LANL Emergency Planning and Preparedness Overview

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Overview

- LANL’s National Security Mission and Strategies
- Unique LANL Operational Considerations
- LANL Emergency Management Capabilities
- LANL Hazards, Analysis, and Planning
- LANL Preparedness Activities
- Internal and External Communications and Collaborations
- Wildland Fire – Case Study in Partnership
- Summary Thoughts
LANL’s National Security Mission

- **Vision:** Delivering science and technology to protect our nation and promote world stability
- **Mission:** To solve national security challenges through scientific excellence
- **Goals:** Deliver national nuclear security and broader global security solutions and foster excellence in science and engineering disciplines essential for national security missions
- **Strategies:**
  - Maintain an effective U.S. nuclear deterrent;
  - Protect the nation against the nuclear threat through efforts in nonproliferation, counter proliferation, and counter terrorism;
  - Counter emerging threat and create new technology opportunities;
  - Leverage our core expertise to address energy security needs
Site Footprint and Population Provides Unique Operational Challenges

- Highly complex and dispersed
  - Large R&D/science community
  - Complex technical work
- ~36 square miles of operations
- 9 million sq. ft. of building space
- 11,000+ work force on site
- 268 miles of roads (100 paved)
- 139 miles of 115-KV & 13.2-KV transmission lines
- 58 miles of gas distribution lines
- 8 High/mod nuclear facilities
- 10 high/mod hazardous facilities
- Several metric tons of nuclear material
- ~140,000 Chemical containers

Inset: The total area of LANL is roughly the same size as Washington, DC.
LANL Emergency Management & Response Capabilities

- Comprehensive hazard analysis & planning capability
- Field Monitoring Teams
- State of the Art Emergency Operations Center (EOC)
  - Capable of handling multi-agency Emergency Response activities/coordination
  - EOC runs on natural gas with diesel fuel backup
  - Able to be off the grid for 14 days servicing up to 120 people
  - Food supplies, potable water, sanitary sewer, back up power, UPS, particulate filtration system etc.
- On-duty Emergency Managers and Facility Operations Centers
- Well equipped and highly trained Fire Department (LA County) and Hazard Materials (HAZMAT) Response Group (LANL)
- Wild-land Fire Mitigation team
- Experienced Hazardous Devices Team
Types of Potential Hazards at LANL

- Wild-land Fires
- Structure fires and explosions
- Natural phenomena impacts
  - Seismic issues gaining increased attention
- Environmental releases
- Hazardous material releases
  - Radiological
  - Chemical
  - Biological
- Workplace accidents
- Malevolent acts
Hazards Analysis and Planning

- Comprehensive Emergency Planning Hazard Assessment (EPHA) program
  - Provides a solid analytical basis for protective actions and response
  - Typically employs a worst case “what-if” set of conditions for modeling
  - Incorporating Beyond Design Basis Events (BDBE) analysis into our process (post-Fukushima emphasis)

- Rigorous and detailed protective actions planning
  - Emergency Action Lists (EALs) provide responders with decision tree tools to determine initial actions in response to any event that may occur at LANL
  - Fire Department pre-incident plans provides detailed information on initial attack options
  - HAZMAT response strategies are detailed and practiced

- Strong communications channels with external resources and impacted entities (County, State, Tribal, Federal)
LANL Preparedness Activities

- Emergency Preparedness includes:
  - Training
  - Drills
  - Exercises
LANL Emergency Training

- Training established for:
  - LANL general workers
  - LANL Emergency Response Organizations
    - EOC Responders
    - Field Responders
  - Community Response Partners
    - Los Alamos Fire Department
      - Unique & Special Hazards
      - Facility tours
    - Los Alamos Police Department
LANL Drills

- Drills at LANL take on two forms:
  - Annual NFPA required standard fire and shelter-in-place drills done for LANL occupied buildings
  - “Hands-On” training for members of the Emergency Response Organization (ERO), to ensure demonstration of proficiency
LANL Exercises

- Three different types of Exercises:
  - Hazmat Facility
  - EOC Functional
  - EOC Full Scale/Full Participation
LANL Exercises

- LANL Hazardous Material Facility Exercises:
  - ~20 done annually
  - Primary play is in the field, at the facility
  - Typically with LAFD response
  - Focusing on the evaluation of the facility’s actions during an emergency, and arriving responder access and immediate actions
LANL Exercises

- Emergency Operations Center (EOC) Functional Exercises:
  - Accomplished Quarterly
  - Typical for 50+ responders and exercise control personnel
  - Field play is simulated
  - Incidents exercised include hazardous material, natural phenomena hazards, security, and health & safety events
LANL Exercises

- LANL Full Scale/Full Participation
  - 1-2 annually
  - Field, Community, External, and EOC play
  - Up to 200+ personnel
  - LANL, DOE, County, Tribal, State responders
The nature and magnitude of an event or emergency will dictate the need for external assistance and interactions

- Los Alamos County (Fire and Police, Public Information, Utilities, etc.)
- State resources (EOC, State Police, National Guard, etc.)
- Tribal resources (notifications on off-site impacts)
- Federal resources (Park Service, Forest Service, DHS/FEMA, DOE, etc.)
DOE/LANL/Los Alamos County Interface

Senior Executive Team
Site Manager
LANL Director

SET Focus Areas
DOE Headquarters
Local Government
LANL Board of Governors
News Media

LANL Emergency Directorate
LANL Emergency Director
NA-00-LA
Los Alamos County

Primary Facilitator
Assist Emergency
Directorate
Primary Room

Secondary Facilitator
Maintain Flow of the
Secondary Room

Operations Section
Planning Section
Logistics Section
Admin/Fin Section
Recovery Manager
FOD

Emergency Technical Support Center (ETSC)
COOP

Incident Commander
May Be in Unified Command
with LAFD / Security / Law Enforcement

Field Safety Officer
Public Information Officer
Liaison Officer
Field Planning Chief
Field Operations Chief
Field Logistics Chief

HAZMAT
LAFD
FMT
FOD
SOC
LAPD
HDT
External Communication & Collaboration

- Long and deep history of communications and collaborations:
  - Briefings with LAC on potential protective action recommendations and hazardous material constituents at numerous LANL hazmat facilities.
  - Quarterly exercises for last 7 years at LANL EOC, with LAC participation each time.
  - Monthly field exercises for LAC firefighters at LANL hazardous material facilities.
  - Annual field exercise with LAC responders, both police and fire.
  - Inviting and hosting LAC, several Pueblos and the State during our February 2013 day-long table-top exercises on four different seismic events affecting LANL facilities.
  - Participating, hosting State-led large-scale exercise regarding MDA-B (LAC and Pueblo participation).
  - Extensive LANL-led training effort of LAC firefighters for unique hazards and touring of special facilities at Laboratory.
  - LAC tours of firing sites and remote LANL areas.
  - Coordinating with LAC, State and San Ildefonso for pending thinning of Wildland fire threat areas adjacent to State Road 4 and nearby San Ildefonso land.
  - Coordinating with LAC, State for multiple exercises for initial emergency notifications.
  - Touring the State EOC and having their representatives up here for a tour of the LANL EOC.
  - Coordination with the State for radio interoperability.
  - New trunked radio system rollout coordination with LAC responders (both police and fire).
  - Annual Tier II Hazardous Material Inventory reporting to the State and LAC.
  - Inviting and discussing LANL Emergency Planning Zone with LAC and San Ildefonso.
  - Continuity of Operations program outreach activities to State.
Wild Land Fire Program

Area Large Fire History

2008

La Mesa Fire – 1977
Dome Fire – 1996
Lummis Fire – 1997
Oso Fire – 1998
Cerro Grande Fire – 2000
Lakes Fire - 2002

Ancho Canyon Fire –
San Miguel Fire - 2009
Lake Fork Fire - 2010
Valle Canyon Fire - 2011
Las Conchas Fire - 2011
Thomson Ridge - 2013
Wild Land Fire Maps
Cerro Grande

CERRO GRANDE FIRE
Fire Progression Map

Legend
Fire Perimeter Progression by Date
- May 18, 2000
- May 17, 2000
- May 16, 2000
- May 15, 2000
- May 14, 2000
- May 13, 2000
- May 12, 2000
- May 11, 2000
- May 10, 2000
- May 9, 2000
- May 8, 2000
- May 6, 2000

Roads
- Light Duty Road
- Unimproved Road
- Highway/Hand Surface Road
- Primitive Road

Scale
0 1 2 Miles
1:100000

Locator Map
(State of New Mexico)

Los Alamos National Laboratory
Wild Land Fire Maps
Las Conchas
Wild Land Fire Program – Program Elements

- Fire Modeling
- Training
- Strategic Planning

- Suppression

- Fuels
- Mitigation

- Public Information
- Web Site
- Coordination
- Restrictions
- Investigations
- Daily/Seasonal Conditions Report
Summary

- Comprehensive emergency planning and preparedness program
- Significant resources available internal to LANL and with external agencies
- Extensive experience in working closely with local, State, Tribal and Federal agencies
- Forward looking program focused on continual improvement
Questions?