

# Site Exposure Matrices (SEM) Training 2013

Advanced Training  
Seattle District Office

# Objectives

- Review current status of SEM
- Discuss changes in SEM
- Examine how SEM results should be used
- Using the SEM Mailbox

# SEM covers .....

- SEM contains information that includes:
  - **113** DOE sites
  - **4,252** RECA sites
  - **15,951** toxic substances
  - **131** occupational diseases

# DOE sites in SEM

- All major DOE and all known RECA sites are now profiled on SEM
- One new site (Dayton Project) added in past year; one existing site (Gilman Hall) consolidated into the LBNL SEM profile
- 29 smaller DOE sites are not in SEM
  - Low claims activity
  - May be added in the future as determined by DOL

# Updates Coming

- DOE site information
  - Ames Laboratory (nearly complete)
  - Pantex (nearing completion)
  - Uranium mill remediation
  - GE Vallecitos profile
  - Site revisits
- SEM health effects are as defined in the National Library of Medicine's Haz-Map database and are continuously updated
- DOL funds Dr. Jay Brown, Haz-Map author, to study substances used in DOE and RECA facilities
- The health effects shown in SEM are identical to those in Haz-Map

# Refresher: What does SEM tell us?

- Potential exposures to toxic materials
- The Claimant may have been exposed to.... NOT the Claimant was exposed to .....
- SEM is only one source of information; others include
  - DAR
  - OHQ
  - Other info in case file, claimant submissions
- May also need:
  - IH referral to assess exposure level
  - Tox referral
  - DMC referral

# Refresher: What does SEM tell us?

- Example: Idaho National Lab pipe fitter
- What is the SEM page telling us?
- What is it not telling us?
- Best to read each SEM page from the top down

# General Q & A

- What if a Claimant, an electrician, worked in more than one building at a DOE site?
  - At a site, where do most electricians work?
  - How does knowing that affect our SEM searches?
- What if a Claimant worked in more than one labor classification?
  - Generate SEM profiles for each labor category
- What if a Claimant worked at more than one DOE site?
  - Generate applicable SEM profiles for his/her work at each site

# Refresher: Health effects in SEM

- SEM has links to Haz-Map to assist DOL
  - Example: Xylene
  - Site: Iowa Ordnance Plant
- What does SEM tell us?
  - Xylene was present in certain operations
  - Workers in some labor categories may have been exposed to xylene
- What does SEM not tell us?
  - Exposure path
  - Extent of exposure
  - Whether or not our claimant was exposed to xylene

# Bladder cancer

- New links between 10 substances and bladder cancer
- Added to Haz-Map and then SEM as a result of 2012 changes by IARC

# Scenario 1

A sheet metal worker at the Idaho National Lab claims his bladder cancer was caused by his work at the site. He worked for 20 years in a sheet metal shop in the CFA-621 Building.

# Scenario 1 (continued)

- If we select the labor category and filter on his disease we find what?
  - The results tell us that sheet metal workers (some or all) at INL were potentially exposed to one toxic substance [benzo(a)pyrene] linked to bladder cancer
  - Print or save the list (List A)
  - We have to do more evaluation
- What if no links were returned?
  - We would know that no sheet metal workers at the site were exposed to any toxic substances linked to bladder cancer
  - Do not have to do any further evaluations

# Scenario 1 (continued)

- Next we can filter the labor category on Building CFA-621 where the Claimant worked
  - The results tell us the chemicals used by sheet metal workers in Building CFA-621
  - Print the resulting list (List B)
- Compare the toxic substances on List A with those on List B for matches
  - Benzo(a)pyrene is a match

# Scenario 1 (continued)

- Do you know how benzo(a)pyrene was used by sheet metal workers?
- Do you know its route of exposure and if the substance was in a form that made it a likely exposure?

# Question

- The results tell us to (select one):

- The CE has enough information to make findings of fact about exposure to send the case to a CMC
- Ask the Claimant if he used the substances
- Request an industrial hygiene review
- Request a toxicology review
- The CE has enough information to conclude that there was not likely any substantive exposure

# Question

- The results tell us to (select one):

\_\_\_\_\_ The CE has enough information to make findings of fact about exposure to send the case to a CMC

\_\_\_\_\_ Ask the Claimant if he used the substances

**X** **Request an industrial hygiene review**

\_\_\_\_\_ Request a toxicology review

\_\_\_\_\_ The CE has enough information to conclude that there was not likely any substantive exposure

# What's wrong with this search?

- We open SEM, and find the building (6-160) where a claimant who was an NTS electrician worked. We filter on the worker's health effect (Encephalopathy, chronic solvent).
- The results are used to evaluate the worker's exposure potential

# What's wrong with this search?

- **Answer: Doing so would assign all toxic substances in the Building to the worker. He/she was potentially exposed only to those substances used by electricians.**
- Is “electrician” listed as a labor category in the Building search results?
  - What is that telling us?
  - What is it not telling us?

# Scenario 2

A Sandia National Lab (Albuquerque) worker submits a claim with medical evidence of pneumoconiosis. She worked as a pipefitter at the site from 1960-1991. She said she had worked all over the Lab during her career.

- Is it reasonable to expect a pipefitter to have worked all over the Lab?

# Scenario 2 (continued)

- For occupations like a pipefitter, site-wide work is a reasonable assumption
  - We can search SEM without designating a building
  - Would this be reasonable if the worker had been at the site from 1960-1962?
- What if the claimant was a machinist?

## Scenario 2 (continued)

- What questions would you have about the Claimant's medical condition?
- What health condition is presumed lacking other evidence?

# Scenario 2 (continued)

- What questions would you have about the Claimant's medical condition?
- What health condition is presumed lacking other evidence?
- **After selecting pipefitter as the labor category, we would then need to filter using the "Pneumoconiosis, other" health effect and tabulate the results**

# Scenario 3

A Claimant with lung cancer indicates that he was an Escort at the Los Alamos National Lab (LANL). He worked in that capacity from 1981 – 1992. He indicates that he worked on multiple construction and other projects during that time period in various locations.

# Scenario 3 (continued)

- What is an escort?

An escort does no hands-on work. It is a person with a DOE clearance that “escorts” uncleared workers, typically construction or other sub-contractors, so they can work in restricted areas of a site. They observe several workers at a time; thus they are not typically close the actual work (welding, painting, other) being done

# Scenario 3 (continued)

- More clarification
  - The escort would typically work all over the site but would not typically be close to toxic substances or toxic-substance producing activities
  - Exception: If escorting roofers, e.g., they could be expected to experience exposure to tar fumes but not the other toxic substances experienced by the hands-on workers

# Scenario 3 (continued)

- In general, a person serving as an escort would not be exposed to the occupational toxic substances being used by the people he escorts
- What does the SEM profile of a LANL Escort show?

# What's wrong with this search?

- From 1990 to 2010, a Lawrence Livermore National Laboratory (LLNL) graphics designer with lung cancer worked in Building 314 where it is known that asbestos was present. However, SEM does not link asbestos to her labor category.
- Should the claim be approved based on the known presence of asbestos in the building materials?

# What's wrong with this search?

## (continued)

- By 1990, DOE sites had strict controls in place that greatly reduced or eliminated asbestos exposures. Unlikely that a person being in such doing non-process work would have lung cancer due to exposure to asbestos.
  - No IH referral necessary
- What if she had worked at LLNL from 1950 to 1970 and had asbestosis?

# Scenario 4: Administrative and staff workers

- Example: Claimant was a Secretary at Hanford. She worked in several buildings during her 25 years of employment including 2704-E. She has skin cancer.
- How would you approach this search in SEM?

# Administrative and staff workers (continued)

- Should we find the list of toxic substances in Building 2704-E and filter it with the disease skin cancer to see if there is a match?
- Where do secretaries, clerks and similar persons work at most sites?
  - All over
  - Buildings are not designated in SEM for this reason

# Administrative and staff workers (continued)

- Search Option 2: Select the labor category and filter on the disease. The result is not conclusive but tells us if we need to go further.

# Administrative and staff workers (continued)

- Search Option 1: Select the labor category and filter on the building(s).
  - Results: no buildings are listed for Administrative Assistants, Secretaries, Clerks or similar positions
- Search Option 2: Select the labor category and filter on the disease.
  - Results: no toxic substances listed

# Question

- The results tell us to (select one):

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\_\_\_\_\_ Ask the Claimant if he used the substances

\_\_\_\_\_ Request an industrial hygiene review

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\_\_\_\_\_ The CE has enough information to conclude that there was not likely any substantive exposure

# Question

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\_\_\_\_\_ Request an industrial hygiene review

\_\_\_\_\_ Request a toxicology review

**\_\_\_\_\_ The CE has enough information to conclude that there was not likely any substantive exposure**

# Administrative and staff workers (continued)

- SEM will frequently not return any health effects for administrative, clerical, staff, draftsman, office and similar workers because such persons typically don't have significant workplace exposures to toxic substances
  - What is an incidental exposure?
- Most toxic substances are associated with production, research and laboratory activities where administrative persons would not be working (there are always exceptions)

# New information in SEM

- Note the new entry on the Secretary's labor category page/Record history:
  - **Facility Data Last Updated: April 3, 2013 (Note: Toxic substance/disease relationships may have changed after this date.)**
- What important information is this note telling you?

# Supervisors and engineers

- In general, SEM shows few or no toxic substances in the profiles for supervisors and engineers
- Reason: Assume a supervisor or engineer gets the same exposures as the labor category he/she supervises or to which provides technical support
- Example: If Claimant is a “Welding Group Supervisor” then use assign him the “Welder” profile in SEM
  - Use “Welder” for searches, not “Supervisor”

# Example 5

- The EE-3 and the evidence in the case file points to the claimant being classified as a “Laborer.” However, the claimant indicates that she was involved in certain processes that would make her more of a “Maintenance Mechanic.”
- How should we proceed?

# Construction workers

- Covered in SEM User's Guide (on DOL Share Drive)
- If the Claimant is a construction worker, a 2-step SEM search must be made
  - Step 1: Identify the toxic substances linked to the worker's trade
  - Step 2: Identify the toxic substances used by the site that the construction worker could have been exposed to

# Construction workers (cont'd)

- Example
  - Site: Ames Laboratory
  - Job title: Painter
  - Employer: Jack's Painting Company
  - Repaired and painted interior offices and work areas of the Applied Science Complex (I and II) between 1975-1979
  - Claimed illness: COPD
- Let's go to SEM and evaluate the potential exposure

# Public SEM

- The publicly accessible version of SEM is found at [www.sem.dol.gov](http://www.sem.dol.gov)
- With only a few exceptions, the public has access to the same information about the DOE and RECA sites that DOL does
  - The DOL SEM has the most recent information; public SEM has only the information reviewed by DOE and approved for public release
  - There is usually a lag of approx. 6 months after an update of the DOL SEM is reflected in the public SEM

# SEM Mailbox

- A way for you to ask questions about SEM content, DOE and RECA facilities, labor categories and others
  - Not for IH evaluation
  - Not for policy questions
  - Follow your local policy for submittals
- Typical response time is 1-2 days
- Can also be used to review questions asked by others

# Wrap up

- SEM is a mature website
  - Structure has changed little over the past 5 years
  - Content has changed a lot
- Remember that the User's Guide is available to help you
- Use the Mailbox to get help

Questions????