

THE MILE SHAKEDOWN SERIES OF EXERCISES

A COMPILATION OF COMMENTS AND CRITIQUES

PARTIAL
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REVIEWING
OFFICIAL: Paul Liplante, March 8, 1996
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I. Executive Summary

MILE SHAKEDOWN was a series of four inter-related interagency exercises designed to evaluate the federal capability to deal with domestic nuclear terrorism: **MICA DIG**, **EDRE**, **MILD COVER**, and **MIRAGE GOLD**. Planning was initiated in the summer of 1992 and the exercises took place with major participation by the Federal Bureau of Investigation (FBI), Department of Energy (DOE), Department of Defense (DoD), and Federal Emergency Management Agency (FEMA) over the period from December 1993 to October 1994. This report summarizes both the planning and the events—with particular emphasis on the difficulties encountered during the execution of the final field Exercise (**MIRAGE GOLD**) in New Orleans and on recommendations for follow-up actions and future activities. That particular emphasis is not to be interpreted as denigrating the capability of these agencies to respond rapidly to a very complex technical, tactical and crisis management event, but rather as recognizing that improvements are needed and can be achieved given adequate support. This report is also intended to serve as a reference to more extensive documentation elsewhere.

MICA DIG was the first of the series—a moderated and scripted seminar held in Washington, D.C., in December, 1993, primarily to illuminate interagency policy issues that might affect the plans and execution of the field Exercise. The intent was not to resolve such issues during the seminar but to bring them to the attention of the appropriate interagency councils for possible resolution. In this context the effort was successful, but the principal impact lay in intra-agency actions that were highlighted as necessary and achievable in the interim.

The no-notice Emergency Deployment Readiness Evaluation (**EDRE**), conducted in June 1994, was primarily a DOE effort to exercise the Nuclear Emergency Search Team (**NEST**) alert, notification, and deployment chain, up to the point of airlift ramp readiness. At each of the involved DOE facilities [(except the Los Alamos National Laboratory (**LANL**))] it was preceded by an administrative **EDRE**, which provided a review and an evaluation of the applicable procedures and documentation. A number of areas for improvement were noted. Facility-specific items were referred back to the individual institutions for corrective action while community-wide issues are being addressed by DOE **NEST** management.

Because economics dictated some pre-positioning of personnel and equipment at **MIRAGE GOLD**, an ancillary objective of the **EDRE** was to develop a realistic schedule for the introduction of **NEST** assets into play at New Orleans. For this purpose, a limited scenario was established that paralleled the **MIRAGE GOLD** scenario in some aspects. With some necessary adjustments for personnel changes in the interval between the **EDRE** and **MIRAGE GOLD** and for changes in destination and time of day, the deployment schedule was utilized successfully.

V. MIRAGE GOLD

A. Overview of MIRAGE GOLD: The fourth event in the MILE SHAKEDOWN series of exercises was the full-field Exercise: MIRAGE GOLD. The Exercise site, New Orleans, was selected early in the planning cycle by the lead agency, the FBI, as being close to the site of the 1996 Olympics for training purposes but not close enough to interfere with on-going activities. The Exercise included four major federal agencies, FBI, DOE, DoD, and FEMA, as well as limited representation from state and local governments.

[REDACTED]

The Exercise scope was restricted to field play, with all Washington-level activity simulated by the control organization. Major compromises, several dictated by cost constraints, were also imposed by prior planner agreement in several areas: limiting the DOE search activity; excluding initial intelligence and credibility assessment activity from the Players; and terminating the Exercise before any clean-up and site restoration activity could take place. The necessary simulations also extended to some technical and tactical activities, causing considerable confusion for the Players.

Approximately 850 people participated as Players, Controllers or observers, contributing significantly to the community understanding of, and participation in, the complex command and control relationships in a multi-agency operation. By the same token the complexity of a scenario designed to meet all of the interagency objectives was significant, introduced some confusion, and required numerous simulations. The balance struck in the planning for MIRAGE GOLD was also perturbed late in the game by the intrusion of real-world requirements on both the DoD tactical elements and FEMA regional assets. The resulting compromises were, at best, just that.

B. Planning phase. The planning for the MIRAGE GOLD Exercise was initiated by representatives of DOE/NEST, the DoD, and the FBI in the early summer of 1992. The site (New Orleans) was selected early in the planning stage, at the suggestion of the FBI. No formal site requirements were defined in the selection process. Thirty-six representatives from various groups within three of the major participating agencies attended the third planning meeting (in New

Orleans) on February 2-3, 1993, and agreed to the Exercise objectives.

Minutes of all thirteen Steering Committee meetings are retained by the NEST Training and Drills Management Working Group in the classified and unclassified files at SNL, Albuquerque.

The objectives of the Exercise were adopted by representatives of the FBI, DOE, and DoD in February, 1993, and were available to guide further planning. They required only minimal modification after that time. The FEMA was added to the planning group in January, 1994, at their request and submitted their objectives at that time. The development of an Operations Plan (OPLAN), Security Plan, Safety Plan, Logistical Support Plan, and other planning documents occupied a significant part of the time of the planners on the Steering Committee. Any provisions of those plans which committed financial resources of the agencies were voted on by the senior member from each of the agencies. No multiagency financial plan was developed during the planning stage; each agency assessed the financial commitments it was undertaking by the decisions made at the various meetings. A significant portion of the expenditure for logistics and site preparation for the deployment was underwritten by the DOE.

1. **Planning Organization.** The MIRAGE GOLD planning organization (the Steering Committee) under the direction of a Chief Planner (from DOE) was composed of four groups, each with special areas of responsibility, namely, the Scenario Working Group, Operations Working Group, Exercise Support Working Group, and the Washington, D.C. Working Group. The Scenario, Operations, and Exercise Support Groups worked with representatives from each of the four participating agencies throughout the duration of the planning for MIRAGE GOLD. The Washington, D.C. Working Group worked on the planning of MICA DIG and, when it was decided to simulate Washington, D.C. play in MIRAGE GOLD, this Working Group concentrated its efforts on identifying Controller needs in Washington, D.C. simulation cell for MIRAGE GOLD. In the execution phase of the Exercise this simulation cell was located in the Exercise Control Center (ECC), the Exercise control site.

The full text of the objectives, scope, and purpose of MIRAGE GOLD can be found in either the Planning Guide or the Operations Plan of the Exercise. A summary of those critical planning elements follows:

The purpose of MILE SHAKEDOWN was to test the capabilities of the U.S. Government to respond to a malevolent nuclear threat in the United States (Planning Guide, 1.2, page 2).

The scope of MIRAGE GOLD was to include field and headquarters elements from the major federal participating agencies in an exercise of at least three-days duration, with field activities occurring on a twenty-four-hour basis. All parts of each agency's normal response procedures would be exercised (Planning Guide, 1.4, page 3).

The objectives of MIRAGE GOLD were defined for "all agencies" and separately for each of the major agencies in particular. Each agency had additional "agency specific" objectives which were not disseminated in the planning process. A summary follows:

All-agency objectives: Test command and control against the existing memoranda of understanding and standard operating procedures. Test how the decisions of MICA DIG are incorporated into a field deployment. Evaluate Operational Security (OPSEC), protection, and security of personnel and equipment against plans and procedures. Evaluate transition of control from an investigative crisis management operation to nuclear evaluation activities against plans and procedures. Evaluate FBI intelligence functions, including a full Interagency Intelligence Cell (IIC), against existing plans, procedures, and training. Evaluate the interagency automated data system. Evaluate policies, procedures, and training for interagency public affairs functions. Evaluate the transition from the law enforcement phase to the consequence management phase against existing policies and procedures. Evaluate the interface between responding federal agencies against existing plans, procedures, and training (Planning Guide, 1.3, page 2).

DOE objectives: Test the DOE's ability to reach key decisions in a timely manner, based on existing plans and procedures. Evaluate operational and technical response capability without pre-installing Player equipment. Evaluate interactions between the Technical Operations Center (TOC), Working Point (WP), field teams, DOE command post (CP), and the Joint Operations Center (JOC), based on current plans, procedures, and training. Evaluate NEST field organization ability to resolve the threat problem within existing procedures. Evaluate the adequacy of training of deployed personnel for a short-fused problem and adequacy of their equipment.

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FBI objectives: Evaluate plans, procedures, and capabilities for the on-site forensic functions. Evaluate the plans, procedures, training, and equipment for the fusion of information flow between the FBI and other participating agencies. Evaluate the internal FBI notification process. Evaluate the MOUs, procedures, and training for initiation of formal and informal FBI requests for assistance. ~~Test the plans, procedures, training, and equipment for the fusion of information flow between the FBI and other participating agencies.~~ Evaluate the legal functions related to handling this type of an incident (Planning Guide, FBI, 1.8, page 6).

DoD objectives: Test plans, procedures, and training for interactions between DoD field teams, the DoD/CP, and the JOC. Test the current plans and procedures for key decisions in the field and at the Washington level. Evaluate the response plans, procedures, and training to handle an event. ~~Test the plans, procedures, training, and equipment for the fusion of information flow between the DoD and other participating agencies.~~ Test plans, procedures, training, and agreements for operational and technical response with a limited time and without pre-installation of response equipment. ~~Test the plans, procedures, training, and equipment for the fusion of information flow between the DoD and other participating agencies.~~ Test the plans, procedures, and training for interactions with the DOE (Planning Guide, DoD, 1.9, page 6).

FEMA objectives: Evaluate FEMA's onscene response coordination with the FBI, DOE, DoD, and other agencies. Evaluate FEMA interaction with DOE, other federal agencies, and state officials during implementation of the Federal Response Plan (FRP) and the Federal Radiological Emergency Response Plan (FRERP). Evaluate interface of federal responding agencies at the local and national levels in command and control, logistical support, public information, and state interface. Exercise concepts and operations of a Disaster Field Office and Joint Operations Center (JOC) with the FBI as lead federal agency. Evaluate operation of the Joint Information Center (JIC) during an incident which evolves from a law enforcement problem to a consequence management problem (Planning Guide, FEMA, 1.10, page 7.).

2. Planning Documentation Summaries. The Player organizations of the four federal, participating agencies were respectively led by individuals designated as the Energy Senior Official (ESO) for the DOE, Defense Senior Representative (DSR) for the DoD, Special Agent in Charge (SAC) for the FBI, and Senior Federal Official (SFO) for FEMA. The internal structures and assignment of personnel were determined by the respective agency managers, based on the demands of the scenario. The JOC is, by preagreement of the FBI, DoD, and DOE, divided into the Senior Command Cell (SCC), the Interagency Intelligence Cell (IIC), the Joint Information Cell (JIC), and the Operations and Support Cell (OSC).

playing; and responses to expected Player activities. In addition the control database was configured to allow real-time generation of new events by the Controllers to accommodate unanticipated Player action, to permit the addition of Controller notes and evaluations to the event as it occurred, and to record the changes in timing or content of an event as dictated by Player or real world activity. The flexibility and availability of IINNFO proved to be a real asset to the Controllers during the Exercise.

The first meeting of the Scenario Working Group as an interagency entity took place on December 7, 1993, and after eight more meetings the group finished its work on September 27, 1994. The Working Group also established several subgroups concerned with particular targets or phases of the Exercise, and these subgroups met in the interim. In addition to the responsibility for the MSEL and the Technical Support Plan underlying the material inputs to the MSEL, the Group provided the cadre for and interface to the Exercise control organization as it developed.

At the conclusion of the Exercise the MSEL contained about 1000 documents supporting the scenario, along with the accumulated changes and notes. This SRD database will not be reproduced in text files for this report but is archived in the Controller Notes group in the Lotus Notes format and is available to appropriately cleared personnel through IINNFO. Controller evaluations and recommendations contained therein have been abstracted into this report.

C. Scenario Brief.

The following summary of the scenario reflects the planning intent, as of October 1, 1994. Significant changes had occurred during the months up to this time--due largely to uncertainties in the details of venues and operational requirements--and further changes occurred during the play. Real world events intruded upon several of the agencies. Free play, where allowed and encouraged, occasionally took the Players in directions not anticipated by the Controllers. Furthermore, the necessary simulations required to keep play within pre-determined boundaries inevitably created some confusion. Some comfort may be derived from the observation that many of the most valuable lessons learned arose from the deviations from the script. These are reflected in Section VI and Appendix I of this report.

FBI New Orleans, in anticipation of a potential hostage/barricade situation at the house, requested deployment of the [REDACTED]. Additional investigative information was obtained while the [REDACTED] was being deployed, and planning for an assault on the house was initiated. Early in the morning on the 17th, instructions to kill the informant [REDACTED] were overheard and the tactical action was initiated.

Evidence seized at the scene and interviews of the rescued informant confirmed the group's intent to obtain foreign nuclear material and assemble several nuclear devices. The evidence also provided some possible leads to a maritime vessel through a charter boat operator. Based on this information the SAC requested [REDACTED] DOE technical advice. Further investigative work and analysis strengthened the case for an immediate and serious nuclear threat to New Orleans. NEST, EOD, and FEMA support were requested in late afternoon on the 17th. Louisiana state officials were notified of the establishment of a FEMA regional operations center.

The activity surrounding the assault early on the 17th also generated some media attention which quickly focussed on the FBI Public Affairs Officer (PAO) in New Orleans.

By early morning on October 18th the DoD tactical assets and initial NEST search and support elements had arrived and established their staging areas and command posts. [REDACTED]

NEST/EOD/FEMA elements established command posts and staging areas in an unused industrial complex across the Intercoastal Waterway from the NAS. The FBI Joint Operations Center was set up in the same industrial complex. By mid-day the airlift of NEST personnel and equipment was complete but the movements from the home facilities were attracting media attention.

Information developed by the continuing FBI investigation was used for planning and programming a number of search areas. NEST initiated the first search in the FAA noise abatement area near the New Orleans International Airport.

[REDACTED]

By late afternoon of October 18, a maritime target was located (anchored at Lake Michoud) and put under surveillance. [REDACTED]

[REDACTED]

Additional information [REDACTED] drew attention early on the 19th to a small flying service on an airstrip off Magazine Road in the Belle Chasse area. NEST searchers were directed to the area and got a "hit" during a drive-by. The FBI established surveillance on the flying service that was supplemented by NEST radiation monitoring of the road nearby. The [REDACTED] started planning for an emergency assault based on the observed activities.

At about noon, three men were seen leaving the flying service with a small but heavy bag which they loaded into a closed van parked nearby. The NEST monitors were activated as the van left the area and the FBI initiated mobile surveillance. The van was observed entering a property at 797 Walker Road, owned by the same individual who owned the house assaulted by the [REDACTED] on the 17th.

By mid-afternoon of the 19th the [REDACTED] had determined that there were no people left at the flying service after the departure of the van. The EOD has initiated access to the buildings. An Improvised Nuclear Device (IND) was found with information indicating it was armed and set to detonate at 1200 on the 20th. DOE/EOD technical working point activities were initiated to diagnose the device and develop a render-safe plan.

[REDACTED]

Authority to execute the [REDACTED] was obtained from Washington during the morning of the 20th. The Plan was successfully carried out before the deadline without the release of any radioactivity. Reentry at the site to verify safety and initiate the FBI forensic activity was to be undertaken immediately.

[REDACTED]

Surveillance was maintained at the Walker Road site and plans were made to assault that site and the maritime target [REDACTED] simultaneously to maintain the element of surprise. The terrorists at the two locations were in contact and known to be uncertain about the cause of the apparent failure of the device armed at the flying service.

VI. MAJOR ISSUES



Introduction: During and following the exercise series a number of comments, observations and recommendations were received from many of the Players and Exercise managers. [REDACTED]


[REDACTED] the editors have summarized and compiled all of the available and relevant ones in a later section. (See Appendix I). This section (VI. Major Issues) summarizes those issues considered to have the most significance and the highest priority for follow-up action. The reader who might have interest in more detail or in specific issues and problems not addressed in this section will find a broad array of participant commentary in Appendix I.

A. Policies and Procedures

1. Interagency Policy

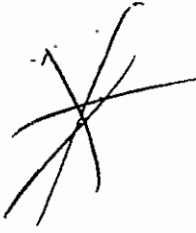
a. Interagency Agreements

 **Problem:** The interagency MOUs, directives, agreements, and planning/implementing documents for a coordinated federal response to a domestic nuclear terrorism incident were fragmented, incomplete, or non-existent. Specifically: 

- The FBI/DOE/DoD MOU has an older, approved version and a newer draft version, not yet approved. There was some confusion as to which version pertained. More to the point, neither version recognizes the continuing role of FEMA in the likely consequent management phase, [REDACTED]
 - Outside of DOE, there was no policy documentation to guide the transition from a NEST event to a consequence management and recovery event. By prior planner agreement, the EPA (the probable LFA in a consequence management phase) did not participate because the Exercise was to terminate before then. However, evaluation of the transition was a major objective and the LFA necessarily has a decisive role. Among those agreements that do exist, the FRERP is inadequate in incorporating roles and responsibilities where nuclear terrorism is the initiating event.
 - For lack of specific guidance, supporting roles in the planning for public safety were uncertain, with several agencies falling back to their responsibilities in other federal missions. The DoD expected
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a JHEC to be operative, based on ARG experience, including some DoD responsibility for effects prediction, while elements of DOE and FEMA were planning an emerging FRMAC. In fact, the sole responsibility for prediction at this stage lies with the NEST Containment and Effects (C&E) Team through the Science Commander (SCIC) and the Energy Senior Official (ESO).

[REDACTED]



- Although, by design, the state and local authorities were represented in a limited way in the Exercise in order to interact with the major federal agencies, there were no uniform plans or procedures to govern either the public health or law enforcement interfaces. State and local entities have significant and independent responsibilities for the populace in a major crisis and must operate with adequate knowledge. This requirement was not properly accommodated even within the acknowledged limitations of the Exercise. By the same token, the probable impact of public knowledge on federal operations was not adequately reflected.
- Although Washington-level activity was only simulated, the specter of independent and conflicting reports going up-channel from the field elements was real. Clear and coordinated channels to the highest level were not recognized.

Recommendations: MICA DIG was intended to illustrate and to develop these interagency issues at the Headquarters level in Washington, with the further intent of reaching resolution prior to MIRAGE GOLD. When this became impossible for whatever reason the planners agreed to simulate all Washington action so as to reduce the impact of uncertainties in policy on the field operations. To be prepared for future exercises or real incidents, some specific actions are necessary:

- (1) An immediate and intensive interagency effort between the major participants at both the Headquarters and field levels is needed to establish roles and responsibilities and to systematize and document the federal policy for nuclear terrorism.

- (2) Long-term continuity in interagency policy coordination must be established to allow for changing threats, tactics, and technology.
- (3) Uniform policy guidance must be developed to define and establish interfaces with state and local governments.
- (4) Simplified operational command and control channels to the highest levels in the federal government must be defined.

Problem: Some observations from the exercise series indicate that existing interagency agreements were not adequately supplemented by more detailed implementing procedures, were not well understood, or that operational problems arose that were not currently covered by approved procedures. Examples of the first two cases are documented elsewhere in this report. The latter case specifically includes the following:

- Although not intended by the planners to be a consideration in **MIRAGE GOLD**, the question arose regarding possible relocation of the JOC, CPs, TOC and MSA for safe separation from one of the Working Points. This would be a critical decision, as such a move would be disruptive in an urgent scenario.
- For key operations requiring Washington-level approval, standardized interagency reporting and request formats were not available, or generated, that addressed the appropriate issues and the available options.

Recommendation: The appropriate NEST working group, Plans and Operations (P&O), should develop initial plans and procedures on these issues for further interagency coordination and approval.

b. Joint Field Operations

Problem: The JOC, as sketched out in existing procedures, was never implemented by the FBI as lead agency. Inadequate coordination as a joint center significantly influenced player decisions and conduct in specific areas:

- The JIC was not allowed to function realistically in response to simulated public affairs activity. The simulated media were shut out in a mode contrary to all experience in real world disasters, particularly in light of state and local responsibilities.

- The IIC did not function as the interagency intelligence interface. Consequently, the Exercise intelligence information that was available was not easily exchanged between agencies or even recognized. No joint requirements were developed or tasked to the simulated intelligence community.

[REDACTED]

[REDACTED]

Recommendations: As noted under interagency agreements, there are a number of policy issues to be resolved. Until that is done, joint operations will not be effective and can not be evaluated until implementing procedures have been approved by all concerned and substantial joint training undertaken—including drills and CPXs at all levels. The interagency group charged with maintaining long-term policy continuity must also provide the continuing oversight of training and evaluation.



2. DOE Policy

Problem - HQs/NV/Lab/Contractor Interactions: Both the no-notice EDRE and MIRAGE GOLD Exercise illuminated some internal DOE policy and command and control issues to be clarified or resolved jointly within the NEST community. Specifically these include:




- Response times during the alert and notification phase were slowed by existing requirements for some communications to proceed in series, rather than in parallel.
- Requirements for and frequency of no-notice callouts and EDREs are not clearly documented to address the needs of the community.

- The appointment of field commanders and team leaders requires serial interactions throughout the community and therefore progresses slowly. Decisions are delayed by the time required for information flow.
- The conditions for, and level of, FRMAC deployment in the initial stages of a NEST incident are not clearly defined or documented. Neither the transfer of FRMAC command and control from a NEST planning operation to a post-disablement consequence management operation nor the post-disablement physical areas of responsibility of the NEST TOC and FRMAC are well understood.
- In spite of previous efforts to resolve their areas and times of responsibility, ARAC is still producing effects predictions during the pre-disablement phase in conflict with those of the responsible C&E field team.
- Once again the appropriate decision-making level for technical problems was questioned. Technical activities currently requiring ESO or higher authority approval could be knowledgeably approved at the joint Science/EOD Commander level.

Recommendations: Improvements in the sequence of alert and activation times and in initial information flow require a critical review of the existing procedures throughout the community and further drills. DOE/NV and the NAB should review and clarify the entire NEST/FRMAC relationship for nuclear terrorism incidents and reexamine the key decision list.

B. Deployment




Problem: The No-Notice Emergency Deployment Readiness Evaluation (EDRE) portion of MILE SHAKEDOWN defined inadequacies within the activation, notification, transportation, and deployment elements of NEST. These issues were identified prior to and separately from full field Exercise MIRAGE GOLD. It is important to address these deployment problems at this time, because pre-staging and pre-positioning of personnel and equipment took place during MIRAGE GOLD in an effort to reduce complexity and funding requirements.

It is the consensus of the evaluators of the various NEST components that the following deployment issues listed below should be addressed as community-wide issues which need improvement.

4. Evaluate the effects upon NEST in the event DOT exemptions are granted or not granted to DOE.
5. Determine commercial aircraft resources.
6. Conduct Air Mobility Command (AMC) training (Equipment Preparation and Hazardous Cargo) and designate key deployment personnel to attend.


C. Technical

1. Overview of Common Technical Problems



Access, Diagnostics, Disablement, Containment and Effects, Reentry, and Forensic technical functions conducted at the primary Improvised Nuclear Device (IND) ~~at the primary Improvised Nuclear Device (IND)~~ during NEST full field Exercise MIRAGE GOLD were not fully achieved by methods and procedures that would ensure adequate, accurate, or valid incapacitation of the IND with no or minimal radioactive dispersal. Evaluation of the primary root causes of the identified problems within the NEST technical mission indicated a series of common, interrelated events, activities, and errors. This section addresses these common problems. Following the identification of the common problems, further analyses follow in which the individual NEST technical areas are addressed.

Problem: In summary, the modes of information collection and critical decision-making did not create a high confidence level for complete mission success. Information flow at the Working Point (WP) was not efficient or free-flowing. Technical teams at the Working Point and Forward Staging Area (FSA) operated in closed cells as a result of the information flow process. The primary root causes that generated these conclusions and which were common throughout the NEST technical areas are:

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- Poor command and control
 - Inadequate Information and Intelligence Flow from the Joint Operations Center (JOC), Interagency Intelligence Cell (IIC), Operations and Support Cell(OSC), Senior Command Cell (SCC), and the overall NEST Field Operations and Management Structure. Inadequate funding, planning, and training by means of focused drills and exercises for FBI, DoD/EOD, DOE, and National Laboratories personnel

- Overall, ineffective technical response as a result of unrealistic scenarios and timelines, artificialities, notionalizations, and simulations which were created to meet complex interagency objectives
- Failure to establish rotating work shifts and inability to track on and off duty personnel
- Incomplete and incompatible safety equipment, operating plans and procedures
- Inefficient acquisition and distribution of critical IND data to NEST technical field and management personnel
- Inadequate understanding and performance of interagency interface and JOC formation
- Inability to detonate disablement explosive charges on the New Orleans (Belle Chase) Naval Air Station.

Recommendations: The lessons learned and problems identified during the MILE SHAKEDOWN, particularly MIRAGE GOLD, should be:

- a. Further refined, evaluated, and resolved by way of solutions derived primarily through the NEST Advisory Board (NAB) and the appropriate NEST Working Groups.
- b. Interface and coordination between Working Groups will be necessary to focus on the resolution of problems and the assignment of action items due to the common, interrelated inadequacies dealing with command and control, information flow, intelligence analysis and distribution, and interagency interface functions and performance.
- c. An agenda, action items, personnel, and due dates should be developed by each Working Group that addresses the resolution of MILE SHAKEDOWN problems.
- d. Root causes of some of the common problems originate from a lack of understanding and inefficient conduct of operations within the Joint Operations Center (JOC), Interagency Intelligence Cell (IIC), Operations Support Cell (OSC), and Senior Command Cell (SCC).


- e. These findings highly influence the effectiveness and timeliness of basic policy decisions and critical decision-making in a NEST operation. Additional efforts are recommended to design highly specialized training drills that allow practice of skills and reach resolution of specific problems.
- f. A dedicated training site is required to conduct these drills and exercises which would permit utilization of disablement explosives, radioactive sources, radiography, and other hazardous materials operations.
- g. These activities will provide the technical exposure to generate useful Standard Operating Procedures (SOPs), supply training to NEST personnel, and maintain proficiency. Review of the MILE SHAKEDOWN Final Report by the NAB and NEST Working Groups will be necessary to assign action items to the appropriate Working Groups.

2. Search

The search phase of MIRAGE GOLD was, by design, limited in scope, both in the number of teams deployed and in the time allotted for searching in the overall Exercise timeline. The primary objective was to evaluate the interfaces between search and other Exercise elements, such as the DOE CP and the FBI, rather than the technology and readiness of the teams. By prior agreement among the planners, local law enforcement support was limited, although normal procedure would have provided for more locals.

a. Interfaces


Problem:

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- The escorting FBI agents assisting the search were not aware of the search techniques or the safety and security requirements. Because of the Exercise constraints, the majority of them were not familiar with the local area. There were also substantial delays in obtaining escorts.
 - The DOE search organization did not coordinate surveillance and safety requirements adequately with the FBI before entering potentially hostile environments.

D. Information Management



1. Intelligence

a. Intelligence Flow

 **Problem:** Intelligence data regarding the IND and other technical data were not effectively transferred among the major federal agencies. Hence, it was not available to user groups within these agencies. There are several key reasons for this failure.

- The Joint Operations Center (JOC) was not properly implemented for MIRAGE GOLD. Of its four key components, only the Senior Command Cell (SCC) was functional. The Operations and Support Cell (OSC) and the Interagency Intelligence Cell (IIC) were not set up. The Joint Information Center (JIC) was nominally implemented, but the Center was poorly executed, i.e., it was too small to accommodate Public Affairs Officers (PAOs) from FEMA, DoD, DOE and FBI. Office equipment, such as phones, fax machines, TV monitors, etc., were too few in number to support a real emergency. The JIC played a role so small that media actors were not aware that it even existed until the fifth day of MIRAGE GOLD. Hence, there was no conduit for media interaction. The scenario became meaningless, irrelevant and unrealistic for FEMA, state and local participants.

- Since the IIC was not implemented, there was no forum for intelligence representatives from each agency to present problems, trade data, and develop priorities for the technical resolution of these problems. The results were apparent in key functional areas, e.g., tactical intelligence was never provided to appropriate members of the Device Assessment and Disablement Teams.


 - It appears that the FBI was narrowly focussed on the forensic aspects of technical intelligence, i.e., learning what was necessary to identify and capture the terrorists, not how the device was constructed or configured. The latter is, of course, key to DoD and DOE efforts to diagnose the device, predict its effects, disable it, etc. There were, for example, diagrams of the device firing system in an area searched by the FBI. They were either missed or not recognized as important to other elements of NEST. The data missed were critical to the Disablement Team; the lack thereof could have meant the difference between success or failure in the

deployment of disablement tools. ~~CONFIDENTIAL~~

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- Absent an IIC, or an effective JOC, there was little opportunity for interagency discussion, little pressure to develop and disseminate critical intelligence. Other agencies complained that the Bureau presented no intelligence briefings to reveal intelligence they had gathered.
- The final significant barrier to effective sharing of critical intelligence was the security procedures for protecting classified materials. These procedures unnecessarily hampered interagency cooperation and the flow of vital information. There is no established equivalency of security classification levels or person clearances among the major participants. Hence, each agency has its own procedures and cultural climate for safeguarding classified and sensitive information. Other agencies, especially FEMA, were prevented from obtaining critical information concerning the se diagnostics and disablement of the IND, as well as the evidence uncovered in the criminal investigation of the incident.

Recommendation: In order to solve a problem with the potential catastrophic consequences of a nuclear detonation, agencies must realize that all major NEST agencies need access to critical information.

- (1) They must develop procedures to reduce or eliminate institutional barriers affecting the flow of information.
- (2) An equivalency chart that correlates security classification level clearances from one agency to another must be developed to facilitate the appropriate information transfer.
- (3) The JOC and its critical subelements, the IIC and JIC, must be operational so that intelligence data can flow freely among DOE, FBI, DoD, and FEMA. Consequence management can be properly implemented only if FEMA is fully aware of the developing situation from the very beginning.

3. Information Transfer



Problem: NEST personnel at all levels of the organization cited the problem of information transfer, i.e., obtaining accurate, timely information regarding the developing situation. The NEST mission, responsibilities, and number of deployed personnel have grown dramatically. Information transfer, however, has not been appropriately stressed, available tools have not been used to maximum advantage.

Recommendation: NEST can function effectively only if its members are fully informed of ongoing developments.

- a. In Key Leader Training the necessity of regular briefings and situation updates must be stressed. Oral briefings should be personally delivered by managers, on a regular basis.
- b. Status boards and written situation reports should be updated and distributed on a regular basis, e.g., every four hours. These are especially important when radio and telephone communication are still being set up. IINNFO and other electronic aids may not be up to speed. During power outages or at outlying locations (the FSA, the WP) these may be the only sources of current information.
- c. A coordinated plan should be developed to integrate most of the video and map-related inputs into the "video wall" so there is a unique location where CP and TOC personnel can quickly grasp a current picture of the entire operation. News flashes and IINNFO net situation reports should also be displayed.

E. Training Qualifications

1. Training

Problem: The MILE SHAKEDOWN exercise series was designed to be the culmination of training of policy makers, technical/scientific personnel, command and control managers, and support staff from the various agencies who provide resources to the NEST and from the agencies that support and otherwise participate in that program.

- MICA DIG, the first of the four part series of exercises of MILE SHAKEDOWN, was a moderated and scripted seminar with high level participants invited from the Washington, D.C. area. In the execution of this exercise, several of the invitees delegated their roles in the panel


to persons of lower rank and presumably of lesser authority in the policy decision area of operations. Training and orientation of the players was required during the course of this exercise, which is not the purpose of an exercise.

- The Emergency Deployment Readiness Exercise (EDRE) was a Department of Energy no-notice call-out of the various technical, scientific, and logistical resources of NEST from the various sites from which these resources are staged. The call-out was intended to test alert capabilities, the staging of equipment, and the assembly of personnel without actual transportation beyond the various assembly areas. In several of the administrative EDREs personnel demonstrated a need for additional exposure to the call-out procedures and training in their respective responsibilities.
- MILD COVER was an interagency, communications exercise in which all of the primary federal agencies participated. Even though there were some personnel from various agencies who had not been previously exposed to a deployed NEST environment, the personnel were technical personnel who did not require training in the various tasks to which they were assigned. Some of the problems identified in MILD COVER were:
 - The communications arrangements and installations in MILD COVER were utilized during this Exercise and left in place for the MIRAGE GOLD Exercise. This process introduced a level of lessened reality for these personnel. Even though this decision facilitated the communications installation in the full-field Exercise, it did not provide the exposure of communications personnel to the stress of a crisis and the demands of arriving crisis management personnel for communications services.
 - The installation of the IININFO system was a time consuming process, which may be attributable to the fact that it was a new system and was unfamiliar to some of the technical personnel tasked with its installation.
 - Because five years had elapsed since the last major, interagency exercise involving NEST, several of the personnel at all player levels had not previously experienced this type of an event. This deficiency was more obvious in the command, control, and management ranks of some of the agencies than in the technical and scientific personnel. Technical and scientific personnel have more stability in their various

assignments and thus more exposure to the NEST environment. The training of personnel during an exercise in the proper conduct of their assigned duties is counterproductive to both the training process and the management of the situation.

- Several training sessions were conducted prior to MIRAGE GOLD in the operation of the IINNFO. A cadre of trained personnel was thus available to utilize that system; however, training of personnel in both the controller and player ranks in IINNFO operations was necessary during the exercise which detracted from the play of the Exercise and the performance of certain personnel.

Recommendations:

- 
- a. A major interagency, CONUS NEST field exercise should be conducted once every three years, as prescribed by DOE Order. The next such exercise is to be scheduled for 1997.
 - b. A series of interagency or agency-specific drills should be performed on an annual basis in specialized areas that would prepare personnel for a NEST deployment. These could incorporate classes, seminars, limited deployments, tabletops, etc.
 - c. No new operational support systems should be deployed during the next major exercise, unless and until personnel have been properly trained in their use.
 - d. NEST policy orientation sessions of top-level personnel, who will be advisors to the deployed NEST, must occur frequently so that an elevation of decision making does not require orientation and training of executive personnel during an actual nuclear crisis.
 - e. The DOE and DOE contractor community should conduct an annual EDRE call-out to assure an adequate level of readiness.
 - f. Each agency and contractor should conduct orientation and sufficient training in skill areas required of its personnel in a NEST deployment so that time will not be required during a deployment to train the uninformed.

1. Simulation/realism

Problem: The MILE SHAKEDOWN Exercise series was planned in four segments to permit specialized areas or programs to identify problems and rectify them prior to the start of the major Exercise (MIRAGE GOLD).

- This design, in and of itself, provided participants with several opportunities to face issues prior to their participation in MIRAGE GOLD and, in turn, detracted from the reality of handling the issues in real time without preview.
- The planning of an exercise must be structured to meet the objectives of the exercise. MIRAGE GOLD and the three smaller exercises of the series each had stated objectives. In addition, the various agencies had agency-specific objectives that impacted on the development of the series. The major Exercise, MIRAGE GOLD, had a complex set of objectives which included simultaneous tactical events for ~~several~~ federal tactical assets. ~~The set of objectives for the Exercise series were too complex and in some cases not measureable.~~
- The exercise series, due to fiscal constraints, was designed to be confined to a limited number of days. The complexity of the potential player activity, the fiscal/time constraints, the perceived need to include all elements of NEST in play to some extent, necessitated simulation, limited activity of some groups, and required notionalization of some activities in the planning and execution of the Exercise.
- The infrequency in the staging of major, multiagency NEST exercises necessitated loading (and perhaps overloading) the event with as many opportunities for various player activity as possible. The act of loading an exercise with player opportunities to be played out in a limited time period in and of itself introduces unrealism in that the "terrorist wouldn't give us unlimited time" to execute our many tasks and demonstrate our various skills.
- Specifically in MIRAGE GOLD, certain activities were not incorporated or were limited in their activity merely because those activities, if fully exercised, would have incorporated significant additional expense, would have exercised elements that already were frequently exercised, or would have forced the incorporated activities to perform in shorter time periods, thus imposing more unrealism than was desired.

VIII. Conclusions

The MILE SHAKEDOWN Exercise series was a difficult and expensive endeavor which involved over eight hundred people from many different agencies of local, parish, state, and federal government agencies. Often in tracking the exceptions in an event like this, we fail to take the time to recognize the many things that went right in the various activities. Recognition is due the planners of this series of exercises, who spent many months melding the requirements of their respective agencies within the limitations imposed by fiscal constraints, to develop exercises that incorporated many facets of a simulated terrorist plot with multiple nuclear weapons. Among the many recognitions due, as a result of this exercise series, are:

- Four major agencies of the federal government melded their respective resources into developing a solution for a major criminal threat to a United States population center that had potential catastrophic consequences.
- State and local government, though acting mainly in an advisory and observational role in MIRAGE GOLD, provided important insights into the interactions that would take place between all levels of government in an event of this type.
- Many dedicated individuals and groups of tactical, investigative, technical, scientific, management, and service people came together in a major deployment, demonstrated a high level of sincerity and dedication in performing their distinct responsibilities, and did so in an environment that was unfamiliar and perhaps even uncomfortable to many.
- The smaller-scale exercises of the series provided efficient and controllable experiences for defining the activities, training needs, logistical requirements, and liaison relationships that would exist in the full scale exercise.
- The logistical support to MIRAGE GOLD consisted of months of cleaning out abandoned buildings, resolving indemnification problems, rehabilitating structures, arranging numerous sites for a wide variety of activities, identifying housing for hundreds of people, and providing numerous services to the many Players during the Exercise. It was done well and all the participants appreciate the dedication of the people who provided it.
- The executives in the various federal departments who made available the fiscal and other resources to bring about this opportunity to test our preparedness are to be complimented for their recognition that the consequences for not being prepared for an event of criminal misuse of nuclear material or weapons in the United States are too great to ignore or minimize.

Patience, perseverance, and continued dedication are expected from all of the Players, Controllers, exercise managers, staff people, home teams, and executives who experienced some aspect of MILE SHAKEDOWN and know from their experience that there is work to be done, there are policies to be modified or formulated, there is research and development required to enhance success, there are people to train, there are liaisons to build, and there is trust to build in the interagency relationships. The citizens of our country expect the best from all of us. Thanks.

Appendix I: Critiques, Evaluations, and Recommendations

This appendix contains an edited collection of critiques, evaluations and recommendations from a large number of MIRAGE GOLD participants. The contributors were Players, Controllers, and Observers. Hundreds of written comments were received; all were reviewed by the committee assigned to prepare this after action report. Some were not included in the compilation for very straightforward reasons: they were trivial, impossible to read (handwritten or badly composed), clearly erroneous, or arrived too late for inclusion.

Those included suffered various degrees of editorial revision. Some are nearly *verbatim*, with minor changes in punctuation or spelling. In a few cases acronyms were spelled out for the reader.

Some comments were very long and wordy. Efforts were made to summarize the text and to reduce the statement to a Problem/Recommendation format for the convenience of the committee and readers who may wish to sample the "flavor" of the comments received. It should be noted that the committee has adopted a critique by exception. That is, we have focussed on the negative aspects of the Exercise and the specific solutions each author suggested to improve the problem area.

There were many strong, positive comments regarding MIRAGE GOLD expressed by the participants. These have not been ignored by the Committee. However, we feel that optimum performance of NEST depends upon carefully scrutinizing the problems we encountered and developing methods to prevent their recurrence.

The committee strove to preserve the viewpoint of the comments expressed by each writer. No attempt was made to improve the accuracy of the writer's observations, to express them in "politically correct" verbiage, to soften the tone of the writers editorial comments, or to review the credentials of the author(s). They are included here as a sample of the commentary from participants, without attribution, to avoid embarrassing the authors. Participants were asked to be honest and candid. They were. The committee, and NEST, will benefit from their candor because the problems and recommendations they reveal are the key to improving the performance of NEST. Readers who feel that the comments submitted are erroneous, myopic or just plain unfair have no quarrel with the committee members who compiled them, but with the authors who wrote them.

Recommendation: Realistic search sites should be provided for extended, non-specific lengths of time. Exercise planners should secure insurance which includes multiple, non-specific search sites whose owners would be automatically covered once they have been selected.

Problem: The inability to use high explosives and Special Nuclear Material (SNM) in the Exercise created artificial problems and confusion for technical participants.

Recommendation: Reconsider the Nevada Test Site (NTS) or the Idaho National Engineering Laboratory (INEL) as exercise locations.

d. **Indemnification:**

Problem: In MIRAGE GOLD the owners of the property where the Exercise was to be staged imposed stringent "hold harmless" requirements on the logistics planners late in the planning cycle. The DOE, FBI, and DoD would not assume the responsibility for such indemnification and ultimately EG&G/EM, a DOE contractor, was provided sufficient funds to purchase insurance to cover the exercise activity at the MIRAGE GOLD site.

Recommendation: In future exercise planning, the problems of insurance and indemnification for private property owners must be resolved early in the planning as a part of the site selection process.

e. **Agency commitment:**

Problem: Consequence Management was not sufficiently exercised during Exercise MIRAGE GOLD. In normal instances, consequence management planning must be led by the state. The state "owns" the plans and must resource any needs to the fullest extent of their capability. Unmet needs can be resourced from federal agencies when conditions warrant and appropriate authorities are in place.

Only FEMA (HQ and Region) and the DoD (led by the DSR) at the federal level possess sufficient information to address worst case scenarios. This planning basically consists of identifying and prioritizing potentially needed equipment and skills across the Emergency Support Functions (ESFs). These assessed planning needs may not fit with state needs, nor are these needs compared to available assets provided by the state. Requirements and resources cannot be rationalized without active state emergency planning.

How at?

Recommendation: The need for a federal IND Exercise with primary focus on consequence management and public affairs was first identified in MICA DIG in December 1993. Exercise MIRAGE GOLD was not seen by the participating agencies as the proper Exercise for consequence management and public affairs issues. However, MIRAGE GOLD did emphasize the requirement for such an Exercise. The next major IND exercise should focus on the consequence management and public affairs arenas. FEMA, DOE, FBI and DoD must jointly develop policies and procedures for the early development of consequence management for an IND incident.

Problem: During MIRAGE GOLD there were significant interagency operational problems, at both the highest levels and the working levels.

Recommendation: To sort out roles and missions and procedures there needs to be greater interagency interaction at both the policy and working levels. The NAB and the NEST working groups must dedicate serious effort to the resolution of interagency problems. We need to sit with the FBI and the DoD and frankly discuss some of the interactions, the shortcomings, and the proposed fixes. We then need to incorporate those changes into policy documents and make them binding during our next joint deployment.

Problem: We (DOE) are still troubled by the many voices of the DoD, which are not always in agreement.

Recommendation: Don't start a planning cycle unless roles and missions are defined for all.

Problem: EPA played only notionally during the Exercise.

Recommendation: Since the EPA would probably be the Lead Federal Agency (LFA) during the consequence phase, they should play a major role during future Exercises that include a consequence management phase.

Problem: FEMA, as well as state and local agencies, were kept away from detailed, technical knowledge of Exercise developments for security reasons. Hence, consequence management planning was distorted and downgraded.

Recommendation: All planners should have the same clearances and need to know. FEMA must apply for DOE "Q" clearances for their

key personnel. Red-badging FEMA Controllers, segregating them in a "joint agency" environment, and not treating them as coequals is counterproductive, not only during an exercise, but in the integration of that agency into real world applications of their expertise.

Problem: No multiagency financial plan was developed during the planning stage in that each agency assessed the financial commitments it was undertaking by the decisions made at the various steering group meetings. A significant portion of the expenditure for logistics and site preparation for the deployment was underwritten by the Department of Energy.

Recommendation:

1. A financial assessment of the common costs of an exercise should be determined at the outset of the planning process and an all participating agency financial plan or budget should be developed shortly after the objectives are adopted.
2. All participating agencies should agree to a more equitable share of the non-agency specific costs of site preparation, insurance coverage, and various common logistical costs.

Problem: The Washington D.C. Working Group of the planning group had made plans for active Washington, D.C. (WDC) play. MICA DIG was intended to be a precursor and staging platform for such active play on the part of headquarters personnel from the various agencies. Upon execution of MICA DIG, policy decision makers for the most part, delegated their roles in that Exercise to subordinates. Within two months of the execution of MIRAGE GOLD it was finally decided by the various headquarters elements of the principal playing agencies that there would be no active WDC play.

Recommendation: High-level commitment from each agency head should be obtained by the planning group early in the planning process for active play by WDC HQ in the major Exercise. A level of commitment should be obtained early in the process so as to preclude unnecessary, expensive, and disorienting reshuffling of the plans late in the planning process.

Problem: Because state and local authorities have direct responsibility for the health and safety of the local population, but do not operate under the control of the FBI, they can and will take action

[REDACTED]

Problem: The initial briefing, especially for the search teams, was somewhat sparse.

Recommendation: More background information should be provided to Players to make the intelligence database realistic.

Problem: During the planning for MIRAGE GOLD several problems occurred which should be avoided in planning future exercises.

Recommendation:

1. All Player groups and their activity should be written into the scenario and a single, master scenario should be driven by an integrated group of Controllers.
2. All agencies and other organizational entities that expect to field Player groups in a NEST exercise must participate as equal partners in the planning and scenario writing process and in the control process so that responsibilities and expectations of each Player entity will be known and can be followed by all other Players.

[REDACTED]

Problem: The Exercise scenario was unrealistic: a real world situation would have mandated early FEMA, state and local involvement. Critical life-saving information was not distributed.

X

k. Evaluation:

Problem: There exists no effective mechanism for collecting and utilizing the results of post-exercise evaluation meetings held at various NEST locations.

Recommendation: We must, in the future, ensure that post-exercise meetings throughout the NEST community are covered by evaluators or that information from them gets to the evaluators so that we do not risk missing critical data.

3. Player Activity in Exercise

a. Command and Control.

(1) Joint Operations Center

Problem: The FBI conducted Exercise operations in "imperial fashion," failing to communicate or coordinate with other agencies. The Bureau did not utilize the JOC. ~~CONFIDENTIAL~~ they provided little information regarding their portion of the play. They persist in handling NEST situations on an *ad hoc* basis.

Recommendation: The FBI should consider creation of a unique Command and Control Group, adaptable to NEST-type operations, to significantly enhance the probability of success.

Problem: The FBI SAC stated explicitly that he did not want a full-time DOE liaison at the FBI CP or JOC. This caused delays in communication and various disconnects in operations.

Recommendation: Develop a consistent and viable interagency procedure for implementing a Joint Operations Center.

Problem: The JOC was not effectively formed, configured, or operated during MIRAGE GOLD.

Recommendation: The establishment of a JOC in an interagency response setting is imperative. Senior NEST leadership must emphasize the importance of the JOC and the substructures that it identifies for command and control of the interagency intelligence sharing, operations tracking, media control, and command functions. All NEST training is keyed to this structure and for direction to

come from the Lead Federal Agency. That did not happen in MIRAGE GOLD.

Problem: The Players failed to establish and integrate all organizations into the Joint Operations Center (JOC). This was the primary cause of the inability to share and coordinate vital information and contributed to a lack of coordination by personnel on the ground.

Recommendation: Agency heads from FBI, DOE, DoD, and FEMA must ensure that a truly Joint Operations Center is established and operates according to the current MOUs, directives or other documents. In those cases where no policy exists for the inclusion of an agency in the JOC, those agencies must coordinate with the FBI to ensure they have proper representation in the JOC.

(2) ESO of NEST assets:

[REDACTED]

Problem: Packing up and moving the search equipment had a noticeable effect on the Players' attitudes.

Recommendation: The intensity of play must be kept up as an exercise reaches its termination.

[REDACTED]

Without a coordinator at this location, there was no effective way to transfer information to and from the CP, to control access to the WP, to quickly resolve issues and conflicts, to facilitate continuing support requirements, etc.

Recommendation: A DOE FSA/WP Coordinator is needed so that the Science Commander and the ESO have a single point of contact who is constantly aware of operations and the sequencing of events which involve DoD, FBI, and DOE. The Support Commander must rely on him to discuss continuing support requirements: communications, generators, lights, special tools, heavy equipment, status of each agency, fuel, water, tents, toilets, etc. Many scientific and support activities are initiated at the TOC; and thus feedback is needed from the FSA/WP to ensure that these activities are carried out and are consistent with projected timelines. A DOE voice is needed at the FSA/WP to quickly resolve issues with the EOD teams, such as access to the FSA and WP, shared resources, priority of staging communication elements, number of personnel at the WP, etc.

Problem: The logistics group was poorly used. Most of the logistics tasks had been accomplished prior to the Exercise by the contractor.

Recommendation: NEST should delete the DOE/NV position entitled "Logistics and Administration Director". The Support Commander ought to perform that function; he can be given a point of contact on the ESO staff if support from a federal representative is needed.

(3) FBI as lead Agency:

Problem: There were long delays and considerable difficulties in obtaining FBI escorts for the Search Teams.

Recommendation: The FBI at an exercise or incident site must be made aware of the Bureau's responsibilities.

Problem: During MIRAGE GOLD there was confusion regarding the amount of information which could be shared with FEMA to plan consequence management.

Recommendation: Policies and procedures for the orderly transition from one lead agency to another (following a possible detonation) are urgently needed.

Problem: When NEST responds to an IND incident the FBI, as the LFA, is precluded from sharing adequate information with FEMA or the affected state(s) for OPSEC reasons. Valuable time is lost, which could be dedicated to emergency planning, asset mobilization, evacuation, etc.

Recommendation: Policy issues must be resolved at the National level for the integration of FEMA and the state(s) into consequence management planning. Policies and procedures must be developed for requesting information, coordinating with key personnel, and obtaining local expertise, assets and plans so that consequence management consistent with FBI/DOE/DoD activities can occur simultaneously.

Problem: The FBI, DoD and DOE lack clear policy guidance regarding law enforcement, technical IND considerations, and federal, state and local political considerations. Improper release of information to the public could cause panic and uncontrolled mass evacuations. Interagency policy for decision making is inadequate.

Recommendation: Develop policy to guide FBI/DOE/DoD toward a recommended course of action for Presidential decision.

Problem: The FRMAC role is not well coordinated with other federal response agencies. The FRMAC director never met with the FBI during the Exercise.

Recommendation: The FRMAC must be treated as a federal center, not a DOE center. It should be located with FEMA, the state, and the potential LFA. It should have representatives from the FBI, DoD and DOE.

(4) Intelligence flow:

Problem: No real Joint Intelligence Cell was operational. The DOE representative was able successfully to pass assessments to the FBI net through the "airgap" but without the opportunity for discussion. [REDACTED]

Recommendation: Develop a consistent and viable interagency procedure for implementing the Interagency Intelligence Cell of the JOC.

Problem: DOE is not distributing adequate information to other agencies.

Recommendation: A joint DoD/DOE agreement should be established to determine the essential elements of information which DOE should automatically transfer to EOD.

Problem: FBI intelligence efforts were narrowly focused on the information required to identify and apprehend terrorists responsible for emplacing the IND, not on the technical information required to prevent the device from functioning as desired.

Recommendation: A DoD/FBI/DOE MOU to establish priority of intelligence requirements should be established. Preventing a device from achieving nuclear yield should have priority as high as capturing the terrorist subjects who placed it.

Problem: There is no clear guidance to define who is responsible for requesting national intelligence assets.

Recommendation: Procedures should be written to remedy this deficiency. The DSR will determine Priority Intelligence Requirements (PRI) needs, make requests to the tactical forces; these tactical forces should request national intelligence assets for the DSR. The SAC also will have access to national intelligence assets.

Problem: Security procedures for protecting classified materials unnecessarily hampered interagency cooperation and the flow of vital information. There is no established equivalency of security classification and clearances between agencies. Each agency has its own procedures and cultural climate for safeguarding classified and sensitive information. This prevented other agencies from obtaining critical information concerning the search, diagnostics and disablement of the IND, as well as the criminal investigation of the incident. In order to solve a problem with the potential catastrophic consequences of an IND, agencies must realize all participants need access to information.

Recommendation: All agencies must develop procedures designed to reduce/eliminate institutional barriers that affect the flow of information. This policy must be exercised frequently to ensure all organizations are able to fully interact. An equivalency chart that correlates security classification and clearances from one agency to all other agencies could be helpful.

Problem: The flow of information, both routine and operationally immediate, between the FBI, DOE and DoD was inadequate.

Recommendation: Deficiencies in information flow can be reduced by establishing information management SOPs within each agency and an interagency SOP defining information flow among the CPs of all the federal agencies.

Recommendation: FBI should increase the information provided to the DOE and DoD so they can improve their support to the FBI. The Bureau should conduct routine "worker-level" meetings with DoD and DOE in attendance.

Problem: The FBI provides us with intelligence information. We received very little intelligence about MIRAGE GOLD activities as the event unfolded. No intelligence briefings were provided that covered the intelligence that had been gathered.

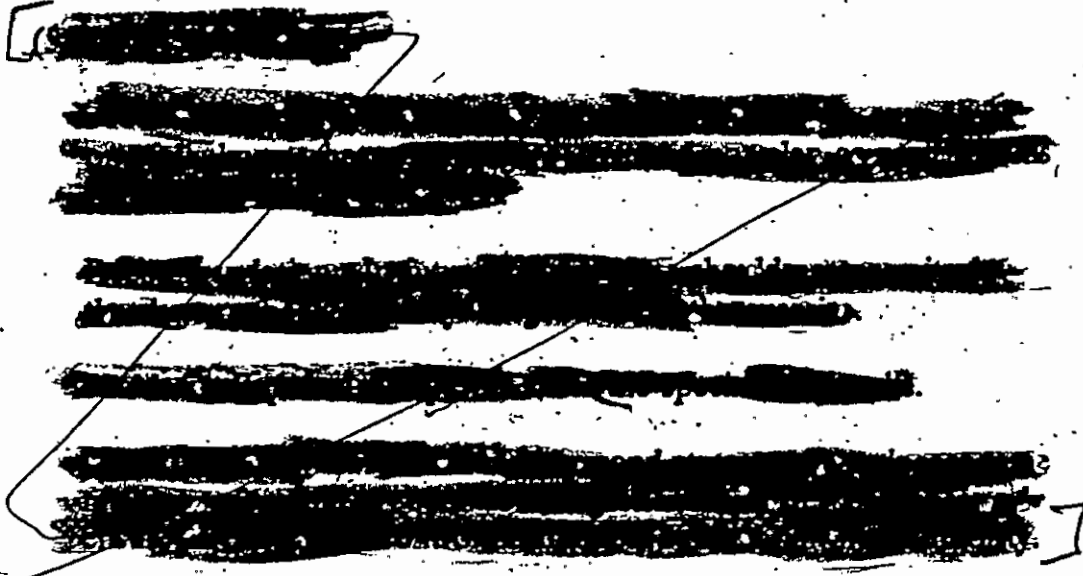
Recommendation: A functional intelligence providing cell in the JOC, i.e., an IIC, would have had representatives of all agencies, which in turn would have provided necessary intelligence to the subelements that needed it. The Interagency Intelligence Cell must be activated by the FBI in the next exercise to preclude the loss of technical intelligence, as occurred in MIRAGE GOLD.

Problem: The Advance Advisory Team did examine the documents made available by the FBI but did not visit the [redacted] site or question the surviving informant. As a result they may not have determined the scope of the operation for DOE.

Recommendation: Develop procedures and instructions for AAT members.

Problem: Technical intelligence did not get to the appropriate members of the Device Assessment and Disablement Teams.

Recommendation: Improved technical intelligence and information flow are required.



(6) Interagency Operations coordination:

Problem: The roles and responsibilities of the FBI, DOE and DoD are not clearly defined. The DoD's perception was that DOE was not willing to conduct actions that DoD deemed necessary.

- (1) The DoD pressured DOE to request REAC/TS support and wanted written justification for DOE's failure to do so.
- (2) DoD Health Physics personnel demanded immediate establishment of a JHEC to effect health hazards predictions for consequence management. DOE decided the issue should be a NEST policy decision, established outside the play of the Exercise. DoD was dissatisfied.
- (3) The DSR directed DoD to develop a plan for the disposition of the IND, which was done. DOE appeared to regard the plan as unnecessary because DOE had full responsibility for the disposition of the device and had its own plan underway.

Recommendation: At the very highest level, DOE, DoD and FBI need to define and publish the roles and responsibilities of these agencies and outline the procedures for execution of those responsibilities.

Problem: During the approval process for entry and/or disablement, a "Countdown Checklist" was not available for higher level decision-makers such as the Attorney General, Secretary of Energy, the Secretary of Defense and the President so they could be aware of the steps involved and which they could have used as a basis for their on-scene decisions.

Recommendation: The appropriate working groups should prepare, coordinate and distribute a "Countdown Checklist" to the appropriate decision levels for use in the approval process.

Problem: The President would receive separate, unconsolidated situation reports and recommendations from the Attorney General, the Secretary of Energy, and the Secretary of Defense. The President could be presented with confusing or conflicting recommendations.

Recommendation: Justice, Energy and Defense should convene an interagency working group, monitor the unfolding situation, and prepare consolidated policy recommendations and situation reports for the President.

Problem: Key NEST policy and procedural documents were not followed or did not exist for MIRAGE GOLD. The Key Decision List was not followed; NEST SOP 5 was not followed at either HRT target. The following documents either do not exist or need to be revised:

1. MNWE MOU - exists only in draft form and does not include FEMA or the DoD-T
2. JOC Implementing Procedures - incomplete
3. Forensics SOP - incomplete
4. Interagency Public Affairs Policy for a MNWE - does not exist
5. Turnover Procedures ~~CONFIDENTIAL~~ incomplete

Recommendation: A number of NEST documents need to be revised and several new ones need to be written. Key NEST leaders need to ensure that policy and procedural documents are used appropriately in the field. NEST SOPs must be stated in a more simplified context. They had not been broadly briefed. The NEST principals expected to execute them did not understand them.

Problem: There was slow response throughout the NEST community during the No-Notice EDRE. Notification, activation, and deployment procedures were not well known although many were documented. In some cases, NEST field personnel were not notified of mobilization for hours.

Recommendation: Notification and deployment procedures should be accelerated by proceeding in parallel communications rather than series.

Problem: The need for support equipment from REECo, the Medical Team, the US Weather Service, and the EPA was not defined during the No-Notice EDRE deployment. Not all agencies or their field elements were notified. U.S. Air Force Security personnel at some bases were not notified.

Recommendation: Support elements (equipment and personnel) outside of DOE and National Laboratory circles needs to be defined and documented in NEST deployment plans. This includes notification of U.S. Air Force and other appropriate security personnel.

Problem: The FBI took too little interest in the search process, both in setting priorities and in personnel protection.

Recommendation: We need to prepare a checklist for the FBI and explain to them more clearly what they will be expected to do.

Problem: All parties were not well versed in the content of the FBI/DOE/DoD MOU. There was also uncertainty as to which was to be used, the older signed version or the newer unsigned version.

Recommendation: We should develop or find appropriate Command and Control training for the DOE NEST/DoD EOD management team.

used, the state of the IND after disablement and the continuing need for protective gear by the reentry team. The root cause of the problem is the organization of the TOC, which is configured into physically separated cells of distinct functional responsibility and agency affiliation. This physical separation of technical and agency leadership impedes communication and is exacerbated by the inclination for face-to-face communication in the TOC.

Recommendation: NEST should form a collocated joint technical operations team, consisting of the Science Commander, EOD Commander, and all technical team leaders. This would facilitate communications and transitions across technical/agency cells within the TOC and better reflect the integrated nature of much of the TOC activities. The integrated team should be at a central TOC location, not dispersed within its cells.

Problem: Searches were deployed too rapidly for adequate briefings on potential dangers, the search plan, the search equipment setup, and FBI/DOE coordination.

Recommendation: The scenario should be designed to force search leaders to deploy more deliberately. Training should be designed to include more realistic interfacing with law enforcement including penalties for unrealistic procedures. NEST managers should ensure that an operations cell within the JOC controls the deployment.

Problem: Searchers were too brave or too careless in a potentially hostile environment. They searched without effective FBI concurrence and protection.

Recommendation: All aspects of NEST searcher training should emphasize realistic interfacing with law enforcement and a more realistic view of actions to be taken in a potentially hostile environment.



Problem: It was observed that various Player groups were on eight hour shifts, others on twelve-hour shifts, and yet others had no limit

on their work periods. It is realized that this problem is generally considered a prerogative of the command staff of each agency and a Player choice. However, the fact that it occurred was a disruption to interagency communication and command.

Recommendation: It is assumed that in a real life, multiagency deployment of the significance of resolving a nuclear threat against a major population center, that central command would dictate the availability of adequate personnel and the process of shift change to obtain optimum communication and consistent operations. At the next exercise this detail should be agreed on, in advance, by the planning staff so as to better simulate reality and preclude the introduction of an additional element of confusion into Player operations.

Problem: The chain of command was either not understood or direction from that entity was not followed.

Recommendation: An interagency group should look at the various aspects of command and control of all federal resources, as well as the command and control in the NEST technical community, to determine if better communication, command, and control can be conveyed to the technical elements in the NEST community.

Problem: Time required to get in and out of the Working Point was excessive.

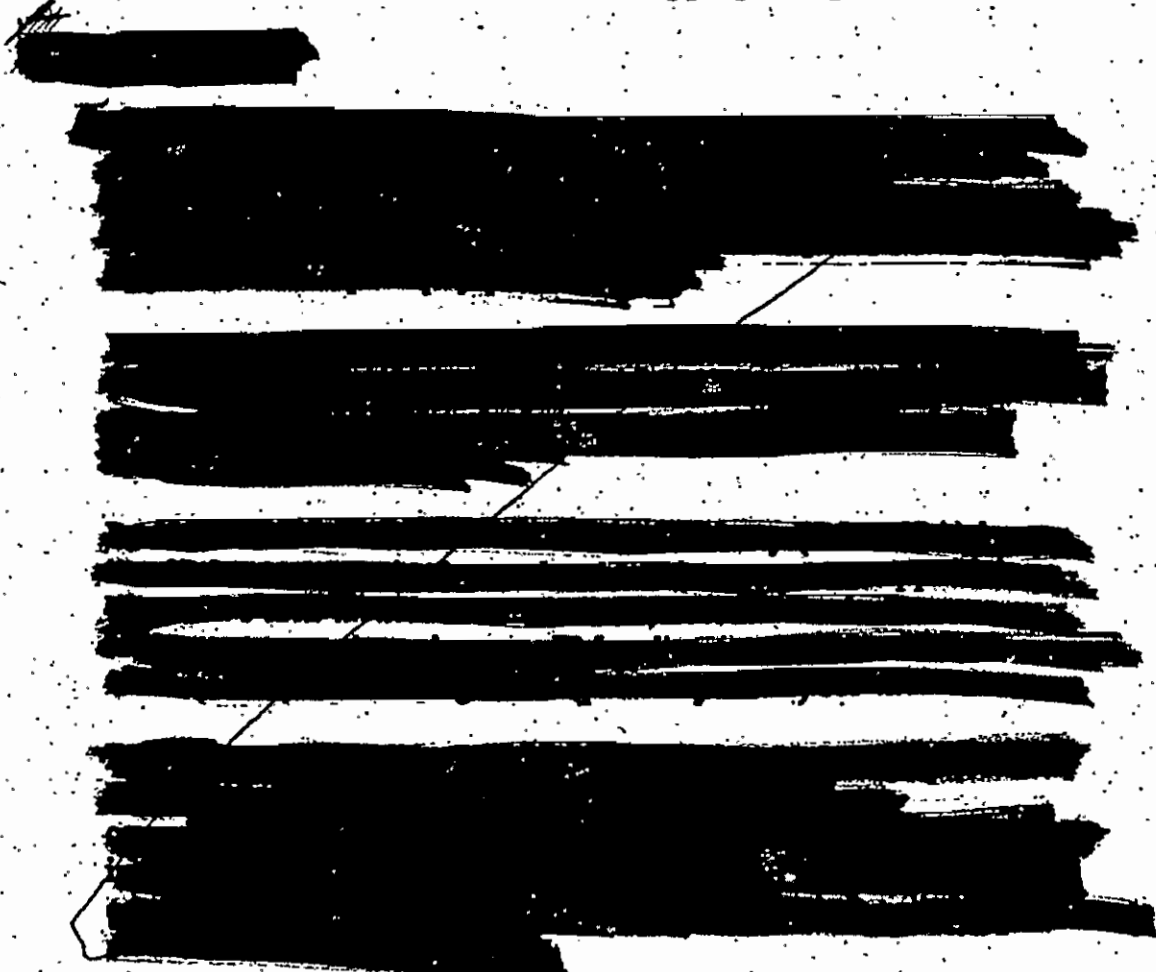
Recommendation: The appropriate working groups of NEST, ~~in coordination with the Force Element~~ should review working point ingress and egress procedures to determine if there were delays in admitting personnel with essential duties during the MIRAGE GOLD and if some coordination of essential functions at the working point needs to be better defined or otherwise streamlined.

Problem: No place was designated as a holding area or staging area for searchers and other personnel who were not immediately needed but were on standby for deployment to one task or another. Personnel in this area would be out of the way of other TOC activity, would be available for assignment and briefing for assignment, and would be checked in at the beginning of shift and checked out at the end of shift.

Recommendation: A common crisis management process in a situation involving multiple agencies and large numbers of personnel is a clearance point for new on-shift and going-off-shift personnel, a holding area for personnel awaiting assignment, a general briefing area to keep staff apprised of progress, and a staging area for teams that are deployed. This type of area should be defined not only to facilitate personnel management but also to reduce the congestion in the TOC, CPs, and other areas where other work is being performed.

Problem: The absence of tested procedures for MIRAGE GOLD and forensics created problems.

Recommendation: We should not field elements in an exercise until we have established procedures for the function and demonstrated them in a drill with the appropriate players.



FINAL DRAFT

Problem: NEST participants lacked descriptions of their general duties. They had no written guidelines to define their responsibilities. Hence, they were ineffective performers.

Recommendation: NEST should publish, as quickly as possible, the basic job descriptions, duties and responsibilities for each position. Also needed, are interface guidelines for those who support joint-agency operations.

Problem: At the working level there was little interaction among FBI, ~~DOE~~ DOE Players. Procedures for the exchange of (and destruction of) classified working papers were not available.

Recommendation: Procedures for handling classified working papers should be prepared and distributed. Working-level interagency communication channels need to be developed and promoted during an exercise.

Problem: The Exercise Disablement Plan addressed primarily the tactical need of the Players. It did not develop a number of issues of concern to Washington policy-makers, such as other disablement options, hazards assessment for the chosen option (and for other potential options), impact on the civilian population, actions to address their concerns, etc.

Recommendation: Headquarters of involved agencies should review the requirements of the Washington decision-makers and prepare a checklist of requirements for inclusion in the Disablement Plan or a separate document.

c. Logistical support of NEST activities.

Problem: Name tags are needed for all players in the NEST community, especially at the FSA and WP. Identification of personnel at the FSA and WP was highly difficult. Closed communications resulted.

Recommendation: Badges should be provided that show name, function, and field team group. These should be dispersed to all NES personnel.

Problem: Moving the TOC/CP would be too disruptive in a real incident.

Problem: FBI continually assigned Search Teams to perform "hot pursuits". The FBI mobile teams followed the searchers in their vans, creating a high-profile situation. Too many Teams were directed to converge on a suspect location simultaneously.

Recommendation: The FBI field teams need to be better trained in handling and supporting NEST search operations.

Problem: NEST Search Teams did not always locate the Exercise targets without some input of Controller injects. NEST Search Teams entered target areas with purpose and enthusiasm but not always with regard for personal and public safety, knowledge of the terrorist activity and location, or other security concerns.

Monitoring of the radios during the play indicated that the Search Team was not provided intelligence that would guide their activity. The risk to the searchers personal safety, as well as the risk that they might unintentionally warn terrorists of pending government activity, were both real because of the dearth of intelligence furnished to them.

Recommendation: Better communication and intelligence from the JOC to the Search Teams is critical. Efforts must be made through training and interagency liaison to ensure that the Search Teams are not "left out to dry" in a hostile environment. A reiteration of the obligation of the FBI to ensure the safety of the Search Teams as defined in the MOU must be emphasized to all participating agencies.

Problem: We had too many vehicles and personnel in a neighborhood during search operations.

Recommendation: Search managers need to reduce vehicle and personnel congestion to minimize the possibility that onlookers (and potential terrorists) may become suspicious.

Problem: The DOE and FBI define "roadside monitoring" differently.

Recommendation: The term "roadblock monitor" should be discontinued, to be replaced by "roadside monitor". DOE and FBI need to concur on the definition of the procedure involved.

Problem: Search support personnel were in a building separate from the TOC, where search Controllers were located.

Recommendation: Search support and search Controllers should be in the same place to simplify communication and minimize confusion.

Problem: The liquid nitrogen supply for screening unit detectors can not last through a 12-hour shift.

Recommendation: We should have dewars which last longer or additional liquid nitrogen in the field. Another solution: swap units in field or run the search crews on shorter shifts. (The dewars on the new screening units last 12 hours, but some searchers were in the field as long as 17 hours).

Problem: The RISA software may require viewing the spectrum to identify radiation sources, particularly if the photopeaks are small.

Recommendation: For the problem photopeaks, we should implement one or more of the following solutions.

1. Improve RISA's ability to identify small peaks in the spectrum;
2. Send experienced personnel into the field for onsite evaluation;
- or
3. Use the radio modem to send spectra back to the TOC for detailed inspection.

Problem: The search Dispatcher/Debriefers needed a "runner" to handle some of their tasks.

Recommendation: Assign a person to help with Dispatcher/Debriefers.

Problem: The FBI had no understanding of NEST search and had to be constantly briefed.

Recommendation: The NEST briefings to the FBI field offices should be continued.

Problem: The relationship of the Dispatcher/Debriefers with the Search Director Coordinator, and Controller, was confusing.

chronology/documentation form, followed by the Search Reporting Log.

Problem: Searchers did not always have team Dispatcher/Debriefers radio/telephone number.

Recommendation: The daily search team roster printouts should include the radio net designations and telephone numbers for the team's Dispatcher/Debriefers and the appropriate PIO.

Problem: The mobile Search Team had no local drivers.

Recommendation: The mobile Search Teams should have local law enforcement drivers.

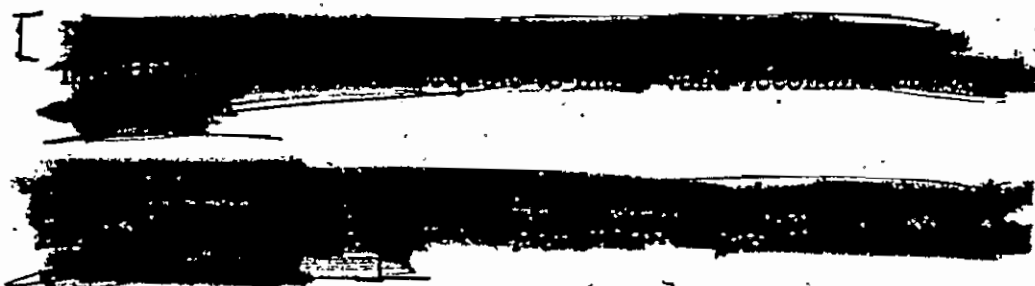
Problem: There was a problem with the integration of the FBI and the Search Teams.

Recommendation: The FBI attached to the NEST Search Teams should be included in the search briefings and their role identified.

Problem: Search Teams were given instructions that were cancelled and then reinstated. Delays were significant in the deployment of Search Teams. Maps for use in search were of poor quality and generally not available to Search Teams.

Recommendation: Search managers need to assess their communications with the FBI or NEST technical managers to enhance the channels which define deployment of Search Teams and equip them with necessary documentation to do their job.

(2) Diagnostics:



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(3) Disablement:

Problem: The Disablement Plan was incomplete from an operational perspective. It addressed the scientific aspects of the process but did not provide the direction for interaction of DoD/FBI assets—what to do, where to be, at what times, Safety/evacuation annex, fallback options, etc.

Recommendation: All NEST agencies develop a more robust template for this type of plan that addresses actions/activities and requirements for all participants. This must be a joint operations plan. The drafting of this plan must be completed soon enough to receive a high, multi-agency review prior to publication.

Problem: The timelines in the Operations Plan of the NEST Initial Response SOP were viewed as unrealistic by the Disablement Team.

Recommendation: The times assigned to the Disablement Initial Response operations plans should be derived from specifically focused drills.

Problem: It did not appear that there was a Disablement person on the recovery team with EOD to determine whether a successful

Problem: Portability of computational equipment (for C&E) carries penalties: speed and convenience are inadequate.

Recommendation: Fast printers, larger displays and faster computers are needed for timely response.

Problem: Once the device was foamed and it was decided to do a surgical disrupt, there was no way to get rid of the foam. This prevented early reentry for forensic purposes.

Recommendation: One must decide carefully on the necessity of foaming. For a surgical disrupt, no foaming is necessary. An effective method of dispersing foam rapidly is needed.

(5) Public Management and Evacuation

Problem: The FBI did not execute existing federal plans requiring notification of state authorities when there is a real or potential hazard to the public. It is a drastic mistake to assume that NEST technology and procedures will always succeed, resulting in zero nuclear yield.

Recommendation: The FBI and DOE should brief emergency response leaders acting as liaisons to NEST. FRMAC could assist in this process.

Problem: At MIRAGE GOLD we were ill-prepared for the possible relocation of the CP and TOC.

Recommendation: All information (regarding equipment and supplies) accumulated during deployment needs to be regularly updated so that a re-deployment checklist can be immediately provided, if required.

(6) Re-entry:

Problem: Reentry into the foam did not go smoothly. This was less the fault of the individuals involved than of the lack of planning and training for this situation.

Recommendation: Plans for more extensive reentry training are underway.

(9) Consequence Management:

Problem: The conditions for and level of FRMAC deployment are uncertain, not established or documented.

Recommendation: If the NEST is deployed, FRMAC should also be deployed. Non-NEST assets should be upwind, perhaps 100 miles away. FRMAC assets should be split, some at this remote location, some at the NEST CP.

Problem: NEST lacks a well-defined process for effective consequence management.

Recommendation: NEST should include a Joint Consequence Assessment Team (JCAT) or a Joint Consequence Planning Team (JCPT), with representatives from FBI, DOE, FRMAC, FEMA, state and potential LFA (e.g., the EPA). The team should meet regularly, as the crisis situation develops, to coordinate plans and actions. The DoD organized such a team during the Exercise; it worked very well.

Problem: After device disablement it is not clear what is considered on-site or off-site and who has jurisdiction.

Recommendation: After an IND has been disabled NEST should define these terms as the Accident Response Group (ARG) does. Then let NEST, specifically LANL, LLNL and SNL, handle radiological measurements on-site and FRMAC handle measurements and assessment off-site.

f. Media and public affairs

(1) Joint Information Center:

Problem: The FBI did not institute an interagency JIC and thus the agencies did not have the opportunity to cooperate on media-related issues. There, in fact, was no media play, which was totally unrealistic on the part of FBI management.

Recommendation: Training and operations orientation of FBI personnel must occur to help develop an appreciation of their lead position and the dependence of all NEST organizations on their leadership. DOE, DoD, and FEMA would not have been permitted by their headquarters to stand mute against the international press in a situation like this. The FBI has control of media releases according to the MOU, but must face reality.

Problem: The FBI approach to the response to the media is unrealistic. This took much of the consequence play out of the Exercise.

Recommendation: DOE is in a much better position to understand the NEST requirements than the FBI and has an obligation to provide to the FBI a checklist or the information on what the FBI should be prepared to face.

Problem: The JIC was too small to accommodate PAOs from FEMA, DoD, DOE and FBI. Equipment (phones, TV monitors, etc.) was insufficient for a real emergency situation.

Recommendation: The JIC should be large enough to accommodate PAOs from participating agencies, with sufficient equipment to handle their needs.

Problem: So little useful information was released to the media that speculation resulted in public alarm. During a real incident, speculation would have caused panic reactions and significant problems.

Recommendation: Adequate information must be released early in an incident, followed by regularly scheduled Public Affairs (PA) briefings.

Problem: It was not clear to some of the Players what they could and could not say to the media or public.

Recommendation: There should be a briefing at the beginning of the exercise which explains what can be said to outsiders.

Problem: All-agency objective 1.3g was not satisfied in the Exercise. The FBI would not respond to injects designed to test the objectives initially and later responded with "no comment/no problem". No media conferences were held and the media actors were not informed of the existence of a Joint Information Center until the fifth day of the Exercise. To put it in proper perspective, the pressures exerted by the media actors were small compared to those which will be imposed in the real event.

Recommendation: Interagency policy and guidance for public affairs in domestic nuclear terrorism must be developed further.

(2) Interagency Activity:

Problem: Only one Public Affairs Officer (PAO) was provided by 5th Army Public Affairs. Second shift support was provided by one PAO from the Defense Nuclear Agency Advisory Team (DNAAT). The latter's expertise was not available to the DSR when he was off shift.

Recommendation: The 5th Army should provide two PAO officers, allowing the DNAAT PAO to be available to the DSR during peak hours and immediately on call at other times.

Problem: The FBI successfully blocked any media interaction during the Exercise by refusing to release information or allow anyone else to do so.

Recommendation: Although the DOE and DoD have learned to act cooperatively, the FBI operated independently, to the detriment of the overall NEST operation.

(3) Local and state government incorporation:

Problem: All of the media play was handled by the FBI and DOE public affairs was not consulted.

Recommendation: The FBI in charge of an exercise or incident site must understand their responsibilities and the interactions needed with DOE.

Problem: The FBI unrealistically expected to withhold information from the public. In a real incident this will not be allowed by the state and local officials.

Recommendation: An honest and realistic policy toward the release of certain information to the public must be practiced in exercises.

Problem: State and local governments need early notification so that adequate consequence management planning can be accomplished. There is no policy guidance to advise NEST regarding the conditions for or timing of such notification. The decision to not notify state and local governments during MIRAGE GOLD was unrealistic and prevented adequate development of consequence management planning.

Recommendation: Policies applicable to all agencies involved in a NEST emergency must be developed at the national level to establish the conditions and timing for notification of state and local governments.

Problem: If a high-profile, high-visibility IND incident occurred in the real world, the reluctance of federal agencies to share critical information with state and local authorities would cause conflict, confusion and chaotic response from FEMA, the state and other critical agencies.

Recommendation: NEST policy regarding INDs must require informing the governor of the affected state as quickly as possible. Failure to do so will irreparably destroy Federal Lead Agency credibility.

g. Prior Training and Qualifications

Problem: Lack of NEST funding and training combined with growing requirements in other parts of the NEST mission makes it increasingly difficult for Working Point field teams to coordinate, communicate, and accomplish their mission.

Problem: NEST personnel need improved awareness of and training in NEST procedures.

Recommendation: Follow-up training and drills can be enhanced with the development of a NEST training facility and further development of training courses. We need to practice in smaller groups more often. We tend to reinvent the wheel too often in a major exercise because we have new personnel who have no institutional knowledge of what happened the last time and what worked or failed.

Problem: We need to be honest with ourselves. Some of our technical operations did not work as well as they should. Some of the processes we have developed must be examined for practicality and effectiveness. Time must be the determinant in whether or not a process is meaningful. Some of our processes take up too much time.

Recommendation: An exercise is a test of proficiency, not a training session. We should not permit new personnel, new and untested equipment, and new processes and procedures in an exercise. NEST personnel should arrive on site fully trained and equipped, ready to execute appropriate procedures.

Problem: We need to check the actual MIRAGE GOLD Player roster against the Deployment Authorization List from October 1 to see how many of the Players would have actually been authorized to deploy. The DAP will only be meaningful if we incorporate it into our operation. I strongly suspect that a critical portion of the technical capability would not have been authorized for deployment under DAP.

Recommendation: The fact that we now have a DAP program defined creates an even greater burden on the managers of NEST to ensure that the program is fully implemented and enforced. In the legal world, utilizing people who do not meet the criteria for such utilization appears in a court of law as negligent management and is the grounds on which many liability suits are won.

Problem: DTRG equipment to support the EOD Sophisticated Improvised Explosive Device (SIED) Task Force is aging and personnel are inadequately trained in its use.

Recommendation: Funding should be provided for new equipment, especially for secure Satellite Transmission (SATRAN) capability, Passive Infrared (PIR) detection and kill capability. Additional training funds are needed to upgrade and maintain operational skills.

Problem: The [redacted] staff lacks adequate communications equipment and a sufficient number of trained staff personnel.

Recommendation: A secure communication system, compatible with those of the FBI and DOE, must be provided for communications with the support agencies. Various options are available. The DSR staff should be expanded and divided into two elements: 32 personnel, co-located with the LFA, to provide IND response, plus 28 personnel located with FEMA to support consequence management. The former, with technical, nuclear safety and security skills, should be drawn from

Funding should be provided for a stand-alone communications capability, as well as for a stand-up exercise and periodic sustainment exercises for each staff. Chemical and medical plans officers should be included on the DSR staff to handle mass casualties from an IND detonation.

S **Problem:** Senior FBI [redacted] officials, or even DOE managers who do not have a technical background, may make judgments which are seriously flawed because they do not fully understand the technical implications of their actions. This syndrome is equally apparent at lower levels of NEST as well, a fact noted by observers of operations at the Working Point, public affairs activities, search, etc.

Recommendation: NEST should create a series of canned charts and short videos to simply and graphically illustrate key technical problems, issues, and operations. Those in authority can quickly brief themselves and their operating personnel on key issues and the technical problems that need to be considered.

S **Problem:** Many Players did not have job descriptions prior to the Exercise and were not briefed on their duties and responsibilities. They had to learn, by trial and error, not only their own jobs, but those of equally confused people working with them.

Recommendation: Job descriptions should be provided, prior to departure, to all NEST participants. The Support Commander and/or the DOE Administration and Logistics Section, need to have access to the duties and responsibilities of all deployed NEST personnel.