

December 31, 2009

The Honorable Gregory B. Jaczko  
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### **Regarding a Cancer Study around United States Nuclear Power Plants**

Dear Chairman Jaczko,

All citizens have the right to know the potential risks and possible health effects of living near a nuclear facility. Recognizing that the United States has numerous abandoned and operating uranium mining sites, nuclear fuel processing and production facilities, 104 operating nuclear power plants, 30 permanently closed reactors, multiple nuclear waste storage and disposal facilities and a whole host of Department of Energy (DOE) nuclear facilities, a large portion of our population is potentially affected by radiation induced cancers and other health effects arising from the operation of nuclear fuel chain facilities.

In October 2008, the Nuclear Regulatory Commission (NRC) began an update of the National Cancer Institute's (NCI) 1990 study "Cancer in Populations Living Near Nuclear Power Plants." The NRC staff selected the Center for Epidemiologic Research (CER) at the Oak Ridge Institute for Science and Education (ORISE), and operated by Oak Ridge Associated Universities (ORAU) as the lead contractor for developing study protocols, collecting and analyzing data, and preparing draft and final reports. NRC began assembling a peer review committee to review a draft of the study protocol that included commitments from the National Cancer Institute, Department of Energy, Center for Disease Control and the French Institut de Radioprotection et de Sûreté Nucléaire (IRSN). NRC subsequently issued a call for more interested and qualified parties to submit their credentials—an effort we support.

It is our sincere hope that the NRC will not replicate the flawed NCI 1990 study. In our view the NCI study is not worth repeating since it failed to adequately address realities of exposure pathways (including meteorological factors), did not report cancer incidence or any non-cancer health impacts such as infant mortality, relied on inappropriate population units such as counties, did not provide a case-controlled set of cohorts, provided no dose data, relied on relatively old cancer data and did not include any reactor that came on-line after 1981. A study conducted today can, and should do better. It is astounding that there has been funding for only one extensive study in the United States given that a quarter of the nuclear power reactors worldwide operate here.

While we strongly support such work as critical and long overdue, we also recognize a number of challenges that remain despite NRC's issuance of the December 15, 2009 solicitation notice. We fully support and commend the agency effort to broadly solicit

interested parties to respond with their qualifications and desire to conduct a health study around nuclear facilities. This is a good starting point. It represents the Commission's willingness to recognize the weakness of the previous plan. We strongly recommend that rather than proceeding with a national laboratory on a sole source contractual bid, NRC should consider other capable entities to perform this study.

However, we are deeply concerned that the NRC receives about 90 percent of its funding from nuclear power reactor licensing fees; as such, the agency clearly stands to gain from reactor license extensions and new reactor construction. In addition, because the NRC promulgates and oversees regulations for "permissible" radiation exposures to the public, having the Commission also fund and oversee a health study is a direct conflict of interest. NRC cannot credibly assess how well its own regulations and oversight are performing which is what a properly designed, thoroughly conducted, science-based assessment of cancer near nuclear power reactors would be.

For these reasons, NRC should not be directly involved in defining or conducting such studies. The concerns about conflict-of-interest include the determination of the "research question" which defines what will be studied and how the process will be structured. NRC should not determine the scope of the study or have the ability to impose certain assumptions that later may not be supported by the data. The history of public radiation impact assessment includes multiple instances where such assumptions have superseded logical findings from real-world data, undercutting any scientific basis for official conclusions.

A critical study of this nature requires that we identify and use the most credible, experienced, independent body with the highest standard of scientific methodology. In our judgment, the only way for NRC to credibly address these concerns is to delegate this study to an agency, such as the National Institute of Environmental Health Sciences (NIEHS) with a mandate to award this money to a research institution capable of producing an independent peer reviewed study on this issue. We strongly recommend an agreement be established to manage the NRC funding of a study while offering the reasonable assurance that a bias towards reactor licensing or the agency's oversight performance does not interfere with conducting an independent study. The agreement should also require all research and study protocol decisions be left to the research institution that has been chosen by NIEHS. It should issue a request for proposals that would receive funding under an intramural grant. This would result in funding an independent study of the health effects associated with living near nuclear reactors. The NIEHS mission is "to reduce the burden of environmentally associated disease and dysfunction by defining how environmental exposures affect our health, how individuals differ in their susceptibility to these exposures, and how these susceptibilities change over time." Their mission aligns perfectly with the scope of work required for an assessment of radiation impacts on health as needed by the NRC. Therefore, this structure would allow a chance for study independence while fulfilling the NRC's request for a health study.

The undersigned have contributed to the study of radiation health effects and also to education of the public, as well as “participated as public” when solicited by the NRC. In this light, we appreciate NRC’s frequently stated commitment to promote greater openness and transparency in its decision-making procedures rather than merely communicating a study result or process to the public. This openness will help build and maintain public confidence.

For *any* federally funded health study the following initial, broad concerns must be addressed in order to have the public to have reasonable confidence in the results. If the NRC maintains its present course for this study:

1. To what extent does the Commission plan to make the new study’s methodology publicly transparent for *review*?
2. To what extent does the Commission plan to make the new study’s methodology available for independent *comment* before a methodology is decided?
3. What is the Commission’s current timing for the release of the new study methodology?
4. Will all meetings be open, drafts be available for comment and primary “raw” data be made freely available for peer review by other researchers? The degree to which a study is transparent and reviewable will help obviate many future questions and concerns.

The NCI 1990 study’s methodology is broadly and professionally criticized as significantly flawed. To the extent that the new study is proposed by NRC to compliment and update this same NCI study, there are a growing number of questions as to how critical flaws will be corrected in a new health study so as not to incorporate the same NCI mistakes. If NRC maintains its present course for this study:

- A. How are health effects beyond cancer mortality - cancer incidence and non-cancer impacts such as infant mortality, to be treated in a new study? If not, why not?
- B. How does the new study control confounding factors? If not, why not?
- C. How does the new study incorporate a case control design such as used by the Massachusetts Department of Public Health in the “Southeastern Massachusetts Health Study 1978-1986” (1990) instead of an ecologic design? If not, why not?
- D. How does the new study incorporate and permit the examination of small area effects? If not, why not?
- E. How does the new study develop criteria to quantify subject’s potential exposure? Please address each of the following criteria specifically and if not, why not:
  - a. Proximity of residence to reactor

- b. Length of residence at address
  - c. Proximity of individual's job site to reactor
  - d. Length of employment at that site
  - e. Frequency residence or job site downwind from reactor, based on prior site specific meteorological analysis
  - f. Residence and job site location
- F. What time period(s) are to be studied; and are the reactor operational histories for those time periods provided? If not, why not?
- G. Which reactor sites are proposed for the study and what is the rationale for these sites being chosen?

We look forward to working constructively with the NRC. We must ensure that NRC achieves its goal of earning public trust and confidence through establishing and strictly maintaining independence from the industries it regulates. The public, who deserves protection, demands no less.

Sincerely,

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