COMMUNICATIONS PLAN

ANALYSIS OF CANCER RISKS IN POPULATIONS LIVING NEAR NUCLEAR FACILITIES—PHASE 2 PILOT STUDIES

Introduction

The objective of this communication plan is to outline the Nuclear Regulatory Commission’s (NRC) strategy for communicating the goals and key messages regarding the agency’s next steps of the NRC-sponsored Analysis of Cancer Risks in Populations Living Near Nuclear Facilities study. This plan specifically addresses the recommendations made by the National Research Council of the National Academy of Sciences (NAS) in the Phase 1 report which concluded in May 2012.

Goals

This plan will help the NRC continue effective communications with internal and external stakeholders regarding the continuation of the project by undertaking the following tasks:

- **Promote** effective communications with internal and external stakeholders in a timely, consistent, and understandable manner.

- **Inform** all stakeholders that NRC and NAS carry out studies using processes designed to promote independence, transparency, objectivity, and technical rigor.

- **Identify** opportunities for educating the public regarding the impact of nuclear facilities on cancer mortality and incidence risk for populations surrounding those facilities.

Key Messages

The NRC will communicate the following key messages to all stakeholders:

1. In September 2013 the NRC directed the NAS to begin the second phase of a study on cancer mortality and incidence risks in populations living near seven NRC-licensed facilities. The NAS will create an up-to-date version of the 1990 U.S. National Institutes of Health-National Cancer Institute (NCI) report, “Cancer in Populations Living Near Nuclear Facilities—including a more thorough examination of cancer incidence.

2. In Phase 1, NAS developed approaches to evaluate cancer risks in populations living near NRC-licensed nuclear power and fuel cycle facilities. NAS developed methodological approaches for assessing offsite radiation dose and methodological approaches for assessing cancer epidemiology. The Phase 1 report identified two scientifically sound approaches for carrying out the assessment of cancer risks, and recommended a pilot study. The pilot study, referred to as Phase 2 Pilot, was recommended because of the technical challenges associated with carrying out
assessments of cancer risks in populations near nuclear facilities in the United States and it was not clear which approach would be best or if either approach could produce meaningful results.

3. The committee recommended carrying out the cancer risk assessment through two types of epidemiology studies—an ecologic study of multiple cancer types of populations living near nuclear facilities and a case-control study of cancers in children born near nuclear facilities. These two study designs combine dose assessments with the ability to analyze many different cancer types, while also specifically focusing on children's cancer in the case-control study.

4. The committee proposed pilot studies at seven sites to determine the feasibility of performing the study designs on a larger scale. The NRC accepted NAS' suggested pilot study sites:

- Dresden Nuclear Power Station, Morris, IL (2 BWRs, 1 BWR shutdown)
- Millstone Power Station, Waterford, CT (2 PWRs, 1 BWR shutdown)
- Oyster Creek Nuclear Generating Station, Forked River, NJ (1 BWR)
- Haddam Neck (decommissioned), Haddam Neck, CT (1 PWR)
- Big Rock Point Nuclear Power Plant (decommissioned), Charlevoix, MI (1 BWR)
- San Onofre Nuclear Generating Station, San Clemente, CA (2 permanently shut down PWRs, 1 decommissioned PWR)
- Nuclear Fuel Services, Erwin, TN (operating uranium fuel fabrication facility)

The committee selected these sites because they provide a good sampling of facilities in six states with different operating histories, population sizes, and levels of complexity in data retrieval from the state cancer registries.

5. The NAS study process is independent of NRC, transparent, objective, and technically rigorous, ensuring that the new study will be comprehensive and scientifically sound.

6. Following the pilot study, the NAS will provide a consensus report with the findings regarding the scientific feasibility of carrying out an assessment of cancer risks at additional U.S. NRC-licensed facilities. Staff will review the report and decide whether to proceed with Phase 2.

Appendix A provides responses to inquiries expected from the general public, congressional staff, the media, and other stakeholders. The appendices also include additional information for stakeholders who may be more familiar with these topics, such as elected officials, Federal and State Government officials, public interest groups, and certain members of the media.

Background

NRC regulations and licenses require each licensee to establish and maintain a program for monitoring radioactive effluents from their facilities. The regulations that govern these programs are Title 10 of the Code of Federal Regulations (10 CFR) Part 50.34a, —Design Objectives for
Equipment to Control Releases of Radioactive Material in Effluents – Nuclear Power Reactors, 10 CFR Part 50.36a, —Technical Specifications on Effluents from Nuclear Power Reactors, and 10 CFR Part 50, —Domestic Licensing of Production and Utilization Facilities, Appendix I, —Numerical Guides for Design Objectives and Limiting Conditions for Operation To Meet the Criterion ‘As Low as Is Reasonably Achievable,’ for Radioactive Material in Light-Water-Cooled Nuclear Power Reactor Effluents. NRC regulations in 10 CFR Part 50.36a require licensees to report these effluents in an annual radioactive effluent release report. Regulations for fuel cycle facilities effluent reporting are found in 10 CFR Part 70.59, —Effluent Monitoring Reporting Requirements, and 10 CFR Part 40.65, —Effluent Monitoring Reporting Requirements. All of these regulations ensure that offsite doses to individual members of the public are a small fraction of the 10 CFR Part 20 —Standards For Protection Against Radiation limits specified in 10 CFR 20.1301(a) and (e). The typical offsite doses to members of the public are generally less than 1% of the amount of radiation the average U.S. citizen receives in a year from all background sources. Nonetheless, some stakeholders have expressed recurrent concerns about the potential effect of these releases on the health of residents living near nuclear facilities.

To help address these stakeholder concerns, the staff uses the 1990 NCI report and other more recent epidemiology reports conducted by various State Health Departments when communicating on cancer mortality in populations near nuclear power facilities. The staff relies on credible health studies to augment its discussions about the NRC’s robust regulatory programs to keep offsite doses as low as reasonably achievable (ALARA) by providing public health information that directly applies to the health outcomes that are often of concern (i.e., cancer). However, the 1990 NCI report is now more than 20 years old, and more modern analysis methods, combined with up-to-date information sources, will provide contemporary cancer information in current populations living near NRC-licensed nuclear facilities. The state reports are generally of good quality, but are limited in the number performed and facilities covered. As a result, several NRC offices sent a user-need request to the Office of Nuclear Regulatory Research to update the NCI study. These epidemiological studies are not new or unique to the United States. Since 2008, Canada, France, Germany, Great Britain, Spain, and Switzerland have all conducted epidemiology studies of populations near nuclear facilities within their borders to address public health concerns. Generally these studies did not find elevated cancer risks, and if they did (e.g., Germany) the increased risk could not be attributed to the radiation released from the facilities.

Accordingly, the staff chose to provide a grant to NAS to perform the study. NAS agreed to take a two-phase approach. In Phase 1, NAS performed a scoping study that developed two approaches to evaluate cancer risks in populations living near nuclear power and fuel cycle facilities licensed by the NRC. NAS developed methodological approaches for assessing offsite radiation dose and for assessing cancer epidemiology. For Phase 2, NAS will perform the cancer risk assessment using the methods developed in Phase 1 at all NRC-licensed facilities. Because these are new methods with expected low statistical power and different cancer data quality from state-to-state, NAS recommended pilot studies at 7 facilities to evaluate the feasibility of the Phase 1 methods.

1 Epidemiology is the study of the distribution of illness, injury, disability, and death within a population.

2 Statistical power tells the researcher how big of a sample size is needed to detect a health effect that can be attributed to a specific source. A study with too low statistical power is unlikely to be able to identify a health effect attributable to a specific source, even if it exists.
The NRC accepted the NAS recommendations and asked the NAS to carry out the pilot study. NAS started the pilot planning phase in September 2013. The pilot study will have two steps: Pilot Planning and Pilot Execution. Planning activities include:

- Appointing the study committee;
- Identifying the processes for selecting qualified individuals and/or organizations to perform the technical tasks;
- Assessing the availability and quality of release and weather data;
- Investigating the use of existing dose-estimation models or the need to create a new model;
- Identifying state requirements for data sharing and transfer of health information;
- Obtaining Institutional Review Board approvals for the study, as appropriate; and
- Identifying key stakeholders and assessing their concerns, perceptions, and knowledge.

Pilot Execution phase activities include:

- Obtaining data on weather and nuclear facility airborne and waterborne releases turning the information into computer files that can be used for dose estimation;
- Using the computer model identified or developed in the planning phase to estimate absorbed doses to individual organs from monitored releases;
- Obtaining cancer incidence and mortality data at the census tract level to determine whether the population study can be carried out;
- Linking birth registration and cancer incidence data to identify eligible cases of childhood cancers and matched controls to determine whether the case control study can be carried out;
- Developing processes for public participation and for communicating with key stakeholders identified in the planning phase.

At the conclusion of the Pilot Execution step, the NAS will report its findings regarding the scientific feasibility and merit of carrying out a wider assessment of cancer risks near additional NRC-licensed facilities. The report will also include, if feasible, an analysis of cancer risks in the populations near the seven pilot facilities. NAS estimates the pilot study will take 2-3 years to complete.

Staff will review the report and decide on proceeding with Phase 2 for the balance of the operating nuclear power plants and fuel cycle facilities.

Audience/Stakeholders

<table>
<thead>
<tr>
<th>Internal</th>
<th>External</th>
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<tbody>
<tr>
<td>Commission</td>
<td>Congress</td>
</tr>
<tr>
<td>Office of the Executive Director for Operations (OEDO)</td>
<td>Federal agencies</td>
</tr>
<tr>
<td>Advisory Committee on Reactor Safety (ACRS)</td>
<td>Institute for Nuclear Power Operations</td>
</tr>
<tr>
<td>Office of the General Counsel (OGC)</td>
<td>Electric Power Research Institute</td>
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<tr>
<td>Office of Congressional Affairs (OCA)</td>
<td>Nuclear Energy Institute</td>
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<tr>
<td>Office of International Programs (OIP)</td>
<td>Conference of Radiation Control Program Directors</td>
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<tr>
<td>Office of Public Affairs (OPA)</td>
<td>Organization of Agreement States</td>
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<tr>
<td>Office of Nuclear Regulatory</td>
<td>Agreement States</td>
</tr>
<tr>
<td></td>
<td>news media (e.g., Inside NRC)</td>
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Research (RES)  
- Office of New Reactors (NRO)  
- Office of Nuclear Reactor Regulation (NRR)  
- Office of Nuclear Security and Incident Response (NSIR)  
- Office of Federal State Materials and Environmental Management Programs (FSME)  
- Office of Nuclear Material Safety and Safeguards (NMSS)  
- Regions I–IV  

International Atomic Energy Agency  
- nuclear regulators of other countries  
- residents living near nuclear power plants  
- State and local governments  
- public interest groups (e.g., Union of Concerned Scientists)  
- academic and professional organizations (e.g., Health Physics Society, American Nuclear Society)  
- NRC licensees  
- International Organizations (e.g., NEA, IAEA, ICRP)  
- Foreign governments of countries with similar facilities

Communication Team

The Communication Team will assist the Team Leader as needed in developing uniform and accurate messages, initiating communication vehicles, and coordinating implementation plans for this project. The members of the Regional Communication Team will be responsible for coordinating communication within their regions.

<table>
<thead>
<tr>
<th>Position</th>
<th>Name</th>
<th>Organization</th>
<th>Telephone Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Team Leader</td>
<td>Terry Brock</td>
<td>RES</td>
<td>(301) 251-7487</td>
</tr>
<tr>
<td>NMSS Lead</td>
<td>Marilyn Diaz</td>
<td>NMSS</td>
<td>(301) 287-9068</td>
</tr>
<tr>
<td>NRR Lead</td>
<td>Steven Garry</td>
<td>NRR</td>
<td>(301) 415-2766</td>
</tr>
<tr>
<td>NRO Lead</td>
<td>Jean-Claude Dehmel</td>
<td>NRO</td>
<td>(301) 415-6619</td>
</tr>
<tr>
<td>NSIR Lead</td>
<td>Trish Milligan</td>
<td>NSIR</td>
<td>(301) 415-2223</td>
</tr>
<tr>
<td>Region I Lead</td>
<td>Ron Nimitz</td>
<td>RI</td>
<td>(610) 337-5267</td>
</tr>
<tr>
<td>Region II Lead</td>
<td>Gena Woodruff</td>
<td>RII</td>
<td>(404) 997-4739</td>
</tr>
<tr>
<td>Region III Lead</td>
<td>John Cassidy</td>
<td>RIII</td>
<td>(630) 829-9667</td>
</tr>
<tr>
<td>Region IV Lead</td>
<td>Don Stearns</td>
<td>RIV</td>
<td>(817) 200-1176</td>
</tr>
<tr>
<td>State Liaison Lead</td>
<td>June Cai</td>
<td>FSME</td>
<td>(301) 415-5192</td>
</tr>
<tr>
<td>Legal Lead</td>
<td>Beth Mizuno</td>
<td>OGC</td>
<td>(301) 415-3122</td>
</tr>
<tr>
<td>Public Affairs Lead</td>
<td>Scott Burnell</td>
<td>OPA</td>
<td>(301) 415-8204</td>
</tr>
<tr>
<td>International Programs</td>
<td>Andrea Jones</td>
<td>OIP</td>
<td>(301) 415-2309</td>
</tr>
<tr>
<td>Congressional Affairs</td>
<td>Gene Dacus</td>
<td>OCA</td>
<td>(301) 415-1697</td>
</tr>
<tr>
<td>Congressional Affairs</td>
<td>Jenny Dacus</td>
<td>OCA</td>
<td>(301) 415-1691</td>
</tr>
<tr>
<td>OEDO Lead</td>
<td>Lance Rakovan</td>
<td>OEDO</td>
<td>(301) 415-2589</td>
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Communication Tools

<table>
<thead>
<tr>
<th>Tool</th>
<th>Description/Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>NRC External Web Site</td>
<td>The NRC’s external website will provide links to the NAS study web page, to the NCI Web page and to other related publicly available documents.</td>
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</tbody>
</table>
Internal Briefings
The Communication Team will conduct internal briefings at various points in the process to keep internal stakeholders informed of its activities and messages.

Weekly Highlights and EDO Daily Notes
The weekly highlights and/or EDO Daily Notes will report on significant milestones.

Internet E-Mail
The Communication Team will e-mail significant information on the status of the study and deliverables to internal stakeholders.

Commissioners’ Assistants Notes
Commissioners’ Assistants Notes will be used to communicate information about public meetings, study status, and other items of significant interest

<table>
<thead>
<tr>
<th>Tool</th>
<th>Description/Purpose</th>
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</thead>
<tbody>
<tr>
<td>Commissioner Interactions</td>
<td>The Communication Team will coordinate and assist in preparing briefing materials for the interactions of Commissioners with various stakeholders.</td>
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<tr>
<td>Public Meetings</td>
<td>If necessary, public meetings could be held to discuss the final study report after NAS has briefed the staff and/or Commission on the findings and a Commission-approved message has been developed.</td>
</tr>
<tr>
<td>Issuance of Significant Correspondence</td>
<td>The project manager will coordinate the issuance of correspondence with key internal and external stakeholders. The Communication Team will coordinate with OPA when preparing press releases and interacting with the media.</td>
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<tr>
<td>Congressional Communications</td>
<td>OCA will coordinate all communication with Congress.</td>
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<tr>
<td>Media Communications</td>
<td>OPA will coordinate all communication with the media.</td>
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Communications Activities

<table>
<thead>
<tr>
<th>Activity</th>
<th>Responsibility</th>
<th>Date Planned</th>
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</thead>
<tbody>
<tr>
<td>Press Release on Pilot Study Award</td>
<td>RES/OPA</td>
<td>Sept. 2013</td>
</tr>
<tr>
<td>Event</td>
<td>Responsible</td>
<td>Date</td>
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<td>--------------------------------------------</td>
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<td>NAS Committee Selection</td>
<td>NAS</td>
<td>Nov. 2013</td>
</tr>
<tr>
<td>Kick-off presentation</td>
<td>RES</td>
<td>Dec. 2013</td>
</tr>
<tr>
<td>Presentations at future meetings</td>
<td>RES/NRC staff</td>
<td>TBD</td>
</tr>
<tr>
<td>Press Release of Planning Phase Results</td>
<td>RES/OPA</td>
<td>Sept. 2014</td>
</tr>
<tr>
<td>Communicate pilot study results</td>
<td>NAS/RES/OPA</td>
<td>May. 2016</td>
</tr>
<tr>
<td>NRC evaluates the results of the pilot study and decides whether or not to continue with the next phase.</td>
<td>RES/NRC Staff</td>
<td>Dec. 2016</td>
</tr>
</tbody>
</table>

**Communication Challenges**

The Communication Team is likely to encounter challenges in the following two areas while implementing this plan:

1. **Effective Communication with the General Public**

   This study and its results will be of significant interest to the general public, particularly those members of the general public who live within the areas analyzed in the study. All NRC-produced materials must take into account the limited technical background of some stakeholders and the sensitivity of issues relating to cancer. In addition, various stakeholder groups have expressed concern with perceived elevated cancer risks in populations that live near nuclear facilities.

2. **Public Perceptions of the NRC and the NAS**

   Communications regarding this study should address the frequent misconception among some stakeholders that the NRC promotes the use of nuclear power (i.e., to generate electricity). In addition, communication efforts must stress the NAS was established by Congress to provide scientific information and advice to the government, and that any NAS report will be independent of the NRC and reflect the Academy’s best judgment.

**Updates and Revisions**

If major revisions to this plan or its key messages are necessary, the Team Leader will ensure that a formal revision is made and placed in the Agencywide Documents Access and
Management System and on the internal communications Web page. The Team Leader will also determine the need for updates to the questions and answers in Appendix A to this plan. These updates will not constitute a revision to this plan.

As needed, the Communication Team will assess the degree of success that key messages and talking points have with the target stakeholder audience, and will modify/adjust the key messages as necessary.

The Team Leader will brief key staff as needed regarding revisions to the messages, talking points, or guidance based on immediate concerns or questions asked by the stakeholder audience.

Final Closeout

At the conclusion of the study, the Team Leader will prepare a brief closeout statement about the challenges and successes related to the communication plan and attach it to the end of the last revision.
Appendix A
Questions and Answers

Q1. Why has the U.S. Nuclear Regulatory Commission (NRC) asked the National Academy of Sciences (NAS) to conduct this study now?

A1. This study will provide the NRC staff with the most current scientific information for responding to stakeholder concerns related to cancer mortality and incidence rates for populations that live near past, present, and proposed nuclear power facilities. The NRC staff has used a 1990 study conducted by the National Cancer Institute (NCI), “Cancer in Populations Living near Nuclear Facilities,” as a valuable risk communication tool for addressing stakeholder concerns about cancer mortality attributable to the operation of nuclear power facilities. However, the NCI report is over 20 years old and a new study needs to be performed to reflect the current populations living near nuclear power facilities. In addition, the analyses in the NCI report focus on cancer deaths, and the general public is often also interested in cancer incidence (e.g., being diagnosed with cancer, but not necessarily dying from the disease). Therefore, the NAS project will also assess cancer incidence in addition to mortality.

Q2. Why is NAS, rather than NCI, conducting this follow-up study to NCI’s 1990 work?

A2. The NRC staff approached NCI management about performing a new study under contract to the NRC, but because of staffing limitations, NCI was unable to commit resources for this activity for the foreseeable future. NAS will draw its project team from a wide range of technical experts, which could include NCI members.

Q3. Which seven sites will be included in the pilot study?

A3. The pilot sites to be included in the pilot study are the Dresden Nuclear Power Station in Illinois, the Millstone Power Station in Connecticut, the Oyster Creek Nuclear Generating Station in New Jersey, the Haddam Neck in Connecticut (decommissioned), the Big Rock Point Nuclear Power Plant in Michigan (decommissioned), the San Onofre Nuclear Generating Station in California (permanently shut down), and the Nuclear Fuel Services facility in Tennessee.

Q4. Which additional nuclear facilities could be included in the study?

A4. The NRC could ask NAS to study all NRC-licensed nuclear power reactors and fuel cycle facilities (e.g., fuel enrichment and fabrication plants) that are or were in operation in the United States, however this will depend on the results of the pilot studies and NRC staff review.

The 1990 NCI report included all 52 commercial nuclear power facilities in the United States.
that that started operation before 1982. Preliminary information indicates that 25 new reactor sites have begun operation since 1982. The 25 new reactor sites will also be included in the study. Researchers are identifying the study and control populations for these sites for inclusion in the cancer mortality study.

Q5. How does the NAS project consider cancer incidence (occurrence)?

A5. The NAS is expected to gather cancer incidence data from individual States health databases. When NCI conducted its 1990 study, cancer incidence information was only available for counties adjacent to four facilities located in Iowa and Connecticut. The limited cancer incidence data for these counties resembled the counties' mortality data patterns.

Q6. Does the NRC suspect that cancer mortality rates are elevated around nuclear power plants?

A6. The staff does not believe the low doses from the routine operations of NRC-licensed facilities would result in observable elevated rates of cancer in the populations. The NAS Phase 1 committee's decision to not calculate sample sizes based on actual off-site doses confirms the staff position that at the low offsite doses from these facilities, researchers would not expect to observe any increased cancer risks in the populations surrounding these facilities attributed to the regulated release of radioactive effluents. Nevertheless, the staff believes that despite these potential limitations and expected outcomes, the studies would be helpful to address public health concerns and are therefore still worthwhile to pursue.

Q7. How can I be sure that the nuclear power plant is not causing cancer? If I lived near a power plant, how might I be exposed to radiation? For example, if my house is 2 miles away from a reactor, am I being exposed whenever I am at my house?

A7. In the previous study NCI found no increased risk of cancer in those people who lived in counties near nuclear facilities. Nuclear facilities release very small regulated amounts of radioactivity, at very slow rates into the environment. The amounts released are strictly controlled within limits set by the NRC and the U.S. Environmental Protection Agency. Any exposures that may occur are below the established safety limits. The radioactive emissions from nuclear power plants only contribute a very small fraction (1/1000\textsuperscript{th}) of our yearly total radiation exposure (approximately 0.1 percent). For comparison, your radiation exposure from natural radiation sources in soil and rocks, radon gas in homes, radiation from space, and other sources that are naturally found within the human body contributes to approximately 50 percent or 500 times more radiation than from nuclear facilities. The other half of your yearly exposure (also 500 times more radiation than nuclear facilities) is from man-made sources, such as consumer products, medical procedures, and to a much lesser extent, industrial sources.
Q8. Which age groups are included in the study?

A8. The NRC expects the NAS pilot study project to analyze cancer incidence and mortality rate data for the following age groups: 0–4 years, 5–9 years, 10–19 years, 20–39 years, 40–59 years, and 60 years and older.

Q9. Will the study address cancer rates from leukemia in children near nuclear facilities?

A9. Yes. The study will address leukemia in all age groups, including children (0–5 years).

Q10. Why are children looked at specifically in the case-control study?

A10. Children exposed to radiation tend to be more sensitive to cancer effects than adults and any health effect should show up in this population first.

Q11. I live near a nuclear power plant and my husband died of cancer. Will this study prove that living near the plant caused the cancer?

A11. No, the study is designed to survey trends in populations and does not evaluate the cause of individual cases. However, the study does give us an indication if the cancer rates of populations near nuclear facilities are the same, greater, or less than what is expected.

Q12. Are such studies able to detect population health effects from industrial sources?

A12. Yes. NCI has effectively used county-based studies in the past to study cancer mortality rates. For example, NCI has used county-based studies to show elevated rates of lung cancer deaths in counties with shipyard industries and in counties with arsenic-emitting smelters and refineries.

Q13. Were past studies, such as the French and German studies on childhood leukemia and radiation from nuclear power plants, being considered?

A13. Yes, these studies were considered by the phase 1 expert committee when writing their recommendations in the phase 1 report, in addition to other international studies.

Q14. Why do some local cancer studies around some nuclear plants show increased cancer rates and some show no increase?

A14. Numerous local cancer studies that have been performed by local groups near nuclear plants show an increase in cancer. These local studies are sometimes based on small populations or groups and may or may not be influenced by local confounding factors, such as eating habits, cigarette smoking, and chemical exposures. In addition, some studies may not be using scientifically accepted epidemiology methods and as such may not be credible. Any local cancer studies should be submitted to the State Health Department, or possibly to the U.S. Department of Health and Human Services, Agency for Toxic Substances and
However, the NRC has evaluated the radiation levels from radioactive effluents and radiation from nuclear power plants and found that the levels are very low. Therefore, even with a conservative linear, no-threshold assumption, the corresponding cancer risk is very low.

Q15. Where can I find the NAS protocols on the study process, including committee selection and technical reviews?

A15. The NAS study protocols (http://www.nationalacademies.org/studyprocess/index.html) include procedures for member selection and rigorous review of the project's findings.

Q16. How will the NRC consider this resulting data in new reactor reviews and relicensing decisions?

A16. The NRC will use the results of the study to answer recurring questions from our stakeholders during the public comment period for regulatory actions. If necessary the results could prompt further review of both new reactor and existing regulations to ensure the effluent and direct radiation exposure dose limits adequately protect public health and safety.

Q17. What will the NRC do if the results indicate an increase in cancer risk in some populations that live near a specific nuclear facility?

A17. While the NAS project is still ongoing, the NRC expects any increases in cancer risk will first be assessed against the levels of radiation dose attributable to strictly regulated radioactive materials released during plant operation, as well as any public radiation dose that might result from the releases. This data would assist NAS in examining any relationship between the study results and potential radiation exposures of the public at individual plants. Furthermore, the public radiation doses from operating plants are significantly below the radiation safety dose limits set to protect the public and are a small fraction of dose received from natural background. If there continues to be a concern then more refined epidemiology studies can be performed (e.g., case-control study).

Q18. I live near a nuclear power plant or in near of the proposed pilot study sites. Will I be contacted during this study for information? Will my family or personal medical information be protected during this study or during a cancer incidence study?

A18. The NAS study process includes opportunities for the public to contribute, but the data used in this study will be obtained from anonymous state and national sources. These data do not contain personal identifying information making it impossible to determine to whom the medical information belongs.
Q19. Why did the NRC switch from Oak Ridge Associated Universities (ORAU) to NAS as a study provider after one year of work?

A19. The staff has reconsidered using ORAU to do the work due to the possibility of high public interest in the topic and the importance of the project to the agency. The decision not to use ORAU was not an indication of any deficiencies in the technical quality of ORAU’s work, but more of ensuring that the investigator brings a broad social and national policy perspective to the study. As such, the staff chose the NAS to perform the study.

Q20. What is the status of the project and how will the NRC decide on the next step and has funding been reserved?

A20. NAS released the phase 1 report on March 29, 2012. The staff reviewed the report and communicated to the Commission in SECY-12-0136 that staff will pursue the NAS recommended approach to perform pilot studies at 7 sites. The pilot study is being performed in two steps: pilot planning and pilot execution. NAS started the pilot planning phase in September 2013 and will be completed in one year. At the conclusion of the Pilot Execution step, the NAS will report its findings regarding the scientific feasibility and merit of carrying out a wider assessment of cancer risks near additional NRC-licensed facilities. NAS estimates the pilot study will take 2-3 years to complete.

At the conclusion of the pilot study, the staff will review and consider the report recommendations and stakeholder comments to determine whether to analyze additional facilities. The OPA backgrounder for the study can be found on the NRC website at http://www.nrc.gov/reading-rm/doc-collections/fact-sheets/bg-analys-cancer-risk-study.html.

Q21. How does the NRC ensure the validity of the licensee’s reporting of off-site doses and environmental monitoring results?

A21. The licensee is required to establish, implement, and maintain an acceptable effluent and environmental monitoring program. As such the licensee has the primary responsibility to ensure conformance with all applicable requirements in the area of effluent and environmental monitoring. The NRC performs selective inspections of the program to validate that the licensee is implementing such a program and that public doses are maintained well below regulatory requirements and are in fact as low as reasonably achievable. The following points illustrate this approach:

1) NRC has imposed strict regulatory requirements for conduct of both station effluent monitoring control and environmental monitoring. These requirements are designed to ensure licensee doses to members of the public are well below regulatory limits and are as low as reasonably achievable. Consequently, licensees are obligated to establish, implement, and maintain programs to sample, monitor, evaluate, and control effluents. The licensee is also required to collect and analyze environment samples to detect activity associated with facility operations. The sampling program
is designed to review exposure pathways and sampling results. The environmental monitoring program is designed to provide a check on the station effluents control program.

2) The NRC has established reporting requirements that require the licensee to report effluent and or environmental monitoring issues as established in program requirements. NRC initiates appropriate reviews and evaluation of the reports and conducts follow-up inspections as appropriate.

3) The NRC conducts routine inspections in a variety of ways. The NRC maintains an onsite resident inspection staff that selectively and routinely reviews on-going activities to become aware of issues that may impact effluent or environmental monitoring including public dose. For example the residents review corrective action documents to evaluate potential impact on the effluents control program. The residents also review radiation monitors for indication of releases. During their inspections residents also look for potential unmonitored release paths.

4) The NRC also uses specialist inspectors, independent of the resident staff, to conduct periodic onsite inspections of both effluent release and environmental monitoring programs to ensure the licensee conforms with applicable requirements. As part of this review, NRC inspectors also review ground water controls. The inspectors evaluate the adequacy of quality assurance of measurements to ensure they are of appropriate quality and that the licensee is implementing a robust quality assurance program.

5) The NRC routinely reviews secondary evaluations conducted as part of the licensees’ quality assurance programs (e.g., audits and assessments) as well as independent measurements conducted by other regulatory entities (e.g., state monitoring programs).

6) In addition, and as necessary, the NRC conducts independent confirmatory sampling to validate the accuracy of licensee measurements.

7) Information provided to the NRC by a licensee must be complete and accurate in all material respects. Submitting falsified information to the NRC is considered a violation of the regulations and will have severe implications. (For additional information, please refer to the Enforcement Policy.)

Q22. How does SONGS shutdown status impact its participation in the pilot study?

A22. The SONGS shutdown will not impact its participation in the pilot study. The facility has a long operating history and past exposures can still be evaluated and provide useful input to the pilot study effort.
Q23. Where can the public find more information on the study?

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