

U.S. Department of Energy

Oak Ridge Operations

ORO O 150 Chapter I Chg. 2

DATE: 03-31-98

SUBJECT: COMPREHENSIVE EMERGENCY MANAGEMENT SYSTEM

1. PURPOSE. This Chapter correlates to DOE O 151.1, COMPREHENSIVE EMERGENCY MANAGEMENT SYSTEM, dated September 25, 1995, by assigning responsibility and accountability and providing administrative and/or contractual guidance to Oak Ridge Operations (ORO) and its contractors. Nothing in this issuance changes any requirements contained in any DOE Order.
2. CANCELLATION. This Chapter cancels and replaces:
 - a. ORIG 5500.1A, EMERGENCY MANAGEMENT SYSTEM, dated March 14, 1994.
 - b. ORIG 5500.2A, EMERGENCY CATEGORIES, CLASSES, AND NOTIFICATION/REPORTING REQUIREMENTS, dated September 23, 1994.
 - c. ORIG 5500.3B, PLANNING AND PREPAREDNESS FOR OPERATIONAL EMERGENCIES, dated October 31, 1994.
 - d. ORIG 5500.4B, PUBLIC AFFAIRS AND PLANNING REQUIREMENTS FOR EMERGENCIES, dated January 10, 1994.
 - e. ORIG 5500.7A, EMERGENCY OPERATING RECORDS PROTECTION PROGRAM, dated March 21, 1994.
 - f. ORIG 5500.8, ENERGY EMERGENCY PLANNING AND MANAGEMENT, dated November 15, 1994.
 - g. ORIG 5500.9, EMERGENCY PLANNING, PREPAREDNESS, AND RESPONSE TO CONTINUITY OF GOVERNMENT (COG) EMERGENCIES, dated June 23, 1995.
 - h. ORIG 5500.10A, EMERGENCY READINESS ASSURANCE PROGRAM, dated December 17, 1993.
 - i. ORIG N 5630.3, PROTECTION OF DEPARTMENTAL FACILITIES AGAINST RADIOLOGICAL AND TOXICOLOGICAL SABOTAGE, dated June 15, 1994.
3. APPLICABILITY. The provisions of this Chapter apply to ORO Principal Staff, management and operating contractors, other contractors that have responsibility for operating DOE-owned facilities (e.g., East Tennessee Mechanical Contractors), and other contractors that have responsibility for protection of the public health and safety and the environment (e.g., Bechtel Jacobs Company, and MK-Ferguson Company at Weldon Spring, Missouri).

DISTRIBUTION: ORO, OSTI, AND CONTRACTORS

**INITIATED BY: EMERGENCY MANAGEMENT
PROGRAM OFFICE**

4. RESPONSIBILITIES. Many ORO contractors have developed Standards/Requirements Identification Documents (S/RIDs) or Work Smart Standards (WSS) sets that may not include requirements referenced or included in DOE O 151.1, its attached CRD, or this Chapter. Interpretation and performance of Federal responsibilities outlined below must take into account the approved standards set for each particular contract and must not be deemed to add any requirements to the approved set.
 - a. Manager.
 - (1) Performs those tasks identified in DOE O 151.1, Chapter I, subparagraphs 8c (except (1) and (2) thereunder) and d.
 - (2) Reviews and approves the ORO Emergency Readiness Assurance Plan (ERAP) and submits it to the Associate Deputy Secretary for Field Management (ADSFM), the cognizant Secretarial Officer (CSO), and the DOE Headquarters (DOE-HQ) Office of Emergency Management (NN-60) by November 30 each year.
 - (3) Approves the ORO emergency plan for operational emergencies at contractor-operated facilities and forwards to NN-60 and the ADSFM.
 - b. ORO Crisis Manager performs or delegates those functions identified in DOE O 151.1, subparagraph 4c(1)(b) and Chapter I, subparagraph 8n.
 - c. Assistant Managers with Site Responsibilities.
 - (1) Perform those tasks identified in DOE O 151.1, Chapter I, subparagraphs 8c(1) and (2), and 8h.
 - (2) Submit contractor requests for exemptions from the requirements in accordance with the provisions of DOE O 151.1, subparagraph 3c.
 - (3) Designate individuals to serve as members of the ORO emergency cadre.
 - (4) Review and approve contractor-operated site-level emergency plans and submit to the CSO (ADSFM for Johnson Controls).
 - d. Assistant to the Manager for Public Information (M-4).
 - (1) Perform those tasks identified in DOE O 151.1, Chapter I, subparagraph 8f.
 - (2) Participates in and coordinates the emergency public information activities at ORO facilities as described in DOE O 151.1, Chapter IX.

- e. Assistant to the Manager for Environment, Safety, and Quality (AMESQ) ensures that the functional appraisal program scope encompasses all emergency management system activities.
- f. Manager, Emergency Management Program Office (MEMPO).
 - (1) Performs those tasks identified in DOE O 151.1, subparagraph 4b(1)(b); and Chapter I, subparagraphs 8a, b, g, h, l, p, and s.

- (2) Develops ORO emergency management systems to ensure compatibility and clear assignment of responsibilities for responding to an emergency situation involving facilities under ORO cognizance. In order to ensure that the maximum benefits are derived for resources expended for each full participation exercise (FPE), a long planning cycle and extensive coordination are required. To ensure consistency of this process across ORO activities, the action time line delineated in Attachment 2 of this Chapter is to be used for planning and coordination activities associated with each ORO/contractor FPE.
- (3) Prepares ORO requests for exemptions from the requirements identified in DOE O 151.1, subparagraph 3c.
- (4) Reviews and concurs with contractor-proposed emergency planning zones (EPZ), contractor radiological and sabotage assessments, and supporting documentation, site level emergency plans, and requests for exemptions (see DOE O 151.1, Chapter IV).
- (5) Serves as ORO member of the HQ Emergency Management Advisory Committee.
- (6) Ensures that the Radiation Emergency Assistance Center and Training Site (REAC/TS) is maintained in an operational state of readiness.
- (7) Serves as the ORO point of contact for the Tennessee Emergency Management Agency for emergency preparedness including activities associated with the Tennessee Oversight Agreement.
- (8) Administers and executes the operational emergency base program for the Oak Ridge Federal Building Complex.
- (9) Coordinates development and implementation of contractor-operated facility emergency management programs to ensure effective and consistent emergency management systems.
- (10) Serves as the ORO Emergency Operating Records Program Officer.
- (11) Coordinates ORO support to the Energy Emergency Management Team and ORO participation in energy emergency readiness exercises (see DOE O 151.1, Chapters II and VI).
- (12) Provides support and technical assistance to the M-4 in planning emergency public information activities (see DOE O 151.1, Chapter IX).
- (13) Prepares the consolidated ORO ERAP and submits it, with the concurrence of the Program Assistant Managers, to the Manager by November 25 each year.
- (14) Develops fire- and medical-related mutual aid agreements for the Oak Ridge Reservation (ORR), signs such agreements with the concurrence of AMESQ, appropriate Contracting

Officers' Representatives (COR), and the Office of Chief Counsel, and provides a copy to the Directives Management Group (DMG) and appropriate COR.

- (15) Manages and ensures operational readiness of the ORO Operations Center and the primary and alternate Emergency Operations Centers (EOC) for ORR.
- g. Directors, Operations, Technical Support, Nuclear Safety, and Safeguards and Security Divisions, provide support and technical assistance to COR and the MEMPO relating to all emergency management activities.
- h. Director, Safeguards and Security Division, develops security-related Memoranda of Understanding for the ORR; signs such agreements with the concurrence of the MEMPO, appropriate COR, and the Office of Chief Counsel; and provides a copy to the MEMPO, DMG, and appropriate COR.
- i. Contracting Officers' Representatives.
- (1) Perform those tasks identified in DOE O 151.1, subparagraphs 4b(1)(a) and 4c(1)(a); Chapter I, subparagraphs 8e, i, k, m, o, p, q, and paragraph 9.
 - (2) Review and concur with contractor requests for exemptions from the requirements of DOE O 151.1, subparagraph 3c. Submit requests to the appropriate Assistant Manager after review and concurrence by the MEMPO.
 - (3) Review and concur with contractor EPZ and supporting documentation, and facility emergency plans, and forward to the appropriate Assistant Manager for approval with concurrence by the MEMPO.
 - (4) Review and approve contractor-operated facility ERAPs and provide a copy to the appropriate Assistant Manager. A copy of the contractor-operated facility ERAP shall be provided to the MEMPO by September 30 each year and to the CSO by November 30 each year.
 - (5) Coordinate the scheduling of all contractor-operated facility appraisals with NN-60 through the MEMPO.
 - (6) Ensure that each contractor-operated facility conducts internal readiness assurance assessments as required by DOE O 151.1, Chapter X, subparagraph 4a.
 - (7) Approve contractor radiological and toxicological sabotage evaluations and provide them, with the concurrence of MEMPO, to the CSO for validation.
5. REQUIREMENTS AND PROCEDURES. None.

6. REFERENCES. “DOE Emergency Management Guide,” issued by DOE-HQ Office of Planning and Operations.
7. DEFINITIONS. None.
8. CONTRACTOR REQUIREMENTS DOCUMENT. See Contractor Requirements Document, Attachment 1 of this Chapter.
9. ATTACHMENTS.
 - a. Attachment 1 - Contractor Requirements Document.
 - b. Attachment 2 - Full Participation Exercise Action Time Line.
 - c. Attachment 3 - Guidance for Protection of DOE Facilities Against Radiological and Toxicological Sabotage.
 - d. Attachment 4 - Non-Regulatory, Non-Emergency Notification Guidance for Events Occurring at ORO Facilities.
 - e. Attachment 5 - Offsite Agency Notification Form.

CONTRACTOR REQUIREMENTS DOCUMENT

Contractors that are identified in paragraph 3 of this Chapter shall accomplish the following:

1. Implement site/facility/activity-specific comprehensive emergency management programs based on a graded approach consistent with the requirements of DOE O 151.1, Attachment 1.
2. Submit proposed EPZ and supporting documents, and facility emergency plans to the cognizant COR for appropriate action.
3. Submit site level emergency plans to the cognizant COR for appropriate action.
4. Manage and maintain the REAC/TS in an operational state of readiness (Oak Ridge Associated Universities only).
5. Submit an initial or updated site level facility ERAP to the cognizant COR by August 31 each year.
6. At those facilities possessing hazardous materials in use or storage, including that contained in waste, conduct radiological/toxicological sabotage evaluations in accordance with Attachment 3 of this Chapter.
7. For site drills or exercises involving participation by non-contractor organizations or participation at an offsite location, ensure that the MEMPO is provided the opportunity to participate in the planning and coordination and concur with the proposed scenario.
8. Plan and conduct FPEs in accordance with the FPE Action Time Line contained in Attachment 2 of this Chapter, DOE O 151.1, and the Drill and Exercise Controller and Evaluator Manuals of the "DOE Emergency Management Guide."
9. Implementation plans for the requirements of this Chapter shall be developed based on information documented in the "DOE Emergency Management Guide." These guidance documents provide an acceptable approach to emergency planning activities. Other approaches may be used to develop implementation plans provided they are approved by the COR with the concurrence of the MEMPO.
10. Manage and maintain primary and alternate EOCs (Lockheed Martin Energy Systems) and associated Technical Support Centers/Emergency Control Centers (Lockheed Martin Energy Systems and Lockheed Martin Energy Research).
11. Perform all state notifications and reporting requirements specified in statutes, regulations, regulatory guides, and DOE Orders for all events. This responsibility includes not only the initial notification required for emergency events, but also the continuing provision of information during the course of the event. If there is any doubt whether the affected state should be notified, operate conservatively and make the notifications.

12. Contractors performing work for ORO in the state of Tennessee shall:
 - a. Notify the Tennessee Emergency Management Agency (TEMA) in a timely manner of events identified in categories in Attachment 4 of this Chapter. Notification shall be made orally followed by transmittal of the Offsite Agency Notification Form (Attachment 5 of this Chapter) by facsimile to TEMA and the Oak Ridge Operations Center (OROC). All notifications must be made through one of the following: the OROC, the Plant Shift Superintendent's (PSS) Office at the K-25 Site, the PSS Office at the Y-12 Plant, or the Laboratory Shift Superintendent's Office at the Oak Ridge National Laboratory. Events occurring on the Oak Ridge Reservation (ORR) will be reported through the Shift Superintendent's Office for the facility with which the event is associated. Events occurring off the ORR will be reported through the OROC.
 - b. Notify the Facility Representative (FR) orally through the OROC of any notifications made to TEMA. If the OROC has been notified of the event and a decision to notify TEMA is made subsequently, then the OROC should be so informed within 1 hour following the notification.

13. Contractors performing work for ORO in state(s) other than Tennessee shall:
 - a. Contact the applicable state Emergency Management Agency to identify notification requirements. This shall be done before beginning work for ORO in that state. The information must be incorporated into the site health and safety plan and/or other emergency management documentation.
 - b. Notify the FR orally through the OROC of any notifications made to the state. If the OROC has been notified of the event and a decision to notify the state is made subsequently, then the OROC should be so informed within 1 hour following the notification.

FULL PARTICIPATION EXERCISE ACTION TIME LINE

<u>Days prior to exercise</u>	<u>Action required</u>
365	Establish exercise date.
270	Establish Exercise Planning Group with representatives from site, ORO, and offsite organizations that will participate in the exercise, and DOE-HQ.
180	Verify that site Emergency Plan is current. Update, if necessary, and accomplish training on revisions. Establish Scenario Development Group and initiate scenario planning. Each organization in the Exercise Planning Group shall be invited to have a representative on the Scenario Development Group. The exercise package shall be developed by this group as the scenario is defined.
120	Scenario Development Group establishes requirements for controllers and evaluators. Requirements include numbers, qualifications, and training. Training shall be completed at least 10 days prior to the exercise.
65	Finalize exercise scenario and exercise package and submit to the COR with a copy to the MEMPO.
60	Complete emergency plan updates.
55	The COR forwards exercise package to CSO for review, comment, and concurrence.
45	Designate controllers and evaluators and make specific assignments.
15	Prepare and distribute controller and evaluator packets.
10	Complete all pre-exercise training.
1	Conduct pre-exercise briefing and site-specific training for all participants, evaluators, and controllers.

**GUIDANCE FOR PROTECTION OF DOE FACILITIES
AGAINST RADIOLOGICAL AND TOXICOLOGICAL SABOTAGE**

The process to evaluate sabotage vulnerabilities supports the implementation of radiological/toxicological sabotage protection. Sabotage is one event that can disperse hazardous materials and therefore is a component of overall risks assessments of hazardous materials inventories. Radiological/toxicological sabotage is a malevolent act resulting in the release of hazardous materials stored, produced, or used at DOE facilities that may adversely impact the health and safety of employees, the public, or the environment.

The sabotage evaluation process includes representation of all interested functions (e.g., operations, programs, safeguards and security, safety, and emergency management). The following seven-step process is recommended for assessing and addressing sabotage risks at DOE facilities. If this methodology is not adopted, an alternative method should be developed and submitted to the COR for approval. The DOE element responsible for accomplishing each step is in parentheses.

1. Establish team (Facility).
2. Identify and assess quantities of hazardous materials at the facility (Facility).
3. Identify and rank hazardous material targets (Facility).
4. Perform a vulnerability assessment (VA) of credible threat targets (Facility).
5. Evaluate sabotage risk reduction options (Facility).
6. Select and implement prevention and mitigation options (Facility/Operations Office).
7. Validate the program (Operations Office and Headquarters).

A combined team, with membership as described in Step 1.1 of this Attachment should perform the radiological/toxicological sabotage evaluation process as follows:

1. Assessment and protection should be provided using a “graded approach” commensurate with the level of hazards at each facility.
2. Upgrades should be evaluated and selected for implementation, considering cost compared to the continued acceptance of risk. Protection against radiological and toxicological sabotage at DOE facilities should be cost-effective and, where appropriate, consistent with protection afforded to similar hazardous materials in the commercial and private sector.
3. Safety, safeguards and security, and emergency planning elements should be combined to ensure that mutually compatible and effective measures provide defense in-depth prevention, mitigation, and/or response to sabotage events.

4. Current guidance and computer-based methodologies used to conduct VAs in support of Safeguards and Security Plan (SSSP) should not be required. Hazards assessments and risk assessments should be primarily used to develop radiological/toxicological sabotage scenarios. Vulnerabilities should be identified by the security professional using a tabletop analysis approach.
5. Prioritization of facilities/interests needs to be completed to ensure more obvious concerns are analyzed first.

IMPLEMENTATION PROCESS STEPS

STEP 1 - ESTABLISH TEAM. A team representing all interested parties should use available resources to identify and develop preventative, mitigative, and response options. The facility manager should appoint team members and establish milestones for completing the requirements.

1.1 Appoint Team Members.

Each facility manager should select personnel from each office or organization that has a role in the management, protection, and planning for, or responding to, incidents of radiological or toxicological sabotage. At a minimum, representatives of the following disciplines should be appointed to the team: (1) Emergency Management; (2) Facility Management and Operations; (3) Safeguards and Security; (4) Safety and Health; and (5) Environment.

The responsibilities of the team should include:

- (1) Identifying, assessing, and ranking hazardous materials and hazardous material targets at the facility. The ranking should include the attractiveness of the hazardous material to a potential adversary and the resultant sabotage risk.
- (2) Conducting an integrated assessment of radiological and toxicological sabotage events that could have an unacceptable level of impact upon employees, the public, or the environment.
- (3) Performing assessments of the potential consequences due to an act of sabotage associated with hazardous materials in storage, or in use, at the facility which are above the screening thresholds as described in Section D3b of the Guidance for Hazards Assessment chapter of the "DOE Emergency Management Guide."
- (4) Evaluating and recommending, for Operations Office concurrence and cognizant Program Office approval, options to reduce the security risk and/or postulated level of consequences of sabotage events and the priority for implementing each recommended option.

1.2 Establish Milestones. The team should establish realistic and attainable milestones for accomplishing Steps 1 through 6 of this Attachment. The milestones for sabotage assessment should include time tables for related safety, and emergency preparedness assessment and documentation

(e.g., hazards identification/classification in DOE O 421.3 (formerly DOE 5480.23), NUCLEAR SAFETY ANALYSIS REPORTS, dated April 10, 1992, and DOE O 151.1.)

STEP 2 - IDENTIFY AND ASSESS QUANTITIES OF HAZARDOUS MATERIALS AT THE FACILITY.

Threshold quantities of hazardous materials should be screened in accordance with Section D of the Guidance of Hazards Assessment chapter of the “Emergency Management Guide” and DOE O 151.1.

All applicable regulations should be used to determine the screening threshold. The team should request assistance from MEMPO, through the COR, if adequate guidance does not exist for some toxic material and no published data exists that is appropriate for establishing screening thresholds. Any lack of guidance should be noted, and the material assessment should be conducted when the appropriate guidance is received.

2.1 Identify Types, Quantities, and Locations of Hazardous Materials.

Federal Regulations requiring the reporting of hazardous materials inventory within a facility include:

1. Environmental Protection Agency (EPA) Regulations, Title 40 Code of Federal Regulations (CFR) Part 302, “Designation of Reportable Quantities and Notification.”
2. The EPA Hazardous Chemical Reporting: Community Right-To-Know regulations, 40 CFR Part 370, requires annual reporting of hazardous chemicals at a facility to provide the public with information about the hazardous chemicals in the community.
3. The internal material control and accountability records will identify the location and quantities of nuclear material.
4. The U.S. Department of Labor Occupational Safety and Health Administration (OSHA), 29 CFR Part 1910.119, “Process Safety Management of Highly Hazardous Chemicals,” which addresses substances that present a potential catastrophic situation for employees in the workplace.

2.2 Determine Which Hazardous Materials Are Above Screening Thresholds.

After identification, the hazardous materials should be screened to eliminate from further consideration and assessment those facilities with such small quantities of material as to be unattractive as targets of sabotage. Section D3 of the Guidance for Hazards Assessment chapter identifies a methodology for screening hazardous materials to eliminate those facilities that are below the screening threshold.

Hazardous material at or above the specific threshold quantities listed in Appendix A to 29 CFR Part 1910 should be identified as potential sabotage targets with unacceptable levels of consequence for employees.

Review, as appropriate, safeguards and security VAs that have previously identified screening thresholds for nuclear material using 10 CFR Part 100 specification.

STEP 3 - IDENTIFY AND RANK HAZARDOUS MATERIAL TARGETS. If quantities of hazardous materials above threshold limits are present, materials should be ranked on a relative quantity/hazard scale and be combined within the same building or location. Therefore, targets should be identified for in a format that indicates those that may pose larger risks/consequences.

The team should develop a rank-ordered listing of those hazardous materials above threshold limits (screening threshold) based on the event scenario consequence assessments consistent with DOE O 151.1 and Guidance for Hazards Assessment chapter of the "DOE Emergency Management Guide." The listing should identify the potential targets upon which the remaining five steps will focus.

The facility team should evaluate the materials at risk consistent with methodologies utilized for environmental, safety and health (ES&H) issues. The team should consider the use of one or more of a variety of risk-based ranking systems which have been utilized within the Department. These include: (1) Capital Asset Management Process (CAMP) Prioritization (DOE O 430.1, LIFE CYCLE ASSET MANAGEMENT, dated August 24, 1995); (2) a Safety and Health Risk-Based Priority Model which prioritizes risk through the use of a Priority Planning Grid (PPG); (3) DOE Prioritization for Waste Management Operations; (4) DOE Prioritization for Environmental Restoration; (5) Funding Prioritization of Fire Protection Items; (6) Occupational Safety Model-Risk Assessment Methodology; (7) Tiger Team Priorities; and (8) Technical Safety Appraisal Priorities.

The PPG approach used to rank ES&H issues and planned corrective actions should be used in ranking risks from sabotage. However, information developed from this process should be consistent with CAMP requirements for upgrade projects. The establishment of priorities for evaluation should include consideration of those potential targets where minimal protection exists. For example, the assessment should initially focus on those materials located in areas with the least protection and conclude by addressing materials located in areas with the most protection.

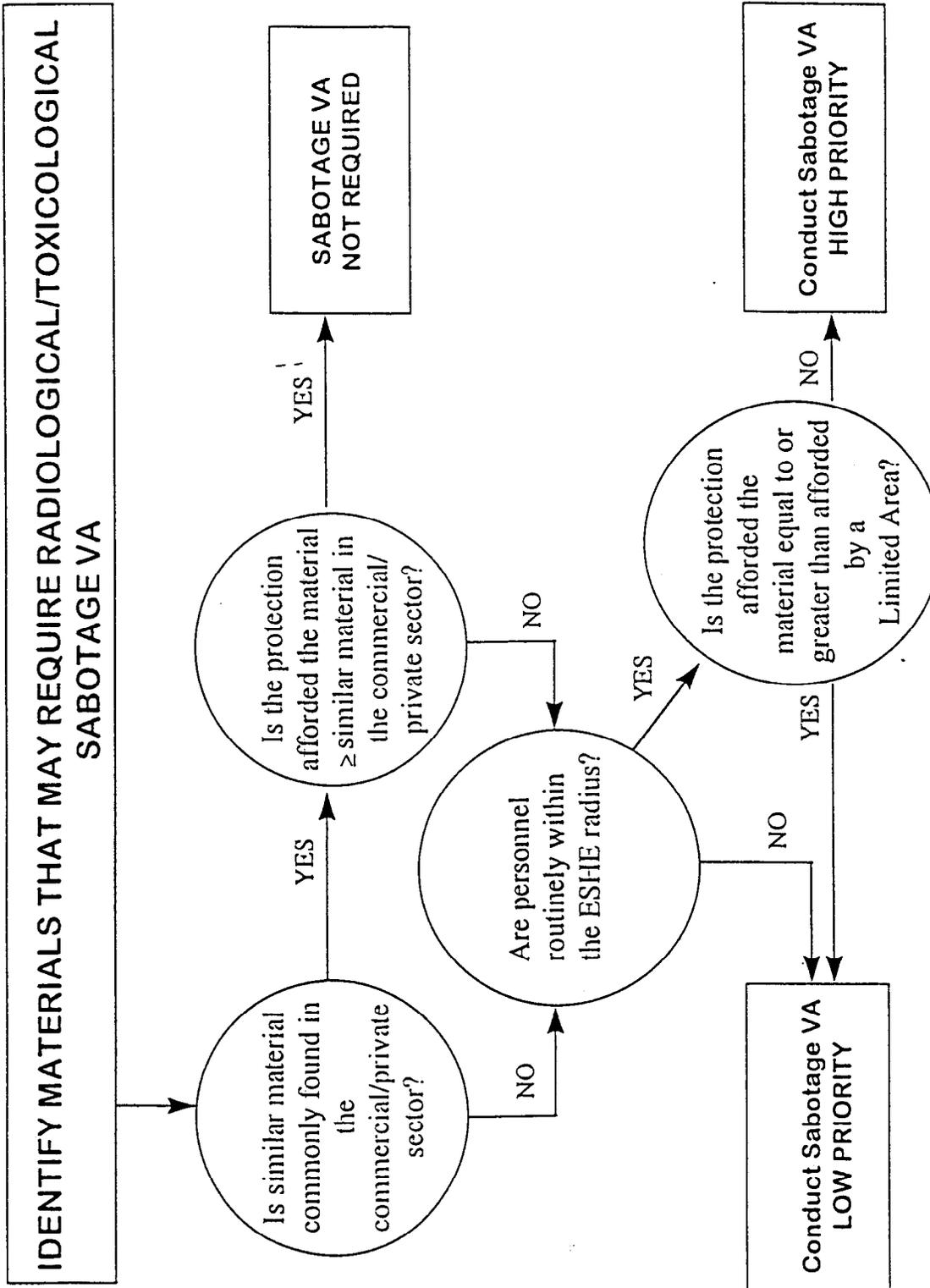


Figure 1
VA Process Flowchart

The first decision in the process (see Figure 1, page I-12 of this Chapter) addresses whether similar materials are transported, stored and/or used in the commercial/private sector. If the answer is yes, the second decision is whether the protection afforded the material is comparable to similar materials transported, stored, and/or used in the commercial/private sector. If the answer is no, a secondary screening criteria is applied which relates to whether personnel are routinely within the Early Severe Health Effects (ESHE) radius. This decision establishes two categories, high priority and low priority, for accomplishing sabotage VAs. After the analyses of the high priority facilities and interests are completed, the lower priority materials should be analyzed.

The number of people within the ESHE radius and potential clean-up costs associated with a hypothetical sabotage scenario should be facility specific and useful for prioritizing within the High Priority category to ensure the materials that pose the highest risk are analyzed first. After the analyses of the high priority facilities/interests are completed, the lower priority materials should be analyzed.

(See the Guidance for Hazards Assessment chapter of the “DOE Emergency Management Guide” for additional information.)

STEP 4 - PERFORM A VA OF CREDIBLE THREAT-TARGET COMBINATION. The VA should include several factors, such as locations, site-specific features, and existing safety and security features. In this process, scenarios that lead to releases of hazardous materials should be developed and analyzed. The first step in the assessment should be identifying and documenting protective features that reduce the probability of successful completion of a sabotage act and/or mitigate the consequences. The analyses should include completed results for accident scenarios, emergency event classification, protective actions and consequence assessments in accordance with the Guidance for Hazards Assessment chapter of the “DOE Emergency Management Guide.” Performance of the analyses should identify scenarios that create an unacceptable risk in the safety and safeguards and security protection systems and in response planning for release scenarios.

Hazards assessments and risk assessments should be used to develop radiological and toxicological sabotage scenarios. Safeguards and Security personnel should review the accident scenarios developed during the hazards assessment process to determine if there is a way in which an individual could cause a similar event (malevolent act) to occur. For example, an accident scenario could involve the inadvertent opening of a valve. A malevolent scenario could involve an employee using explosives to disable the valve and potentially change the form of the material and the degree of dispersal. Vulnerabilities should be identified by the security professional using a tabletop assessment approach.

STEP 5 - EVALUATE SABOTAGE RISK REDUCTION OPTIONS. After sabotage vulnerabilities are assessed, the VA team analyses should be performed of actions that may reduce the risk of a successful sabotage event and/or mitigate the consequences. In addition, a reassessment process should be initiated after cost-effective modifications and/or plans are identified.

Risk reduction and consequence mitigation actions that should be considered include:

1. Taking event-mitigating actions (e.g., establishing shelters, emergency notifications/evacuations, reducing and/or removing inventory quantities or changing storage locations).
2. Developing programs to reduce the probability of insider acts (e.g., personnel clearances, personnel assurance programs, and utilization of threat and intelligence information).
3. Adding safeguards and security features to prevent or detect adversary actions (e.g., access and materials controls, surveillance, additional barriers/alarms, and searches).
4. Implementing additional safety controls or adding equipment that prevents the sabotage release scenario (e.g., providing automatic shutdown if components fail, adding backup systems, and establishing vital areas).

Where operationally feasible, consideration should be given to reducing quantities of materials on-hand below the screening threshold or modifying process or production/operations equipment to reduce the consequence level of the sabotage act.

Safeguards and security methods for risk reduction through prevention of an act of sabotage should be considered with safety and emergency planning mitigation activities to determine the most cost-effective approach to reducing risk to an acceptable level.

STEP 6 - SELECT AND IMPLEMENT PREVENTION AND MITIGATION OPTIONS. The VA team should analyze options to reduce the risk and/or consequences of sabotage events. The analysis should include risk/benefit optimization, feasibility, and difficulty of performing the sabotage act(s) and of implementing the proposed action, resource optimization to limit total risk, compliance with requirements, effectiveness of existing systems and programs, and site-specific factors. Upgrades should be selected for implementation based on these analyses to meet graded, cost-effective sabotage protection program objectives that emphasize risk/consequence for the most attractive sabotage targets. These selected upgrades should be submitted to COR for consideration and approval within overall site resource optimization, and to the cognizant program offices for information and funding support, as necessary, prior to implementation. Particular attention should be given to sabotage scenarios whose risks/consequences exceed those of corresponding accident scenarios. Risks should be accepted. For example, actions cannot be taken to reduce the potential for, or consequences of, a sabotage act event to zero. However, an acceptable level of risk should be determined based on evaluation of a variety of facility-specific goals and considerations. Results from the VA process should identify accepted risks, the rationale for this conclusion, and exceptions to DOE Orders and policies.

Selection of upgrades for implementation should be based upon risk reduction, operational and safety compatibility, and cost effectiveness. To evaluate the vulnerability reduction associated with each security upgrade set, the upgrades are assumed to have been applied and each target is reevaluated. The matrices and

supporting rationale developed by the team in Steps 1 through 6 should serve as the documentation of the sabotage evaluation process. This guidance should not inhibit field elements from making common sense/cost-effective upgrades when deemed appropriate by site management.

STEP 7 - DOCUMENTATION AND PROGRAM VALIDATION.

7.1 Documentation.

The results of Steps 1 through 6 of the sabotage evaluation process should be documented in the Facility Specific Hazard Assessment (or a classified appendix thereof). These results should include the process, calculations, and rationale for results of Steps 3 through 6. Additionally, documentation of the sabotage evaluation process should be referenced in applicable facility plans and reports (e.g., Emergency Readiness Assurance Plan and SSSP).

7.2 Program Validation.

Once upgrading options have been selected and implemented, the facility personnel should performance test their sabotage protection program to verify that the measures implemented are effective and that the changes have not caused other vulnerabilities in their protection system. The COR should perform reviews and validate the results of facility sabotage vulnerability programs. In addition, facility personnel should review at least annually and update as necessary their sabotage VAs as part of the overall hazards assessment process. Performance testing should be conducted in concert with VAs when protection features, targets, or processes change. Validation results should be provided to the CSO.

NON-REGULATORY, NON-EMERGENCY NOTIFICATION GUIDANCE
FOR EVENTS OCCURRING AT ORO FACILITIES

1.0 FACILITY CONDITION.

1. Level 1 or 2 Nuclear Criticality Safety Incident with a risk to personnel and protective actions are, or should be, taken.
2. Fire, explosion, or compressed gas/electrical discharge with Safety Class Structures, Systems, and Components (SSC) equipment or performance degradation only if people are at risk and protective actions are, or should be, taken.

Note: Safety Class SSC equipment is equipment that provides a safety function by preventing or mitigating accidents.

3. Fire, explosion, or compressed gas/electrical discharge within primary building or facility confinement/containment boundaries if injury occurs.
4. Fire, explosion, or compressed gas/electrical discharge in a radioactive/hazardous material processing or storage area requiring emergency response.
5. Loss of accountability of nuclear source in excess of limits in 10 CFR 30.71 or state standards.
6. Request for Radiological Assistance.
7. Failure or significant performance degradation of Safety Class SSC equipment required by existing plant conditions if people are at risk and protective actions are, or should be, taken.
8. Process ventilation system or confinement loss sufficient to invert pressure zones if people are at risk and protective actions are, or should be, taken.
9. Evacuation in response to an actual occurrence if people are at risk and protective actions are, or should be, taken.
10. Unplanned Nuclear Excursion in a nuclear reactor, whether or not terminated by protective actions, that was clearly outside the routinely accepted and experienced bounds for that reactor.
11. Discovery of an actual Unreviewed Safety Question which reveals a currently existing inadequacy in the approved authorization basis.

2.0 ENVIRONMENTAL.

1. Actual or suspected radioactive material release that threatens a source of drinking water pathway if state limits have a potential to be exceeded at the raw water intake to a public water treatment plant. (Tennessee Division of Water Quality, 1200-5-1-.06)

2. Actual or suspected radioactive material release to a sewer, stream, navigable waterway or unexpected holding point if the concentration of radionuclide(s) exceeds 100 times the derived concentration guides in Chapter III of DOE O 441.1 (formerly DOE 5400.5), RADIATION PROTECTION OF THE PUBLIC AND THE ENVIRONMENT, dated February 8, 1990.
3. Actual or suspected radioactive material surface contamination in uncontrolled areas accessible to the public and greater than the surface contamination release limits of DOE O 441.1 or actual or suspected presence of an item in uncontrolled areas accessible to the public that does not conform with a waste management shipment or other materials/substance management plan or procedure that stipulates the acceptable quantity of volumetrically contained "DOE-added" radioactivity that may be released to the general public.
4. Actual or suspected hazardous substance release that threatens a source of drinking water such that maximum containment levels have the potential to be exceeded at the raw water intake to a public water treatment plant (40 CFR 141).
5. Any new discovery of radioactive or hazardous material containment discovered in groundwater.
6. Fish Kills of greater than 100 fish in a single event.
7. The State will be contacted as a courtesy whenever a call is made to the U. S. Environmental Protection Agency or the National Response Center, which fulfills a regulatory requirement to report an incident.

The increase, above steady state conditions, in radioactive exposure to offsite persons at levels of 7.0 millirem per day or greater. (Currently all releases of 10 grams/day of enriched uranium, or 100 grams/day of depleted uranium, above steady state level are reported to the State. For worst case meteorological conditions, this corresponds to 0.7 millirem/day dose.)

Incidents at the Y-12 Plant that result in the release of greater than normal amounts of mercury to local creeks, as from water main breaks.

3.0 PERSONNEL RADIATION PROTECTION.

1. Dose to minor or general public greater than 0.100 rem.
2. Actual or suspected contamination spread offsite in excess of the DOE Radiological Contamination Control Manual. "Offsite" means any area beyond the fenced boundaries of the respective individual plant sites, including publicly accessible roads and parking lots.
3. Any occurrence requiring offsite medical assistance for contaminated personnel.

4.0 TRANSPORTATION.

1. An offsite transportation event involving a release of non-radioactive hazardous materials in excess of a limited quantity (defined at 49 CFR 171.8) transported in support of Departmental Operations.
2. An offsite transportation event involving the release of radioactive material transported in support of Department Operations.
3. Any radioactive material shipment that has been transported on offsite roads that arrives at its destination with radiation or contamination levels in excess of DOT allowable limits. (Defined at 49 CFR 173.441-and 173.443)
4. The State will be contacted as a courtesy whenever a call is made by the carrier to the U. S. Department of Transportation or the National Response Center, which fulfills a regulatory requirement to report an incident.

5.0 CROSS CATEGORY. These are examples of general items of interest to TEMA and other state agencies.

1. Fatal occupational injury.
2. Vehicular/Transportation accident with loss or damage greater than \$100,000.
3. A single event resulting in:
 - a. Dose greater than 5 rem.
 - b. Dose to lens of eye greater than 15 rem.
 - c. Dose to extremity, skin or organ greater than 50 rem.
 - d. Dose to an unborn child greater than 0.500 rem.
 - e. Contamination of five or more individuals from a single occurrence.
4. An occurrence that has resulted or may result in concern or inquiry by the public, media, or offsite officials.
5. Actual or suspected uncontrolled hazardous or radiological material of suspected plant origin located offsite where plant representatives are asked to investigate or retrieve the material.

OFFSITE AGENCY NOTIFICATION FORM

NOTIFICATION FORM	NOTIFICATION NO. _____ (For Internal Use Only)															
<p>1. <u>Notification Received From:</u> Name: _____ Telephone: _____ Organization: _____ Time: _____</p>																
<p>2. <u>Site:</u> _____ Building/Facility: _____</p>																
<p>3. <u>Type of Event:</u> a. <input type="checkbox"/> Emergency b. <input type="checkbox"/> Occurrence c. <input type="checkbox"/> Exercise/Drill</p>																
<p>4. <u>Category/Classification Level:</u> a. <input type="checkbox"/> Off-Normal c. <input type="checkbox"/> Alert e. <input type="checkbox"/> General Emergency b. <input type="checkbox"/> Unusual Occurrence d. <input type="checkbox"/> Site Area Emergency</p>																
<p>5. <u>Key Incident Dates and Times:</u></p> <table style="width: 100%; border: none;"><thead><tr><th style="width: 30%;"></th><th style="width: 35%; text-align: center;">Date</th><th style="width: 35%; text-align: center;">Time</th></tr></thead><tbody><tr><td>a. <input type="checkbox"/> Incident Occurrence</td><td style="text-align: center;">_____</td><td style="text-align: center;">_____</td></tr><tr><td>b. <input type="checkbox"/> Initial Classification</td><td style="text-align: center;">_____</td><td style="text-align: center;">_____</td></tr><tr><td>c. <input type="checkbox"/> Reclassification</td><td style="text-align: center;">_____</td><td style="text-align: center;">_____</td></tr><tr><td>d. <input type="checkbox"/> Termination</td><td style="text-align: center;">_____</td><td style="text-align: center;">_____</td></tr></tbody></table>			Date	Time	a. <input type="checkbox"/> Incident Occurrence	_____	_____	b. <input type="checkbox"/> Initial Classification	_____	_____	c. <input type="checkbox"/> Reclassification	_____	_____	d. <input type="checkbox"/> Termination	_____	_____
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c. <input type="checkbox"/> Reclassification	_____	_____														
d. <input type="checkbox"/> Termination	_____	_____														
<p>6. <u>Type(s) of Incident:</u> a. <input type="checkbox"/> Fire or Explosion c. <input type="checkbox"/> Radiological e. <input type="checkbox"/> Electrical g. <input type="checkbox"/> Other: _____ b. <input type="checkbox"/> Reactor System Problem d. <input type="checkbox"/> Security f. <input type="checkbox"/> Hazardous Materials</p> <p>Description of Incident: _____ _____ _____</p> <p>Materials Released: _____ Estimated Quality: _____</p> <p>Extremely Hazardous: <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Assistance Requested: _____</p>																
<p>7. <u>Release Information:</u> a. <input type="checkbox"/> No Release d. <input type="checkbox"/> Unknown b. <input type="checkbox"/> Airborne e. <input type="checkbox"/> Terminated c. <input type="checkbox"/> Waterborne Estimated Start Time _____ Assumed Duration _____</p>	<p>8. <u>Meteorological Data:</u> Wind Speed _____ mph Wind Direction from _____ to _____ Precipitation: <input type="checkbox"/> Yes <input type="checkbox"/> No Stability Class _____</p>															
<p>9. <u>Prognosis of Situation:</u> a. <input type="checkbox"/> Unknown b. <input type="checkbox"/> Stable c. <input type="checkbox"/> Escalating d. <input type="checkbox"/> Improving</p>																
<p>10. <u>Protective Action Recommendation (PAR)/Decisions:</u> _____ _____ Known Health Effects: _____</p>																
<p>11. <u>Press Release Anticipated:</u> <input type="checkbox"/> Yes <input type="checkbox"/> No</p>																