Miller, Diane M.

From: Bogard, Rhonda S. (XEB) [XEB@y12.doe.gov]
Sent: Friday, March 01, 2002 12:56 PM
To: Robinette, Betty K. (BKR)
Cc: Barker, James H. (X6B) ; 'NIOCINDOCKET@cdc.gov'; 'sharon.evelin@hq.doe.gov'
Subject: FW: NIOSH comments

comments.doc

Betty,
Attached are our comments on the 42CFR Part 81 and 82. I believe our original cost comments still stand. Compared to the other requests we receive, these require slightly less time to respond on an individual basis. Unfortunately they compete for resources with FOIA,PA, Legal, and Routine requests.
Thanks,
Rhonda

> -----Original Message-----
> From: Veinot, Ken G. (KED)
> Sent: Friday, March 01, 2002 12:39 PM
> To: Bogard, Rhonda S. (XEB)
> Subject: NIOSH comments
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> <<comments.doc>>
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>
> **********
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> "I'm a victim of circumstance" - Curly Howard
>

Thank you for allowing us to comment on the draft rule "Guidelines for Determining the Probability of Causation Under the Energy Employees Occupational Illness Compensation Program Act of 2000" and "Methods for Radiation Dose Reconstruction Under the Energy Employees Occupational Illness Compensation Program Act of 2000". We provide the following comments:

1) The method for determining probability of causation has been thoroughly researched and should be based on the best available science. A method for updating the process and knowledge is included. We feel any updates to the method should be peer reviewed by an expert panel prior to inclusion and implementation. This includes any updates made to the 1985 radioepidemiological risk tables.
2) The method of determining probability of causation is favored toward the claimant through the use of the 99th percentile of the confidence level. While this is justified, some portions in the dose reconstruction process may be overly conservative. Some examples follow.
3) The method for performing dose constructions recommends that a dose dose-rate effectiveness factor of 2 be used to compensate for supposed inverse dose rate effects of low-dose and low dose-rate radiation, thereby increasing the risk associated with high-LET radiation under typical occupational exposure scenarios. This enhancement factor is contrary to recommendations given in the International Commission on Radiological Protection (ICRP) publication 60. In fact, ICRP-60 (the most recently approved ICRP publication relating to radiation risks) recommends reducing by a factor of 2 the probability coefficients of high-LET radiation that have been obtained by extrapolation of observations at high doses and high dose rates. The net result of this change is the increase of radiation risk by a factor 4 above what the ICRP recommends.
4) We agree with the recommendations that annual doses be used for probability of causation calculations.
5) Although some mention is given to latency effects, we believe additional documentation and justification of modifications to risk estimates based on these effects is necessary.
6) Under current laws, radiation doses to workers are limited both by the Committed Dose Equivalent (CDE) to any organ or tissue and the Committed Effective Dose Equivalent (CEDE). Since these limits are based on recommendations from the ICRP, some consideration should be given to a worker's annual (or committed) dose relative to these limits. That is, if a worker did not exceed the current regulatory limits during any year since their implementation, the probability of causation should reflect the reduced likelihood that a cancer was caused by radiation. Since the ICRP recommendations are a risk-based model, the limits derived from these recommendations provide protection against stochastic effects.
7) No consideration appears to have been given to the recommendation of the Health Physics Society in their letter dated May 2, 2001 which states "... there should be no compensation for persons whose lifetime doses are less than approximately 0.1 Sv (10 rem). This relationship of increasing likelihood of disease with increasing dose has only been observed for doses greater than approximately 0.1 Sv. The likelihood of radiation-induced disease below this level, if it exists at all, is so small that it is not measurable, it is not a matter of scientific fact, and it can only be estimated utilizing hypothetical mathematical dose-response models."
8) Exposure assumptions differ for external monitoring based on the type of radiation. Neutron results are treated as chronic exposures while photon results are treated as one time acute exposures. This, presumably, is intended to minimize uncertainty with dose and dose-rate effectiveness factors for photons as they are the reference radiation. Given the uncertainty surrounding the TLD results (regardless of the radiation type), this seems unnecessary.
9) In the case of lung cancers, special risk models for radon are included. Exposure data for radon models may not be readily available. What assumptions will be used since ambient radon levels differ by geographic region?
10) More detail of the smoking risk model should be provided. Given that smoking has been shown to be a carcinogen, it would seem that it would have a much higher risk associated with it than that of low-level radiation exposures.

11) The board should recognize the limitations of some monitoring data, particularly older information. These limitations include uncertainties associated with measurement results, techniques used, and detection levels.

Records Information

1) For pre-1989 exposures modern internal dosimetry models may not have been used and doses were typically reported in terms of percents of the radiation protection standards. Regardless, any organ doses calculated using percent RPS methods are irrelevant since the newest ICRP-recommended biokinetic and lung models will be used for dose reconstruction.
2) In general, worker monitoring data is easily retrievable. However, other requested data including particle size studies, site characterizations, material solubility information, air sampling data, and respiratory protection practices may be difficult to obtain.