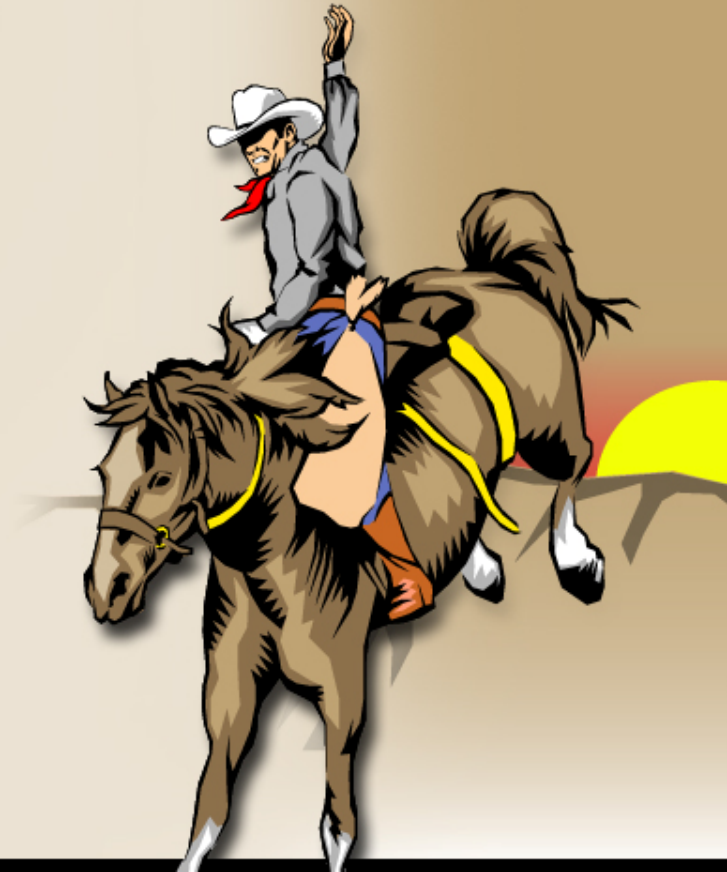


An Approach for Streamlining Hazards Surveys

Gerry Gibeault
Idaho National Laboratory

May 9, 2007



The Challenge

- Meet customer expectations
- Add value
- Be cost effective



What does the customer want?

Hazards Surveys that:

- Identify emergency conditions, and describe potential impacts
- Identify hazardous materials that require further analysis in an EPHA
- Identify planning and preparedness requirements



What do I want?

- Survival
- Happy customer
- Bang for the buck, a useful tool
- Consistent with a strategic vision
- Supports oversight/assessments



Starting point

The Hazards Survey example shown in Volume II of the DOE Emergency Management Guide is an approach that is acceptable to DOE.



The recommended steps in the Hazards Survey process are:

Step 1: Identify and briefly describe each facility.

Step 2 Screen hazardous materials to determine the need for further analyses in a facility-specific quantitative EPHA.

Step 3 Identify the generic types of emergency events and conditions that apply to each facility.

Step 4 Qualitatively describe the potential health, safety, environmental, or national security impacts of the applicable emergencies.

Step 5 Identify and document the applicable Base Program planning and preparedness requirements.



How much detail?

| <i>Bld ID</i> | <i>Type/Use</i> | <i>Emergency Conditions a</i> | <i>Potential Impacts</i> | <i>Applicable Requirements</i> |
|---------------|--------------------|---|---|---|
| 101 | Craft shop | 1. Structure fire/explosion 2. Natural phenomena 3. Environmental release 5. Malevolent acts 7. Workplace accident 8. External hazards | 1,2,5,7,8 - Worker death/injury. 3 - Pollution of waterway | OSHA Employee notification & evac. plan; 40 CFR 117 notification of release to waters |
| ABC | Laboratory process | 1. Structure fire/explosion 2. Natural phenomena 3. Environmental release 4. Haz. Mat. release 5. Malevolent acts 6. Workplace accident 7. External hazards | 1,2,5,7,8 - Worker death/injury 3 - Pollution of waterway 4 - Onsite & offsite personnel death/injury | OSHA Employee notification & evac. plan; 40 CFR 302 reporting; 40 CFR 355 reporting; 40 CFR 117 notification of release to waters |



Again, what do I want?

- Survival
- Happy customer
- Bang for the buck, a useful tool
- Consistent with a strategic vision
- Supports oversight/assessments



Our path forward

Form 412.09 (Rev. 09)

| | | | |
|---|--|--------------------|--------------|
| Idaho National Laboratory | | Identifier: EHS-30 | Page: 1 of 6 |
| EMERGENCY MANAGEMENT HAZARDS SURVEY FOR RWMC | | Revision: X | |
| | | Effective Date: | |

| | | | |
|----------------------|-------------------------|-------------------|-------------|
| Emergency Management | Hazards Survey Document | USE TYPE 3 | DAR Number: |
|----------------------|-------------------------|-------------------|-------------|

Manual Hazards Survey — Radioactive Waste Management Complex (RWMC)

CONTENTS

| | | |
|----|---|---|
| 1. | INTRODUCTION..... | 2 |
| 2. | SCOPE..... | 2 |
| | 2.1 Site Description..... | 2 |
| | 2.2 Facilities Covered..... | 2 |
| 3. | HAZARDOUS MATERIAL SCREENING..... | 2 |
| 4. | RESULTS..... | 2 |
| 5. | EMERGENCY PLANNING AND PREPAREDNESS REQUIREMENTS..... | 2 |

TABLE

| | | |
|----|----------------------------------|---|
| 1. | RWMC hazards survey summary..... | 2 |
|----|----------------------------------|---|




Building/structure binning

| Location | Room/Area No. | Hazardous Material | Category Assigned (X) | | |
|--------------|---------------|------------------------------|---|---|--------------|
| | | | Base Plan Adequately Addresses Generic OEs (Unclassified) | Further Planning May be Required for Potential OEs (Unclassified) | EHA Required |
| WMF-661 | All | NOVO-FLO Chem Resist Epoxy | X | | |
| | | One Coat Aluminum Coating | X | | |
| WMF-671 | All | None | X | | |
| WMF-680 | All | None | X | | |
| WMF-681 | All | None | X | | |
| WMF-697/1612 | All | Radiological | | | X |
| | | Refrigerated liquid nitrogen | X | | |
| WMF-698 | All | Radiological | | | X |
| WMF-714 | All | Radiological | | | X |
| WMF-720 | All | Radiological | | | X |



Data sheets for each structure

| | |
|---|--|
| 1. Location: RWMC | |
| 2. Room/area: WMF-720 | |
| 3. Photographs/Drawings: | |
| INL Facility Planning Database | |
| <p>Area: Radioactive Waste Management Complex</p> <p>Structure: WMF-720</p> <p>Name: ILTSF #2</p> <p>Status: Operating -</p> <p>Activation Year: 1984</p> <p>End Use Year: 2012</p> <p>Utility Termination:</p> <p>Inactivated: <input type="checkbox"/></p> <p>Utilization: %</p> <p>Ownership:</p> <p>Responsible Organization:</p> <p>HQ Secretarial Office Owner: EM</p> <p>FIMS Design Use:</p> <p>FIMS Current Use: Other, Storage (Industrial Waste/Haz)</p> <p>LRP Use Category: -</p> |  <p>Area Index Code: 098</p> <p>Occupancy: %</p> <p>Size: 247,808 CFT</p> <p>Maximum Height: ft</p> <p>Number of Floors:</p> <p>Number Below Grade:</p> <p>Construction Type:</p> <p>Condition:</p> |
| 4. Location Description: ILTSF #2 | |
| 5. Special Conditions or Designations: N/A | |
| 6. Occupancy: | |
| → Total occupancy: 0 | |
| → Total occupancy other than ground floor: 0 | |
| → Occupancy basis: INL Lotus Notes Phone directory - 3/22/07 | |

| | |
|--|---|
| 7. Activities Performed: Industrial waste storage | |
| 8. Hazardous Material Inventory Information Sources: | |
| Information Sources | Notes |
| Walk-down performed with operations personnel and fire department personnel on 2/15/07 | No new issues noted |
| Comply Plus Web on 3/16/07 | Dolphin personnel generated Excel files |
| 9. Emergency Management Hazards Assessment (EHA): | |
| Is quantitative analysis in an EHA required? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Basis: Radiological Hazardous Material Screening Summary box 12 | |
| 10. Potential for Nongeneric Operational Emergency (OE) (Unclassified) Events: | |
| Does the potential exist for OE (unclassified) events not addressed as generic events? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| OE (unclassified) No. 1: | |
| OE (unclassified) No. 2: | |
| Section Break (Next Page) | |

| | |
|--|---|
| 7. Activities Performed: Industrial waste storage | |
| 8. Hazardous Material Inventory Information Sources: | |
| Information Sources | Notes |
| Walk-down performed with operations personnel and fire department personnel on 2/15/07 | No new issues noted |
| Comply Plus Web on 3/16/07 | Dolphin personnel generated Excel files |
| 9. Emergency Management Hazards Assessment (EHA): | |
| Is quantitative analysis in an EHA required? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Basis: Radiological Hazardous Material Screening Summary box 12 | |
| 10. Potential for Nongeneric Operational Emergency (OE) (Unclassified) Events: | |
| Does the potential exist for OE (unclassified) events not addressed as generic events? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| OE (unclassified) No. 1: | |
| OE (unclassified) No. 2: | |
| Section Break (Next Page) | |



DOE O 151.1C requirement

Each Hazards Survey must—

- (d) identify the planning and preparedness requirements that apply to each type of hazard.

| <i>Potential Impacts</i> | <i>Applicable Requirements</i> |
|--|---|
| 1,2,5,7,8 - Worker death/injury. 3 - Pollution of waterway | OSHA Employee notification & evac. plan; 40 CFR 117 notification of release to waters |



Applicable requirements

Appendix D

Codes, Standards, and Orders Referenced in DOE O 151.1C, "Comprehensive Emergency Management System"

| Requirement | DOE O 151.1C | | Citation | Impact on INL Emergency Management Program | INL Implementation |
|-----------------------------------|--------------------------------|------|---|--|-----------------------------|
| | Chapter ^a , Section | Page | | | |
| 42 United States Code (USC) 7274k | 1.g | 1 | To integrate applicable policies and requirements, including those promulgated by other Federal agencies (e.g., stockpiling stable iodine for possible distribution as a radiological protective prophylaxis) and interagency emergency plans into the Department's Emergency Management System. In compliance with the statutory requirements in 42 USC 7274k, DOE hereby finds that this Order is necessary for the fulfillment of current legal requirements and conduct of critical administrative functions. | 42 USC 7274k is identified as "Transferred." The citation subject was environmental management. As listed, the citation is not consistent with the published code. | Not applicable. |
| 33 USC 1321 | 4.a.(14)(a) | 5 | Hazardous materials are any solid, liquid, or gaseous material that is toxic, flammable, radioactive, infectious, corrosive, chemically reactive, or unstable upon prolonged storage in quantities that could pose a threat to life, property, or the environment. Oil, as defined in 33 USC 1321, is "oil of any kind or in any form, including, but not limited to, petroleum, fuel oil, sludge, oil refuse, and oil mixed with wastes other than dredged spoil." Consistent with Federal law, oil is not included in the definition of hazardous materials used in | Definition of oil presented in the citation is consistent with the definition stated in the referenced code. | No implementation required. |



Strategic vision

- Hazards surveys as response resources?
- Why not?
- Surveys represent a significant investment. Why not develop them in a form that can serve other uses?



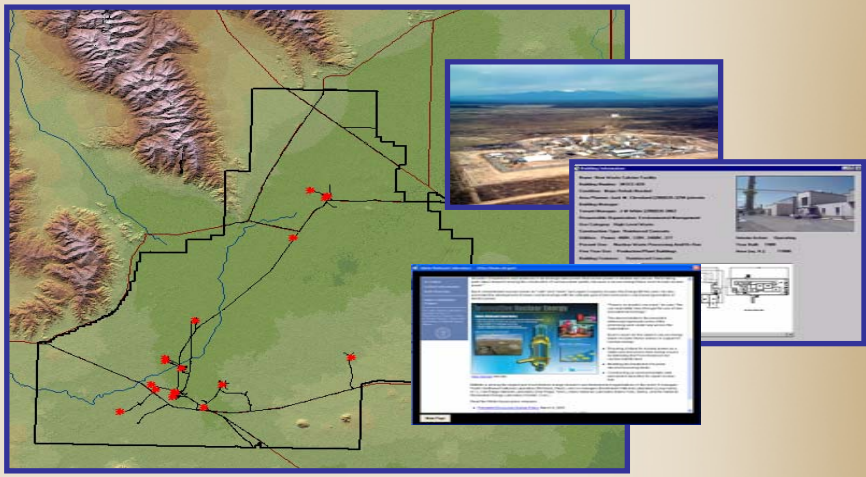
Strategic
vision



Virtual Infrastructure and Site Tour System

VISITS

Version 3.0 User's Manual



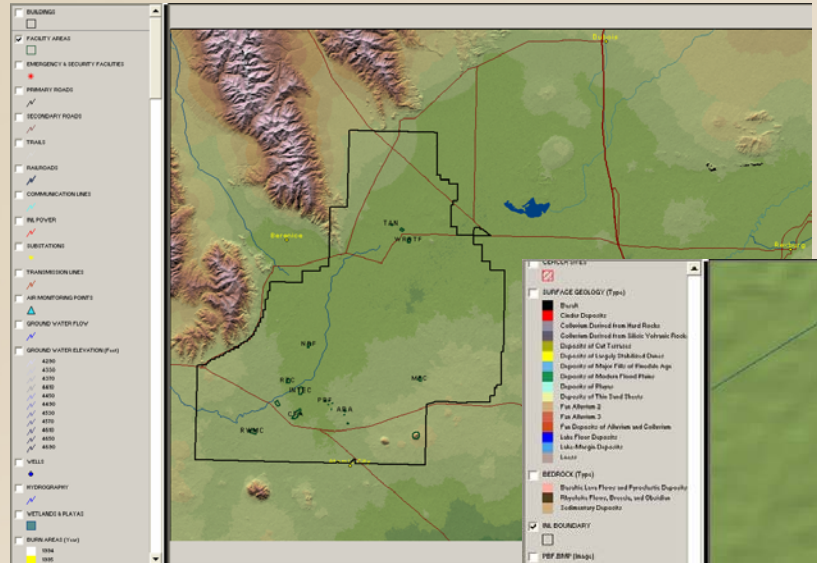
Shane J. Cherry
Geospatial Science and Engineering
208.526.1438
Shane.Cherry@inl.gov

April 2005



EXPECT THE UNEXPECTED

Wide open potential



Clear field for opportunity

The screenshot displays a GIS interface with several key components:

- Search By Dist... Panel:**
 - Step 1: Select Layer to Search (Buildings)
 - Step 2: Enter Search Distance in Meters (100)
 - Step 3: Click Activate Distance Button (Activate Distance Value)
 - Step 4: Click on Point of Interest on Map
 - 41 records found
 - Step 5: Select Feature (Fuel Process Building)
 - Attributes of Feature:
 - LRF_USE_DE = Production/Plant Building
 - CONDITION = Replacement Required
 - STATUS = Operating
 - DATA_LAYER =
 - NAME2 = INTEC-601
 - FEATURE = Reinforced Concrete
 - UTILITY = Electrical 480V, 200V, 120V
 - SD_DESCRIP = Environmental Management
 - PERCENT_UF = 15
 - ACTIVE_DAT = 1993
 - Flash Selected Feature
- Layer List:** Includes categories like SURFACE GEOLOGY (Types), BEDROCK (Types), and RE BOUNDARY, with various sub-layers such as Bush, Cinder Deposits, and FPF BMP.
- Building Information Panel:**
 - Name: Remote Analytical Lab
 - Building Number: INTEC 604 Area (sq. ft.): 13409
 - Year Built: 1995 Condition: Minor Rehab Needed
 - Area Planner: Jack M. Cleveland (208) 526-3234 john.cleveland@idm
 - Responsible Organization: Environmental Management
 - Construction Type: Steel Framed
 - Building Features: Prefabricated, Can
 - Utilities: Power: 2400V, 480V, 200V, 12
 - Present Use: Chemical Laboratory (Nuclear)
 - Interim Action: Operating
 - Five Year Use: Laboratories
- Map:** Aerial view with buildings highlighted in yellow and a red circle indicating the search area.



There are always issues

- Environmental release - Operational Emergencies (unclassified) (5xRQ)
- Biological release Operational Emergencies (unclassified)



Comments:

gerald.gibeault@inl.gov

208-526-1767

