

# The Energy Employees Occupational Illness Compensation Program Act

## New Legislation to Compensate Affected Employees

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by Ken Silver, DSc, SM

*I had a job to do and I did it. Someone else did not do their job. I feel that now is the time for someone to understand the importance of accepting financial responsibilities for the damage that I and others like me have incurred to our health and quality of life during our service to the nation," said William Van Buskirk in a March 18, 2000 hearing in Espanola, NM. He is a former Los Alamos machinist with chronic beryllium disease, diagnosed in 1971 ("Public Hearing—Injured LANL workers," 2000).*

The Energy Employees Occupational Illness Compensation Program Act of 2000 (EEOICPA; "ee-ok-pah") is the first new federal entitlement program for American workers since the Black Lung Benefits Reform Act of 1977 ("Subchapter XVI," 2002; "The Floyd D. Spence," 2000). EEOICPA's passage marked the end of a dark chapter in occupational health in America—the systematic denial of occupational illness compensation claims among workers in the factories and laboratories of the atomic bomb complex during the Cold War era. Labor health advocates, together with workers and their survivors, have long called for the federal government to stop encouraging and assisting contractors in contesting legitimate occupational disease claims, and to replace policies of "deny and defend" (Energy Employees Occupational Illness Compensation Program Act, 2003) with recognition and recompense for individuals who earn their livelihoods in government-owned, contractor-operated weapons production plants where large quantities of

toxic and radioactive materials are used (Alvarez, 2000, 2001; "Employee Radiation Hazards," 1959). EEOICPA is a timely rejoinder to the program of 12 federally-funded medical surveillance projects which since 1993, have screened more than 26,000 current and former workers at Department of Energy (DOE) facilities (Breyse et al., 2002; Daugherty, Falk, Furman, Aldrich, & Hilmas, 2001; Dement et al., 2003; Department of Environmental Health Sciences, 1999; Miller, Markowitz, Manowitz, & Miller, 2004; Welch et al., 2004).

A public constituency for this federal program was galvanized in 1999 and 2000 by a series of public hearings held around the country by Dr. David Michaels, then Assistant Secretary of Energy for Environment, Safety and Health. Often co-chaired by Senators and Congressmen, these hearings provided what had been lacking since the first attempts to address the issue in the 1950s. Never before had so many authentic and high-level voices discussed worker health issues on the public record outside the DOE's "culture of secrecy" ("Department of Energy Employee," 2000; Savannah River Site Town Meeting, 2000). Then Energy Secretary, Bill Richardson, was a principal proponent.

The purpose of this article is to provide occupational health professionals with an overview of EEOICPA—its scope, coverage and exclusions, benefit structures, major agency "players," and key regulations, as well as some areas of ongoing controversy. At its peak, the DOE weapons complex would have ranked high among the "Fortune 100" of large corporations in terms of physical plant, subcontracting relationships, and number of contractor employees (600,000 estimated). Because of massive downsizing in the 1990s, formerly exposed workers may

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Table  
**Roles of Agencies and Board**

<i>Agency</i>	<i>Roles</i>
National Institute for Occupational Safety and Health (NIOSH)	<ul style="list-style-type: none"> <li>● Dose reconstruction</li> <li>● Site profiles</li> </ul>
U.S. Department of Labor	<ul style="list-style-type: none"> <li>● Operates resource centers</li> <li>● Claims intake and administration</li> <li>● Probability of causation determinations</li> <li>● Adjudication of claims</li> <li>● Compensation payments</li> </ul>
U.S. Department of Energy	<ul style="list-style-type: none"> <li>● Records retrieval</li> </ul>
Advisory Board on Radiation Worker Health	<ul style="list-style-type: none"> <li>● Advice to NIOSH on dose reconstruction and probability of causation techniques</li> <li>● Review of petitions for Special Exposure Cohort status</li> </ul>

be currently employed in other settings, unaware of their eligibility for benefits. Nurses and other occupational health professionals in every community in America may encounter an eligible employee or family member. This article is intended as a resource for assisting potential claimants in securing their rights under this program.

**BACKGROUND**

Congress first held hearings in 1959 on a compensation proposal for radiation-induced cancer in atomic workers (“Employee Radiation Hazards,” 1959). Those efforts ran aground on the issue of “indeterminate causation.” How can radiogenic cancers deserving of compensation be distinguished from cancers that would have occurred sporadically in the absence of occupational exposure to ionizing radiation?

In crafting EEOICPA during the second session of the 106th Congress, legislators adopted a framework, implemented by federal agencies (see Table), using two standardized methods: radiation dose reconstruction and computer modeling of the “probability of causation.” Although not without controversy (Beyea & Greenland, 1999; Greenland, 1999, 2000; Thomas, 2000), these methods are intended to yield consistent, scientifically informed causation determinations for cancer claims on a case-by-case basis. The methods rest on principles familiar to occupational health professionals: reconstructing past exposures from interviews and documentation; using confidence intervals to express statistical uncertainty; and erring on the side of the worker. The National Institute for Occupational Safety and Health (NIOSH), charged with reconstructing radiation doses, has contracted through Oak Ridge Associated Universities (Oak Ridge, TN) for the services of health physicists.

EEOICPA provides tools and remedies suited to the unique conditions of the weapons complex. A series of “site profile” documents is in progress to delineate infor-

mation needed to reconstruct workers’ exposures, including historical radiation dosimetry practices at each DOE site. In addition, the law recognizes that some cohorts of workers incurred radiation exposures under special circumstances that make dose reconstruction either scientifically infeasible or morally unnecessary as a basis for compensation decisions. Members of such “special exposure cohorts” (SECs) need only establish verifiable employment histories and a diagnosis of 1 of 22 specified kinds of cancer to receive compensation.

EEOICPA is not limited to radiation-related cancer. It also addresses beryllium, silica (at underground nuclear test sites), and toxic substances (e.g., asbestos, solvents, heavy metals). The implementation of these provisions to date is a study in contrasts. The original beryllium and silica provisions have performed largely as Congress intended, due in part to the U.S. Department of Labor’s (DOL) experience in administering compensation programs (“Energy Employees Workers’ Compensation,” 2003). In contrast, for other toxic substances, the 2000 law originally sought to create a technical assistance program run by DOE to help workers file state workers’ compensation claims. After constituents’ complaints of delays and mismanagement were confirmed by a series of General Accounting Office (GAO) reports (U.S. GAO, 2003, 2004a, 2004b), Congress totally revamped these provisions in 2004.

Even practitioners who do not work at DOE facilities may be affected by EEOICPA. A NIOSH study mandated by law evaluated residual contamination in private sector defense production plants across the United States (NIOSH, 2004a). Broader effects may also be felt. Although the federal statute expressly disclaims influence over other illness compensation schemes, logic and definitions from a federal model may percolate into state programs in ways unforeseen by federal lawmakers. Indeed, some aspects of EEOICPA are innovative, especially

when viewed in the context of the slow-moving field of workers' compensation law.

## COVERAGE

In adopting EEOICPA, Congress aimed to overcome the lack of uniformity among state workers' compensation programs for occupational diseases, a problem that long played to the disadvantage of atomic workers in rural states where some of the largest weapons facilities are located. Signed by President Clinton in October 2000, EEOICPA established uniform federal systems for compensating radiation-related cancer and chronic beryllium disease (CBD). A trust fund was created to pay claims (also known as "direct spending"), obviating the need for annual appropriations from Congress.

Employees of contractors paid to operate government-owned nuclear weapons facilities are eligible to file claims. These include certain employees of large industrial and construction companies, such as Lockheed Martin, DuPont, Johnson Controls, and Bechtel, by virtue of their tenures operating government energy and weapons facilities in Oak Ridge, TN; Savannah River, SC; Los Alamos, NM; and Nevada Test Site, NV, respectively. Also included are employees of less obvious entities such as Battelle Laboratories and the University of California that have operated nuclear weapons laboratories. (A list of EEOICPA claims listed by state and by worksite in each state is available at [www.dol.gov/esa/regs/compliance/owcp/eoicp/Statistics/Statistics.htm](http://www.dol.gov/esa/regs/compliance/owcp/eoicp/Statistics/Statistics.htm)) Contemporary environmental remediation workers, visiting scientists, and postdoctoral fellows at DOE sites are also covered. The definition of a "contractor employee" specifies residence at a DOE facility for at least 24 months.

During the Cold War, the federal government contracted throughout American industry for the production of weapons components. These jobs incorporated the same beryllium or radioactive materials used in the government-owned plants. Therefore, two additional categories of employees are covered: employees of "beryllium vendors" and "atomic weapons employers" (AWE). The original EEOICPA statute from 2000 listed eight beryllium vendor companies by name and authorized the Secretary of Energy to designate additional companies (U.S. DOE, 2002). These workers currently have the same beryllium coverage as employees of DOE contractors.

As part of the same regulation, DOE published a list of AWEs. Workers are covered if they were employed while radioactive materials were handled in these private sector plants. Contemporary workers in these plants whose only exposure is to residual radioactive contamination may be covered under limited circumstances. Congress recently directed NIOSH to update its study of residual contamination (Ronald W. Reagan National Defense Authorization Act, 2004).

## COMPENSATION FOR BERYLLIUM ILLNESSES

Workers with CBD, a granulomatous condition which primarily affects the lungs, are entitled to one-time payments of \$150,000 plus coverage of health-related expenses related to the illness and incurred from the time

the claim was filed. If the worker is deceased, then survivors share the \$150,000, according to a descending family hierarchy (i.e., surviving spouse and minor children, children [adults and minors], parents, grandchildren, grandparents). The hierarchy determines which survivors have precedence to receive the compensation benefits. Adult children are only eligible if there is no spouse or minor children, and parents are only eligible if there are no children, etc.

Workers with beryllium sensitization (BeS) that has not yet progressed to CBD (Newman, Mroz, Balkissoon, & Maier, 2005) are provided with lifetime medical surveillance. Upon developing CBD, they become eligible for \$150,000 plus medical benefits.

The long-heralded promise of biological markers for early diagnosis (Ashford, Spadafor, Hattis, & Caldart, 1990) has been realized with the beryllium-related provisions of EEOICPA. The beryllium lymphocyte proliferation test (Be-LPT) is determinative. In this laboratory test, an individual's lymphocytes are cultured in the presence of beryllium salts. A proliferative response, measured by incorporation of radioactively labeled thymidine, indicates the individual's immune system has been sensitized to beryllium (Kreiss, Newman, Mroz, & Campbell, 1989; Mroz, Kreiss, Lezotte, Campbell, & Newman, 1991; Newman, 1996)

EEOICPA applies the scientific understanding that sensitization precedes CBD (Newman et al., 1994; Newman, Lloyd, & Daniloff, 1996). A positive Be-LPT test on lymphocytes from peripheral blood or lung lavage fluid constitutes sensitization. However, additional pulmonary criteria must be met to establish that the worker has progressed to CBD. According to 42 USC §7384(1)(13)(A) of the statute ("Subchapter XVI," 2002), a case of CBD must have "lung pathology consistent with chronic beryllium disease" and evidence from any one of the following diagnostic procedures: lung biopsy, computed tomography (CT) scan, or pulmonary function or exercise tests.

A special set of presumptive criteria is provided for cases in which the worker died or was diagnosed before the Be-LPT test became available in January 1993. In addition to a history of exposure to beryllium, these cases must meet three of the following five criteria:

- X-ray or CT scan abnormalities characteristic of CBD.
- Pulmonary function tests indicating restrictive or obstructive disease, or a defect in diffusing capacity.
- Lung pathology "consistent with" CBD.
- A clinical course of disease "consistent with a chronic respiratory disorder."
- Positive skin patch test.

Some survivors who brought claims in these older cases have prevailed only after adamantly seeking complete retrieval of archived health-related records. For some, the process has been one last encounter with occupational medicine services in a "company town" atmosphere (L. Martinez, personal communication, March 15, 2003). Now, the U.S. DOL uses independent beryllium experts to review health-related records.

EEOICPA is not a preventive law, but it may be having a positive influence in some workplaces. A recent

report by the DOE Office of Inspector General on contemporary hazards at the Y-12 facility in Oak Ridge, TN disclosed the availability of a safer beryllium substitute in weapons components. The report cited the mounting cost of claims under EEOICPA as a motive for material substitution (U.S. DOE, 2003).

### **Compensation for Silicosis**

More than 800 U.S. nuclear tests from 1957 to 1992 were conducted underground at the Nevada Test Site (NTS) (U.S. DOE, 1994) 75 miles north of Las Vegas. Underground tests also occurred on Amchitka Island, Alaska. In both locations, the subsurface geology contained appreciable levels of naturally occurring free silica. NTS “shots” were conducted in “downhole” shafts bored to depths of thousands of feet and in lateral tunnels, bored in an anastomosing pattern that proved difficult to ventilate.

Both exposure and disease are dealt with by legal presumptions in the statute. Under 42 USC §7384(r), exposure to silica is established “if, and only if, the employee was present” at NTS or Amchitka for at least 250 days during tunneling or testing (“Subchapter XVI,” 2002). Chronic silicosis is established if the onset of disease is at least 10 years since initial exposure and a physician’s diagnosis is accompanied by one of the following:

- Radiographic changes classified by a NIOSH-certified B-reader as category 1/0 or higher.
- CT scan or other imaging “consistent with” silicosis.
- Lung biopsy.

Successful claimants are eligible for the same benefits as CBD cases (\$150,000 plus health-related coverage from the date the claim was filed).

Under pressure from manufacturers of industrial sands, Congress included a disclaimer in this section of the law to avoid establishing “a precedent on the question of chronic silicosis as a compensable occupational disease” outside the DOE complex. However, this disclaimer is of an advisory nature (under the heading “Sense of Congress”). It would not prevent another jurisdiction from adopting a similar approach by statute or regulation for non-DOE silicosis cases.

The silica provisions’ exclusive focus on pulmonary disease has excluded workers with autoimmune diseases. Some of these silica-induced ailments, such as systemic vasculitis, can be severely disabling (Mulloy, 2004). This problem may be alleviated by the recent Subtitle E amendments (discussed on p. 274).

### **LEGAL PRESUMPTIONS**

Historical industrial hygiene measurements have little or no bearing on the compensability of silicosis and CBD. Although quantitative health physics measurements of radiation were routinely collected in the atomic weapons complex, very limited industrial hygiene data are available for decades past. Lawmakers in the 106th Congress were aware that silicosis is a classic occupational disease of tunnel workers. The free silica content of rock at the NTS is as high as 62% (Mulloy, 2004; Pepper, 1997). Preliminary surveillance data showed a prevalence

of silicosis among NTS miners of 8% to 20% (“Bill to Compensate,” 2000; Tetreault, 2000). Thus, a job history of employment in the tunnels presumptively establishes “exposure.”

For beryllium, the availability of a highly specific and moderately sensitive biological marker of early effect (i.e., the Be-LPT test) (Stange, Furman, & Hilmas, 2004) renders moot, for the purposes of compensation, the question of “how much” exposure the worker received. Almost any documentation of beryllium dust, particles, or vapor in or near the work process is sufficient to qualitatively establish the potential for exposure (U.S. DOL, 2002). Historical air concentrations above a certain threshold are not a predicate for compensation.

This makes sense both biologically and morally. A biological marker of sensitization lies much farther along the causal pathway to disease than industrial hygiene measurements. A well-performed Be-LPT test is more meaningfully interpreted for an individual than are air concentrations of beryllium, a substance for which the adequacy of even current occupational exposure limits are in doubt (U.S. DOE, 1999; Wambach & Tuggle, 2000; Yoshida et al., 1997) because of marked inter-individual variability (McCanlies, Kreiss, Andrew, & Weston, 2003). There are no published reports of beryllium sensitization attributable to naturally occurring beryllium. Under EEOICPA, a single positive Be-LPT in a DOE worker presumptively establishes sensitization (U.S. DOL, 2002). From a moral perspective, most of these exposures occurred during the era in which federal agencies minimized the perception of beryllium’s potency (Egilman, Bagley, Biklen, Golub, & Bohme, 2003; Egilman, Bagley, & Connolly, 2002).

### **RADIOGENIC CANCER**

Of all the non-communicable agents of chronic occupational disease, ionizing radiation has the most highly evolved quantitative basis for regulation because it is relatively easily measured. Decades of work by the health care and scientific communities worldwide have quantified harm from various uses of radiation with the aim of minimizing adverse effects. Long-term epidemiologic studies of large cohorts, most notably survivors of the atomic bomb blasts at Hiroshima and Nagasaki, have been extensively reviewed and modeled (National Research Council, 1990).

The system adopted by Congress in EEOICPA, and later elaborated in NIOSH’s and DOL’s regulations, rests on the National Institutes of Health’s (NIH) radioepidemiological tables. These were originally developed for legislation in the 1980s to pro-rate cancer compensation for those living downwind of atmospheric nuclear tests according to the “probability of causation” (i.e., the percent likelihood that the cancer was radiogenic) (Parascandola, 2002b). Although use of the tables was ultimately struck from the “downwinders” legislation, they have been applied in the Veterans Administration’s system for compensating “atomic veterans,” soldiers who were

exposed to radiation during nuclear tests (National Research Council, 2003).

In 2000, an NIH committee updated the tables in light of cancer incidence studies and recent scientific developments concerning the relative biological effectiveness of different types of radiation, dose-rate effects, and effect modifiers for radiation carcinogenesis (U.S. Department of Health & Human Services, 2003). In addition, the Interactive Radio-Epidemiological Program (IREP), a mathematical model, replaced the 1985 report's tabular format. A product of the modern age of quantitative risk assessment, IREP simplifies the calculation of probability of causation values and allows for uncertainty analysis, based in part on the technique of Monte Carlo simulation. It has a user-friendly computer interface which allows interested parties to explore the effect of different assumptions on the calculated probabilities of causation.

For 32 types of cancer, IREP calculates a probability of causation as a function of radiation dose, age at diagnosis, years of exposure, and type (e.g.,  $\alpha$ ,  $\beta$ ) and energies of radiation. Crucial for its application in the EEOIC program is the confidence interval, which bounds each dose-response curve. Per the EEOICPA statute, a cancer claim is compensable if the worker's radiation dose corresponds to a 50% or greater probability of causation at the upper 99% confidence limit around the dose-response curve. Use of the upper 99% confidence limit results in more decisions to award compensation than would a system based on the "best estimate" values lying directly along the dose-response curve.

As explained by Senator Jeff Bingaman (D-NM), one of EEOICPA's lead sponsors:

For example, for a given worker with a particular cancer and radiation exposure history, the PC may be 0.38 with 99% confidence interval of 0.21 to 0.55. This means that it is 38% likely that this worker's cancer was caused by this radiation dose, and we can say with 99% confidence that this estimate is between 21% and 55%. Since the upper bound, 55%, is greater than 50%, this person's cancer would be considered to be at least as likely as not to have been caused by exposure to radiation, and the person would be eligible for benefits... ("The Floyd D. Spence," 2000).

Because the IREP model is based primarily on studies of the cohort of Japanese A-bomb survivors enrolled in the Life Span Study, NIOSH has made minor modifications to better reflect the occupational environment. Many atomic workers were exposed over long periods of time to alpha radiation, in contrast to A-bomb survivors whose exposures were brief, intense, and dominated by gamma radiation and neutrons. NIOSH has modified IREP to take into account the "inverse dose rate effect" associated with prolonged exposure to low levels of alpha radiation (Lubin et al., 1995).

However, epidemiologic studies of nuclear workers have not yet been fully incorporated into the IREP model. IREP's heavy reliance on the atomic bomb survivor studies is controversial (Wing, Richardson, & Stewart, 1998). A review of nuclear worker studies by scientists from 12

federal agencies established the scientific basis for the EEOIC program when the legislation was introduced (National Economic Council, 1999; Wald, 2000).

Recognizing that occupational radiation exposure may be just one of several cancer risk factors, the original statute required that "other health-related factors" be taken into account. Community and non-occupational radiation exposures are implicitly accounted for in the IREP model's use of background rates of cancer. To account for the contributions of smoking and race and ethnicity, NIOSH modified the IREP model for lung and skin cancer, respectively. But, as the agency noted in the Federal Register, it would be very difficult to collect reliable data from claimants about any other such factors (U.S. Department of Health & Human Services, 2002a). Moreover, for cancers other than skin and lung, similar modifications "may not be possible to develop based on existing research."

## DOSE RECONSTRUCTION

Cancer claims not covered by an SEC are statutorily required to undergo an "exposure assessment" by NIOSH. The agency has interpreted this to mean a radiation dose reconstruction.

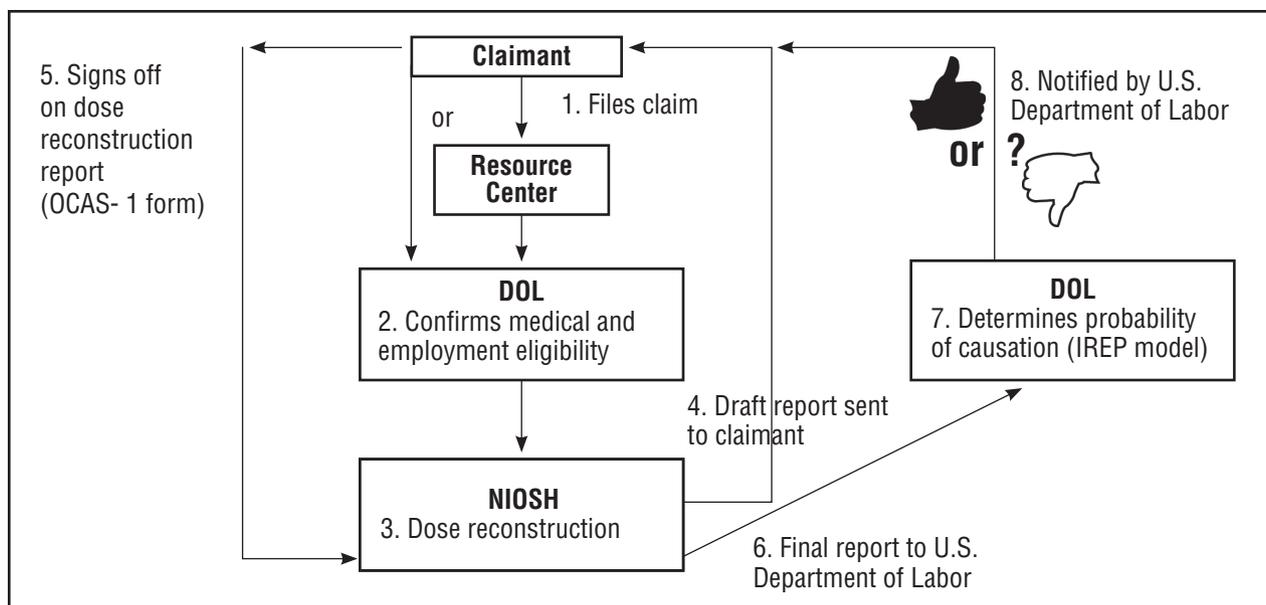
Use of the IREP model to calculate probability of causation requires input of the dose attributed to internal or external radiation by type and energy range. This requires an understanding of the type ( $\alpha$ ,  $\beta$ ,  $\gamma$ ,  $n^\circ$ ) and size of radiation source, and a basic understanding of the work process. The information is assembled to reconstruct how the worker's presence and activities varied in time and space with respect to the radiation source. For internally deposited radionuclides, NIOSH relies on biokinetic models of the International Commission on Radiation Protection (ICRP) to calculate dose to the site of the primary tumor.

In its approach to implementing this pivotal part of EEOICPA, NIOSH faced a choice between scientific refinement—for which the agency is widely respected—and the "timely" process mandated by Congress. To help find the appropriate balance, the agency's Office of Compensation Analysis and Support (OCAS) adopted regulations in May 2002. A key guiding ethic is stated in the "overview" of the dose reconstruction rule (U.S. Department of Health & Human Services, 2002b):

At any point during the steps of dose reconstruction... NIOSH may determine that sufficient research and analysis has been conducted to complete the dose reconstruction.

That is, a dose reconstruction is considered "complete" when further analysis does not alter the answer to the question, "Is the probability of causation 50% or greater at the upper 99% confidence limit, according to the IREP model?"

Upon receipt of a claims package, OCAS first applies "efficiency processes" to determine whether a worker's radiation dose was clearly high or very low. An unmistakably high dose case might present itself as follows. A



**Figure. Key steps in the processing of radiation-related cancer claims which are not in the Special Exposure Cohort.**

worker's dose records are summed and, with allowances for potential missed doses resulting from old insensitive monitoring badges, a probability of causation of 50% or more results using the IREP model. No further work is performed. NIOSH notifies the DOL and the worker is compensated (see Figure).

At the other extreme, some cancer claims have been filed by cafeteria workers, clerks, accountants, and secretaries who worked near, or occasionally walked through, radiation work areas. Because they were not considered to be radiation workers, they were not badged. Individual monitoring data are not available. In these situations, NIOSH overestimates their doses by making a worst-case assumption such as exposure at the occupational exposure limit in effect at the time of employment. Most of these cases yield the inevitable answer: The probability of causation is much less than 50% at the upper 99% confidence limit. DOL notifies the claimant that the claim has been denied.

A structured telephone interview is a standard feature of the dose reconstruction process. If the worker is deceased, NIOSH personnel attempt to elicit the names of former coworkers who might still be available from the claimant (usually a spouse or child). Interviewees are given the opportunity to review and make corrections on the written record of the interview. Supplemental information provided by claimants is evaluated for consistency with other data.

In a break from past conflicts of interest, DOE's role in the process is statutorily limited to gathering information for NIOSH. DOE is expected to provide all radiation dosimetry records of the employee. NIOSH may compile additional information, such as details of processes and operations, drawing on information collected in previous studies as well as a series of "site profiles."

In between the two extreme cases described lie several thousand others that are not as clear. Some radiation-exposed workers were unmonitored. In many more cases,

monitoring procedures were inadequate or the available records are incomplete.

The existing data often need to be augmented with assumptions. NIOSH has compiled a series of default assumptions. For external radiation, if individual exposure monitoring data are not available for an employee, then coworker or area monitoring data may be used. For internal emitters, it is necessary to account for the fact that bioassay sample programs of the past had higher detection limits than current technology. When analyzing bioassay data, NIOSH assumes a "missed dose," the upper limit of internal dose that a worker could have received for periods when bioassay results were below the detection limit.

Certain other default assumptions are explicitly intended to provide a worst-case dose estimate. An often-cited example involves inhalation of a radionuclide of unknown chemical form. Internal dose depends on solubility. In a case of lung cancer, NIOSH assumes the material was insoluble, predominantly remaining in the lungs. In a case of cancer of a distal organ, NIOSH assumes it was a highly soluble material, readily entering the circulation. The reconstructed dose to the site of the primary tumor is thereby maximized, increasing a claimant's chance of receiving compensation.

Default assumptions are also used to handle missing badge data. Values can be interpolated between the data points for nearby time periods, or coworkers used as proxies. More elaborate methods are under review, such as job exposure matrices, which systematically compile historical information on exposures in relation to job titles and tasks (Taulbee, 2004).

Claimants are provided with a draft of the dose reconstruction report for comment, review, and a final opportunity to provide additional information. Upon return of a signed OCAS-1 form certifying that the claimant has provided all relevant information to NIOSH, the DOL determines the probability of causation using the IREP

## Key Organizations and Agencies

National Institute for Occupational Safety and Health, Office of Compensation Analysis and Support	<a href="http://www.cdc.gov/niosh/ocas">www.cdc.gov/niosh/ocas</a>
U.S. Department of Labor, Office of Workers' Compensation Programs	<a href="http://www.dol.gov/esa/regs/compliance/owcp/eoicp/main.htm">www.dol.gov/esa/regs/compliance/owcp/eoicp/main.htm</a>
Government Accountability Project, Worker Health and Safety Program	<a href="http://www.whistleblower.org/getcat.php?cid=20">www.whistleblower.org/getcat.php?cid=20</a>
U.S. Department of Energy, Office of Worker Advocacy	<a href="http://www.eh.doe.gov/advocacy/">www.eh.doe.gov/advocacy/</a>
Alliance of Nuclear Worker Advocacy Groups	<a href="http://www.doesickworker.org/">www.doesickworker.org/</a>

model. After a claim has been denied, it can be reopened upon successful appeal to DOL, and then to U.S. District Court. NIOSH may reopen the dose reconstructions of denied claims if additional records or new science become available.

### SPECIAL EXPOSURE COHORTS

Dose reconstructions are not required as a condition of compensation for members of the SEC when the claim is for 1 of 22 specified kinds of cancer. Classes of workers are added to the SEC in two ways—legislatively, in the original EEOICPA statute, and by petition to NIOSH.

Impetus for a federal compensation program came about in 1999 with the disclosure that workers at the Paducah, KY Gaseous Diffusion Plant had been intentionally misled by the federal government and its contractors about contamination of the plant's raw materials with energetic internal emitters, including neptunium-237 and plutonium-239 (Warrick, 1999, 2000). Concealment was the status quo for decades before chest counts and bioassay sampling programs were made available. Soon after the Paducah disclosures, similar disclosures were made about the gaseous diffusion plants in Oak Ridge, TN and Portsmouth, OH ("Department of Energy's Management," 2000).

Worker advocates, notably the Paper, Allied-Industrial, Chemical and Energy Workers' Union (PACE), argued on Capitol Hill that the federal government had a moral responsibility to provide compensation to these workers without the delays inherent in the dose reconstruction process. These workers became the first members of the SEC. Upon verification of an employment history of at least 250 days (prior to February 1, 1992) in the gaseous diffusion plants and a verified diagnosis of one of the specified cancers, these workers receive payments of \$150,000 and, if still alive, health benefits. A similar argument was successfully made for workers employed on any of three nuclear tests conducted before 1974 on Amchitka Island, Alaska, with no minimum period of employment.

Congress also recognized there will be other groups of workers for whom "it is not feasible to estimate with sufficient accuracy the radiation dose they received" ("The Floyd D. Spence," 2000). Pursuant to a Presidential Executive Order (Clinton, 2000), NIOSH has issued

a rule setting forth the criteria for designating classes of employees to be added to the SEC (U.S. Department of Health & Human Services, 2004). Petition forms are available on the OCAS website. (See Sidebar for the OCAS website and websites for other key organizations and agencies.)

### ADVISORY BOARD

NIOSH is advised in its dose reconstruction and SEC decision-making by the Advisory Board on Radiation and Worker Health, a formal federal advisory committee mandated by §7384(o) of EEOICPA ("Subchapter XVI," 2002). Its 12 members, who are appointed by the President for 2-year renewable terms, include academicians, trade unionists, nuclear scientists, health physicists, and physicians. A transcript of each meeting, including the public comment periods, is posted on the OCAS website.

### RESOURCE CENTERS

DOL operates 11 resource centers across the country to assist claimants. Resource center staff retrieve employee job histories and health-related records from employers, respond to inquiries, and provide support to claimants. They also conduct outreach to groups of potential claimants (at union meetings and senior centers), a function that takes on added importance each time reforms are made in the program. An Office of the Ombudsman was recently created in DOL to further assist claimants.

### SUBTITLE E

Exposure to toxic chemicals was widespread in Cold War nuclear facilities, as would be expected in a massive enterprise that employed hundreds of thousands of workers in isotope separation, fuel and target fabrication, chemical separations, component fabrication, and other processes (U.S. DOE, 1997). Congressional leaders were willing to ascribe moral responsibility for radiation and beryllium to the federal government, but some were initially reluctant to do so for other toxic substances widely used throughout American industry. For these "other" toxic substances, the original EEOICPA statute from 2000 envisaged a federal program run by DOE to help workers file state workers' compensation claims ("The Floyd D. Spence," 2000). However, the near total failure of this

approach was quickly apparent (Energy Employees Occupational Illness Compensation Program, 2004; Energy Employees Occupational Illness Compensation Program Act, 2003; U.S. GAO, 2003, 2004a, 2004b).

Reform amendments adopted in October 2004 (“Subtitle E”) have placed other toxic chemical exposures on a more even footing with radiation, beryllium, and silicosis (Ronald W. Reagan National Defense Authorization Act, 2004). The DOL currently has primary responsibility for case development and causation determinations, using the statutory standard of “at least as likely as not that exposure...was a significant factor in aggravating, contributing to or causing the illness.” The DOE is limited to gathering needed information.

The familiar concepts of impairment and wage loss are put to novel use in Subtitle E in calculating the lump sum to which a worker is entitled. Two formulae are used. First, a worker is entitled to \$2,500 for each degree (%) of impairment in a major organ system, according to the American Medical Association’s (AMA) *Guides to the Evaluation of Permanent Impairment* (Cocchiarella & Anderson, 2001). Physicians “suitably trained and qualified” will be chosen to evaluate impairments not covered in the AMA Guides (Ronald W. Reagan National Defense Authorization Act, 2004).

The second formula deals with wage loss and aims to redress injustices experienced by “medically terminated” workers who were forced into early retirement and, at best, accepted reduced pensions. During the era of “deny and defend,” occupational disease claims were seldom successful because contractors’ litigation costs were fully reimbursable by the federal government (U.S. GAO, 2002). Subtitle E’s wage loss formula is based on the degree and duration of diminished earnings which occurred before Social Security retirement age. The average earnings of the last 3 years on the job is the basis for the worker’s earnings, were it not for the occupational illness. For each year that the illness diminished earnings by 50% or more, the worker is entitled to \$15,000. For each year in which earnings were reduced between 51% and 75%, the worker is entitled to \$10,000. Annual increments of \$10,000 or \$15,000 are tallied up to the normal retirement age, then combined with the dollar amount for impairment.

Subtitle E also provides workers’ compensation health-related benefits comparable to those available in beryllium, silica, and cancer cases, as well as survivor benefits. The duration and degree of wage loss are also taken into account. The largest benefit of \$175,000 is paid to survivors of workers who, prior to death, experienced 20 or more years of at least 50% wage losses as a result of the illness. Smaller lump sums are paid for shorter durations.

Workers may receive awards when alive and, upon death, their survivors are eligible to apply for survivor benefits. However, the total amount awardable per case under Subtitle E is capped at \$250,000.

Those who receive lump sums from DOL of \$150,000 for beryllium, cancer, or silicosis are eligible to file for the Subtitle E benefits, in lieu of pursuing state workers’ compensation claims. For beryllium, radiation and silica at the test sites—those materials for which the govern-

ment plainly had the greatest responsibility—families are eligible for a total maximum benefit of \$400,000. This is roughly the dollar amount that William Van Buskirk, the former Los Alamos machinist quoted in the first paragraph, estimates he lost in wages after he was diagnosed with beryllium disease in 1971.

## OTHER LEGAL ISSUES

Like most administrative claims programs, EEOICPA is the “exclusive remedy;” claimants may not also pursue tort lawsuits against the federal government and its contractors. However, the law contains almost no offsets against other benefit programs. The recent reform amendments require a claimant to choose between federal Subtitle E and state workers’ compensation. All EEOICPA benefits are exempt from federal income tax. Lawyers’ fees are capped at 2%, except for appeals where the cap is set at 10%.

## ONGOING CHALLENGES AND ISSUES

Except for members of SECs with radiogenic cancer claims, nuclear workers still bear the burden of proof. This is a problem for members of an aging population located mainly in rural areas, where health professionals tend to be less familiar with industrial toxicants. Beryllium-exposed workers had ready access to the Be-LPT test through DOE-sponsored medical surveillance projects (Breysse et al., 2002; Welch et al., 2004), but the funding for these projects is being phased out. Along with workers affected by silica and other toxic substances, new claimants with beryllium sensitization and CBD will now have to rely on family physicians and referrals to specialists to obtain an occupational diagnosis. National Jewish Medical Research Center in Denver, a leading beryllium research facility, is developing an online system for ordering the Be-LPT via overnight courier after the blood is drawn (J. Kleppe, personal communication, January 3, 2005). However, until federal decision-makers make resources available for evaluations, toxic substances claimants will have to pay for diagnostic visits and tests using a patchwork of Medicare, private insurance, and individual resources.

Accurate cancer diagnoses are more readily obtained. For radiation-related cancer, claimants face a burden of proof that is embedded in the highly quantitative methodologies of dose reconstruction and the IREP model. Workers of limited educational attainment who were sworn to secrecy and told little about their exposures are unlikely to be effective participants in the dose reconstruction process. The computer modeler’s cliché of “garbage in, garbage out” may apply to cases in which the worker is deceased, family members never knew the details of the job (for national security reasons), badge data are sparse or suspect, or coworkers are reticent or deceased.

The federal government’s role in low-level radiation health studies remains controversial. A key issue is whether the implementation of EEOICPA will fulfill the propitiatory intent of Congress or whether the system’s dependence on highly quantitative methods will serve to deepen public mistrust. At Congressional hearings in

2003, a representative of construction unions dubbed the dose reconstruction process “a Rube Goldberg device of the finest complexity” (“Energy Employees Workers’ Compensation,” 2003). One of the lead Senate sponsors of the original EEOICPA legislation has openly questioned whether highly quantitative methods fulfill the intent of Congress (“Energy Employees Occupational Illness Compensation Program,” 2004).

On the other side are established beliefs, practices, and commitments traceable to the federal government’s seminal role in the nuclear industry, including the founding of the health physics profession (Hacker, 1987). The belief that radiation risks to individuals can be reliably quantified decades after exposure occurred is a basic tenet of the health physics profession—a tenet that federal health agencies have underwritten with generous funding. Erosion of this basic tenet could yield costlier outcomes not just in the EEOICPA program, but in many sectors of the U.S. economy where workers are exposed to ionizing radiation, including health care and medicine (“Radioepidemiological Tables,” 1987).

A further issue of public trust is highlighted by a recent congressionally-mandated study which found that some DOE contractors are taking unreasonably long periods of time to respond to NIOSH requests for historical records (NIOSH, 2004b). Some have questioned whether the cost to the federal government of retrieving records at some DOE sites may rival the cost of paying the claims outright (Parascandola, 2002a). Petitions to extend SEC status to groups of workers at sites across the DOE complex are likely to mount.

The new EEOICP Ombudsman at DOL will have a busy agenda. It is this author’s hope that he never come to identify with a young adjuster at the Work Accident Insurance Institute in Bohemia who remarked to a friend (Carrouges, 1968):

How modest these men are...They come to us and beg. Instead of storming the Institute and smashing it to little pieces, they come and beg (p. 65).

The adjuster, Franz Kafka, worked at the agency most of his adult life, pursuing a writing career on the side. To this day, the term “Kafka-esque” is used to describe the bizarre and tragic injustices meted out by institutions that come to value bureaucratic arcana more than the human beings they were created to serve.

## SUMMARY

Nurses make a bureaucracy work on behalf of clients. Occupational health nurses who are already versed in basic concepts applicable to EEOICPA—confidence intervals, occupational histories, exposure assessment, and dose response—can play constructive, caring roles in assisting claimants in securing benefits under this landmark program. Occupational health nurses know that chronically ill employees have a finite number of hours a week to make phone calls, visit providers, and advocate on their own behalf. Thoughtful referrals to occupational health providers who are both experienced and supportive

## IN SUMMARY

### The Energy Employees Occupational Illness Compensation Program Act

New Legislation to Compensate Affected Employees

Silver, K.

*AAOHN Journal 2005; 53(6), 267-277.*

- 1 The Energy Employees Occupational Illness Compensation Program Act (EEOICPA) of 2000 is the first new federal entitlement program for workers in a quarter of a century.
- 2 EEOICPA provides occupational illness compensation to employees of government-owned, contractor-operated facilities in the nuclear weapons complex. Employees of private sector firms which had contracts with the federal government during the Cold War era may also be covered.
- 3 EEOICPA establishes presumptive criteria for chronic beryllium disease and silicosis. Most radiation-related cancer claims are evaluated using historical dose reconstruction techniques.
- 4 Recent amendments to the EEOICPA promise to provide compensation to workers made ill by other toxic substances.

can come from an occupational health nurse or a family physician. Involvement of university-based programs in projects to empower organizations representing EEOICP claimants would be a welcome development.

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# The Energy Employees Occupational Illness Compensation Program Act: New Legislation to Compensate Affected Employees

This issue of the AAOHN JOURNAL contains a Continuing Education Module on "The Energy Employees Occupational Illness Compensation Program Act: New Legislation to Compensate Affected Employees." 1.3 contact hours of continuing education credit will be awarded by AAOHN upon successful completion of the posttest and evaluation.

A certificate will be awarded and the scored test will be returned when the following requirements are met by the participant: (1) The completed answer sheet is received at AAOHN on or before May 31, 2006; (2) A score of 70% (7 correct answers) is achieved by the participant; (3) The answer sheet is accompanied by a \$10.00 processing fee. Expect up to 6 weeks for delivery of the certificate.

Upon completion of this lesson, the occupational health nurse will be able to:

1. Describe the scope and applicability of EEOICPA.
2. Discuss the medicolegal presumptions, criteria and administrative processes used for rendering compensation decisions.
3. Identify collaborative roles that occupational health nurses play in advocacy and technical assistance.

AAOHN is accredited as a provider of continuing education in nursing by the American Nurses Credentialing Center's Commission on Accreditation. AAOHN is additionally approved as a provider by the California Board of Registered Nursing (#CEP9283) and the Louisiana State Board of Nursing (#LSBN3).

Contact hour credits received for successful completion of the posttest and evaluation may be used for relicensure, certification, or re-certification.

*Directions:* Circle the letter of the best answer on the answer sheet provided. (Note: You may submit a photocopy for processing.)

- 1. The federal agency responsible for radiation dose reconstruction is the:**
- A. National Institute of Health.
  - B. National Institute for Occupational Safety and Health.

- C. U.S. Department of Energy.
- D. U.S. Department of Labor.

**2. Determining the "probability of causation" by computer modeling is the responsibility of the:**

- A. Advisory Board on Radiation Worker Health.
- B. National Institute for Occupational Safety and Health.
- C. U.S. Department of Energy.
- D. U.S. Department of Labor.

**3. According to the EEOICPA, the definition of a "contractor employee" specifies residence at a DOE facility for at least \_\_\_\_\_ months.**

- A. 12.
- B. 18.
- C. 24.
- D. 32.

**4. The occupational health nurse includes which of the following when counseling a DOE employee recently diagnosed with CBD?**

- A. The employee is entitled to \$300,000 plus medical benefits.
- B. The only criterion for the diagnosis is a positive Be-LPT test.
- C. Sensitization to beryllium precedes CBD.
- D. A positive skin patch is required for diagnosis.

**5. Under 42 USC 7384 (r), exposure related to silica is established only if:**

- A. A lung biopsy is positive.
- B. The onset of disease is at least 15 years since initial exposure.
- C. A physician classifies radiographic changes.
- D. The employee was present at NTS for at least 250 days during tunneling or testing.

**6. According to the EEOICPA statute, a cancer claim is compensable if the worker's radiation dose corresponds to a \_\_\_\_\_ % or higher probability of causation at the upper 99% confidence level.**

- A. 40%.
- B. 50%.
- C. 60%.
- D. 70%.

**7. All of the following are true in relation to radiation dose reconstruction for cancer claims not covered by a SEC except:**

- A. At any point the DOL may determine that sufficient analysis has been conducted to complete the dose reconstruction.
- B. The IREP model is used to calculate probability of causation.
- C. A structured telephone interview is a standard feature of the process.
- D. Default assumptions are used to handle missing badge data.

**8. Workers in the gaseous diffusion plants were covered by the SEC if verified for at least \_\_\_\_\_ days of employment and diagnosis with 1 of 22 specified kinds of cancer.**

- A. 150.
- B. 250.
- C. 350.
- D. 450.

**9. Which of the following advises NIOSH in its dose reconstruction and SEC decision-making?**

- A. Office of Compensation Analysis and Support.
- B. Worker Health and Safety Board.
- C. Office of Worker Advocacy.
- D. Advisory Board on Radiation and Worker Health.

**10. According to Subtitle E (2004), wage loss is determined by averaging the last \_\_\_\_\_ years on the job as the basis for earnings, were it not for the occupational illness:**

- A. 2.
- B. 3.
- C. 4.
- D. 5.

# ANSWER SHEET

## Continuing Education Module

### The Energy Employees Occupational Illness Compensation Program Act: New Legislation to Compensate Affected Employees June 2005

(Goal: To gain ideas and strategies to enhance personal and professional growth in occupational health nursing.)

**Mark one answer only!**  
(You may submit a photocopy of the answer sheet for processing.)

- |            |             |
|------------|-------------|
| 1. A B C D | 6. A B C D  |
| 2. A B C D | 7. A B C D  |
| 3. A B C D | 8. A B C D  |
| 4. A B C D | 9. A B C D  |
| 5. A B C D | 10. A B C D |

### **EVALUATION (must be completed to obtain credit)**

Please use the scale below to evaluate this continuing education module.

	4 - To a great extent	3 - To some extent	2 - To little extent	1 - To no extent
1. As a result of completing this module, I am able to:				
A. Describe the scope and applicability of EEOICPAAct.	4	3	2	1
B. Discuss the medicolegal presumption, criteria and administrative processes used for rendering compensation decisions.	4	3	2	1
C. Identify collaborative roles that occupational health nurses play in advocacy and technical assistance.	4	3	2	1
2. The objectives were relevant to the overall goal of this independent study module.	4	3	2	1
3. The teaching/learning resources were effective for the content.	4	3	2	1
4. How much time (in minutes) was required to read this module and take the test?	50	60	70	80

Please print or type: (this information will be used to prepare your certificate of completion for the module).  
DEADLINE: MAY 31, 2006. Allow up to 4 weeks for processing.

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