U.S. NUCLEAR REGULATORY COMMISSION

Region I

Report No. 82-04

Docket No. 50-286

License No. CPPR-62 Priority _____ Category C

Licensee: Power Authority of the State of New York

Facility Name: Indian Point Nuclear Power Plant (Unit 3)

Inspection conducted: March 2 - 4, 1982

Inspectors: Nemen M. Terc, Exercise Team Leader — 4/14/82 date signed

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Summary

Inspection on March 2 - 4, 1982 (Report Number 50-286/82-04)

Area Inspected: Special Announced Emergency Preparedness Exercise observation, evaluation and inspection. The inspection involved 306 hours by a team of 11 NRC Region I, NRC Headquarters, and contractor personnel.

Results: No items of noncompliance were identified.

## DETAILS

1. Persons Contacted

E. Albright, PASNY - Instrument and Control Superintendent
J. Allen, Shift Supervisor
C. Allingham, Director, Radiation and Environmental Protection
W. W. Boston, PASNY - Executive Vice President
J. C. Brons, Resident Manager
J. R. Brumfield, Information Officer
J. Decker, II, Manager of Operational Analysis and Training
R. Deschonyss, Health Physics Supervisor
J. N. Dube, Security and Safety Superintendent
J. Gillen, Chemistry General Supervisor
J. J. Hahn, Security Supervisor
P. Halama, Quality Assurance Superintendent
W. Hamlin, Assistant to Resident Manager
W. A. Josiger, Superintendent of Power
J. J. Kelly, PASNY - Manager, Radiation, Health and Chemistry
L. M. Kelly, Assistant Operations Superintendent
C. Kent, M. D., Medical Consultant
L. M. Lomonaco, PASNY - Assistant to the Radiation and Emergency Service Superintendent
P. Mathur, Senior Nuclear Engineer
S. Munoz, Technical Services Superintendent
N. Passman, Reactor Analyst Supervisor
J. R. Perrotta, PASNY - Radiation and Emergency Services Superintendent
D. Quinn, Radiological Engineer
J. E. Russell, Shift Supervisor
J. Schivera, Licensing Coordinator
V. Somers, Site Services Manager
C. Spieler, Vice President, Power Authority
E. Tagliamonte, Operations Superintendent
J. J. Vignola, Maintenance Superintendent
D. Vinchkoski, Shift Technical Advisor
S. Zulla, Vice President, Nuclear Support

2. Emergency Exercise

The Indian Point 3 emergency exercise was conducted on March 3, 1982 from about 0730 to 1730.

A. Pre-Exercise Activities

Prior to the emergency exercise, the NRC Team Leader had telephone discussions with licensee representatives to review the nature and scope of the exercise scenario. As a result, substantial modifications to the scenario were made by the licensee to improve it and render it more realistic (i.e., the mechanical failures were made consistent with radiological consequences offsite).

In addition, NRC observers attended a licensee briefing for all observers and participated in the discussion of emergency response actions expected during the various phases of the scenario. The licensee stated that certain functional areas of emergency response would be simulated in order to prevent disturbing normal plant operations, e.g., relocation of evacuees, loss of access to the Health Physics checkpoint and extended plan of operator actions to bring the plant to cold shutdown, the latter being exercised during special simulator training and walkthroughs.

The licensee scenario involved significant fuel deterioration and a large release of radioactivity to the environment with the intent of exercising the onsite emergency organization, the corporate support organization, and the response of offsite groups, state and counties. For this reason, the scenario was developed in coordination with participating agencies.

Based on the above findings, this portion of the licensee's exercise appears to be acceptable.

B. Exercise Observation

During the exercise, 11 NRC inspectors and contractors made detailed observations of the following activities:

(1) Operational staff actions concerning detection, classification, and operational assessment of the accident;

(2) Notification of licensee's personnel and offsite agencies;

(3) Radiological (dose) assessment and protective action recommendations;

(4) Assembly and accountability;

(5) Security and access control;

(6) In-plant, onsite and offsite radiological surveys;

(7) Post-accident sampling and analysis;

(8) Radiation protection of emergency workers;

(9) Communications and information flow;

(10) Coordination and direction;

(11) Technical support; and

(12) Public information.

The NRC team noted that the licensee's organizational response to the simulated accident was, for the most part, in accordance with their emergency implementing procedures and that facilities and equipment were consistent with these procedures. The NRC team determined, however, that there were procedural, facility, and equipment shortcomings identified by NRC and licensee observers that needed to be evaluated and resolved. An evaluation of these shortcomings showed that, in part, they were consistent with the findings of the Emergency Preparedness Implementation Appraisal (EPIA) performed during May 11 - 15, 1981.

It was noted that the licensee had taken action to correct deficiencies noted during the EPIA and which were covered in Inspection Report 50-286/81-05 dated November 19, 1981. The upgrading of the Emergency Operations Facility (EOF) (Item 2 of Appendix A) located at the Buchanan Service Center building of Consolidated Edison and the installatin of new equipment in the News Center (Item 4 of Appendix A), for example, contributed to the overall adequacy of the licensee's emergency response. Although some deficiencies were still identified in these areas, significant improvements were noted.

The NRC team noted that during the exercise the licensee had a sufficient number of observers and controllers which provided independent assessment and who gave necessary control cards and contingency messages to participants during the various phases of the scenario.

Additionally, the NRC team noted that many functional areas of emergency response were exercised with enough depth and free play, and that within the scope and limitations inherent in the scenario, the licensee's response was effective.

C. Exercise Critique

The NRC team attended a post-exercise critique on March 4, 1982 during which licensee observers/evaluators discussed their findings. During the critique, licensee observers presentations highlighted areas needing improvements. The licensee documented observers' comments for subsequent evaluation and corrective actions.

The NRC team compared its findings with those of licensee observers and determined that many coincided. The following findings were identified by NRC observers.

Scenario Limitations

This category of findings constituted three classes: one refers to the limitations inherent in any scenario pertaining to its scope and as a consequence to those functional areas

of emergency response (e.g., emergency tasks) which were left out of the exercise, to the extent of simulation involved in functional areas of response which were encompassed by the scenario and to the quality and amount of information available to participants and observers pertinent to the given scenario (e.g., radiological data, operational parameters, etc.).

- Radiation and radioactive contamination levels in plant (e.g., airborne) were too low to allow a full exercise of in-plant teams.

- The senario did not include taking post-accident reactor coolant or plant vent effluent samples.

- On site/perimeter survey teams did not exercise wearing respiratory protection and attempting to establish communications with respirators in place.

- Radiological data for the Recovery Center was not included in the scenario. In addition, the Recovery Center lacked controllers and observers.

- The Radiological Environmental Monitoring Program (e.g., sampling of soil, water, vegetation, animal feed) was not exercised.

- Monitoring and decontamination of groups of emergency workers in assembly areas who may have become radioactively contaminated was not exercised.

- There was a lack of controllers and sufficient number of observers at assembly areas.

- Personnel evacuation and reassembly of individuals was not exercised.

- The transition from the Emergency Operations Facility (EOF) to the alternate EOF was not part of the scenario.

Personnel Training/Proficiency

This category of findings refers to how well licensee personnel performed their emergency duties during the exercise (e.g., technical know-how, following of procedures and instructions). In some cases, it is not evident from the observations of isolated instances (e.g., during an exercise) whether deficiencies are due to faulty training or other factors.

- The Lead Accountability Officer was not notified by Control Room personnel concerning search and rescue of contaminated and injured individuals, in accordance

with Emergency Implementing Procedure IP-1050, paragraph 5.0. As a result, during a site-emergency condition when the full-fledged onsite emergency organization was already in place, coordination between the Lead Accountability Officer and the Emergency Director (the only person who may authorize a search and rescue operation) did not take place as outlined in IP 1050.

- Some individuals performing radiological controls at assembly areas and security building (e.g., machine shop 15' elevation; 2nd floor cafeteria) lacked adequate knowledge of radiation detection instrumentation and failed to implement timely radioactivity monitoring techniques (e.g., for personnel monitoring and airborne radioactivity). In addition, such individuals were not familiar with habitability guidance criteria in Emergency Implementing Procedure IP-1040.

- Individuals in charge of directing and supervising one of the in-plant repair and corrective actions teams failed to properly brief personnel and plan effectively before performing the task. As a consequence, the repair team started to purge the wrong valve.

- The selection of radiation instruments by on-site perimeter survey teams was poor in that they had no instrument which would allow them to distinguish between beta and gamma radiation. As a result, team members could not provide information concerning beta radiation fields as required by Emergency Implementing Procedure EP-1010, paragraphs 4.2 and 4.3 to accomplish their objective, that is, to verify exposure rates and projections to offsite populations.

  In addition, the on-site perimeter survey team failed to report their significant readings to the Radiological Assessment Team Leader.

- Coordination and handling of the contaminated/injured person by the search and rescue team was slow and somewhat disorganized (e.g., patient was left within high radiation area instead of being moved out quickly; some members of the search/rescue team stood back and watched, not taking an active role).

- Plant vent effluent sampling procedure RE-CS-042 was not followed by the chemistry technicians. Misjudging the consequences of a 200 mr/hr field, the sampling time indicated by procedure was reduced to the point where the sample would have lost its representativeness. This was done without consulting supervisory personnel.

- The Recovery Center, located at the Consolidated Edison Simulator Building, was manned while under very high radiation field. The initial Recovery Manager was not aware of radiological conditions demanding evacuation of the center. Additionally, he was not aware of some of his duties as Recovery Manager during accident conditions.

Information Flow

Efficient means of communications are necessary, but alone are not sufficient for an accurate and timely transmittal of relevant information. The Information-flow category refers to the entire process of information exchange between emergency organizational elements including the ability to discriminate critical information that should be acted on a timely manner.

- Some technical and radiological information was coordinated and used poorly. In particular, due to lack of technical and radiological knowledge, the communicator at the Emergency Operations Facility (EOF) could not determine from the information being received what should be acted on preferentially in a timely manner. In addition, on various instances, onsite and offsite teams did not receive needed technical and radiological guidance or instructions on which to base their actions. Although in part due to lack of specificity in the functional layout of the emergency organization in that area, this finding is also related to the small size of the EOF. (See Emergency Facilities below).

- The information exchange between the EOF and the Recovery Center needs to be formalized (e.g., to reach decisions concerning various phases of de-escalation of emergency categories including corrective actions preceeding the entering of the recovery phase and to coordinate responses and areas of responsibilities of both groups).

Radiological Controls

This category refers to inadequacies concerning the radiation protection of emergency workers. The reason for these could be traced to deficiencies in training, procedures and management (direction/coordination) areas.

- Use of unqualified persons and deficient procedures in assembly areas.

- Insufficient quidance and direction of in-plant, onsite and offsite teams concerning radiological controls

(e.g., dosimetry, dose control, ingestion of Potassium Iodide, respiratory protection, decontamination, and ALARA considerations).

- Personnel dosimetry was lacking at the Recovery Center located within a high risk radiation area.

Emergency Facilities

- The interim TSC, although well prepared to respond to specific requests for technical information to support operational needs, was found not well suited for analyzing plant conditions since it had no hard copies of plant parameters available. Plots of relevant plant parameters were not maintained, and status boards available were not suited for the type of event (accident) being exercised.

- The Emergency Operations Center did not have enough space to accommodate the numbers of persons expected to perform active emergency duties there without crowding and congestion. This, in turn, reduced the efficiency of the emergency response by limiting the number of emergency technical personnel directing the various functional areas of response (e.g., providing technical and radiological guidance to onsite and offsite teams, etc.). Communication and other equipment would have to be modified (e.g., addition of more phone receivers, etc.) to accommodate changes in the reorganization of the EOF. In addition, the habitability of the EOF could not be ensured since it lacked an independent means of air filtration.

- The Special News Center from which the licensee will provide the media information about the course of events during accident conditions was located in Verplanck, New York. Although well equipped and spacious, the center is too close to the site and could be subjected under certain meterological conditions to a radioactive plume that would require its evacuation. The design of this News Center in this location would require its evacuation, or would require greater protective factors to guarantee its habitability.

Other Improvement Areas

The NRC team, in addition to the above areas, suggested other improvements as follows:

- Add more telephone receivers in the Control Room (there are too many incoming lines and few receivers).

- The liason role of the Shift Technical Advisor should be formalized.

- Forms for Dose Assessment should be received and approved for use. (They were improvised during the simulated accident).

- Install continuous radiation monitor with visual and audible alarm at the Recovery Center and Security Building.

- Improve the maps used by onsite-perimeter surveys to eliminate ambiguities of location by using a different scale with more details of the territory to be covered, reference land marks, etc.

- Attempt to reduce the number of workers in the Operational Support Center during severe accident conditions.

- Formalize the protocol for information exchange between the Recovery Center and the Emergency Operations Facility.

Based on the above findings, the licensee's emergency response was found to be adequate, but improvements are required as noted above to ensure that deficiencies noted do not result in a degraded response capability.

3. Exit Meeting and NRC Critique

Following the critique by licensee's observers, the NRC inspectors met with licensee representatives listed in Section 1 above. The Exercise Team Leader summarized the purpose and scope of the NRC inspection and major findings. The Team Leader discussed the findings and informed the licensee that the number of observers and controllers were adequate; the amount of simulation was minimal and that enough free play allowed exercising the various functional areas of emergency response.

The Team Leader concluded that within the scope and limitations of the scenario, the licensee's actions were found to be adequate to protect the health and safety of the public and that such actions were consistent with their Emergency Plans and Emergency Implementing Procedures.