

U.S. NUCLEAR REGULATORY COMMISSION  
REGION I

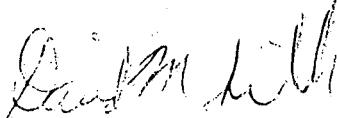
DOCKET/REPORT: 50-286/96-06

LICENSEE: New York Power Authority

FACILITY: Indian Point 3 Nuclear Power Plant  
Buchanan, New York

INSPECTION DATES: April 9-12, 1996

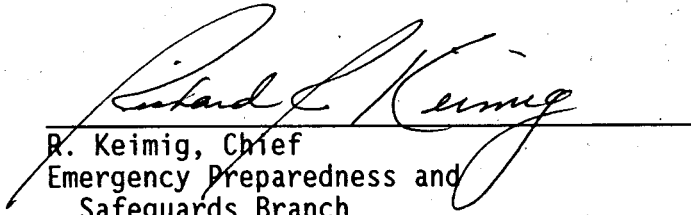
INSPECTORS: D. Silk, Senior Emergency Preparedness Specialist  
J. Laughlin, Emergency Preparedness Specialist  
S. Klementowicz, Radiation Health Specialist  
R. Rasmussen, Resident Inspector, Indian Point 3  
B. Welling, Reactor Engineer



D. Silk, Sr. Emergency Preparedness Spec.  
Emergency Preparedness and  
Safeguards Branch  
Division of Reactor Safety

4/24/96  
Date

Approved by:



R. Keimig, Chief  
Emergency Preparedness and  
Safeguards Branch  
Division of Reactor Safety

4-24-96  
Date

**SCOPE:** An announced inspection of the biennial, full-participation emergency preparedness exercise.

**RESULTS:** Overall, the licensee's performance was good. The licensee met its exercise objectives. No exercise strengths or weaknesses were identified. There were some minor breakdowns in communications which did not detract from the licensee's performance. The licensee's critique was thorough and appropriately self-critical and the licensee identified items requiring prompt corrective action.

## DETAILS

### 1.0 INDIVIDUALS CONTACTED

- \* W. Cahill, Chief Nuclear Officer
- +\* M. Chaubard, Emergency Planning Coordinator
- \* J. Comiotes, General Manager - Support Services
- \* T. Daugherty, Director-Nuclear Engineering
- \* N. Heddle, Senior Quality Assurance Engineer
- \* L. Hill, Assistant to Chief Nuclear Officer
- +\* S. Horvath, Nuclear Emergency Planning Engineer
- \* W. Josiger, Vice President-Nuclear Engineering Project
- \* J. Kelly, Director-Regulatory Affairs & Special Projects
- \* M. Mozzor, Senior Nuclear Emergency Preparedness Engineer
- \* M. Pearson, Operations Manager
- \* J. Perrotta, Operational Review Group Manager
- \* K. Peters, Licensing Manager
- \* D. Quinn, Radiological and Environmental Services Manager
- \* H. Salmon, Vice President-Nuclear Operations
- \* J. Steets, Public Relations Manager
- \* S. Zulla, Director - Independent Safety Engineering Group

The inspectors interviewed other licensee personnel.

+ Denotes those present at the entrance meeting on April 9, 1996

\* Denotes those present at the exit meeting on April 12, 1996

### 2.0 SCENARIO PLANNING

The exercise objectives and scenario were submitted to the NRC in a timely manner and were reviewed by the NRC prior to the exercise. The scenario was determined to test the major portions of the emergency plan and the implementing procedures adequately.

On March 28, 1996, licensee personnel responsible for the scenario development briefed the evaluation team and answered questions pertaining to the scenario and the exercise in the NRC Region I office in King of Prussia, Pennsylvania.

### 3.0 ACTIVITIES OBSERVED

The NRC inspection team observed the activation and augmentation of the emergency response facilities (ERFs) and the actions of the emergency response organization staff. The following specific activities were observed:

1. Selection and use of procedures.
2. Detection, classification, and assessment of scenario events.
3. Direction and coordination of emergency response.
4. Notification of licensee personnel and offsite agencies.
5. Communications/information flow, and record keeping.
6. Assessment and projection of offsite radiological dose, and consideration of protective actions.
7. Provisions for in-plant radiation protection.

8. Provisions for communicating information to the public.
9. Accident analysis and mitigation.
10. Accountability of personnel.
11. Post-exercise critique by the licensee.

#### 4.0 FACILITIES OBSERVED

The inspectors evaluated licensee performance at the Simulator Control Room (SCR), the Technical Support Center (TSC), the Operations Support Center (OSC), the Central Alarm Station (CAS) and the Emergency Operations Facility (EOF). The following sections of this report provide observations made by the inspectors in the above ERFs during the exercise.

##### 4.1 Simulator Control Room (SCR)

The exercise began with the simulation of a truck losing its brakes, penetrating the protected area fence and coming to rest against the Unit 3 condensate storage tank (CST), without causing any damage to the CST. The Shift Manager (SM) in the SCR reviewed the emergency action levels (EALs) and correctly declared an Unusual Event (UE). Notifications of local officials were completed in a timely manner. The SM then briefed the SCR exercise crew and announced that he had assumed the position of the Emergency Director (ED).

For the second exercise event, the SCR crew quickly identified that there was a reactor coolant system (RCS) leak, but when the leak suddenly increased, the preliminary leak-rate estimate was low. Due to the continued loss of RCS inventory, the crew started an additional charging pump so that two were operating (100 gpm each), and with a letdown flow rate of 45 gpm, the crew estimated the RCS leak-rate at only 50 gpm. However, 15 minutes later the crew revised its estimate to greater than 75 gpm, declared an Alert and made timely notifications. A leak-rate in excess of 75 gpm is necessary for the Alert declaration. The inspector concluded that the SM/ED was not timely in determining the extent of leakage from the RCS, thereby, delaying the Alert declaration. The late declaration, however, did not impact the exercise.

The Plant Operations Manager (POM) arrived at the SCR at 7:59 a.m., 4 minutes after the UE declaration, and began turnover proceedings with the SM/ED. The SM/ED ordered the activation of the TSC and OSC at 8:43 a.m., based on the unidentified RCS leakage. The POM relieved the SM of the ED duties after completing the turnover checklist and the SM announced the turnover to the SCR crew. The POM subsequently turned over ED responsibilities to the ED in the EOF after it was activated.

The POM adequately directed plant mitigation efforts. He continually reviewed the EALs and recommended appropriate event escalations to the ED in the EOF. He also ensured that radiation monitor readings were promptly communicated to the appropriate health physics personnel. However, the POM could have been more effective in keeping SCR and other plant staff apprised of the status of the event. For example, he was untimely in announcing the GE declaration to the SCR crew and did not provide regular plant status briefings to them. Also, he did not provide detailed plant status updates during plant page announcements. The licensee's procedure requires announcements to be made

every 30 minutes, however, it does not specify what information is to be included in the announcements. The licensee stated that it will assess whether to specify the contents of the plant page announcements.

Teamwork by the SCR crew was excellent. The Control Room Supervisor effectively directed the implementation of the emergency operating procedures (EOPs). Communications were formal and repeatbacks were consistently used. Mitigation efforts for the simulated event were done well. Overall, the SCR response was good.

#### 4.2 Central Alarm Station (CAS)

Confusing information was communicated from CAS regarding the truck accident. The control room informed the CAS that Consolidated Edison (Con Ed) reported a truck had crashed through the CST fence and that the CST was not damaged. The CAS security officer reported to plant managers and others that "Con Ed reported that a truck crashed into their CST and Con Ed was responding." The miscommunication caused some individuals to believe that the Unit 2 CST (Con Ed's) was the site of the crash. (The potential for miscommunication existed because the actual location of Unit 3's CST is on the Unit 2 side of the fence.) However, CAS security officers understood which CST was involved as demonstrated by observations made with security cameras.

In response to the CST event, security personnel responded in accordance with their procedures, however, the officers in the CAS could have been more aggressive in obtaining follow-up information. Attempts to get details on the truck, contents, driver, passengers, or updated assessments of the damage from Con Ed were not made until prompted by the POM in the SCR at 8:15 a.m. However, security personnel demonstrated better performance and a more questioning attitude with respect to plant security during the remainder of the exercise.

#### 4.3 Technical Support Center (TSC)

At 8:45 a.m., an announcement was made to activate the TSC and by 9:00 a.m., the TSC was fully manned. The responders used procedures to set up the facility promptly. However, personnel responding to the TSC were not aware of the reason for its activation (or the reason for UE and, later, the Alert declarations) until 9:12 a.m. when the TSC manager contacted the SM/ED in the SCR. When the SM/ED ordered the TSC to be activated, he did not announce the reason for its activation. This did not impact the exercise although some confusion was noted on the part of the responders.

Good communications were observed within the TSC and between the TSC and OSC staffs. The TSC manager was effective in keeping personnel up to date on plant status. On several occasions, erroneous or suspect information caused concern in the TSC. Follow-up on such information was prompt and aggressive.

The TSC staff demonstrated several good practices. For example, sending an electrical engineer into the field with a maintenance team allowed prompt and effective troubleshooting of 480 volt breaker problems. Also, the use of an operations department training person with a strong operations procedure

background was a notable benefit because this individual could assist engineers by providing recommendations on which procedures to use to accomplish the desired plant manipulations.

However, the inspector determined that TSC/OSC procedures do not contain requirements to shift the ventilation system for the facilities to the incident mode prior to a pending release. The system has a manual control panel and is designed to transfer automatically at a specified radiation level. Procedure SOP-TSC-1 has instructions for manual operation of the system, however, the entry conditions indicate that the procedure would only be used if the automatic transfer failed. But the control panel is located outside of the TSC ventilation boundary and waiting for the automatic action does not seem consistent with ALARA principles since it could increase exposure to individuals if the controls were required to be manually manipulated after the area radiation levels have increased. The licensee agreed with the inspector's observation and will revise the procedure to caution personnel to consider manually activating the ventilation system prior to an imminent automatic actuation.

The TSC staff noted a potential procedure problem with the Functional Recovery Procedure, FR-P-1, step 23, regarding excess subcooling margin and pressurized thermal shock concern. Even though not all of the conditions were present for this concern, the procedure directed decreasing the subcooling margin. TSC personnel thoroughly researched the issue and simulated the involvement of Westinghouse in an analysis. After the analysis, TSC engineers recommended operators to proceed to the next step of the procedure and not to reduce subcooling margin. The licensee will review this problem and revise the procedure as required.

Overall, staff performance in the TSC was good.

#### 4.4 Operations Support Center

The OSC was effective in supporting the emergency response. It was staffed and activated within about 22 minutes. The inspector observed appropriate use of procedures for the setup of the facility. The OSC manager displayed good command and control of the facility and staff. Communications with other ERFs and the field teams were generally timely and accurate.

The OSC team leaders were effective in organizing repair teams. Pre-mission briefings of the teams were thorough. The repair teams were generally tracked and directed appropriately. However, in one instance, a repair team in the field was left waiting for directions from the OSC for over ten minutes.

The inspector observed that OSC staff members were generally made aware of changing plant conditions. However, individuals at the radiological area control point were not able to hear announcements by the OSC manager, and, therefore, were not always aware of changes in plant status.

Coordination between the OSC and the TSC was considered very good. OSC team leaders interfaced directly with members of the TSC staff in developing repair strategies. Also, some of the OSC repair teams included engineers from the TSC to aid in the troubleshooting efforts.

Section 5.3.7 of the emergency plan states that "the OSC Manager must obtain Shift Manager approval before directing work in safety related systems." In most instances, the inspector did not observe the SM granting explicit approval for such work. For example, is specific approval from the SM needed for the OSC staff to conduct troubleshooting, even though it is the SM who requests that troubleshooting, and the TSC and OSC managers report to the SM? Since the intent of that statement was not clear, the inspector raised the issue to the licensee's attention. The licensee acknowledged the inspector's query and indicated that clarification would be provided.

#### 4.5 Emergency Operations Facility

##### 4.5.1 Command and Control

The EOF was staffed and activated in a timely manner. The ED assumed command and control within 40 minutes of the Alert classification. Upon arriving at the EOF, personnel promptly reviewed plant status information, implemented procedures, and established communications with their counterparts. Security personnel quickly established a control and check-in point for personnel entering the EOF and made periodic patrols through the EOF during the exercise. Although the EOF was congested at times, the general noise level was low and did not distract personnel from their duties. All EOF personnel acted in a very professional manner.

Recognition of the appropriate EALs and the subsequent declarations and notifications to offsite response organizations were accurate and timely for the Site Area Emergency and the General Emergency declarations. Protective action recommendations (PARs) were appropriate and completed in a timely manner. The ED and his staff remained current on changing plant conditions and, as conditions changed, promptly made comparisons to the EALs to anticipate escalating declarations. The ED held frequent and informative discussions with his staff on plant conditions and made frequent and timely briefings on plant conditions, radiological conditions and release status, and planned actions to keep EOF personnel aware of the current situation. Direct communication and transmittal of information with offsite agencies was good. The Dose Assessment Health Physicist also gave periodic briefings to county representatives at the EOF to keep them informed of radiological conditions.

##### 4.5.2 Dose Assessment

Dose assessment personnel arrived shortly after the declaration of the Alert and implemented their checklist to place the EOF dose assessment area into operation. They immediately activated the computerized dose assessment terminal (MIDAS) to obtain real time weather data and Reuter-Stokes exposure rate information. Meteorological forecast data were also obtained from a weather service. During the set-up period, dose assessment personnel conducted a "test case" dose assessment. The test case served to verify the

operation of the system and to generate a dose assessment with an assumed one Curie per second release rate, which could be quickly scaled up in the event of an actual release. The "test case" was referred to on several occasions later in the exercise to enable the calculation of "what if" dose projections. The inspector considered the conduct of the "test case" to be a good practice.

Field monitoring team (FMT) data were provided by one onsite and two offsite teams. Communications from the EOF to the FMTs were good. The FMTs were pre-positioned, based upon wind direction, to be able to gather data quickly if a release were to occur. When the release occurred, radiological survey data about the plume was quickly obtained and communicated to the EOF. FMTs were properly tracked and coordinated throughout the exercise.

The Radiological Assessment Team Leader (RATL) and his staff worked effectively to assess and compare radiological data, such as, Reuter-Stokes exposure rates, plant radiation monitors and FMT data. The RATL and his staff provided dose assessments and recommended PARs to the ED in a timely and accurate manner. Meteorological and radiological data were updated and effectively assessed throughout the exercise.

The inspector noted a minor problem with the licensee's ability to analyze an air sample cartridge effectively in the plant's chemistry counting room. There was some initial confusion about elevated radiation background levels in the counting room preventing the proper operation of the counting equipment. After it was decided that the room was useable, personnel discussed whether the filter cartridge may have high activity levels that required a special shielded holder and that the special holder was stored in the Primary Access Building, which was inaccessible. It was finally decided that the air filter was at an acceptable activity level that did not require the use of the special holder. The radiological analysis of the air filter was completed two hours and twenty minutes after the request to take the sample. The RATL reviewed the air sample results and compared it with initial survey data (gross counts) and decided that the plant ventilation monitor data used for dose projections was conservative and did not need to be recalculated. This analysis can be performed in less than one hour. The inspector discussed this matter with the RATL and determined that there are back-up counting room capabilities available, if needed. In this situation, it was finally decided by the licensee that the air filter data was not necessary for a dose assessment to determine a PAR, but was requested and pursued as a low priority to be used as a verification of other available data. The inspector accepted the licensee's explanation.

Overall, the inspector assessed the licensee's performance in this area to be satisfactory.

## 5.0 LICENSEE CRITIQUE

The licensee held a critique of its exercise performance on April 11, 1996. The critique was attended by the controllers, key players in the exercise, senior licensee management and the NRC evaluation team. The inspectors assessed the critique as being effective in that the licensee identified and

discussed the performance issues that the inspectors had noted, as well as additional issues. The licensee prioritized significant issues that required immediate corrective action.

## 6.0 FINAL SAFETY ANALYSIS REPORT REVIEW

A recent discovery of a licensee operating their facility in a manner contrary to the Updated Final Safety Analysis Report (UFSAR) description highlighted the need for a special focused review that compares plant practices, procedures and/or parameters to the UFSAR descriptions. While performing the inspection discussed in this report, the inspector reviewed an applicable portion of the UFSAR. The following minor inconsistency was noted between the UFSAR and the plant practices.

During the exercise, the inspector observed that the TSC radiation monitoring system (R-41, R-42, R-43) was not and is not normally used to monitor particulate due to the noise caused by the sample pump. The FSAR (page 11.2-16) mentions the existence of these monitors. Although the mention of these monitors in the FSAR, and their existence, imply that they will be used, there is no specific requirement regarding their usage. Instead of using the TSC monitors, the licensee uses portable monitors that draw air at the same location as the TSC monitors. The inspector concluded that the licensee's practice was acceptable because the portable monitors are sampling air at the same location as the TSC monitors, and because the licensee conducts surveillances on the TSC monitors to ensure their operability. The inspector had no further questions regarding this issue.

## 7.0 REVIEW OF EMERGENCY PLAN AND IMPLEMENTING PROCEDURES

An in-office review of revisions to the emergency plan and implementing procedures submitted by the licensee was conducted. A list of the specific revisions reviewed are included below. The inspector concluded that the revisions did not reduce the effectiveness of the emergency plan and were acceptable.

<u>Document</u>	<u>Procedure Title / Section</u>	<u>Revision</u>
Plan	Section 4.0	27,28
IP-1028	Core Damage Assessment	7
IP-1038	Offsite Emergency Notification	20
IP-1060	Personnel Radiological Check and Decontamination	10
IP-1076	Roster Notification Methods	21
IP-2101	Technical Support Center Manager	2
IP-2201	Operations Support Center Manager	2
IP-2205	OSC HP Team Leaders	3
IP-2209	OSC Health Physics (H.P.) Technician	3
IP-2210	OSC Dosimetry Technician	1
IP-2301	Emergency Director Procedure	3
(Volume 2)	Initiating Conditions and Emergency Action Levels	2,3

**8.0 EXIT INTERVIEW**

The inspectors presented highlights of the above findings to the licensee at the exit meeting. The licensee acknowledged the findings and stated that they would be reviewed for appropriate corrective action.