



**INSTITUTE FOR ENERGY AND ENVIRONMENTAL RESEARCH**

6935 Laurel Avenue, Suite 201  
Takoma Park, MD 20912

Phone: (301) 270-5500  
FAX: (301) 270-3029  
e-mail: [ieer@ieer.org](mailto:ieer@ieer.org)  
<http://www.ieer.org>

February 25, 2000

Richard R. Monson M.D., Chair  
c/o Rick Jostes, Staff Officer  
Committee on the Health Risks from Exposure to Low Levels of Ionizing Radiation (BEIR VII)  
National Academy of Sciences  
2101 Constitution Avenue, NW  
Washington, D.C. 20418

Dear Dr. Monson,

We understand that at the last meeting of the BEIR VII Committee in December 1999 in Irvine, California, you announced that the Committee will consider all the points raised in the September 3, 1999 letter which contained recommendations on the Committee's research agenda and was signed by the Institute for Energy and Environmental Research (IEER) and other groups and individuals (signatures were updated December 20, 1999). Thank you very much for agreeing to address those issues. We look forward to following the Committee's deliberations and findings on these important points.

We have enclosed information, and offer suggestions below, regarding one of the points in the letter: worker dose records of the Department of Energy and its predecessor agencies are deeply flawed. These materials include:

- B. Franke and K.R. Gurney, *Estimates of Lung Burdens for Workers at the Feed Materials Production Center, Fernald, Ohio*, (Takoma Park, Maryland: Institute for Energy and Environmental Research, 1994). IEER performed this independent assessment of radiation exposure to workers as part of a class action lawsuit filed by Fernald workers against National Lead of Ohio, DOE's contractor until 1985. To the best of our knowledge, it is the only independent assessment of nuclear weapons plant workers' internal doses taken from raw data (we understand that some work may be now underway at the National Institutes for Occupational Safety and Health).
- Two issues of IEER's newsletter, *Science for Democratic Action (SDA)*, which include articles summarizing the findings of the aforementioned study as well as subsequent research. In particular, see "Fernald Workers' Radiation Exposure" on page 1 of SDA vol. 5 no. 3, October 1996, and "Worker Radiation Dose Records Deeply Flawed" and "Identify Groups of Workers at Risk" on page 1 of SDA vol. 6 no. 2, November 1997.
- National Economic Council, *Occupational Illness Compensation for Department of Energy Contractor Personnel: Report of Task Group 1*, January, 2000, December 23, 1999 DRAFT. This draft report summarizes the results of some health surveillance programs conducted at the U.S. Department of Energy. (The tables and figures are either

absent or unintelligible in this version of the draft report. Presumably, they will appear legibly in the final report, expected by March 31, 2000.) We ask that the Committee take into account the epidemiological studies described in this draft report, of which a list is provided in Appendix 2.

In light of questions regarding data integrity, we believe the Committee should examine the underlying data within all epidemiological studies it considers, at least those that make use of DOE worker data, when evaluating the validity of the risk estimates derived from them. Specifically, the Committee should:

- Assess the accuracy of external dose data. To illustrate this need, we have enclosed a photograph of a Fernald worker stamping a label on a uranium ingot, a job done routinely throughout the history of the plant. We believe that the external dose to the worker's gonads, and the effective whole body dose equivalent that might be calculated from it, are likely to be far in excess of what was recorded on the film badge. Factors that could affect the accuracy of the worker's film badge data include the position of the film badge relative to the radiation source, and the distance differential between the radiation source and his gonads versus the source and his film badge.

The photo illustrates one of many examples of potentially flawed data sources on which many worker studies are based. For example, see U.S. Department of Energy, *Deficiencies in Reporting of Worker Exposure to Radiation and Toxic Material*, submitted to the Subcommittee on Oversight and Investigations, U.S. House of Representatives, Washington, D.C., 17 March 1994; Wells, J. *Protecting Department of Energy Workers Health and Safety*, Testimony before the Subcommittee on Oversight and Investigations, U.S. House of Representatives, GAO/T-RCED-94-143 (Washington, D.C.: U.S. General Accounting Office); and, O'Toole, Tara (Assistant Secretary for Environment, Safety and Health, U.S. Department of Energy), Testimony Before the Subcommittee on Oversight and Investigations, U.S. House of Representatives, Washington, D.C., 17 March 1994.

- Examine the effect that the lack of internal radiation dose estimates has on the results of epidemiological studies.
- Evaluate the validity of the frequently-used assumption that internal doses are strongly correlated to external doses.

The Committee should address whether any of the worker dose records are suitable for assessing the risks of low-level radiation, and if so, how they should be used. The Committee should also address what criteria of data quality it will apply to the information contained in the studies it reviews.

Thank you very much for considering these points and sharing them with the rest of the Committee. We look forward to the Committee's response.

We are thankful to the NAS staff for publishing and posting to the BEIR VII web site an updated list of the publications that the Committee is reviewing, so that we may be able to follow the review and add to that list.

Sincerely,

Lisa Ledwidge  
Outreach Coordinator and Editor, *Science for Democratic Action*

Encl.

Cc: Dr. Evan B. Douple, Director, Board on Radiation Effects Research

Dr. Stephen L. Simon, Board on Radiation Effects Research

Dr. Jerome Puskin, Radiation Studies Branch, US Environmental Protection Agency

Dr. David Michaels, Asst. Secretary for Environment Safety & Health, US Department of Energy

Dr. Bonnie Richter, Office of Environment Safety & Health, US Department of Energy

Mr. Marty Gensler, Office of Senator Paul Wellstone