ANALYSIS OF CANCER RISKS IN POPULATIONS NEAR NUCLEAR FACILITIES: PHASE 2 PILOT

Ourania (Rania) Kosti
Study Director
Kevin D. Crowley
Director
Nuclear And Radiation Studies Board

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TOPICS TO BE ADDRESSED

- Study request and phasing
- Scientific challenges
- Phase 1 recommendations
- Phase 2 pilot statement of task
- Phase 2 pilot schedule
- Closing comment

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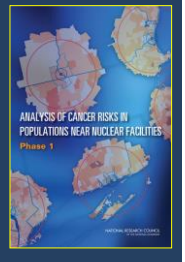
STUDY REQUEST AND PHASING

The U.S. Nuclear Regulatory Commission (NRC) requested that the National Academy of Sciences (NAS) perform an assessment of cancer risks in populations near NRC-regulated nuclear facilities

NAS agreed to carry out an assessment in two phases:

- Phase 1: Epidemiology study design
- Phase 2: Assessment of cancer risks using recommended design



Download Phase 1 report at:
http://www.nap.edu/catalog.php?record_id=13388

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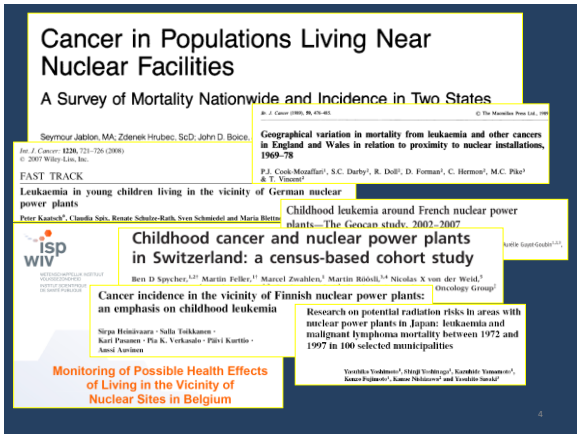

SCIENTIFIC CHALLENGES

The NAS report from the Phase 1 study identified several scientific challenges for carrying out an assessment of cancer risks in populations near NRC-regulated nuclear facilities:

- Low expected statistical power
- Uneven availability and quality of cancer registration data
- Uneven availability and quality of data on nuclear facility effluent releases
- Inability to reliably capture information on population mobility, risk factors, and potential confounding factors

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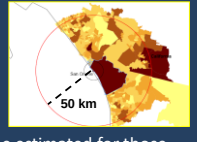
PHASE 1 RECOMMENDATIONS

Recommendation 1. Should the NRC decide to proceed with an epidemiology study of cancer risks in populations near nuclear facilities, the committee recommends that this investigation be carried out by conducting the following two studies, subject to the feasibility assessment described in Recommendation 2:

- Ecologic study of multiple cancer types in populations living near nuclear facilities
- Record-linkage based case-control study of cancers in children born near nuclear facilities



Absorbed doses to individual organs should be estimated for those living/born within approximately 50 km of nuclear facilities.

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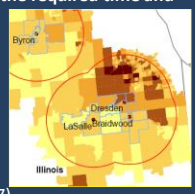
Recommendation 2. **A pilot study should be carried out to assess the feasibility of the committee-recommended dose assessment and epidemiology studies and to estimate the required time and resources.**



Recommended Pilot Study Plants

Dresden, Illinois (BWR, 1959 –)
Oyster Creek, New Jersey (BWR, 1969 –)
Millstone, Connecticut (PWR, 1970 –)
San Onofre, California (PWR, 1967 –)
Big Rock Point, Michigan (BWR, 1962 – 1997)
Haddam Neck , Connecticut (PWR, 1968 – 1996)
Nuclear Fuel Services, Tennessee (Fuel fabrication, 1957 –)

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Recommendation 3. **The epidemiology studies should include processes for involving and communicating with stakeholders. A plan for stakeholder engagement should be developed prior to the initiation of data gathering and analysis for these studies.**

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NRC NEWS

U.S. NUCLEAR REGULATORY COMMISSION

Office of Public Affairs Telephone: 301/415-8200
Washington, D.C. 20555-0001
E-mail: opa.resource@nrc.gov Site: www.nrc.gov
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NRC SPONSORING NATIONAL ACADEMY OF SCIENCES EFFORT TO CARRY OUT PILOT OF CANCER RISK STUDY

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PHASE 2 PILOT STATEMENT OF TASK

The pilot study will focus on the five activities described below:

- Obtain and digitize effluent release and meteorology data
- Estimate absorbed doses to individual organs
- Obtain cancer incidence and mortality data
- Link birth registration and cancer incidence
- Develop processes for communicating with the public

NAS will prepare a report regarding the scientific feasibility of carrying out an assessment of cancer risks

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PHASE 2 PILOT SCHEDULE

The pilot study will be carried out in two steps:

Planning Step

Focus: Assess availability of effluent data, registration data, and dose models; develop cost and time estimates

- Start date (tentative): April 2013
- Duration: 12 months

Execution Step

- Focus: Obtain data and perform analyses specified in the pilot statement of task
- Start date and duration: To be determined

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Closing Comment: Why did NAS agree to carry out Phase 2 pilot study in view of the technical challenges?

- The Phase 1 committee recommended two science-based study designs for the Phase 2 pilot
- NRC made a policy decision to proceed with the Phase 2 pilot
- There was strong support for the Phase 2 pilot from members of the public who live near some NRC-regulated nuclear plants
- The Phase 2 pilot could provide useful information for informing the public about cancer risks in populations near nuclear plants

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QUESTIONS, COMMENTS, OR SUGGESTIONS?

Please contact:
Dr. Ourania (Rania) Kosti, study director
okosti@nas.edu
+1-202-334-3066

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