

DOE Beryllium-Associated Worker Registry

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SURVEILLANCE

- Ongoing, systematic collection of health information from a population.
 - “Active” medical surveillance requires selection, recruitment, and medical screening.
 - For beryllium, medical screening and exposure monitoring are provided to meet health protection requirements.
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MEDICAL SCREENING

- Medical testing of individuals for the purpose of:
 - Early detection of disease or conditions
 - Secondary prevention - treatment that can affect morbidity or mortality
 - Reporting and analyzing results creates opportunities for primary prevention
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Occupational Exposure Monitoring

- ❑ Personal monitoring representative of actual exposure
- ❑ Identify causes of exposure for primary prevention
- ❑ Reporting and analysis to generalize lessons learned



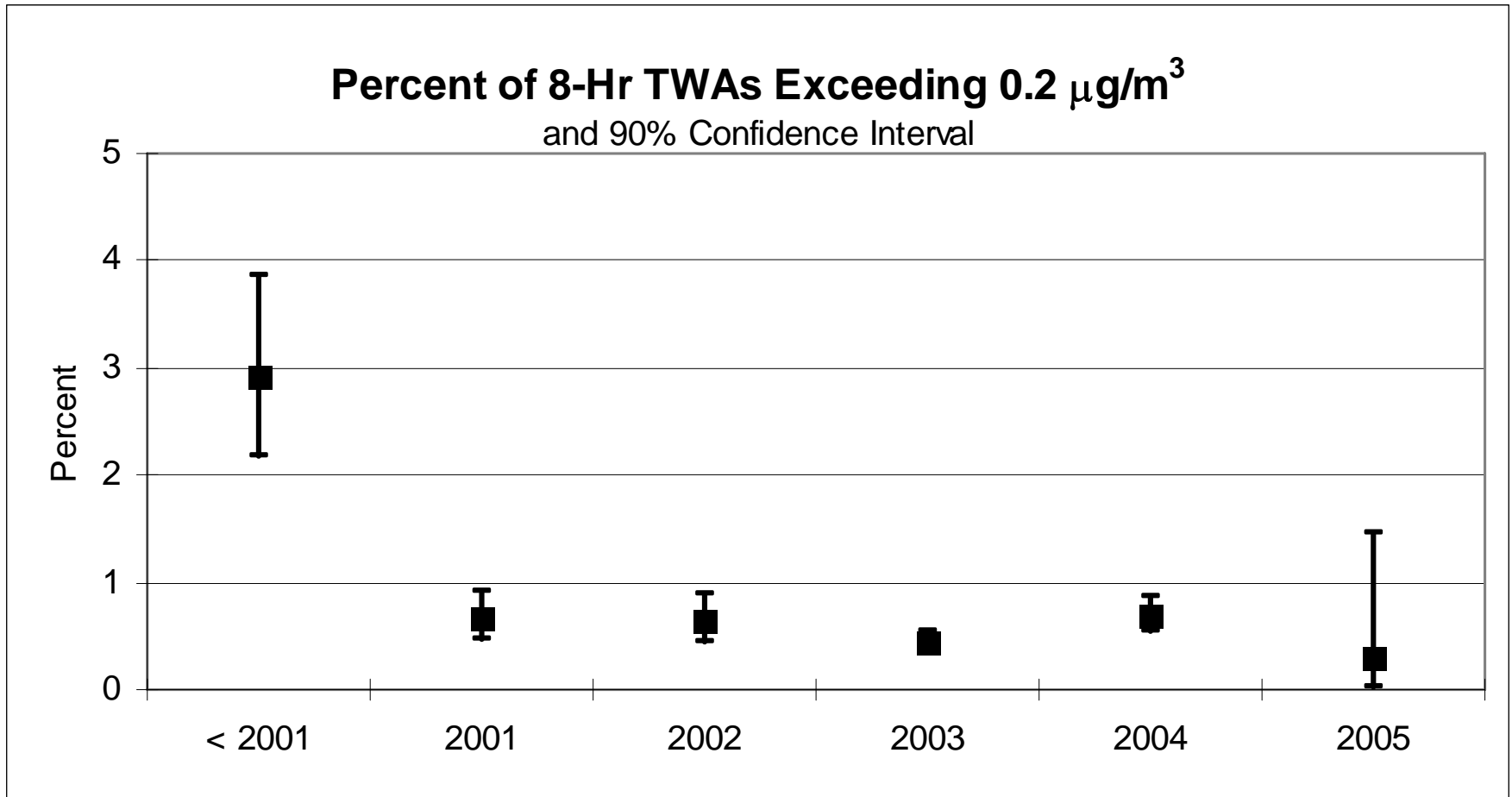
Medical Surveillance Data for Current Employees Through 2005

- 16,267 employees have been screened for CBD by site occupational medicine clinics
 - 189 (1%) are sensitized
 - 95 (0.6%) are diagnosed with CBD
 - 284 (1.7%) total sensitized and CBD
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Rocky Flats Health Data

	Former Workers	Clean-up Workers
Number with BeLPT Results	8,695	3,980
Number Sensitized	224	31
Number with CBD	131	0
Rate Sensitized or CBD	4.1%	0.8%

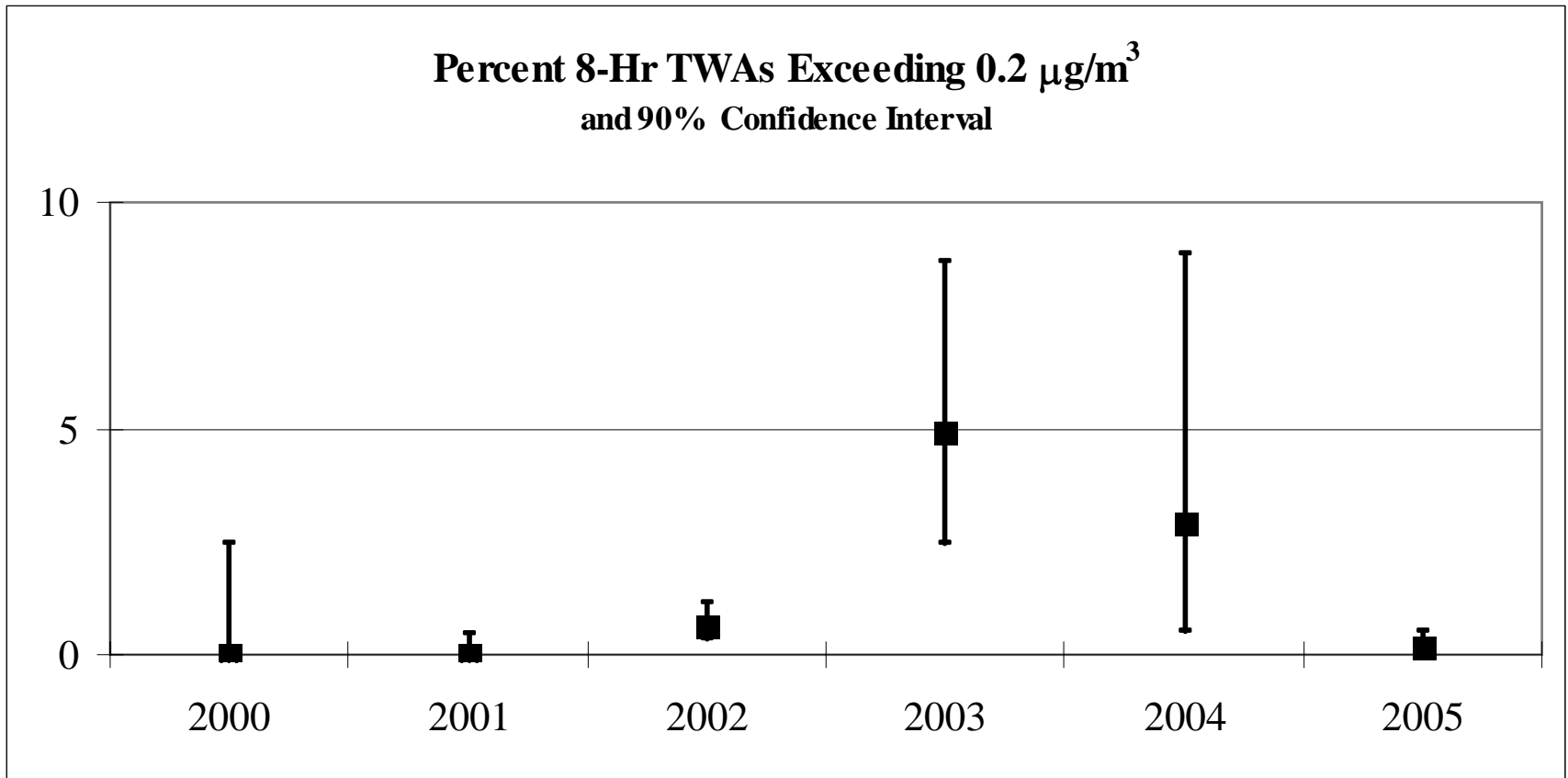
Rocky Flats Clean-up Exposure Trend



Los Alamos Health Data

	Former Workers	Current Workers
Number with BeLPT Results	2,002	1,661
Number Sensitized	22	2
Number with CBD	2	3
Rate Sensitized or CBD	1.2%	0.3%

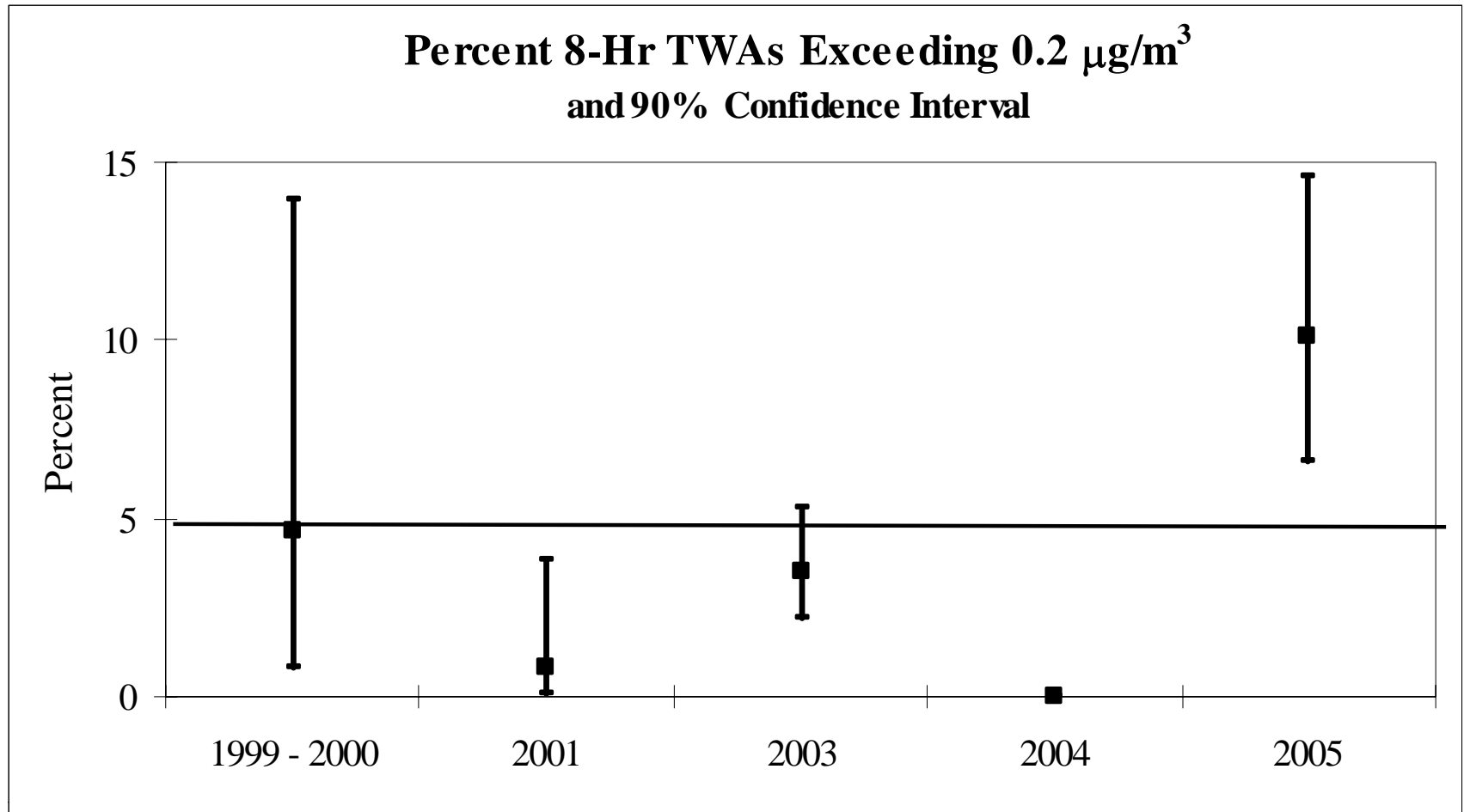
Los Alamos Exposure Trend



Livermore Health Data

	Former Workers	Current Workers
Number with BeLPT Results	1,804	281
Number Sensitized	47	0
Number with CBD	7	0
Rate Sensitized or CBD	3.0%	0

Livermore Exposure Trend



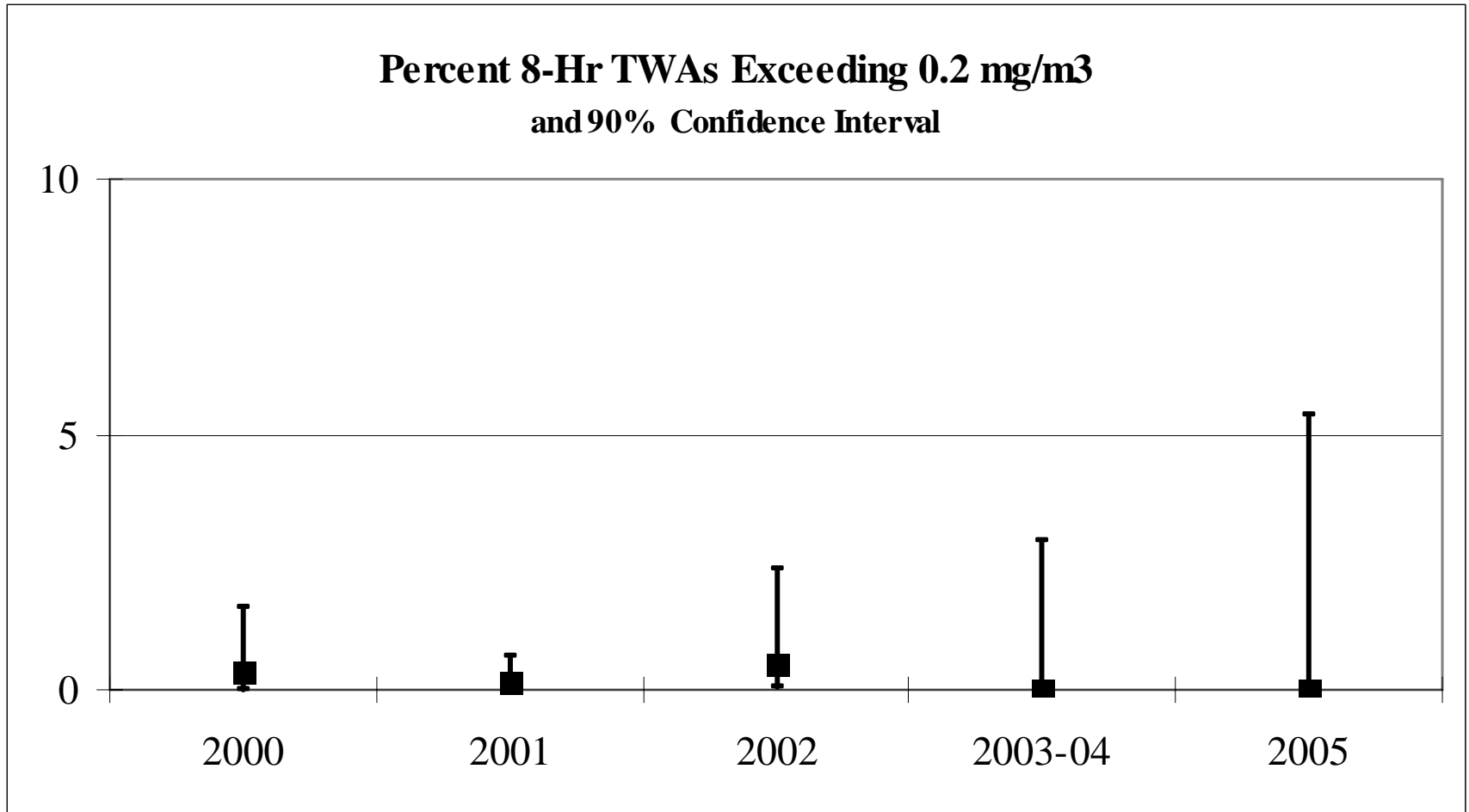
Pantex Health Data

	Former Workers	Current Workers
Number with BeLPT Results	1,228	1,617
Number Sensitized	22	17
Number with CBD	5	15
Rate Sensitized or CBD	2.2%	2.0%

Pantex Current Worker Health Data by Work History Activity

Activity	Number with BeLPT Results	Number Sensitized	Number CBD	Rate Sensitized or CBD
Management	126	0	1	0.8%
Administrative Support	171	2	2	2.3%
In-House Professionals	85	0	0	0.0%
Field Professionals	121	1	1	1.7%
Technical Support	137	3	1	2.9%
Service	87	1	2	3.4%
Security and Fire	370	7	1	2.2%
Crafts	147	2	1	2.0%
Line Operators	301	1	6	2.3%
Unknown	72	0	0	0.0%
All Subjects	1,617	17	15	2.0%

Pantex Exposure Trend



Hanford Health Data

	Former Workers	Current Workers
Number with BeLPT Results	3,982	3,359
Number Sensitized	47	42
Number with CBD	12	19
Rate Sensitized or CBD	1.5%	1.8%

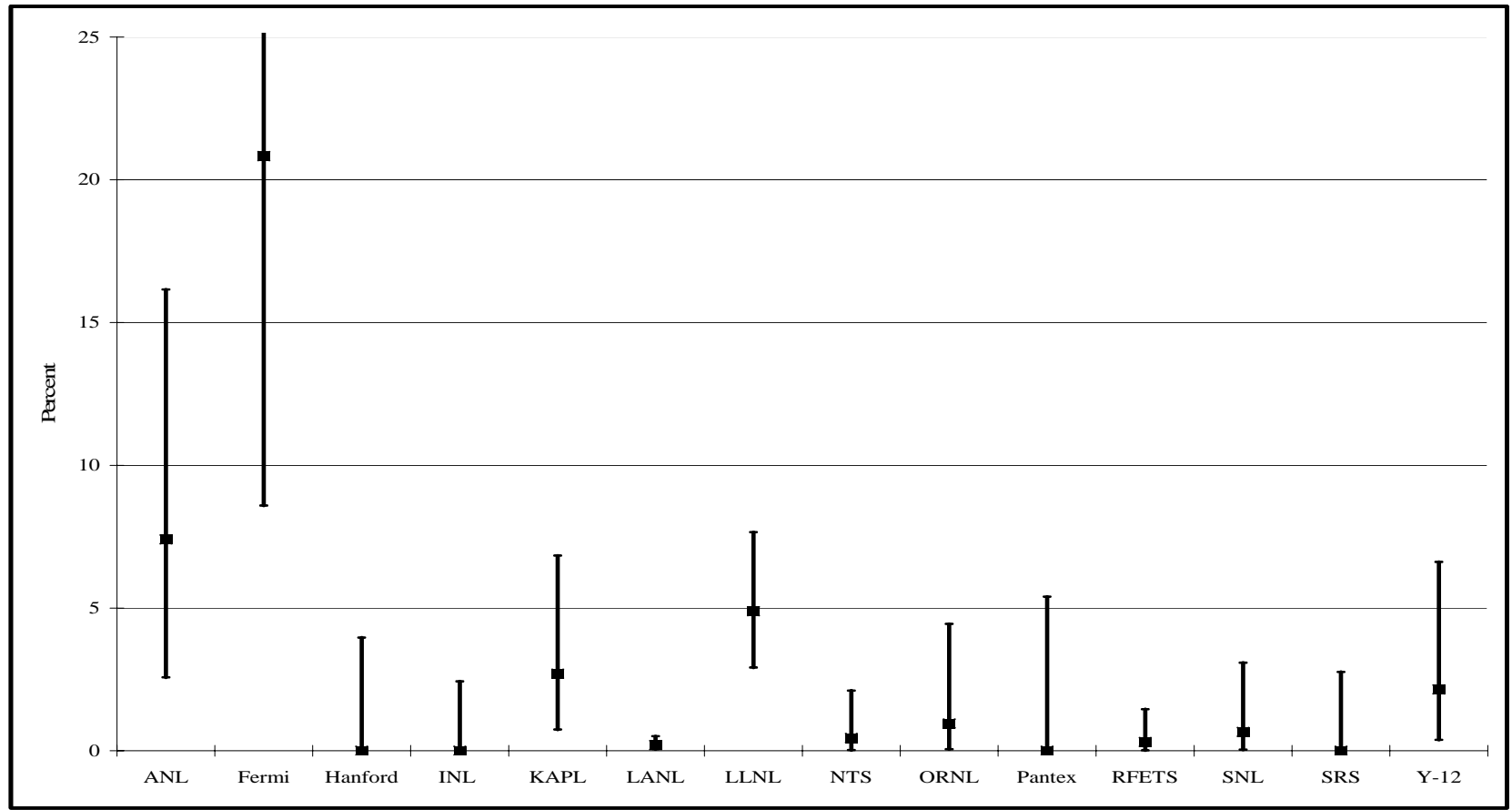
Current Worker Medical Data Sites With More Than 200 Participants

Site	Number Tested	Number Sensitized	Number CBD	Rate Sensitized or CBD
Rocky Flats	3,980	31	0	0.8%
Hanford Reservation	3,359	42	19	1.8%
Los Alamos National Laboratory	1,661	2	3	0.3%
Y-12 National Security Complex	1,642	44	42	5.2%
Pantex Plant	1,617	17	15	2.0%
Kansas City Plant	1,011	21	11	3.2%
East Tennessee Technology Park	695	9	5	2.0%
Nevada Test Site	651	10	0	1.5%
Savannah River Site	428	8	0	1.9%
Sandia National Laboratories	396	0	0	0%
Lawrence Livermore National Lab	281	0	0	0%
Oak Ridge National Laboratory	222	1	0	0.5%

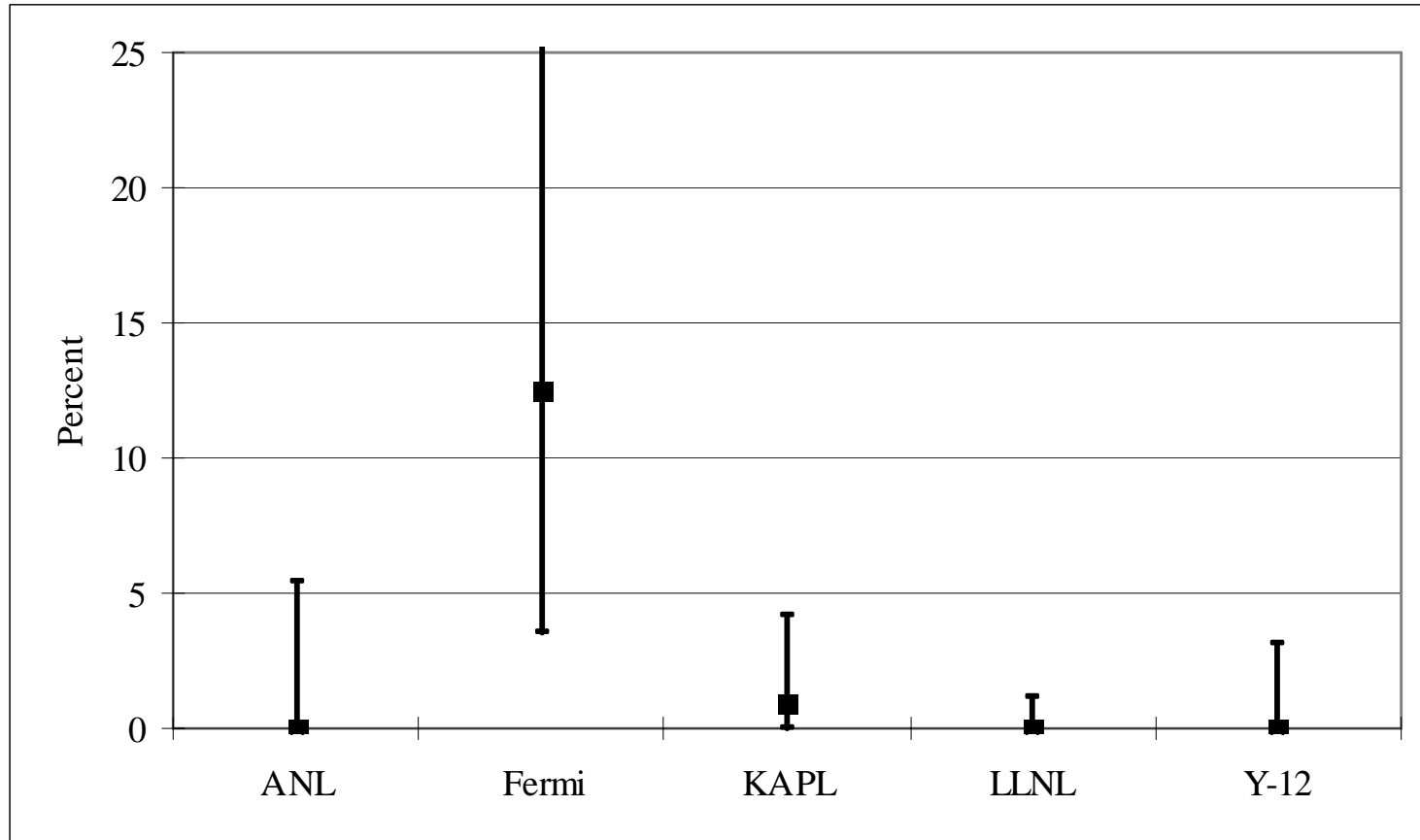
Former Worker Medical Data Sites With More Than 1000 Participants

Site	Number Tested	Number Sensitized	Number CBD	Rate Sensitized or CBD
Oak Ridge (Y-12, ORNL, ETTP)	9,129	121	39	1.8%
Rocky Flats	8,695	224	131	4.1%
Hanford Reservation	3,982	47	12	1.5%
Savannah River Site	3,331	42	1	1.3%
Kansas City Plant	3,272	64	4	2.1%
Los Alamos National Laboratory	2,114	22	2	1.1%
Idaho National Laboratory	2,734	16	0	0.6%
Lawrence Livermore National Lab	1,804	47	7	3.0%
Nevada Test Site	1,836	21	2	1.3%
Pantex Plant	1,228	22	5	2.2%

Percent Exceeding $0.2 \mu\text{g}/\text{m}^3$ and 90% Confidence Interval



Percent Exceeding $0.2 \mu\text{g}/\text{m}^3$ and 90% CI With Respirator APF



Medical Surveillance Data Discussion

- Differences in prevalence rates provide opportunities for studies to analyze protective working conditions.
 - Individual CBD cases among current workers require additional investigation to identify possible causes.
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Exposure Monitoring Data Discussion

- ❑ Measurement system is producing a high rate of non-detected results.
 - ❑ Exposure distributions are highly skewed – risk is dominated by a few high exposure excursions.
 - ❑ Decontamination work practices adapted from radiation, asbestos, etc can be effective.
 - ❑ Decontamination of process equipment and outdoor environments remain significant sources of exposure.
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Proposed Revision

DOE-STD-1187

- Beryllium-Associated Worker Registry Data Collection and Management Guidance

 - On RevCom for Standards for DOE-wide comment and coordination
<http://standards.doe.gov/login.jsp>
 - Comments due 5/14/2007

 - Adds analysis and reporting procedures

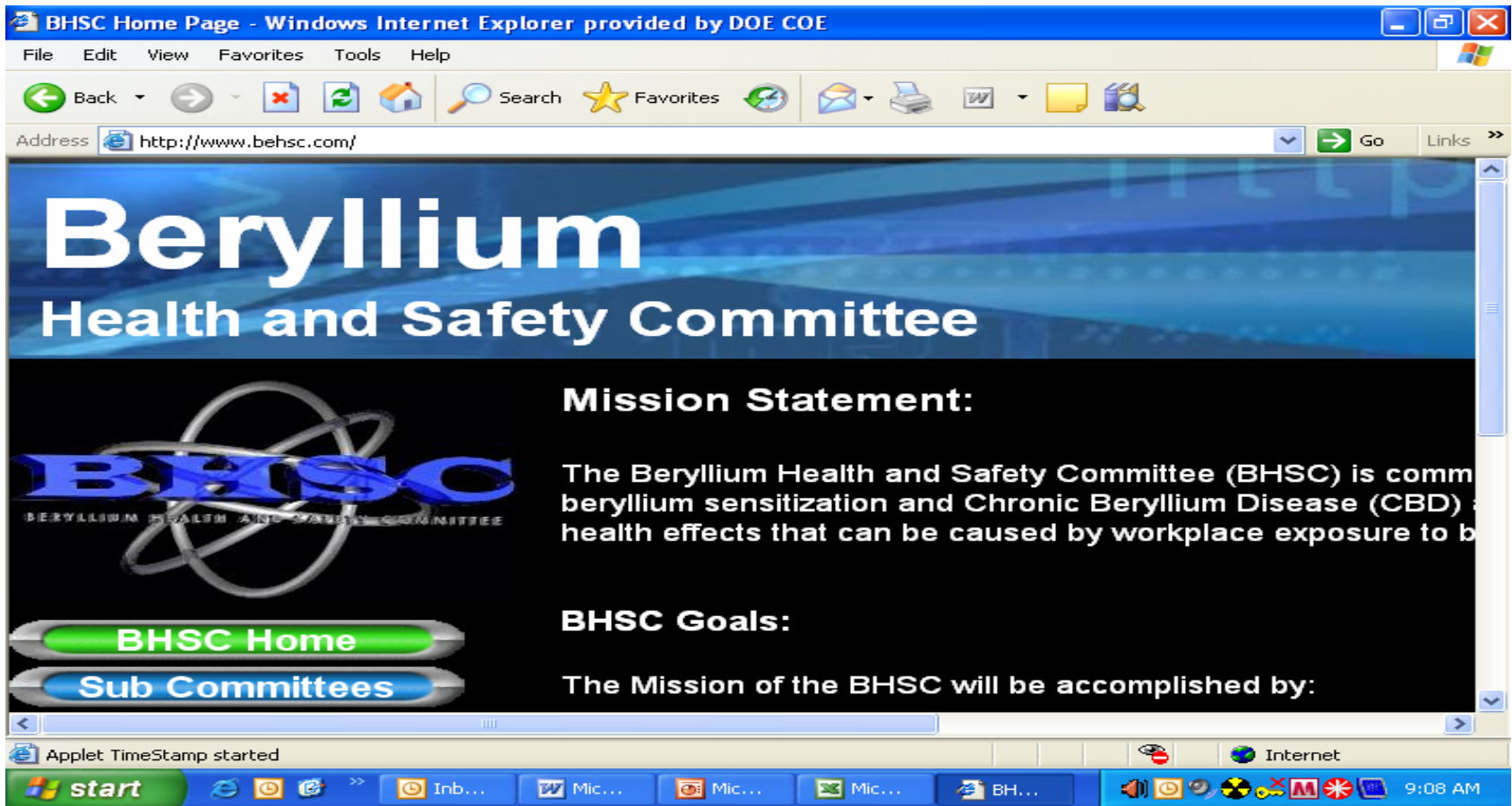
 - Removes Pulmonary Function Reporting
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Surveillance Reports

- Beryllium Current Worker Health Surveillance Through 2005
 - <http://www.hss.energy.gov/HealthSafety/IIPP/h/services/beregistry.pdf>

 - Report on Screening for Beryllium Sensitization and Disease in Former DOE Federal and Contractor Workers through December 2005
 - <http://www.hss.energy.gov/healthsafety/fwsp/formerworkermed/FormerBeWorkerReport.pdf>
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Beryllium Health and Safety Committee (www.BeHSC.com)



The screenshot shows a Windows Internet Explorer browser window displaying the BHSC website. The browser's address bar shows the URL <http://www.behsc.com/>. The website's main heading is "Beryllium Health and Safety Committee". Below this, there is a "Mission Statement:" section with the text: "The Beryllium Health and Safety Committee (BHSC) is comm... beryllium sensitization and Chronic Beryllium Disease (CBD); health effects that can be caused by workplace exposure to b...". To the left of the mission statement is a logo featuring a stylized atom with the letters "BHSC" and "BERYLLIUM HEALTH AND SAFETY COMMITTEE" below it. Below the logo are two buttons: "BHSC Home" and "Sub Committees". Below the mission statement is a "BHSC Goals:" section with the text: "The Mission of the BHSC will be accomplished by:". The browser's taskbar at the bottom shows the start button, several open applications (Inb..., Mic..., Mic..., Mic..., BH...), and the system tray with the time 9:08 AM.

BHSC Home
Sub Committees

Mission Statement:

The Beryllium Health and Safety Committee (BHSC) is comm... beryllium sensitization and Chronic Beryllium Disease (CBD); health effects that can be caused by workplace exposure to b...

BHSC Goals:

The Mission of the BHSC will be accomplished by:

The 3rd International Conference

<http://internationalbeconference07.com/>

The screenshot shows a Windows Internet Explorer browser window. The title bar reads "The 3rd International Conference on Beryllium Disease. - Windows Internet Explorer provided by DOE COE". The address bar contains the URL "http://internationalbeconference07.com/". The main content area features a banner with the following text:

The 3rd International Conference on Beryllium Disease

 **UNIVERSITY OF PENNSYLVANIA**
SCHOOL OF MEDICINE
Continuing Medical Education

SAVE THE DATE:

OCTOBER 16-19, 2007

The 3rd International Conference on Beryllium Disease

The banner also includes a small image of a clock and some laboratory equipment. The Windows taskbar at the bottom shows the Start button, several open applications (Inb..., Mic..., Mic..., Mic..., The...), and the system tray with the time 9:12 AM.