

Department of Health and Human Services (HHS), the U.S. Department of Labor (DOL) and the U.S. Department of Energy (DOE). The role assigned to HHS included the promulgation of two regulations central to the adjudication of cancer-related claims and to consider procedures for the evaluation of petitions for adding classes of workers to the Special Exposure Cohort. The first of these rules, 42 CFR Part 81, establishes guidelines to determine whether an individual with cancer shall be found "at least as likely as not" to have sustained that cancer from exposure to ionizing radiation in the performance of duty for nuclear weapons production programs of the U.S. Department of Energy (DOE) and its predecessor agencies. These "probability of causation" guidelines will be used for the adjudication of cancer claims by the U.S. Department of Labor (DOL), which has lead responsibility to administer this federal compensation program. The second of these rules, 42 CFR Part 82, establishes the methods by which HHS will estimate the doses of radiation incurred by individual employees of nuclear weapons production programs. This presentation discusses 1) the approach NIOSH has taken to implement its roles and responsibilities under the EEOICPA; 2) NIOSH's interaction with the DOL and DOE; and 3) the overall status of the program.

#### **TAM-D.2**

#### **IMPLEMENTATION OF THE DOSE RECONSTRUCTION RULE—42 CFR PART 82.**

L.W. Neton (National Institute for Occupational Safety and Health, 4676 Columbia Parkway, Cincinnati, OH 45226)

In May of 2002, NIOSH published 42 CFR Part 82, Methods for Conducting Dose Reconstructions Under the Energy Employees Occupational Illness Compensation Program Act (EEOICPA) of 2000. These methods are being used by the National Institute for Occupational Safety and Health (NIOSH), Centers for Disease Control and Prevention (CDC) to conduct dose reconstructions for covered employees seeking compensation for cancer, other than as a member of the Special Exposure Cohort, under EEOICPA. The rule provides guidance as to how dose reconstructions are conducted to characterize the radiation environment to which workers were exposed. A hierarchy of methods is used, depending on the nature of the exposure conditions and the type, quality, and completeness of data available to characterize the environment. The methods employed are based on approaches similar to that used in traditional occupational dosimetry, but achieve efficiency by substituting scientific, reasonable, and fair assumptions in the place of extensive data collection. This allows for an increase in claims processing efficiency, which is

essential for an effective compensation program, without compromising the accuracy of the final compensation decision.

#### **TAM-D.3**

**THE APPLICATION OF DOSE RECONSTRUCTION RESULTS TO NIOSH-IREP (NIOSH'S VERSION OF THE INTERACTIVE RADIO-EPIDEMIOLOGICAL PROGRAM) IN ESTIMATING THE PROBABILITY OF CAUSATION OF RADIOGENIC CANCER.** R.W. Henshaw and L.J. Elliott (National Institute for Occupational Safety and Health, 4676 Columbia Pkwy, Cincinnati, OH 45226)

NIOSH-IREP is an online, interactive software program created specifically for use in adjudicating cancer claims under the Energy Employees Occupational Illness Compensation Program Act (EEOICPA), as promulgated by 42 CFR, Part 81, "Guidelines for Determining Probability of Causation." To qualify for compensation, EEOICPA stipulates that an individual's cancer has to have been "at least as likely as not" caused by exposure to ionizing radiation while in the performance of covered duties. This presentation provides an overview of NIOSH-IREP and its application of reconstructed radiation doses and other variables to calculate the statistical probability, according to the provisions of EEOICPA, that a worker's cancer was induced by occupational exposure to ionizing radiation. Examples of the types of radiation exposures that are likely to be compensated are presented, as well as those not likely to result in compensation. To calculate the unique probability of causation (PC) for each claim, NIOSH-IREP incorporates probability distributions derived from uncertainties associated with cancer risk models, radiation exposure, dose-response assumptions, and personal attributes, employing Monte Carlo simulations to propagate these uncertainties. Individual dose reconstruction results are factored into the calculations via inputs for radiation type and exposure rate, organ dose in cSv, and year of exposure. In order to provide the benefit of doubt to each claimant, a claim is considered compensable if the PC result is 50% or greater at the upper 99th percentile credibility limit.

#### **TAM-D.4**

**CREATION OF A DOSE RECONSTRUCTION ORGANIZATION.\*** R.E. Toohey (Oak Ridge Associated Universities, P.O. Box 117, Oak Ridge, TN 37831)

Upon award of the NIOSH dose reconstruction project, ORAU and its partners, MJW Corp. and Dade

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*On the cover: A panda at the San Diego Zoo. Photo courtesy of the San Diego Convention and Visitors Bureau.*

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