

April 17, 1995

The Honorable Thomas P. Grumbly
Assistant Secretary for Environmental Management
Department of Energy
Washington, D.C. 20585

Dear Mr. Grumbly:

Since its establishment, the Defense Nuclear Facilities Safety Board (Board) has expressed its continuing interest in the status of Emergency Preparedness at facilities throughout the complex and has had a number of briefings on this subject by cognizant Department of Energy (DOE) officials. The Board's staff has observed emergency drills and exercises at a number of facilities and has routinely reported its observations to the Board. In general, these reports have indicated marginally acceptable levels of performance, but have identified a number of weaknesses and areas requiring improvement, most of which were also observed by DOE evaluators of the same exercises. The Board has forwarded copies of these reports to DOE.

Recent experience in this regard, however, has been less satisfactory. In particular, the staff's observation of Exercise "Ready 94" at the Rocky Flats Environmental Technology Site on March 29, 1995, disclosed an unacceptable level of performance by participants and fundamental weaknesses in achieving closure of previously identified weaknesses. Nearly all of the subject areas found to be deficient during "Ready 94" were observed to be deficient a year earlier at Exercise "Ready 93" by both the Board's staff and DOE controllers and evaluators. In addition, the specific shortcomings were more serious and numerous this year. A copy of the staff's report on Exercise "Ready 94" is enclosed for your consideration.

The Board requests that it be informed within 90 days of the actions DOE plans to take to address not only the specific negative items noted in the attached report, but also shortcomings in Emergency Preparedness identified by DOE's own evaluations over the past three years. In particular, improved methods for ensuring satisfactory closure of deficiencies and weaknesses disclosed in drills and exercises should be addressed.

Sincerely,

John T. Conway
Chairman

c: The Honorable Tara J. O'Toole
Mr. Mark Whitaker

Enclosure

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

April 5, 1995

MEMORANDUM FOR: G. W. Cunningham, Technical Director

COPIES: Board Members

FROM: D. Thompson
Senior Technical Specialist

SUBJECT: Report on Rocky Flats Emergency Response Exercise "Ready 94"

1. Purpose: This report documents Defense Nuclear Facilities Safety Board (Board) staff observations made during the conduct of Emergency Preparedness Exercise "Ready 94" which was conducted during the morning of March 29, 1995, by the Department of Energy (DOE) Rocky Flats Office (RFO) and the EG&G Company (EG&G).
2. Summary: It was clear that EG&G Emergency Preparedness staff members had devoted a lot of effort in planning the exercise. The realism of the accident scene, the effectiveness of role players and the extent of planning contingency control messages all deserve favorable comment. Despite these positive notes, however, Board staff evaluators consider the exercise to have been a failure overall. A number of areas displayed serious deficiencies - many of which repeat or are very similar to weaknesses disclosed during Exercise "Ready 93" in late October 1993. These include:

- ❑ The Incident Commander exercised poor judgement in establishing his Command Post directly downwind from the accident site, even with the strong sensory reminder of its location provided by the smoke from the generator used to improve the realism of the scenario.
- ❑ More than an hour and a half elapsed before the first Radiological Control Technician (RCT) support arrived at the accident scene.
- ❑ No attempt was made to survey injured personnel for contamination before they were evacuated.
- ❑ On-scene discipline regarding respiratory protection was extremely poor.
- ❑ No attempt was made by the Incident Commander to establish effective contamination control boundaries for access to the accident scene. Traffic control points were not set up on lateral access roads near the accident scene; foot and vehicular traffic entered the environs from uncontrolled access roads.
- ❑ Almost all the information provided to the press and public was outdated and inaccurate. Inordinately long times were required to obtain agreement of Crisis Management Team members on the details of press releases.
- ❑ Within the Emergency Operations Center, work by the Hazards Assessment Center (HAC) staff was uncoordinated. Recommendations from the HAC Director went directly to the Crisis Management Team without effective consultation with the HAC staff most of whom remained in the dark throughout

the exercise. Early in the exercise, the HAC calculated off-site consequences greater than Protective Action Guidelines, but rationalized not making a recommendation for protective actions for the off-site public.

☒ The amount and the composition of the simulated radiological source were never correctly determined by the Crisis Management Team; the information was provided to the HAC staff early in the exercise as a controller's message.

☒ Exercise control was weak and ineffectual. The Crisis Manager declared an end to the emergency portion of the exercise before the scenario had been played out, and no action was taken by the lead controller to inform players that the exercise was not complete.

3. Background: Exercise "Ready 94," an emergency preparedness exercise designed primarily to test the actions of members of RFO and EG&G response teams, was conducted during the morning of March 29, 1995, at the Rocky Flats Plant near Boulder, Colorado. DOE Headquarters Emergency Operations Center (EOC) did not participate; the State of Colorado and elements of the local counties participated to a limited degree.

Exercise "Ready 94" was based on a simulated accident on the site involving a propane explosion following a crash of a truck transferring U235-bearing waste between buildings. The simulated accident involved three fatalities, a fire, and on-site contamination from the ten drums of material being transferred. Source term and meteorological conditions led to projected doses exceeding prescribed Protective Action Levels (PAL), requiring the activation of the emergency response of EG&G and RFO to protect on-site workers and to assess the possibility of exposure of off-site public.

Board staff evaluators utilized the Federal Emergency Management Agency (FEMA) evaluation methodology set forth in FEMA-REP-15, "Radiological Emergency Preparedness Exercise Evaluation Methodology," dated September 1991.

4. Discussion/Observations:

Specific objectives in ten subject areas, listed below, were identified by RFO and EG&G as goals for Exercise "Ready 94." Stated objectives were evaluated by Board staff evaluators except as noted in the detailed discussions in Attachment A. Few of the objectives were satisfactorily achieved. The nature and extent of deficiencies are set forth in greater detail in Attachment A.

☒ Notification and Mobilization
☒ Emergency Assessment, Classification, Command and Control, and Mitigation
☒ Emergency Response
☒ Emergency Response Facilities and Equipment
☒ Radiological/Chemical Dose Assessments and Control
☒ Public Information
☒ Occupational Medicine
☒ Reentry and Recovery
☒ Security and Safeguards Measures
☒ Exercise Scenario, Conduct and Control

5. Future Staff Actions:

The staff intends to review both the DOE-RFO and the EG&G evaluation reports, when they are issued, and will issue a supplemental report to the Board assessing the adequacy of those evaluations upon their receipt. The staff will also monitor the conduct of future emergency preparedness exercises.

The staff also intends to work out an agreement, or a series of

agreements, with cognizant DOE staff members to ensure timely receipt of future scheduling information in the Emergency Preparedness arena and has made initial contacts in this regard.

Attachment A

Background:

At the Rocky Flats Plant, a Plant Shift Superintendent is assigned to the Emergency Operations Center 24 hours a day. It is the Plant Shift Superintendent's responsibility to initiate actions in response to any unusual condition occurring during his tour of duty, including responding to any on-site incident to serve as Incident Commander at the scene. Communications channels covering the Fire and Security forces are monitored full-time, and telephone, radio and extensive data processing devices are readily available.

Initial Conditions:

Exercise "Ready 94" was initiated on March 29, 1995 by an 8:22 am telephonic report from a guard station near the accident scene. The caller reported a vehicle accident within sight of his post, involving a truck which struck a propane tank causing a rupture of the tank and ignition and explosion of the leaking propane. Several drums were ejected from the truck onto the street and the truck was burning. Three of the drums were ruptured and their contents (which appeared to be trash) were strewn on the ground in the vicinity of the burning truck.

1. Notification and Mobilization

Objective: Demonstrate the capability to alert and fully mobilize personnel for both emergency facilities and field operations in accordance with the RFETS Emergency Preparedness Plan.

Discussion/Observations:

The Plant Shift Superintendent departed immediately. At 8:39 am, seventeen minutes after the initial report, and shortly after arrival at the accident scene, he assumed the role of Incident Commander and declared a Site Area Emergency, thereby activating the Emergency Operations Center and initiating automated notification calls to members of the Crisis Management Team and the Crisis Support Team.

Simultaneously, the Rocky Flats Fire Department responded to the scene, arriving at approximately 8:27 am. Fire apparatus approached the accident site from the west, while Fire and Rescue crews approached from the east, turning to the south near the accident site, where the vehicles were parked. Fire and Rescue crews approached the accident scene from directly downwind; smoke from the simulation of the truck fire passed directly over vehicles, equipment and personnel, none of whom wore respiratory protection. Since real meteorology was used for the exercise and a smoke generator was employed to simulate the fire, participants could not fail to observe that they were in the plume, yet no one took any action to protect the crews or to determine whether or not vehicles and equipment were contaminated.

The Incident Commander set up his command post in a small vacant building which had formerly been used as a guard shack, precisely on the downwind mid-line about 500 yards from the accident scene. As had been the case for Fire and Rescue crews, no action was taken by the Incident Commander or his staff to cope with the potential respiratory hazard or the probable contamination of personnel and equipment. There was no apparent control point established for access to the accident scene, and no staging area for personnel and equipment responding to requests for assistance. The Incident Commander's command post was not readily identifiable, as is called for in the RFETS Emergency Plan.

Initial actions of the first Fire and Rescue responders involved treatment of the casualties. While this is consistent with generally accepted good practice (Life Safety First), no attempt to assess the overall situation was apparent for

several minutes after arrival. Fire and Rescue crews walked over and through the spillage from the open drums with no apparent concern for the obvious possibility that the litter was contaminated. Use of respiratory protection among Fire and Rescue workers was inconsistent, with some workers using self-contained breathing apparatus (SCBA) throughout the exercise, others using SCBA for a while, then removing it, and still others using no protection at all.

The Fire Commander chose to set up his control point about 100 yards from the accident scene (also directly in the plume) and the two response forces never established effective liaison, although the Fire Commander did send an individual to the Incident Commander's Command Post to provide communications capability; it was never used effectively to coordinate the overall response. The Incident Commander chose not to direct collocation - an option that would have been within his authority - and was overheard to say that he didn't want to upset the Fire Commander by directing him to move his control point.

Approximately half an hour after arriving at the scene, the Incident Commander requested support of Radiological Control Technicians (RCT's). The first RCT's to arrive got there at approximately 9:55 am - more than an hour and a half after the accident, and more than an hour after they were requested by the Incident Commander.

Treatment of the injured appeared to be accomplished in the order in which they were encountered by the Emergency Medical Technicians (EMT's), with no apparent attempt at triage (subsequent comments by EG&G and DOE Controller/Evaluators at post-exercise debriefs indicated that rudimentary triage was being performed by one of the EMT's, but that activity was not observed by either of the two DNFSB evaluators at the scene). No attempt was made to determine whether or not the injured were contaminated (and the scenario did call for contamination of some of the casualties), and the most seriously injured casualty was dispatched without accompanying data regarding his contamination. As a matter of fact, all the injured were transported from the scene before the first RCT's arrived.

Approximately one hour after the start of the exercise, a Hazardous Material response team arrived on the scene in response to a request from the Fire Chief for assistance in determining the hazard from the ruptured propane tank. The HazMat team was in street clothes, and carried no equipment. They left shortly thereafter, having been informed that the tank was empty. However, the scenario also called for a gasoline leak from the gas tank of a car damaged by the initial explosion. It is not clear whether or not this controller message was ever delivered to any of the responders. If it was, the HazMat team was derelict in leaving without assessing that hazard; if it was not delivered, it is a failure in exercise control.

It was almost two hours into the exercise before Field Survey Teams (FST's) arrived to assess potential radiological hazards. One FST did set up downwind air samplers (the damaged truck, the air samplers and the Incident Commander's Command Post were collinear). Use of personal protective equipment by the FST's was inconsistent. For example, one member of a two-man FST wore protective clothing and a respirator properly, while his partner wore no respirator, with his protective garment open.

Immediately following receipt of the initial call to 911, which was monitored in the Emergency Operations Center, members of the EOC staff began the process of activating the center. Some of these personnel were already located in the EOC. It was not clear to DNFSB evaluators if all of them were there because it was their routine duty station, or if some of them were pre-positioned in anticipation of the exercise. There were other indications that information concerning the scenario had leaked to participants and that unauthorized and unwarranted advance preparations for the exercise were made by some players. For example, about 40 minutes before the start of the exercise, television monitors in the Emergency Operations Center using panoramic video cameras mounted on top of the water tower were focused on the accident scene, where final preparations were underway for the start of the exercise. While it could be argued that the EOC staff would naturally try to monitor any unusual activity, such as was occurring at the projected accident scene, the coincidence seems remarkable, given the normal indifference of EOC staffers to video displays during routine

non-emergency situations.

At 9:08 am, the Crisis Manager assumed responsibility for managing the incident and declared the Emergency Operations Center to be operational. He directed that sheltering actions be taken for all on-site personnel and approved a site-wide Life Safety and Disaster Warning announcement to that effect, which was issued promptly.

DNFSB evaluators consider that Objective 1 was not achieved.

2. Emergency Assessment, Classification, Command and Control, and Mitigation

- Objectives:
- a. Demonstrate the capability to properly assess and classify an emergency event, and perform command and control and mitigation activities during emergency operations.
 - b. Demonstrate the ability to make timely and appropriate protective action recommendations to the State of Colorado.

Discussion/Observations:

The prompt declaration of the Site Area Emergency by the Incident Commander (the Plant Shift Superintendent), and the endorsement of that declaration by the Crisis Manager upon his arrival at the Emergency Operations Center, were proper and in accordance with the RFETS Emergency Preparedness Plan.

From the start of the exercise, the Crisis Manager was decisive, confident, and forthcoming with information for the entire Emergency Response Organization, using the EOC public address system frequently to inform the team of the status of the emergency and providing 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, based on what was thought to be the current situation.

Unfortunately, for a variety of reasons, the Crisis Management Team (CMT) never correctly assessed the precise nature of the hazard involved, nor its magnitude. Throughout the exercise, conflicting information was provided to the CMT regarding the amount of SNM involved in the accident (at the conclusion of the exercise, the CMT still misunderstood the amount to be a total of 10 grams of Uranium for the entire shipment, vis-a-vis the correct amount of 10 grams per drum), and the isotopic composition of the Uranium (the exercise scenario identified the material as enriched Uranium, but the CMT never seemed able to determine if it was enriched or depleted). Under the scenario conditions, the determination was almost moot, since neither extreme of the possible combinations of mass and isotopic composition changed the appropriate protective actions, which were those ordered by the Crisis Manager.

The Hazards Assessment Center team used a conservative (and accurate, as far as amount and composition was concerned) assumption regarding possible site boundary doses; i.e., 100% release of 100 grams of enriched Uranium; to calculate an initial projected dose of 1.4 Rem at the fence. Then they backed away from the decision to recommend protective actions for the off-site public, as that projected dose would have indicated, by noting the extreme conservatism of their assumption, and estimating that the actual dose from a release would almost certainly have been less than the 1.0 Rem level, below which off-site protective actions are not considered necessary. In non-emergency situations, one might consider that approach to be reasonable and prudent, but in an emergency situation involving many unknowns, one of the principal reasons for arbitrarily fixing action levels is to ensure protective actions are timely and adequately conservative without requiring undue exercise of that type of rationalization.

There were significant time lags between activities on the scene and related inquiries from the CMT. The CMT failed to use the available video capability in the EOC effectively, as evidenced by its questions to the Incident Commander concerning on-scene efforts to recover and overpack the ruptured drums, at a time when the video cameras clearly showed that debris had been picked up and the

drums had been recovered and prepared for removal from the accident site. Instead CMT members apparently became concerned because they were looking at a still photograph taken hours earlier.

Based on the failure to correctly determine the magnitude and composition of the source material, DNFSB evaluators consider that Objective 2.a. was not achieved.

By sheer coincidence, the HAC's assessment of the lack of significant off-site hazard from the accident was correct, and the resulting protective action recommendation to the State of Colorado was consistent with the scenario. The State properly questioned the calculated fencepost dose estimate as being inconsistent with the recommendation for no off-site protective action, but ultimately accepted the rationale provided for that recommendation.

DNFSB evaluators consider that Objective 2.b. was not achieved.

3. Emergency Response

- Objectives:
- a. Demonstrate the capability to respond to an emergency utilizing appropriate equipment and procedures for determining field radiation.
 - b. Demonstrate the organizational capability and resources necessary to control traffic flow and control access to evacuated, relocated and sheltered areas.
 - c. Demonstrate timely evacuation and accountability for building and emergency response personnel, as required.
 - d. Demonstrate the capability to maintain Emergency Management Organization staffing on a continuous, 24-hour basis through an actual shift change.
 - e. Demonstrate the capability to identify the need for external assistance and to request such assistance from support organizations.

Discussion/Observations:

As noted in the discussion under Objective 1 above, the response of the RCT's was tardy and poorly controlled. It was also insufficient in numbers of staff, particularly during the early portion of the exercise, and very disorganized. No steps were taken to ensure personnel monitoring of responding personnel; no TLD's were evident. On several occasions, DNFSB evaluators observed RCT's using sloppy survey practices such as touching surfaces with the face of probes (in at least one case, the end of a probe was wet by melted snow in the street). While these conditions occur not infrequently in field survey situations, accepted good practice is to obtain a new probe or decontaminate a probe that has contacted a potentially contaminated surface before using it elsewhere. Probes were moved across surfaces at higher rates than is normally considered prudent when frisking personnel (which only began late in the exercise).

DNFSB evaluators consider that Objective 3.a. was not achieved.

Traffic control at both ends of Central Avenue (where the accident was located) was acceptable, but lateral access roads were not controlled and several participants entered the accident scene from these points. As an example, the senior EG&G Radiological Protection Manager walked onto the scene in street clothes, accompanied by a retinue of assistants, none of whom used any protective clothing or respiratory protection.

There was no personnel accountability effort established to monitor who responded to the scene and where they were working, except for early accountability recording by the Fire and Rescue forces, and that petered out after about thirty minutes.

No evacuation of uninvolved personnel was called for under the scenario. However, as noted above, it was necessary to evacuate injured personnel, and that was completed without surveying them for contamination. No record of which victims were dispatched to which medical facility was evident at the accident scene, and this led to later confusion regarding how many injuries and fatalities were involved. In addition, there was no apparent attempt to account for personnel in nearby buildings damaged by the explosion, as would have been prudent under the conditions postulated in the scenario. As a result, it was only in the final stages of the exercise that an additional simulated fatality was discovered in one of the damaged buildings.

No survey of building damage was evident until very late in the exercise, when the recovery plan was being prepared even though the scenario included relatively widespread building damage and placards had been posted on nearby buildings to indicate they had been affected by the initial explosion.

DNFSB evaluators consider that neither Objective 3.b. nor Objective 3.c. was achieved.

Although the exercise originally called for a simulated shift turnover, that provision was deleted from the planning. Thus, Objective 3.d. was not applicable.

Outside assistance was needed for injured personnel. DNFSB evaluators did not observe the response of off-site medical staffs thus involved. At the post-exercise critique, controllers indicated that the hospitals involved were generally effective in their responses. The scenario originally called for helicopter evacuation of the most seriously injured. Weather conditions precluded demonstrating that capability directly.

DNFSB evaluators did not attempt to evaluate Objective 3.e.

4. Emergency Response Facilities and Equipment

- Objectives:
- a. Demonstrate the adequacy of facilities, equipment, displays, and other materials to support radiological and chemical emergency response.
 - b. Demonstrate the capability to communicate with appropriate emergency personnel at facilities, in the field and off-site.

Discussion/Observations:

As noted in the discussion under Objective 1 above, the Incident Commander's Command Post was poorly selected, lacked space for the numbers of participants attempting to operate there, and was essentially unorganized, with no provisions for apprising or updating participants as the exercise progressed.

No real-time log of activities at the Incident Commander's Command Post was maintained. Notes were kept on whatever paper was available to the writer, but these were not maintained in any order (It should be noted, however, that the Radiological Control Manager's Secretary, who was part of his retinue mentioned earlier, did commence a record of RadCon activities late in the exercise). Reference materials, checklists, status boards, personnel accountability rosters, charts, drawings, and other materials available to the Incident Commander in his response vehicle were apparently not used at all.

Communications between the Incident Commander and the Emergency Operations Center were almost solely by hand-held radios, as was his communications with the accident scene. This arrangement was not suitable for the amount of radio traffic involved, and significant problems ensued. Dead batteries were common, and overloaded channels were evident. There were too few hand-held radios for the number of participants needing them (At one stage, there was one radio for 15 RCT's).

On-scene activities were not provided to the Emergency Operations Center routinely, nor was the information that was provided to the EOC given in a timely manner. As examples, information was never clearly communicated to the EOC concerning the magnitude and composition of the contaminant in the waste drums, the number of drums involved, the number of drums ruptured, the number of injured, the locations to which they had been evacuated, the number of fatalities and the extent of collateral damage, despite the fact that reasonably good information on all of these parameters became available to the Incident Commander in a relatively straightforward fashion as the exercise evolved.

The Emergency Operations Center at Rocky Flats is well equipped with state of the art communications, data processing, and display devices (See Trip Report dated 12/3/93). While the working-level Crisis Support Team members appear to be quite facile in using this equipment, the members of the Crisis Management Team appeared to be almost oblivious of its existence during this exercise. For example, as noted in the discussion under Objective 2 above, had the CMT members observed the video presentation available to them midway in the exercise, they could have perceived the general status of cleanup at the accident scene, even though details may not have been clear.

DNFSB evaluators consider that neither Objective 4.a. nor Objective 4.b. was achieved.

5. R adiological/Chemical Dose Assessment and Control.

- Objectives:
- a. Demonstrate the capability to continuously monitor and control radiation and/or chemical exposure to emergency workers.
 - b. Demonstrate the capability to develop dose projections and protective action recommendations regarding worker and public safety.

Discussion/Observations:

The discussion under Objective 1 noted the long delays in obtaining support from the Radiological Control organization. Under Objective 3, the poor quality of that response is discussed. Based on those assessments, DNFSB evaluators consider that neither Objective 5.a. nor Objective 5.b. was achieved.

6. P ublic Information

- Objectives:
- a. Demonstrate the capability to promptly alert and notify the public within the EPZ and disseminate instructional messages to the public on the basis of decisions by appropriate State and local officials.
 - b. Demonstrate the capability to coordinate the development and dissemination of clear, accurate, and timely information to the plant population, news media and the public.

Discussion/Observations:

DNFSB evaluators did not observe public information activities directly. Development and review of proposed press releases by the Crisis Management Team in the EOC was painstakingly slow and, in the view of DNFSB evaluators, often nit picking. As a result, information provided to the Joint Public Information Center was usually out of date by the time it was cleared by all reviewers. In some cases, it was also simply wrong. Comments by controllers and evaluators at the post-exercise were critical of time delays in issuing press releases and public information bulletins and of poor availability of knowledgeable spokespersons for press briefings.

7. O ccupational Medicine

Objective: Demonstrate the adequacy of the equipment, vehicles, procedures, supplies, and personnel of medical facilities responsible for transport and treatment of contaminated and/or injured or exposed individuals.

Discussion/Observations:

Emergency Medical Technicians were among the first responders, and proceeded to render assistance without delay. Triage was not apparent (casualties were evaluated in the order in which they were encountered), with the most severely injured victim receiving attention only after three others had been treated, more than 30 minutes after EMT's arrived on the scene.

The four seriously injured victims were readied for evacuation relatively promptly. Radiological Control support was called for within 30 minutes of arrival, but did not arrive until after evacuation had been completed. One of these casualties was designated as contaminated (by controller action, not by participant survey). That victim was appropriately segregated and wrapped in plastic before he was evacuated.

DNFSB evaluators did not observe activities at the medical facilities participating in the exercise. Post-exercise critiques were positive in tone regarding the participation of those hospitals.

DNFSB evaluators consider that Objective 7 was marginally achieved.

8. Reentry and Recovery

Objective: Demonstrate the capability to develop decisions on relocation, reentry, and return.

Discussion/Observations:

The scenario for Exercise "Ready 94" included a relatively extensive involvement in recovery activities. Specifically, it was anticipated that replacements for the broken power poles simulated in the scenario would be brought to the accident site, that the damaged truck would be towed away, and that the simulated damage to nearby buildings would be temporarily repaired. None of these came to pass because the exercise was summarily terminated prior to the time they could be accomplished.

In the Crisis Management Team, the latter stages of the exercise were devoted to outlining key points to be addressed in a recovery plan. A Recovery Manager was named, and he was en route to the EOC at the time the exercise was concluded.

Termination of the exercise was apparently at least partially a result of poor communication between the Crisis Manager and the Crisis Support Team. The Crisis Manager stated that he was terminating the emergency portion of the exercise, but that the recovery operation was to proceed. The staff apparently misunderstood that the exercise was finished, and many players immediately picked up their belongings to return to their normal duties. The resulting adulteration of the Emergency Management Organization led the Crisis Manager to conclude that it made better sense just to abandon the exercise than to attempt to reconvene the team. No controller action was taken during this period to regain control of the exercise.

DNFSB evaluators consider that Objective 8 was not achieved.

9. Security and Safeguards Measures

Objectives: a. Demonstrate the ability to provide protective force personnel and equipment to effectively support emergency situations.

b. Demonstrate the ability to respond to

conditions that may indicate a loss of SNM.

Discussion/Observations:

The original scenario called for the situation to be complicated by seizure of hostages by a disgruntled ex-employee, with the possibility of diversion of SNM by the hostage taker. In the interim between the original schedule for this exercise, that portion of the scenario was deleted, although this objective was not eliminated. Clearly, however, Objective 9.b. was not provided for in the final scenario.

That portion of Objective 9 associated with traffic control and personnel access restrictions has been discussed extensively under other objectives. Although control points were established promptly on Central Avenue, approximately 300-400 meters to the east and west of the accident, no control was established on lateral access roads, and that is where most of the participants came from.

Based on this lack of lateral access control, DNFSB evaluators consider that Objective 9.a. was not achieved.

10. E exercise Scenario, Conduct, and Control

Objective: Demonstrate the ability to develop a scenario, conduct, control, and evaluate an exercise that allows the participants to demonstrate the stated objectives.

Discussion/Observations:

The controller/evaluator team appeared to be well trained (for the most part) and competent. Pre-exercise briefings by the EG&G Emergency Preparedness staff were conducted professionally and thoroughly. Questions were few, but pointed, and responses were direct and clear.

Controllers, role-players, and evaluators were in position well before start of the exercise. Some free play injections by individual controllers took place despite pre-exercise instructions that individual controllers were not to inject ad hoc conditions into the exercise without specific clearance from the Lead Controller.

Post-exercise critiques by controller/evaluators was generally forthright and candid, although there were a few cases in which the DNFSB evaluators considered criticisms were excessively soft pedalled, and there were several cases in which a favorable conclusion regarding attainment of objectives did not appear to square with the criticisms presented.

Definitive conclusions by the DNFSB evaluators regarding the adequacy of EG&G's or DOE's evaluations is deferred until the written reports have been reviewed.