



RIC 2011
Analysis of Cancer Risk in
Populations Living Around
Nuclear Facilities

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Concerns with Proposed Study

- The proposed study may not have the statistical power to identify "ionizing radiation health effects"
 - The radiation doses to populations near nuclear facilities are less than 100th the dose to the population from other radiation sources. (NCRP Report 160)
 - Scientific consensus on risk estimates below 100 mSv suggests no causation between ionizing radiation and cancer
 - These two facts do not support adequate statistical power for Phase II of this study





Concerns with Proposed Study
(continued)

- The proposed study can not be a radiation health effects study since this type of study can only look for an association and not causation, if an association is found
- Some sites are likely to have an apparent association with increased cancer and some with a deficit of cancer due to the random nature of cancer, as was the case in the NIH-NCI 1990 study





Concerns with Proposed Study (continued)

- The NRC should adequately justify need for and expectations of the study
 - There's no credible allegation that there is a cancer increase in the vicinity of a nuclear facility
 - A "power of the study" calculation should be performed to predict study's outcome(s) usefulness
 - Limitations of the study must be evaluated as to whether it will help alleviate stakeholder concerns





Concerns with Proposed Study (continued)

- "Flaws" commonly referred to by critics of the NIH-NCI 1990 study are "limitations" of the study
 - Essentially all of the significant limitations in the 1990 study might still exist in the new study
 - The limitations of the study need to be emphasized at the onset and communicated to the target audience
 - It is important to call out known study limitations early, and, distinguish from "flaws" that need to be publicly corrected beforehand





The HPS Position:

- Do not fund epidemiological studies of exposed populations which have low statistical power
- Do not fund epidemiological studies on populations for which there is insufficient data to properly control for known confounding factors
- Support the continuation of the Life Span Studies of the Japanese Survivors but establish a multi-stakeholder body to provide peer review and alternative data analysis techniques for the RERF data analysis reports





The HPS Position (continued):

- Fund basic research in molecular biology directed at better understanding the mechanisms by which cancer is induced after exposure to ionizing
- Fund basic animal research that is directed at better understanding the mechanisms of radiation-induced cancer
- Fund work to establish a framework for determining a reasonable and safe dose level for public exposures





HPS Recommendations:

- We understand that updating the NIH-NCI 1990 study is unavoidable, but don't repeat its errors
- A communication plan needs to be developed and implemented early-on (right after Phase I)
- The communication plan should clearly delineate the study's limitations well beforehand
- The communication plan must calibrate the target audience's expectations and interpretations


