient guidance on procedural adherence, significance of signatures, complete and accurate records, use of OIRs to resolve procedural performance deficiencies and procedure validation.

It was determined that key administrative procedures did not fully address these issues. In most cases procedures provided adequate guidance on procedural adherence, completion of records and procedure validation; however, the significance of a signature and the use of OIRs to resolve procedural performance deficiencies were not fully addressed. Subsequent to this determination, administrative procedures were revised to provide appropriate guidance.

Specifically, the significance of a signature has been defined as attesting to the personal completion of an action in a procedural step or a witnessing of the completion of the action of a step.

Additionally, the relevant Station Administrative Order (SAO) has been revised to clarify the use of OIR's for documentation and resolution of particular problems including the documentation of procedural performance deficiencies. This SAO revision is in addition to the corrective action taken in 1989 which consisted of revising a QA administrative procedure to require the initiation of an OIR to document and resolve cases where inspections were not documented.

Changes were made to maintenance related administrative procedures to more fully reflect the SOV-1035 issues.

4.4 Personnel Training

Immediately after the SOV-1035 incident a training course (MM-102) was developed which described the correct conduct of maintenance. This training program was given to key maintenance personnel. An assessment of the course outline, in conjunction with discussions with training personnel, indicated that via references to maintenance administrative procedures some of the general issues related to SOV-1035 were discussed but the course outline did not specifically highlight all of the issues. In addition, General Employee Training courses did not reflect all of these issues.

Subsequent to this determination, the MM-102 course content was revised to include the subjects of procedure validation and use of OIRs to resolve procedural performance deficiencies. Additionally, General Employee Training courses have been revised to address the SOV-1035 issues.

4.5 Nuclear Safety Ombudsman Program

An assessment of this program was conducted by interviewing the Nuclear Safety Ombudsman to determine the history of the program and the results to date. Additionally, maintenance personnel were interviewed to determine their awareness and use of the Ombudsman program.

The Nuclear Safety Ombudsman Program commenced at Indian Point Station approximately one and one half years ago to provide an alternative approach for bringing nuclear safety concerns to the attention of responsible management. This program provides anonymity to those who utilize this process and offers an outlet for those who have raised concerns through normal channels but feel that insufficient action was taken to resolve their concerns.

The program was publicized at the plant via use of prominently displayed posters, memos to plant personnel and discussions with various plant personnel by the Nuclear Safety Ombudsman.

The program was established to handle Nuclear Safety related issues. Since the program's inception, approximately 12 issues have been brought to the Ombudsman's attention. Four of these issues involved potential nuclear safety questions and these were addressed satisfactorily. The balance involved industrial safety or personnel issues and were referred to the relevant Company organization.

Interviews were recently conducted with maintenance personnel regarding the Ombudsman program. These interviews revealed that some of the personnel were still not aware of the Ombudsman program.

To further enhance personnel familiarity with this program, the Nuclear Safety Ombudsman conducted a special training session with maintenance to promote better overall knowledge of the program and encourage its use, as necessary. The Ombudsman also visited plant operations personnel and other Nuclear Power and contractor organizations to reinforce program utilization. Additionally, information concerning the existence and purpose of the Ombudsman Program is being incorporated in general employee training sessions.

In summary, the assessment of the Nuclear Safety Ombudsman program showed that the program has been used by personnel to report potential nuclear safety and other concerns, and additional training and discussion of the program with maintenance personnel was warranted. This additional training was accomplished in the maintenance organization and is continuing with other plant organizations.

4.6 Open Item Reports (OIRs)

An assessment of personnel awareness of the OIR program was conducted by interviewing maintenance personnel.

All of those interviewed indicated that they would notify management if they encountered a nonconformance requiring corrective action, a temporary repair requiring a permanent fix, a need for additional information/assurance on the quality of an item, or an instance of a procedural performance deficiency.

Almost all indicated that they would report the situation further up the management chain, or initiate an Open Item Report (OIR) if satisfactory action was not taken. Additionally personnel interviewed were generally aware of the OIR process and were aware of how to initiate an OIR and to whom it should be submitted, although there was some uncertainty expressed as to the circumstances under which an OIR should be initiated.

As a follow-up to this assessment, and to create a better understanding regarding OIR initiation, additional training was given to key station personnel during the recent outage, including maintenance personnel, as to the proper use and initiation of an OIR and other corrective action systems. The training was in the form of presentations and discussions among maintenance management, supervisory personnel and workers.

In addition to assessing personnel awareness of the OIR system, OIRs were reviewed to determine if they were utilized to identify procedural performance type deficiencies including variations between ongoing field work and procedures, drawings and specifications. During the recent outage numerous OIRs of this nature were issued. They were originated by personnel reporting to the Con Edison QA/QC organization, subcontractor QC personnel, Maintenance, Plant Engineering, Nuclear Safety and Licensing, and Rad Waste.

The indication is that OIRs have been appropriately written by a cross section of plant and contractor personnel which demonstrates their overall knowledge and use of the OIR system.

4.7 Work Packages

Completed maintenance work packages were reviewed with the primary intent of determining if they appropriately reflected considerations of procedural adherence, accurate and complete documentation and appropriate resolution of procedural performance deficiencies.

Three groups of completed maintenance work packages were reviewed in detail. The groups consisted of packages chosen at random during different stages of the recent outage. The reviewers concluded that the work packages, in general, demonstrate that the maintenance procedures are properly implemented, concerns are reported to management and appropriate resolution is achieved. Overall, the work packages were complete and accurately represented the work performed, however there were cases where specific data or document entries were not appropriate or were not completed.

The overall assessment of maintenance work packages therefore showed that:

1. In general, maintenance procedures are properly implemented, records are accurate and complete, concerns are reported to management and are appropriately resolved.

2. There were cases where specific data or document entries were not appropriate or were not completed.

3. The need to minimize errors in the completion of work documentation should continue to be emphasized by management. This will be accomplished by continuing discussions or training with applicable personnel. Additionally, the overall quality of maintenance work packages will be reviewed via periodic surveillances by Nuclear Quality Assurance personnel over the next several quarters. Results of these surveillances will be issued to appropriate management.

4.8 Revision to Quality Assurance Procedure

QA procedure QA-711, Responsibility and Authority of Quality Control Inspectors was revised on November 16, 1989 to indicate that an Open Item Report (OIR) is to be issued if there is no documented evidence that a required inspection was performed. The revision to the procedure was accompanied by immediate and follow-up training sessions/discussions with key QC and Maintenance personnel.

An assessment of OIRs issued from February through mid July 1991 indicated that numerous OIRs were issued which identified performance type deficiencies including variations between ongoing field work and procedures, drawings and specifications. Some of these were specifically initiated to resolve cases where inspections and witness points were not documented. These were issued by personnel reporting to Con Edison QC and Maintenance. This indicated that the revision to the QA procedure 711 contributed towards the recent use of OIRs to appropriately identify and resolve cases where inspections were not documented.

4.9 Revision To Maintenance Temporary Procedure Change Policy

Maintenance administrative procedure, MAD-4 was reviewed to assess the revision regarding Temporary Procedure Changes.

MAD-4 revision 10, dated August 17, 1989 incorporated provisions which permit temporary field revisions to work procedures by maintenance supervisors when the revisions do not change the intent of the procedure. At the completion of the job, such field changes are reviewed prior to job closeout by designated personnel in Maintenance and Operations.

The primary intent of the revision is to provide more flexibility to field personnel to make procedural changes, under stipulated conditions, to prevent situations where specific, unworkable procedural steps preclude or unnecessarily delay satisfactory job completion.

Prior to this revision a change to the work procedure by the Planning group was required before the job could progress beyond the problem step. This necessitated a review by personnel in addition to the job supervisor and contributed to job delays, work stoppages and increased risk of radiation exposure.

The revised Temporary Procedure Change (TPC) policy was assessed by evaluating the impact of the changes with key maintenance personnel who were involved in the administration or development of TPCs. Additionally, the use of TPCs was reviewed via a sampling of work packages representing work completed during the recent outage.

Maintenance personnel indicated that after an initial learning curve supervisory personnel understood and began using TPCs during their normal work and the use of TPCs contributed to productivity, decreased radiation exposures, and increased feedback to planning personnel. In addition, the use of TPCs contributed to the overall policy of procedural adherence because they provide a flexible method to revise unworkable procedures.

Selected work packages were reviewed to evaluate the use of TPCs. The TPCs appeared not to meet the requirements of MAD-4 in all cases regarding entry of signatures and dates and reasons for change in the work procedure. This was primarily due to the fact that MAD-4 essentially described the development of TPCs during ongoing field work but not the development of TPCs by Planning prior to work initiation. A revision to MAD-4 is being made to reflect these considerations.

4.10 Standard Of Excellence In Maintenance

This program was initiated in the Fall of 1989 to foster improvements in overall plant conditions and employee productivity by cultivating pride and professionalism among maintenance personnel and by emphasizing enhancements in:

- maintenance of plant equipment
- compliance to procedures
- work area cleanliness
- reduced radiation exposures
- accurate and complete documentation
- identification of improper conditions
- training
- work relations

A general assessment of the effectiveness of the Standards of Excellence in Maintenance program suggests that the program has contributed to improvements in the overall plant condition and employee professionalism. Although the extent of improvement is difficult to assess, the following indicators suggest a positive contributory relationship.

1. Improved overall plant operations as evidenced by fewer plant trips, greater plant efficiencies and increased length of unit on-line performance.

2. Improved material plant condition.

3. Increased employee awareness on the need for excellence and adherence to procedures.

4. An aggressive material condition upgrade program schedule to target areas of the plant including: lighting upgrade, re-insulating, painting, cleaning, and resurfacing floors; all contributing to a more professional environment and fostering an improvement culture.

5. A progressive program of decontamination of plant areas to avoid normal use of anti-contamination clothing; thereby increasing work efficiency.

6. Improvements in the quality of work documentation.

7. Employee reports of improper conditions to their own management, or if applicable, via the issuance of Open Item Reports or alternatively via the Ombudsman Program.

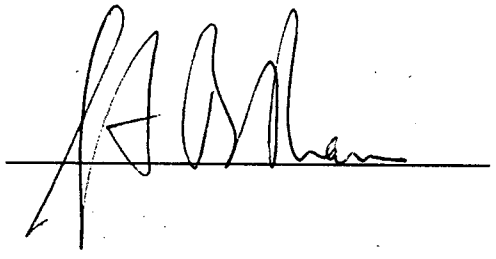
5. CONCLUSION

We believe that the findings and details of the Assessment described in preceding sections 2 and 4 indicate that our overall maintenance efforts including activities such as QA/QC controls, training, administrative procedures and work documentation have improved over the past several years and that this improvement has continued during the recent outage.

We are confident that our maintenance programs will continue to improve, and that actions taken in response to the SOV-1035 incident will contribute to that improvement with emphasis on procedure implementation, records, use of OIRs and significance of signatures.

State of New York)
) ss.
County of Westchester)

I, Stephen B. Bram, Vice President, Nuclear Power for Consolidated Edison Company of New York, Inc., being first duly sworn, state that I have read the foregoing assessment in response to Demand for Information and that it is true and correct to the best of my knowledge and belief based upon information known to me or information which I believe to be correct.



Subscribed to and sworn before me this 28th day of August, 1991.

Karen L. Lancaster
Notary Public

KAREN L. LANCASTER
Notary Public, State of New York
No. 60-4643659
Qualified In Westchester County
Term Expires 9/30/91