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EM9001-RW Emergency Response Organization Training Refresher (FY 2012)

EM9001-RW, Rev. 9.0.0

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Emergency Response Organization – FY12 Annual Refresher

Course Goal:

After completing this course, the student will demonstrate an understanding of updated information regarding the LLNL Emergency Response Organization policies and procedures; lessons learned from drills, exercises, and actual emergency responses; and new processes or facility changes, in accordance with the LLNL Emergency Plan and Emergency Plan Implementing Procedures.

Course Objectives:

- I Describe your roles and responsibilities as part of the LLNL Emergency Response Organization in relation to the lessons learned from the FY11 drills, exercises, and actual emergency responses.
- II Identify the new processes, procedures, or facility changes that may affect your roles and responsibilities as a member of the LLNL Emergency Response Organization.

Emergency Management System

The Command and Management component within the Standardized Emergency Management System (SEMS) and the National Incident Management System (NIMS) are designed to enable effective and efficient incident management and coordination by providing flexible, standardized incident management structure. The structure is based on three key organizational constructs:

1. The Incident Command System (ICS),
2. Multi-Agency Coordination Systems (MACS), and
3. Public Information System.

These three organizational constructs are designed to allow personnel from a variety of agencies to meld rapidly into a common management structure with common terminology, meet the needs of incidents of any kind or size, provide logistical and administrative support, and be cost effective by avoiding duplication of efforts.

The Field Response Level is where emergency management/response personnel, under the command of the Incident Commander, carry out tactical decisions and activities in direct response to an incident or threat. The Incident Command System is used to organize on-scene operations for a broad spectrum of emergencies (small to complex, both natural and manmade).

At LLNL, the Field Emergency Response Organization (ERO) consists of Alameda County Fire Department, Security Protective Forces Division, and the ES&H Teams.

The LLNL Multi-Agency Coordination System (MACS) consists of the Emergency Operations Center (EOC), the Department Operations Centers (DOCs), and the Executive Business Coordination Center (EBCC). The MACS provide the architecture to support coordination of multiple incident prioritizations, critical resource allocation, communications system integration, and information coordination.



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The LLNL Public Information System is managed by the Public Affairs Office and consists of the processes, procedures, and systems to communicate timely, accurate, and accessible information on the incident's cause, size, and current situation to the public, our employees / sub-contractors, and additional stakeholders (both directly affected and indirectly affected).

Emergency Management Base Program:

The Emergency Management Base Program at LLNL (i.e., Facility-Level Base Program) was developed in accordance with Federal Occupational Safety and Health Administration guidance on workplace emergency planning and is intended to ensure that each normally occupied facility has a fundamental emergency action plan (e.g., emergency reporting, evacuation, assembly, and accountability). The Facility-Level Base Program provides the framework for response to unplanned, significant events, or abnormal conditions that require time-urgent response from outside the immediate area of the incident and that are causing or have the potential to cause serious impact to the safety, health, or security of personnel, facilities, or the environment.

Facility-specific emergency situations take into account events such as hazardous material spills, fires, explosions, security threats, and other emergency situations requiring immediate action of facility/building occupants and the rapid deployment of emergency response personnel, including the Fire Department and Protective Forces.

The Facility-Level Base Program differs from the Disaster/Self-Help Program in that it focuses on events where emergency response personnel are immediately available to take charge of the emergency response efforts at the facility upon arrival. The Disaster/Self-Help Program focuses specifically on large-scale disasters that would impact the entire site and overwhelm emergency response personnel.

Building Emergency Coordinators (BECs) are primarily expected to oversee the emergency preparedness and response activities in their assigned facilities, coordinating designated facility personnel to meet and direct Emergency Responders to the emergency scene, and providing status reports to the Emergency Responders (Incident Commander / Unified Command). They also will interface with Facility Management during the event.

During a Disaster/Self-Help event, the BECs will provide situation status reports to the Assembly Point Leaders or Zone Supervisors; who will relay the information to the EOC for incident prioritization and emergency response.

Initial Response / Call-Out

LLNL Emergency Plan – *General Concept of Operation:*

Upon declaration of an Operational Emergency, the Incident Commander (IC) assumes the role of Emergency Director (ED) until the EOC is declared operational. The Emergency Management Duty Officer (EMDO) activates the appropriate level of the LLNL Multi-Agency Coordination System, initiates appropriate off-site agency notifications, including the Laboratory Emergency Duty Officer (LEDO).

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The IC manages the emergency until relieved by the on-duty LEDO who then becomes the ED when the EOC is operational. The IC continues to manage the incident scene.

Emergency response efforts and resources committed to the incident scene are under the control of the Alameda County Fire Department Battalion Chief or Security's Protective Forces Division Watch Commander/Sergeant.

Emergency response efforts and resources used within the LLNL site boundary, but outside the incident scene, are under the control of the ED.

Committing DOE/NNSA resources rests with the NNSA/LSO Emergency Manager.

The **Emergency Director** has authority and responsibility to implement the facility/site emergency plan and exercise overall emergency management responsibility at all times during a response to an Operational Emergency. After the EOC is declared operational, the ED assumes responsibilities for categorization and classification, protective actions and protective action recommendations, and off-site agency notifications.

During an Operational Emergency, on-site protective actions will be modified or lifted at the direction of the ED following recommendation by the IC. This information will be communicated to appropriate on-site emergency response and facility personnel through established emergency communication systems. Changes to protective action recommendations for affected off-site agencies will be communicated per EPIP-51 *Notifications* following coordination with local decision-makers.

Lessons Learned:

During previous exercises, no formal transfer of responsibilities from the IC to the LEDO/ED was observed prior to the EOC being declared operational, including the responsibilities for on-site protective actions (PAs) and off-site protective action recommendations (PARs). This initial "meet and greet" needs to be conducted between the IC and the LEDO in order to gain situational awareness and make a formal turnover of responsibilities.

During subsequent table-top exercises, the EMDO, IC, and LEDO talked through the process of how they would classify the event, determine PAs and PARs, and then make PAR notifications to off-site agencies.

The IC and LEDO walked through the process for conducting their turnover briefing and establishing clearly defined areas of responsibility. They also discussed how that conversation may need to be conducted periodically should the event change. They established clear lines of responsibility, when and how often they would have to reassess the situation.

Once the LEDO had full situational awareness of the event and assumed the role as Emergency Director, the IC, ED, and Consequence Assessment Team Lead discussed the possibility of how the event categorization / classification could change based on metrological conditions, plume models, and other factors as the event evolved.

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The *COMMUNICATOR* system is designed to dispatch the LLNL Multi-Agency Coordination System staff when they are needed. The Emergency Management Duty Officer (EMDO) is responsible for making initial required off-site emergency notifications and activating the EOC and DOCs at LLNL.

Safe Route Information:

Keep in mind, the use of good judgment and common sense should always be used in matters that are not foreseen or covered by the emergency plans or procedures.

Field / First Responders:

It is imperative to request or obtain meteorological data (wind direction) from ACRECC, CAS, your ES&H Team, or from <http://www-metdat.llnl.gov/> prior to initial responses. Always approach from an upwind direction (wind at your back) and ensure a safe stand-off distance from the incident scene or facility. Be observant of wind direction shifts by watching wind socks, trees, or simply feeling the wind.

Do not respond directly to the facility or incident scene; instead, **respond to the Incident Command Post (ICP)**.

Multi-Agency Coordination Responders:

It is equally imperative for the MACS staff to receive information so they can plan a safe route to the EOC or their assigned DOC. The EMDO will provide the following *COMMUNICATOR* recorded safe route message:

“If you have been told to Shelter in Place and cannot reach your assigned duty station, remain where you are and contact the EOC or your DOC by telephone.

When responding to the EOC or your DOC, avoid [*Building xxxx, general location, etc.*] involved in this emergency. Wind direction is currently coming from the [*direction*].”

Lessons Learned:

Establishing a Safe Route: During a previous exercise, several members of the EOC / DOCs and the ES&H Team personnel were under shelter-in-place orders and could not report to their support locations. Some members contacted Alameda County Emergency Communications Center (ACRECC) to establish how they could respond to the event even though they were under shelter-in-place orders. Because there were multiple dispatcher fielding calls, some of the callers were told they could respond, and were provided “safe route” information, and others were told not to respond since they were under shelter-in-place orders.

All EOC / DOC and ES&H Team personnel **must** follow protective action orders. Further information will be provided as soon as the situation is evaluated. ES&H Team personnel may relay information to the ES&H Team Liaison or Incident Commander via radio or cell phone. EOC and DOC personnel should contact their respective emergency facility; again, many of the EOC / DOC positions may be able to function in a “virtual” fashion (from their office) until further safe route information becomes available.

Initial Actions and On-Going Actions

Incident Command System Concept – Common Terminology / Clear Text:

One way to ensure communications are verified and validated is to practice and use the Active Listening concept. In the book *Leader Effectiveness Training*, Thomas Gordon states “Active listening is certainly not complex. Listeners need only restate, in their own language, their impression of the expression of the sender.”

Simply put: Repeat the message back! (*Message – Repeat – Confirm – Clarify*)

Lessons Learned:

During a previous exercise, the chemical names “hydrofluoric acid” and “hydrochloric acid” were misconstrued resulting in potential confusion for emergency response and emergency medical treatment activities. Should any information discrepancy be identified, whether verbal, written, or any other means of communications, the discrepancy **must** be immediately verified and validated to ensure the correct and accurate information is available for decision making.

Radio Communication Systems:

It is recommended that Incident Commanders, EMDOs, LEDOs, etc. employ the 400 MHz radio system for direct communications when managing an event, especially at Site 300.

While communications remains an issue during a Site 300 event, some improvements have been implemented. The Senior Fire Officer first on scene directed ACRECC to notify and brief the Site 300 Manager; this was completed in a timely manner. Additionally, the Battalion Chief (BC) on his arrival at Site 300 stopped at the Site 300 DOC to conduct a “face to face” with the Site 300 DOC Commander / Manager.

The EMDO did not have the chance to talk to the BC due to a communications void between Site 200 and Site 300. The EMDO made initial event categorization/classification based on the information received over the radio.

During follow-up table-tops, there was a discussion on the fire channels and the number of radios that were being used to monitoring the incident. The Site 300 DOC Commander / Manager and ACFD decided on the channel(s) to be used for their communications during an event.

Site 200: **Fire 1** / Site 300: **Fire 2**

WebEOC Information Management System:

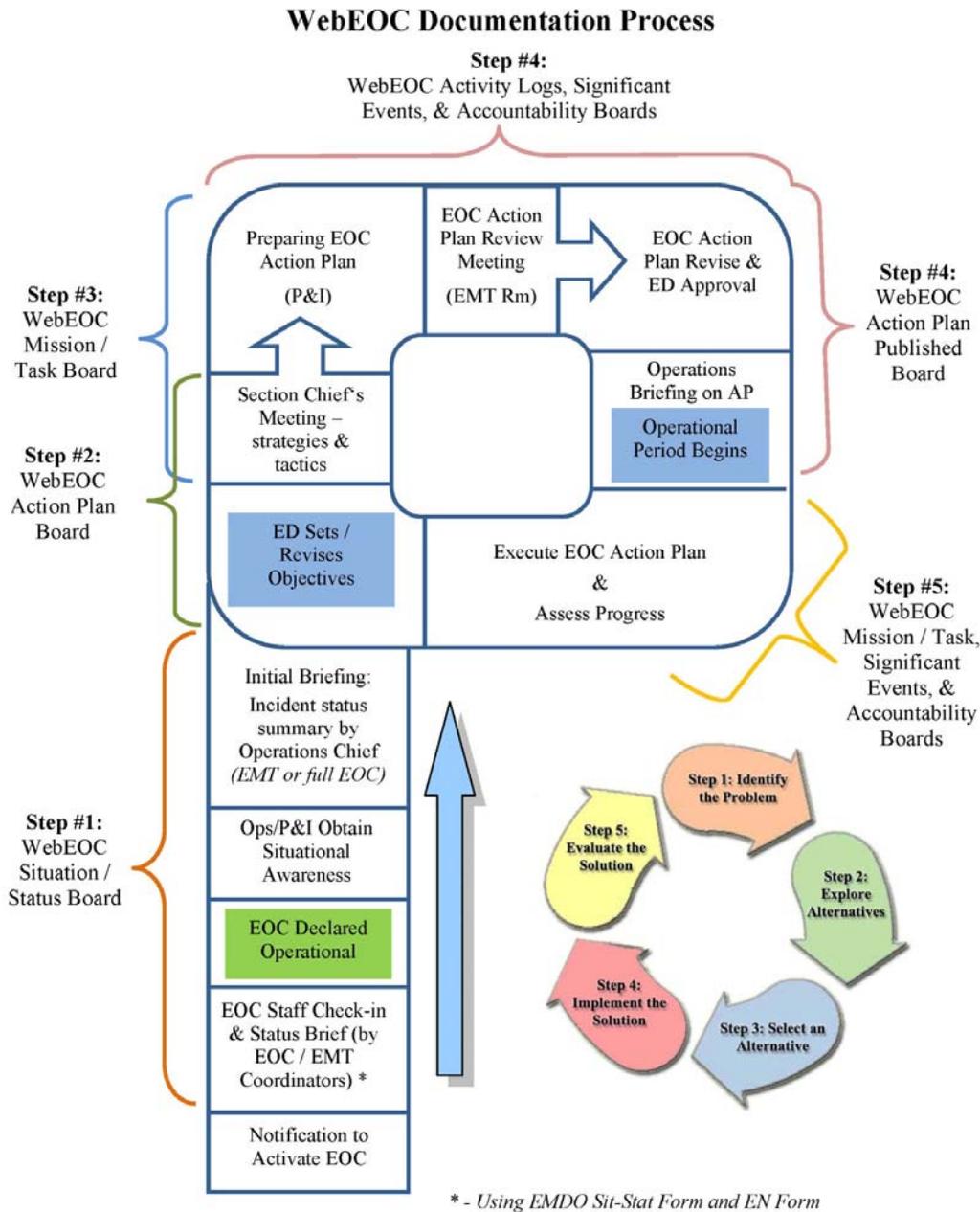
It is equally important to ensure that all information recorded onto the WebEOC information management system has been verified and validated. Repeating the message back to the originator can ensure the information is correctly received before posting on WebEOC.

During FY2011, the LLNL Multi-Agency Coordination System has implemented the new WebEOC version 7.2. This new version is designed to be aligned with the SEMS/NIMS concept of operation for the EOC, DOCs, and EBCC.

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The following Planning “P” illustrates the emergency management planning process and the WebEOC documentation process:



The leg of the “P” describes the initial response period – activation of the EOC and DOCs, the initial incident briefing, and verification/validation of the situation. Identifying the problems!

At the top of the leg of the “P” is the beginning of the first Operational Period planning cycle. In this circular sequence, the steps establishing the objectives or goals to be accomplished based on the identified problems faced, establish the strategies and tactics to meet the objectives, assigning tasks to implement the strategies / tactics, and then implement the solution to the problem.

The final step is to execute the plan and assess the progress of the assigned tasks. In other words; evaluate the effectiveness of the solution.

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Lessons Learned:

FEMA Lessons Learned / Information Sharing; November 2011

Requiring that Information Management Systems be employed during all activations:

On May 1 and 2, 2010, severe storms brought record-setting torrential rain to Nashville and Davidson County, Tennessee. Rainfall amounts over a 38-hour period ranged from 13.57 inches at Nashville International Airport to 17.67 inches in the Bellevue area. The unprecedented rains resulted in flash floods and river flooding beginning mid-day on May 1, pushing water and debris into roads and properties. The Cumberland River and Mill Creek each exceeded their respective flood stages by more than 11 feet.



From May 1 to 3, 2010, the Cumberland River at Nashville rose from 18 feet to a crest of 51.86 feet. The floods resulted in 10 deaths, damage to more than 10,900 structures, and billions of dollars worth of damages to public infrastructure, making it the costliest disaster in the history of Nashville and Davidson County.

On May 1, 2010, the Nashville Mayor's Office of Emergency Management (OEM) fully activated the Nashville and Davidson County EOC. By 7 p.m. that evening, dozens of city, county, state, voluntary, and private sector agencies had deployed representatives to the EOC. The EOC remained activated around-the-clock for the next 2 weeks as it coordinated a variety of operational activities.

Many EOC personnel relied on face-to-face conversations to convey information to other agency representatives in the EOC. However, in some cases, these EOC personnel did not document the information from the conversation into WebEOC, the information management system used by the EOC. Consequently, the EOC's WebEOC system did not have all critical agency events, significant events, or the requested resources. The failure to record this data in WebEOC meant that the critical information was not disseminated to all EOC personnel. Further, it increased the difficulty of documenting times and dates in EOC reports.

The **After Action Report (AAR)** recommended that requiring the use of WebEOC during all activations, even partial ones, could help personnel become accustomed to using the system automatically. The AAR noted that while most EOC personnel had received WebEOC training, many did not demonstrate the necessary level of proficiency during the flood operations.

For additional information on the LLNL WebEOC information management system, download and review the EM9016-P *WebEOC System Practical* lesson plan:

https://www-epp.llnl.gov/EM-Practicals/Practicals/EM9016-P_10-2011.pdf

Operational Emergency Termination / Recovery Activities

Accident/Incident Scene Management (Post Emergency Response):

Procedure “PRO 0081 00,” approved 06/29/2010, describes the control, management, and chain of custody responsibilities of an accident/incident scene for the safety of personnel and preservation of materials and evidence for follow-on investigative/analysis efforts, after emergency response activities have been completed. Accident/incident scene management is necessary after the emergency response to ensure that the scene is effectively preserved and controlled until all fact finding and evidence gathering is complete. This facilitates the conduct of a root cause analysis by LLNL or DOE, should one be required.

A key concept for the successful implementation of this procedure is that individuals assigned the function of scene control/management should assume that further analysis is required, and act accordingly, until further analysis is deemed not required.

The procedure describes the process to respond to the following scenarios:

Scenario 1: Emergency response with an Incident Commander established, anytime.

Scenario 2: Line management responds to an event during working hours.

Scenario 3: Line management is notified of an event during off-working hours and responds.

The procedure follows four phases:

Phase 1: Emergency response

Phase 3: Scene Management

Phase 2: Scene stabilization & control

Phase 4: Analysis

	Phase 1	Phase 2	Phase 3	Phase 4
Scenario	Level of Emergency Response	Scene Stabilization & Control	Scene Management	Analysis
1	Incident Commander (IC)	LEDO	Geographic DAD Ops (or designee)	IA Committee Chair
2	Line Manager – Working Hours	ES&H Team facilitates	Payroll or Program DAD Ops (or designee)	Mgt assigned – IA Committee Chair or Assurance Manager
3	Line Manager – Off-Hours	LEDO facilitates	Payroll or Program DAD Ops (or designee)	Mgt assigned – IA Committee Chair or Assurance Manager

A copy of Procedure “PRO 0081 00” is available on the Emergency Preparedness & Planning web site: <https://www-epp.llnl.gov/epp/resources.html>

New Processes, Procedures, or Facility Changes

Emergency Plan

The Emergency Plan is reviewed, revised, and released on an annual basis. Revision 17 is available on the EM9001-RW home page as well as the Emergency Preparedness & Planning web site: <https://www-epp.llnl.gov/epp/resources.html>

Newly Reorganized Disaster/Self-Help Zones

During 2012 the Disaster/Self-Help Program will be revamped. The first step in implementing the change was the January 2012 introduction of the new consolidated and reconfigured zones. During 2012, the Emergency Programs Organization, with the assistance of the LLNL Disaster/Self-Help cadre, will implement the use of the new zones. On October 18, 2012, in conjunction with the Great California Shakeout, LLNL will hold Shaker FY2013 testing the full implementation of the zone reconfiguration.

The new Disaster/Self-Help Zone Map is available on the Emergency Preparedness & Planning web site: <https://www-epp.llnl.gov/epp/selfhelp.html>

Newly Reconfigured Emergency Operations Center

Emergency Management has been working on a reconfiguration of our EOC – keeping the Incident Command functional areas of Management, Operations, Planning & Intelligence, and Administration/Logistics/Finance; but moving the positions into closer proximity to each other to facilitate communications/information flow.

For example, the Emergency Director will be setting directly across from the Operations Section Chief – immediate information flow versus going into the former Management Team Room or during periodic briefings.

During FY2012, the EOC will be focusing on improving the communications and information flow. The upcoming DOC Drills will allow the validation of the new EOC reconfiguration and the facilitation of better communications and information flow.

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Other Accomplishments / Noteworthy Practices

FY11 B321 and B322 – EPHA Facility Exercise:

1. The EVA system in Buildings 321A/B did not work on the day of the exercise. A hearing-impaired employee received the page and he in turn notified his co-workers to evacuate.

FY11 B131 – EPHA Facility Exercise:

1. Facility manager used the building paging system to make follow-up shelter-in-place announcement to facility occupants and also to notify occupants to “safe” all operations and prepare for an evacuation order once he had received information from ADFM at the Incident Command Post that an evacuation was being discussed. This prepared facility occupants for the evacuation and gave them a window of time to deal with any classified information.
2. The new Facility-Level Emergency Program, and associated emergency plans, will designate what, if any, employees will shut down, or continue to operate, critical equipment / operations before they evacuate. The plans will also outline, or reference, the procedures for safe shut-down / continued operation of critical equipment.

FY11 Site 300 / Transportation – EPHA Facility Exercise:

1. Although the incident scene was initially described as “stable” after the fire was extinguished, the Emergency Director, based on a recommendation from the S300 DOC Commander/Manager, refrained from releasing personnel from protective actions until the remaining Lithium Hydride drum (that was not incinerated by the fire) could be inspected and secured (e.g., covered to prevent contact with moisture in the event of rain and in case the drum was damaged).

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