

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 12, 1995

MEMORANDUM FOR: G. W. Cunningham, Technical Director

COPIES: Board Members

FROM: J. Deplitch

SUBJECT: Supplementary Report on Rocky Flats Emergency Response Exercise "Ready 94" Corrective Action Drill

1. **Purpose:** This report documents Defense Nuclear Facility Safety Board (Board) staff observations made during the conduct of Emergency Preparedness Corrective Action Drill, "Ready 94," which was conducted during the morning of June 7, 1995, by the Department of Energy (DOE) Rocky Flats Field Office (RFFO) and the EG&G Company (EG&G).
2. **Summary:** Overall, Board staff evaluators consider the drill to have been a limited success in demonstrating corrective actions taken following the unsuccessful Emergency Preparedness Exercise "Ready 94," conducted March 29, 1995. Board staff participants were J. Deplitch and D. Thompson.

The performance of the players and controllers/evaluators during the corrective action drill was of significantly higher quality than was observed during the March exercise. Board evaluators concluded that the stated objectives for the drill were satisfactorily achieved. However, the scope of the drill was narrow; and the scenario was very simple and had only limited goals -- it was not very challenging. It was noted that DOE and the contractor have stated their intent to hold additional drills in the near future, one with Kaiser-Hill around the end of June.

3. **Background:**

As a result of the poor performance in Exercise "Ready 94," the Board requested, in its letter dated April 17, 1995, that DOE report to the Board the corrective actions it proposed to take to address the deficiencies disclosed in the exercise. This corrective action drill was conducted in response to the Board's request and will provide a partial basis for DOE's report to the Board.

Evaluations of Exercise "Ready 94" were received and reviewed from DOE Headquarters, DOE RFFO, and EG&G RF. Each organization was in agreement with the Board's

comments and assessment of the exercise. RFFO reported that RFETS "performed Unsatisfactorily"; EG&G reported that "the overall performance was rated marginal"; and DOE HQ reported findings with no overall level of performance. DOE HQ and RFFO provided thorough and constructively critical evaluations. EG&G assimilated the comments and developed its Corrective Action Plan on 24 April, with actions planned for completion with drills in June.

4. Discussion/Observations:

Corrective Action Drill "*Ready 94*" was based on a scenario involving simulated transport to Building 559 of samples of material removed from ventilation ducts in Building 707 containing approximately 3 grams of plutonium oxide. A Transportation Security Officer (TSO) dropped the transported can off the back of the truck while hand carrying it to the loading dock. The can popped open, the bag was punctured and the inner container partially opened, releasing a small amount of its contents. In the process of jumping off the truck and orienting the can and inner bag to minimize further release, he acquired an abrasion and became contaminated.

The drill was a full-scale site-wide emergency response, including response, mitigation, and recovery. Participant activities were the Incident Command Organization, Emergency Management Organization, and Functional Work Centers. No off-site agencies participated and there was no Joint Information Center.

Controllers initially had difficulty getting the drill started. About two minutes after the workers in Building 559 finally recognized that the incident had occurred outside the loading dock area and reported it, a real flow alarm (which was never reported) was received from Building 374. While the Fire Department and Protective Force responded to the flow alarm, the drill was put on-hold for 40 minutes (the drill clock was reset for a one hour delay in initiation). When the drill was completely restarted, personnel responded almost immediately and totally prepared. The demonstration of a timely response was compromised.

The Incident Command Organization demonstrated improvement. Personnel at the accident scene responded satisfactorily and demonstrated a timely and reasonable response to the simulated contamination and casualty. Although the Incident Command Post was better organized and controlled activities at the accident scene, it was not adequately marked for identification, the access route was not announced or posted, it was not clear who was in charge for quite a while, there was no turnover briefing between the Fire Department and the subsequent site Incident Commander, and accountability of personnel at the accident scene was not maintained.

The Emergency Management Organization adequately assessed the hazard, communicated protective actions, and supported the accident response. A Site Area Emergency was

promptly declared by the Plant Shift Superintendent of the Emergency Operations Center (EOC), and endorsed by the Crisis Manager upon his arrival. The Crisis Manager appeared decisive, confident, and forthcoming with information for the entire Emergency Response Organization. He used the EOC public address system frequently to inform the team of the status of the emergency and provided them with the basis for his decisions. He also arranged for frequent site-wide announcements concerning the exercise, thus keeping the entire on-site work force aware of what was happening. The first announcement however, occurred 25 minutes after the incident and many workers disregarded protective measures.

Initial efforts to reliably determine the magnitude of the release were somewhat confused. The transport documents were misplaced in the haste to assess and control the incident and treat the injured TSO. Speculation that a release as large as 100 grams of PuO₂ was quickly refuted, because there was an administrative limit of 10 grams of special nuclear material (SNM) per transfer. The Crisis Manager was reluctant to accept 10 grams and declare a General Emergency, so he requested more reliable information. The Plant Nuclear Safeguards staff was contacted and reported that three grams was correct forty-two minutes after the incident. Had that information not been forthcoming at that time, the Crisis Manager would have been obligated to declare a General Emergency, as the default action in the absence of firm information quantifying the release, and initiated off-site protective actions.

Recovery Phase preparations were satisfactory. When the Incident Command Organization had controlled the hazard and evacuated the casualty (65 minutes after the incident), it began Recovery Phase planning and drafted a plan. The Radiological Control Manager was designated the Recovery Manager and a team was selected. The draft plan was reviewed against a checklist, briefed to the Crisis Management Team, and approved by the Crisis Manager. When the Recovery Phase Plan was approved the drill was terminated. As the drill drew to a close, it was clear that the Crisis Management Team was very conscious of criticisms of the failure to meet this objective during the March exercise.

The post-drill critique by controller/evaluators was generally forthright and candid, although there were a few cases where the Board staff observers considered criticisms were soft-pedalled.

5. Future Staff Actions:

The staff intends to review both the DOE-RFFO and the EG&G drill evaluation reports, when they are issued, and will issue a supplemental report, if appropriate. The staff will monitor the conduct of future emergency preparedness exercises.