FACT SHEET

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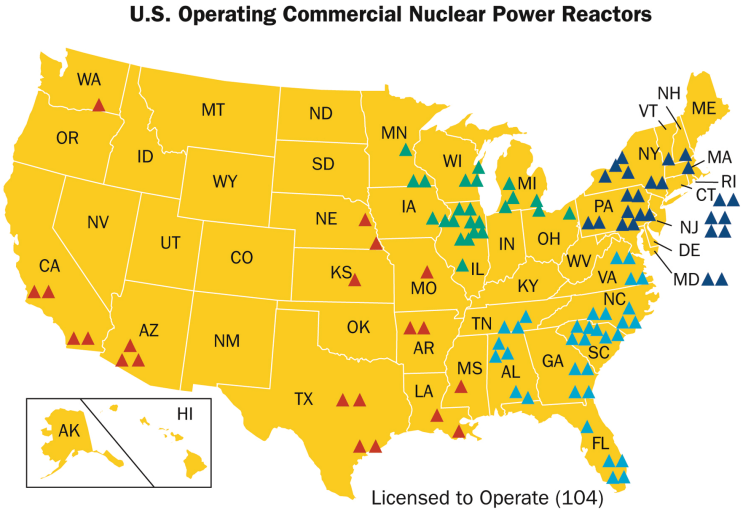
Analysis of Cancer Risk in Populations Near Nuclear Facilities— Phase 1 Feasibility Study

Background

Nuclear facilities licensed by the US Nuclear Regulatory Commission (NRC) sometimes release very small amounts of radioactivity during normal operations. NRC regulations ensure plant operators monitor and control these releases to meet very strict radiation dose limits, and plants must publicly report these releases to the agency. Some communities are concerned about these releases' potential impact on the health of those living near those nuclear facilities.

To help address these concerns the NRC has asked the National Academy of Sciences (NAS) to perform a state-of-the-art study on cancer risk for populations surrounding NRC-licensed nuclear facilities. The NAS will study nuclear power plants that generate electricity and certain plants that create the nuclear fuel used in the power plants (see maps). The NRC is seeking the expertise of the NAS to update the 1990 U.S. National Institutes of Health - National Cancer Institute (NCI) report, *"Cancer in Populations Living Near Nuclear Facilities"* (http://www.cancer.gov/cancertopics/factsheet/Risk/nuclear-facilities). The 1990 NCI report concluded that cancer mortality rates were not elevated in these populations. The NRC staff uses the NCI report as a primary resource during public discussions of cancer mortality risk in counties that contain or are adjacent to nuclear facilities.

The NRC-sponsored NAS study is expected to include populations that live in the vicinity of past, present, and proposed nuclear facilities. The NRC is also interested in having NAS evaluate cancer diagnosis rates, as well as exploring how to divide the study areas around the facilities into geographical units smaller than the counties used in the NCI report.



NRC Request

The NRC requested that the study be performed in two phases. In Phase 1, NAS will determine whether the study request's goals can feasibly be met in a technically defensible way– and if so, develop recommendations for phase 2 using scientifically sound processes for evaluating whether nuclear facilities pose a cancer risk.

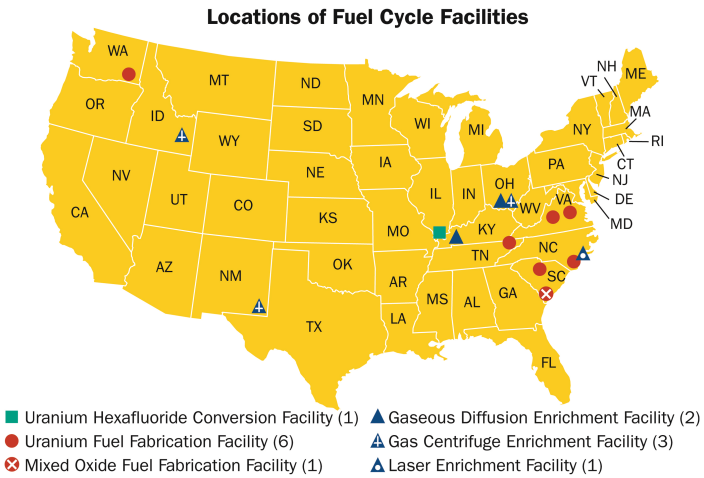
The NRC has requested the NAS to consider several topics in the first phase.

1. Methodological approaches for assessing off-site radiation dose, including consideration of:

- The isotopes/radiation involved, how they could reach humans and how they interact with the human body.
- Availability, completeness, and quality of information on gaseous and liquid radioactive releases and direct radiation exposure from nuclear facilities
- Approaches for overcoming potential methodological limitations arising from the variability in radioactive releases over time and other confounding factors

2. Methodological approaches for assessing cancer risks including consideration of:

- Demographic characteristics of the study and control populations (e.g., all age groups, including children and nuclear facility workers)
- Geographic areas to use in the study (e.g., county, zip codes, census tracts, or annular rings around the facility at some nominal distances)
- Cancer types and endpoints (i.e., diagnosis, mortality)
- Availability, completeness, and quality of cancer diagnosis and mortality data
- Different health study designs and approaches



Approaches for developing a scientifically sound study within known limitations such as changes in population characteristics over time.

Project Status

The NAS formed a 19-person expert committee in January 2011—chaired by Dr. John E. Burris. The committee will hold public meetings in Washington, D.C., Chicago, Atlanta, Los Angeles, and Boston. The meetings are for committee members to collect data and stakeholder input in developing the final report. The final phase 1 report is scheduled to be publicly released in February 2012. A 60-day comment period will allow stakeholders an additional opportunity to provide input on the phase 1 feasibility study. The NRC will review and consider the stakeholder comments and the phase 1 report to determine the next step for phase 2 of the study.

For the most current information on the study, including the schedule for public meetings, visit the National Academy of Sciences project website at http://dels.nas.edu/global/nrsb/CancerRisk.

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