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PRESS RELEASE

Cancer Risks for Women and Children Due to Radiation Exposure Far Higher Than for Men

New National Academy of Sciences Report Raises Major Issues for Radiation Protection, Independent Institute Claims

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Takoma Park, Maryland, July 7, 2005: The National Academy of Sciences (NAS) latest report on radiation risk, called the BEIR VII report, issued June 29, has major implications on how radiation protection regulations are made and enforced, according to the Institute for Energy and Environmental Research (IEER). "BEIR" stands for the Biological Effects of Ionizing Radiation. The NAS report issued this week updates the BEIR V report issued in 1990. The BEIR series of reports are the most authoritative basis for radiation risk estimation and radiation protection regulations in the United States.

"In 1990, the NAS estimated that the risks of dying from cancer due to exposure to radiation were about five percent higher for women than for men," said Dr. Arjun Makhijani, president of the Institute for Energy and Environmental Research. "In BEIR VII, the cancer mortality risks for females are 37.5 percent higher. The risks for all solid tumors, like lung, breast, and kidney, liver, and other solid tumors added together are almost 50 percent greater for women than men, though there are a few specific cancers, including leukemia, for which the risk estimates for men are higher." (Summary estimates are in Table ES-1 on page 28 of the BEIR VII report prepublication copy, on the Web at http://books.nap.edu/books/030909156X/html/28.html.)

Unlike the 1990 NAS report, BEIR VII estimates risks for cancer incidence rates as well as mortality and also provides detailed risk figures according to age of exposure for males and females, by cancer type. This is a great advance over the previous report. The BEIR VII report has thoroughly reviewed available human and animal cancer data and scientific understanding arrived at using cellular level studies. Cancer risk incidence figures for solid tumors for women are also about double those for men.

The BEIR VII report estimates that the differential risk for children is even greater. For instance, the same radiation in the first year of life for boys produces three to four times the cancer risk as exposure between the ages of 20 and 50. Female infants have almost double the risk as male infants. (Table 12 D-1 and D-2, on pages 550-551 of the prepublication copy of the report, on the Web starting at http://books.nap.edu/books/030909156X/html/550.html).

While the report states there is no direct evidence of harm to human offspring from exposure of parents to radiation, the committee noted that such harm has been found in animal experiments and that there is "no reason to believe that humans would be immune to this sort of harm." (Page 20, prepublication copy, on the Web at http://books.nap.edu/openbook/030909156X/html/20.html)

"I think it is high time that society protected those most at risk," said Dr. Makhijani. "The BEIR VIII report has done the public a great service by putting the imprimatur of the NAS on solid research that has long indicated much greater risks for women and children. Now it is up the Environmental Protection Agency to change the framework of regulation from averages of men and women to those who are most at risk."

Contrary to the beliefs of many in the nuclear industry, the BEIR VII report reaffirmed the conclusion of the prior report that every exposure to radiation produces a corresponding increase in cancer risk. The proportionality of risk means that at low exposures the risks are small, as the NAS report points out. The average risks to the population are estimated to be 10 to 15 percent higher than the reference value now used for radiation protection of the general population (565 cancer fatalities per million rem exposure in BEIR VII compared to 500 typically cited in the literature on radiation protection). While this average risk is in the general range of uncertainties and values reported previously, it indicates an increase of risk overall. Both incidence and mortality risk estimates are now greater. Finally, the committee also noted that relatively high levels of radiation exposure increase risk of heart disease and stroke, though it did not give specific risk estimates.

"I want to thank the BEIR VII committee for keeping a promise it made to IEER and 133 other organizations and individuals to consider crucial issues outlined in a letter we delivered to the committee in September 1999," said Lisa Ledwidge, Outreach Director of the Institute for Energy and Environmental Research. The Institute sent several letters to the BEIR VII committee, which can be viewed at /comments/beir/index.html. The Committee's response to IEER is in Annex C of the BEIR VII report, on the Web at http://books.nap.edu/books/030909156X/html/577.html.

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