

# Strategic Hazards Reduction

An Unexpected Benefit of Hazards Surveys & Assessments

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Sandia is a multiprogram laboratory operated by Sandia Corporation, a Lockheed Martin Company, for the United States Department of Energy's National Nuclear Security Administration under contract DE-AC04-94AL85000.



# Introduction

- Hazards Surveys and Assessments used to identify targeted changes
- Specific steps used in process
- Proactive approach
- SNL/CA example
- Challenges and benefits

# HS & HA Requirements

- Hazards identified & evaluated through survey or assessment
- Comprehensive audits
- Facility & materials evaluations
- Plan preemptive actions for facilities and materials of interest

# Focus

- Facilities
  - Borderline or clear concern
- Operations
  - Borderline or clear concern
  - Continuing, inactive or temporary
- Hazardous Materials
  - Numerous or few
  - Dated storage or actively used
  - Stable or varying inventory

# Tools for Evaluation

- Inventory systems
- Hazardous material audits
  - Operational reviews
  - Hazardous material procurement & storage
  - Hazardous Waste Management
- Pollution Prevention initiatives

# Steps for Improvement

- Material reductions
- Substitutions
- Administrative controls
- Repackaging
- Program restructure

# Zoning for Effect

- Segregation of material
- Relocation of larger containers
- Use of separate storage points
- Identify and use mitigation

# SNL/CA Overview

- Base level program declared under 151.1B
- Hazard Material program indicated under 151.1C
- Selective reduction and other strategies – return to base program
- Small site –
  - Not highly visible in community
  - Potential GE would raise visibility, public concern, and program cost

# SNL/CA Goals & Drivers

- Drivers
  - DOE focus on NFPA Health Hazard Rated 3 & 4 materials
  - DOE requirement on Management of Unneeded Materials and Chemicals
  - Sandia ES&H Manual focus on Housekeeping, Fire Protection (IFC), HazComm/Lab Standard, and Chemical Inventory
  - SNL/CA EMS Annual Goals/Targets
    - 10% site inventory reduction by container (2005)
    - 5% site inventory reduction by container (2006)
    - reduce NFPA Health 3 & 4 items to eliminate 2 of 5 EPHA target areas (2006)
    - reduce by 20% > 10 year old NFPA Health 3 & 4 items in *The Physical and Engineering Sciences Center (8700)* (2007)
    - 10% site-wide gas cylinder container count (2008)

# **SNL/CA Inventory - 2007**

## **(by Container Count)**

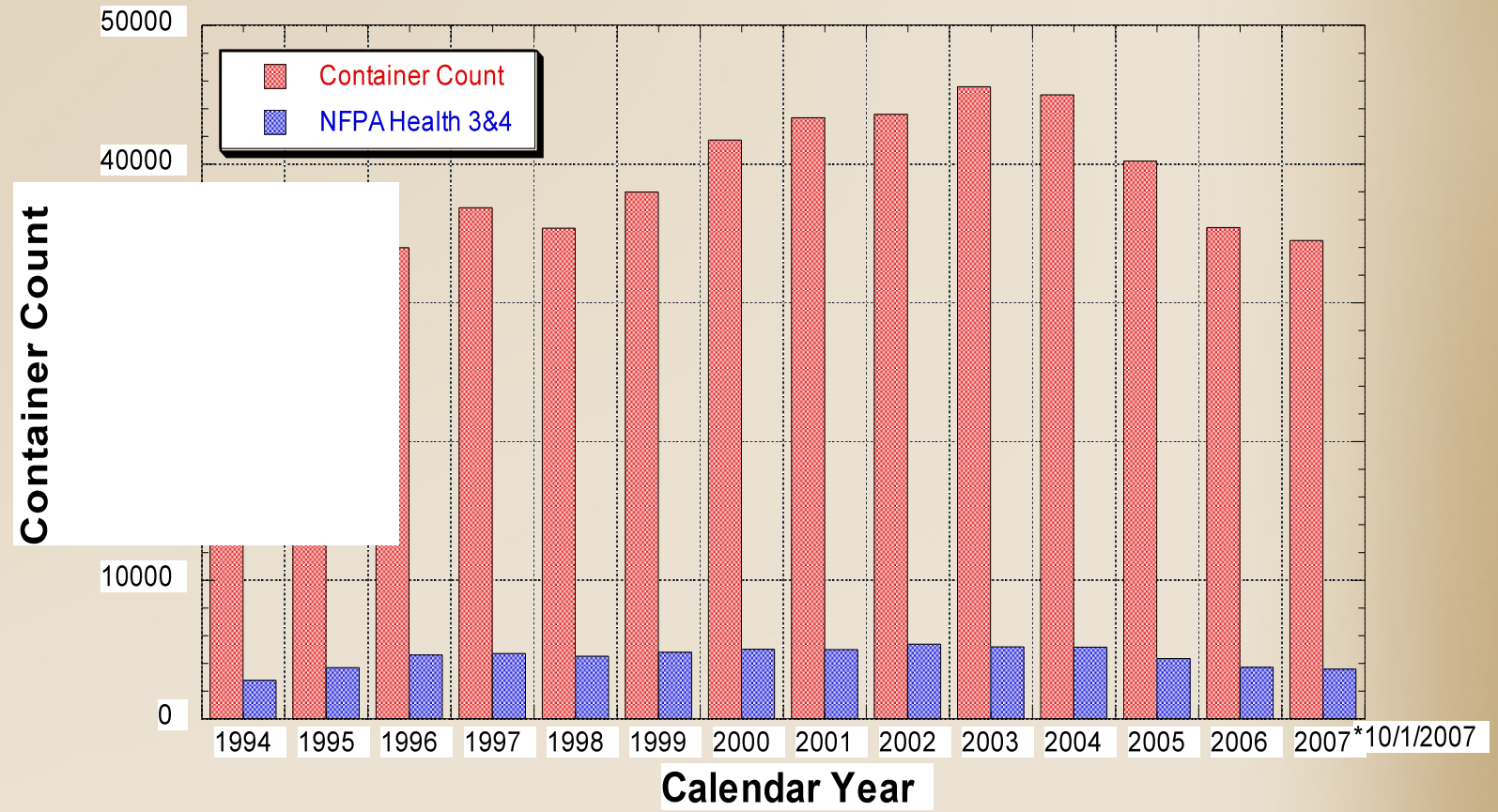
- Hazardous Materials > 10 years old
  - 26% of inventory
  - 25% of NFPA 704 HHR 3 & 4 inventory
- Hazardous Materials > 5 years old
  - 48% of inventory
  - 47% of NFPA 704 HHR 3 & 4 inventory

## **SNL/CA Chemical Information System**

- Integrated Chemical Inventory and MSDS Container Tracking System
  - 120,000 Chemical Containers at SNL/NM
  - 35,000 Chemical Containers at SNL/CA
  - 25,000 Unique Chemicals/Products
  - 1,500 Chemical Storage Locations
  - Dynamic Inventory - Daily Inputs
- MSDS library of over 85,000 materials
  - Available for Routine or Emergencies 24 x 7
  - Dynamic Library - Daily Inputs

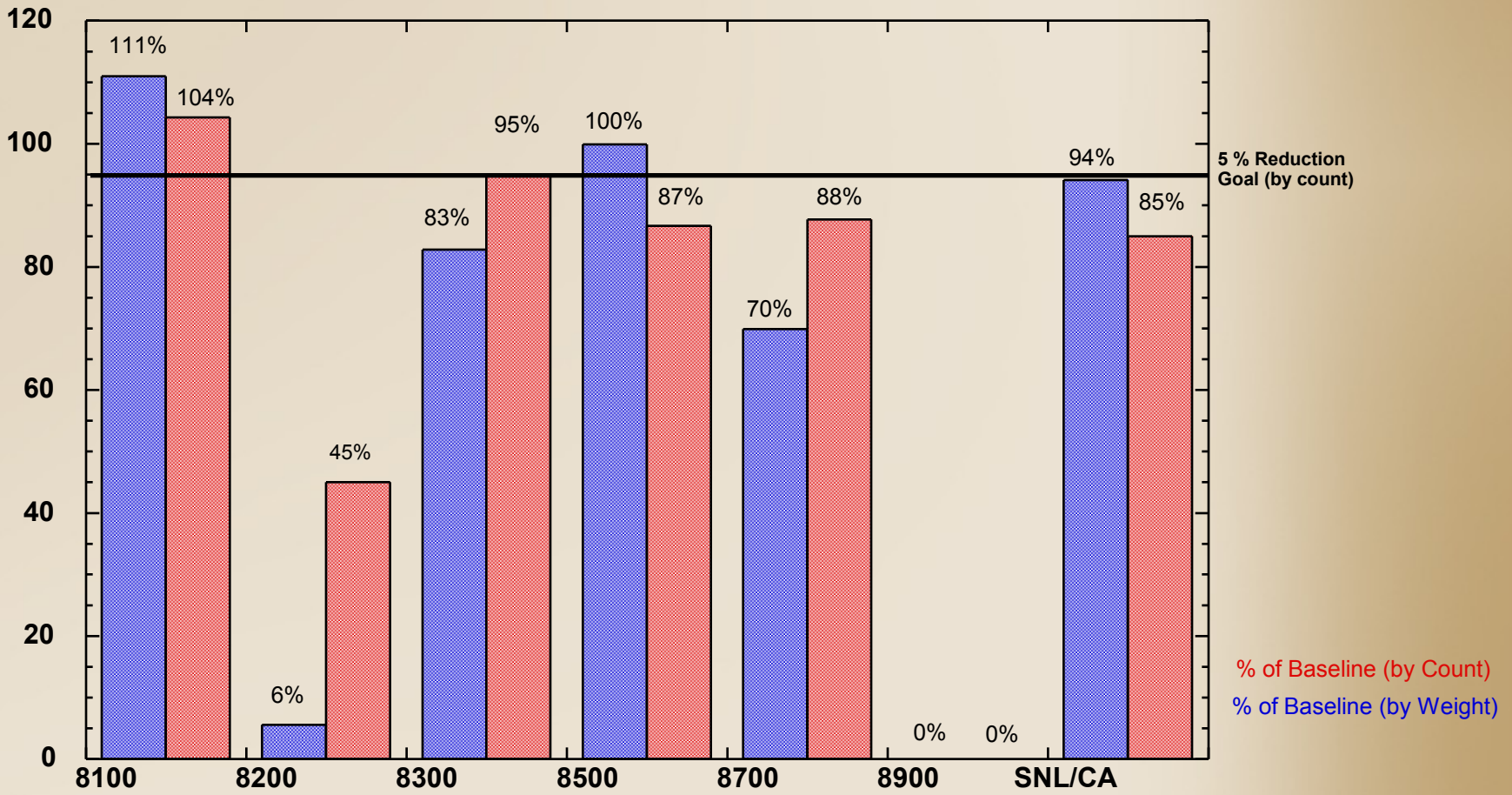
# SNL/CA Inventory Profiles

**SNL/CA Hazardous Material Inventory Container Count**



EXPECT THE UNEXPECTED

# SNL/CA Inventory Profiles



**SNL/CA NFPA Health 3&4 Inventory Reduction (2006)**

# **SNL/CA Implementation**

- Removal of unneeded materials
- Reduction of container sizes
- Better control over hazmat purchases
- Better use of available storage facilities
- Development of administrative controls to maintain inventory size

# **Reduction Challenges**

- Procurement Controls
- Inventory Accuracy
- Inventory Reduction Frequency
- Inventory Ownership & Orphaned Inventory
- Inventory Age Profiles
- Inventory Shelf Life Guidelines
- Graded Risk-Based Approach
- Material Safety Data Sheet Set
- Location Based Material Permit Limits
- Excess Material Redeployment - Chemical Exchange

# Benefits

- Reduced hazards
- Reduced EM efforts and costs
- Reduced HazMat program costs
- Reduced legacy material buildup
- Reduced visibility and negative perception in local community

# Summary

- Opportunities to reduce hazards through focus on Hazards Survey and Assessment results
- Leverage other program efforts in facility and hazmat focus
- Examine facilities and materials that provide the most valued return