

CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.
4 IRVING PLACE
NEW YORK, NEW YORK 10003

PROGRAM PLAN
FOR
INDIAN POINT GENERATING STATION
UNIT NO. 2
NRC REGULATORY GUIDE 1.97 REVISION 2
REVIEW OF ACCIDENT
MONITORING INSTRUMENTATION
FOR
NUREG - 0737 SUPPLEMENT 1

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8409050029 840828
PDR ADCK 05000247
F PDR

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A. INTRODUCTION

1. General

The purpose of this program plan is to outline the activities as required to evaluate the existing emergency response instrumentation design of Indian Point Unit 2 (IP2) against the requirements of Regulatory Guide 1.97, Rev. 2 with application to Emergency Response Facilities. This review is being conducted in accordance with our response to Supplement 1 of NUREG-0737, dated April 15, 1983.

2. Objectives

The intent of RG 1.97, Rev. 2 is that instrumentation be provided to monitor variables and systems over their anticipated ranges for accident conditions, as appropriate, to ensure adequate protection of public health and safety. Since most of the parameters listed in RG 1.97 are currently monitored by instrument channels, with control room displays of appropriate range for the post accident conditions, our objective is to optimize the design such that it is integrated with the other initiatives of Supplement 1 and has the least negative impact on the operators. The inclusion of plant features that have a safety improvement and meet the intent of RG 1.97 are desirable and within the scope of this program.

A review of the IP-2 design will include the appropriate justifications to form a basis for acceptance of existing instrument channels and the recommendation for supplementary or new instrument channels, where required, and will be completed in a timely and cost-effective manner. Our overall objective of satisfying the intent and requirements of RG 1.97 Rev. 2 is to be accomplished as follows:

- . Investigate the stated guidelines and requirements of RG 1.97 Rev. 2 and Supplement 1.
- . Determine whether the existing instrument channels at IP2 accomplish the required function of providing the information needed to recover the plant from an accident and assess the operational post-accident conditions.
- . Where the existing equipment falls short of its required objectives, analyze the use of alternate

solutions, and justifications for the acceptance of the alternate channels.

- . Utilize other previous studies where applicable.
- . Integrate the other Supplement 1 program initiatives in the design review.
- . Define modifications to existing instrument channels or the addition of new instrumentation, if required, to satisfy the goals of this program.

B. REGULATORY GUIDE 1.97 REVIEW

1. Methodology

The review will include a survey of the control room panelboard instrumentation and the SAS/SPDS parameters.

- (i) A review of RG 1.97, Rev. 2 will yield a master list itemizing the types of variables and their categories (as defined in the Reg. Guide) that are recommended for post-accident assessment. Type A variables will be selected consistent with the requirements of the Emergency Operating Procedures.
- (ii) A review of IP2 plant accident monitoring instrumentation and emergency operating procedures will be performed.
- (iii) A review of IP2 documents and previous work to determine current IP2 capabilities for post-accident assessment instrumentation, including the current equipment qualification program.
- (iv) Comparison of the RG 1.97 master list with IP2 will result in the evolution of an appropriate plan which will identify areas for further study as well as those to meet the intent of RG 1.97. Supporting justification will accompany any recommendations made.
- (v) In the event that administrative modifications, new instruments or design modifications are required to meet the intent of RG 1.97, design packages will be developed.
- (vi) The electrical systems will be analyzed by a review of one line diagrams and other

necessary drawings to insure that the proper channelized power sources are provided.

- (vii) The design packages will be verified and validated to assure that the design change fulfills its intended functions.
- (viii) The review and the recommended modifications will be coordinated with the requirements of the other Supplement 1 initiatives as necessary while optimizing plant operability and minimizing plant impact.
- (ix) A final report will be prepared summarizing all information obtained in the study.

2. Criteria

It is our intention to utilize RG 1.97, Rev. 2 as a source of guidance for this evaluation and NUREG 0737 Supplement 1 for definition of the requirements. The review of the variables will classify them into the five types A,B,C,D and E as defined by RG 1.97. Type A variables will be derived from the Emergency Operating Procedures. General guidelines and standards for evaluation of existing and required equipment will be developed.

The intent of the NRC, in NUREG 0737, Supplement 1, is to consider previously installed equipment acceptable if it was installed in good faith to meet previous guidance, taking into account the degree to which past requirements and guidance have been implemented. Deviations from the guidance of RG 1.97, Rev. 2 and Supplement 1 will be explicitly shown and supporting justification or alternatives will be presented. The experience of other licensees will also be considered in our evaluation.

Guidelines associated with control room layout and design, and with human factors engineering considerations will be coordinated by the RG 1.97 project team with the other Supplement 1 initiatives.

3. Control Room Requirements

Previously completed and on-going control room studies and modifications will be utilized to assist in the review. Any recommendations for additions to, deletions from, or changes to the control room instrumentation will be designed with the principles of human factors

engineering and coordinated with Con Edison's control room design review program and human factors task force.

4. Emergency Response Facilities (ERF)

To assure the continued development of emergency response capabilities that are well integrated with each other, all IP2 changes resulting from the RG 1.97, Rev. 2 review will be coordinated with the other initiatives of Supplement 1 to NUREG 0737 in order to optimize the interface requirements.

5. Equipment Qualification

The survey of IP2 instrumentation will include analysis of the extent to which it has been qualified for post-accident monitoring. No qualification of existing equipment will be undertaken where justification can be provided. All newly-required equipment will be subject to appropriate qualification. Any analysis associated with the RG 1.97 effort will be coordinated with ongoing programs to ensure that consistent equipment qualification criteria are applied.

6. Supplement 1 Summary Table

As recommended by Supplement 1 to NUREG 0737, a summary table will be prepared which will include, for each Type A,B,C,D, and E variable, the following:

- a. Instrument range, accuracy of measurement
- b. Time interval during which the measurement is needed
- c. Environmental Qualification
- d. Seismic Qualification
- e. Quality Assurance
- f. Redundancy and Sensor(s) Location(s)
- g. Power Supply
- h. Location of Display(s)

7. New Equipment Design Packages

Where an existing instrument or instrument channel needs modification or new instrument channels need to be added

in order that the implementation requirements of RG 1.97, Rev. 2 and Supplement 1 be satisfied, design packages (including drawings, specifications, etc.) will be prepared for purchase and installation, with consideration given to plant outage dependencies.

8. Verification and Validation

New conceptual designs will be verified to assure that they satisfy the appropriate requirements for their intended design function and validated to assure that they perform as intended.

9. Final Report

The final report will contain a tabulated list of instrument types and categories of variables, a summary identifying deviations from R.G.-1.97, Rev. 2 with supporting justifications or alternatives, and an implementation schedule.

C. MANAGEMENT AND STAFFING

A project team has been established.

The project team will meet periodically throughout the program.

The project team will coordinate with the contractor, the licensing engineer, the Con Edison human factors engineering personnel and those involved in the other Supplement 1 initiatives, as necessary.

D. SUMMARY

The selection and implementation of post-accident monitoring instrumentation is highly plant specific owing to differences in plant design, operating philosophy, integration of Supplement 1 initiatives, and numerous other factors. An engineering evaluation of IP2 instrumentation equipment will include a review of RG 1.97, Rev. 2, an evaluation of IP2 plant-specific accident monitoring needs, procedures and a review of existing instrumentation. The result will be development and documentation of plant specific justification of existing equipment and modifications or addition of equipment (with its justification) where necessary.