

## Special Topic: Asbestos Fatality

On September 17, 2008, a long-time Sandia National Laboratory craftsperson (employed since 1971) died of Mesothelioma from long-term asbestos exposure. The worker was diagnosed with pneumonia in January 2008, and six months later was diagnosed with Mesothelioma by his personal physician. Over the span of his employment at Sandia, the worker had been a millwright whose duties included laying out, constructing, modifying, overhauling, repairing, and maintaining all types of facility structures; and erecting, dismantling, aligning, leveling, moving, or installing machine tools, process equipment, test equipment, and similar or associated items and structural devices. He had taken Facility Worker Asbestos Awareness training in 1990 and the required annual Asbestos Awareness training from 1996 through January 2008. Based on the worker's work history and experience, his exposure could have occurred at a variety of locations.

Although the Department began focusing on asbestos exposure controls in conjunction with the first OSHA standards in 1972, nearly thirty years of operations since the Manhattan Project had already exposed countless workers to asbestos's dangers. As this previously-exposed workforce ages, deaths from exposures will continue because asbestos may take 20 to 40 years before symptoms of asbestos-related disease appear. The Department should encourage those who may have been exposed to seek medical screening if they haven't already done so.

Today's focus should be on ensuring programs are in place and are active to prevent current overexposures. Since sites are responsible for implementing asbestos exposure control programs, this is a good time for all sites and HQ facilities to ask themselves whether their programs are active and working as intended.

### Asbestos' Dangerous Legacy

Asbestos has been mined since the 1800s; its use increased in the 1940s. Before the 1980s, asbestos was commonly used in structural components such as insulation, drywall, floor and ceiling tiles, and roofing.

As a result of its widespread use, millions were exposed in their workplace, schools, and homes.

### What is Mesothelioma?

Mesothelioma is cancer of the mesothelium membrane that covers/protects lungs and internal organs. Asbestos exposure is the primary cause; inhaled asbestos fibers cling to pleural lining of the lungs. The disease can take from 20 to 40 years from first exposure to develop.

Mesothelioma is difficult to diagnose and *less than 1 percent of those diagnosed survive*. When it has been diagnosed, it is treated with chemotherapy/radiation/surgery, but the average survival rate is only 4 to 12 months.

About 3,000 new cases of Mesothelioma are reported each year in the U.S. and 400 in Canada. Statistics show that 1 Mesothelioma-related death occurs every 5 hours in Great Britain. U.S. fatalities have risen every year since 1999, when Mesothelioma was first coded as a cause of death.

See additional information sources at:

[www.epa.gov/asbestos](http://www.epa.gov/asbestos); [www.asbestosnetwork.com](http://www.asbestosnetwork.com)  
[www.cancer.gov/cancertopics/factsheet/risk/asbestos](http://www.cancer.gov/cancertopics/factsheet/risk/asbestos)

### **Past and Present Danger**

DOE and other workers must guard against a false sense of complacency - asbestos is not a thing of the past, despite attempts to regulate it out of existence. Nor is there a safe level. According to NIOSH, “There is no level of exposure below which clinical effects do not occur.”

Neither the 1970 Clean Air Act nor the 1989 Environmental Protection Agency (EPA) ban on the manufacture, importation, and processing of asbestos-containing products guaranteed asbestos-containing material’s (ACM) elimination. As a result, ACM continued to make its way into construction materials.

In fact, the First Court of Appeals remanded much of the original Rule in 1991, so the ban on many asbestos-containing products did not remain in effect. As a result, the assumption that building date or tile size is a credible criterion to determine the presence of asbestos is wrong on both counts: the prudent consumer or worker must refer to Material Safety Data Sheets (MSDSs) when they are available and must always exercise caution when encountering materials of unknown composition.

DOE has periodically reminded workers of asbestos dangers: In December 2005, DOE published Safety Bulletin 2005-13, *Asbestos Awareness*; and the November 2008 issue of *Operating Experience Summary* contained an article about Mesothelioma and asbestos safety.

Since January 1, 2006, there have been 13 ORPS-reported events where DOE workers have either unexpectedly encountered asbestos or have expected its presence but have been exposed when it becomes airborne through less-than-adequate controls. In both scenarios, exposure is possible because workers were wearing inadequate or no PPE. Four of the 13 events occurred at EM sites, 6 at NNSA sites, 2 at SC sites, and 1 at an FE site.

For example, on October 17, 2008, an employee at NETL (FE), while performing routine cleaning of the interior of a laboratory hood marked with a warning that it contained asbestos, noted white fibrous material among the debris that resulted. Suspecting asbestos in the fibrous material, the employee stopped work and notified ES&H. The employee was wearing insufficient PPE, but there was no known asbestos exposure.

All suspected asbestos containing materials were collected and placed inside the suspect hood. The hood was then sealed, tagged out, and marked with danger tape. Upon confirmation that asbestos was detected outside the laboratory hood by an independent lab on October 28, 2008, the entire Building 26 was closed as a precaution, pending asbestos air monitoring within the facility. Subsequent air monitoring in Building 26 revealed there was no airborne asbestos contamination present. Accordingly, the adjacent areas in the building were released for personnel use on November 3, 2008. Laboratory 205/206 remains closed pending completion of future asbestos abatement of the contaminated laboratory hood.

## **Protecting DOE Workers by Avoiding Asbestos Exposure on the Job**

Work planners and Industrial Hygienists can ensure that steps are taken to prevent asbestos exposure on the job. They include the following:

- Determine the presence, location and quantity of asbestos containing materials (ACM) at each work site, in accordance with OSHA requirements at 29 CFR 1910.1001(j)(2)
- Notify all employees of the presence and location of ACM
- Ensure that all ACM is labeled in accordance with OSHA requirements
- Develop an asbestos management plan for each building or facility containing ACM
- Ensure that effective work controls are in place in buildings with ACM
- Ensure that personnel have the appropriate levels of training and that training is current
- Avoid dust-generating disturbances during routine maintenance and cleaning near ACM
- Work in controlled areas that are clearly marked by asbestos warning signs
- Barricade areas to prevent unauthorized entry
- Provide appropriate dust controls, including wetting agents, before and during ACM removal
- Conduct exposure monitoring and require appropriate PPE
- Use negative-pressure enclosures or glove boxes