

**PRM-51-11
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From: Scott Ainslie <ainslie1@ix.netcom.com>
To: <SECY@nrc.gov>
Date: Mon, Feb 5, 2007 3:53 PM
Subject: BEIR VII Phase 2 Report

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OFFICE OF SECRETARY
RULEMAKINGS AND
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Dear Sirs:

I support the petition for rulemaking filed with the Commission by Sally Shaw. The petition was published in the Federal Register on November 20, 2006. The petitioner requests that the NRC prepare a rulemaking that will require NRC reconcile its generic environmental impact statement for nuclear power reactors operating license renewal applications with current scientific understanding of the health risks of low-level radiation, including but not limited to those discussed in the National Academy of Sciences Health Risks From Exposure to Low Levels of Ionizing Radiation: Biological Effects of Ionizing Radiation (BEIR) VII Phase 2 Report.

Given that relicensing provides an opportunity to take a "hard look" at the effects relicensing would have on the environment under NEPA, the inclusion of the BEIR VII findings in calculations of risk, early fatalities, latent mortality, and radiation-related injuries is essential to protect the public health and safety put at greater risk by an additional 20-40 years of reactor operation. It is imperative that NRC employ the most conservative risk estimates to protect the most vulnerable members of the population, particularly those who live in the vicinity of reactors. The use of "standard man" to estimate risk is not conservative, since BEIR VII found that 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.

The report also found 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.

The effects of internal radiation from ingested or inhaled alpha and beta emitters must also be included in the risk estimates in the GEIS. NRC must consider radiation damage from inhaling or ingesting radionuclides which are known to be more damaging than low doses of external radiation. For example, see

<http://www.ead.anl.gov/pub/doc/strontium.pdf> for the internal effects of Strontium 90.

Since all nuclear reactors emit radiation, and some isotopes of long half-life invariably escape containment or enter the food web via the decay chain of permitted isotopes, the cumulative effects of radioactive emissions and accidental releases must be taken into account. It is essential that NRC incorporate recent science on internal radiation in addition to the BEIR VII findings that there is no safe dose and that exposure to low dose radiation has

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consequences. As the BEIR VII panel concluded, "It is unlikely that a threshold exists for the induction of cancers."

BEIR VII also cited extensive data on radiation-induced genetic damage: transmissible mutations in mice and other organisms. There is therefore no reason to believe that humans would be immune to this sort of harm. Such mutations, passed from exposed parent to child, may contribute to potential disease and death rates in reactor communities. This must be addressed and the precautionary principle observed.

Therefore I support the petitioner's rulemaking request that NRC protect all members of the public from all types of excess radiation exposure from nuclear power and its fuel cycle, gamma, alpha, beta, neutron, particulate, fission products, noble gases, etc. and that measurement and monitoring should include all forms and pathways, not just gamma at the fence line.

Sincerely,

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