



January 23, 2012

Dear IOM Committee Members,

My name is Laurence Fuortes. I have been practicing occupational medicine at The University of Iowa for approximately 25 years and working directly with former DOE workers from sites across the Midwest for a little over 10 years on issues related to medical screenings through the DOE Former Worker Medical Screening Program. I am grateful for your efforts in examining the use of the DOL SEM and the Haz-Map databases for claims adjudication under the EEOICPA and for the opportunity to share with you some personal experiences and observations.

I would like to begin by stating that it has been an honor to work with these former DOE workers and their families as well as with colleagues from the other Former Worker Program screening services and the various federal agencies involved with these activities. The EEOICPA represents a landmark in social progress regarding how we deal with occupational disease. On the one hand, the Act represents a dramatic shift in a federal agency's recognition of historical disenfranchisement of employees from a system that placed production and national security concerns above worker health and safety. Additionally, it is the first such program designed to comprehensively identify hazards, educate and screen workers for health effects, and possibly most significant, to recognize and compensate for chronic disease of toxic etiology with no statute of limitation. Through onsite work directly with former workers and Plant staff, the DOE Former Worker Program has resulted in the creation of a cadre of medical professionals with unique knowledge and expertise in exposures and health risks associated with specific DOE facilities processes and exposures. These programs have interviewed and examined tens of thousands of former DOE workers across the country and in so doing garnered a significant amount of epidemiologic knowledge regarding these workforces and facilities.

Until quite recently, workers typically were not aware of toxic substances to which they might have been exposed, and the development of the SEM has been quite helpful in the process of risk assessment and diagnosis. We have been told by the DOL that the SEMs are a work in progress. It has been a relatively common occurrence that the DOL be made aware from workers, medical practitioners and advocates that specific agents are noted as being absent from facilities' SEM lists despite historical evidence to the contrary. The DOL has in my experience been for the most part receptive and made corrections to these lists in response to such feedback. An easy and relatively common example of such a problem has been in the absence of asbestos in several SEMs which was corrected after providing DOL with government, site-specific data documenting tons of asbestos in the waste stream

from renovation processes. Similarly using this link, <http://www.sem.dol.gov/Dis.cfm>, pulmonary fibrosis is not listed nor are several of the SEC radiogenic cancers listed. It appears that there are no toxic substances listed under thyroid, stomach, pancreatic, colorectal, brain and bone cancers; and radionuclides exposure is not listed under any of the cancers. These are examples of categorical omissions which though serious should not be overemphasized as such lists are most useful in identifying potential hazards but not particularly helpful in assessing dose or risk and should definitely not be relied upon for confirming or ruling out diagnoses. The frequency of errors in categorical exposure assessment based on the SEMs has been frequent enough as to cast doubt on the use of such lists to deny claims out of hand. In our experience in Iowa, we tried to develop a job exposure matrix taking into consideration the effects of time, changing processes, locations, job titles, job tasks, specific exposures and degree thereof. The process of exposure assessment proved to be quite difficult to validate as little historical data exists in many cases and dose characterization had to rely at times on data from other sites, eras or industries. The expertise of industrial hygienists, process engineers, line workers and health and safety staff both from the sites in question and from other areas (including academia, NIOSH and other DOE facilities) was necessary for us to get a feel for the degree of exposure to specific agents based on any given individual's work history.

As regards to the Haz-Map program, it is a wonderful educational tool and quite useful for broad brush assessment of hazards and a good starting point, especially for anyone with limited toxicological background. Although potentially quite useful, it is my impression that this program is not well suited to use by non-medical personnel in confirming or ruling out diagnoses. As an example, the Haz-Map program does not list pneumoconiosis as a consequence of many well-recognized pneumoconiotic agents. For example, compare the following two Haz-Map pages: the first page lists agents associated with the term 'pneumoconiosis'; and the second page lists agents associated with the term 'fibrosis.' When searching under 'pneumoconiosis' below, for example, neither asbestos, beryllium, silica nor plutonium are listed, whereas they are found under the term 'fibrosis.'

Browse Haz-Map

pneumoconiosis was searched as word(s) in all of the text fields. Results are sorted in relevancy ranked order.

Search results: 17 record(s) found in Agents table. [Next Section](#)

- [Mica, respirable dust](#)
- [Gypsum](#)
- [Shale oils](#)
- [Kaolin](#)
- [Antimony](#)
- [Coal dusts](#)
- [Graphite, all forms except graphite fibers](#)
- [Chromite ore processing](#)
- [Tin oxide](#)
- [Trona](#)
- [Antimony trioxide](#)
- [Fuller's earth](#)
- [RARE EARTH METALS](#)
- [Perlite](#)

- [Portland cement](#)
- [Polyvinyl chloride](#)
- [Iron oxide \(Fe₂O₃\)](#)

Search results: 9 record(s) found in Diseases table. [Next Section](#) [Back to Top](#)

- [CWP, complicated](#)
- [Pneumoconioses, other](#)
- [Coal workers' pneumoconiosis](#)
- [Silicosis, acute](#)
- [Pneumoconioses, benign](#)
- [Silicosis, simple](#)
- [Silicosis, complicated](#)
- [Chronic beryllium disease](#)
- [Asbestosis](#)

Search results: 3 record(s) found in JobTasks table. [Next Section](#) [Back to Top](#)

- [Work as a dental technician with long-term exposure to CoCrMo dusts](#)
- [Worked in foundry for years with heavy exposure to gases/fumes and mineral dust](#)
- [Generate plastic dusts or powders \(Plexiglas or polyvinyl chloride\)](#)

Browse Haz-Map

fibrosis was searched as word(s) in all of the text fields. Results are sorted in relevancy ranked order.

Search results: 31 record(s) found in Agents table. [Next Section](#)

- [Zapon red 471](#)
- [Silica, crystalline](#)
- [Asbestos](#)
- [Nickel carbonyl](#)
- [Plutonium](#)
- [Zirconium silicide](#)
- [Talc \(containing no asbestos\)](#)
- [Diquat](#)
- [Synthetic vitreous fibers](#)
- [Yttrium and compounds](#)
- [Erucic acid](#)
- [Silver phosphate](#)
- [Vermiculite](#)
- [Tantalum, metal and tantalum oxide, dust](#)
- [Aluminum metal and insoluble compounds](#)
- [Titanium dioxide](#)
- [Silicon carbide](#)
- [Gadolinium](#)
- [Zirconium silicate](#)
- [Fungi](#)
- [Attapulgite](#)
- [Aramid fibers](#)
- [Mitomycin C](#)
- [Indium and compounds](#)
- [Wollastonite](#)
- [Zirconium and compounds](#)

- [Graphite, all forms except graphite fibers](#)
- [Portland cement](#)
- [Cyclophosphamide](#)
- [Paraquat dichloride](#)
- [Cobalt](#)

Search results: 9 record(s) found in Diseases table. [Next Section](#) [Back to Top](#)

- [CWP, complicated](#)
- [Silicosis, complicated](#)
- [Asbestosis](#)
- [Asbestos-related pleural disease](#)
- [Hypersensitivity pneumonitis, acute](#)
- [Hypersensitivity pneumonitis](#)
- [Chronic beryllium disease](#)
- [Filariasis](#)
- [Coccidioidomycosis](#)

Although computer algorithms for diagnosis provide an attractive opportunity for research and future improvements in medical care, we have not come to a point when we can rely on such systems or technologies to accurately make diagnoses, in all but very few medical applications (EKG readings for example). Such programs are most helpful in generating differential diagnoses but cannot as yet address the nuances of clinical and exposure histories and certainly should not be relied on for ruling out diagnoses or denying claims without the input and oversight of persons familiar with the concepts of exposure, acute and especially chronic toxicity, and medical presentations associated there within. The SEM and Haz-Map systems are both subject to being incomplete and should not be relied upon in isolation of given probatory precedence over other sources, including (co)worker and clinicians' histories and relevant epidemiology. Data from medical screenings and epidemiologic studies of many tens of thousands of nuclear weapons industry workforces both from the U.S. and abroad are available should be used in the evaluation of exposure-disease relationships in this workforce. There is expertise in this area and skilled human resources may likely be preferable to rely upon by non-health sciences oriented staff and their use of these data systems.

Thank you for the opportunity to share these observations and perspectives with you. I would welcome the opportunity to discuss any of these issues with you further.

Sincerely,

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