

Review
of the

Headquarters
Facilities
Emergency
Response Plans



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Abbreviations Used in This Report

CFR	Code of Federal Regulations
DOE	U.S. Department of Energy
ME	Office of Management, Budget, and Evaluation
ME-40	Office of Administration
OEP	Occupant Emergency Plan
SO	Office of Security
SO-20	Office of Security Operations
SO-40	Office of Emergency Operations

OVERSIGHT

The Secretary of Energy's Office of Independent Oversight and Performance Assurance conducted a review of the U.S. Department of Energy (DOE) Headquarters facilities emergency response plans in February 2002. The purpose of this review was to assess the Department's readiness to respond to emergency events, such as fires and hazardous material releases (inside and outside the building), that occur at any of the following facilities: the two primary DOE Headquarters facilities, namely, the James V. Forrestal building, which is located in Washington, D.C., and the main Germantown, Maryland, facility; and the 270 Corporate Center and Cloverleaf office facilities, which are facilities in Germantown that also provide permanent work space for DOE employees. The scope of the review did not include the Forrestal or Germantown child development centers, nor was the L'Enfant Plaza facility evaluated. The review evaluated the identification and integration of applicable requirements into the emergency response program; roles and responsibilities for developing and maintaining the Headquarters occupant emergency plans (OEPs); and implementation of the provisions of the OEPs and associated implementing procedures. The review also examined the adequacy of facilities and equipment to notify and protect workers in an emergency involving a Headquarters facility.

Consistent with the scope of the evaluation, data collection activities included interviews with individuals having programmatic development and implementation functions, as well as those having incident response roles. Although facilities and equipment were evaluated at the four facilities mentioned above, evaluation of the OEPs was limited primarily to the Forrestal and Germantown buildings because these buildings' plans were farthest along in terms of development and implementation, and because these two facilities are the most visible of the DOE Headquarters facilities and together provide office space for the vast majority of the DOE Headquarters population.

Federal property management regulations assign the Secretary of Energy, as the Department's highest-ranking official of the primary occupant agency, the responsibility for developing, implementing, and maintaining OEPs for the facilities evaluated during this review; the term "designated official" is used to describe this overall responsibility. This responsibility has been informally delegated through the Director, Office of Management, Budget, and Evaluation (ME) to the Director, Office of Administration (ME-40). The Office of Emergency Operations (SO-40) also has certain emergency response functions that are related almost exclusively to the response of DOE Headquarters to an event elsewhere in the DOE complex, including responsibility for the Forrestal Operations Center/Watch Office, the Germantown Technical Support Center, and reporting mechanisms to be used following events occurring in the field. The Office of Security Operations (SO-20) is responsible for physical security at the Forrestal, Germantown, and Cloverleaf buildings, and the associated protective force personnel play a significant role in any emergency event occurring at these facilities; protective force personnel have no responsibility for the 270 Corporate Center facility.

The overall concept of emergency response for each facility is structured around an incident command team and an emergency response team that directs and manages activities of facility occupants during an emergency. The incident command team consists of the designated official; the occupant emergency coordinator; the response team coordinator; the damage control coordinator; and the security, safety and health, and medical technical advisors. These individuals generally report to a facility-specific command center to direct and manage the emergency response. The emergency response team is a designated group of trained volunteers who, under the direction of the incident command team, assist building occupants in evacuating or relocating to a safe location during an emergency situation.

This review was conducted at a time of significant effort on the part of ME to develop comprehensive OEPs for seven Headquarters facilities. The Independent Oversight team recognizes that all of the OEPs are works in progress, and the results of this review indicate that, overall, the Department has made remarkable progress in its efforts to develop and implement an effective building emergency response program within Headquarters facilities since the events of September 11, 2001. Upon completion, these efforts will result in a substantially improved readiness posture to protect occupants. However, because of integration and coordination issues, the OEPs for the Headquarters facilities currently cannot be effectively implemented as written. Based on the number of key tasks remaining, additional senior management attention is needed to ensure that a comprehensive set of Headquarters emergency response plans is effectively implemented in a timely manner.

Section 2 of this report provides an overall discussion of the results of this evaluation. Section 3 details the results of the reviews of individual occupant emergency program elements. Section 4 provides Independent Oversight's conclusions regarding the overall effectiveness of the program. Section 5 identifies opportunities for improvement, which are intended to provide guidance for continuing program improvement efforts. They should be reviewed and considered by the responsible DOE line managers and prioritized and modified as appropriate, in support of program implementation. Appendix A provides supplemental information, including team member composition. Appendix B provides a partial listing of the requirements that apply to the Headquarters emergency response plans.

2.1 Positive Program Attributes

In recognition of the improvements that were needed in the Department's systems and facilities to better protect its Headquarters employees as a result of the events of September 11, 2001, as well as the more recent Forrestal power outage and the anthrax contamination concerns, ME has initiated an ambitious effort to define the approach to occupant emergency planning, upgrade obsolete response plans, and install new equipment that is necessary to support the plans.

Positive attributes of the emergency management program include:

- **DOE employees are engaged and contributing to the improvements in facility emergency preparedness and response through safety and planning committees.** Mechanisms such as the Headquarters Labor-Management Health and Safety committee and the occupant emergency planning team provide the means for employees, organized labor, and program office safety professionals to contribute to the development of the Headquarters facilities emergency response plans. Employee volunteers have come forward to serve as wardens and monitors, which are key roles that support evacuation and sheltering protective actions for building occupants. Individual program offices are proactively reexamining and improving local emergency plans and procedures.
- **A comprehensive effort to improve emergency preparedness and response is being pursued through the development of the OEPs.** ME-40 and SO-20 are taking leadership roles in defining the scope of this effort and identifying the necessary implementation interfaces. The OEPs define the roles and responsibilities of emergency responders in addressing a broad spectrum of emergency initiators, including medical

emergencies; chemical, biological, and radiological events; fires; bomb threats; and natural disasters. The OEPs include mechanisms for implementing protective actions, such as evacuation and relocation of building occupants, and provide the general framework for key programmatic elements, such as training, drills, and exercises and continuous improvement.

- **ME is working aggressively to improve readiness assurance through facility and emergency equipment upgrades.** Public address systems are now being installed in the Forrestal and Germantown facilities that, when operational, can provide the specific emergency information and movement instructions appropriate to the event. The emergency power system in the Germantown building is being modernized, and the Forrestal and Germantown building ventilation systems have been provided with rapid emergency shutdown capabilities to minimize the spread of potentially hazardous material releases. ME is also pursuing additional equipment for wardens and monitors to enhance their effectiveness in facilitating building evacuation.

2.2 Program Weaknesses and Items Requiring Attention

ME line management and staff recognize that many aspects of the newly implemented occupant emergency planning program are a work in progress, and understand that there are significant implementation issues remaining. This review confirmed many of ME's concerns and identified additional barriers to timely implementation of an effective program; these barriers primarily are a consequence of insufficient coordination among all affected Headquarters organizations.

Specific weaknesses include:

- **The roles, responsibilities, and authorities between ME-40 and SO-20 for**

implementing facility emergency response actions are not clearly integrated and understood. The OEPs do not clearly communicate the expectations for incident command in response to an emergency. Most notably, there is no clear description of a complete chain of command from the scene to the command center, and then to offsite response agencies, during emergencies. In addition, the DOE Headquarters emergency response plan, which was developed by SO-40, does not refer to and has not been integrated with the facility OEPs. Important plan interfaces regarding the handling of personnel who may remain in the building following an evacuation to maintain critical functions, such as the Forrestal Watch Office, have not been fully addressed. SO-40 has not actively participated in OEP development activities to date.

- **The existing OEPs are not well integrated and coordinated with existing security procedures.** There are inconsistencies between the actions called out in the OEPs and those that will actually be accomplished by security personnel, based on the current security procedures. For example, the OEPs require supervisors to report

to security any problems with building evacuation (e.g., trapped or missing personnel), but security procedures do not address this activity. Modifications to existing security procedures and/or new security implementing procedures are needed to support the OEP. Security activities that are not adequately addressed include those that are associated with emergency notifications and response command and control.

- **ME has not defined and established a formal process to ensure the timely completion, testing, and maintenance of the OEPs.** Full implementation of the OEPs requires the resolution of substantive training, equipment, and process issues. ME is maintaining a master list of issues that need to be resolved and is using the occupant emergency planning team to help prioritize this list and identify solutions to the issues considered to be most important. However, this informal list does not provide a strategy, plan, or schedule for prioritizing and addressing these issues. Furthermore, as the OEPs are verified for accuracy and validated through drills and exercises, additional implementation issues can be expected.

3.0 Discussion of Results

3.1 Emergency Response Programs, Plans, and Procedures

The Headquarters OEPs, published in January 2002, address the emergency planning activities for the DOE Headquarters facilities in Washington, D.C., and Germantown, Maryland. The plans describe the actions that must be taken by employees and emergency response personnel to ensure the safety of employees and mitigate damage to facilities. The OEPs are designed primarily to meet the regulatory requirements of 41 CFR 101-20.103-4, *Occupant Emergency Program*, and 29 CFR 1910.38, *Employee Emergency Plans and Fire Prevention Plans*. An incident command team and an emergency response team (consisting of trained volunteers) are established for each facility to direct and manage activities of facility occupants during an emergency.

The process by which the OEPs were developed, and continue to mature, is characterized by several notable strengths. ME-40 is responsible for the development and maintenance of the OEPs. As a member of the Federal Administrative Managers Association, ME-40 staff have obtained insights and information on how member Federal agencies plan for emergencies and interface with other Federal agencies in the Washington area, including the General Services Administration and local response agencies, as part of the development process. Another positive attribute of the OEP development process is that ME-40 has involved other internal stakeholder groups who have experience in security, health, and safety and who are aware of employee concerns in developing the occupant emergency program. These groups include the Headquarters Labor-Management Health and Safety committee, the occupant emergency planning team, and the Disability Action Council. In addition to providing input regarding the content of the program, the occupant emergency planning team is being used to assist in addressing and resolving OEP implementation

concerns/issues that are not included in the current versions of the OEPs.

The Forrestal and Germantown OEPs are comprehensive and, with some exceptions, include the appropriate level of detail. The plans cover a broad spectrum of manmade and natural emergencies, including fires, bomb threats, hazardous material releases (inside and outside the building), civil disturbances, hurricanes, and earthquakes. The plans contain many positive elements in terms of the scope of emergency operations, particularly with respect to emergency evacuations and the consideration of protective actions other than evacuation, such as sheltering. Each OEP contains a table listing hazardous materials and their locations within the facilities. The OEPs also include provisions for feedback mechanisms and corrective actions to promote continuous improvement, training, and responses to events occurring after normal business hours.

As part of the overall emergency planning effort, the process by which critical functions can be safely maintained or relocated during a facility evacuation (e.g., central alarm stations and Forrestal Operations Center) has been considered, although the OEPs do not include the specific procedures by which these functions are to be accomplished. If an evacuation of the Forrestal or Germantown central alarm station is necessary, the alarm functions can be switched to allow monitoring at the unaffected facility. Additionally, the Forrestal Watch Office has implemented a procedure for relocating the Watch Office to the Germantown Technical Support Center; the procedure includes the major steps of notifying both the Director of Emergency Operations and the operations center manager; transporting necessary references and materials (i.e., “fly-away” kit) to the Germantown facility; and securing the Forrestal facility. Although most necessary elements have been included, the relocation procedure is not complete. The procedure currently identifies the need to transmit a relocation message, but the message’s content, method of transmission/distribution, and timing have not been determined.

SO-40 personnel expect that this effort will be completed in the near term.

As written, the OEPs contain a substantial number of weaknesses with varying significance. In addition to shortcomings in the definitions of some roles and responsibilities and required procedures, which are discussed in some detail in the following section, the OEPs lack specificity in some areas and are inaccurate in other areas. For example, the OEPs require that stairway monitors inspect assigned stairways on a regular basis, but do not include any inspection criteria, and the Germantown OEP erroneously lists one room as a photographic lab containing hazardous chemicals, even though this room is now a conference room and the listed photographic chemicals are no longer in use at Germantown. Additionally, halon systems in the Forrestal and Germantown facilities are not included on the lists of high-hazard areas.

More importantly, the OEPs are not well integrated and coordinated with security procedures. These procedures describe actions that are required to be implemented by protective force officers for events such as medical emergencies, civil disturbance, and bomb threats. Even though many of the events included within the security procedures are also addressed by the OEPs, they were not reviewed as part of the OEP development process. As a result, there are inconsistencies between actions called out in the OEPs and those that will actually be accomplished by security personnel, based on the current security procedures. Of primary concern is the absence of a clear chain of command for all emergencies. Emergencies require an immediate, coordinated response; however, the current security response procedures are configured such that the facility incident command team is not likely to be rapidly notified by security of an emergency, even though the occupant emergency coordinator, who is a member of the incident command team, is the designated on-scene incident commander.

ME-40 personnel who have OEP development responsibilities recognize that much work is required before the occupant emergency program for Headquarters facilities is fully implemented. In many cases, potential OEP implementation problems identified by the Independent Oversight review team had already been identified by ME and are being collected on a master list (i.e., “parking lot”) for eventual resolution. The OEPs are characterized by ME management and staff as a work in progress and, as such, the effort to reconcile them against current procedures and practices was for the most part not initiated until after the OEPs

were issued. Some implementation issues are being proactively addressed. For example, 11 individuals have been certified as Red Cross Instructors and thus are qualified to teach first aid, cardiopulmonary resuscitation, and automatic external defibrillator courses; this certification is intended to facilitate meeting the extensive training required by the OEPs for incident command team and emergency response team members. In addition, ME has proactively initiated an effort to identify additional wardens and monitors and provide them with the training necessary to accomplish their assigned duties.

Other processes have not been completely considered. Full implementation of the OEPs requires the resolution of training, equipment, and process issues, such as the conduct of incident command team training, the actual functioning of the new automatic dialing phone/pager notification systems, personnel accountability processes, and feedback mechanisms, all of which are still in the development, planning, or installation stages. The following partial list of issues provides an indication as to the number and significance of the issues that require resolution for full implementation of the OEPs:

- The roles and responsibilities of the OEP on-scene incident commander (the facility manager) are not consistent with security procedures for immediate response to events involving a security threat, including chain of command and notification requirements.
- The OEPs do not clearly designate who is responsible for meeting and briefing arriving offsite response agencies.
- The OEPs require supervisors to identify individuals who are trapped, missing, or in need of evacuation assistance and to report the results to security. However, security procedures do not address this activity, and protective force operations personnel were not aware of this requirement.
- Security has identified seven response procedures that will require revision to either the procedure or OEP to make them consistent.
- The OEPs rely on volunteers to perform emergency response team functions, but many volunteer positions are unfilled.

- Incident command team and emergency response team members have not received the training required by the OEPs, which includes training on the content and implementation of the OEP itself.
- General employee training related to the OEPs has not been developed.
- A heating, ventilation, and air conditioning shutoff switch has recently been installed in the Germantown central alarm station; however, training has not been provided on the conditions that warrant its use.
- There is confusion among some members of the incident command team regarding their assigned emergency response station and the location of the primary Germantown command center.
- Public address systems, currently being installed at the Forrestal and Germantown buildings, are required to maximize the effectiveness of the emergency approach described by the Germantown and Forrestal OEPs. Currently there is no effective mechanism to rapidly and easily communicate protective actions to occupants to shelter-in-place.
- The Forrestal incident command center is not set up or equipped to facilitate operations by the incident command team.
- The desired method of communication among the incident command team, emergency response team, security, and offsite responders, including radio and telephone channels, has not been established and tested under simulated emergency conditions.

As mentioned previously, ME-40 is maintaining a master list of issues that need to be resolved and is using the occupant emergency planning team to help address the issues considered to be most important. Furthermore, ME-40 has added weaknesses identified by the Independent Oversight team during the course of the review to this list. However, this informal list does not provide a strategy, plan, or schedule for prioritizing and addressing these issues. Furthermore, because the OEPs were implemented without a thorough verification (for accuracy) and validation (usability) process, additional implementation issues can be expected.

Finally, the informal nature of certain aspects of the occupant emergency planning program may make implementation more difficult. As mentioned previously in this report, the position of designated official that is required by Federal property management regulations, and its attendant responsibilities of developing, implementing, and maintaining an occupant emergency program, has been delegated to the Director, ME-40. Although these responsibilities are assigned and described in the body of each OEP, no formal delegation of authority memorandum has been issued. Additionally, no formal approval process has been established for the OEPs. A signature page is used to certify the participation of incident command team members, local response agencies, the General Services Administration, and the National Treasury Employees Union in OEP development and to certify a general understanding of procedures to be followed in an emergency affecting the facility. However, the OEPs were issued without obtaining these signatures. An official memorandum from the Secretary of Energy delegating his building occupant emergency responsibilities to ME-40 and formal OEP approvals by the appropriate staff and line managers should facilitate ME-40's efforts to obtain necessary support from other DOE offices and help communicate senior DOE management's commitment to the success of the program.

In conclusion, using input from a variety of Federal and stakeholder sources, ME-40 has developed a set of OEPs that are comprehensive and address a broad spectrum of potential emergencies. However, the OEPs are either unclear or inaccurate in several important areas. Most notably, there is no clear description of a complete chain of command from the scene to the command center, and then to offsite response agencies, during emergencies, and the emergency response approach is not fully coordinated with actions of protective force personnel and their supporting security response procedures. Consequently, OEP revisions, modifications to security implementing procedures, and emergency responder training are required to implement a response that is timely, efficient, and maximizes the protection of building occupants and responders during emergencies for which evacuation is an inappropriate protective action. ME-40 has identified many OEP weaknesses and potential implementation barriers in these areas and is currently resolving the issues or has plans to address them in the coming months. However, the list is lengthy, some of the issues are potentially

significant in terms of their impacts on the OEPs, and there is no formal strategy for prioritizing and scheduling their resolution or for implementing the OEPs in stages.

3.2 Emergency Management Requirements, Roles, and Responsibilities

The set of requirements that applies to the Headquarters emergency response plans is complex, as illustrated by the partial listing provided in Appendix B. Thus, it is a significant accomplishment that, in general, the OEPs that were reviewed appropriately identify and specify the means for implementing the Federal regulations discussed in Appendix B, particularly the basic emergency management-related requirements. The OEPs clearly describe employee warning systems; specify the incident command and emergency response teams and how these teams function in an emergency; and identify mechanisms for reporting emergencies and evacuating Headquarters buildings. However, a few required elements have not yet been addressed or fully implemented. For example, emergency action plans (i.e., OEPs) are required to clearly specify procedures for employees who remain to operate or shut down critical facility equipment or perform other essential functions before evacuating. There are several activities, such as the Forrestal Operations Center/Watch Office, that might continue to be staffed during a building-wide evacuation, but are not addressed by the OEPs. In another example, the OEPs require all Headquarters offices to ensure that employees and supervisors are trained in emergency response-related functions upon initial assignment to Headquarters and on an annual basis thereafter. Procedures for ensuring that these requirements are consistently satisfied have not been established.

The OEPs also reference and invoke many of the requirements of 29 CFR 1910.120, *Hazardous Waste Operations and Emergency Response*. While this regulation provides a useful framework for establishing an emergency response plan and organization, it does not appear to be directly applicable to the OEP and procedures for Headquarters personnel and facilities. No organizations within the Headquarters buildings were identified as either using or storing hazardous substances or having employees who are considered “emergency response” personnel, as defined and intended by this regulation. Use of the 29 CFR 1910.120

terminology, such as “incident command” team and “on-scene incident commander,” in the OEPs may be contributing to confusion regarding the roles of responders, which are described in the previous section of this report. An assessment of the quantities of hazardous materials identified in Appendix B of each OEP and their potential for causing adverse effects on employee health and safety is necessary to verify whether this regulation is applicable to any Headquarters facilities or operations.

A few DOE directives have not been fully considered by ME in developing the OEPs and in defining ME responsibilities for occupational safety and health and emergency planning. DOE Order 151.1A, *Comprehensive Emergency Management System*, applies to all DOE facilities regardless of hazard potential and requires that each site/facility have, at a minimum, an Operational Emergency Base Program. The OEPs generally address the elements of an Operational Emergency Base Program; however, they do not specifically identify the potential health, safety, or environmental impacts of emergency conditions and do not address operational emergency categorization requirements for base programs as required by the order. On the other hand, the requirements of this order were developed primarily for implementation by DOE field sites, and strict application of these requirements is not likely to increase the protection afforded by the existing occupant emergency program. A similar condition exists with regard to DOE Order 232.1A, *Occurrence Reporting and Processing of Operations Information*. DOE Headquarters facilities and organizations are not excluded from the requirements of this order. Although the application of the 151.1A and 232.1A order requirements to Headquarters organizations may not serve the primary purposes of these directives, ME has not requested that the occupant emergency planning program be exempted from these orders, nor have they fully assessed what benefits might be derived by incorporating selected provisions.

Roles and responsibilities for developing and administering the Department’s occupant emergency program are clearly defined in the OEPs and in the mission statement of the Engineering and Facilities Management Services Group. The OEPs indicate that the Director, ME-40, is the delegated designated official for the facilities that were evaluated during this review and, as such, is the individual responsible for developing, implementing, and maintaining the associated OEPs. The OEPs also clearly indicate that the authority to release employees or relocate employees to another

building is retained by the Director, ME. The mission statement for the Engineering and Facilities Management Services Group specifically tasks that organization with managing the Department's Headquarters building emergency preparedness program, and individual administrative responsibilities are identified in the OEPs. One inconsistency was noted regarding the definition of programmatic roles and responsibilities. DOE HQ Order 442.1, *Headquarters Occupational Safety and Health Program*, tasks the Headquarters Safety and Occupational Health Manager with providing and maintaining the OEPs, whereas the OEPs indicate that this individual provides assistance in updating and maintaining the OEP, thus leaving the documented responsibility for OEP development and maintenance unclear.

The roles and responsibilities of emergency response team members (i.e., wardens, monitors, and assistants) for implementing various aspects of the OEP during an emergency are generally well defined and address the major tasks that must be performed in the building to facilitate an evacuation or relocation. However, in some cases, the roles and responsibilities of incident command team members are either not clearly defined or understood. For example, as mentioned in the previous section, inconsistencies exist between tasks assigned in the OEPs and in existing security response procedures, and there are differences between the current understanding of some incident command team members regarding the nature and location of their emergency duties and the assignments specified in the OEP. Other weaknesses include the fact that four designated incident command team "primary" responders are normally located at the Forrestal building but are required to respond to an event at the Germantown facility, thus impeding their function during transit time, and inconsistencies between assigned responsibilities and authorities within the OEP. As an example of the latter, the OEP indicates that the occupant emergency coordinator, who is the designated "on-scene incident commander," generally is in a position of authority over the response activities of the response team coordinator during an emergency. However, the OEP also states that the response team coordinator is responsible for exercising command responsibility for the orderly movement of all personnel in the building, and indicates that one of the occupant emergency coordinator duties is to "assist in the coordination and movement of personnel within, into, or out of the building." Overall, these weaknesses can be attributed

to the recent issuance of the OEPs, their evolving nature, the number of unresolved implementation issues, and the lack of training for incident command team members.

Beyond the definition of incident command team functions, the roles, responsibilities, and authorities between ME-40 and SO for emergency management and response are not clearly defined. For example, DOE Order 151.1A; the formal SO-40 mission and functions statement; and the DOE Headquarters emergency response plan recently issued by SO-40 (which is applicable to all Headquarters offices) indicate that the Director, SO-40, is responsible for developing, coordinating, and maintaining plans and procedures for DOE Headquarters response to emergencies, including the conduct of all Headquarters emergency management system training. Neither the OEPs nor any of the preceding documents differentiate these responsibilities from those being exercised by ME-40 to plan and respond to emergencies directly affecting DOE Headquarters buildings. In addition, the DOE Headquarters emergency response plan does not refer to and has not been coordinated or integrated with the OEPs developed by ME-40, and interfaces between the two plans have not been tested under simulated emergency conditions. In fact, SO-40 has not participated in any OEP development activities. Given that ME-40 is responsible for managing any emergencies occurring within DOE Headquarters buildings and SO-40 is responsible for managing all other emergencies, increased coordination between these two organizations and their respective response systems is needed to ensure that all necessary emergency functions are addressed while avoiding overlapping activities, particularly with regard to notifications to other Federal agencies. Coordination is also necessary to ensure that future responses to emergencies or threats having both a local and regional or national impact, such as that which occurred on September 11, 2001, are both effective and efficient.

In conclusion, with few exceptions, the emergency response plans for Headquarters facilities appropriately implement the myriad of applicable Federal regulations. The roles and responsibilities for developing and administering the occupant emergency planning program are clear, as are those for emergency response team members. However, the OEPs do not fully consider DOE orders related to emergency planning and occurrence reporting and the degree to which they should be incorporated into the occupant emergency planning program. In addition, some inconsistencies

exist in incident command team roles and responsibilities, and roles and responsibilities between ME-40 and SO for an emergency at a Headquarters facility are not clearly defined, which could cause confusion among local and Federal agencies following an emergency at one of these facilities. Finally, the inclusion of terminology and various incident command provisions from 29 CFR 1910.120, which may not be directly applicable to Headquarters facilities, may be contributing to confusion regarding the roles of responders, and has important ramifications regarding the training effort that will be needed to support OEP implementation.

3.3 Emergency Facilities and Equipment

Effective functioning of the OEPs is generally contingent upon having the facility features and emergency equipment necessary to warn occupants of an emergency and provide protection for employees relocated within a building or to effect a partial or complete building evacuation in an emergency. These systems and equipment must be available and maintained in a manner that adequately supports the emergency response effort.

All of the buildings visited during this review have comprehensive fire alarm systems that are automatically activated by heat, smoke, or fire suppression system activity or by manual pull stations. Manual pull stations are strategically located throughout the facilities and, when pulled, will activate the fire alarm system either in that particular zone or throughout the entire building; the activation scheme is building dependent. The fire alarm system provides one type of alarm that is intended to initiate either a partial or complete evacuation of the facility. When activated, the fire alarm is automatically received at the General Services Administration regional control center for the Forrestal and main Germantown buildings and at the lessor's alarm monitoring company for the leased facilities in Germantown, Maryland. This results in dispatch of either the Washington, D.C., or Montgomery County Fire Department as appropriate. At both the Forrestal and Germantown facilities, redundant visual indicators (strobe lights) have been installed in the areas where hearing-impaired individuals are working to indicate that the fire alarm has been activated.

Presently, the fire alarm is the only means available to rapidly notify employees of the need to take

protective actions as a result of an emergency affecting the building. Installation of a public address system for both the Germantown and Forrestal facilities is progressing and is scheduled for completion by March 31, 2002. This system will permit rapid communication of protective actions other than just evacuation, as provided by the fire alarm, to the general employee population. Implementation of these systems is a major enhancement and is necessary to maximize the effectiveness of the emergency approach described by the Germantown and Forrestal OEPs, particularly for non-evacuation events. ME-40 is reviewing the feasibility of installing public address systems in the 270 Corporate Center and Cloverleaf Center facilities. Other means to notify employees of emergencies are available, such as sending broadcast messages by computer and/or telephone and using bullhorns. However, the use of broadcast messages lacks effectiveness because employees are not necessarily notified when a computer or telephone message has been sent to them. The use of bullhorns is impractical and does not guarantee that employees can be notified in a timely manner in an emergency.

Emergency lighting and emergency exit signs are plentiful throughout the facilities and are well maintained. Additional emergency lighting at the Forrestal building was recently installed following an October 2001 power outage. Critical facility components, including the Forrestal Operations Center/Watch Office, the Germantown Technical Support Center, communications and computer centers, central alarm stations, motor control centers, and emergency fire water pumps are appropriately provided with uninterruptible power supply systems and backup diesel generator-supplied emergency power in case of outages. This equipment is maintained in accordance with General Services Administration-mandated maintenance guides and inspection intervals.

In response to potential chemical and biological threats, an additional shutoff switch for the facility heating, ventilation, and air conditioning system was recently installed in the central alarm stations at both the Forrestal and Germantown buildings for use in an emergency. This feature, when actuated, closes the ventilation intake dampers and de-energizes the associated fans, and is intended to reduce the potential introduction or spread of contaminants within the building. The OEPs identify the emergency conditions that warrant securing these ventilation systems. Forrestal building protective forces have been trained on its use and have posted an operator aid by the switch.

The existing procedures, facilities, and emergency equipment adequately support the safe evacuation of occupants following activation of the fire alarm. All of the OEPs identify evacuation routes for the facilities and, with the exception of the Cloverleaf building, emergency response information is posted throughout the buildings. However, some of the posted information is not complete or fully consistent with the information in the OEPs. For example, the posted information at the 270 Corporate Center facility does not identify evacuation routes, and the posted information at the Forrestal building is inconsistent with the information in the OEPs regarding fire alarm activation, safe evacuation distances, and use of elevators during an emergency. The OEPs appropriately identify areas of refuge for employees who cannot readily evacuate the facility. Although these areas are generally identified as stairwells, the Forrestal and Germantown OEPs identify specific stairwells within the facilities as refuge areas. These areas are well marked and each area of refuge includes an emergency telephone to call for assistance and an evacuation chair to facilitate evacuation of an affected individual with help from others; the 270 Corporate Center and Cloverleaf facilities are also equipped with evacuation chairs. At Germantown, the telephones ring directly to the central alarm station. At the Forrestal building, the telephones ring to a fire alarm panel located in the facility operations work space, but an individual is not always nearby to monitor that alarm panel and, in an emergency, it would have to be monitored by an individual who does not evacuate the facility. This responsibility has not been assigned or addressed in the Forrestal OEP; however, the new public address system includes speakerphones that will ring in the Forrestal central alarm station to eliminate this problem.

The ability to communicate among the protective force, incident command team, emergency response team, and offsite responders is critical during an emergency. However, the OEPs do not identify the equipment necessary for the command centers to be considered operational. Presently, radios are available

but there is uncertainty among emergency responders as to the number of radios available and their compatibility with other response organizations, such as security. The response team coordinator is required by the OEPs to maintain equipment in the Headquarters facilities for use during an emergency. Although the Forrestal and Germantown facility managers have developed a list of equipment that they maintain for emergencies, these lists are not included in the OEPs. Moreover, an analysis of the types and quantity of emergency equipment and supplies that are needed to adequately support the OEP has not been conducted.

The protective force has procured standard sets of advanced emergency medical response equipment, which are strategically located in the Forrestal and Germantown facilities to facilitate a rapid response to a medical emergency. However, this equipment is not identified in the respective OEPs. Smaller first aid kits and eyewash stations were also observed in areas of the Forrestal facility where small quantities of chemicals are stored. On the other hand, the 270 Corporate Center OEP lists several locations where emergency equipment is located in the building, but none of this equipment has been staged in the specified locations.

In conclusion, the results of this review indicate that existing facilities and equipment are adequate to notify occupants of an emergency and to conduct a complete evacuation of the affected building. Although other types of protective actions, such as shelter-in-place, cannot be rapidly and easily implemented at present, the installation of public address systems will ultimately remedy this situation at the Forrestal and Germantown facilities. Additional effort is needed to equip designated facility command centers in accordance with the OEPs and, most importantly, to ensure that sufficient equipment is available and has been tested under simulated emergency conditions to be effective for communicating among the incident command team, emergency response team, security personnel, offsite responders, and assembled employees during an emergency.

In response to recent events and the ongoing threat of terrorism, DOE has been reexamining its ability to protect the public, employees, and facilities and assets. The Department's senior managers recognized that many of the basic facility emergency response capabilities, plans, and procedures had become ineffective due to lack of attention, and that major improvements were needed. With respect to the Department's Headquarters facilities, a broad array of actions have been taken and are planned to improve DOE's collective capabilities to prepare for, and respond to, emergencies occurring at these facilities. There has been a significant degree of employee engagement and management support focused around the renovation and improvement of the Headquarters facility emergency plans.

The Department is making notable progress in several areas to develop a more effective emergency response for Headquarters facilities. An expanded cadre of wardens and monitors is being trained, and emergency equipment to facilitate building evacuations is being upgraded. Facility improvements to permit the rapid shutdown of the Forrestal and Germantown building ventilation systems, which have already been completed, combined with the installation of public address systems in these two facilities will result in a substantially improved ability to communicate emergency information and implement occupant protective actions. More broadly, significant efforts are being applied to developing comprehensive, facility-specific OEPs that provide an emergency management system better aligned to cover the full spectrum of hazards and threats to Headquarters facilities. While these facilities can be evacuated using currently installed equipment and plans, the upgrade efforts should produce substantive improvements in the timeliness, flexibility, and effectiveness of the emergency response.

This review was conducted at a time of significant effort on the part of ME to develop comprehensive OEPs for seven Headquarters facilities. The Independent Oversight team recognizes that all of the OEPs are works in progress, including the OEPs that were recently

issued for the Forrestal and Germantown buildings, and that ME has already identified many specific implementation weaknesses for correction. This review identified several additional weaknesses requiring attention, the most significant of which were 1) disconnects between the OEP approach and security response procedures, such as in the areas of initial event notification and post-evacuation accountability, and 2) the fact that unclear definition of the roles and responsibilities of the designated "on-scene incident commander," combined with the lack of training on the OEPs, have produced some confusion among incident command team members regarding their assigned duties and expected response locations. When considered collectively, these and other weaknesses, including the extent of the master list of OEP implementation issues and the absence of a formal plan to prioritize and schedule the remaining tasks, will impede the timely implementation of an effective program.

Overall, ME-40 has made remarkable progress in its efforts to develop and implement an effective building emergency response program within Headquarters facilities since the events of September 11, 2001. When these efforts are completed, DOE's readiness to protect facility occupants following an emergency at a Headquarters building will be substantially improved. However, the ME process to improve the facilities emergency response plans has not ensured that all of the roles, responsibilities, and authorities necessary to implement an effective set of facility emergency response actions are clearly integrated and understood. ME leadership is needed to define priority actions and establish key milestones toward full implementation of the OEPs. The ongoing commitment of resources from all Headquarters program offices is needed to ensure that the plans are tested, maintained, and continuously improved. Finally, senior management attention is needed to clearly communicate their commitment to an effective Headquarters occupant emergency program and to ensure the cooperation of the program offices in the development and long-term maintenance of this important program.

Opportunities for Improvement

As part of this evaluation, the Independent Oversight team identified several opportunities for improvement. These potential enhancements are not intended to be prescriptive. Rather, they are intended to be reviewed and evaluated by the responsible DOE line managers and prioritized and modified as appropriate, in accordance with Headquarters-specific programmatic and emergency management objectives.

1. Revise the OEPs to ensure effective integration and coordination of all emergency response-related procedures and protocols. Validate the plans by conducting procedure walkthroughs and practical exercises. To aid in accomplishing these activities, obtain additional expertise for the occupant emergency planning process.

Near-Term Improvement Opportunities

- Conduct a review of protective force procedures, the Headquarters Emergency Response Plan and implementing procedures, DOE Watch Office procedures, and the draft National Nuclear Security Administration Emergency Response Plan to ensure that emergency response actions are clearly defined to eliminate ambiguity or duplication. In particular, reexamine the responsibilities and priorities for making internal (e.g., promptness of notifying the Designated Official) and external notifications and conducting employee accountability. Ensure that notification priorities are planned to maximize the protection of workers and property. Clarify expectations regarding positive and negative personnel accountability mechanisms and reports, and ensure that there is a clear reporting mechanism to transmit essential accountability information to those who would perform rescue operations (e.g., the fire department or protective force).
- Consider requesting from the heads of DOE Headquarters elements specific points of

contact who will be held accountable for participating in occupant emergency program planning activities and coordinating revisions of the OEPs within their respective offices. Points of contact should include, but may not be limited to, representatives from SO-40, SO-20, and the ME Offices for Forrestal and Germantown Facilities Operations. In conjunction with SO-40, consider the feasibility of unifying the existing emergency response program points of contact (i.e., those maintained by ME and SO-40) such that there is only one central contact point for all types of emergencies in each DOE Headquarters element.

- Clearly differentiate the responsibilities among the emergency responder in charge at the event scene; the individual in charge at the facility's command center and/or central alarm station; and the individual directing activities occurring outside the facility (such as meeting and briefing arriving non-DOE assets; formally transferring command and control authority; assigning tasks to available personnel; and redirecting and informing personnel assembled outside following an evacuation). Consider using different position titles and/or revised terminology to clearly define their respective functions within the overall incident management system. If the incident command terminology in 29 CFR 1910.120 is retained, coordinate with non-DOE responding agencies to ensure that the DOE and non-DOE incident command systems are compatible.
- Ensure that all incident command team members are aware of the OEP command center locations and that each command center is furnished with the equipment and communication systems that are needed by the incident command team to fulfill their assigned functions.

- Reexamine the personnel assignments for the primary and alternate positions of the incident command team to ensure that there will be adequate coverage of all assigned functions, particularly for cases where one individual is assigned multiple response positions. Clarify the responsibilities of primary and alternate incident command team members such that the respective roles of responders local to the incident and those at remote locations (e.g., team members at the Forrestal building who are assigned functions for a Germantown, 270 Corporate Center, or Cloverleaf building emergency) are clearly understood and can be implemented effectively.
- Establish the specifications for and minimum quantities of emergency response equipment that must be maintained to support the OEP. Periodically verify the operability, location, and availability of the minimum levels of required equipment. Provide formal performance expectations for individuals who are assigned responsibility for maintenance and operability of specific equipment items.

Longer-Term Improvement Opportunities

- Consider addressing and assigning in the OEPs and other procedures the responsibility for meeting, briefing, and transferring command (as applicable) to arriving non-DOE assets. Include a pre-formatted form to facilitate transmittal of accurate, current, and consistent information to arriving authorities.
- Verify that the information provided in the OEP appendices accurately reflects current conditions, particularly with regard to available response equipment and locations and quantities of hazardous materials. Verify that facility postings that provide emergency response guidance contain the appropriate information, are accurate, and are legible.
- Consider expanding the use of visual aids, such as the incident decision tree and emergency response organization wiring diagrams, for application as response tools to simplify communicating the incident management concept of operations. Also consider distributing visual aids, such as laminated cards identifying emergency contact numbers and evacuation guidance, to all employees.

2. **Review all Headquarters administrative, management, and implementing documents that pertain to emergency response activities to ensure that objectives, roles, responsibilities, and decision-making authorities are clearly defined and assigned.**

Near-Term Improvement Opportunities

- Ensure that the Secretary of Energy has formally identified and approved any delegation of authority for the responsibilities of the agency designated official and is aware of the specific authorities vested in that delegate.
- When transmitting the OEPs and other emergency response plans (e.g., SO-40 and National Nuclear Security Administration) to heads of DOE Headquarters elements, clearly and unequivocally specify the purpose, scope, and applicability of and expected response from the issuance of those plans. For example, attach pertinent sections from DOE HQ Order 442.1 when transmitting the OEPs, and attach relevant sections of DOE Order 151.1A when transmitting Headquarters Emergency Response Plans and implementing procedures, to ensure that DOE elements and program secretarial officers understand the activities for which they will be held accountable. In addition, clearly convey expectations for further dissemination of those plans within each Headquarters element. Obtain the highest level of Departmental endorsement possible for these transmittals, similar to that which was obtained in transmitting DOE requirements for continuity of operations plans.

Longer-Term Improvement Opportunities

- SO and ME should identify whether current organizational documents are sufficient to meet the requirements of DOE Policy 411.1, *Safety Management Functions, Responsibilities, and Authorities Policy*, and, if not, institute a mechanism to meet those expectations on a continuous basis (including when responsibilities change or are reassigned). Reference the January 31, 2002, letter from the Defense Nuclear Facilities Safety Board to Secretary Abraham on this subject.

- Within DOE directives and the OEPs, separate roles, responsibilities, and authorities for program management, program implementation, and administrative functions from those associated with emergency response.
- SO and ME should revise their office-specific mission and function statements, which are maintained by ME in accordance with DOE Policy 111.1, *Departmental Organization Management System*, to ensure that their emergency preparedness and response functions are clearly defined in accordance with their respective missions.

3. Senior ME and SO managers should conduct periodic reviews of the occupant emergency program development and implementation process and render authoritative decisions on program scope, utilization of human and financial resources, an end point to the planning process, and strategic plans for program maintenance and continuous response readiness.

Near-Term Improvement Opportunities

- Consider developing a program management document similar to an Emergency Readiness Assurance Plan (described in DOE Order 151.1A and Volume V of the associated DOE Emergency Management Guide) to identify resources needed in both the short and long term to support the occupant emergency program.
- Perform a critical review of the master list (i.e., “parking lot”) of issues to determine the importance of each item listed relative to its role in ensuring employee safety and protection. Use the results of this assessment to determine an end point for considering the plans complete and fully implemented, and for formally defining implementation stages.
- Establish a formal process for approving and subsequently revising the OEPs. This should include documenting any certifications of plan development participation. Before formally issuing the plans, ensure that a sufficient number of personnel are trained to support the concept of

operations required by the plans and that these personnel are determined to be proficient in the tasks that they are expected to perform.

- Reevaluate the training requirements specified in the OEPs, taking into consideration: (1) the existing training and expertise of employees (to include the protective force and medical clinic personnel), and (2) the duties expected of incident command and emergency response team personnel as described in 29 CFR 1910.120. Consider consulting an individual with significant experience and expertise in incident command systems and industrial emergency response to facilitate this evaluation.

Longer-Term Improvement Opportunities

- Evaluate the possibility of using an incentive program to encourage participation in the facility emergency response program by DOE Headquarters elements.

4. Conduct a comprehensive review of regulations and directives associated with emergency response activities to verify that all applicable requirements have been addressed and/or implemented.

Near-Term Improvement Opportunities

- Identify personnel who might need to remain in the building during certain emergencies. Specify what actions they might be required to perform before exiting the building; clearly identify who has ultimate authority for directing those individuals to evacuate the building immediately; and specify how this evacuation order will be communicated to affected personnel.
- Work with the human resources arm of ME to institutionalize a mechanism for ensuring that all employees receive the required information concerning emergency response upon initial assignment to DOE and whenever the response plans change thereafter.
- Identify the maximum quantities of hazardous materials that could routinely be associated with DOE buildings and operations to verify the applicability of emergency planning requirements discussed in 29 CFR 1910.120.

Longer-Term Improvement Opportunities

- Query other Headquarters organizations (e.g., operations offices) that have promulgated directives related to emergency response and emergency management program administration to determine the applicability of specific requirements to Headquarters buildings and personnel. Request

formal exemptions from requirements that do not increase the level of protection afforded to Headquarters employees, visitors, and contractors, and the nearby public in an emergency.

- Verify that there are no state or local requirements or laws that pertain to emergency planning and response programs for buildings housing DOE Headquarters employees.

APPENDIX A

SUPPLEMENTAL INFORMATION

A.1 Dates of Review

	Beginning	Ending
Scoping/Planning	January 4, 2002	January 25, 2002
Data Collection	January 28, 2002	February 5, 2002
Report Writing	February 6, 2002	February 11, 2002
Validation and Outbriefing	February 12, 2002	February 15, 2002

A.2 Review Team Composition

A.2.1 Management

Glenn S. Podonsky, Director, Office of Independent Oversight and Performance Assurance
Michael A. Kilpatrick, Deputy Director, Office of Independent Oversight and Performance Assurance
Charles B. Lewis, Director, Office of Emergency Management Oversight

A.2.2 Quality Review Board

Michael A. Kilpatrick
Dean C. Hickman
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A.2.3 Review Team

Charles Lewis (Team Leader)
Al Cerrone
Kathy McCarty
Jeffrey Robertson
Steven Simonson

A.2.4 Administrative Support

Marjorie Radey

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APPENDIX B

REQUIREMENTS APPLICABLE TO THE HEADQUARTERS FACILITIES EMERGENCY RESPONSE PLANS

There are several Federal regulations and internal DOE directives that are applicable to the emergency preparedness and response programs for buildings that are owned or leased by DOE to house its Federal employees. Foremost among these regulations and directives are:

- 41 CFR 101, *Federal Property Management Regulations*, of the General Services Administration
- 29 CFR 1910, *Occupational Safety and Health Standards*, of the U.S. Department of Labor’s Occupational Safety and Health Administration, including 1910.37, *Means of Egress*; 1910 Subparts

I (*Personal Protective Equipment*) and L (*Fire Protection*); and 1910.1200, *Hazard Communication*

- 29 CFR 1960, *Basic Program Elements for Federal Employee Occupational Safety and Health Programs and Related Matters*
- DOE Order 151.1A, *Comprehensive Emergency Management System*
- DOE HQ Order 442.1, *Headquarters Occupational Safety and Health Program*.

The basic emergency management-related requirements of these rules and directives are described in Table B-1.

Table B-1. Basic Emergency Management-Related Requirements

Requirement	Title	Objectives
29 CFR 1910.38	<i>Employee Emergency Plans and Fire Prevention Plans</i>	Requires a written emergency action plan that identifies the actions employers and employees must take to ensure safety from fire and other emergencies, including emergency reporting, escape routes, types of evacuation used, and procedures to account for employees following evacuation.
29 CFR 1910.165	<i>Employee Alarm Systems</i>	Requires an employee alarm system to initiate actions required by the emergency action plan and provisions for maintaining and testing such systems.
41 CFR 101-20.103-3	<i>Responsibilities of Occupant Agencies</i>	Requires agencies to provide employee training regarding protection from and response to emergencies.
41 CFR 101-20.103-4	<i>Occupant Emergency Program</i>	Requires the agency designated official to develop, implement, and maintain an Occupant Emergency Plan and Occupant Emergency Organization.
41 CFR 101-20.103-5	<i>Initiating Action under Occupant Emergency Programs</i>	Requires the designated official to activate the Occupant Emergency Organization when deemed necessary in accordance with the plan.

Table B-1. Basic Emergency Management-Related Requirements (cont.)

Requirement	Title	Objectives
DOE Order 151.1A	<i>Comprehensive Emergency Management System</i>	Requires each DOE site/facility to develop and participate in an integrated and comprehensive emergency management system as defined by the order. Outlines Headquarters roles and responsibilities for emergency response and program management.
DOE HQ Order 442.1	<i>Headquarters Occupational Safety and Health Program</i>	Requires the Headquarters Safety and Occupational Health Manager to provide and maintain an occupant emergency plan that provides for emergency building evacuations. Requires Headquarters managers and supervisors to assist and cooperate in implementing this plan and ensuring that all employees are familiar with evacuation procedures.