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Subject: FW: NOT FOR PUBLIC RELEASE -- Cancellation/abandonment of cancer Study Around Nuclear facilities
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From: Nimitz, Ronald
Sent: Thursday, September 03, 2015 2:31 PM
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The below link provides the communication plan for NRC cancellation of the cancer study. (Note that this plan is not yet fully approved but it is believed that no significant changes will occur.)

The study was to focus on the following sites: Dresden Nuclear Power Station, Illinois; Millstone Power Station, Connecticut; Oyster Creek Nuclear Generating Station, New Jersey, Haddam Neck, Connecticut (decommissioned); Big Rock Point Nuclear Power Plant, Michigan (decommissioned); San Onofre Nuclear Generating Station, California (permanently shut down); and Nuclear Fuel Services, Tennessee.

Basically, the Phase 2 Pilot planning identified a number of challenges to the study including the belief that the work "may not have adequate statistical power to detect the presumed small increases in cancer risks arising from... monitored and reported releases." Given the uncertainty in the usability of the pilot results and the high cost and duration of the pilot (39 months and \$8 million), the staff found that the NAS proposal would take too long and cost too much.

The cancellation is to be made public on September 8 (day after Labor Day) with the following time line (see also plan time line):

September 8, 2015:

9:00 AM – NRC to inform NAS of study cancellation

9:30 AM – Press release to be sent to internal stake holders (SLOs, PAOs, etc.) to allow them to inform states with facilities considered for study

10:00 AM - HQ PAO to send E-mail to external stakeholders (Grammies etc.) to inform them. (Scott Burnell, HQ, PAO, needs their E-mail addresses)

10:30 AM - Press Release and associated SECY paper to be publicly released

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Below is the link to the cancer study comm plan with Q&As. It is not expected that there will be any changes.

[View ADAMS P8 Properties ML15244A833](#)

[Open ADAMS P8 Document \(Communications Plan - Analysis of Cancer Risks in Populations Living Near Nuclear Facilities-Project Closeout\)](#)

NOT FOR PUBLIC RELEASE: The SECY paper is here: [ML15141A404](#)

No Excess Mortality Risk Found in Counties with Nuclear Facilities

A National Cancer Institute (NCI) survey published in the *Journal of the American Medical Association*, March 20, 1991, showed no general increased risk of death from cancer for people living in 107 U.S. counties containing or closely adjacent to 62 nuclear facilities. The facilities in the survey had all begun operation before 1982. Included were 52 commercial nuclear power plants, nine Department of Energy research and weapons plants, and one commercial fuel reprocessing plant. The survey examined deaths from 16 types of cancer, including leukemia. In the counties with nuclear facilities, cancer death rates before and after the startup of the facilities were compared with cancer rates in 292 similar counties without nuclear facilities (control counties).

The NCI survey showed that, in comparison with the control counties, some of the study counties had higher rates of certain cancers and some had lower rates, either before or after the facilities came into service. None of the differences that were observed could be linked with the presence of nuclear facilities. "From the data at hand, there was no convincing evidence of any increased risk of death from any of the cancers we surveyed due to living near nuclear facilities," said John Boice, Sc.D., who was chief of NCI's Radiation Epidemiology Branch at the time of the survey.

He cautioned, however, that the counties may be too large to detect risks present only in limited areas around the plants. "No study can prove the absence of an effect," said Dr. Boice, "but if any excess cancer risk due to radiation pollution is present in counties with nuclear facilities, the risk is too small to be detected by the methods used."

The survey, conducted by Seymour Jabon, Zdenek Hrubec, Sc.D., B.J. Stone, Ph.D., and Dr. Boice, was begun in 1987 for scientific purposes in response to American public health concerns, and after a British survey of cancer mortality in areas around nuclear installations in the United Kingdom showed an excess of childhood leukemia deaths near some facilities.¹ No increases in total cancer mortality were found in the

¹ "Cancer Near Nuclear Installations," David Forman, Paula Cook-Mozaffari, Sarah Darby, et al. *Nature*, October 8, 1987.



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British study, and other smaller surveys of cancer deaths around nuclear facilities in the United States and the United Kingdom have yielded conflicting results.

The NCI scientists studied more than 900,000 cancer deaths in the study counties using county mortality records collected from 1950 to 1984. The researchers evaluated changes in mortality rates for 16 types of cancer in these counties from 1950 until each facility began operation and from the start of operation until 1984. For four facilities in two states (Iowa and Connecticut), cancer incidence data were also available. Data on cancer incidence in these counties resembled the county's mortality data patterns.

For each of the 107 study counties, three counties that had populations similar in income, education, and other socioeconomic factors, but did not have or were not near nuclear facilities, were chosen for comparison. The study and control counties were within the same geographic region and usually within the same state. Over 1.8 million cancer deaths were studied in the control counties.

The numbers of cancer deaths in the study counties and in the control counties were analyzed and compared to determine the relative risk (RR) of dying of cancer for persons living near a nuclear facility. A relative risk of 1.00 means that the risk of dying of cancer was the same in the study and control counties; any number below 1.00 indicates that the overall risk was lower in the study county than in the control county; and any number greater than 1.00 indicates a higher risk in the study county. For example, an RR of 1.04 would indicate that there was a 4 percent higher risk of cancer death in the study county. Conversely, an RR of 0.93 would indicate a 7 percent lower risk in the study county.

For childhood leukemia in children from birth through age 9 years, the overall RR comparing study and control counties before the startup of the nuclear facilities was 1.08; after startup the RR was 1.03. These data indicate that the risk of childhood leukemia in the study counties was slightly greater before startup of the nuclear facilities than after. The risk of dying of childhood cancers other than leukemia increased slightly from an RR of 0.94 before the plants began operation to an RR of 0.99 after the plants began operating.

For leukemia at all ages, the RRs were 1.02 before startup and 0.98 after startup. For other cancer at all ages, the RRs were essentially the same: 1.00 before startup and 1.01 after startup. These results provide no evidence that the presence of nuclear facilities influenced cancer death rates in the study counties.

Questions and Answers

National Cancer Institute (NCI) Survey Cancer Mortality in Populations Living Near Nuclear Facilities

1. Which nuclear facilities were included in the survey?

Only major nuclear facilities that are or once were in operation and went into service before 1982 were included in the survey. All 52 commercial nuclear power facilities in the United States that started before 1982 were included. A facility may include more than one reactor.

In addition to the commercial nuclear power facilities, nine U.S. Department of Energy (DOE) nuclear installations and one commercial fuel reprocessing plant were included. These facilities do not generate electrical power for commercial use.

Facilities such as small research reactors at universities were not included. See the Appendix for a complete list of facilities.

2. Why were the DOE facilities included?

In the British study that helped to prompt this survey, an excess of childhood leukemias was found mainly around nuclear installations that were involved in the enrichment, fabrication, and reprocessing of nuclear fuel or research and development of nuclear weapons. The DOE facilities included in the study are similar to these British facilities.

Also, some DOE installations have been operating since 1943, which is longer than any commercial nuclear power plant in the United States. The first commercial nuclear power plant began operation in 1957.

The DOE facilities were evaluated both as part of the total group of nuclear facilities and separately.

3. Which counties were included in the survey?

All counties with a major nuclear facility that is or once was in operation and went into service before 1982 were included in the survey as study counties. Other adjacent counties that contain one-fifth of the land that lies within a 10-mile radius of these facilities were also included as study counties. In total, 107 counties were identified as study counties. See the Appendix for a complete list.

For each study county, three control counties within the same geographic region that do not have or are not near nuclear facilities were identified for comparison. Control counties were chosen that were the most similar to study counties based on population size and socioeconomic characteristics such as race and income.

4. What were the 16 types of cancer surveyed?

The following 16 types of cancer were surveyed: leukemia; all cancers other than leukemia (as a group); Hodgkin lymphoma; lymphomas other than Hodgkin lymphoma; multiple myeloma; cancers of the digestive organs (as a group and separately), including cancer of the stomach, colon and rectum, and liver; cancer of the trachea, bronchus, and lung; female breast cancer; thyroid cancer; cancer of the bone and joints; bladder cancer; brain and other central nervous system cancer; and other benign or unspecified tumors.

5. Why was childhood leukemia a special focus of the analysis?

The excess risk identified in the British study pertained to leukemia deaths among persons under the age of 25. Leukemia is one of the major cancers induced by high doses of radiation and may occur as soon as 2 years after exposure. Other cancers associated with high-dose radiation may not develop until 10 years after exposure.

Studies have also suggested that children are more sensitive to the cancer-producing effects of radiation than adults. Children may spend more time in and around the home than parents, whose jobs may take them to other areas. They are also more likely to come in close contact with the soil, upon which radioactive releases may have been deposited following discharges from the facilities.

6. Why were cancer deaths (mortality) compared instead of the number of cancer cases that occurred (incidence)?

Although data on cancer incidence (the number of newly diagnosed cases in a given period of time) could provide a more complete evaluation of the possible impact of living near nuclear facilities, cancer incidence data for the entire Nation do not exist. The reporting of county mortality data by state provides nationwide data that can show important geographic and time-related patterns of cancer. In past NCI studies, mortality data have proven useful in developing clues about the causes of cancer and in targeting areas for future research.

Cancer incidence data were available in two states (Iowa and Connecticut) for four facilities. The cancer registries that provided this information were among those that participate in the NCI Surveillance, Epidemiology, and End Results Program and are of high quality. Survey results using cancer incidence data resembled results using cancer mortality data.

7. Did any individual county or plant have an excess risk of cancer death?

Overall, the risks for childhood leukemia, adult leukemia, and all cancers were about the same in the counties with nuclear installations as in the control counties. The areas around some facilities appeared to have higher risks of leukemia while others had lower risks. Generally, however, the differences are not large and are consistent with the random variations seen when making many comparisons based on geographic data.

The county surrounding the Millstone Power Plant located in New London, Connecticut, had a significant excess of cases of leukemia in children under 10 years of age (shown in incidence statistics) in comparison to its control counties. The RR was 3.04 after startup of the facility. Upon review, the excess risk shown using incidence data arose partly from comparison with significantly low cancer rates in the control counties rather than from a high rate in the study county.

No other excesses of childhood leukemia were found that could be linked to any of the nuclear facilities. Further, three facilities—San Onofre in Orange County and San Diego County, California; Quad Cities in Rock Island County and Whiteside County, Illinois; and Vermont Yankee in Windham County, Vermont—were marked by significant deficits in the RR for leukemia death at 10 to 19 years of age. The RRs were 0.75, 0.24, and 0.09, respectively.

8. Is it possible that "chance" could explain some of the high or low relative risks observed in the survey?

Due to the large scope of the study and the many comparisons made, it could be expected that a number of "statistically significant" increased or decreased RRs would be observed due to chance alone. Further, significant variations in rates might also result from underlying differences in other cancer risk factors that have nothing to do with the presence of nuclear facilities. The prevalence of important risk factors, such as cigarette smoking and diet, might be the cause of many of the observed differences in cancer rates between study and control counties. As expected, comparisons of cancer rates in study and control counties showed substantial variation, but there was no general tendency for cancer rates to be higher after nuclear facilities began operating than before operation began.

9. Did the counties with DOE facilities, individually or as a group, have an increased risk of cancer for the surrounding counties?

The findings for the DOE facilities were similar to those for the electricity-generating plants. There was no overall suggestion of cancer excesses that could be attributed to the presence of the DOE nuclear facilities. The lone commercial fuel reprocessing plant was included in the overall evaluation of DOE facilities.

For these counties, the RRs for childhood leukemia (ages birth to 9 years) were 1.45 before the facilities began operation and 1.06 after opening. For all other childhood cancers, the RRs were 1.06 and 0.95 before and after operation began, respectively. For leukemia at all ages, the RRs were 1.07 before startup and 0.96 after startup. For other cancer at all ages, the RRs were essentially the same, 1.06 before startup and 1.04 after startup.

10. Why was the study based on the county as the geographic unit?

The data for a study based on counties were readily available for the entire United States. NCI and the U.S. Environmental Protection Agency have prepared detailed data on cancer mortality by county since 1950. Population data, which are needed to calculate cancer rates, are also available by county. Thus, the county was the smallest geographic unit for which nationwide data could be quickly evaluated.

11. Have similar county-based studies been valuable in the past?

Yes, surveys using methods that analyze county mortality patterns have been used effectively several times by NCI. Based on findings from NCI "cancer maps" constructed from county mortality statistics, a clustering of lung cancer deaths was seen among residents of counties along the southern Atlantic coast. Across the United States, counties with shipyard industries were found to have elevated rates of lung cancer deaths, particularly in men. Subsequent indepth studies of the high-risk areas linked the excess lung cancer deaths to asbestos and cigarette smoke exposure in shipyards, especially during World War II.

In another study, mortality rates from lung cancer were found to be elevated among men and women living in counties with smelters and refineries that emitted arsenic. A previous NCI study had shown arsenic to cause lung cancer in smelter workers who were heavily exposed to the substance. Further analytical study of counties with smelters showed an elevated risk of lung cancer associated with residential exposure to arsenic released by smelters into the local environment.

The county mortality surveys are often considered a first step toward directing future research efforts. These surveys also have their limitations. The county may be too large to detect risks present only in limited areas, death certificates are sometimes not accurate regarding the actual cause of death, and exposures to individuals are unknown.

12. Would a study based on smaller geographic units be feasible?

Mortality and population data are not available on a national basis for areas smaller than counties. The data required for studies of small areas, such as cities or neighborhoods, are collected at the state or local level when they are available.

Using the existing county mortality data, the survey took 3 years to complete. A national survey using data for areas smaller than counties would take much longer.

13. Were the study design and results reviewed?

In addition to internal review, the design of the study was evaluated by an expert team of scientists from outside the U.S. Government who also reviewed the entire intramural research program of the Radiation Epidemiology Branch in the Division of Cancer Etiology (DCE), NCI.

Because of the importance of clarifying any potential health hazards associated with living near nuclear facilities, a special advisory group was also established to help evaluate the study results. The advisory group consisted of selected members of DCE's Board of Scientific Counselors as well as other scientists from outside the U.S. Government with expertise in radiation epidemiology.

14. What levels of radiation might be expected from the normal operation of most of the nuclear facilities studied?

Reported radioactive releases from monitored emissions of nuclear facilities in the United States show very low radiation exposure to the surrounding populations. Maximum individual radiation doses from these plants are reported to be less than 5 millirem annually, or less than 5 percent of what is received annually from natural background sources of radiation, such as cosmic rays and radon. Levels this low are believed to be too small to result in detectable harm. However, there have been high releases of radioactive emissions from some facilities, such as the Hanford facility (Benton, Franklin, and Grant Counties, Washington).

It is important to distinguish between a major release of radioactivity from a reactor accident, such as the accident at Chernobyl in the former Soviet Union, and the small amounts of radiation that are likely to be emitted by nuclear facilities under normal operation.

15. Will there be more research on the possible hazards of living near nuclear facilities?

The NCI county mortality survey is only the initial step in evaluating the possible hazards of living near nuclear facilities. The study provides background information that will complement that from other studies being conducted or planned by the Centers for Disease Control and Prevention, various state health departments, and other groups. Information gained from this survey and other ongoing projects will guide future research efforts.

In its consensus statement, the ad hoc advisory committee that reviewed and evaluated this study has also recommended areas for further research.

The complete three-volume report titled *Cancer in Populations Living Near Nuclear Facilities* can be ordered from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402-9325. The GPO stock number is 017-042-00276-1.

Appendix
Facilities and Counties Included in the Study

State	County	Study Facility	Year of Startup
Alabama	Houston	Farley	1977
	Lawrence	Browns Ferry	1973
	Limestone	Browns Ferry	1973
Arkansas	Pope	Arkansas	1974
California	Amador	Rancho Seco	1974
	Humboldt	Humboldt Bay	1963
	Orange	San Onofre	1967
	Sacramento	Rancho Seco	1974
	San Diego	San Onofre	1967
	San Joaquin	Rancho Seco	1974
Colorado	Boulder	Fort St. Vrain	1976
		*Rocky Flats	1953
	Jefferson	*Rocky Flats	1953
	Larimer	Fort St. Vrain	1976
	Weld	Fort St. Vrain	1976
Connecticut	Middlesex	Haddam Neck	1967
	New London	Millstone	1970
Delaware	New Castle	Salem	1976
Florida	Citrus	Crystal River	1977
	Dade	Turkey Point	1972
	St. Lucie	St. Lucie	1976
Georgia	Appling	Hatch	1974
	Burke	*Savannah River	1950
	Early	Farley	1977
	Toombs	Hatch	1974
Idaho	Bingham	*Idaho National Engineering Lab.	1949
	Butte	*Idaho National Engineering Lab.	1949
	Jefferson	*Idaho National Engineering Lab.	1949
Illinois	Grundy	Dresden	1960
	Lake	Zion	1972
	Rock Island	Quad Cities	1972
	Whiteside	Quad Cities	1972
	Will	Dresden	1960
Iowa	Benton	Duane Arnold	1974
	Harrison	Fort Calhoun	1973
	Linn	Duane Arnold	1974
Kentucky	Ballard	*Paducah Gas. Diff.	1950
	McCracken	*Paducah Gas. Diff.	1950
Maine	Lincoln	Maine Yankee	1972
	Sagadahoc	Maine Yankee	1972
Maryland	Calvert	Calvert Cliffs	1974
Massachusetts	Berkshire	Yankee Rowe	1960
	Franklin	Vermont Yankee	1972
		Yankee Rowe	1960
	Plymouth	Pilgrim	1972
Michigan	Berrien	Cook	1975
	Charlevoix	Big Rock Point	1962
	Emmet	Big Rock Point	1962
	Monroe	Fermi	1963
	Vanburen	Palisades	1971

Minnesota	Goodhue	Prairie Island	1973
	Sherburne	Monticello	1971
	Wright	Monticello	1971
Missouri	Atchinson	Cooper Station	1974
Nebraska	Gage	Hallam	1962
	Lancaster	Hallam	1962
	Nemaha	Cooper Station	1974
	Richardson	Cooper Station	1974
	Washington	Fort Calhoun	1973
New Hampshire	Cheshire	Vermont Yankee	1972
New Jersey	Ocean	Oyster Creek	1969
	Salem	Salem	1976
New York	Cattaraugus	**Nuclear Fuel Services	1966
	Oswego	Nine Mile Point/Fitzpatrick	1969
	Rockland	Indian Point	1962
	Wayne	GINNA	1969
	Westchester	Indian Point	1962
North Carolina	Brunswick	Brunswick	1975
	Gaston	McGuire	1981
	Lincoln	McGuire	1981
	Mecklenburg	McGuire	1981
Ohio	Butler	*Fernald	1951
		*Mound	1947
	Hamilton	*Fernald	1951
	Montgomery	*Mound	1947
	Ottawa	Davis Besse	1977
	Pike	*Portsmouth Gaseous Diffusion	1952
	Warren	*Mound	1947
Oregon	Columbia	Trojan	1975
Pennsylvania	Beaver	Shippingport/Beaver Valley	1957
	Dauphin	Three Mile Island	1974
	Lancaster	Peach Bottom	1974
		Three Mile Island	1974
	York	Peach Bottom	1974
		Three Mile Island	1974
South Carolina	Aiken	*Savannah River	1950
	Barnwell	*Savannah River	1950
	Chesterfield	Robinson	1970
	Darlington	Robinson	1970
	Oconee	Oconee	1973
	Pickens	Oconee	1973
South Dakota	Lincoln	Pathfinder	1964
	Minnehaha	Pathfinder	1964
Tennessee	Anderson	*Oak Ridge	1943
	Hamilton	Sequoyah	1980
	Roane	*Oak Ridge	1943
Virginia	Caroline	North Anna	1978
	Hanover	North Anna	1978
	Isle of Wight	Surry	1972
	Louisa	North Anna	1978
	Surry	Surry	1972
Vermont	Windham	Vermont Yankee	1972

Washington	Benton	*Hanford	1943
	Cowlitz	Trojan	1975
	Franklin	*Hanford	1943
	Grant	*Hanford	1943
Wisconsin	Kenosha	Zion	1972
	Kewaunee	Kewaunee	1973
		Point Beach	1970
	Manitowoc	Kewaunee	1973
		Point Beach	1970
	Pierce	Prairie Island	1973
West Virginia	Vernon	La Crosse (Genoa)	1967
	Hancock	Shippingport/Beaver Valley	1957

* Department of Energy facility

** Commercial fuel reprocessing plant

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Related NCI materials and Web pages:

- Radioactive I-131 from Fallout Web Page (<http://www.cancer.gov/cancertopics/causes/i131>)

How can we help?

We offer comprehensive research-based information for patients and their families, health professionals, cancer researchers, advocates, and the public.

- **Call** NCI's Cancer Information Service at 1-800-4-CANCER (1-800-422-6237)
- **Visit** us at <http://www.cancer.gov> or <http://www.cancer.gov/espanol>
- **Chat** using LiveHelp, NCI's instant messaging service, at <http://www.cancer.gov/livehelp>
- **E-mail** us at cancergovstaff@mail.nih.gov
- **Order** publications at <http://www.cancer.gov/publications> or by calling 1-800-4-CANCER
- **Get help** with quitting smoking at 1-877-44U-QUIT (1-877-448-7848)

This fact sheet was reviewed on 4/19/11

FOR: The Commissioners

FROM: Brian W. Sheron, Director
Office of Nuclear Regulatory Research

SUBJECT: RESULTS OF THE ANALYSIS OF CANCER RISKS IN POPULATIONS
NEAR NUCLEAR FACILITIES: PHASE 2 PILOT PLANNING PROJECT
AND STUDY STATUS

PURPOSE:

The purpose of this paper is to update the Commission on the analysis of cancer risks in populations near nuclear facilities study and study status. This paper does not address any new commitments or resource implications.

BACKGROUND:

Each commercial nuclear power plant and fuel cycle facility that the NRC regulates is authorized to release radioactive materials to the environment as specified in the regulations and licensing documents, in compliance with dose limits for members of the public and concentration limits for liquid and gaseous effluent releases. The staff has concluded that offsite doses to individual members of the public as a result of these routine releases are a small fraction of the dose limits specified in Title 10 of the *Code of Federal Regulations* (10 CFR) Part 20, "Standards for Protection Against Radiation," specifically 10 CFR 20.1301(a) and (e). The offsite dose to the highest exposed member of the public is also generally less than 1 percent of the amount of radiation the average U.S. citizen receives in a year from all background sources. Nonetheless, some stakeholders have continued to express concerns about the potential effect of these releases on the health of residents living near nuclear facilities.

CONTACT: Terry Brock, RES/DSA
301-251-7487

These concerns are not new or unique to the United States. Since 2008, Canada, France, Germany, Great Britain, Spain, and Switzerland have all conducted epidemiological studies near nuclear facilities within their borders to address public health concerns. These studies have generally found no association between facility operations and increased cancer risks to the public that are attributable to the releases. ~~For example, the German study did find an association of increased childhood leukemia risk within 5 kilometers of the facilities; however, upon examination of the offsite exposures, the authors concluded the increased risk could not be attributable to releases from the facilities¹.~~

To help address these stakeholder concerns, the staff has been using the 1990 National Cancer Institute (NCI) study, "Cancer in Populations Living near Nuclear Facilities" (Agencywide Documents Access and Management System (ADAMS) Accession No. ML15035A630), and other more recent epidemiological reports conducted by various State health departments when communicating with the public 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 is 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 25 years old, and the staff recognized that an update to this data would allow the staff to provide more contemporary cancer information on populations living near NRC-licensed nuclear facilities.

Staff originally requested that NCI to provide the update. However they were unable to provide staff to support the study and they indicated these types of studies were no longer in their research focus. NCI still supports the original report and has a fact sheet on the study that is publicly available on their web site at: <http://dceg.cancer.gov/about/organization/programs-ebp/reb/fact-sheet-mortality-risk>.

In April 2010, the NRC requested the National Academy of Sciences (NAS) perform a study on cancer risks in populations living near NRC-licensed facilities to update the 1990 NCI study. NRC and NAS decided to divide the study into phases. In Phase 1, NAS explored the feasibility of conducting an updated study by developing modern methods to perform the analysis. This was documented in the 2012 report, "Analysis of Cancer Risks in Populations Near Nuclear Facilities: Phase 1" (ADAMS Accession No. ML15035A132). The staff communicated the results of the Phase 1 study and the NAS recommendations for the second phase pilot studies in SECY-12-0136, "Next Steps for the Analysis of Cancer Risks in Populations near Nuclear Facilities Study" (ADAMS Accession No. ML12249A121). In Phase 2, NAS would conduct pilot studies to determine the ability to practically apply the Phase 1 methods at seven sites recommended by the NAS committee: Dresden (in Illinois), Millstone (in Connecticut), Oyster Creek (in New Jersey), Haddam Neck (decommissioned; in Connecticut), Big Rock Point (decommissioned; in Michigan), San Onofre (in California), and Nuclear Fuel Services (in Tennessee). NAS 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. NAS specifically recommended the pilot study examine two study designs: a population study of cancer diagnosis and mortality rates for multiple cancer types and all age groups, down to the census-tract level (sub-divisions of a county), and a case control study of childhood cancers in children born within a fixed distance of a nuclear facility². Upon completion of the proposed Phase 2 pilot studies, NAS was to

¹ Kaatsch P, et al. "Leukaemia in Young Children Living in the Vicinity of German Nuclear Power Plants," *International Journal of Cancer*, 2008 Feb 15; 122(4):721-6.

² The population-based study design uses a geographical area as the unit of observation (e.g., census tract

determine whether further study is practical on a nationwide scale, and the NRC staff was charged with determining whether to perform the studies at all NRC-licensed facilities (i.e., balance of operating nuclear power plants and fuel-cycle facilities).

NAS split the Phase 2 pilot study into a pilot planning project and a pilot execution project. This paper describes staff's evaluation of the NAS pilot planning project report, "Analysis of Cancer Risks Near Nuclear Facilities: Phase 2 Pilot Planning" (ADAMS Accession No.: ML15035A135) and study status.

DISCUSSION:

NAS: Phase 2 Pilot Planning Project Results

NAS stated in the pilot planning report that the pilot studies are meant to determine the practicality of implementing the methods and study designs recommended in Phase 1. NAS also said the interpretation and communication of risk estimates from the pilot study, ~~if reported~~, should be done with "great caution." It emphasized that any data collected during the pilot study would have limited use for estimating cancer risks in populations near each of the nuclear facilities or for the seven nuclear facilities combined because of the imprecision inherent in estimates from small samples. Furthermore, any decision to proceed with a full scope study should be based solely on conclusions related to practicality and not on risk estimates, since the risk estimates are inherently imprecise. NAS also highlighted that the population-based study at the census tract level had significant issues. Staff interpreted that the population-based census tract study design may not be feasible. NAS also communicated to staff that the execution phase of the pilot study will require "significant resources" to complete (39 months and cost \$8 million).

In addition, the staff estimates that it may take NAS 8 to 10 years ~~from now~~ to complete the pilot and the subsequent nation-wide studies before NRC has final cancer risk results to share with NRC stakeholders—the original intent of the project. That would possibly prolong the study to 2025, 15 years after the start of the project with NAS. After staff members reviewed the pilot planning report and execution phase proposal, ~~they~~ staff do not believe it is worthwhile to complete the pilot study, given the NAS position regarding the limited usefulness of the results to draw conclusions about the pilot plants (or just as importantly, single facilities), the long duration and high cost of the pilot study, and the long duration of subsequent studies.

NAS Alternate Approach

Staff expressed concerns to NAS about the lack of usefulness of the pilot study results in communicating cancer risks to stakeholders and the overall study duration. Staff requested that NAS focus on providing final results for the next phase of the study to shorten the study time. Specifically, staff asked NAS to focus on the Phase 1 recommended case-control study design and perform an analysis of a sample of facilities in the United States to draw statistically valid and generalizable results to the entire fleet. In response, NAS proposed that the pilot planning committee reconvene to examine our request for the alternate approach at an additional

Comment [SG]: The intent of this sentence is unclear to me. What is the meaning of "perform an analysis of a sample of facilities..." Is this in lieu of the case control study of childhood cancers in children?

as proposed by NAS, county as used in the 1990 NCI report, ZIP Code) and uses an aggregate analysis that looks at a study factor (exposure) and an outcome factor (disease or death) measured in the geographical area at the same time. This study can show possible associations between exposure and disease. The case-control study design compares the prevalence of risk factors or exposures in a series of diseased study subjects (cases) with the prevalence of risk factors or exposures in a series of disease-free study subjects (controls).

\$200,000 for a 9-month study. After the new review, NAS estimated another 50 months to complete the alternate approach at an uncertain cost.

U.S. National Council on Radiation Protection and Measurements (NCRP) Approach

In an unsolicited proposal, the NCRP offered to directly update the 1990 NCI study report within a shorter time frame and cost (staff estimates approximately 2 to 3 years and \$2.5 million). The NCRP is an organization chartered by the U.S. Congress as the National Council on Radiation Protection and Measurements. The Charter of the Council (Public Law 88-376) states its objectives to include: collect, analyze, develop and disseminate in the public interest information and recommendations about (a) protection against radiation and (b) radiation measurements, quantities and units, particularly those concerned with radiation protection.

NCRP offered to directly update the 1990 NCI study report within a shorter time frame and cost (staff estimates approximately 2 to 3 years and \$2.5 million). The NCRP update would be a more modest initiative. Instead of the NAS recommended two study designs, NCRP would use the same methods used in the 1990 study—a countywide population-based study design, and would be able to provide final results in a reasonable time period to meet the original staff goal of having updated information. The NCRP's lead investigator used to work for NCI where he designed, directed, and completed the original 1990 study.

The results of the NCRP update would be a consensus report going through their scientific committee and peer-review process. The staff would ask NCRP to update the report with new results for certain NRC facilities not operational or considered at the time of the 1990 study using the same NCI approach of studying population risks at the county level (e.g., Nuclear Fuel Services in Tennessee, Braidwood and Byron Nuclear Generating Stations in Illinois). The staff would ask NCRP upon completion of the update if further study should be done utilizing the NAS Phase 1 case-control study design—generally considered a more robust design.

CONCLUSION:

After considering the three options above, staff felt the NCRP was a reasonable option to move forward. However, due to the current budget environment, the staff has decided to not move forward with this project at this time. The NRC staff initiated this project in an effort to be responsive to stakeholders concerns about cancer risks; however, the current budget environment has required the agency to prioritize its spending to focus on activities directly related to protecting public health and safety (e.g., inspections and licensing). The uncertainty in the NRC budget for the foreseeable future precludes the agency from spending any additional funds on this project.

COORDINATION:

The Office of the General Counsel has reviewed this paper and has no legal objection.

Brian W. Sheron, Director
Office of Nuclear Regulatory Research

COORDINATION:

The Office of the General Counsel has reviewed this paper and has no legal objection.

Brian W. Sheron, Director
Office of Nuclear Regulatory Research

ADAMS Accession No.: ML15141A404

OFFICE	RES/DSA/RPB	Tech Editing	BC:RES/DSA/RPB	D:RES/DSA	R-I
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OFFICE	D:NMSS	D:NRR	D:NSIR	D:NRO	D:OGC
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OFFICE	D:OPA	D:RES			
NAME	E. Brenner	B. Sheron			
DATE	/ /	/ /	/ /	/ /	

OFFICIAL RECORD COPY

Stevens, Margo

From: Garry, Steven
Sent: Monday, May 14, 2012 4:57 PM
To: Shoop, Undine
Cc: Conatser, Richard; Meighan, Sean
Subject: Yellow Ticket: Y020120096 NRR review of draft Phase I National Academy of Science cancer study
Attachments: 120509_RLC_Comments on NAS Cancer Study_Phase I_For Yellow Ticket.docx; 120509_SCM_Comments on NAS Cancer Study_Phase I_For Yellow Ticket.docx; S Garry comments on NAS cancer study.docx

Undine,

As requested and assigned in Yellow Ticket 020120096, attached are 3 sets of comments on the NAS Phase I cancer study from the AHPB staff (Richard Conatser, Sean Meighan, and myself).

Steve Garry
301-415-2766
NRR / DRA / AHPB

From: Craver, Patti
Sent: Wednesday, May 02, 2012 1:13 PM
To: Cruz, Holly; FAST Resource
Cc: Garry, Steven; Shoop, Undine; Conatser, Richard
Subject: RE: Request to change date of YT: Y020120096

Done!

Thanks,
Patti

From: Cruz, Holly
Sent: Wednesday, May 02, 2012 12:49 PM
To: FAST Resource
Cc: Craver, Patti; Garry, Steven; Shoop, Undine; Conatser, Richard
Subject: Request to change date of YT: Y020120096

Hi Patti,

Could you please change the due date of Y020120096, TAC ME8451 to May 15th, per the change in the RES memo noted below?

Thanks for your help,

Holly

Holly Cruz, Project Manager
Licensing Processes Branch (PLPB)
Division of Policy and Rulemaking

Office of Nuclear Reactor Regulation
Phone: (301) 415-1053
Location: O12F12
M/S: O12E1
email: holly.cruz@nrc.gov



From: Garry, Steven
Sent: Wednesday, May 02, 2012 12:12 PM
To: Shoop, Undine; Cruz, Holly; Conatser, Richard
Subject: FW: REQUEST: NEW DUE DATE review and comment on the NAS Phase 1 Cancer Risk Study

Holly,

Can you revise the Yellow Ticket Y0120096 due date from May 7th to May 15th per the email below? (see attached yellow ticket).

Thanks

Steve Garry

From: Brock, Terry
Sent: Wednesday, April 25, 2012 3:04 PM
To: Brock, Terry; Cassidy, John; Burnell, Scott; Chapman, Gregory; Dacus, Eugene; Dehmel, Jean-Claude; Garry, Steven; Jones, Andrea; McIntyre, David; Milligan, Patricia; Mizuno, Beth; Nimitz, Ronald; Stearns, Don; VonTill, Bill; Weil, Jenny; Woodruff, Gena; Rakovan, Lance; Diaz, Marilyn; Bush-Goddard, Stephanie; Humberstone, Matthew; Conatser, Richard; Tomon, John; Salomon, Stephen; Burnell, Scott
Subject: REQUEST: NEW DUE DATE review and comment on the NAS Phase 1 Cancer Risk Study

All,

RES sent out the official memo requesting comments on the NAS Phase 1 cancer study report to your respective offices with a new due date of Tuesday, May 15.

Thanks for your continued support,

Terry

Terry Brock, Ph.D.
Office of Nuclear Regulatory Research
U.S. Nuclear Regulatory Commission
Washington D.C. 20555
Mail Stop CSB-3A07
phone: 301-251-7487

From: Brock, Terry
Sent: Thursday, April 12, 2012 12:07 PM
To: Brock, Terry; Cassidy, John; Burnell, Scott; Chapman, Gregory; Dacus, Eugene; Dehmel, Jean-Claude; Garry, Steven; Jones, Andrea; McIntyre, David; Milligan, Patricia; Mizuno, Beth; Nimitz, Ronald; Stearns, Don; VonTill, Bill; Weil, Jenny; Woodruff, Gena; Rakovan, Lance; Diaz, Marilyn; Bush-Goddard, Stephanie; Humberstone, Matthew; Conatser, Richard;

Tomon, John; Salomon, Stephen; Burnell, Scott

Subject: REQUEST: review and comment on the NAS Phase 1 Cancer Risk Study

All,

This is a heads-up that RES will be sending out a formal memo request for review and comment on the NAS Phase 1 Cancer Risk Study in the next couple of days. You all have been identified as the POC for your organizations in the memo. We're asking for comments back by Monday, May 7, 2012. Once I get the comments I'll put a meeting together to talk about next steps.

The NAS report, "Analysis of Cancer Risks in Populations near Nuclear Facilities: Phase I" is available in ADAMS at ML120860057 .

Thanks,
Terry

Terry Brock, Ph.D.
Office of Nuclear Regulatory Research
U.S. Nuclear Regulatory Commission
Washington D.C. 20555
Mail Stop CSB-3A07
phone: 301-251-7487

Comments on NAS Cancer Study, Phase I Report

ADAMS ML120860057

By Richard L. Conatser

NRC/NRR/DRA/AHPB

14-May-12

#	Page	Affected Text	Comment
1	S.1	<i>Uneven availability and quality of data on nuclear facility effluent releases.</i> Effluent release data may not be available....	The NRC has high confidence that a complete set of effluent data is available. Some of the data may be on microfilm or microfiche, and as a result, may take time to retrieve, but it is expected that all information is available.
2	S.1	<i>Uneven availability and quality of data on nuclear facility effluent releases.</i> Effluent release data may not be available and data quality may be poor for some nuclear facilities.	This gives the impression that the data has low quality. There are NRC regulations regarding the quality of the data, so this sentence could (or does) convey to the reader that licensees were not in compliance with NRC regulations. I do not think that is what the authors intended to say. I believe this sentence intended to say that the quality of the microfiche/microfilm that contains the reports may be questionable. You may wish to reword this sentence to clarify the intent.
3	S.2	<i>Low expected statistical power.</i>	You may wish to include some additional summary information here about the range(s) of doses that some previous studies have historically linked to cancer mortality or morbidity to provide some context to the (doses from radioactive effluents proposed by the) current NAS study.
4	S.2	Doses resulting from monitored and reported radioactive effluent releases from nuclear facilities are expected to be low.	This seems to say that the doses from unmonitored and/or unreported releases may be high. In fact, any doses from unmonitored and/or unreported releases are expected to be a small fraction of the monitored and reported releases. As a result, the words "monitored and reported" have no value in this sentence. Indeed these words could suggest to the reader that unmonitored or unreported doses may not be low. Consider deleting the words "monitored and reported."

5	F.2	Additionally, 10 CFR 50.36(a)(2) requires licensees to submit annual reports specifying the principal radionuclides released in liquid and gaseous effluents.	Change the reference to the regulation to "...10 CFR 50.36a(a)(2) ..."
6	F.2	radiological effluent release technical specifications (RETS),	Editorial: You may choose to delete the word "release" since it is redundant when used with the word effluent. This appears elsewhere in the document as well. Deal with the globally in the document as you see fit. Editorial.
7	F.2	...place annual limits of 0.025 rem (0.25 mSv) to the whole body, 0.075 rem (0.75 mSv) to the thyroid, and 0.025 rem (0.25 mSv) to any other organ of any member of the public as the result of planned discharges of radioactive materials, excluding radon and its progeny, to...	The applicability of 40 CFR 190 includes doses received as a result of operations which are part of the nuclear fuel cycle. As a result, it includes both planned and unplanned (or abnormal) discharges. So either (1) delete the word "planned" or (2) add the words "and unplanned," or (3) use the words from the applicability section of 40 CFR 190.
8	G.1	Methods for estimating airborne and liquid effluent dispersions from nuclear plants are described in Regulatory Guides 1.111	RG 1.111 is for airborne only. Delete "and liquid."
9	G.2	Title 10, Part 50 of the Code of federal Regulations (10 CFR 50.36(a)(2) requires licensees to report the principal radionuclides in effluent releases.	Should be "10 CFR 50.36a(a)(2)"
10	H.1	Radioiodine is measured weekly and gross beta activity of particulates captured on filters is measured quarterly...	Please check this frequency. Radioiodine and gross beta activity of particulates captured on filters are measured weekly.
11	H.1	Analyses to identify gamma-emitting radionuclides are done on composite samples	Please check this frequency. Analyses to identify gamma-emitting radionuclides are done on composite samples quarterly.

		weekly.	
12	H.1	The RETS require that the licensee submit	Did you mean to say "REMP"? The items in the bullet list are typically associated with REMP.
13	H.2	one sample of each of on to three (Wc1 – Wc3) of the nearest water supplies that could be affected by	Editorial. Should be as follows: "one sample of each of one to three (Wc1 – Wc3) of the nearest water supplies that could be affected by"
14	H.2	TABLE H.1 Water Sampling and Analysis Recommendations	Footnotes are listed at the bottom of the table, but no footnote references appear in the table. Add footnote references in the table that match the footnotes at the bottom of the page.
15	2.45	FIGURE 2.1 Noble gas releases from (A) BWRs and (B) PWRs in 2008. SOURCE: Daugherty and Conaster (2008)	Should be spelled " Conatser "
16	2.48	FIGURE 2.2 Iodine-131 releases from (A) BWRs and (B) PWRs in 2008. SOURCE: Daugherty and Conaster (2008)	Should be spelled " Conatser "
17	2.51	FIGURE 2.3 Particulate releases from (A) BWRs and (B) PWRs in 2008. SOURCE: Daugherty and Conaster (2008)	Should be spelled " Conatser "
18	2.54	FIGURE 2.4 Tritium (H-3) releases from (A) BWRs and (B) PWRs in 2008. SOURCE: Daugherty and Conaster (2008)	Should be spelled " Conatser "
19	2.6	The committee was not able to locate many of the reports for these plants, especially prior to 1975, ...	I assisted in the retrieval of a few of these reports from microfiche. It was a time-consuming task, and there was simply not enough time allowed to retrieve all of the reports. It is expected that all reports can be located on microfiche, but it will take much more time than was allotted during the NAS Phase 1 report. I recommend rewording this to say, " Retrieval of historical reports from microfiche is a time-consuming task, and because a limited amount of time was available during the Phase 1 Study, the

			<p>committee was not able to locate many of the reports for these plants, especially prior to 1975. Provided sufficient time is allowed for a thorough search of the records, there is reason to believe that all of the reports can be made available to the committee."</p> <p>As an alternative to the above wording, the text at left could be treated the same as is done on page 2.13 (for fuel cycle facilities). There it says, "the availability of effluent release data prior to the mid 1970s is unclear."</p>
20	2.6	..., and some of the reports on microfiche were not legible.	<p>Most of the reports provided were legible, and for those reports there would be no problem with a dose reconstruction. On the other hand, some portions of some of the reports were not legible, but other portions of those reports were completely legible. Generally, when copies were poor, the illegibility affected only one calendar quarter's data for a particular radionuclide. The other 3 calendar quarters' data for that nuclide were typically legible. As a result it becomes a question of how much data is required for a reasonable dose reconstruction. In reality, in any particular year at any site, even though 20-40 radionuclides may be reported in the annual effluent reports, 90% (or more) of the dose to the members of the public is due to the contributions of only about 12 nuclides. As a result, I would suggest that a reasonable dose reconstruction could most likely be conducted even when using the annual reports that were partially illegible.</p> <p>As a result, please consider rewording the text at left as follows:</p> <p>"Some portions of some of the reports on microfiche were not legible, and this would be a challenge for any dose reconstruction. If a dose reconstruction were conducted using partially illegible reports, the resulting reconstructed doses could potentially provide a reasonable estimate of the doses to nearby populations, even though there would be more total uncertainty with the dose estimates."</p>
21	2.10	...groundwater monitoring within a licensee's site is only required if the groundwater is used for	<p>Revise as follows:</p> <p>"Undetected liquid leakage that enters the</p>

		drinking or irrigation purposes.	<p>subsurface can frequently remain undetected for long periods of time because the existing groundwater monitoring requirements only apply once a leak is detected or if the groundwater is used for drinking or irrigation purposes."</p> <p>This change is requested because the statement at left only reflects the REMP ODCM requirement for groundwater monitoring. Other NRC requirements also exist, and those requirements do require licensees to monitor the groundwater. For example, 10 CFR 50.36a requires licensees to report effluents discharged to offsite areas in an annual report to the NRC. If a licensee has had a spill or leak on site, the licensee has an obligation to report those releases as an effluent in the year in which it is discharged to an offsite area. This requires some monitoring, and the monitoring would be required regardless of whether the groundwater was used for drinking water or irrigation purposes. Additionally, 10 CFR 50.75g requires licenses to maintain records important for decommissioning. If a leak or spill were to occur, a licensee has an obligation to perform the monitoring required by 10 CFR 50.75g. This monitoring is required regardless of whether the groundwater is used for drinking water or irrigation purposes. Additionally, 10 CFR 20.1501 requires adequate surveys.</p>
22	2.10	These measurements are generally not sensitive enough to detect increases above background levels except at locations close to plant boundaries.	<p>This makes it sound like the TLDs don't work except close to the site boundary. I suggest rewording as follows:</p> <p>"TLDs are sensitive enough to detect small increases above background levels, but because typical radiation exposures from power plants are so small, the power plant's contributions to the measured doses are often indistinguishable from background except at locations close to the site boundary."</p>
23	2.15	...and sediments are analyzed for gamma-emitting isotopes.	<p>Consider adding a sentence at the end which says:</p> <p>"Groundwater and drinking water samples may also be analyzed for some hard-to-detect nuclides such as Sr-90 and Fe-55."</p>
24	2.16	...were found to be above	The use of the word "limits" may cause confusion.

		the detectable limits.	Suggest rewording as follows: "...were detected."
25	2.16	radioisotope concentrations were below detection limits in the vast majority of instances.	The use of the word "limits" may cause confusion. Suggest rewording as follows: "...radioisotope concentrations were not detected in the vast majority of instances."
26	2.17	In fact, most measurements are below detection limits.	The use of the word "limits" may cause confusion. Suggest rewording as follows: "In fact, most measurements indicate no radionuclides are detected."
27	2.19	Consequently, the passive monitoring systems around nuclear plants cannot be used to quantify increases in exposure resulting from routine effluent releases and therefore cannot be used to validate estimated population doses.	I know what you are trying to say, but this seems to indicate the TLD monitoring around the power plants can't quantify increases due to routine effluents. However, one could argue that a step increase in effluents of 10 to 15 mrem per year would be detectable by TLDs. Consider clarifying the intent by replacing the text at the left with a statement similar to the one below. "Consequently, effluent doses would have to be more than 5-10 mrem per year to be detected by TLDs. Because doses from routine effluent are typically much lower than that, TLDs can only provide an upper bound (of approximately 5-10 mrem per year) for validating estimated population doses." You discuss this to a limited degree on page 3.23 (in the last paragraph before section 3.7). This may indicate there is some duplication between the discussions on pages 3.23 and 2.19.
28	2.20	Continuous air sampling measurements generally have lower limits of detection that are below the levels of airborne particulates and iodine that actually occur as a result of plant releases during normal operations. Consequently, such measurements are generally not useful for validating specific calculations of air activities,	The use of the word "limits" may cause confusion. Suggest rewording as follows: The levels of airborne particulates and iodine released during normal operations is typically below the detection sensitivity of the continuous air sampling measurements. As a result, these measurements can only provide an upper bound for validating estimated population doses."

		and possible ground contamination, based on measured release rates	
29	2.23	Almost all environmental measurements reported by facilities are either below the minimum detection limits or are not sensitive enough to allow for the development of adequate dose estimates.	The use of the word "limits" may cause confusion. Suggest rewording as shown in previous comments.
30	2.23	Data from environmental monitoring that are above minimum detection limits can,	The use of the word "limits" may cause confusion. Suggest rewording as shown in previous comments.
31	2.25	Daugherty, N., and R. Conaster (2008) Radioactive Effluents from Nuclear Plants: Annual Report 2008. Washington, DC: Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission.	Should be " Conatser "
32	2.31	NOTE: MDL = minimum detection limit.	Please check to see if this is the correct acronym. Usually MDL means minimum detectable level.
33	3.4	Upper bound values of parameters such as the time spent at the location of maximum exposure or the consumption rates of local foodstuffs are used to demonstrate that there is no doubt that the calculated doses are below the dose limits or standards, and, therefore, that there is no need to evaluate the uncertainties in the calculated doses.	<p>You may want to add a sentence at the end of this paragraph that links this discussion to the doses listed in the Annual Radioactive Effluent Release Reports. For example, you may wish to add something like the following:</p> <p>"This is why the doses reported to the NRC in the licensee's Annual Radioactive Effluent Release Reports (ARERRs) are typically overestimates of actual exposures. In the 1970s and 1980s, licensees often used very conservative, bounding assumptions when estimating radioactive releases because the primary purpose was to demonstrate compliance with the NRC design objectives and limits. The resulting dose estimates in the ARERRs often reported more dose than actually received by individuals. As a result, there are two major contributions to the decreases in radioactive effluents during the last 30 years: (1) the actual</p>

			amount of materials released has decreased (due to better fuel performance), and (2) the practice of using overly conservative estimates to calculate radioactive releases has been reduced or curtailed.”
34	3.6	Nevertheless, in recent years the estimated MEI doses are mostly less than 1 mrem/yr (Daugherty and Conaster. 2008),	Should be “Conatser.”
35	3.19	The discussion of natural background radiation is limited to the USA.	It may be appropriate to mention other very high natural background areas (e.g., Iran) to demonstrate that global natural background can be over 1000 (or 10,000) mrem per year, and that to date no correlation has been made between increases in cancer incidence at these very high natural background areas.
36	3.25	Daugherty, N., and R. Conaster. 2008. Radioactive Effluents from Nuclear Plants: Annual Report 2008. Washington, DC: Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission.	Should be “Conatser.”

Comments on NAS Cancer Study, Phase I Report

ADAMS ML120860057

By Sean Meighan
NRC/NRR/DRA/AHPB

14-May-12

#	Page	Affected Text	Comment
	14/385	carbon-14 may be a significant contributor to dose from nuclear plant releases, especially in recent years	Why "especially in recent years"
	23/385	This is primarily the result of the small radiation doses that are typically received by individuals living near nuclear facilities as a result of normal operations at those facilities (see Chapter 3).	This statement implies that large "radiation doses" have been received by members of the (U.S.) public due to abnormal operations.
	48/385	Plant sizes range from 240 MWt (Big Rock Point) to 6876 MWt (San Onofre 2 and 3). "	Somewhat misleading. Each San Onofre unit has a licensed 3438 MWt. One might read this to see each unit having 6876 MWt
	52/385	Table 2.5 provides a summary of known uncontrolled/inadvertent releases of radioactive liquids at nuclear plants over the period 1986 to 2006 (USNRC, 2006).	I am not sure what the purpose of Table 2.5 is, but it is not a full Summary of Inadvertent Releases of Radioactive Liquid Effluents at Nuclear Plants. The declarative of "Table 2.5 provides a summary of known uncontrolled/inadvertent releases..." implies that a full accounting of all sites 50.75g(1) files are contained in Table 2.5
	62/385	Continuous air sampling measurements generally have lower limits of detection that are below	I am not sure the intent of this statement. Is it stating that the LLDs of the monitoring stations are above the airborne concentrations of

	<p>the levels of airborne particulates and iodine that actually occur as a result of plant releases during normal operations. Consequently, such measurements are generally not useful for validating specific calculations of air activities, and possible ground contamination, based on measured release rates.²⁸</p>	<p>radionuclides due to normal releases? With the general definition LLD being the minimum amount of radioactivity needed to enable one to state that the sample contains radioactive material (a specific radionuclide), is the above stating that normal plant ops cause enough, or not enough airborne concentration to detect?</p>
		<p>General: Do we have an OMB clearance for all the proposed info requests?</p>
Several	<p>total collective effective dose equivalent (CEDE)</p> <p>maximum committed effective dose equivalent (CEDE)</p> <p>Committed effective dose equivalent is the time integral of the effective dose equivalent from the time of the activity intake until the age of 70 y.</p>	<p>CEDE is improperly defined (for the common usage in our industry), and inconsistent.</p>
113/385	<p>As can be seen from the figure, the total collective doses for some plants (e.g., Millstone and Dresden plants) were several orders of magnitude higher than for other plants (e.g., Fort Calhoun and Trojan plants). The estimated collective doses generally correlate with total noble gas effluent releases from the plants."</p>	<p>Wouldn't population density be a greater contributor to this value than releases?</p>

	3.7 FINDINGS AND RECOMMENDATIONS	1. <i>Absorbed dose</i> —i.e., the energy deposited by ionizing radiation per unit mass of tissue in specific organs of interest—is the appropriate dose quantity for use in an epidemiology study.	Do we agree with using absorbed dose (rad & grey) as the appropriate dose quantity for use?
	266/385		Table 5.1 has Indian Point in CT and NY (Indian Point is in NY). Also What is Table 5.1 based upon?
	General		We really need to look at pages 269 – on.

Steve Garry comments:

Note: The text in ~~strikeout~~ is provided to suggest deletion of words in the NAS report, and text in yellow is proposed new text.

General Comment:

The NAS study is proposing to basically study two areas; 1) cancer incidence/mortality and 2) radiological doses from effluents.

There is an incorrect assumption in the draft NAS report that there is a need to quantify public doses that is in the range of insignificant (micro-rem) doses. The mathematical exercise of calculating public dose as a function of distance and direction would be of value, if and only if, the magnitude of the public dose was substantial (such as in the range of background radiation doses or medical dose levels).

Instead of a dose reconstruction, the NAS study should do a bounding dose assessment to determine the upper bound of public doses. The NAS could calculate bounding dose estimates using simplified computer models using existing, readily available annual average X/Q values, and source term summaries from nuclear power plant effluent summary reports. The draft NAS reports state that the effluent data is sometimes either unavailable or is not sufficiently accurate. What is missing is the context of this implication; i.e., that the magnitude of the effluent releases does not cause substantial public dose, and therefore, the unavailability of the data or inaccuracy of the data is mostly irrelevant to the study.

Specific Comments:

Acronym: Define the acronym GIS on its first use in the document (GIS =Geographic Information System). GIS is defined in the appendix list of acronyms.

Both page S.1 and page 1.1

NAS Statement: *The U.S. Nuclear Regulatory Commission (USNRC) requested that the National Academy of Sciences (NAS) provide an assessment of cancer risks in populations near USNRC-licensed nuclear facilities that utilize or process uranium for the production of electricity (see Sidebar 1.1 in Chapter 1 for the complete statement of task).*

NRC Comment: Verify that this is an accurate statement of the NRC request, it appears to be a generalized statement vs. an exact statement of task.

Page S.1, Finding 1 – Second Bullet

NAS Statement: *Uneven availability and quality of data on nuclear facility effluent releases*

Effluent release data may not be available and data quality may be poor for some nuclear facilities. Effluent releases from many nuclear facilities were much higher in the past and their radionuclide compositions have changed over time. Uncertainties in dose estimates may be much higher in years when effluent releases were highest.

NRC Comment:

This statement should be deleted entirely, since the magnitude of these doses are so minimal. Instead, the following statement is suggested:

Since effluent release data are not likely to have resulted in substantial public dose, any effluent release data that is unavailable or of poor quality is not a significant factor in determining the outcome of the estimated public doses.

Alternately, change the last sentence to read: *Uncertainties in dose estimates may be much higher in years when effluent releases were highest, however, the magnitude of the change is likely insignificant.*

Page S.2, Finding 1 – Third bullet.

NAS Statement: "Moreover, populations near nuclear facilities receive radiation doses from multiple sources that are unrelated to facility effluent releases, for example, doses from natural background radiation and medical radiation."

NRC Comment: This statement lacks context. I suggest the following: "Moreover, populations near nuclear facilities receive approximately 100 times more radiation doses from multiple sources that are unrelated to facility effluent releases, for example, doses from natural background radiation and medical radiation."

Page S.2, Finding 1 – Last bullet

NAS Statement: *Low expected statistical power.* Doses resulting from monitored and reported radioactive effluent releases from nuclear facilities are expected to be low. As a consequence, epidemiology studies of cancer risk in populations near nuclear facilities may not have adequate statistical power to detect the presumed small increases in cancer risks arising from these monitored and reported releases.

NRC Comment: Doses resulting from monitored and reported radioactive effluent releases from nuclear facilities are expected to be low. As a consequence, epidemiology studies of cancer risk in populations near nuclear facilities ~~may not~~ are not likely to have adequate statistical power to

detect the presumed small increases in cancer risks arising from these monitored and reported releases.

Page S.4 Finding 3.

NAS Statement: FINDING 3: Effluent release, direct exposure, and meteorology data, if available, can be used to obtain rough estimates of annual variations in dose as a function of distance and direction from nuclear facilities.

NRC Comment:

FINDING 3: Effluent release, direct exposure, and meteorology data, if available, can be used to obtain rough estimates of annual variations in dose as a function of distance and direction from nuclear facilities.

Page S.4, Finding 3:

NAS Statement: Effluent release and direct exposure data collected by facility licensees are likely to be sufficiently accurate to develop a population-level dose reconstruction that provides rough estimates in annual variations in dose as a function of distance and direction from nuclear facilities. However, such data, would not be sufficient to support detailed reconstructions of doses to specific individuals living near nuclear facilities.

NRC Comment: Effluent release and direct exposure data collected by facility licensees are likely to be sufficiently accurate to develop a population-level dose reconstruction that provides rough estimates in annual variations in dose as a function of distance and direction from nuclear facilities. However, such radiological data, combined with the lack of information on the exact locations and knowledge of when individuals actually lived near a facility, would not be sufficient to support detailed reconstructions of doses to specific individuals living near nuclear facilities.

Page S.4, Finding 3:

NAS Statement: Environmental monitoring data have limited usefulness for estimating absorbed doses from effluent releases around nuclear plants and fuel cycle facilities. Almost all environmental measurements reported by facilities are either below the minimum detection limits or are not sensitive enough to allow for the development of useful dose estimates.

NRC Comment: Suggested re-wording: The gaseous and liquid effluents released by nuclear power plants have resulted in very low environmental contamination, as documented by the environmental monitoring data. The environmental monitoring data could theoretically be used to estimate doses to the members of the public, but the doses will be extremely small, since ~~and have limited usefulness for estimating absorbed doses from effluent releases around nuclear plants and fuel cycle facilities.~~ almost all environmental measurements reported by facilities are either below the minimum detection limits. ~~or are not sensitive enough to allow for the development of useful dose estimates.~~

Page S.4, Finding 3.

NAS Statement: Absorbed doses near nuclear facilities are anticipated to be low, in most cases well below variations in levels of natural background radiation in the vicinity of individual facilities. Absorbed doses are also anticipated to be below levels of radiation received by some members of the public from medical procedures and air travel.

NRC Comment: Absorbed doses near nuclear facilities are anticipated to be very low, in most cases well below variations in levels of natural background radiation in the vicinity of individual facilities. Absorbed doses are also anticipated to be approximately 100 times below levels of radiation received by some members of the public from medical procedures and air travel.

Page S.5 Summary

NAS Statement: RECOMMENDATION 1: Should the U.S. Nuclear Regulatory Commission 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: (1) an ecologic study of multiple cancer types of populations living near nuclear facilities; (2) a record-linkage based case-control study of cancers in children born near nuclear facilities.

NRC Comment: While the decision about whether to carry out one or both of these studies is the responsibility of the USNRC, NAS should make a recommendation on the feasibility of doing the study, i.e., as to whether to do the study, and whether the study is likely to provide any conclusive results.

Page S.6 Recommendation 2

NAS Statement: 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.

NRC Comment: I agree with that a pilot study should be performed, but I disagree with this NAS recommendation perform a detailed dose assessment (see comment above). I think a bounding dose assessment is appropriate. In addition, this dose data is not needed since the question is whether there is a increased cancer incidence, and the data is not being used to attempt to build a dose-cancer response function.

Page 1.3, Introduction

NAS Statement: *The committee hopes that the USNRC will be able to use this information to help make an informed decision about whether to undertake a new epidemiologic study and, what type of study to conduct.*

NRC comment: *The committee hopes that the USNRC will be able to use this information to help make an informed decision about whether to undertake a new epidemiologic study and, and if so, what type of study to conduct.*

Page 2.1, typo. *This chapter addresses the following change ~~change~~ in the statement of task for this study (see Sidebar 1.1 in Chapter 1):*

Page 2.9

NAS Statement: *However, because it can be assumed that carbon-14 activity released is approximately proportional to the thermal energy generated by the plants, the annual doses resulting from carbon-14 releases can be crudely estimated.*

NRC Comment: *However, because it can be assumed that carbon-14 activity released is approximately proportional to the thermal energy generated by the plants, the annual doses resulting from carbon-14 releases can be ~~crudely~~ estimated.*

Page 2.9 Section 2.1.4.1 Airborne Effluent Releases

NAS Statement: *The releases of some nuclides may be very uncertain or not available, particularly for earlier years of operation. Also, as previously noted, atmospheric releases of carbon-14 have not been reported until 2010, although their contribution to the collective dose may be substantial (Kahn et al., 1985; Dominion, 2010a).*

NRC Comment:

The releases of some nuclides may be very uncertain or not available, particularly for earlier years of operation. Also, as previously noted, atmospheric releases of carbon-14 have not been reported until 2010, although their contribution to the collective dose may be substantial compared to other effluent releases, but insignificant compared to background radiation levels or medical doses (Kahn et al., 1985; Dominion, 2010a).

Page 2.9 section 2.1.4.2 Liquid Effluent Releases

NAS Statement: *The committee judges that if release data are available, they are likely to be sufficiently accurate to develop credible dose estimates.*

NRC Comment: This NAS statement is a good statement, but it appears in general to be in conflict with other NAS statements regarding the adequacy of effluent data.

Page 2.12, section 2.2, EFFLUENT RELEASES FROM FUEL-CYCLE FACILITIES

NAS Statement: The reported releases shown in the table are for normal operations only; they do not include unplanned releases. As for any operating industrial facility, significant unplanned releases from fuel-cycle facilities (as well from nuclear plants) could have large impacts on doses to populations.

NRC Comment: The above NAS statement (i.e., "could have large impacts on doses to populations") is likely incorrect for nuclear power plants, and is in direct conflict with the NRC conclusion made in the NRC 2006 task force report (see below).

The USNRC's Liquid Radioactive Release Lessons Learned Task Force (USNRC, 2006) examined available data on uncontrolled release events, including additional monitoring data gathered by licensees after releases were identified. The Task Force did not find any instances where the available data indicated that the near-term health of the public was impacted by uncontrolled liquid releases to the environment (USNRC, 2006, p. 13): Based on currently available data for sites with detailed evaluations or monitoring, the inadvertent releases of radioactive liquids to surface and/or to ground-water pathways had a negligible impact on public radiation doses. For many of the identified sites, the lack of a public dose impact resulted from the radioactive contamination remaining within the owner controlled areas. For the few events which resulted in detectable radionuclide concentrations in the surface and/or ground-water samples collected outside of the owner controlled area, Dose impacts on members of the public still were determined to be negligible. However, several of the reviewed abnormal release event scenarios did, or potentially could, impact ground-water sources relative to established EPA drinking water standards.

Page 2.14 Environmental Monitoring

NAS Statement: *Monitoring therefore focuses on sampling of environmental media that might serve as pathways for radiation exposure to humans, based on effluent release pathways and the local site characteristics.*

NRC Comment: Monitoring therefore focuses on sampling of environmental media that ~~might~~ most likely serve as pathways for radiation exposure to humans, based on effluent release pathways and the local site characteristics.

Page 2.14 section 2.3.1 Atmospheric Monitoring

NAS Statement: *Measurements of direct radiation exposure using TLDs are discussed in detail in Section 2.3.4. These measurements are generally not sensitive enough to detect increases above background levels except at locations close to plant boundaries.*

NRC Comment: This statement is true but lacks context. A better statement would be: The increases in direct radiation exposure near facilities are generally too small to be detected by TLD measurements, except at locations close to plant boundaries.

Page 2.15 Section 2.3.1 Atmospheric Monitoring

NAS Statement: The data in these tables further illustrate that, for the 1970s as well as in recent years, environmental monitoring programs did not detect radioactive materials above control (or background) levels at these plants.

NRC Comment: The data in these tables further illustrate that, for the 1970s as well as in recent years, environmental monitoring programs did not detect ~~radioactive materials~~ radiation doses above control (or background) levels at these plants.

Page 2.17 Section 2.3.4 Direct Radiation Monitoring

NAS Statement: Direct exposure can also occur as a result of exposure to external irradiation from radioactive waste and spent fuel stored onsite and from induced radioactivity in BWR turbines.

NRC Comment: Direct exposure can also occur as a result of exposure to external irradiation from radioactive waste and spent fuel stored onsite and from the nitrogen-16 radionuclide induced radioactivity in BWR turbines.

Page 2.19 Section 2.3.4 Direct Radiation Monitoring

NAS Statement: Consequently, the passive monitoring systems around nuclear plants cannot be used to quantify increases in exposure resulting from routine effluent releases and therefore cannot be used to validate estimated population doses.

NRC Comment: Consequently, the passive monitoring systems around nuclear plants cannot be used to quantify the very small potential increases in exposure resulting from routine effluent releases and therefore cannot be used to validate estimated population doses.

Page 2.19

NAS Statement: As discussed later in this chapter, theoretically, fluctuations in exposure rates above background can be integrated to estimate exposure for comparison with the estimated levels calculated from the reported plant effluent releases. This provides an independent

verification of the reported effluent release levels. However, the direct radiation levels are so small that this method is of limited usefulness.

Page 2.23 Section 2.5 FINDINGS AND RECOMMENDATIONS

NRC Comment: See General Comment above: Instead of reconstructing site specific doses, the NAS study should do a bounding evaluation to validate that the public doses (e.g., in the range of < 5 mrem/yr) are indeed either negligible, or at the most, a small percentage of natural background dose or medical dose. NAS could calculate bounding dose estimates using simplified computer models using existing, readily available X/Q values based on annual average meteorology, and the source term summaries from nuclear power plant effluent summary reports. Thus, the NAS should revise its recommendation and not propose an expensive and time consuming dose reconstruction. Instead, NAS should make the high level conclusion that although dose reconstruction is feasible and could be made, the estimated dose are too low to be of significance.

Page 3.5 Section 3.2 REPORTED RADIATION DOSES AROUND NUCLEAR PLANTS

NAS Statement: Even during periods when nuclear plants released orders of magnitude more activity on average than currently (see Chapter 2), estimated external radiation doses to even the most exposed individual as a result of plant airborne effluent releases was likely only a fraction of the dose received from ambient natural background radiation

NRC Comment: Even during periods when nuclear plants released orders of magnitude more activity on average than currently (see Chapter 2), estimated external radiation doses to even the most exposed individual as a result of plant airborne effluent releases was likely only a small fraction of the dose received from ambient natural background radiation

Page 3.18 Section 3.5. OTHER RISK FACTORS

NAS Statement: Individuals living near nuclear facilities may be exposed to radiation from other sources besides facility effluent releases. The most significant sources of these other exposures are from natural background radiation, radiation from medical diagnostic procedures, and cosmic radiation from air travel.

NRC Comment: The study should also recognize that many people living near a nuclear facility work at the nuclear facility, and are likely to occupational dose that is 1-4 orders of magnitude more than public dose. The study should consider identifying and removing from the study those individuals who work at a nuclear plant, or at least remove those individuals with measureable occupational dose.

Page 3.24 Section 3.7 FINDINGS AND RECOMMENDATIONS

NAS Statement: In light of these Findings, the committee recommends that a pilot study be undertaken to demonstrate the feasibility of reconstructing absorbed doses for an epidemiology study.

NRC Comment: This recommendations should be revised to recommend a bounding dose assessment be made in lieu of a detailed dose reconstruction.

Page 5.8 5.4 PUBLIC ENGAGEMENT IN PHASE 2

Typo: The committee judges that public engagement will be an import element of any Phase 2 study.

Correction: The committee judges that public engagement will be an important element of any Phase 2 study.

Page A.2 Appendix A, Section A.1 RADIATION AS A CAUSE OF CANCER

NAS Statement: Not all countries support the LNT model at this time, but in general it is perceived that with so much uncertainty about the effects at low doses, it is appropriate to continue with the LNT model that has been in place for several decades for purposes of radiation protection.

NRC Comment: Not all countries support the LNT model at this time, but in general it is perceived that with so much uncertainty about whether there are the effects at low doses, it is appropriate to continue with the LNT model that has been in place for several decades for purposes of radiation protection.

From: Brock, Terry
Sent: Tuesday, January 11, 2011 1:20 PM
To: Brock, Terry; Damon, Dennis; Garry, Steven; Clement, Richard; Milligan, Patricia; Nimitz, Ronald; Woodruff, Gena; Orth, Steven; Stearns, Don; Virgilio, Rosetta; Mizuno, Beth; Burnell, Scott; Jones, Andrea; Dacus, Eugene; Weil, Jenny; Bagley, Susan
Cc: Anzenberg, Vered; Bush-Goddard, Stephanie
Subject: RE: cancer study update - announcement of committee members

FYI: NRC press release link >> <http://www.nrc.gov/reading-rm/doc-collections/news/2011/11-005.pdf>

Terry

From: Brock, Terry
Sent: Tuesday, January 11, 2011 10:00 AM
To: Damon, Dennis; Garry, Steven; Clement, Richard; Milligan, Patricia; Nimitz, Ronald; Woodruff, Gena; Orth, Steven; Stearns, Don; Virgilio, Rosetta; Mizuno, Beth; Burnell, Scott; Jones, Andrea; Dacus, Eugene; Weil, Jenny; Bagley, Susan
Cc: Anzenberg, Vered; Bush-Goddard, Stephanie
Subject: cancer study update - announcement of committee members

Greetings All,

The National Academy of Sciences (NAS) has completed its selection of experts for the Analysis of Cancer Risk in Populations near Nuclear Facilities—Phase 1 study. Today the NAS and NRC will be issuing joint press releases notifying the public of the provisional members selected and an opportunity for a 20-day comment period on the selectees. I've attached the bios of the provisional members for your information. Please do not distribute outside the NRC until the public announcement is made.

The kickoff meeting for the committee is tentatively scheduled for Thursday, February 24th at the NAS Keck Center in DC. Brian Sheron, RES Office Director, will be presenting NRC's charge to the study committee. I plan on holding a communication team meeting within the next two weeks to discuss the committee members, give an update on the study schedule and other activities . . . stay tuned.

Thanks,
Terry Brock

Terry Brock, Ph.D.
Office of Nuclear Regulatory Research
U.S. Nuclear Regulatory Commission
Washington D.C. 20555
Mail Stop CSB-3A07
phone: 301-251-7487

From: Brock, Terry

Sent: Thursday, September 02, 2010 3:04 PM

To: Damon, Dennis; Garry, Steven; Clement, Richard; Milligan, Patricia; Nimitz, Ronald; Woodruff, Gena; Orth, Steven; Stearns, Don; Virgilio, Rosetta; Mizuno, Beth; Burnell, Scott; Jones, Andrea; Dacus, Eugene; Weil, Jenny; Bagley, Susan

Cc: Anzenberg, Vered; Bush-Goddard, Stephanie

Subject: cancer study update

Greetings all cancer study communication team members:

Yesterday the National Academy of Sciences (NAS) started the nomination process to select committee members for the cancer study. See attached OPA press release.

We expect the selection process to take approximately 2-3 months. The first public meeting of the to-be established committee is slated for Jan. 2011. Once the committee is established I'll hold another meeting to discuss the members and the path forward for the study. In the meanwhile, take a look at the NAS website for the study at <http://dels.nas.edu/global/nrsb/CancerRisk>

Let me know if you have any questions.

Terry

Terry Brock, Ph.D.

Office of Nuclear Regulatory Research

U.S. Nuclear Regulatory Commission

Washington D.C. 20555

Mail Stop CSB-3A07

phone: 301-251-7487

From: Habighorst, Peter
Sent: Friday, January 14, 2011 1:27 PM
To: Barbara A Oneal
Cc: Ramsey, Kevin; Park, James
Subject: RE: NAS Cancer Study
Attachments: ML110110528.pdf NRC News 11-005 is already publicly available.

Thanks For your question....

My understanding is that the NRC's intention for this study is to include nuclear power plants and fuel cycle facilities that are or were in operation in the US. The study is intended to cover those counties that contain an NRC-licensed fuel cycle facilities and those adjacent counties (an adjacent county is included if it is comprises at least 20 percent of the area within a 10 mile radius of the site)

I have attached our last press announcement on January 11 for your information...In this press release we provide links to the National Academy of Science, last cancer study, ect...

Hope this helps....

-----Original Message-----

From: Barbara A Oneal [mailto:barbaraoneal@embarqmail.com]
Sent: Friday, January 14, 2011 10:04 AM
To: Habighorst, Peter
Cc: Ramsey, Kevin; Park, James
Subject: NAS Cancer Study

Pete: Regarding the NAS Cancer Study, I remember our briefly discussing it after the public meeting on Oct. 26, 2010, or perhaps it was at the Nov. 30, 2010 meeting. Whenever it was, I seem to recall you saying that the study would not necessarily focus on Erwin per se, but would be "regional?" Is that correct, and if so, do you know what area it would cover?

Thanks,
Barbara O'Neal

From: Frazier, Alan
Sent: Monday, February 07, 2011 12:23 PM
To: Ramsey, Kevin
Subject: FW: NAS Study of Cancer Risk at Nuclear Facilities & Nuclear Fuel Services-Erwin, Tennessee

Just FYI

PS. EDO staff meeting was cancelled for today so I could not ask about potential high-level visits.

-----Original Message-----

From: Weber, Michael
Sent: Sunday, February 06, 2011 9:21 PM
To: Sheron, Brian
Cc: Haney, Catherine; Dorman, Dan; McCree, Victor; Young, Mitzi; Bowman, Gregory; Frazier, Alan
Subject: Response - NAS Study of Cancer Risk at Nuclear Facilities & Nuclear Fuel Services-Erwin, Tennessee

Thanks. Both are long-term and active citizen stakeholders involved with NFS -Erwin.

----- Original Message -----

From: Sheron, Brian
To: Weber, Michael
Sent: Sun Feb 06 21:15:21 2011
Subject: FW: NAS Study of Cancer Risk at Nuclear Facilities & Nuclear Fuel Services-Erwin, Tennessee

FYI.

From: LC M (b)(6)
Sent: Sunday, February 06, 2011 10:21 AM
To: crs@nas.edu
Cc: Barbara O'Neal; Sheron, Brian
Subject: NAS Study of Cancer Risk at Nuclear Facilities & Nuclear Fuel Services-Erwin, Tennessee

06 February 2011

Good morning,

Following is an email that I had sent to Ms. Toni Greenleaf, NRSB, prior to attending the April 26, 2010 meeting announcing the NRC's request to the National Academy of Sciences for a study of cancer risk in populations living near nuclear power facilities. In my email, and at the meeting itself, I explicitly requested that Nuclear Fuel Services of Erwin, Tennessee (hereinafter, NFS-Erwin) be included in the study.

Also, at the meeting, Barbara O'Neal (of Erwin Citizens Awareness Network, Inc.) and I presented to Ms. Greenleaf a 3-inch binder full of background material and data on NFS-Erwin. At the time, we requested that Ms. Greenleaf pass that information on to the scientists who would be conducting the study and analyzing the cancer risk to communities beset by nuclear fuel-manufacturing operations.

Specifically, I am writing first to inquire whether the recently-constituted expert panel has received the background data on NFS-Erwin that we provided on April 26, 2010. If not, and in the event the binder of material was lost, please let me know to whom to send duplicate (as well as new) documentation of cancer-

causing radiation and chemical releases by NFS-Erwin onto the community and into ground and surface water used by tens of thousands of drinking-water customers.

Secondly, I am writing to request the Academy's assurance that NFS-Erwin will definitely be included in the study, as officials of the NRC had stated on a number of occasions --including on April 26th by Dr. Sheron.

Thank you, in advance, for your attention to these matters and for your quick reply.

Sincerely,
Linda Modica.

cc: Ms. Barbara O'Neal - Erwin Citizens Awareness Network, Inc. (ECAN)
Dr. Brian Sheron - Nuclear Regulatory Commission (NRC)

Linda Cataldo Modica, Chair
Fuel Facilities Working Group
Sierra Club Nuclear Issues Activist Team
266 Mayberry Road
Jonesborough, TN 37659

(b)(6)

From: (b)(6)
To: nrsb@nas.edu
CC: (b)(6)
Subject: FW: NRC Asks National Academy to Study Cancer
Date: Wed, 7 Apr 2010 16:35:25 -0400

07 April 2010

Ms. Greenleaf,

I understand from today's NRC press release (<http://www.nrc.gov/reading-rm/doc-collections/news/2010/10-060.html>), and from the draft agenda for the April 26th Nuclear and Radiation Studies Board meeting, that there will be a discussion of the request for a study of cancer risk surrounding nuclear plants.

This email is a request to the Nuclear and Radiation Studies Board to include fuel manufacturing facilities in its study, especially Nuclear Fuel Services (NFS) in Erwin, Unicoi County, Tennessee. NFS currently processes highly-enriched uranium (HEU) from dismantled nuclear warheads into low-enriched uranium (LEU) for TVA nuclear power stations. In its May 29, 2007 Public Health Assessment on NFS (attached), the Agency for Toxic Substances and Disease Registry (ATSDR) found this company, which is serially-non-compliant with NRC regulations, to be an "Indeterminant Public Health Hazard" based on past conditions (ATSDR, p. 25). For current and future operations, the ATSDR would not state its findings definitively, but rather reported that "No Apparent Public Health Hazard" seemed to be posed by NFS (ATSDR, p. 25).

I also urge the Academy to consider, in its analysis of the cancer risk of nuclear power, not only radiation exposure but also the public health hazards of "'whole' mixtures" (ATSDR, p. 25) of chemicals used by nuclear fuel manufacturers such as NFS and which are released -- without prior analysis having ever been done, to our knowledge, of possible synergistic or compounding effects -- into Erwin's air and water as well as into downstream and downwind communities.

Further, I ask the Academy to consider the cancer risk to nuclear neighborhoods such as Erwin of radioactive waste processing facilities such as Studsvik which is located adjacent to Nuclear Fuel Services on land leased to Studsvik by NFS. In a December 2009 Letter to the Johnson City Press, Joe Mangano of the Radiation and

Public Health Project, found that public health statistics for Unicoi County, Tennessee show that the death rate "for infants and children -- who are most sensitive to chemical exposures -- is a staggering 130 percent higher, more than double the United States" rate (Attachment 2, Johnson City Press, 16Dec2009).

Finally, serious health problems (other than cancer) also plague communities with nuclear facilities (other than reactors). For example, drinking-water contamination by uranium-mining operations in Arizona has been tentatively linked to "Navajo Neuropathy", a disease that can cause childhood deaths.

Therefore, I suggest that the Academy broaden its analysis of cancer risk from nuclear power to include not only other health risks associated with nuclear power plants but also the cancer and other health risks caused by uranium mining, fuel manufacturing, and radioactive waste processing facilities without which nuclear power reactors could not operate.

Looking forward to your reply and an opportunity to meet with you,

Respectfully,
Linda.

Linda Cataldo Modica
266 Mayberry Road
Jonesborough, TN 37659

c: (b)(6)

e:

PS: I am not a public health expert by any definition, but am a long-time environmental activist and economist who currently serves as Chair of the Fuel Facilities Working Group of the Sierra Club's national Nuclear Issues Activist Team. I live within 15 miles of NFS & Studsvik, and 5 miles from Aerojet Ordnance, a depleted uranium weapons manufacturer. I will be in the DC area the week of April 26th with a member of the Erwin Citizens Awareness Network, and can plan to attend the public meeting on April 26th if I know in advance that I will be able to make a presentation or provide comments during the meeting.

PPS: Thank you for your time.

From: Brock, Terry
Sent: Monday, May 02, 2011 3:41 PM
To: Ramsey, Kevin; Damon, Dennis
Subject: RE: NAS request for site visit

Kevin,

Thanks for working this. I just heard from the NAS staff and they now do not think a tour during the week of the Atlanta meeting is possible and would like to work with NSF to work out an agreeable date after the meeting for a tour. NAS also wants to talk to someone from NSF to coordinate a speaker that could talk to the committee about effluents and off-site doses from the facility. Do you have a name that I can provide them?

Thanks,
Terry

Terry Brock, Ph.D.
Office of Nuclear Regulatory Research
U.S. Nuclear Regulatory Commission
Washington D.C. 20555
Mail Stop CSB-3A07
phone: 301-251-7487

From: Ramsey, Kevin
Sent: Friday, April 29, 2011 4:05 PM
To: Damon, Dennis
Cc: Brock, Terry
Subject: FW: NAS request for site visit

FYI.

From: Wheeler, Jennifer K. [mailto:JKWheeler@nuclearfuelservices.com]
Sent: Friday, April 29, 2011 3:43 PM
To: Ramsey, Kevin
Cc: Lee, D. Michelle
Subject: Re: NAS request for site visit

Sorry I lost this one... We'll get you an answer back on Monday.

Jennifer

From: Ramsey, Kevin <Kevin.Ramsey@nrc.gov>
To: Wheeler, Jennifer K.
Sent: Fri Apr 29 15:40:07 2011
Subject: FW: NAS request for site visit

Any feedback on this? They are nagging me for an answer.

From: Ramsey, Kevin
Sent: Wednesday, April 27, 2011 11:01 AM

To: 'Wheeler, Jennifer K.'; Smith, Galen; Chitty, Mark; Crespo, Manuel
Cc: Damon, Dennis; Johnson, Robert; Pelchat, John; Vias, Steven
Subject: NAS request for site visit

The National Academy of Science (NAS) is updating the cancer study around NRC-licensed sites. The update will include fuel cycle facilities. A Project Manager at NAS has asked to visit NFS and to see how environmental monitoring is conducted and how doses to the public are estimated. They have suggested a visit on 5/23 or 5/24.

Do you believe you can support the request? I can schedule a call to discuss further. I don't know what security clearance they have so access to certain areas may be restricted. If there is specific information you need, let me know and I will make sure NAS understands what we need to have a productive call.

Kevin M. Ramsey
Senior Project Manager
Fuel Manufacturing Branch
U.S. NRC
301-492-3123

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From: Wheeler, Jennifer K. <JKWheeler@nuclearfuelservices.com>
Sent: Monday, May 02, 2011 4:16 PM
To: Ramsey, Kevin
Cc: Smith, Galen; Chitty, Mark; Vias, Steven; Johnson, Robert; Pelchat, John
Subject: RE: Change to NAS request for site visit

I'm checking on this with the appropriate Subject Matter Experts here and will get back to you.

Thanks,
Jennifer

From: Ramsey, Kevin [mailto:Kevin.Ramsey@nrc.gov]
Sent: Monday, May 02, 2011 3:53 PM
To: Wheeler, Jennifer K.
Cc: Smith, Galen; Chitty, Mark; Vias, Steven; Johnson, Robert; Pelchat, John
Subject: Change to NAS request for site visit

See below. The request has evolved into a speaker in Atlanta on 5/23 (public meeting), and a site visit later.

From: Brock, Terry
Sent: Monday, May 02, 2011 3:41 PM
To: Ramsey, Kevin; Damon, Dennis
Subject: RE: NAS request for site visit

Kevin,

Thanks for working this. I just heard from the NAS staff and they now do not think a tour during the week of the Atlanta meeting is possible and would like to work with NSF to work out an agreeable date after the meeting for a tour. NAS also wants to talk to someone from NSF to coordinate a speaker that could talk to the committee about effluents and off-site doses from the facility. Do you have a name that I can provide them?

Thanks,
Terry

Terry Brock, Ph.D.
Office of Nuclear Regulatory Research
U.S. Nuclear Regulatory Commission
Washington D.C. 20555
Mail Stop CSB-3A07
phone: 301-251-7487

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From: Elliott, Mark P. <mpelliott@nuclearfuelservices.com>
Sent: Tuesday, May 03, 2011 6:50 AM
To: Ramsey, Kevin
Cc: Vias, Steven
Subject: Cancer Study

Kevin,

Please send me all information you have on a proposed cancer study in the NFS area by the National Academy of Science. Jennifer mentioned this to us yesterday.

Mark

Mark P. Elliott, Director
Quality, Safety & Safeguards
Nuclear Fuel Services, Inc
1205 Banner Hill Road
Erwin, TN 37650
o 423-743-1705
c (b)(6)
f 423-743-2315

~~This message is intended only for the individual or entity to which it is addressed and contains information that is proprietary to Nuclear Fuel Services, Inc., a subsidiary of The Babcock & Wilcox Company, and/or its affiliates, or may be otherwise confidential. If the reader of this message is not the intended recipient, or the employee agent responsible for delivering the message to the intended recipient, you are hereby notified that any dissemination, distribution or copying of this communication is strictly prohibited. If you have received this communication in error, please notify the sender immediately by return e-mail and delete this message from your computer. Thank you.~~

From: Chitty, Mark
Sent: Tuesday, May 03, 2011 8:31 AM
To: Vias, Steven; Ramsey, Kevin; Smith, Galen; Crespo, Manuel
Cc: Johnson, Robert; Pelchat, John
Subject: RE: NAS request for site visit

Steve,

This sounds like something they should be contacting the licensee about. It's not our plant. I'm not sure why we would have any involvement at all.

/R
mark

From: Vias, Steven
Sent: Monday, May 02, 2011 3:46 PM
To: Ramsey, Kevin; Smith, Galen; Chitty, Mark; Crespo, Manuel
Cc: Johnson, Robert; Pelchat, John
Subject: RE: NAS request for site visit

I believe that Galen or Mark can support this from the regional point of view.

Kevin
How much time would they require of them?

From: Ramsey, Kevin
Sent: Wednesday, April 27, 2011 11:01 AM
To: 'Wheeler, Jennifer K.'; Smith, Galen; Chitty, Mark; Crespo, Manuel
Cc: Damon, Dennis; Johnson, Robert; Pelchat, John; Vias, Steven
Subject: NAS request for site visit

The National Academy of Science (NAS) is updating the cancer study around NRC-licensed sites. The update will include fuel cycle facilities. A Project Manager at NAS has asked to visit NFS and to see how environmental monitoring is conducted and how doses to the public are estimated. They have suggested a visit on 5/23 or 5/24.

Do you believe you can support the request? I can schedule a call to discuss further. I don't know what security clearance they have so access to certain areas may be restricted. If there is specific information you need, let me know and I will make sure NAS understands what we need to have a productive call.

Kevin M. Ramsey
Senior Project Manager
Fuel Manufacturing Branch
U.S. NRC
301-492-3123

From: Damon, Dennis
Sent: Thursday, May 05, 2011 10:06 AM
To: Brock, Terry; Striz, Elise
Cc: Shaffer, Vered; Ramsey, Kevin; Chapman, Gregory
Subject: RE: Atlanta NAS meeting info

Marissa Bailey and Tony Gody (Region II Director of Div. of Fuel Facility Inspection) suggested that, concerning the possible NFS Erwin visit, you might want to have the Committee members who are interested in effluent monitoring and offsite dose to talk to the people at the Tennessee Dept. of Environmental Quality about these subjects, as these are the people who take a real interest in NFS' reports on these subjects.

From: Brock, Terry
Sent: Thursday, May 05, 2011 9:41 AM
To: Damon, Dennis; Striz, Elise
Cc: Shaffer, Vered
Subject: RE: Atlanta NAS meeting info

I suggest you fly in on Sunday and you should be able to fly out Monday evening or Tuesday morning depending on your preference. The late session on Monday in Chicago was for the general public to have a chance to provide comments on the study to the committee. You do not need to stay around for that in Atlanta-but you are invited if you want to hear what people have to say. The Tuesday session is closed to the public to allow for the committee to write and deliberate.

I am working today.

Terry Brock, Ph.D.
Office of Nuclear Regulatory Research
U.S. Nuclear Regulatory Commission
Washington D.C. 20555
Mail Stop CSB-3A07
phone: 301-251-7487

From: Damon, Dennis
Sent: Thursday, May 05, 2011 9:32 AM
To: Brock, Terry; Striz, Elise
Cc: Shaffer, Vered
Subject: RE: Atlanta NAS meeting info

Terry,

Do you know anything about which day or time we might be making our presentations? I noted that the Chicago NAS meeting ran from 9:30 am to 9 pm. Should we therefore be making travel arrangements to fly in Sunday, May 22, and not leave until May 25? Marissa Bailey is still checking on whether Region II will be able to provide an HP who has knowledge of fuel cycle facilities. I have been trying to call you this morning (Thursday May 5). Are you working today?

Thanks,
Dennis Damon

From: Brock, Terry
Sent: Wednesday, May 04, 2011 4:57 PM
To: Striz, Elise; Damon, Dennis
Cc: Shaffer, Vered
Subject: Atlanta NAS meeting info

Hi Elise/Dennis

Feel free to make your travel arrangements for the May 23rd NAS cancer study meeting in Atlanta. The meeting will be held at the Renaissance Concourse Atlanta Airport Hotel.

<http://www.marriott.com/hotels/travel/atlsa-renaissance-concourse-atlanta-airport-hotel/>

NAS also wants the title of your talks, here's what I have below. Let me know if you want to change the title or if I got anything wrong. Please be aware that your talk will be webcast live and recorded & your slides will be posted on the study website. I suggest you get management concurrence on your slides before the meeting.

Talk titles:

Uranium Recovery Regulations and Operations, Dr. Elise Striz, Office of Federal and State Materials and Environmental Management Programs, U.S. Nuclear Regulatory Commission

Fuel Cycle Facilities, Dr. Dennis Damon, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission

Thanks,
Terry

Terry Brock, Ph.D.
Office of Nuclear Regulatory Research
U.S. Nuclear Regulatory Commission
Washington D.C. 20555
Mail Stop CSB-3A07
phone: 301-251-7487

From: Wheeler, Jennifer K. <JKWheeler@nuclearfuelservices.com>
Sent: Tuesday, May 17, 2011 9:17 AM
To: Ramsey, Kevin
Subject: RE: NAS cancer study announcements

Update - no we are not going to the meeting. Mark Elliott has spoken to someone from that group. He has told them they could come to NFS for a meeting that would be closed to public.

Jennifer

From: Ramsey, Kevin [mailto:Kevin.Ramsey@nrc.gov]
Sent: Thursday, May 05, 2011 1:20 PM
To: Elliott, Mark P.
Cc: Wheeler, Jennifer K.; Damon, Dennis; Bailey, Marissa; Gody, Tony; Vias, Steven; Pelchat, John; Smith, Galen; Chitty, Mark; Johnson, Robert; Hiltz, Thomas
Subject: NAS cancer study announcements

The information you requested is attached.

From: Damon, Dennis
Sent: Thursday, May 05, 2011 10:54 AM
To: Ramsey, Kevin
Cc: Bailey, Marissa; Gody, Tony
Subject: Please send to NFS: NAS cancer study announcements

Kevin,

I got a call from Mark Elliot of NFS about the request they got to give a talk at the NAS public meeting in Atlanta. I gave him Terry Brock's name if he wanted information about this project. Mark asked for the communications that announced the study. Attached are files that provide this. One is an email giving the url of the NRC webpage with our announcement. The other is a pdf of the NAS announcement. Would you please forward these to Mark, as I did not get his email address.

Dennis Damon

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January 11, 2011

Project Announcement

ANALYSIS OF CANCER RISKS IN POPULATIONS NEAR NUCLEAR FACILITIES: PHASE 1

A National Research Council committee has been appointed under the auspices of the Nuclear and Radiation Studies Board to undertake a study assessing cancer risks in populations living near U.S. Nuclear Regulatory Commission-licensed nuclear facilities. This assessment will be carried out in two consecutive phases:

A Phase 1 scoping study will identify scientifically sound approaches for carrying out the cancer epidemiology study that has been requested by the U.S. Nuclear Regulatory Commission. It will address the following tasks:

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

- Pathways, receptors, and source terms
- 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 epidemiology, 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., incidence, mortality)
- Availability, completeness, and quality of cancer incidence and mortality data
- Different epidemiological study designs and statistical assessment methods (e.g., ecologic or case-control study designs)
- Approaches for overcoming potential methodological limitations arising from low statistical power, random clustering, changes in population characteristics over time, and other confounding factors

The results of this Phase 1 scoping study will be used to inform the design of the cancer risk assessment, which will be carried out in Phase 2

This study is being sponsored by the U.S. Nuclear Regulatory Commission. Additional information about this study is posted at: <http://www8.nationalacademies.org/cp/projectview.aspx?key=49310>. The committee roster follows:

THE NATIONAL ACADEMIES

Advisers to the Nation on Science, Engineering, and Medicine

John E. Burris, Chair
Burroughs Wellcome Fund

John C. Bailar, III
The University of Chicago

Andre Bouville
National Cancer Institute (retired)

Phaedra S. Corso
University of Georgia, College of Public Health

Patricia J. Culligan
Columbia University

Paul M. DeLuca, Jr.
University of Wisconsin

Raymond L. Guilmette
Lovelace Respiratory Research Institute

George M. Hornberger
Vanderbilt Institute for Energy and Environment

Margaret Karagas
Dartmouth University

Roger E. Kasperson
Clark University

James E. Klaunig
Indiana University

Timothy Mousseau
University of South Carolina

Sharon B. Murphy
University of Texas Health Science Center (retired)

Roy E. Shore
Radiation Effects Research Foundation

Daniel O. Stram
University of Southern California

Margot Tirmarche
Institute of Radiation Protection and Nuclear Safety

Lance Waller
Emory University

Gayle E. Woloschak
Northwestern University, Feinberg School of Medicine

Jeffrey J. Wong
California Environmental Protection Agency

Administrative Staff Contact:
Shaunteé Whetstone
(202) 334-3066, swhetstone@nas.edu

From: Ramsey, Kevin
Sent: Monday, June 20, 2011 7:57 AM
To: Chapman, Gregory
Cc: Johnson, Robert
Subject: RESPONSE: dates of fuel cycle facility operations
Attachments: fuelcyclefacilities4NASstudy.doc

I corrected the NFS information.

From: Chapman, Gregory
Sent: Monday, June 20, 2011 6:17 AM
To: Reilly, Breeda; Thompson, Richard; Diaz, Marilyn; Reeves, Rosemary; Baker, Merritt; Ramsey, Kevin; Naquin, Tyrone; Johnson, Timothy; Bartlett, Matthew; Liu, Tilda; Mattern, Kevin; Siurano-Perez, Osiris; Downs, James; Ryder, Christopher; Rodriguez, Rafael
Cc: Smith, Brian; Johnson, Robert; Morey, Dennis
Subject: FW: REQUEST: dates of fuel cycle facility operations

PMs and backups,

The NAS has requested a short operational synopsis of the major fuel cycle facilities due this week. Please review the attached document and modify as appropriate for the licensees for which you are assigned. I need this returned to me by COB Wednesday so I can compile all the responses into a single document and send on by Friday. Thanks for your prompt attention.

Greg

From: Brock, Terry
Sent: Friday, June 17, 2011 1:02 PM
To: Chapman, Gregory
Cc: Shaffer, Vered
Subject: REQUEST: dates of fuel cycle facility operations

Hi Greg,

Attached is the list of NMSS facilities we were asked by your office to evaluate for the NAS cancer risk study. NAS has come back and requested the dates of operations for these facilities. Vered Shaffer--my colleague working with me on this project--has found some information through the NRC web page and ADAMS, but we need program office assistance to find the rest of the operating dates and to validate if there were periods of non-operating years.

Would you please contact the respective PMs in NMSS for these facilities to complete the attached list with the dates of operation? We would like to have this information by the end of next week, Friday 6/24 to provide to NAS to support their current writing efforts. Let me know if there is a problem meeting this date.

Thanks,
Terry
Terry Brock, Ph.D.
Office of Nuclear Regulatory Research
U.S. Nuclear Regulatory Commission
Washington D.C. 20555
Mail Stop CSB-3A07

phone: 301-251-7487

Nuclear Fuel Cycle Facilities for NAS cancer study

facility name	location	type of facility	notes	Docket no.
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AREVA NP, Inc. (Lynchburg, VA)		LWR fuel (note 3)		70-1201
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AREVA NP, Inc. (Richland, WA)		LWR fuel		70-1257
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- Operating approximately 40 years.
(<http://us.areva.com/EN/home-427/fuel-design-and-production.html>)

AREVA NP, Inc. (Eagle Rock, ID)		centrifuge enrichment (note 6)		70-7015
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- Not in operation – scheduled for 2014. Application for license received in March 2009.
(NRC public website)

Babcock and Wilcox Nuclear Operations Group (Lynchburg, VA)		(note 3)		70-27
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Global Nuclear Fuel - Americas, LLC (Wilmington, NC)		LWR fuel		70-1113
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Honeywell Specialty Chemicals (Metropolis, IL)		UF6 conversion (note 4)		70-40-3392
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- Honeywell-MTW began operation in 1958. After the contract's conclusion, the facility was mothballed in 1964. In 1967, the facility was rehabilitated and since 1968 has operated as a private converter.
- The Nuclear Regulatory Commission staff informed officials of the Honeywell International, Inc. uranium hexafluoride processing plant in Metropolis, Illinois, on 14 April 2004 that the agency has no objection to the restart of the second stage of a three-stage process leading to resumption of production at the facility. On 27 March 2004, the NRC staff authorized the company to resume ore preparation, the first stage in a process that has been shut down since a 22 December 2003 release of uranium hexafluoride to the environment outside the plant.
(<http://www.globalsecurity.org/wmd/facility/metropolis.htm>)

Louisiana Enrichment Services (Eunice, NM) centrifuge (notes 1, 5) 70-3103

- NRC approval to begin commercial operation was obtained in mid-2010, with full phase 1 capacity of 3.3 million SWU/yr to be reached in 2013
(http://www.world-nuclear.org/info/inf41_US_nuclear_fuel_cycle.html)

Nuclear Fuel Services, Inc. (Erwin, TN), LWR fuel fab (HEU and LEU), 70-143

- The facility has been in operation since 1957 and was initially operated as a job shop, performing tasks under contract to the Atomic Energy Commission. At various times in the past, processing has occurred with depleted, natural, and enriched uranium; uranium-233 (U-233); thorium; and plutonium. Most of the chemical forms have been handled, including metal, uranium hexafluoride (UF₆), oxides, and nitrates. NFS is authorized to convert highly enriched uranium to other uranium compounds; to produce fuel containing HEU; to recover and purify low-enriched and high-enriched uranium from process scrap generated either internally or at other facilities; and to perform enrichment blending of high-enriched uranyl nitrate solution to produce a low enriched uranyl nitrate solution (BPF Facility) and to convert the down blended uranyl nitrate solution into uranium oxide powder (BLEU Complex).

Deleted:

Deleted: 70-3098

Deleted: Began operating in 1957

Deleted: (<http://www.nuclearfuelservices.com/history.php>) ¶

United States Enrichment Corp. (GDP in Paducah, KY) (notes 2, 4) 70-7001

- The plant was opened in 1952 as part of a U.S. government program to produce highly enriched uranium to fuel military reactors and produce nuclear weapons. Enrichment at Paducah originally was limited to low levels, and the plant served as a "feed facility" for other defense plants in Oak Ridge, Tennessee, and Piketon, Ohio, where the enriched uranium was processed.
(http://www.usec.com/gaseousdiffusion_pad_history.htm)

United States Enrichment Corp. (GDP in Portsmouth, OH) (note 2) 70-7002

- The PORTS facility has been operating since 1954, enriching uranium for use in commercial reactors and for use by the U.S. Navy in power reactors. Production of enriched uranium for use by the U.S. Navy ceased in 1991. The production facilities are owned by U.S. DOE and have been leased by the United States Enrichment Corporation (USEC) since 1993. The enrichment operation became private in July 1998. Other portions of the site are leased to the Ohio National Guard and the Defense Logistics Agency. U.S. DOE remains the owner of the property. USEC ceased enrichment operations at the Portsmouth site in May, 2001. The facility has been placed into cold standby mode.

United States Enrichment Corp. (ACP centrifuge, Portsmouth, OH) (note 1) 70-7004

- In April 2007, the Nuclear Regulatory Commission licensed construction and operation of USEC's American Centrifuge Plant in Piketon, Ohio. The American Centrifuge technology has been developed over many years by USEC, based on work by the Department of Energy (DOE) in 1970s and 1980s. The plant is being constructed on the same Portsmouth site where the DOE's experimental plant operated in the 1980s.

Westinghouse Electric Company (Columbia, SC) LWR fuel

70-1151

- Since beginning production in 1969, over 51,000 nuclear fuel assemblies have been produced at the Columbia Site.

(http://www.westinghousenuclear.com/ProductLines/Nuclear_Fuel/columbia_site.shtm)

Notes:

1. not yet operated or just started operations
2. previous history as DOE site
3. co-located
4. nearly co-located
5. adjacent to low level waste site, very low population area
6. not yet licensed, very low population area

From: Wingo, Erin <EWingo@nas.edu>
Sent: Thursday, July 07, 2011 1:13 PM
Subject: Cancer Risk Assessment Committee Meeting July 21: Updated Agenda
Attachments: Irvine_public_agenda.pdf

Dear interested parties,

Please see the final agenda attached for the July 21st Cancer Risk Assessment meeting in Irvine, CA. If you plan to attend, we ask you to please rsvp here: <http://www.surveygizmo.com/s/570266/zedim>. The session will be webcast.

Please direct comments or questions to our project email: crs@nas.edu

For further information on the study, please see our website: <http://www.nationalacademies.org/cancerriskstudy>

THE NATIONAL ACADEMIES

Advisers to the Nation on Science, Engineering, and Medicine

Nuclear and Radiation Studies Board

500 Fifth Street, NW
Washington, DC 20001
Phone: 202 334-3066
Fax: 202 334-3077
www.nationalacademies.org

Thursday, July 21, 2011

**The Huntington Room
Beckman Center, 100 Academy, Irvine, CA. 92617
Tel. 949-721-2200**

DATA GATHERING SESSION: OPEN TO THE PUBLIC **Meeting Room: Huntington**

- 8:30 am **Call to order and welcome**
John Burris, committee chair
- 8:40 am **Childhood cancer and nuclear power plants in Switzerland: national cohort study**
Matthias Egger, Director, Institute of Social and Preventive Medicine, University of Bern, Switzerland
- 9:05 am **Questions and Discussion**
- 9:15 am **Technical Considerations for NAS Proposed Study of Cancer Risks in Populations Living Near Nuclear Facilities**
Antone Brooks, Washington State University Tri-cities (retired professor)
Helen Grogan, Cascade Scientific, Inc
David Hoel, Medical University of South Carolina
Phung Tran, Electric Power Research Institute
Bill Wendland, CN Associates
- 9:55 am **Questions and Discussion**
- 10:05 am **Protocol for an Analysis of Cancer Risk in Populations Living Near Nuclear-Power Facilities, 2009**
Donna Cragle, Vice President and Director, Occupational Exposure and Worker Health
Oak Ridge Institute for Science and Education
- 10:30 am **Questions and Discussion**
- 10:40 am **BREAK**
- 10:55 am **States' Environmental Monitoring at Nuclear Power Plants**
Alice Rogers, Chair, Conference of Radiation Control Program Directors (Texas Department of State Health Services)

THE NATIONAL ACADEMIES

Advisers to the Nation on Science, Engineering, and Medicine

11: 20 am

Questions and Discussion

Opportunity for Public Comments

12:00 am

Adjourn session open to the public

From: Wingo, Erin <EWingo@nas.edu>
Sent: Friday, July 15, 2011 11:25 AM
Subject: Cancer Risk Assessment Meeting #4: Final Agenda and Webcast Instructions
Attachments: Final_CA_Public_Agenda.pdf

Dear interested parties,

Please see the instructions below for accessing the webcast for the July 21 meeting of the Cancer Risk Assessment committee. Note that this is a different process than previous webcasts.

Please also see the final public agenda attached.

Live Webcast:

<mms://128.200.205.34/live>

Webcast Instructions:

We will be streaming with Windows Media 9, most computers with Windows 2000 or better should have no problem viewing the video. Windows Media Player is required to view the webcasts. If you need the latest Windows Media Player, please click on the link below:

Windows Media Player Download

<http://www.microsoft.com/windows/windowsmedia/player/download/download.aspx>

For MACs

Installing Flip4Mac WMV Free Version you can play Windows Media files in QuickTime Player and view Windows Media content on the Internet using Safari and other web browsers.

http://www.flip4mac.com/wmv_download.htm

In order to test your Windows Media Player and connection, please click on the picture-link below. If your connection is working, a 60 second Video Intro with music will play.

<mms://128.200.205.34/test>

In order to watch the live webcast, you will need to click on the link below. The link will be active a half hour before the start of the webcast on July 21, 2011.

Additional Tech Support:

MAC Users:

If the videos are not working through your web browser. Load Quicktime Player and select: File > Open URL... and enter:

<mms://128.200.205.34/live>

For general study information, please see our webpage: www.nationalacademies.org/cancerriskstudy

Direct inquiries and comments of the project email: crs@nas.edu

THE NATIONAL ACADEMIES

Advisers to the Nation on Science, Engineering, and Medicine

Nuclear and Radiation Studies Board

500 Fifth Street, NW
Washington, DC 20001
Phone: 202 334-3066
Fax: 202 334-3077
www.nationalacademies.org

Cancer Risk Assessment Meeting #4

Thursday, July 21, 2011

The Huntington Room

Beckman Center, 100 Academy, Irvine, CA. 92617

Tel. 949-721-2200

DATA GATHERING SESSION: OPEN TO THE PUBLIC **Meeting Room: Huntington**

- | | |
|----------|--|
| 8:30 am | Call to order and welcome
<i>John Burris, committee chair</i> |
| 8:40 am | Childhood cancer and nuclear power plants in Switzerland: national cohort study
<i>Matthias Egger, Director, Institute of Social and Preventive Medicine, University of Bern, Switzerland</i> |
| 9:05 am | Questions and Discussion |
| 9:15 am | Technical Considerations for NAS Proposed Study of Cancer Risks in Populations Living Near Nuclear Facilities
<i>Antone Brooks, Washington State University Tri-cities (retired professor)</i>
<i>Helen Grogan, Cascade Scientific, Inc</i>
<i>David Hoel, Medical University of South Carolina</i>
<i>Phung Tran, Electric Power Research Institute</i>
<i>Bill Wendland, CN Associates</i> |
| 9:55 am | Questions and Discussion |
| 10:05 am | Protocol for an Analysis of Cancer Risk in Populations Living Near Nuclear-Power Facilities, 2009
<i>Donna Cragle, Vice President and Director, Occupational Exposure and Worker Health</i>
<i>Oak Ridge Institute for Science and Education</i> |
| 10:30 am | Questions and Discussion |
| 10:40 am | BREAK |
| 10:55 am | States' Environmental Monitoring at Nuclear Power Plants
<i>Alice Rogers, Chair, Conference of Radiation Control Program Directors (Texas Department of State Health Services)</i> |
| 11:20 am | Questions and Discussion |

THE NATIONAL ACADEMIES

Advisers to the Nation on Science, Engineering, and Medicine

- 11:30 am **Opportunity for Public Comments**
- 12:30 am **Adjourn session open to the public**

From: Pelchat, John
Sent: Saturday, July 16, 2011 9:25 AM
To: JKWheeler@nuclearfuelservices.com
Cc: Shackelford, W. Randy; Vias, Steven; Brock, Terry



Good morning Jennifer,

I understand that the subcommittee of the National Academy of Sciences that is doing the NRC-sponsored Cancer Study has made a request to NFS for a tour of the non-Navy portion of NFS' facilities. Would you please update me on the status of that request. Currently, the NAS is hoping to tour the plant on September 8, 2011 to coincide with other public activities they are considering that day in Erwin, TN.

If the request is stuck and if it would help it gain traction, I can probably arrange for either NRC Office of Research or Region II make the request formally.

If you have any questions, please call me . . . take care . . .

John

John M. Pelchat
Senior Fuel Facility Inspector
U.S. Nuclear Regulatory Commission, Region II
245 Peachtree Center Avenue, NE, Suite 1200
Atlanta, Georgia 30303-1257

Telephone: 404-997-4729
800-577-8510, extension 2-4729
FAX: 404-997-4910
E-mail: john.pelchat@nrc.gov



Please consider the environment before printing this e-mail. Thank you.

From: Wingo, Erin <EWingo@nas.edu>
Sent: Tuesday, August 16, 2011 11:31 AM
Subject: Cancer Risk Announcement: August 29th Meeting
Attachments: PublicDraftAugust15.pdf

Dear interested parties,

The August 29th meeting of the Cancer Risk Assessment committee will be held in Washington, DC at the PEW Charitable Trusts Conference Center (http://www.pewtrusts.org/about_us_conference_center.aspx), located at 901 E St., NW. There will be an open session in the afternoon, including a period for public comment. Please see attached agenda for further details. This agenda is subject to change. The open session will be webcast.

We would like to ask members of the public who are planning to attend to register for this meeting. To RSVP, please visit our registration page: <http://www.surveygizmo.com/s/614760/cancer-risks-assessment-meeting-registration>

Please direct comments and questions to the project email: crs@nas.edu

For general information on the study, please see the project webpage: www.nationalacademies.org/cancerriskstudy

THE NATIONAL ACADEMIES

Advisers to the Nation on Science, Engineering, and Medicine

Nuclear and Radiation Studies Board

500 Fifth Street, NW
Washington, DC 20001
Phone: 202 334-3066
Fax: 202 334-3077
www.nationalacademies.org

Analysis of Cancer Risks in Populations near Nuclear Facilities: Phase 1

Fifth Committee Meeting: August 29, 2011

**The Pew Charitable Trusts
901 E St. NW, Washington, DC 20004-2008
tel: 202.552.2000**

August 15 Draft Agenda

DATA GATHERING SESSION: OPEN TO THE PUBLIC Meeting Room: The Americas

- | | |
|---------|--|
| 1:20 pm | Call to order and welcome
<i>John Burris, committee chair</i> |
| 1:35 pm | Next Steps for the Analysis of Cancer Risk in Populations Near Nuclear Facilities Study
<i>Terry Brock, Senior Program Manager, Office of Nuclear Regulatory Research, U.S. Nuclear Regulatory Commission</i> |
| 2:00 pm | Questions and Discussion |
| 2:20 pm | NRC and Stakeholder Interactions
<i>Scott Burnell, Public Affairs Officer, Office of Public Affairs, U.S. Nuclear Regulatory Commission and Lance J Rakovan, Senior Communications Specialist, Office of the Executive Director for Operations, U.S. Nuclear Regulatory Commission</i> |
| 2:45 pm | Questions and Discussion |
| 2:55 pm | Environmental Protection Agency (EPA)
<i>TBD</i> |
| 3:20 pm | Questions and Discussion |
| 3:30 pm | Additional presentations/opportunity for public comments |
| 5:00 pm | Adjourn session open to the public |

From: Ramsey, Kevin
Sent: Tuesday, August 23, 2011 9:51 AM
To: Chapman, Gregory; Liu, Tilda; Mattern, Kevin
Cc: Johnson, Robert
Subject: RE: request from the dosimetry working group; NAS study

Here's the history I have on NFS:

Original license issued: 9/18/57 (AEC)
Renewed: 11/5/65 (AEC)
1/27/78 (NRC)
3/16/79 (NRC)
6/9/92 (NRC)
7/2/99 (NRC)

I took a quick look in the ADAMS Legacy Library. This is what I found:

9206150213 = 6/9/92 Ltr forwarding renewal
9206150215 = 6/9/92 Renewed License
9206150219 = 6/9/92 SER for Renewal

7904210030 = 3/16/79 Ltr forwarding renewal
7904210035 = 3/16/79 Renewed License

7904210038 = 3/16/78 Supplementary SER No. 2 re: Renewal (the date may be a typo because the accession number indicates that this was processed on the same date as the 1979 renewal).

Nothing found on 1/27/78 renewal.
Nothing found on 11/5/65 renewal.

To get documents blown back from microfiche, RES needs to send an e-mail to Records.Resource@nrc.gov.

From: Chapman, Gregory
Sent: Monday, August 22, 2011 5:07 PM
To: Ramsey, Kevin; Liu, Tilda; Mattern, Kevin
Subject: FW: request from the dosimetry working group; NAS study

Kevin(s) and Tilda,

I'm guessing that you are the individuals who can possibly locate the information being requested below. Let me know if I missed the mark.

Greg

From: Brock, Terry
Sent: Monday, August 22, 2011 5:04 PM
To: Chapman, Gregory
Subject: FW: request from the dosimetry working group; NAS study

Hi Greg,

NAS for the cancer study is looking for a couple of old fuel cycle facility reports below. Would you please check with the PMs and see if they have them or know where to get them. These are pre-ADAMS so I imagine they're in some hard copy file somewhere.

Thanks,
Terry

- document of 1989 and/or 1979 NFS license renewal that reviews effluent and environmental data (The 1999 report they have for NFS is titled: Environmental Assessment for Renewal of Special Nuclear Material License :No. SNM-1 24 Nuclear Fuel Services, Inc. Erwin, Tennessee Docket 70-143U)
- similar to above but for Portsmouth or Paducah

Terry Brock, Ph.D.
Office of Nuclear Regulatory Research
U.S. Nuclear Regulatory Commission
Washington D.C. 20555
Mail Stop CSB-3A07
phone: 301-251-7487

From: Wingo, Erin <EWingo@nas.edu>
Sent: Friday, August 26, 2011 12:33 PM
Subject: CANCELED: August 29 Cancer Risk Assessment Meeting

Importance: High

Dear interested parties,

We regret to inform you that the August 29th Cancer Risk Assessment meeting in Washington, DC has been CANCELED due to severe weather conditions. The meeting will be rescheduled. We will update with that information when it is available.

Please direct comments and questions to the project email: crs@nas.edu
Updates will also be available on the study webpage: www.nationalacademies.org/cancerriskstudy

From: Wingo, Erin <EWingo@nas.edu>
Sent: Friday, September 02, 2011 1:08 PM
Subject: RESCHEDULED: Cancer Risk Assessment Committee Meeting

Dear interested parties,

The last meeting of the Cancer Risk Assessment committee has been rescheduled for October 20th. It will be held at a TBD location in Washington, DC. We will update with further information as it becomes available.

Please direct comments and questions to the project email: crs@nas.edu

For information on the study, please see our project webpage: www.nationalacademies.org/cancerriskstudy

From: Elliott, Mark P. <mpelliott@nuclearfuelservices.com>
Sent: Wednesday, September 14, 2011 7:34 AM
To: Ramsey, Kevin
Cc: Wheeler, Jennifer K.
Subject: Re: NAS Cancer Study

Thanks!

From: Ramsey, Kevin <Kevin.Ramsey@nrc.gov>
To: Elliott, Mark P.
Cc: Wheeler, Jennifer K.
Sent: Wed Sep 14 07:18:45 2011
Subject: RE: NAS Cancer Study

Terry Brock, Ph.D.
Office of Nuclear Regulatory Research
U.S. Nuclear Regulatory Commission
Washington D.C. 20555
Mail Stop CSB-3A07
phone: 301-251-7487

From: Elliott, Mark P. [mailto:mpelliott@nuclearfuelservices.com]
Sent: Tuesday, September 13, 2011 5:07 PM
To: Ramsey, Kevin
Subject: NAS Cancer Study

Kevin,

What's the guy's name at NRC over the subject? You gave me his name and I've talked with him; however, I've lost his contact information and would like to speak with him again.

Thanks for your help,

Mark

Mark P. Elliott, Director
Quality, Safety & Safeguards
Nuclear Fuel Services, Inc.
1205 Banner Hill Road
Erwin, TN 37650
o 423-743-1705
c (b)(6)
f 423-743-2315

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From: Wheeler, Jennifer K. <JKWheeler@nuclearfuelservices.com>
Sent: Thursday, October 06, 2011 8:22 AM
To: Ramsey, Kevin
Subject: RE: NAS going to NFS next week for a tour and public meeting

We did know that it would be either 10/12 or 13, we weren't sure about the public meeting.

Thanks,
Jennifer

From: Ramsey, Kevin [mailto:Kevin.Ramsey@nrc.gov]
Sent: Thursday, October 06, 2011 8:12 AM
To: Wheeler, Jennifer K.
Subject: FW: NAS going to NFS next week for a tour and public meeting

Just wanted to confirm you knew about this.

From: Brock, Terry
Sent: Wednesday, October 05, 2011 4:10 PM
To: Ramsey, Kevin; Pelchat, John
Cc: Chapman, Gregory; Bush-Goddard, Stephanie; Burnell, Scott
Subject: NAS going to NFS next week for a tour and public meeting

Kevin/John,

The NAS staff and some cancer study committee members are going on a tour of NFS next week on October 13, 2011. That evening NAS will hold a two hour public meeting to get input on the cancer study—this is a follow-up meeting due to the interest in the study at the NRC public meeting last month. The public meeting is a NAS event, so NRC's role will be minimal to non-existent. I plan on attending the tour and the public meeting to observe the discussions and will only answer questions about the study.

Will one of you please notify the NFS resident inspector and let him know NAS is coming to town? He is welcome to attend the public meeting at the Unicoi county high school from 7-9 pm.

Thanks,
Terry

Terry Brock, Ph.D.
Office of Nuclear Regulatory Research
U.S. Nuclear Regulatory Commission
Washington D.C. 20555
Mail Stop CSB-3A07
phone: 301-251-7487

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From: Chitty, Mark
Sent: Thursday, October 06, 2011 8:43 AM
To: Ramsey, Kevin; Smith, Galen
Cc: Johnson, Robert; McIntyre, David; Weil, Jenny; Vias, Steven; Ledford, Joey; Hannah, Roger
Subject: RE: NAS going to NFS 10/13 for a tour and public meeting

Kevin,

The licensee had also informed us of the visit. I will be out of town (b)(6), but I know Galen will be very excited to know that he is welcome to attend!

/R
mark

From: Ramsey, Kevin
Sent: Thursday, October 06, 2011 8:11 AM
To: Smith, Galen; Chitty, Mark
Cc: Johnson, Robert; McIntyre, David; Weil, Jenny; Vias, Steven; Ledford, Joey; Hannah, Roger
Subject: FW: NAS going to NFS 10/13 for a tour and public meeting

You'd better be good, I'm telling you why, NAS is coming to town.

From: Brock, Terry
Sent: Wednesday, October 05, 2011 4:10 PM
To: Ramsey, Kevin; Pelchat, John
Cc: Chapman, Gregory; Bush-Goddard, Stephanie; Burnell, Scott
Subject: NAS going to NFS next week for a tour and public meeting

Kevin/John,

The NAS staff and some cancer study committee members are going on a tour of NFS next week on October 13, 2011. That evening NAS will hold a two hour public meeting to get input on the cancer study—this is a follow-up meeting due to the interest in the study at the NRC public meeting last month. The public meeting is a NAS event, so NRC's role will be minimal to non-existent. I plan on attending the tour and the public meeting to observe the discussions and will only answer questions about the study.

Will one of you please notify the NFS resident inspector and let him know NAS is coming to town? He is welcome to attend the public meeting at the Unicoi county high school from 7-9 pm.

Thanks,
Terry

Terry Brock, Ph.D.
Office of Nuclear Regulatory Research
U.S. Nuclear Regulatory Commission
Washington D.C. 20555
Mail Stop CSB-3A07
phone: 301-251-7487

From: Wingo, Erin <EWingo@nas.edu>
Sent: Thursday, October 06, 2011 2:26 PM
Subject: NAS Cancer Risk Assessment October 20th Meeting: Details
Attachments: publicagendaoct20.pdf

Dear interested parties,

The October 20th meeting of the Cancer Risk Assessment committee will be held in Washington, DC at the Keck Center of the National Academies, located at 500 5th St., NW. There will be an open session in the afternoon, including a period for public comment. Please see attached agenda for further details. This agenda is subject to change. The open session will be webcast.

We would like to ask members of the public who are planning to attend to register for this meeting. To RSVP, please visit our registration page: <http://www.surveygizmo.com/s/666653/crs-october-20th-meeting-registration>

Please direct comments and questions to the project email: crs@nas.edu

For general information on the study, please see the project webpage: www.nationalacademies.org/cancerriskstudy

THE NATIONAL ACADEMIES

Advisers to the Nation on Science, Engineering, and Medicine

Nuclear and Radiation Studies Board

500 Fifth Street, NW
Washington, DC 20001
Phone: 202 334-3066
Fax: 202 334-3077
www.nationalacademies.org

Analysis of Cancer Risks in Populations near Nuclear Facilities: Phase 1

Fifth Committee Meeting: October 20, 2011

Washington, DC

Keck Center of the National Academies
500 5th St., Room 101
Washington, DC 20001

DATA GATHERING SESSION: OPEN TO THE PUBLIC
Meeting Room: 101

- | | |
|---------|--|
| 1:20 pm | Call to order and welcome
<i>John Burris, committee chair</i> |
| 1:35 pm | Studies of health effects near Massachusetts nuclear power stations
<i>Richard Clapp, D.Sc., MPH, Professor Emeritus, Boston University School of Public Health and Adjunct Professor, University of Massachusetts - Lowell</i> |
| 2:00 pm | Questions and Discussion |
| 2:10 pm | Nuclear Regulatory Commission and Stakeholder Interactions
<i>Scott Burnell, Public Affairs Officer, Office of Public Affairs, U.S. Nuclear Regulatory Commission and Lance J Rakovan, Senior Communications Specialist, Office of the Executive Director for Operations, U.S. Nuclear Regulatory Commission</i> |
| 2:35 pm | Questions and Discussion |
| 2:45 pm | Radiation Risk Communications: Challenges and Opportunities
<i>TBD U.S. Environmental Protection Agency, Radiation Protection Division</i> |
| 3:10 pm | Questions and Discussion |
| 3:20 pm | Next Steps for the Analysis of Cancer Risk in Populations Near Nuclear Facilities Study
<i>Terry Brock, Senior Program Manager, Office of Nuclear Regulatory Research, U.S. Nuclear Regulatory Commission</i> |
| 3:40 pm | Questions and Discussion |
| 4:00 pm | Public Comments |
| 5:00 pm | Adjourn session open to the public |

From: Brock, Terry
Sent: Tuesday, October 11, 2011 2:47 PM
To: Ramsey, Kevin; Pelchat, John
Cc: Chapman, Gregory
Subject: NAS-NFS tour agenda

Kevin/John,

FYI: Below is the NFS tour agenda for the NAS cancer study committee on Thursday, October 13, 2011. The NAS public meeting will be from 7-9 pm at the local high school.

Terry

Terry Brock, Ph.D.
Office of Nuclear Regulatory Research
U.S. Nuclear Regulatory Commission
Washington D.C. 20555
Mail Stop CSB-3A07
phone: 301-251-7487

From: Kosti, Ourania [mailto:OKosti@nas.edu]
Sent: Tuesday, October 11, 2011 2:18 PM
To: Brock, Terry
Subject: FW: NFS Agenda/Directions

Attached, the message as it came directly to me from Marie with attachments. Below is what I sent to the committee following a couple of clarifications from Marie on what buildg 440 and Northsite are.

- 1:00 pm Arrive NFS Training Center
- 1:30 pm Overview from Upper Parking Area
- 1:45 pm Process through EECP (Entry/Exit control point)
- 2:00 pm Discussion of Environmental Monitoring Program
 - Overview of plant site
 - Review of gaseous effluent monitoring
 - Review of liquid effluent monitoring
 - Ambient Air Sampling monitoring
 - Ground water monitoring
 - Other Environmental media
- 3:00 pm WWTF Tour (Waste Water Treatment Facility)

- 3:30 pm GWTF Tour (Ground Water Treatment Facility)
- 3:45 pm Building 440 Tour (Optional)

Building 440 was placed on the agenda as optional, depending on the priorities of our visitors. The building is a processing facility located within the Protected Area at NFS. Low enriched uranium is received, blended, sampled, and loaded into shipping containers at this facility. This facility was chosen for ease of access and the ability to view an active operational area.

- 4:00 pm Tour of Northsite

The Northsite is an area of the NFS site that is undergoing Decommissioning. NFS has been working for the last several years to remove waste that was allowed to be disposed of onsite during the 60's and 70's by the NRC. All waste have been removed at this time and we are in final stages of the D&D effort.

- 4:20 pm Driving Tour Environmental Sampling
- 5:00 pm Return to NFS Training Center

Attire: dress comfortably with full coverage shoes with maximum heel height of 1.5 inches. You will potentially be walking on rough terrain and climbing open metal stairways

Do not forget: your valid government issued picture identification. You will be asked to give your Social Security Number for background checks.

From: Moore, B. Marie [mailto:BMMoore@nuclearfuelservices.com]

Sent: Sunday, October 09, 2011 4:30 PM

To: Kostj, Ourania

Subject: NFS Agenda/Directions

If you have any comments on our proposed agenda please let me know, Mark is out of the plant until Wednesday.

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From: Weil, Jenny
Sent: Thursday, October 13, 2011 12:59 PM
To: Ramsey, Kevin
Subject: RE: NAS and NFS in the News

Strange. Thanks so much.

From: Ramsey, Kevin
Sent: Thursday, October 13, 2011 12:58 PM
To: Weil, Jenny
Subject: RE: NAS and NFS in the News

It's an NAS meeting, not an NRC meeting. The NRC PM for the study (Terry Brock) will be in the audience (see attached). Not sure why NAS didn't put it on its web site.

From: Weil, Jenny
Sent: Thursday, October 13, 2011 12:53 PM
To: Ramsey, Kevin
Subject: RE: NAS and NFS in the News

Thanks Kevin,

I don't see the meeting posted on our website or the NAS website: <http://dels.nas.edu/global/nrsb/CancerRisk>

From: Ramsey, Kevin
Sent: Thursday, October 13, 2011 12:11 PM
To: Johnson, Robert; Hsia, Anthony; Kinneman, John; Weil, Jenny; Smith, Galen; Chitty, Mark; Pelchat, John; Vias, Steven
Subject: NAS and NFS in the News

NAS Study Will Investigate Cancer Rates Near Nuclear Plants. The Asheville (NC) Citizen-Times (10/13, Ostendorff, 37K) reports, "The National Academy of Sciences will spend more than \$1 million for the first phase of a study of cancer near nuclear facilities." A "meeting about the study is planned for tonight in Erwin, Tenn., home of Nuclear Fuel Service, which makes fuel for the Navy's nuclear aircraft carriers and submarines." The company is involved in a "class action lawsuit alleging it has negligently released radioactive and toxic materials into the environment." The Citizen-Times adds the NRC "called for the National Academy of Sciences study to replace an outdated 20-year-old survey by the National Cancer Institute that found no risks in living near a nuclear facility."

Kevin M. Ramsey
Senior Project Manager
Fuel Manufacturing Branch
U.S. NRC
301-492-3123

From: Wingo, Erin <EWingo@nas.edu>
Sent: Tuesday, October 18, 2011 10:54 AM
Subject: NAS Cancer Risk Assessment meeting: Webcast link and Agenda update
Attachments: FinalPublicDraftAgenda.pdf

Dear interested parties,

The live webcast of the open session of this Thursday's Cancer Risk Assessment meeting will be available here:
<http://www.tvworldwide.com/events/nas/110829/#>

Please see the final public agenda attached for the latest meeting updates.

Please direct questions and comments to the project email: crs@nas.edu

Furthre information on the study can be found on the project site: www.nationalacademies.org/cancerriskstudy

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Advisers to the Nation on Science, Engineering, and Medicine

Nuclear and Radiation Studies Board

500 Fifth Street, NW
Washington, DC 20001
Phone: 202 334-3066
Fax: 202 334-3077
www.nationalacademies.org

Analysis of Cancer Risks in Populations near Nuclear Facilities: Phase 1
Fifth Committee Meeting: October 20-21 2011

KECK CENTER
500 Fifth Street, NW
Washington, DC 20001

Thursday, October 20, 2011

DATA GATHERING SESSION: OPEN TO THE PUBLIC

Meeting Room: 101

Webcast link: <http://www.tvworldwide.com/events/nas/110829/#>

- 1:20 pm **Call to order and welcome**
John Burris, committee chair
- 1:35 pm **Studies of health effects near Massachusetts nuclear power stations**
Richard Clapp, D.Sc., MPH, Professor Emeritus, Boston University School of Public Health and Adjunct Professor, University of Massachusetts - Lowell
- 2:00 pm **Questions and Discussion**
- 2:10 pm **Nuclear Regulatory Commission and Stakeholder Interactions**
Scott Burnell, Public Affairs Officer, Office of Public Affairs, U.S. Nuclear Regulatory Commission and Lance J Rakovan, Senior Communications Specialist, Office of the Executive Director for Operations, U.S. Nuclear Regulatory Commission
- 2:35 pm **Questions and Discussion**
- 2:45 pm **Radiation Risk Communications: Challenges and Opportunities**
Tony Nesky, U.S. Environmental Protection Agency, Radiation Protection Division
- 3:10 pm **Questions and Discussion**
- 3:20 pm **Next Steps for the Analysis of Cancer Risk in Populations Near Nuclear Facilities Study**
Terry Brock, Senior Program Manager, Office of Nuclear Regulatory Research, U.S. Nuclear Regulatory Commission
- 3:40 pm **Questions and Discussion**
- 4:00 pm **Public Comments**
- 5:00 pm **Adjourn session open to the public**

THE NATIONAL ACADEMIES

Advisers to the Nation on Science, Engineering, and Medicine

From: Wingo, Erin <EWingo@nas.edu>
Sent: Wednesday, November 09, 2011 11:25 AM
Subject: Addendum: Cancer Risk Assessment release timeline

Interested parties:

The U.S.NRC has requested that we provide more information regarding the release of the report within the extended Phase 1 contract. The extended timeline through May encompasses the time necessary to complete and disseminate the Phase 1 report. The report is scheduled to be released February 2012, after which there will be a 2 month public comment period through March and April.

From: Wingo, Erin
Sent: Wednesday, November 09, 2011 10:11 AM
Subject: Project Update: NAS Cancer Risk Assessment

Dear interested parties,

The Cancer Risk Assessment project duration has been extended to May 2012.

Please continue to check the project [site](#) for further updates.

Please direct comments and questions to the project [email](#).

From: Shackelford, W. Randy <WRShackelford@nuclearfuelservices.com>
Sent: Tuesday, December 13, 2011 2:26 PM
To: Ramsey, Kevin
Subject: FW: Cancer Risk Study

Kevin –

Fyi. According to the link below, it was the National Cancer Institute (NCI) that performed the 190 study.

Shack

<http://dels.nas.edu/global/nrsb/CRBackground.xml>

From: Ehrhardt, Frank [mailto:Frank.Ehrhardt@nrc.gov]
Sent: Tuesday, December 13, 2011 2:21 PM
To: Shackelford, W. Randy
Subject: FW: Cancer Risk Study

From: Ramsey, Kevin
Sent: Tuesday, December 13, 2011 1:43 PM
To: Ehrhardt, Frank
Subject: Cancer Risk Study

<http://dels.nas.edu/global/nrsb/CancerRisk>

Kevin M. Ramsey
Senior Project Manager
Fuel Manufacturing Branch
U.S. NRC
301-492-3123

From: Chapman, Gregory
Sent: Wednesday, February 22, 2012 2:40 PM
To: Kinneman, John; Bailey, Marissa; Smith, Brian; Johnson, Robert; Ramsey, Kevin
Subject: NAS Cancer Study Update

Hello All,

Just a quick shout out from an update meeting I attended today. NAS plans to issue to the NRC the phase 1 report for their study on cancer incidence surrounding NRC licensee sites on March 12. This is the same week as the RIC and I believe one of the NAS will be scheduled to speak on the study during the Radiation Protection session, probably on the 14th. This may be of particular interest to our division as the NAS toured the NFS site and was asked to hold their own public meeting down in Erwin during the data gathering/public meeting stage and it was apparent to those that attended that there is some interest from that community. RES has also put together a 2 day class for communicating radiation risk and epidemiological studies and anyone who feels uncomfortable understanding/discussing this type of information is encouraged to sign up for it.

Greg Chapman PE, CHP
301-492-3106
U.S. Nuclear Regulatory Commission
NMSS-FCSS-UEB

From: Crespo, Manuel
Sent: Wednesday, February 22, 2012 3:24 PM
To: Ramsey, Kevin
Cc: Edwards, Denise; Smith, Galen; Startz, Paul; Chitty, Mark
Subject: FW: STATUS OF NAS CANCER STUDY

John's notes regarding the teleconference call...FYI

From: Pelchat, John
Sent: Wednesday, February 22, 2012 2:32 PM
To: Wert, Leonard
Subject: STATUS OF NAS CANCER STUDY

STATUS OF NAS CANCER STUDY – Notes from Telecom on 2/22/12, 1300. (Black font is original agenda, Red font text are my notes)

Process:

Commission wants to be briefed on results of Phase I by the end of April.

We have \$6M over a span of 3 years budgeted for Phase II should the Commission decide to go forward with Phase II

1. Introduction of new staff on project –Terry Brock, RES
 - a. RES and OPA

Matt Humberstone (NRO) and Marilyn Diaz (FCSS) both on rotation to RES now working on project.

2. What NAS has been up to the last year
 - a. Public meetings and licensee tours

NRC first met with committee a year ago. NRC limited involvement during study process after delivering the initial charge to NAS.

2nd meeting in Chicago to engage on stakeholders with focus on reactors. Followed by tour of Dresden and examination of environmental protection programs there. Also met with inspector to get inspector's perspective.

3rd meeting in Atlanta with focus on fuel cycle facilities and cancer registries. Contrasted with programs at reactors.

4th meeting in Irvine, CA attended by activist groups. Toured San Onofre Video of meetings available on line.

5th meeting focused on outreach and risk communication

NAS also participated Region II CAT III meeting in Erwin, TN. and then conducted 2nd public meeting later without NRC participation followed by plant tour for committee

3. NAS release schedule of Phase 1 to the NRC and public

- a. NRC staff briefing

March 12 1400-1500. Will be VTC'ed. NRC staff will be seeing complete report for the first time. To date we have only seen 29 of an approx 400 page for fact checking. Report will be issued March 14. Will be sent to office directors for review.

b. RIC presentation

Will be presented at 1030 at the RIC. First time that NAS will publicly present Phase 1 results. We will not be able to do more than digest it.

TA's will be briefed for the first time sometime in April. Plan to write a Secy paper with options.

c. NAS 2 month public response period on results of Phase I report.

This is an NAS activity. NRC will not be taking comments at that point.

4. What is NRC doing or going to do?

- a. Fact check of limited chapters
- b. Staff review of entire report
- c. Present staff views on report during a TA brief

Staff expected to brief Commission by end of April 2012.

5. Upcoming epidemiology and risk communication training workshops – John Tomon, RES

- a. Coming to a region near you!

Will be one day to discuss epidemiological methods and a one day to discuss communicating radiation risks to the public.

Pilot training given Nov 2011. Expanded the risk communication piece & tested again in R-III in January 2012.

Later presentations will include an hour on the results of NAS Phase I study.

Region II tentative dates in late May – early June. Regions I and IV dates still being discussed. Hope to finish the regions by end of June and then offer in PDC in late summer.

ABHP granting 13 units of credit for 2 day course. Number of credits for 1½ day prototype course still being determined. RES will be talking to each office and region regarding whether H-401 credits (Topical Training) will be awarded. Decision up to individual offices

6. Regional role in addressing public comments and requests for briefings at end-of-cycle meetings or other public meetings – Stephanie Bush-Goddard, RES

Do regions want RES to produce 10 – 15 minutes of material for regional staff to use during end of cycle of meeting?

7. Update to the Communication Plan –

RES soliciting additional FAQs

John M. Pelchat
Senior Regional Governmental Liaison Officer
U.S. Nuclear Regulatory Commission, Region II
245 Peachtree Center Avenue, NE, Suite 1200
Atlanta, Georgia 30303-1257

Telephone: 404-997-4427

Work Cell#: 800-577-8510, extension 2-4427
FAX: 404-997-4901
E-mail: john.pelchat@nrc.gov



Please consider the environment before printing this e-mail. Thank you.

From: Wingo, Erin <EWingo@nas.edu>
Sent: Thursday, March 22, 2012 2:40 PM
Subject: Cancer Risk Assessment: Phase I Report Update

Dear interested parties,

The report entitled Analysis of Cancer Risks in Populations near Nuclear Facilities: Phase I will be officially released one week from today, on Thursday, March 29 at 11:00 am. At that time, the report will be available for download from the National Academies Press website. We will send you the link to the report via this listserv when the report is released. In addition, we will provide information about the 60-day public comment period for the report, which will occur after its release.

Sincerely,

Erin Wingo
Communications Liaison

From: Bush-Goddard, Stephanie
Sent: Monday, March 26, 2012 12:43 PM
To: Flory, Shirley; Sheron, Brian; Holian, Brian; Weber, Michael; Leeds, Eric; Johnson, Michael; Wiggins, Jim; Haney, Catherine; Satorius, Mark; McCree, Victor; Pederson, Cynthia; Collins, Elmo; Brenner, Eliot; Schmidt, Rebecca; Cassidy, John; Chapman, Gregory; Dacus, Eugene; Dehmel, Jean-Claude; Garry, Steven; Jones, Andrea; McIntyre, David; Milligan, Patricia; Mizuno, Beth; Nimitz, Ronald; Stearns, Don; Virgilio, Rosetta; VonTill, Bill; Weil, Jenny; Woodruff, Gena; Rakovan, Lance; Diaz, Marilyn; Humberstone, Matthew; Conatser, Richard; Tomon, John; Dean, Bill; Brock, Terry; Gibson, Kathy; Scott, Michael
Cc: Buckley, Patricia; Bailey, Marissa; Smith, Brian; Dickson, Billy; Screnci, Diane; Sheehan, Neil; R1DRSCAL RESOURCE; Dapas, Marc; Uhle, Jennifer; Caniano, Roy; Campbell, Vivian; Freeman, Denise; Fleischmann, Trevor; R4Meeting Resource; Tannenbaum, Anita; Vogel, Anton; Blount, Tom; Mehrhoff, Vivian; Werner, Greg; Carson, Louis; Alldredge, Casey; Greene, Natasha; Ricketson, Larry; O'Donnell, John; Ramsey, Kevin; Castleman, Patrick; Pope, Tia; Salomon, Stephen; Turtill, Richard; NRR_ET_Activity Resource; Kock, Andrea; Rini, Brett; Chen, Yen-Ju; Dorman, Dan
Subject: "Back Brief" with Mike Weber for the NAS CANCER STUDY at 1pm. Bridgeline information attached.

All,

For those that did not attend the NAS meeting this morning, there is a "back brief" with Mike Weber from 1 to 2pm today.

Bridge is:

800-593-7208 / Passcode:

-----Original Appointment-----

From: Flory, Shirley

Sent: Tuesday, March 13, 2012 2:39 PM

To: Flory, Shirley; Sheron, Brian; Holian, Brian; Weber, Michael; Leeds, Eric; Johnson, Michael; Wiggins, Jim; Haney, Catherine; Satorius, Mark; McCree, Victor; Pederson, Cynthia; Collins, Elmo; Brenner, Eliot; Schmidt, Rebecca; Cassidy, John; Chapman, Gregory; Dacus, Eugene; Dehmel, Jean-Claude; Garry, Steven; Jones, Andrea; McIntyre, David; Milligan, Patricia; Mizuno, Beth; Nimitz, Ronald; Stearns, Don; Virgilio, Rosetta; VonTill, Bill; Weil, Jenny; Woodruff, Gena; Rakovan, Lance; Diaz, Marilyn; Bush-Goddard, Stephanie; Humberstone, Matthew; Conatser, Richard; Tomon, John; Dean, Bill; Brock, Terry; Gibson, Kathy; Scott, Michael

Cc: Buckley, Patricia; Bailey, Marissa; Smith, Brian; Dickson, Billy; Screnci, Diane; Sheehan, Neil; R1DRSCAL RESOURCE; Dapas, Marc; Uhle, Jennifer; Caniano, Roy; Campbell, Vivian; Freeman, Denise; Fleischmann, Trevor; R4Meeting Resource; Tannenbaum, Anita; Vogel, Anton; Blount, Tom; Mehrhoff, Vivian; Werner, Greg; Carson, Louis; Alldredge, Casey; Greene, Natasha; Ricketson, Larry; O'Donnell, John; Ramsey, Kevin; Castleman, Patrick; Pope, Tia; Salomon, Stephen; Turtill, Richard; NRR_ET_Activity Resource; Crowley, Kevin; 'Kosti, Ourania'; Kock, Andrea; Rini, Brett; Chen, Yen-Ju; Dorman, Dan

Subject: SLIDES ATTACHED - please see message box!.....RE-SCHEDULING OF THE NAS CANCER STUDY BRIEFING TO BRIAN SHERON

When: Monday, March 26, 2012 10:00 AM-11:30 AM (GMT-05:00) Eastern Time (US & Canada).

Where: UPDATED TO ADD VTC ROOMS ---- CSB 6B1 - Bridge Lline: 888-997-8507, Passcode:

When: Monday, March 26, 2012 10:00 AM-11:30 AM (GMT-05:00) Eastern Time (US & Canada).

Where: UPDATED TO ADD VTC ROOMS — CSB 6B1 – Bridge Line: 888-997-8507, Passcode: (b)(6)

Note: The GMT offset above does not reflect daylight saving time adjustments.

~~*~*~*~*~*~*~*~*

PRESENTATION SLIDES ATTACHED. PLEASE NOTE THAT THE SLIDES ARE NOT TO BE RELEASED OUTSIDE THE AGENCY.

THANKS - SHIRLEY << File: sponsor briefing presentation March 26 2012.ppt >>

UPDATED TO ADD VTC ROOMS:

Church Street 6B1

Church Street 2C19

OWFN – 6B2

EBB 1B15

RI – Main Conference Room

RIII – Main Conference Room (A3066)

RIV – Main Conference Room

Thanks – Shirley (301-251-7400)

NOTE: THIS MEETING WAS ORIGINALLY SCHEDULED FOR MONDAY, MARCH 12. NAS WAS UNABLE TO GET FINAL SIGNATURE ON THE REPORT IN TIME TO HOLD THE BRIEFING. THE BRIEFING FOR BRIAN SHERON IS BEING RE-SCHEDULED FOR MONDAY, MARCH 26..

BRIDGE LINE: 888-997-8507, PASSCODE: (b)(6)

Thanks – Shirley (301-251-7400)

PURPOSE: NAS (K. Crowley) Briefing to Brian Sheron on the Results of the Analysis of cancer Risk in Populations Near Nuclear Facilities – Phase I Study

VTC will be set up for Regions and other offices that request it at HQ and the satellite locations.

Contacts: Shirley Flory/Tia Pope

From: Chapman, Gregory
Sent: Tuesday, March 27, 2012 7:36 AM
To: Bailey, Marissa
Cc: Kinneman, John; Smith, Brian; Ramsey, Kevin
Subject: RE: NAS cancer study phase 1 results
Attachments: sponsor briefing presentation March 26 2012.ppt

I did sit in on the bridge line...Kevin and Cathy Haney also sat in although at a different location. Overall, the 1st piece of the study was just a scoping effort to determine if the study had sufficient support and was doable and to identify how the study should be performed. Their findings were that it was doable but they don't have a cost associated with it and the results may not be conclusive due to the large sample size needed and various confounding issues involved. This is why they are recommending a feasibility study for a few select sites to ensure they can both do the work needed and estimate the total cost and effort needed for the epidemiological study. The attached slides are what was used to perform the briefing. The 3 findings and 3 recommendations are on slides 7-12. My impression after it was said and done is that they would most likely focus in on childhood leukemia incidence near the facilities and try to see if it correlates to average dose in the area in which the individuals lived based on emissions. It was also possible that they could incorporate some data from overseas to increase the sample size.

I know Cathy expressed concern that the study may not have any value (i.e., not be conclusive) yet have a high cost associated with it. One of the biggest challenges discussed was historical records of releases beyond 15-20 years and the site's reluctance to engage in cost prohibitive record reviews. At this point, the NRC will determine if the study should continue based on the findings and recommendations.

Greg

From: Bailey, Marissa
Sent: Monday, March 26, 2012 6:08 PM
To: Chapman, Gregory; Smith, Brian; Ramsey, Kevin
Cc: Kinneman, John
Subject: RE: NAS cancer study phase 1 results

Please forward the slides.

Did you attend the briefing? Can you provide a summary?

From: Chapman, Gregory
Sent: Monday, March 26, 2012 10:00 AM
To: Smith, Brian; Ramsey, Kevin; Bailey, Marissa
Subject: NAS cancer study phase 1 results

Just an FYI, I've looked over the slides that are being used for the NAS cancer study briefing (beginning today in a few minutes) and they are recommending including NFS in a pilot program study (feasibility study) along with several power plants. This feasibility study would assess the feasibility of the committee-recommended dose assessment and epidemiology studies and to estimate the required time and resources. I can forward you the slides if desired. NFS is the only fuel cycle facility recommended for the feasibility study.

Greg Chapman PE, CHP
301-492-3106
U.S. Nuclear Regulatory Commission

From: Chapman, Gregory
Sent: Tuesday, March 27, 2012 9:06 AM
To: Haney, Catherine; Kinneman, John; Bailey, Marissa; Smith, Brian; Ramsey, Kevin; Smith, James; Moore, Scott
Subject: FW: NAS Phase 1 Cancer Risk Study Report in ADAMS

FYI...I know there is some interest among management regarding this study.

From: Brock, Terry
Sent: Tuesday, March 27, 2012 8:50 AM
To: Cassidy, John; Burnell, Scott; Chapman, Gregory; Dacus, Eugene; Dehmel, Jean-Claude; Garry, Steven; Jones, Andrea; McIntyre, David; Milligan, Patricia; Mizuno, Beth; Nimitz, Ronald; Stearns, Don; Virgilio, Rosetta; VonTill, Bill; Weil, Jenny; Woodruff, Gena; Rakovan, Lance; Diaz, Marilyn; Bush-Goddard, Stephanie; Humberstone, Matthew; Conatser, Richard; Tomon, John
Subject: NAS Phase 1 Cancer Risk Study Report in ADAMS

Hi All,

The NAS report, "Analysis of Cancer Risks in Populations near Nuclear Facilities: Phase I" is available in ADMAS at ML120860057 .

Please note the report is embargoed until Thursday, March 29, 2012 at 11AM EST. As such, please do not distribute outside the agency until NAS releases the report to the public at that time.

RES will be sending out a formal request for comments in the near term.

Thanks,
Terry

Terry Brock, Ph.D.
Office of Nuclear Regulatory Research
U.S. Nuclear Regulatory Commission
Washington D.C. 20555
Mail Stop CSB-3A07
phone: 301-251-7487

From: Dave McIntyre
Sent: Wednesday, July 18, 2012 5:13 PM
To: Brenner, Eliot
Subject: TOMORROW'S NEWS TONIGHT - PLEASE READ AND DELETE

~~****May contain information proprietary to news agencies. Not for outside disclosure****~~

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CANCER RISK STUDY – OPA spoke to an LA Times reporter working on an article regarding the National Academy of Science's Phase 1 report on the cancer risk study. OPA explained the staff is currently drafting a paper for Commission consideration on how to respond to the report's suggestion of a pilot study at several reactor sites across the country. Publication not expected for several days.

~~****May contain information proprietary to news agencies. Not for outside disclosure****~~

From: Brock, Terry
Sent: Tuesday, October 09, 2012 3:50 PM
To: Pelchat, John
Cc: Ramsey, Kevin; Lesser, Mark; Crespo, Manuel; Chapman, Gregory
Subject: FW: RSLO information for the next phase of the cancer study

Hi John,

As a follow-on to June's e-mail below . . . go ahead and have RII contact NFS in addition to the State of TN to let them know we are moving forward with the NAS pilot cancer studies and that NFS was one of the NAS selected sites—I'm sure they already know this. We don't expect much from them, since this will be mostly a records search at NRC and the state health department. Key messages below if you get stuck.

Thanks,
Terry

Terry Brock, Ph.D.
Office of Nuclear Regulatory Research
U.S. Nuclear Regulatory Commission
Washington D.C. 20555
Mail Stop CSB-3A07
phone: 301-251-7487

From: Cai, June
Sent: Tuesday, October 09, 2012 3:24 PM
To: McNamara, Nancy; Maier, Bill; Logaras, Haral; Tift, Doug; Pelchat, John; Woodruff, Gena; Barker, Allan
Cc: Brock, Terry; Lynch, Jeffery; O'Sullivan, Kevin
Subject: FW: RSLO information for the next phase of the cancer study

Hi all,

This is in follow up to the earlier email I sent on this topic. Please see talking points and background info below from Terry Brock. As I indicated, RES is planning on issuing the press release Thurs or Fri, so please try to make contact before then if you can. Please contact Terry if you get any detailed questions.

Thanks

June

From: Brock, Terry
Sent: Tuesday, October 09, 2012 3:14 PM
To: Cai, June
Subject: RSLO information for the next phase of the cancer study

Hi June,

As discussed, NRC is moving forward with the National Academy of Sciences recommended pilot studies for the Analysis of Cancer Risks in Populations near Nuclear Facilities project. Key messages and the NAS selected pilot study sites are listed below. Please have the RSLO contact the appropriate state contact for the site in their region to inform them of

the forthcoming announcement of the study. This is mostly an awareness issue, there are no direct actions we are requesting of the State folks. If the RSLOs or State people have any questions on the study please have them contact me at my information below.

Thanks,
Terry Brock/RES

Terry Brock, Ph.D.
Office of Nuclear Regulatory Research
U.S. Nuclear Regulatory Commission
Washington D.C. 20555
Mail Stop CSB-3A07
phone: 301-251-7487

Key Messages

- (1) The NRC has asked the NAS to evaluate the feasibility of a new study on cancer mortality and incidence risks in populations living near NRC-licensed and proposed nuclear facilities to update the 1990 NCI report on "Cancer Risks in Populations near Nuclear Facilities." NRC staff uses the NCI report to inform concerned stakeholder that cancer mortality rates are not elevated in these populations. However, the report is over 20 years old, additional facilities have come on-line, and analysis methods and cancer data registries have improved.
- (2) The NRC requested that the NAS study the feasibility of developing scientifically defensible methods to evaluate cancer incidence rates, as well as exploring how to divide the study areas around licensed and proposed nuclear facilities into geographical units smaller than the counties used in the NCI report so the results are more applicable to those populations that live closer to NRC-licensed facilities.
- (3) The NAS has completed the Phase 1 feasibility study. The Phase 1 study provided two different study designs that focus on childhood cancers and all common cancers in the total population. The report highlighted the many scientific limitations of performing low-dose and low-population epidemiology studies around NRC-licensed facilities. The NRC staff reviewed the report and are proceeding with the NAS recommendation to pilot study the Phase 1 methods at seven sites.
- (4) The NAS study process is independent of NRC, transparent, objective, and technically rigorous, ensuring that the new study will be comprehensive and scientifically sound.

NAS-recommended Pilot Study Sites

Region I

- Millstone Power Station, Waterford, CT
- Haddam Neck (decommissioned), Haddam Neck, CT
- Oyster Creek Nuclear Generating Station, Forked River, NJ

Region II

- Nuclear Fuel Services, Erwin, TN (operating uranium fuel fabrication facility)

Region III

- Big Rock Point Nuclear Power Plant (decommissioned), Charlevoix, MI
- Dresden Nuclear Power Station, Morris, IL

Region IV

- San Onofre Nuclear Generating Station, San Clemente, CA

Terry Brock, Ph.D.
Office of Nuclear Regulatory Research
U.S. Nuclear Regulatory Commission
Washington D.C. 20555
Mail Stop CSB-3A07
phone: 301-251-7487

From: Brock, Terry
Sent: Tuesday, October 09, 2012 4:57 PM
To: Ramsey, Kevin
Subject: RE: cancer study and NFS
Attachments: FW: RSLO information for the next phase of the cancer study

This attachment to this email is not in the NRC's possession.

Please do thanks. We're giving the licensees a heads-up before the information SECY paper is made public at the end of the week. Did you see my e-mail to John Pelchat? Let us know if you contact NFS before John does? Earlier e-mail attached.

Thanks,
Terry
Terry Brock, Ph.D.
Office of Nuclear Regulatory Research
U.S. Nuclear Regulatory Commission
Washington D.C. 20555
Mail Stop CSB-3A07
phone: 301-251-7487

From: Ramsey, Kevin
Sent: Tuesday, October 09, 2012 4:32 PM
To: Brock, Terry
Subject: RE: cancer study and NFS

I can let them know. Is there any official documentation of the decision?

From: Brock, Terry
Sent: Tuesday, October 09, 2012 1:24 PM
To: Ramsey, Kevin
Subject: cancer study and NFS

Hi Kevin,

I left a message. As you may have heard by now staff is moving forward with the cancer study pilot studies with NFS being one of the sites. I've asked RII to contact NFS and let them know, but then I thought maybe you might want to do it. Do you have a preference?

Thanks,
Terry

Terry Brock, Ph.D.
Office of Nuclear Regulatory Research
U.S. Nuclear Regulatory Commission
Washington D.C. 20555
Mail Stop CSB-3A07
phone: 301-251-7487

From: Blamey, Alan
Sent: Thursday, October 11, 2012 8:42 AM
To: Ramsey, Kevin
Subject: RE: cancer study and NFS

Excellent Kevin – thanks for the response.

From: Ramsey, Kevin
Sent: Thursday, October 11, 2012 8:41 AM
To: Blamey, Alan; Johnson, Robert; Crespo, Manuel
Cc: Smith, Galen; Chitty, Mark; Glenn, Patricia
Subject: FW: cancer study and NFS

I spoke with Terry Brock. He said the decision to proceed with the Pilot Study under the NAS contract was a staff-level decision. The SECY paper just informs the Commission that the staff has decided to proceed. It doesn't request Commission approval. The decision has been made and it is final.

From: Brock, Terry
Sent: Tuesday, October 09, 2012 4:57 PM
To: Ramsey, Kevin
Subject: RE: cancer study and NFS

Please do thanks. We're giving the licensees a heads-up before the information SECY paper is made public at the end of the week. Did you see my e-mail to John Pelchat? Let us know if you contact NFS before John does? Earlier e-mail attached.

Thanks,
Terry
Terry Brock, Ph.D.
Office of Nuclear Regulatory Research
U.S. Nuclear Regulatory Commission
Washington D.C. 20555
Mail Stop CSB-3A07
phone: 301-251-7487

From: Ramsey, Kevin
Sent: Tuesday, October 09, 2012 4:32 PM
To: Brock, Terry
Subject: RE: cancer study and NFS

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From: Brock, Terry
Sent: Tuesday, October 09, 2012 1:24 PM
To: Ramsey, Kevin
Subject: cancer study and NFS

Hi Kevin,

I left a message. As you may have heard by now staff is moving forward with the cancer study pilot studies with NFS being one of the sites. I've asked RII to contact NFS and let them know, but then I thought maybe you might want to do it. Do you have a preference?

Thanks,
Terry

Terry Brock, Ph.D.
Office of Nuclear Regulatory Research
U.S. Nuclear Regulatory Commission
Washington D.C. 20555
Mail Stop CSB-3A07
phone: 301-251-7487

From: Johnson, Robert
Sent: Thursday, October 11, 2012 11:37 AM
To: Ramsey, Kevin
Subject: FW: cancer study update - SECY paper and Next Phase

Additional (related) discussion,... from another angle

From: Bailey, Marissa
Sent: Thursday, October 11, 2012 10:34 AM
To: Kinneman, John; Johnson, Robert; Gody, Tony; Lesser, Mark; Blamey, Alan
Cc: Chapman, Gregory
Subject: FW: cancer study update - SECY paper and Next Phase

FYI

Thanks Greg.

From: Chapman, Gregory
Sent: Thursday, October 11, 2012 9:46 AM
To: Smith, Brian; Bailey, Marissa; Ramsey, Kevin
Subject: FW: cancer study update - SECY paper and Next Phase

FYI...Marissa was asking me about this yesterday. NFS is still in the list.

From: Brock, Terry
Sent: Thursday, October 11, 2012 9:19 AM
To: Weil, Jenny; Woodruff, Gena; Dacus, Eugene; Salomon, Stephen; Milligan, Patricia; Garry, Steven; Smith, James; Chapman, Gregory; Nimitz, Ronald; Stearns, Don; Cassidy, John; Burnell, Scott; Mizuno, Beth; Jones, Andrea; Dehmel, Jean-Claude
Cc: Tomon, John; Bush-Goddard, Stephanie; Cai, June
Subject: cancer study update - SECY paper and Next Phase

Hi All,

RES has completed the Information SECY paper informing the Commission that staff is pursuing the next phase of the cancer study. In the next phase, NAS will use the methods developed in Phase 1 to perform pilot studies at the seven sites they recommended (listed below). This effort should take approximately 2.5 years. You can access the SECY by clicking on the link below (the paper will be publicly available on Friday 10/12/12). Thanks to all that have helped contact the affected licensees and State folks.

[View ADAMS P8 Properties ML12249A121](#)

[Open ADAMS P8 Document \(SECY - Next Steps for the Analysis of Cancer Risks in Populations Near Nuclear Facilities Study\)](#)

Region I

- Millstone Power Station, Waterford, CT
- Haddam Neck (decommissioned), Haddam Neck, CT
- Oyster Creek Nuclear Generating Station, Forked River, NJ

Region II

- Nuclear Fuel Services, Erwin, TN (operating uranium fuel fabrication facility)

Region III

- Big Rock Point Nuclear Power Plant (decommissioned), Charlevoix, MI
- Dresden Nuclear Power Station, Morris, IL

Region IV

- San Onofre Nuclear Generating Station, San Clemente, CA

Call or e-mail if you have additional questions

Terry Brock, Ph.D.
Office of Nuclear Regulatory Research
U.S. Nuclear Regulatory Commission
Washington D.C. 20555
Mail Stop CSB-3A07
phone: 301-251-7487

From: Interested parties list for activities pertaining to the Cancer Risk project
<CANCERRISKSTUDY@LSW.NAS.EDU> on behalf of Greenleaf, Toni
<TGreenle@NAS.EDU>
Sent: Wednesday, October 24, 2012 8:47 AM
To: CANCERRISKSTUDY@LSW.NAS.EDU
Subject: U.S.NRC announces decision to move forward with the pilot study on cancer risks near
seven U.S. nuclear facilities
Attachments: press release 10 23 2012.pdf Attachment is publicly available
as ML12298A078.

Dear interested parties:

A U.S. Nuclear Regulatory Commission (USNRC) press release (attached) has announced the decision to move forward with the pilot activity on analysis of cancer risks near the seven nuclear facilities recommended by the National Academy of Sciences (NAS) Cancer Risk: Phase 1 committee in its recent report (http://www.nap.edu/catalog.php?record_id=13388). USNRC staff has submitted an issues paper to the Commission that contains opinions on why the study would be useful and comments on the NAS Phase 1 report. The link to the issues paper is below.

<http://adamswebsearch2.nrc.gov/webSearch2/main.jsp?AccessionNumber='ML12249A121>

You receive this message because you have expressed an interest in the NAS Cancer Risk: Phase 1 study. Please, feel free to circulate this message to interested parties. If you would like to be removed from the list and do not wish to receive notifications about the next study phase, please send us an email at crs@nas.edu with the title REMOVE FROM LIST. If you are member of the press and have questions regarding the announcement, please contact Jennifer Walsh, media relations officer, at jwalsh@nas.edu or 202-334-2183.

Ourania (Rania) Kosti, Ph.D.
Senior Program Officer
Nuclear and Radiation Studies Board
The National Academies
500 Fifth Street, NW
Washington, DC 20001
phone: 202 334 3066
fax: 202 334 3077
email: okosti@nas.edu

Toni Greenleaf
Nuclear and Radiation Studies Board
202 334 3066

From: Park, James
Sent: Wednesday, October 24, 2012 10:45 AM
To: Ramsey, Kevin; Haney, Catherine; Moore, Scott; Weil, Jenny; Kinneman, John; Habighorst, Peter; Johnson, Robert; Gody, Tony; Bailey, Marissa; Blamey, Alan; Crespo, Manuel; Smith, Galen; Chitty, Mark; Hsueh, Kevin
Subject: NFS in the News

FYI.

Plant Sites For Cancer Study Listed. WJHL-TV Johnson City, TN (10/23, 11:00 p.m. EDT, 28,050) broadcast that Nuclear Fuel Services in Erwin was among the seven facilities selected for the study. "The NRC says that cancer risk study will start in the next three months and last until 2014 around NFS. Joining NFS on the NRC's cancer study list, are six nuclear reactors: The Dresden Nuclear Power Station in Illinois, Millstone Power Station in Connecticut, Oyster Creek Nuclear Generating Station in New Jersey, Haddam Neck in Connecticut, Big Rock Point Nuclear Power Plant in Michigan and San Onofre Nuclear Generating Station in California."

From: Brock, Terry
Sent: Friday, April 26, 2013 11:46 AM
To: Ramsey, Kevin
Cc: Kinneman, John; Crespo, Manuel; Blamey, Alan; Johnson, Robert
Subject: RE: Status of pilot study on cancer risks near seven U.S. nuclear facilities

The pilot study is moving forward, the NRC is working out administrative details on starting the project in the near-term (next couple months). There was a slight delay due to the current budget situation in Washington.

Terry Brock
RES

From: Ramsey, Kevin
Sent: Friday, April 26, 2013 10:34 AM
To: Brock, Terry
Cc: Kinneman, John; Crespo, Manuel; Blamey, Alan; Johnson, Robert
Subject: Status of pilot study on cancer risks near seven U.S. nuclear facilities

Do you have updated information on the pilot study (schedule, etc.)? We are going to a public meeting at NFS on Monday and expect questions on this.

Kevin M. Ramsey
Senior Project Manager
Fuel Manufacturing Branch
U.S. NRC
301-492-3123

From: Interested parties list for activities pertaining to the Cancer Risk project
[mailto:CANCERRISKSTUDY@LSW.NAS.EDU] **On Behalf Of** Greenleaf, Toni
Sent: Wednesday, October 24, 2012 8:47 AM
To: CANCERRISKSTUDY@LSW.NAS.EDU
Subject: U.S.NRC announces decision to move forward with the pilot study on cancer risks near seven U.S. nuclear facilities

Dear interested parties:

A U.S. Nuclear Regulatory Commission (USNRC) press release (attached) has announced the decision to move forward with the pilot activity on analysis of cancer risks near the seven nuclear facilities recommended by the National Academy of Sciences (NAS) Cancer Risk: Phase 1 committee in its recent report (http://www.nap.edu/catalog.php?record_id=13388). USNRC staff has submitted an issues paper to the Commission that contains opinions on why the study would be useful and comments on the NAS Phase 1 report. The link to the issues paper is below.

<http://adamswebsearch2.nrc.gov/webSearch2/main.jsp?AccessionNumber='ML12249A121>

You receive this message because you have expressed an interest in the NAS Cancer Risk: Phase 1 study. Please, feel free to circulate this message to interested parties. If you would like to be removed from the list and do not wish to receive notifications about the next study phase, please send us an email at crs@nas.edu with the title REMOVE FROM LIST. If

you are member of the press and have questions regarding the announcement, please contact Jennifer Walsh, media relations officer, at jwalsh@nas.edu or 202-334-2183.

Ourania (Rania) Kosti, Ph.D.
Senior Program Officer
Nuclear and Radiation Studies Board
The National Academies
500 Fifth Street, NW
Washington, DC 20001
phone: 202 334 3066
fax: 202 334 3077
email: okosti@nas.edu

Toni Greenleaf
Nuclear and Radiation Studies Board
202 334 3066

From: Wheeler, Jennifer K <jkwheeler@nuclearfuelservices.com>
Sent: Tuesday, September 24, 2013 9:21 AM
To: Ramsey, Kevin
Subject: RE: National Academy of Sciences Starts Pilot Planning Study of Cancer Risks in Populations Near Seven Nuclear Facilities

Thanks

From: Ramsey, Kevin [mailto:Kevin.Ramsey@nrc.gov]
Sent: Monday, September 23, 2013 2:33 PM
To: Wheeler, Jennifer K
Subject: EXTERNAL:FW: National Academy of Sciences Starts Pilot Planning Study of Cancer Risks in Populations Near Seven Nuclear Facilities

See attached FYI.

~~This message is intended only for the individual or entity to which it is addressed and contains information that is proprietary to The Babcock & Wilcox Company and/or its affiliates, or may be otherwise confidential. If the reader of this message is not the intended recipient, or the employee agent responsible for delivering the message to the intended recipient, you are hereby notified that any dissemination, distribution or copying of this communication is strictly prohibited. If you have received this communication in error, please notify the sender immediately by return e-mail and delete this message from your computer. Thank you.~~

From: Brock, Terry
Sent: Tuesday, October 01, 2013 10:17 AM
To: Smith, James; Chapman, Gregory
Cc: Bailey, Marissa; Andersen, James; Damon, Dennis; Ramsey, Kevin
Subject: RE: National Academy of Sciences Starts Pilot Planning Study of Cancer Risks in Populations Near Seven Nuclear Facilities

Hi Jim/Greg,

Jim you are correct. NAS chose the pilot sites in the first phase of the study. The pilot phase of the study was supposed to start in February, but we got delayed because of the sequestration. Funds became available and we awarded NAS the grant to start on Sept. 1, 2013. NAS is in the process of establishing the study committee and should hold their first meeting in November. As far as interactions with the licensees, we plan to minimize the impact to them by having NAS search public effluent records through NRC and the specific State cancer registries. Let me know if you have any questions. Here's a link to the updated fact sheet.

<http://www.nrc.gov/reading-rm/doc-collections/fact-sheets/bg-analys-cancer-risk-study.html>

Terry

Terry Brock, Ph.D.
Office of Nuclear Regulatory Research
U.S. Nuclear Regulatory Commission
Washington D.C. 20555
Mail Stop CSB-3A07
phone: 301-251-7487

From: Smith, James
Sent: Monday, September 30, 2013 2:40 PM
To: Chapman, Gregory
Cc: Bailey, Marissa; Andersen, James; Damon, Dennis; Brock, Terry; Ramsey, Kevin
Subject: RE: National Academy of Sciences Starts Pilot Planning Study of Cancer Risks in Populations Near Seven Nuclear Facilities

Terry Brock in RES has that project. I get asked to look at the results when they have progress reports, but as far as I know, we aren't involved in choosing the licensees they wish to study or facilitating their interactions with the licensees.

James Smith

HEALTH PHYSICIST
NMSS/FCSS/UEB

Office of Nuclear Material Safety and Safeguards
Division of Fuel Cycle, Safety, and Safeguards
Uranium Enrichment Branch, MS 3WFN-13C64
Washington, DC 20555

E-mail: James.Smith@nrc.gov

Work (301) 287-9138

 NRC

From: Chapman, Gregory
Sent: Monday, September 30, 2013 2:29 PM
To: Ramsey, Kevin
Cc: Smith, James
Subject: RE: National Academy of Sciences Starts Pilot Planning Study of Cancer Risks in Populations Near Seven Nuclear Facilities

Dennis Damon was just talking w/me about this. To my remembrance, responsibility for this was transferred to Jim Smith when he was hired into the PM/HP spot in UEB and I transferred to TSB/PORSEB as per our BC's desire at the time. I no longer have working knowledge now.

Greg

From: Ramsey, Kevin
Sent: Monday, September 30, 2013 2:04 PM
To: Chapman, Gregory
Subject: FW: National Academy of Sciences Starts Pilot Planning Study of Cancer Risks in Populations Near Seven Nuclear Facilities

Were you aware of this? Our management is concerned that we aren't sharing.

From: Interested parties list for activities pertaining to the Cancer Risk project
[mailto:CANCERRISKSTUDY@LSW.NAS.EDU] **On Behalf Of** Greenleaf, Toni
Sent: Monday, September 23, 2013 1:22 PM
To: CANCERRISKSTUDY@LSW.NAS.EDU
Subject: National Academy of Sciences Starts Pilot Planning Study of Cancer Risks in Populations Near Seven Nuclear Facilities

Interested Parties:

The National Academy of Sciences (NAS) will perform a pilot study of cancer risks in populations near seven U.S. Nuclear Regulatory Commission (U.S.NRC)-licensed nuclear facilities using two epidemiologic study designs: (i) an ecologic study of multiple cancer types of populations of all ages and (ii) a record-linkage-based case-control study of cancers in children. The pilot study will have two steps: Pilot Planning and Pilot Execution. NAS has started the Pilot Planning step which is estimated to take one year to complete.

The seven nuclear facilities that are part of the pilot study are:

Dresden Nuclear Power Station, Morris, Illinois
Millstone Power Station, Waterford, Connecticut
Oyster Creek Nuclear Generating Station, Forked River, New Jersey Haddam Neck, Haddam Neck, Connecticut
Big Rock Point Nuclear Power Plant, Charlevoix, Michigan
San Onofre Nuclear Generating Station, San Clemente, California
Nuclear Fuel Services, Erwin, Tennessee

The study is sponsored by the U.S. Nuclear Regulatory Commission. It is a continuation of a previous study that was completed in May 2012. The report from that first study can be found here:
http://www.nap.edu/catalog.php?record_id=13388

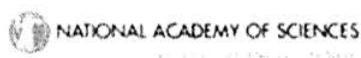
The National Academy of Sciences, National Academy of Engineering, Institute of Medicine, and National Research Council make up the National Academies. They are independent, nonprofit

institutions that provide science, technology, and health policy advice under an 1863 congressional charter. Panel members, who serve pro bono as volunteers, are chosen by the Academies for each study based on their expertise and experience and must satisfy the Academies' conflict-of-interest standards. The resulting consensus reports undergo external peer review before completion. For more information, visit <http://national-academies.org/studycommitteeprocess.pdf>

Please direct comments and questions to the project email: crs@nas.edu. If you would like to be removed from the list please send us an email with the title REMOVE FROM LIST.

If you are member of the press and have questions regarding this message, please contact Jennifer Walsh, media relations officer, at jwalsh@nas.edu or 202-334-2183.

Ourania (Rania) Kosti, Ph.D.
Senior Program Officer
Nuclear and Radiation Studies Board
The National Academies
phone: 202 334 3066



From: Piccone, Josephine
Sent: Monday, October 07, 2013 7:04 AM
To: Haney, Catherine; Moore, Scott; Bailey, Marissa; Anderson, James; Lombard, Mark; Hsia, Anthony
Cc: Gray, Anita; Ramsey, Kevin
Subject: FW: LLW Forum Flash: National Academy of Sciences Starts Cancer Risk Pilot Study

FYI..good summary of the NAS Cancer Risk Study

From: Llwwforuminc@aol.com [Llwwforuminc@aol.com]
Sent: Sunday, October 06, 2013 9:57 PM
To: Llwwforuminc@aol.com
Subject: LLW Forum Flash: National Academy of Sciences Starts Cancer Risk Pilot Study

National Academy of Sciences (NAS)

National Academy of Sciences Starts Cancer Risk Pilot Study

By press release dated September 23, 2013, it was announced that the National Academy of Sciences (NAS) has started the initial planning step of a U.S. Nuclear Regulatory Commission-sponsored pilot study of cancer risks in populations around six U.S. nuclear power plants and a nuclear fuel-cycle facility. NRC asked the Academy to carry out this pilot to help the agency determine whether to extend the study to additional U.S. reactors and fuel-cycle facilities. Information about the study will be presented during an agenda session at the upcoming LLW Forum meeting in Park City, Utah on October 21-23, 2013. *(For additional information on the LLW Forum meeting, see <http://www.llwforum.org/pdfs/Oct2013MeetingAgenda.pdf>.)*

NAS staff will be holding meetings in the next few months regarding the pilot study, with meeting information being posted on the Academy website 10 business days before a meeting. The pilot study, described in NRC staff's update (SECY-12-0136) to the agency's five Commissioners, will examine cancer risks around each of the seven nuclear sites using two types of epidemiological studies. The first will examine multiple cancer types in populations of all ages living near the nuclear sites. The second will be a record-linkage-based case-control study of cancers in children born near the sites. The six nuclear power plants are:

- Dresden Nuclear Power Station in Morris, Illinois;
- Millstone Power Station in Waterford, Connecticut;
- Oyster Creek Nuclear Generating Station in Forked River, New Jersey;
- Haddam Neck (decommissioned) in Haddam Neck, Connecticut;
- Big Rock Point Nuclear Power Plant (decommissioned) in Charlevoix, Michigan; and,
- San Onofre Nuclear Generating Station (permanently shut down) in San Clemente, California.

The Dresden and Millstone sites include both operating reactors and a decommissioned reactor. The pilot effort will also study Nuclear Fuel Services in Erwin, Tenn. NAS recommended these sites because they provide a good sampling of

facilities with different operating histories, population sizes around them, and expected levels of complexity in data retrieval from the relevant state cancer registries.

The NAS study aims to update and improve information on potential cancer risks around nuclear sites from the 1990 U.S. National Institutes of Health – National Cancer Institute (NCI) report, "Cancer in Populations Living Near Nuclear Facilities." The NRC has used the 1990 NCI report as a primary resource when communicating with the public about cancer risks in counties that contain or are adjacent to nuclear sites.

For additional information regarding the NAS cancer risk pilot study, please contact Scott Burnell at (301) 415-8200. For additional information about the fall 2013 LLW Forum meeting on October 21-23, please go to <http://www.llwforum.org/pdfs/MeetingBulletinFall2013.pdf>.

October 6, 2013

Todd D. Lovinger, Esq.
Executive Director
LLW Forum, Inc.

(202) 265-7990

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From: Interested parties list for activities pertaining to the Cancer Risk project
<CANCERRISKSTUDY@LSW.NAS.EDU> on behalf of Greenleaf, Toni
<TGreenle@NAS.EDU>
Sent: Tuesday, November 26, 2013 12:01 PM
To: CANCERRISKSTUDY@LSW.NAS.EDU
Subject: National Academy of Sciences' Pilot Planning Study of Cancer Risks in Populations Near
Seven Nuclear Facilities: Public Meeting, December 11, 2013, in Washington, DC
Attachments: Public Agenda Draft, 11-26-2013.pdf

Dear Interested Parties:

The National Academy of Sciences (NAS) Committee tasked with planning the pilot study of *Analysis of Cancer Risks in Populations near Nuclear Facilities* is scheduled to hold a public meeting at 2-4 PM on Wednesday, December 11, 2013, at the National Academy of Sciences Building located at 2101 Constitution Avenue, NW (Room 125). A draft agenda for the public meeting is attached.

Members of the public that wish to attend the meeting should contact Erin Wingo at 202 334 3066 or crs@nas.edu. Members of the press who wish to attend the meeting should contact Lauren Rugani at 202 334 3593 or LRugani@nas.edu. Seating is limited.

Members of the public and press unable to attend may listen to the meeting through a toll-free telephone line or view the presentations via WebEx. Members of the public interested in calling in or viewing the WebEx should contact Erin Wingo at 202 334 3066 or crs@nas.edu by December 9 for instructions.

Study at a Glance

NAS will perform the pilot study of cancer risks in populations near seven U.S. Nuclear Regulatory Commission (U.S.NRC)-licensed nuclear facilities using two epidemiologic study designs: (i) an ecologic study of multiple cancer types of populations of all ages and (ii) a record-linkage-based case-control study of cancers in children. The pilot study will have two steps: Pilot Planning and Pilot Execution. NAS has started the Pilot Planning step which is estimated to take one year to complete.

The seven nuclear facilities that are part of the pilot study are:

Dresden Nuclear Power Station, Morris, Illinois
Millstone Power Station, Waterford, Connecticut
Oyster Creek Nuclear Generating Station, Forked River
New Jersey Haddam Neck, Haddam Neck, Connecticut
Big Rock Point Nuclear Power Plant, Charlevoix, Michigan
San Onofre Nuclear Generating Station, San Clemente, California
Nuclear Fuel Services, Erwin, Tennessee

The study is sponsored by the U.S. NRC. It is a continuation of a previous study that was completed in May 2012. The report from that first study can be found here: http://www.nap.edu/catalog.php?record_id=13388

The National Academy of Sciences, National Academy of Engineering, Institute of Medicine, and National Research Council make up the National Academies. They are independent, nonprofit institutions that provide science, technology, and health policy advice under an 1863 congressional charter. Panel members, who serve pro bono as volunteers, are chosen by the Academies for each study based on their expertise and experience and must satisfy the Academies' conflict-of-interest standards. The resulting consensus reports

undergo external peer review before completion. For more information, visit <http://national-academies.org/studycommitteeprocess.pdf>

Please direct comments and questions to the project email: crs@nas.edu. If you would like to be removed from the list please send us an email with the title REMOVE FROM LIST.
If you are member of the press and have questions regarding this message, please contact Lauren Rugani, media officer, at 202 334 3593 or LRugani@nas.edu.

Please do NOT respond to this email.

Ourania (Rania) Kostis, Ph.D.
Senior Program Officer
Nuclear and Radiation Studies Board
The National Academies
phone: 202 334 3066

=====

Toni Greenleaf
Administrative/Financial Associate
Nuclear and Radiation Studies Board
202/334-3066
Fax: 202/334-3077

THE NATIONAL ACADEMIES

Advisers to the Nation on Science, Engineering, and Medicine

Nuclear and Radiation Studies Board

500 Fifth Street, NW
Washington, DC 20001
Phone: 202 334-3066
Fax: 202 334-3077
www.nationalacademies.org

Analysis of Cancer Risks in Populations near Nuclear Facilities: Phase 2 Pilot Planning

MEETING AGENDA DRAFT*

First Committee Meeting: December 11, 2013

**National Academy of Sciences Building
2101 Constitution Avenue, NW
Room 125**

- | | |
|---------|---|
| 2:00 PM | Call to order and welcome
Introductions of committee and staff
<i>Jon Samet, committee chair</i> |
| 2:10 PM | Analysis of cancer risks in populations near nuclear facilities: study background
<i>Rania Kosti, study director</i> |
| 2:30 PM | Planning for the pilot of analysis of cancer risks near nuclear facilities
<i>Jon Samet, committee chair</i> |
| 2:40 PM | Analysis of cancer risks in populations near nuclear facilities—Phase 2 Pilot Planning study request
<i>Brian Sheron, Director, Office of Nuclear Regulatory Research, U.S. Nuclear Regulatory Commission; Terry Brock, Senior Program Manager, Office of Nuclear Regulatory Research, U.S. Nuclear Regulatory Commission</i> |
| 3:00 PM | Questions and Discussion |
| 3:15 PM | Congressional Comments (TBD) |
| 3:30 PM | Questions and Discussion |
| 3:40 PM | Public Comments |
| 4:00 PM | Adjourn Session Open to the Public |

Members of the public that wish to attend the meeting should contact Erin Wingo at 202 334 3066 or crs@nas.edu. Members of the press who wish to attend the meeting should contact Lauren Rugani, media officer, at 202 334 3593 or LRugani@nas.edu. Seating is limited.

Members of the public and press unable to attend may listen to the meeting through a toll-free telephone line or view the presentations via WebEx. Members of the public interested in calling in or viewing the WebEx should contact Erin Wingo at 202 334 3066 or crs@nas.edu by December 9 for instructions.

*This draft is subject to change. For updated information please visit the National Academy of Science's website.

From: Interested parties list for activities pertaining to the Cancer Risk project
<CANCERRISKSTUDY@LSW.NAS.EDU> on behalf of Jacobus, John (NIH/OD/ORS) [E]
<jacobusj@ORS.OD.NIH.GOV>
Sent: Monday, February 10, 2014 10:28 AM
To: CANCERRISKSTUDY@LSW.NAS.EDU
Subject: Re: National Academy of Sciences' Pilot Planning Study of Cancer Risks in Populations
Near Seven Nuclear Facilities: Addition of member to provisional committee

As you should know, controlling confounding factors is important in any epidemiological study. Maybe we should wait for the results to be published, unless you have already made you decision about this study.

-- John

From: (b)(6)
Sent: Monday, February 10, 2014 10:22 AM
To: CANCERRISKSTUDY@LSW.NAS.EDU
Subject: Re: National Academy of Sciences' Pilot Planning Study of Cancer Risks in Populations Near Seven
Nuclear Facilities: Addition of member to provisional committee

Thank You Joe!

And this study doesn't take into consideration the "cocktail of chemicals" we humans are bombarded with on a daily basis from ingredients used to make RUBBER used as conditioner in our bread to diesel exhaust and toxins in our air, to the chemicals in our water. Yes, a very low dose of radiation may not 'hurt' us but if a human body is pummeled day in and day out with other environmental 'factors' that may not cause harm individually but MIXED together are toxic and cancerous!

While I know it is impossible to do a study on all the environmental factors humans may be exposed to on a daily basis, A whole NEW methodology needs to in place before any of type of study can be taken seriously. Even if the study is coming from the "FOX WATCHING THE HENHOUSE"

~Cheers, Christy

From: (b)(6) >
To: CANCERRISKSTUDY@LSW.NAS.EDU
Sent: Friday, February 7, 2014 4:27 PM
Subject: Re: National Academy of Sciences' Pilot Planning Study of Cancer Risks in Populations Near Seven
Nuclear Facilities: Addition of member to provisional committee

I think the NAS is not a co-conspirator , merely a willing partner which will take the money if someone has to take the money.

Look at the conclusions of the initial scoping study. NAS said that such a study has nearly overwhelming obstacles. But, if the NRC as directed by Congress has to spend the money , why shouldn't NAS get a piece of the action?

On Feb 7, 2014, at 4:04 PM, "Jacobus, John (NIH/OD/ORS) [E]" <jacobusj@ORS.OD.NIH.GOV> wrote:

So, is the NAS also in on the conspiracy since they are conducting the study?

-- John

John Jacobus, MS
Certified Health Physicist
National Institutes of Health
Division of Radiation Safety
21 Wilson Drive, MSC 6780
Bethesda, MD 20892-6780

From: (b)(6)
Sent: Friday, February 07, 2014 3:48 PM
To: CANCERRISKSTUDY@LSW.NAS.EDU
Subject: Re: National Academy of Sciences' Pilot Planning Study of Cancer Risks in Populations Near Seven Nuclear Facilities: Addition of member to provisional committee

While I appreciate the purpose of the study, The Nuclear Regulatory Commission is nothing more than a 'captured' government agency. The relationship between the NRC, and the lobbyists who lobby Congress AGAINST regulation is nothing more than a revolving door. The people who work for the government in the industry learn the 'ins and outs' and the 'who's who' so that they when they leave the government and become lobbyists they can bypass or navigate around any opposition which adds to the disfunction of the agency. Any study results will surely be whitewashed. Also, the NRC is notorious for 'lowering' standards for Nuclear plants who are not in compliance. These plants were only supposed to have a 30 year life span but many are passed their life expectancy with standards that would have NO WAY been allowed 30 years ago. ~Christy Anderson

From: Brian Hanley (b)(6)
To: CANCERRISKSTUDY@LSW.NAS.EDU
Sent: Friday, February 7, 2014 1:06 PM
Subject: Re: National Academy of Sciences' Pilot Planning Study of Cancer Risks in Populations Near Seven Nuclear Facilities: Addition of member to provisional committee

We know the answers already. The issue is not number of studies. The issue is inability to speak up about the results science already has in hand.
On 2/7/2014 9:34 AM, Greenleaf, Toni wrote:

Interested parties:

We would like to inform you of the addition of Christie Ehemann, Centers for Disease Control and Prevention, on the Committee on Analysis of Cancer Risks in Populations near Nuclear Facilities: Phase 2 Pilot Planning. Dr. Ehemann will bring additional expertise to the committee in the collection, research, and analysis of data from cancer registries.

The slate of provisional committee appointments is open to public comment for 20 calendar days. Members of the public can provide comments here:
<http://www8.nationalacademies.org/cp/CommitteeView.aspx?key=49579>

Study Background

NAS will perform the pilot study of cancer risks in populations near seven U.S. Nuclear Regulatory Commission (U.S.NRC)-licensed nuclear facilities using two epidemiologic study designs: (i) an ecologic study of multiple cancer types of populations of all ages and (ii) a record-linkage-based case-control study of cancers in children. The pilot study will have two steps: Pilot Planning and Pilot Execution. NAS has started the Pilot Planning step which is estimated to take one year to complete.

The seven nuclear facilities that are part of the pilot study are:

Dresden Nuclear Power
Station, Morris, Illinois
Millstone Power Station,
Waterford, Connecticut
Oyster Creek Nuclear Generating Station, Forked
River, New Jersey Haddam Neck, Haddam Neck,
Connecticut
Big Rock Point Nuclear Power Plant, Charlevoix, Michigan
San Onofre Nuclear Generating Station, San Clemente, California
Nuclear Fuel Services, Erwin, Tennessee

The study is sponsored by the U.S. Nuclear Regulatory Commission. It is a continuation of a previous study that was completed in May 2012. The report from that first study can be found here:
http://www.nap.edu/catalog.php?record_id=13388

The National Academy of Sciences, National Academy of Engineering, Institute of Medicine, and National Research Council make up the National Academies. They are independent, nonprofit institutions that provide science, technology, and health policy advice under an 1863 congressional charter. Panel members, who serve pro bono as volunteers, are chosen by the Academies for each study based on their expertise and experience and must satisfy the Academies' conflict-of-interest standards. The resulting consensus reports undergo external peer review before completion. For more information, visit <http://national-academies.org/studycommitteeprocess.pdf>

Please direct comments and questions to the project email: crs@nas.edu. If you would like to be removed from the list please send us an email with the title REMOVE FROM LIST.

If you are member of the press and have questions regarding this message, please contact Lauren Rugani at 202 334 3593 or LRugani@nas.edu.

Please do NOT respond to this email.

Ourania (Rania) Kosti, Ph.D.
Senior Program Officer
Nuclear and Radiation Studies Board
The National Academies

From: Ramsey, Kevin
Sent: Wednesday, March 19, 2014 1:10 PM
To: Brock, Terry
Subject: RE: Docket Number for NFS

1957

From: Brock, Terry
Sent: Wednesday, March 19, 2014 12:00 PM
To: Ramsey, Kevin
Cc: Diaz, Marilyn; Johnson, Robert
Subject: RE: Docket Number for NFS

Thanks, this is extremely useful. When did NFS become an AEC or NRC licensee?

Terry

From: Ramsey, Kevin
Sent: Wednesday, March 19, 2014 11:29 AM
To: Brock, Terry
Cc: Diaz, Marilyn; Johnson, Robert
Subject: RE: Docket Number for NFS

Here's what I found.

From: Brock, Terry
Sent: Wednesday, March 19, 2014 10:35 AM
To: Ramsey, Kevin
Subject: RE: Doceckt Number for NFS

As far back as we have records.

From: Ramsey, Kevin
Sent: Wednesday, March 19, 2014 10:34 AM
To: Brock, Terry; Diaz, Marilyn
Subject: RE: Doceckt Number for NFS

How far back are you going? Some information is already posted at <http://www.nrc.gov/materials/fuel-cycle-fac/fuel-fab/nfs-effluent-reports.html>. Unfortunately, it doesn't appear to have been updated recently.

Accession Number	8709100181
Document Title	"Rept of Effluent Monitoring & Release to Unrestricted Areas for Jan-June 1987." W/870828 ltr.
Document Date	6/30/87 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	8808180248
Document Title	Insp Rept 70-0143/88-18 on 880711-15.No violations & 0.viations noted.Major areas inspected:environ monitoring, liquid radwaste treatment,effluent measurements & analyses & confirmatory measurements.
Document Date	7/28/88 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	8812220069
Document Title	Application for amend to License SNM-124, revising SG-2 Condition 2.12 re highly enriched U-bearing liquid effluents.Fee paid.
Document Date	10/14/88 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	8901090017
Document Title	Insp Rept 70-0143/88-31 on 881128-1202.No violations & deviations noted.Major areas inspected: radiological effluent sampling & monitoring,radiological environ enhancement projects & State of TN end-of-project radiation survey.
Document Date	12/22/88 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	8903210030
Document Title	"NFS Rept of Effluent Monitoring & Release to Unrestricted Areas,Jul-Dec,1988." W/890301 ltr.
Document Date	12/31/88 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	8910020064
Document Title	Insp Rept 70-0143/89-20 on 890814-18.No violations & deviations noted.Major areas inspected:areas of radiological effluent processing,radwaste,radiological environ monitoring,burial ground treatment & pond decommissioning.
Document Date	9/7/89 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	9005080060
Document Title	Insp Rept 70-0143/90-08 on 900319-23.No violations or deviations noted.Major areas inspected: radiological effluents,environ monitoring,onsite waste burial & Pu facility & pond decommissioning.
Document Date	4/6/90 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	9008240207
Document Title	Insp Rept 70-0143/90-16 on 900716-20 & 30-31.No violations or deviations noted.Major areas inspected: radiological effluents,environ monitoring,solid waste burials & Pu facility & pond decommissioning.
Document Date	8/9/90 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	9009070041
Document Title	Effluent monitoring rept for Jan-June 1990.W/900831 ltr.
Document Date	6/30/90 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	9010170149
Document Title	Submits amended rept of effluent monitoring at Erwin, TN plant for Jan-June 1990. Amended rept fulfills licensee commitment to provide update upon receipt of outstanding isotopic results.
Document Date	10/9/90 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	9010170173
Document Title	Amended rept of effluent monitoring & release to unrestricted areas for Jan-June 1990.
Document Date	6/30/90 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	9106050330
Document Title	Forwards NFS weekly status rept for wks of 910513-17 & 0520- 24. Regional insp will be conducted during wk of 910520 in area of decommissioning & radioactive effluents & chemistry.
Document Date	5/20/91 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	9109100285
Document Title	Forwards "Monthly Discharge Monitoring Rept for June 1991" & "Toxicological Evaluation of Treated Effluent Biomonitoring Support for NPDES Permit: NFS, Inc May Monitoring Period."
Document Date	7/15/91 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	9109100300
Document Title	"Toxicological Evaluation of Treated Effluent Biomonitoring Support for NPDES Permit: NFS, Inc May Monitoring Period."
Document Date	5/31/91 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	9110080178
Document Title	Forwards corrected rept of effluent monitoring at plant for Jan-June 1991, containing outstanding isotopic results.
Document Date	9/9/91 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	9110080349
Document Title	Corrected "Rept of Effluent Monitoring & Release to Unrestricted Areas, Jan-June 1991."
Document Date	6/30/91 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	9110100159
Document Title	Forwards amended rept of effluent monitoring at Erwin, TN plant for period covering Jan - June 1991, in accordance w/ requirements set forth in 10CFR70.59. W/o encl.
Document Date	9/6/91 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	9112120015
Document Title	Insp rept 70-0143/91-29 on 911021-25 & 30-31. Noncited violation noted. Major areas inspected: plutonium facilities decommissioning, waste ponds decommissioning, radwaste mgt, including radioactive liquid effluents & environ protection.
Document Date	11/27/91 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	9204070279
Document Title	"Biannual Effluent Monitoring Rept," for Jul-Dec 1991. W/920228 ltr.
Document Date	12/31/91 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	9302100085
Document Title	Forwards corrected Page 11 to licensee 930126 response to NRC 921112 request for addl info re dose assessments & effluent data.
Document Date	2/1/93 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	9305120303
Document Title	"Biannual Effluent Monitoring Rept Jul-Dec 1992." W/930301 ltr.
Document Date	12/31/92 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	9307120070
Document Title	Forwards insp rept 70-0143/93-13 on 930504-0604. Violation noted being considered for escalated enforcement action & involves failure to comply w/existing nuclear criticality safety limits during transfers of liquid effluents.
Document Date	6/24/93 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	9310130309
Document Title	"Rept of Effluent Monitoring & Release to Unrestricted Areas." W/930827 ltr.
Document Date	6/30/93 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	9406060085
Document Title	Insp rept 70-0143/94-05 on 940414, 18-22 & 28. No violations noted. Major areas inspected: environ monitoring, liquid & gaseous effluent waste mgt, plutonium facilities & waste ponds decommissioning activities & radwaste transport.
Document Date	5/25/94 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	9407280064
Document Title	"PCE WWTF Effluent Concentration Jan 1994." W/940215 ltr.
Document Date	1/31/94 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	9407280122
Document Title	"Rept Of Effluent Monitoring & Release To Unrestricted Areas," for period of Jul-Dec 1993. W/940301 ltr.
Document Date	12/31/93 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	9408290375
Document Title	Requests authorization of addl effluent stream to sanitary sewer & adjusted sewer rate to reflect advanced payment for any sewer discharges above 1993 average daily flow of 22,738 gallons per day.
Document Date	6/16/94 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	9409190260
Document Title	Forwards "Rept of Effluent Monitoring & Release to Unrestricted Areas Jan-June 1994" & amended "Effluent Monitoring Rept for First Half 1993."
Document Date	8/29/94 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	9409190262
Document Title	"Rept of Effluent Monitoring & Release to Unrestricted Areas Jan-June 1994."
Document Date	6/30/94 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	9409190264
Document Title	Amended "Effluent Monitoring Rept for First Half of 1993."
Document Date	6/30/93 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	9502160262
Document Title	Submits plans for remediating areas of Pond 4 outside of Bldg 410,including evaluations of estimated worker & public radiation exposures & potential groundwater impact.Summary rept, "Impact of Airborne Radioactive Effluent..." encl.
Document Date	2/8/95 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	9502160265
Document Title	"Summary Rept:Impact of Airborne Radioactive Effluent From Pond 4 Remediation Project."
Document Date	11/10/94 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	9503090295
Document Title	"Bi-annual Effluent Monitoring Rept Jul-Dec 1994." W/950228 ltr.
Document Date	12/31/94 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	9506280019
Document Title	Insp rept 70-0143/95-03 on 950522-26.No violations noted. Major areas inspected:environ monitoring program,effluent controls & mgt.
Document Date	6/16/95 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	9509080100
Document Title	"Radioactivity in Effluent Liquid & Air,Jan-June 1995." W/ 950829 ltr.
Document Date	6/30/95 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	9509180315
Document Title	Insp rept 70-0143/95-06 on 950807-11.No violations noted. Major areas inspected:onsite review of environmental monitoring program effluent controls & mgt program,status of "Pond 4" area decommissioning project.
Document Date	9/8/95 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	9603050369
Document Title	"Biannual Effluent Monitoring Rept Jul-Dec 1995," per 10CFR70.59.W/960129 ltr.
Document Date	12/31/95 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	9607030306
Document Title	"Radioactivity in Effluent Liquid & Air from Jul-Dec 1995." W/960229 ltr.
Document Date	12/31/95 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	9803060336
Document Title	Amended "Bi-Annual Effluent Monitoring Rept of Radioactivity in Effluent Liquid," for period Jul-Dec 1995.
Document Date	12/31/95 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	9805140059
Document Title	Forwards "Biannual Effluent Monitoring rept for Jan-June 1992." Isotopic ratios applied to determine respective activity contributions were estimated by averaging available appropriate isotopic ratios. Amended rept will be provided.
Document Date	8/28/92 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	9805180092
Document Title	"Rept of Effluent Monitoring & Release to Unrestricted Areas for Jan-June 1992."
Document Date	6/30/92 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	9608280262
Document Title	"Bi-Annual Effluent Monitoring Rept for Jan-June 1996." W/960822 ltr.
Document Date	6/30/96 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	9703040368
Document Title	"Bi-annual Effluent Monitoring Rept for Jul-Dec 1996." W/970225 ltr.
Document Date	12/31/96 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	9707030103
Document Title	Insp rept 70-0143/97-05 on 970512-16.No violations noted. Major areas inspected:effluent waste mgt, environ protection & decommissioning activities.
Document Date	6/13/97 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	9709190180
Document Title	"Bi-Annual Effluent Monitoring Rept in Effluent Liquid for Period of Jan-June 1997." W/970829 ltr.
Document Date	6/30/97 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	9803060322
Document Title	Forwards "Bi-Annual Effluent Monitoring Repts" & amends to previous repts for 1996 & 1997.
Document Date	2/27/98 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	9803060325
Document Title	"Bi-Annual Effluent Monitoring Rept of Radioactivity in Effluent Liquid," for period Jul-Dec 1997.
Document Date	12/31/97 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	9803060326
Document Title	"Bi-Annual Effluent Monitoring Rept of Radioactivity in Effluent Air," for period Jul-Dec 1997.
Document Date	12/31/97 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	9803060330
Document Title	Amended "Bi-Annual Effluent Monitoring Rept of Radioactivity in Effluent Air," for period Jan-June 1997.
Document Date	6/30/97 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	9803060340
Document Title	Amended "Bi-Annual Effluent Monitoring Rept of Radioactivity in Effluent Liquid," for period Jan-June 1996.
Document Date	6/30/96 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number 9803060343
Document Title Amended "Bi-Annual Effluent Monitoring Rept of Radioactivity in Effluent Liquid," for period Jul-Dec 1996.
Document Date 12/31/96 12:00AM
Docket Number 07000143
Availability Non-Publicly Available

Accession Number 9803060346
Document Title Amended "Bi-Annual Effluent Monitoring Rept of Radioactivity in Effluent Liquid," for period Jan-June 1997.
Document Date 6/30/97 12:00AM
Docket Number 07000143
Availability Non-Publicly Available

Accession Number 9806250186
Document Title Forwards draft "Environ Assessment for Renewal of SNM-124." EA can be finalized after NRC provides guidance on how to resolve effluent & environ monitoring issues & on whether North Site actions will remain as proposed by NFS.
Document Date 6/8/98 12:00AM
Docket Number 07000143
Availability Non-Publicly Available

Accession Number 9809030055
Document Title Forwards "Rept of Radioactivity in Effluent Liquid for Period, Jan-June 1998." Attachment C includes amended repts for radioactivity in effluent air for listed monitoring periods Jul-Dec 1996, Jan-June & Jul-Dec 1997.
Document Date 8/28/98 12:00AM
Docket Number 07000143
Availability Non-Publicly Available

Accession Number 9809030061
Document Title "Radioactivity in Effluent Liquid Jan-June 1998."
Document Date 6/30/98 12:00AM
Docket Number 07000143
Availability Non-Publicly Available

Accession Number 9809030066
Document Title Amended "Radioactivity in Effluent Liquid Jul-Dec 1997."
Document Date 12/31/97 12:00AM
Docket Number 07000143
Availability Non-Publicly Available

Accession Number 9810020015
Document Title Forwards addl info on radiological air & liquid effluents reported for first six months of 1998, per 980914 telcon with H Astwood & W Gloersen of NRC.
Document Date 9/28/98 12:00AM
Docket Number 07000143
Availability Non-Publicly Available

Accession Number 9903160151
Document Title Forwards "Rept of Radioactivity in Effluent Liquid for Period Jul-Dec 1998" & "Rept of Radioactivity in Effluent Air for Period Jul-Dec 1998," IAW requirement of 10CFR70.59.
Document Date 2/25/99 12:00AM
Docket Number 07000143
Availability Non-Publicly Available

Accession Number 9903160154
Document Title "Rept of Radioactivity in Effluent Liquid for Period Jul-Dec 1998."
Document Date 12/31/98 12:00AM
Docket Number 07000143
Availability Non-Publicly Available

Accession Number 9903160155
Document Title "Rept of Radioactivity in Effluent Air for Period Jul-Dec 1998."
Document Date 12/31/98 12:00AM
Docket Number 07000143
Availability Non-Publicly Available

Accession Number 9909010035
Document Title Forwards bi-annual effluent monitoring repts for Jan-June 1999,IAW 10CFR70.59 requirements.Revised dose & air activity concentration summary rept for period July-Dec 1998,encl.
Document Date 8/27/99 12:00AM
Docket Number 07000143
Availability Non-Publicly Available

Accession Number 9909010037
Document Title "Rept of Radioactivity in Effluent Liquid for Period Jan- June 1999."
Document Date 6/30/99 12:00AM
Docket Number 07000143
Availability Non-Publicly Available

Accession Number 9909010040
Document Title "Rept of Radioactivity in Effluent Air for Period Jan-June 1999."
Document Date 6/30/99 12:00AM
Docket Number 07000143
Availability Non-Publicly Available

Accession Number	ML030690609
Document Title	Biannual Effluent Monitoring Report July through December 2002.
Document Date	2/27/03 12:00AM
Docket Number	07000143
Availability	Publicly Available

Accession Number	ML031070533
Document Title	05/01/2003 Notice of Meeting with Nuclear Fuel Services, Inc Re BLEU Preparation Facility and Future BLEU Oxide Conversion Facility and Effluent Processing Building Licensing Amendment Applications.
Document Date	4/17/03 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	ML032720728
Document Title	Biannual Effluent Monitoring Report, January Through June 2003.
Document Date	8/26/03 12:00AM
Docket Number	07000143
Availability	Publicly Available

Accession Number	ML033010178
Document Title	Proposed Revisions to the NFS Emergency Plan to support the Oxide Conversion Building (OCB) and Effluent Process Building (EPB).
Document Date	10/24/03 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	ML033140002
Document Title	11/19/2003 Notice of NFS/NRC Meeting to Discuss Oxide Conversion and Effluent Processing Buildings in the BLEU Complex Submittal.
Document Date	11/7/03 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	ML033250324
Document Title	11/19/2003 Overview of License Amendment Application for Oxide Conversion & Effluent Processing Buildings.
Document Date	11/19/03 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	ML033350258
Document Title	10/23/03-License Amendment Request for Oxide Conversion Building and Effluent Processing Building at BLEU Complex.
Document Date	10/23/03 12:00AM
Docket Number	07000143
Availability	Publicly Available

Accession Number	ML033360220
Document Title	Nuclear Fuel Services, Inc., Meeting Summary, November 19, 2003, Kick-Off Meeting With Nuclear Fuel Services Re: Overview of License Amendment Application For Oxide Conversion & Effluent Processing Building.
Document Date	11/21/03 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	ML033380535
Document Title	11/14/03-Non-Proprietary Version of Integrated Safety Analysis (ISA) Summary for the BLEU Project Oxide Conversion and Effluent Processing Buildings.
Document Date	11/14/03 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	ML033420756
Document Title	Attachment II to 10/23/03 Letter, Revision 0 to 21T-03-0978, Integrated Safety Analysis Summary - Blended Low-Enriched Uranium Project - Oxide Conversion and Effluent Processing Buildings.
Document Date	10/23/03 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	ML033430563
Document Title	Federal Register Notice: Receipt Of Amendment Request And Opportunity to Request A Hearing for Oxide Conversion Building And Effluent Processing Building At The Blended Low-Enriched Uranium Complex.
Document Date	12/17/03 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	ML033490408
Document Title	10/23/03-License Amendment Request for Oxide Conversion Building and Effluent Processing Building at BLEU Complex.
Document Date	10/23/03 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	ML033490413
Document Title	Revision 0 to 21T-03-0978, " Integrated Safety Analysis Summary Blended Low-Enriched Uranium Project Oxide Conversion and Effluent Processing Building."
Document Date	10/31/03 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	ML033490420
Document Title	Revision 0 to 21T-03-0978, " Integrated Safety Analysis Summary Blended Low-Enriched Uranium Project Oxide Conversion and Effluent Processing Building," Attachment III Decommissioning Cost Estimate.
Document Date	10/31/03 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	ML033520128
Document Title	Transmittal of Nuclear Criticality Safety Evaluations for the BLEU Complex Oxide Conversion Building and Effluent Processing Building (Proprietary and Non-Proprietary Versions).
Document Date	12/11/03 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	ML033520131
Document Title	Nuclear Criticality Safety Evaluations for the BLEU Complex Oxide Conversion Building and Effluent Processing Building.
Document Date	12/11/03 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	ML033520132
Document Title	Revision 0 to " Nuclear Criticality Safety Evaluation for the Effluent Process Building Ammonia Recovery, and Liquid Waste Processes."
Document Date	11/3/03 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	ML033640152
Document Title	Nuclear Fuel Services, Inc., Nuclear Criticality Evaluations For BLEU Complex Oxide Conversion Building And Effluent Processing Building Submittal Dated December 11, 2003, Public Disclosure Determination (TAC NO. L31791).
Document Date	1/9/04 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available
Accession Number	ML040480515
Document Title	02/06/04-Commitment Letter to Address NRC Licensing Review Questions Pertaining to Instrumentation and Controls at the Oxide Conversion Building (OCB) and Effluent Processing Building (EPB).
Document Date	2/6/04 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available
Accession Number	ML040480518
Document Title	02/11/04-Commitment Letter to Address NRC Licensing Review Questions Pertaining to Nuclear Criticality Safety at the Oxide Conversion Building (OCB) and Effluent Processing Building (EPB).
Document Date	2/11/04 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available
Accession Number	ML040570761
Document Title	Review of Nuclear Fuel Services Decommissioning Cost Estimate for BLEU Oxide Conversion Building and Effluent Processing Building.
Document Date	2/26/04 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available
Accession Number	ML040610801
Document Title	02/25/04-Revision to Commitment Letter to Address NRC Licensing Review Question No. 5 Pertaining to Nuclear Criticality Safety at the Oxide Conversion Building (OCB) and Effluent Processing Building (EPB).
Document Date	2/25/04 12:00AM
Docket Number	07000143
Availability	Publicly Available
Accession Number	ML040750448
Document Title	03/11/04-Memo Re: In-Office Verticle Slice Review of NFS Integrated Safety Analysis Summary for Oxide Conversion Building and Effluent Process Building on February 10-11, 2004.
Document Date	3/11/04 12:00AM
Docket Number	07000143
Availability	Publicly Available
Accession Number	ML040760278
Document Title	Transmittal of the Biannual Effluent Monitoring Report, July through December 2003.
Document Date	2/27/04 12:00AM
Docket Number	07000143
Availability	Publicly Available
Accession Number	ML040910468
Document Title	03/31/04-B. Marie Moore Ltr. re: Nuclear Fuel Services, Inc., Oxide Conversion Building And Effluent Processing Building Request For Additional Information (TAC L31791).
Document Date	3/31/04 12:00AM
Docket Number	07000143
Availability	Publicly Available
Accession Number	ML040990147
Document Title	Comments on the Draft Environmental Assessment for Nuclear Fuel Services' Oxide Conversion Building and Effluent Processing Building at the Blended Low-enriched Uranium Complex.
Document Date	4/7/04 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	ML041270047
Document Title	B. Marie Moore Ltr. re: Nuclear Fuel Services, Inc., - Response To Request For Additional Information For Oxide Conversion Building And Effluent Processing Building At The Bleu Complex Submittal Dated April 30, 2004, Public Disclosure Determination.
Document Date	5/19/04 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	ML041280281
Document Title	04/30/04-Revised Affidavits to Reaffirm Proprietary Information Contained in the License Amendment Request for the Oxide Conversion and Effluent Processing Buildings.
Document Date	4/30/04 12:00AM
Docket Number	07000143
Availability	Publicly Available

Accession Number	ML041280556
Document Title	04/30/04-NFS Response to Request for Additional Information for Oxide Conversion Building and Effluent Processing Building at the BLEU Complex.
Document Date	4/30/04 12:00AM
Docket Number	07000143
Availability	Publicly Available

Accession Number	ML041280562
Document Title	Attachment 2 - NFS Response to Request for Additional Information for Oxide Conversion Building and Effluent Processing Building.
Document Date	4/30/04 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	ML041690008
Document Title	Review of Nuclear Fuel Services Letter of Credit for Oxide Conversion Building and Effluent Processing Building.
Document Date	6/21/04 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	ML041970681
Document Title	B. Marie Moore Ltr re: Nuclear Fuel Services, Inc., Amendment 51 - To Authorize Operations In The Blended Low-Enriched Uranium Oxide Conversion Building And Effluent Processing Building (TAC L31791).
Document Date	7/30/04 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	ML042110329
Document Title	Implementation Response to the NRC Order for Interim Compensatory Measures for Category III Fuel Cycle Facilities for the Bleu Oxide Conversion and Effluent Process Buildings.
Document Date	7/13/04 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	ML042180326
Document Title	ISA Summary, Revision 1, for the Oxide Conversion Building and Effluent Processing Building located at the BLEU Complex.
Document Date	7/30/04 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	ML042190180
Document Title	Ltr to B. Marie Moore Re: Response to NRC Order or ICM for Category III Fuel Facilities for BLEU Oxide Conversion and Effluent Process Building - Nuclear Fuel Services Inc.
Document Date	8/5/04 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	ML042540343
Document Title	07/30/04-NFS - Amendment 51 to Authorize Operations in the Blended Low-Enriched Uranium Oxide Conversion Building and Effluent Processing Building - letter.
Document Date	7/30/04 12:00AM
Docket Number	07000143
Availability	Publicly Available

Accession Number	ML042540349
Document Title	07/30/04-Nuclear Fuel Services, Inc., Safety Evaluation Report, License Amendment 51, Blended Low-Enriched Uranium Oxide Conversion Building and Effluent Processing Building.
Document Date	7/30/04 12:00AM
Docket Number	07000143
Availability	Publicly Available

Accession Number	ML042590496
Document Title	NFS Operation of Blended Low-enriched Uranium Oxide Conversion Building and Effluent Processing Building.
Document Date	9/14/04 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	ML042600037
Document Title	NFS Biannual Effluent Monitoring Report January through June 2004.
Document Date	8/27/04 12:00AM
Docket Number	07000143
Availability	Publicly Available

Accession Number	ML042660407
Document Title	07/30/04-NFS, Amendment 51 to Authorize Operations in the Blended Low-Enriched Uranium Oxide conversion Building and Effluent Processing Building License.
Document Date	7/30/04 12:00AM
Docket Number	07000143
Availability	Publicly Available

Accession Number	ML042720620
Document Title	Nuclear Fuel Services, Inc., Operation of Blended Low-Enriched Uranium Oxide Conversion Building and Effluent Processing Building.
Document Date	9/14/04 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	ML042720621
Document Title	Nuclear Fuel Services, Inc., Operation of Blended Low-Enriched Uranium Oxide Conversion Building and Effluent Processing Building.
Document Date	9/14/04 12:00AM
Docket Number	07000143
Availability	Publicly Available

Accession Number	ML050120007
Document Title	Non-Proprietary Version of Integrated Safety Analysis (ISA) Summary for the BLEU Project Oxide Conversion and Effluent Processing Buildings.
Document Date	11/14/03 12:00AM
Docket Number	07000143
Availability	Publicly Available

Accession Number	ML050130096
Document Title	License Amendment Request for the Oxide Conversion Building and Effluent Processing Building at the BLEU Complex.
Document Date	10/23/03 12:00AM
Docket Number	07000143
Availability	Publicly Available

Accession Number ML080510458
Document Title Nuclear Fuel Services - Biannual Effluent Monitoring Report January - June 2002.
Document Date 8/29/02 12:00AM
Docket Number 07000143
Availability Publicly Available

Accession Number ML081360251
Document Title 05/19/04 - B.Marie Moore Ltr. re: Nuclear Fuel Services, Inc.,-Response to Request for Additional Information for Oxide Conversion Building and Effluent Processing Building at the BLEU Complex Submittal Dated 04/30/2004, Public Disclosure Determination
Document Date 5/19/04 12:00AM
Docket Number 07000143
Availability Publicly Available

Accession Number ML081500560
Document Title Response to NRC Order for Category III Fuel Facilities for BLEU Oxide Conversion and Effluent Process Building.
Document Date 8/5/04 12:00AM
Docket Number 07000143
Availability Publicly Available

Accession Number	ML050350098
Document Title	"Integrated Safety Analysis Summary, Blended Low-Enriched Uranium Project Oxide Conversion and Effluent Processing Buildings," Revision 2.
Document Date	1/27/05 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	ML051150066
Document Title	Amendments to Biannual Effluent Monitoring Report July Through December 2004
Document Date	3/11/05 12:00AM
Docket Number	07000143
Availability	Publicly Available

Accession Number	ML051150075
Document Title	Biannual Effluent Monitoring Report July through December 2004.
Document Date	2/25/05 12:00AM
Docket Number	07000143
Availability	Publicly Available

Accession Number	ML060450323
Document Title	Nuclear Fuel Services - ISA Summary for Oxide Conversion and Effluent Processing Buildings, Revision 3.
Document Date	1/31/06 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	ML060860092
Document Title	Biannual Effluent Monitoring Report for January through June 2005.
Document Date	8/29/05 12:00AM
Docket Number	07000143
Availability	Publicly Available

Accession Number	ML061000099
Document Title	Biannual Effluent Monitoring Report, July through December 2005.
Document Date	3/30/06 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	ML070590627
Document Title	Biannual Effluent Monitoring Report July through December 2006.
Document Date	2/26/07 12:00AM
Docket Number	07000143
Availability	Publicly Available

Accession Number	ML072670156
Document Title	Nuclear Fuel Services - Biannual Effluent Monitoring Report, January Through June 2007.
Document Date	8/16/07 12:00AM
Docket Number	07000143
Availability	Publicly Available

Accession Number	ML080510464
Document Title	Nuclear Fuel Services - Biannual Effluent Monitoring Report January - June 2006.
Document Date	8/25/06 12:00AM
Docket Number	07000143
Availability	Publicly Available

Accession Number ML082960743
Document Title NFS, Submittal of Biannual Effluent Monitoring Report January through June 2008.
Document Date 8/28/08 12:00AM
Docket Number 07000143
Availability Publicly Available

Accession Number ML090710718
Document Title NFS, Inc., Submittal of Biannual Effluent Monitoring Report for July through December 2008.
Document Date 2/26/09 12:00AM
Docket Number 07000143
Availability Publicly Available

Accession Number ML092570831
Document Title Biannual Effluent Monitoring Report January through June 2009.
Document Date 8/26/09 12:00AM
Docket Number 07000143
Availability Publicly Available

Accession Number ML100700519
Document Title Nuclear Fuel Services, Biannual Effluent Monitoring Report, July - December 2009.
Document Date 2/22/10 12:00AM
Docket Number 07000143
Availability Publicly Available

Accession Number ML102360147
Document Title Biannual Effluent Monitoring Report January through June 2010.
Document Date 8/18/10 12:00AM
Docket Number 07000143
Availability Publicly Available

Accession Number ML103610258
Document Title E-mail from K. Ramsey, NRC, Response to 11/19/10 Questions re; NFS Biannual Effluent Monitoring Reports.
Document Date 12/22/10 12:00AM
Docket Number 07000143
Availability Publicly Available

Accession Number ML103610273
Document Title Response to 11/19/10 Questions re; NFS Biannual Effluent Monitoring.
Document Date 12/22/10 12:00AM
Docket Number 07000143
Availability Publicly Available

Accession Number ML110610416
Document Title Nuclear Fuel Services, Inc. - Submittal of Biannual Effluent Monitoring Report for Period July through December 2010.
Document Date 2/22/11 12:00AM
Docket Number 07000143
Availability Publicly Available

Accession Number ML11249A064
Document Title Biannual Effluent Monitoring Report January through June 2011.
Document Date 8/29/11 12:00AM
Docket Number 07000143
Availability Publicly Available

Accession Number ML12055A051
Document Title Nuclear Fuel Services, Inc. Biannual Effluent Monitoring Report July through December 2011.
Document Date 2/16/12 12:00AM
Docket Number 07000143
Availability Publicly Available

Accession Number ML12059A303
Document Title Nuclear Fuel Services, Inc. - Biannual Effluent Monitoring Report January through June 2011, Rev. 1.
Document Date 2/21/12 12:00AM
Docket Number 07000143
Availability Publicly Available

Accession Number ML12249A027
Document Title Nuclear Fuel Services, Inc., Biannual Effluent Monitoring Report January through June 2012.
Document Date 8/27/12 12:00AM
Docket Number 07000143
Availability Publicly Available

Accession Number ML13064A286
Document Title Biannual Effluent Monitoring Report July Through December 2012.
Document Date 2/18/13 12:00AM
Docket Number 07000143
Availability Publicly Available

Accession Number ML13254A069
Document Title Nuclear Fuel Services, Inc., Biannual Effluent Monitoring Report January through June 2013 and Amendment to Biannual Effluent Monitoring Report July through December 2012.
Document Date 8/27/13 12:00AM
Docket Number 07000143
Availability Publicly Available

Accession Number ML14057A396
Document Title Biannual Effluent Monitoring Report July through December 2013.
Document Date 2/18/14 12:00AM
Docket Number 07000143
Availability Publicly Available

Accession Number 7907160268
Document Title IE Insp Rept 70-0143/79-12 on 790321.No noncompliance noted. Major areas inspected:nonradiological liquid effluents, underground tank monitoring program & stack fluoride monitoring program.
Document Date 5/9/79 12:00AM
Docket Number 07000143
Availability Non-Publicly Available

Accession Number 7908270282
Document Title IE Insp Rept 70-0143/79-29 on 790723-08.No noncompliance noted.Major areas inspected:air sampling data,contamination surveys,effluent controls & review of operator qualifications.
Document Date 7/16/79 12:00AM
Docket Number 07000143
Availability Non-Publicly Available

Accession Number 7909250683
Document Title Forwards "Rept of Effluent Monitoring" for Jan-June 1979.
Document Date 8/31/79 12:00AM
Docket Number 07000143
Availability Non-Publicly Available

Accession Number 7909250684
Document Title "Rept of Effluent Monitoring" for Jan-June 1979.
Document Date 6/30/79 12:00AM
Docket Number 07000143
Availability Non-Publicly Available

Accession Number 7910220459
Document Title PNS-II-79-102E supplementing 790924 PNS-II-79-102D:lab results of soil samples confirmed presence of low enriched U consistent w/normal effluents.Detailed environ survey is in progress.
Document Date 9/25/79 12:00AM
Docket Number 07000143
Availability Non-Publicly Available

Accession Number 8002110297
Document Title IE Insp Rept 70-0143/79-40 on 790917-27,1002-06 & 09-12. Noncompliance noted:failure to adequately survey stack effluents,make dilution of dispersion calculations & establish adequate contamination control procedures.
Document Date 11/27/79 12:00AM
Docket Number 07000143
Availability Non-Publicly Available

Accession Number 8002190258
Document Title IE Insp Rept 70-0143/79-40 on 791127.Noncompliance noted: failure to adequately stack effluents,failure to make dilution & dispersion calculations & to establish adequate contamination control proPROBABLE DELETE:DUPE OF 8002110297.
Document Date 11/27/79 12:00AM
Docket Number 07000143
Availability Non-Publicly Available

Accession Number 8004300003
Document Title Forwards "Effluent Monitoring Rept," Jul-Dec 1979.
Document Date 2/26/80 12:00AM
Docket Number 07000143
Availability Non-Publicly Available

Accession Number 8004300024
Document Title "Effluent Monitoring Rept," Jul-Dec 1979.
Document Date 2/26/80 12:00AM
Docket Number 07000143
Availability Non-Publicly Available

Accession Number 8005130155
Document Title Requests info re encl G McKinney ltr commenting on inventory difference & NRC decision re continued operation. Also requests info re continued federal govt monitoring of effluent releases & radiation background levels near plant.
Document Date 3/7/80 12:00AM
Docket Number 07000143
Availability Non-Publicly Available

Accession Number 8008280445
Document Title Amends rept of effluent monitoring & release to unrestricted areas, Jul-Dec 1979. Corrects quantity of gaseous effluents released. Amended rept is necessary due to re-evaluation of quantity of U released during 790807 leak.
Document Date 8/22/80 12:00AM
Docket Number 07000143
Availability Non-Publicly Available

Accession Number 8009090504
Document Title Forwards "Rept of Effluent Monitoring & Release to Unrestricted Areas, Jan-June 1980."
Document Date 8/29/80 12:00AM
Docket Number 07000143
Availability Non-Publicly Available

Accession Number 8009090507
Document Title "Rept of Effluent Monitoring & Release to Unrestricted Areas, Jan-June 1980."
Document Date 8/29/80 12:00AM
Docket Number 07000143
Availability Non-Publicly Available

Accession Number 8009240631
Document Title Responds to NRC 800626 ltr re violations noted in IE Insp Rept 70-0143/80-13. Corrective actions: employee exposure repts & effluent release data updated.
Document Date 7/21/80 12:00AM
Docket Number 07000143
Availability Non-Publicly Available

Accession Number 8010100020
Document Title IE Insp Rept 70-143/80-01 on 800109-10 & 0519-23. No noncompliance noted. Major areas inspected: U effluent scrubber sys, stack sampling sys, safety committees & operations review.
Document Date 6/6/80 12:00AM
Docket Number 07000143
Availability Non-Publicly Available

Accession Number 8010100023
Document Title "Analysis of Ventilation Scrubbers & Gaseous Effluent Measurement Sys at NFS Plant, Erwin, TN."
Document Date 5/5/80 12:00AM
Docket Number 07000143
Availability Non-Publicly Available

Accession Number 8011260407
Document Title IE Insp Rept 70-0143/80-28 on 800818-22. No noncompliance noted. Major areas inspected: airborne effluent monitoring, environ air sampling & soil decontamination.
Document Date 10/6/80 12:00AM
Docket Number 07000143
Availability Non-Publicly Available

Accession Number 8103130662
Document Title IE Insp Rept 70-0143/80-42 on 801027-1216. No noncompliance noted. Major areas inspected: criticality safety, radiation protection, stack effluents, access controls & physical inventory. Encl 2 withheld (ref 10CFR2.790).
Document Date 2/5/81 12:00AM
Docket Number 07000143
Availability Non-Publicly Available

Accession Number 8103260910
Document Title IE Insp Rept 70-0143/80-36 on 801103-04.No noncompliance noted.Major areas inspected:effluent control & measurement
Document Date 1/28/81 12:00AM
Docket Number 07000143
Availability Non-Publicly Available

Accession Number 8104280409
Document Title Forwards "Radioactive Effluent Release Quarterly Rept, Jan-Mar 1981."
Document Date 4/22/81 12:00AM
Docket Number 07000143
Availability Non-Publicly Available

Accession Number 8104280410
Document Title "Radioactive Effluent Release Quarterly Rept,Jan-Mar 1981."
Document Date 4/22/81 12:00AM
Docket Number 07000143
Availability Non-Publicly Available

Accession Number 8209020396
Document Title IE Insp Rept 70-0143/82-28 on 820712-16.No noncompliance noted.Major areas inspected:radioactive effluents,external exposure control,solid waste & followup on inspector identified items.
Document Date 7/30/82 12:00AM
Docket Number 07000143
Availability Non-Publicly Available

Accession Number 8209020509
Document Title Forwards "Rept of Effluent Monitoring & Release to Unrestricted Areas,Jan-June 1982."
Document Date 8/16/82 12:00AM
Docket Number 07000143
Availability Non-Publicly Available

Accession Number 8209020513
Document Title "Rept of Effluent Monitoring & Release to Unrestricted Areas,Jan-June 1982."
Document Date 8/16/82 12:00AM
Docket Number 07000143
Availability Non-Publicly Available

Accession Number 8211170150
Document Title Discusses commitment re bioassay program,liquid effluents, impinger solutions & soil.QA program will be revised per Reg Guide 4.15.
Document Date 7/2/82 12:00AM
Docket Number 07000143
Availability Non-Publicly Available

Accession Number 8211190043
Document Title Application to amend License SNM-124,permitting installation of new ventilation sys to combine gaseous effluents from highly enriched U processing & lab areas & discharge from one emission point.
Document Date 8/5/82 12:00AM
Docket Number 07000143
Availability Non-Publicly Available

Accession Number 8211190045
Document Title Requests G Kosinski technical assistance to evaluate NFS Erwin,TN facility gaseous effluent sys.
Document Date 12/19/79 12:00AM
Docket Number 07000143
Availability Non-Publicly Available

Accession Number	8307140382
Document Title	"Rept of Effluent Monitoring & Release to Unrestricted Areas for Jul-Dec 1982."
Document Date	2/24/83 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	8308160157
Document Title	"Rept of Effluent Monitoring & Releases to Unrestricted Areas,Jul-Dec 1975." W/760226 ltr.
Document Date	2/26/76 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	8308160162
Document Title	"Rept of Effluent Monitoring & Release to Unrestricted Areas,Jul-Dec 1976."
Document Date	2/9/77 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	8308160165
Document Title	"Rept of Effluent Monitoring & Release to Unrestricted Areas Jan-June 1977." W/770901 ltr.
Document Date	9/1/77 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	8310040556
Document Title	"Effluent Monitoring & Release to Restricted Areas,Rept for Jan-June 1983." W/830831 ltr.
Document Date	6/30/83 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	8401090121
Document Title	IE Insp Rept 70-0143/83-46 on 831128-1202.No violations noted.Major areas inspected:gaseous effluents,liquid effluents,solid waste mgt & followup on previous identified enforcement matters.
Document Date	12/18/83 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	8404060075
Document Title	"Rept of Effluent Monitoring & Release to Unrestricted Areas,Jul-Dec 1983." W/840224 ltr.
Document Date	12/31/83 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	8405070208
Document Title	IE Insp Rept 70-0143/84-10 on 840319-23.No violations or deviations noted.Major areas inspected: nuclear criticality safety of effluent scrubbers,procedures,audits,training, mods & plant tours.
Document Date	4/9/84 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	8412060339
Document Title	Forwards proposed stack effluent monitoring plan conducted under contract w/Oak Ridge Assoc Univs.
Document Date	11/19/84 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	8412060346
Document Title	Forwards 841022 revised proposed stack effluent monitoring plan.
Document Date	10/26/84 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	8502270031
Document Title	Forwards response to environ questions, per 851228 request, environ monitoring rept re groundwater monitoring wells & Science Applications Intl 831018 rept re sampling study of process effluents.
Document Date	2/8/85 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	8502270039
Document Title	Vol 1 to "Sampling Study of Process Effluents at Nuclear Fuel Svcs Facility, Irwin, TN."
Document Date	5/8/81 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	8503180296
Document Title	"Rept of Effluent Monitoring & Release to Unrestricted Areas, for Jul-Dec 1984." W/850228 ltr.
Document Date	12/31/84 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	8504170236
Document Title	IE Info Notice 85-031, "Buildup of Enriched U in Ventilation Ducts & Associated Effluent Treatment Sys."
	Svc list encl.
Document Date	4/19/85 12:00AM
Docket Number	07000008
	07000027
	07000036
	07000143
	07000364
	07000371
	07000687
	07000734
	07000754
	07000820
	07000824
	07000925
	07000984
	07001100
	07001113
	07001143
	07001151
	07001201
	07001257
	07001308
Availability	Publicly Available

Accession Number	8509250114
Document Title	Effluent monitoring rept for Jan-June 1985.
Document Date	8/29/85 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	8602030040
Document Title	"Radiological Monitoring of Stack Effluents - NFS, Erwin, TN," final rept.
Document Date	11/30/85 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number 8603190380

Document Title Effluent monitoring rept for Jul-Dec 1985.W/860228 ltr.

Document Date 12/31/85 12:00AM

Docket Number 07000143

Availability Non-Publicly Available

Accession Number 9210120023

Document Title Discusses State of NY Health & Safety Lab participation in measurement of effluent samples from NFS plant at West Valley,NY & lab role in subsequent news stories that effluents 36,000 times permissible amounts of Sr-90.

Document Date 2/29/68 12:00AM

Docket Number 07000143

Availability Publicly Available

Accession Number	ML003670798
Document Title	Letter forwarding bi-annual effluent monitoring report for January - June 1999, per requirements of 10CFR70.59.
Document Date	8/27/99 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	ML003746089
Document Title	REVISION OF INFORMATION TO SUPPORT DOSE-BASED EFFLUENT DISCHARGE CRITERIA AS SPECIFIED IN CHAPTERS 5 AND 15 OF SNM-124
Document Date	8/18/00 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	ML003746676
Document Title	NFS - Bi-Annual Effluent Monitoring Report: January through June 2000
Document Date	8/28/00 12:00AM
Docket Number	07000143
Availability	Publicly Available

Accession Number	ML003748970
Document Title	Memo: Comments on EA for NFS License Amendment to change liquid effluent action levels
Document Date	9/12/00 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	ML003748992
Document Title	EPAB markup of EA for NFS license amendment to change liquid effluent action levels
Document Date	9/12/00 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	ML010120046
Document Title	Nuclear Fuel Services, Inc. Amendment 12 Tac No. L1387 Adjust Liquid Effluent Discharge Limits, and NRC Correction of Previous Amendments
Document Date	10/27/00 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	ML010650462
Document Title	Nuclear Fuel Services - Bi-Annual Effluent Monitoring Report July - December 2000.
Document Date	3/1/01 12:00AM
Docket Number	07000143
Availability	Publicly Available

Accession Number	ML010720037
Document Title	Bi-Annual Effluent Monitoring Report July - December 2000.
Document Date	3/1/01 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	ML010960361
Document Title	Nuclear Fuel Services, Inc. - Amendment 12 Letter and SER - Tac L31387 - Adjust Liquid Effluent Discharge Limits
Document Date	10/27/00 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	ML012490200
Document Title	Submittal of report of Radioactivity in Effluent Liquid for period January-June 2001, report of Radioactivity in Effluent Air for period of January-June 2001, & evaluation of dose & air activity concentration for maximally exposed individual.
Document Date	8/28/01 12:00AM
Docket Number	07000143
Availability	Publicly Available

Accession Number	ML012490405
Document Title	Submittal of report of Radioactivity in Effluent Liquid for period January-June 2001, report of Radioactivity in Effluent Air for period of January-June 2001, & evaluation of dose & air activity concentration for maximally exposed individual.
Document Date	8/28/01 12:00AM
Docket Number	07000143
Availability	Non-Publicly Available

Accession Number	ML020710079
Document Title	Nuclear Fuel Services, Bi-Annual Effluent Monitoring Report, July - December 2001
Document Date	12/31/01 12:00AM
Docket Number	07000143
Availability	Publicly Available

Accession Number	ML080800400
Document Title	Ltr from S. Smiley of USAEC to A. Abreu of Whittaker Corporation, Regarding Uniform Methods for Monitoring Effluents Release to the Environment.
Document Date	3/24/72 12:00AM
Docket Number	05000201
	05000268
	07000008
	07000025
	07000027
	07000033
	07000036
	07000064
	07000072
	07000082
	07000135
	07000143
	07000150
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	07000287
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	07000364
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	07000456
	07000734
	07000754
	07000784
	07000807
	07000820
	07000824
	07000903
	07000925
	07000938
	07001007
	07001059
	07001068
	07001086
	07001100
	07001113
	07001143
	07001151
	07001193
	07001201
	07001257
Availability	Publicly Available

Accession Number ML100890081
Document Title Bi-Annual Effluent Monitoring Report January - June 1997.
Document Date 8/29/97 12:00AM
Docket Number 07000143
Availability Non-Publicly Available

From: Interested parties list for activities pertaining to the Cancer Risk project
<CANCERRISKSTUDY@LSW.NAS.EDU> on behalf of Greenleaf, Toni
<TGreenle@NAS.EDU>
Sent: Thursday, March 20, 2014 12:27 PM
To: CANCERRISKSTUDY@LSW.NAS.EDU
Subject: FW: National Academy of Sciences' Pilot Planning Study of Cancer Risks in Populations
Near Seven Nuclear Facilities: Public Meeting, April 3, 2014, Irvine, CA
Attachments: Public Agenda March 20, 2014.pdf

Please do NOT respond to this email. Send any emails go CRS@NAS.EDU.

Dear Interested Parties:

The National Academy of Sciences' (NAS') Committee tasked with planning the pilot study of *Analysis of Cancer Risks in Populations near Nuclear Facilities* is scheduled to hold a public meeting at 1:30-4:00 PM on Thursday, April 3, 2014 at the Beckman Center located in Irvine, California. A draft agenda for the public meeting is attached (all times are Pacific).

Members of the public who wish to attend the meeting or view the presentations via WebEx should register here: <http://www.surveygizmo.com/s3/1577902/CancerRiskAprilRegistration>

Members of the press who wish to attend the meeting should contact Lauren Rugani, media officer, at 202 334 3593 or LRugani@nas.edu.

Study at a Glance

NAS will perform the pilot study of cancer risks in populations near seven U.S. Nuclear Regulatory Commission (U.S.NRC)-licensed nuclear facilities using two epidemiologic study designs: (i) an ecologic study of multiple cancer types of populations of all ages and (ii) a record-linkage-based case-control study of cancers in children. The pilot study will have two steps: Pilot Planning and Pilot Execution. NAS has started the Pilot Planning step which is estimated to take one year to complete.

The seven nuclear facilities that are part of the pilot study are:

Dresden Nuclear Power Station, Morris, Illinois
Millstone Power Station, Waterford, Connecticut
Oyster Creek Nuclear Generating Station, Forked River
New Jersey Haddam Neck, Haddam Neck, Connecticut
Big Rock Point Nuclear Power Plant, Charlevoix, Michigan
San Onofre Nuclear Generating Station, San Clemente, California
Nuclear Fuel Services, Erwin, Tennessee

The study is sponsored by the U.S. NRC. It is a continuation of a previous study that was completed in May 2012. The report from that first study can be found here: http://www.nap.edu/catalog.php?record_id=13388

The National Academy of Sciences, National Academy of Engineering, Institute of Medicine, and National Research Council make up the National Academies. They are independent, nonprofit institutions that provide science, technology, and health policy advice under an 1863 congressional charter. Panel members, who serve pro bono as volunteers, are chosen by the Academies for each study based on their expertise and experience and must satisfy the Academies' conflict-of-interest standards. The resulting consensus reports undergo external peer review before completion. For more information, visit <http://national-academies.org/studycommitteeprocess.pdf>

Please direct comments and questions to the project email: crs@nas.edu. If you would like to be removed from the list please send us an email with the title REMOVE FROM LIST.
If you are member of the press and have questions regarding this message, please contact Lauren Rugani, media officer, at 202 334 3593 or LRugani@nas.edu.

Please do NOT respond to this email. Send any emails go CRS@NAS.EDU.

Ourania (Rania) Kostis, Ph.D.
Senior Program Officer
Nuclear and Radiation Studies Board
The National Academies
phone: 202 334 3066

=====

Toni Greenleaf
Administrative/Financial Associate
Nuclear and Radiation Studies Board
202/334-3066
Fax: 202/334-3077

THE NATIONAL ACADEMIES

Advisers to the Nation on Science, Engineering, and Medicine

Nuclear and Radiation Studies Board

500 Fifth Street, NW
Washington, DC 20001
Phone: 202 334-3066
Fax: 202 334-3077
www.nationalacademies.org

Analysis of Cancer Risks in Populations near Nuclear Facilities: Phase 2 Pilot Planning

MEETING AGENDA Second Committee Meeting: April 3, 2014

**Beckman Center
100 Academy Dr., Irvine, CA 92617
Huntington Room**

- 1:30 PM **Call to order and welcome**
Introductions of committee and staff
Jon Samet, committee chair
- 1:40 PM **Study Design Considerations for the National Academies' Pilot Study of Cancer Risks in Populations Living Around Nuclear Facilities**
*Phung Tran, Electric Power Research Institute (EPRI),
Richard Wakeford, University of Manchester,
David Hoel, Medical University of South Carolina, and
Helen Grogan, Cascade Scientific*
- 2:25 PM **Roundtable discussion with EPRI committee**
*Presenters listed above and
Erik Hoel, ESRI,
Tony Brooks, Washington State University Tri-cities (retired),
Art Rood, K-Spar, Inc., and
Bill Wendland, CN Associates*
- 3:30 PM **Public comment**
- 4:00 PM **Adjourn Session Open to the Public**

Members of the public who wish to attend the meeting or view the presentations via WebEx should register here: <http://www.surveymoz.com/s3/1577902/CancerRiskAprilRegistration>

Members of the press who wish to attend the meeting should contact Lauren Rugani, media officer, at 202 334 3593 or LRugani@nas.edu.

(March 20, 2014 Draft)

From: Interested parties list for activities pertaining to the Cancer Risk project
<CANCERRISKSTUDY@LSW.NAS.EDU> on behalf of Greenleaf, Toni
<TGreenle@NAS.EDU>
Sent: Wednesday, May 07, 2014 3:39 PM
To: CANCERRISKSTUDY@LSW.NAS.EDU
Subject: National Academy of Sciences' Pilot Planning Study of Cancer Risks in Populations Near
Seven Nuclear Facilities: Public Meeting, June 4, 2014, Toms River, NJ

Interested Parties:

A subgroup of members of the National Academy of Sciences' Committee on Analysis of Cancer Risks in Populations near Nuclear Facilities: Pilot Planning will be hosting a public comment session on Tuesday, June 4, 2014, from 6:30 PM-8 PM.

The meeting will take place at:

Ramada Toms River (Ballroom 1)
2373 Highway 9
Toms River
NJ 08755

Remote participation at this meeting via WebEx will not be available.

The members of the committee subgroup will be touring the Oyster Creek Generating Station the day following this evening session. (The public will not be able to attend this tour because of security restrictions and space limitations.) At the beginning of the evening public comment session there will be a presentation describing the objectives of the study and a description of what the subgroup anticipates to see during the tour.

On-site parking is available at the hotel for this evening session. Directions to the hotel can be found here:
<http://www.ramada.com/hotels/new-jersey/toms-river/ramada-toms-river/hotel-overview>

Members of the public that wish to attend the meeting should contact us at crs@nas.edu.

Members of the press who wish to attend the meeting should contact Lauren Rugani, media officer, at 202 334 3593 or LRugani@nas.edu.

Toni Greenleaf
Nuclear and Radiation Studies Board
202 334 3066
crs@nas.edu

From: Interested parties list for activities pertaining to the Cancer Risk project
<CANCERRISKSTUDY@LSW.NAS.EDU> on behalf of Greenleaf, Toni
<TGreenle@NAS.EDU>
Sent: Thursday, May 08, 2014 12:57 PM
To: CANCERRISKSTUDY@LSW.NAS.EDU
Subject: Re: National Academy of Sciences' Pilot Planning Study of Cancer Risks in Populations
Near Seven Nuclear Facilities: Public Meeting, June 4, 2014, Toms River, NJ NOTE
DATE CORRECTION

Interested Parties:

A subgroup of members of the National Academy of Sciences' Committee on Analysis of Cancer Risks in Populations near Nuclear Facilities: Pilot Planning will be hosting a public comment session on ~~Tuesday~~, **Wednesday, June 4, 2014, from 6:30 PM-8 PM.**

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<http://www.ramada.com/hotels/new-jersey/toms-river/ramada-toms-river/hotel-overview>

Members of the public that wish to attend the meeting should contact us at crs@nas.edu.

Members of the press who wish to attend the meeting should contact Lauren Rugani, media officer, at 202 334 3593 or LRugani@nas.edu.

**Toni Greenleaf
Nuclear and Radiation Studies Board
202 334 3066
crs@nas.edu**

Subject: FW: NAS records call - update on actions
Location: telecon - number attached

Start: Wed 07/09/2014 10:00 AM
End: Wed 07/09/2014 11:30 AM
Show Time As: Tentative

Recurrence: (none)

Meeting Status: Not yet responded

Organizer: Brock, Terry

Records call with NAS

-----Original Appointment-----

From: Brock, Terry

Sent: Wednesday, June 11, 2014 10:43 AM

To: Brock, Terry; Pinckney, David; Ourania Kosti (OKosti@nas.edu); Heimberg, Jennifer (JHeimberg@nas.edu)

Subject: NAS records call - update on actions

When: Wednesday, July 09, 2014 10:00 AM-11:30 AM (UTC-05:00) Eastern Time (US & Canada).

Where: telecon - number attached

Passcodes/Pin codes:

Participant passcode: (b)(6)

For security reasons, the passcode will be required to join the conference.

Dial in numbers:

Country	Toll Numbers		Freephone/ Toll Free Number
USA			888-324-7517

From: Brock, Terry
Sent: Wednesday, July 09, 2014 10:03 AM
To: Heimberg, Jennifer
Cc: Kosti, Ourania; Ramsey, Kevin; Pinckney, David
Subject: RE: discussion tomorrow

I'm getting the same thing. Let me try and get a new number.

Terry Brock, Ph.D.
Office of Nuclear Regulatory Research
U.S. Nuclear Regulatory Commission
Washington D.C. 20555
Mail Stop CSB-3A07
phone: 301-251-7487

-----Original Message-----

From: Heimberg, Jennifer [mailto:JHeimberg@nas.edu]
Sent: Wednesday, July 09, 2014 10:00 AM
To: Brock, Terry
Cc: Kosti, Ourania
Subject: RE: discussion tomorrow

Terry,

I am trying to dial in to the teleconference but I am getting a recorded message that this (the 888-number below) is not a valid number.

Jenny

-----Original Message-----

From: Brock, Terry [mailto:Terry.Brock@nrc.gov]
Sent: Tuesday, July 08, 2014 3:25 PM
To: Heimberg, Jennifer
Cc: Kosti, Ourania
Subject: RE: discussion tomorrow

Dial in numbers:
888-324-7517

Passcodes/Pin codes:

Participant passcode: (b)(5)

-----Original Message-----

From: Heimberg, Jennifer [mailto:JHeimberg@nas.edu]
Sent: Tuesday, July 08, 2014 2:47 PM
To: Brock, Terry
Cc: Kosti, Ourania
Subject: RE: discussion tomorrow

Terry,

Great news.

However, I have a last minute appointment in Alexandria tomorrow morning.

I will be able to call-in for our meeting but we will need a call-in number.

Please let us know if you will provide a call-in number. It is straightforward for me to set-up a call-in number.

Thank you,
Jenny

From: Brock, Terry [Terry.Brock@nrc.gov]
Sent: Tuesday, July 08, 2014 1:33 PM
To: Heimberg, Jennifer
Cc: Kosti, Ourania
Subject: RE: discussion tomorrow

The eagle has just landed. Talk with you all tomorrow.

Terry

-----Original Message-----

From: Heimberg, Jennifer [mailto:JHeimberg@nas.edu]
Sent: Wednesday, July 02, 2014 2:54 PM
To: Brock, Terry; Kosti, Ourania
Subject: RE: discussion tomorrow

Terry,

My turn to ask you a question today. Have you received the CD yet?

Jenny

-----Original Message-----

From: Brock, Terry [mailto:Terry.Brock@nrc.gov]
Sent: Wednesday, July 02, 2014 11:19 AM
To: Heimberg, Jennifer; Kosti, Ourania
Subject: RE: discussion tomorrow

C-14 doc ref below.

From: Brock, Terry
Sent: Tuesday, June 24, 2014 10:58 AM
To: Heimberg, Jennifer; Kosti, Ourania
Cc: Pinckney, David
Subject: RE: discussion tomorrow

Hi Jenny,

Let's cancel and meet in two weeks instead to see where we are. Updates below.

Terry

From: Heimberg, Jennifer [mailto:JHeimberg@nas.edu]

Sent: Tuesday, June 24, 2014 9:52 AM
To: Brock, Terry; Kosti, Ourania
Subject: discussion tomorrow

Terry,

At our last teleconference we talked about setting up another conference call for June 25 @ 10am. I'm just checking in with you to see if you are still available. Rania will be on travel so it will just be me on the call from the NAS. If it will just be you from the USNRC, perhaps I can call your office directly.

If you are available, we would like to discuss the following:

- the status of the NFS records, - Terry has put the request in to David.
- USNRC C-14 reporting guidance to its licensees, and Check RG 1.21, Pgs 15-16 here >>
<http://pbadupws.nrc.gov/docs/ML0911/ML091170109.pdf>
I'm looking for others and will send the link if I find any.
- the receipt of data CDs (historic effluent release reports from the PDR's microfiche?both readable and unreadable). ? I have not received them yet.

Thanks,
Jenny

Jennifer Heimberg, Ph.D.

Senior Program Officer
Nuclear and Radiation Studies Board (NRSB) The National Academies

202-334-3293 (o)

(b)(6) (c)

jheimberg@nas.edu<mailto:jheimberg@nas.edu>

From: Roman, Cinthya
Sent: Thursday, July 17, 2014 1:13 PM
To: Johnson, Robert
Cc: Ramsey, Kevin
Subject: RE: TAC for NAS Cancer Study

That's a management decision. I would use RES TAC if we are not going to charge too much time (keep in mind that we don't have any budget under RES BL). Otherwise I would use NFS PM code, but that might impact our budget execution numbers.

From: Johnson, Robert
Sent: Thursday, July 17, 2014 12:57 PM
To: Roman, Cinthya
Cc: Ramsey, Kevin
Subject: FW: TAC for NAS Cancer Study

Cinthya,

RES is providing a TAC for this activity. If this activity requires a significant amount of time, should we create a FF BL TAC to account for the time, or charge it to the PM TAC, or use the RES TAC, or something else?

Thanks,

From: Ramsey, Kevin
Sent: Thursday, July 10, 2014 10:51 AM
To: Johnson, Robert; Fitch, Karen
Subject: FW: TAC for NAS Cancer Study

RES may need a lot of help collecting NFS legacy documents for the cancer study being performed by the National Academy of Sciences (NAS). I have only charged a few hours to NFS Project Management so far, but this effort could require many hours in the coming months. Should I charge support for the NAS Cancer Study to another TAC? This is the one RES uses.

From: Brock, Terry
Sent: Thursday, July 10, 2014 10:40 AM
To: Ramsey, Kevin
Subject: RE: TAC for NAS Cancer Study

KC0310

From: Ramsey, Kevin
Sent: Thursday, July 10, 2014 10:37 AM
To: Brock, Terry
Subject: TAC for NAS Cancer Study

Do you have a TAC you use to charge time spent on the NAS Cancer Study?

From: Hartland, David
Sent: Wednesday, July 23, 2014 8:26 AM
To: Hickey, James; Ramsey, Kevin
Cc: Johnson, Robert; Brock, Terry; Rivera, Carmen; Mendez-Gonzalez, Sandra
Subject: RE: RII request causing delays in cancer study efforts

Do we still need the call?

From: Hickey, James
Sent: Wednesday, July 23, 2014 8:18 AM
To: Ramsey, Kevin
Cc: Hickey, James; Johnson, Robert; Brock, Terry; Hartland, David; Rivera, Carmen; Mendez-Gonzalez, Sandra
Subject: Re: RII request causing delays in cancer study efforts

To be clear, we did not request records. We requested an estimate of the effort required to retrieve the records only. If the cancer study needs these records then they should proceed.

Sent via My Workspace for iOS

On Tuesday, July 22, 2014 at 3:59:49 PM, "Ramsey, Kevin" <Kevin.Ramsey@nrc.gov> wrote:

See e-mail string below. RES has been trying to collect records for the NAS cancer study and OIS had estimated that records for NFS would be available on 7/11. However, the records never arrived because OIS got a request from RII for the same information. We don't want the ECAN response to bring the cancer study efforts to a dead stop. I believe the cancer study should have priority over the ECAN response. Do we need a call to coordinate these efforts?

-----Original Message-----

From: Brock, Terry
Sent: Tuesday, July 22, 2014 3:04 PM
To: Ramsey, Kevin
Subject: FW: 70-143

Did you know anything about the RII request? Is the Chairman responding to the concerns she heard on her site visit, maybe?

-----Original Message-----

From: Pinckney, David
Sent: Tuesday, July 22, 2014 2:46 PM
To: Brock, Terry
Subject: RE: 70-143

Terry,

I will need to check on that because we received a request from Region II in regards to retrieving all records related to NFS from 1957 to 1999 for the Chairman. There is a possibility that these records will be scanned into ADAMS. Is there something in particular that you may need a copy? Do you just want to review the material?

David

-----Original Message-----

From: Brock, Terry
Sent: Tuesday, July 22, 2014 2:14 PM
To: Pinckney, David

Subject: RE: 70-143

Hi David,

Did you have an ETA for the NFS boxes?

Thanks,
Terry

Terry Brock, Ph.D.
Office of Nuclear Regulatory Research
U.S. Nuclear Regulatory Commission
Washington D.C. 20555
Mail Stop CSB-3A07
phone: 301-251-7487

-----Original Message-----

From: Pinckney, David
Sent: Wednesday, July 09, 2014 8:19 AM
To: Brock, Terry
Subject: RE: 70-143

Terry,

I have been in and out of the office for the past 2 weeks. I do not have any updates on your request. I will have to put a "rush" on the 20 documents that you requested to be added to ADAMS pertaining to the nuclear power plants effluent reports. As for 70-143, I will do a search on that docket number and have the records recalled from offsite storage. They should arrive by Friday (7/11) afternoon.

David

-----Original Message-----

From: Brock, Terry
Sent: Tuesday, July 08, 2014 3:38 PM
To: Pinckney, David
Subject: RE: 70-143

Hi David,

Do we have any updates for tomorrow's call, re: NFS boxes?

Terry Brock, Ph.D.
Office of Nuclear Regulatory Research
U.S. Nuclear Regulatory Commission
Washington D.C. 20555
Mail Stop CSB-3A07
phone: 301-251-7487

-----Original Message-----

From: Brock, Terry
Sent: Tuesday, June 17, 2014 8:39 AM
To: Brock, Terry; Pinckney, David
Subject: RE: 70-143

Thanks

From: Brock, Terry
Sent: Tuesday, June 17, 2014 8:30 AM
To: Pinckney, David

Subject: RE: 70-143

Hi David, I would like to pull the Boxes for NFS Docket 70-143 from the start of operations to 2000. NAS needs the fluent records up till then. I'll go through the boxes myself.

From: Pinckney, David
Sent: Wednesday, May 14, 2014 11:15 AM
To: Brock, Terry
Subject: FW: 70-143

Terry, the attached is an example of what we have on 70-143. If this helps, I can provide more. I believe some of the records related to 70-143 are in the regions. I'm not sure if what they have is a copy of what headquarters have or not. Just let me know.

Now for the list that you sent me, what we would do, is look through the files that are stored offsite and retrieve the documents, copy them, and send them to you or we have a process in which we can add them to ADAMS. If you want them added in bulk, we would probably need funding.

David

-----Original Message-----

From: OIS Digital Sender O6-H1 [<mailto:OIS6b.DigitalSender@nrc.gov>]
Sent: Wednesday, May 14, 2014 10:59 AM
To: Pinckney, David
Subject: 70-143

Please open the attached document. This document was digitally sent to you using an HP Digital Sending device.

From: Pinckney, David
Sent: Monday, July 28, 2014 1:30 PM
To: Ramsey, Kevin; Brock, Terry
Cc: Swiger, Roger; Nguyen, Kenny; Baker, Merritt
Subject: RE: 70-143 (NFS)

Good Afternoon

ADM is unable to bring over the boxes this afternoon due to a previous furniture/equipment move. ADM will deliver the boxes tomorrow morning. Also, 34 of the 41 boxes will be delivered tomorrow morning. The remaining 6 will follow and 1 of the boxes have been transferred to NARA.

Thanks
David

From: Ramsey, Kevin
Sent: Thursday, July 24, 2014 1:13 PM
To: Pinckney, David; Brock, Terry
Cc: Swiger, Roger; Nguyen, Kenny; Baker, Merritt
Subject: RE: 70-143 (NFS)

Just to confirm, we agreed that the boxes should be delivered to 3WFN on Monday, 7/28. We will store them in the secure workroom at 13C15.

Contacts: Kevin Ramsey (301-287-9116) or Nick Baker (301-287-9109)

From: Pinckney, David
Sent: Wednesday, July 23, 2014 9:49 AM
To: Ramsey, Kevin; Brock, Terry
Cc: Swiger, Roger; Nguyen, Kenny
Subject: 70-143 (NFS)

Kevin, Terry,

Please accept my apology. My results that I gave you earlier (161 cu. ft.) and based on Region 2's request, I did not realize that the request was solely related to Erwin, TN.

I have performed another search to include Docket No. 70-143 and License No. SNM-124. These results gives me records related to Erwin, TN. Based on the search, there are an estimate of 41 cubic feet of material related to the subject. I can begin recalling those boxes back today and they will arrive on Friday (7/25) and Monday (7/28). If you like, I can have them delivered to you all at Church St.

David

From: Brock, Terry
Sent: Tuesday, July 29, 2014 11:32 AM
To: Ramsey, Kevin
Subject: RE: There be boxes here!

Marilyn said she would help too.

From: Ramsey, Kevin
Sent: Tuesday, July 29, 2014 10:41 AM
To: Brock, Terry
Subject: There be boxes here!

Just received 34 of the 41 boxes. Want to come play in the paper?

From: Brock, Terry
Sent: Friday, August 01, 2014 2:06 PM
To: Ramsey, Kevin
Subject: RE: 4 more boxes

Thanks Kevin. Looks like I'll take field trip.....

From: Ramsey, Kevin
Sent: Friday, August 01, 2014 12:10 PM
To: Brock, Terry
Subject: FW: 4 more boxes

We just added 4 boxes to the stack. David says the last 2 boxes have been transferred to NARA permanently (won't be coming back). Those records can only be reviewed at NARA.

From: Pinckney, David
Sent: Friday, August 01, 2014 11:26 AM
To: Baker, Merritt; Ramsey, Kevin
Subject: 4 more boxes

Kevin, Merritt,

I have 4 more boxes containing 70-143 to be delivered to you. Are you here today?

Thanks
David

From: Diaz, Marilyn
Sent: Tuesday, August 05, 2014 12:37 PM
To: Ramsey, Kevin
Subject: RE: NFS

Soil samples from the railroad nearby

From: Ramsey, Kevin
Sent: Tuesday, August 05, 2014 12:36 PM
To: Diaz, Marilyn; Brock, Terry
Subject: RE: NFS

Only if it is off-site. NAS is trying to estimate dose to the public, not workers. We know that there is soil contamination onsite, but unless it migrates offsite the public isn't exposed.

From: Diaz, Marilyn
Sent: Tuesday, August 05, 2014 12:33 PM
To: Brock, Terry; Ramsey, Kevin
Subject: NFS

Do we care about soil samples?

Marilyn Diaz,
Project Manager/Chemical Engineer
U.S Nuclear Regulatory Commission
NMSS/FCSS/FMB
Washington, DC 20555
(301)287-9068

From: Interested parties list for activities pertaining to the Cancer Risk project
<CANCERRISKSTUDY@LSW.NAS.EDU> on behalf of Greenleaf, Toni
<TGreenle@NAS.EDU>
Sent: Thursday, August 14, 2014 2:33 PM
To: CANCERRISKSTUDY@LSW.NAS.EDU
Subject: National Academy of Sciences' Pilot Planning Study on Cancer Risks near Nuclear
Facilities: Schedule Extension

Please do NOT respond to this email. Send any emails go CRS@NAS.EDU

Dear Interested Parties:

In order to finish the activities related to planning for the pilot, the schedule for the National Academy of Sciences' (NAS') Study titled *Analysis of Cancer Risks in Populations near Nuclear Facilities: Phase 2 Pilot Planning* has been extended to December 2014.

Please direct comments and questions to the project email: crs@nas.edu.

PRESS ONLY: If you are member of the press and have questions regarding this message, please contact Lauren Rugani at news@nas.edu.

Toni Greenleaf

*The National Academies
Nuclear and Radiation Studies Board
202/334-3066
Fax: 202/334-3077*

From: Brock, Terry
Sent: Thursday, August 14, 2014 4:19 PM
To: Ramsey, Kevin
Subject: RE: National Academy of Sciences' Pilot Planning Study on Cancer Risks near Nuclear Facilities: Schedule Extension

No, they wanted to do a sources sought notice to give us a better estimate on the contractor costs to do the pilot studies.

From: Ramsey, Kevin
Sent: Thursday, August 14, 2014 3:22 PM
To: Brock, Terry
Subject: FW: National Academy of Sciences' Pilot Planning Study on Cancer Risks near Nuclear Facilities: Schedule Extension

Do you have background on this? Is our search for records part of the reason for the extension?

From: Brock, Terry
Sent: Friday, August 22, 2014 1:14 PM
To: Ramsey, Kevin
Subject: RE: Archive Records for NFS Cancer Study Pilot

Thanks Kevin. I spoke to Rania and we plan to hold a call on 9-2. Time tbd. Also, Rania would like to tour NFS, however [REDACTED]. Can she go?

From: Ramsey, Kevin
Sent: Thursday, August 21, 2014 11:47 AM
To: Brock, Terry
Subject: Archive Records for NFS Cancer Study Pilot

Here's the final list of records we pulled from the boxes. I had no notes for 2 boxes, but you put a sticky note on them so I assume there were effluent records. I plan to start pulling the 6-month effluent reports and go from there.

From: (b)(6)
Sent: Wednesday, August 27, 2014 3:21 PM
To: Ramsey, Kevin
Cc: (b)(6)
Subject: RE: Release of NFS effluent records

Mr. Ramsey,

Just for your awareness, I work for (b)(6) and am the primary follow for all regulatory and technical matters related to NFS. Could you please include me on direct distribution for anything touching on NFS going forward?

You should, however, continue to include (b)(6) and (b)(6) as well.

Thanks!

ACB.

-----Original Message-----

From: (b)(6)
Sent: Wednesday, August 27, 2014 15:01
To: (b)(6)
Subject: FW: Release of NFS effluent records

-----Original Message-----

From: Ramsey, Kevin [mailto:Kevin.Ramsey@nrc.gov]
Sent: Wednesday, August 27, 2014 1:50 PM
To: (b)(6)
Subject: Release of NFS effluent records

We have been searching through archive boxes to identify effluent records that the National Academies of Science (NAS) can use for its cancer study. The first batch I intend to release are the 6-month effluent reports submitted under 10 CFR 70.59. Mostly just lists of numbers. I haven't identified anything that needs to be redacted. I don't plan to send these to you unless you want to see them.

There are other documents with more discussion that we may want to release (environmental assessments, investigations of releases, etc.). I won't spend time redacting the longer documents if NAS says they don't need them. If I start redacting these longer documents, I plan to share them with you so you can see the information I plan to withhold. Do you concur with that approach?

Kevin M. Ramsey

Senior Project Manager

Fuel Manufacturing Branch

U.S. NRC

301-287-9116

From: (b)(6)
Sent: Thursday, August 28, 2014 3:37 PM
To: Ramsey, Kevin
Cc: (b)(6)
Subject: RE: Example of NFS effluent report
Attachments: NFS effluent report Jan - Jun 2013.pdf

The attachment is publicly available in ADAMS as ML14057A396.

I have no concerns with releasing these.

-----Original Message-----

From: Ramsey, Kevin [mailto:Kevin.Ramsey@nrc.gov]
Sent: Thursday, August 28, 2014 10:46
To: (b)(6)
Subject: Example of NFS effluent report

A recent report is attached.

-----Original Message-----

From: (b)(6)
Sent: Wednesday, August 27, 2014 4:53 PM
To: Ramsey, Kevin
Subject: RE: Release of NFS effluent records

True statement.

I think we're okay with releasing the effluent reports. There's no technical concerns that come to mind, but could you please send me an example one so I can confirm?

(b)(6)

Subject: Effluent records update meeting with NAS
Location: 3WFN; 12th floor, room TBD

Start: Thu 09/04/2014 1:00 PM
End: Thu 09/04/2014 2:00 PM
Show Time As: Tentative

Recurrence: (none)

Meeting Status: Not yet responded

Organizer: Brock, Terry
Required Attendees: Pinckney, David; Ramsey, Kevin; Tadesse, Rebecca; Ourania Kosti (OKosti@nas.edu); Heimberg, Jennifer (JHeimberg@nas.edu)

Planning for meeting on the 12th floor of 3 WFN. Room TBD.

From: Heimberg, Jennifer <JHeimberg@nas.edu>
Sent: Tuesday, September 02, 2014 1:37 PM
To: Brock, Terry; Kosti, Ourania; Ramsey, Kevin
Subject: background for Thursday's meeting
Attachments: Full List of Remaining Files Requested of USNRC_2September2014.xlsx

Terry, Rania, and Kevin,

I have generated a list of files (excluding pre-1974 reports) expected from the USNRC's offsite archival facility to help with the discussion on Thursday, September 4. Also, I recently summarized the activities and lists of files that have been generated during the Phase 2 data collection. This summary can be found below.

1. Effluent release reports identified using ADAMS archival database

To start the data collection effort, I generated a spreadsheet of microfiche addresses and accession #s for historical effluent release reports using ADAMS archival database (see spreadsheet labeled "Annual Effluent Release reports pre-1999 via ADAMS_master spreadsheet sent to PDR 10_17_2013"). Working alphabetically, the first ~3/4 of the listings were retrieved by visiting the PDR and copying the text from microfiche (see items 3 and 4 below for USNRC's efforts to integrate the files into ADAMS and recover unreadable files from an offsite storage facility). Terry Brock offered to help retrieve the remaining files on the list by accessing hard copies from an offsite storage facility. In an email dated 1/31/14, we provided a spreadsheet listing file names and accession numbers for the remaining files—as well as requests for further files to be retrieved (see spreadsheet labeled "Annual Effluent Release reports pre-1999 via ADAMS_Full List_sent to T Brock 1_31_2014").

This spreadsheet has three different lists with labels 1, 2 and 3. List 1 is the listing of files not yet retrieved—approximately 70 files—from the original master list. The original list (Master List) was retained within the spreadsheet because the PDR librarians were using it to retrieve the microfiche (and it was not yet clear if/how Terry might obtain the offsite files). Plus, I did not want to change the original list halfway through the collection process. List 2 includes additional effluent reports discovered using expanded searches within the ADAMS archival database. Finally, List 3 contains reports—not effluent release reports—that are of interest (primarily because the titles include references to episodic releases or changes in measurement systems—see item 2 below).

Terry and his colleagues focused on List 2 in their retrieval efforts (see item 5 below for additional actions related to the files that were retrieved). There are ~70 files from List 1 that still require retrieval. The percentage of retrieved reports from the SONGS facility prior to 1999 is most impacted by this action (with less than 10% reports retrieved).

2. Relevant reports, excluding effluent release reports, identified using ADAMS archival database

In addition to the list of effluent release reports found in ADAMS, many other report titles appeared to be relevant to the study (descriptions of changes in measurement programs or episodic releases). The committee experts reviewed the titles and culled the list. See the spreadsheet titled "List 3 items prioritized." There are 21 files listed which have not yet been received from the USNRC.

3. Integrating microfiche copied files into ADAMS

In an email dated 6/18, I wrote to Terry letting him know we had sent a CD per his request that contained the readable files copied from PDR microfiche. He planned to review the files for integration into ADAMS. Additionally, we sent him the pre-1975 effluent release reports from Oyster Creek for the same purpose. I do not think these files have been integrated into ADAMS yet.

4. Recovering unreadable microfiche copied files using hard copies from offsite storage facility
In the same CD (see above), unreadable files copied from PDR microfiche were included. Terry planned to retrieve these files from the offsite storage facility. Terry asked for accession #s for the unreadable reports (see attached spreadsheet titled "EffluentReleaseReportMLNo for Unreadable reports"). The contents of the CD are viewable on the N drive at:

(b)(7)(F)

5. Fixing broken links within ADAMS for reports retrieved from offsite storage
Terry sent us the new ML numbers for the files that were retrieved from the offsite storage facility using List 2 and then placed into ADAMS (see "Annual Effluent Release reports pre-1999 via ADAMS_Full List_sent to T Brock 1_31_2014"). However, ~25 of the 210 ML #s were not found in ADAMS. Terry had planned to look into why that happened (see attached spreadsheet labeled "Records Request of Annual Effluent Release reports pre-1999 via ADAMS_050114_USNRC updated ML numbers"). See the email dated 6/18 to Terry.
6. Pre-1974 effluent release reports
There are very few effluent release reports for the pilot facilities available in ADAMS prior to 1974 (less than ten—excluding Oyster Creek reports, see note below). The USNRC's offsite archival facility may store the files for the nuclear power plants and fuel services facilities but this has not yet been demonstrated. Accession numbers are not available for these reports. Note: Oyster Creek provided 100 percent of its effluent release reports to NAS staff from the start of operations through 1974.

I hope this is helpful. I will happily answer any questions you might have at our Thursday meeting.

Looking forward to seeing you,
Jenny

Jennifer Heimberg, Ph.D.

Senior Program Officer
Nuclear and Radiation Studies Board (NRSB)
The National Academies

202-334-3293 (o)

(b)(6) (c)

jheimberg@nas.edu

Facility	Document Title	Accession Number	Document Date
Dresden	"Effluent & Waste Disposal Semiannual Rept Jul-Dec 1988." W/890206 ltr.	8902280406	12/31/1988
LaSalle	"Effluent & Waste Disposal Semi-Annual Report,Jul-Dec 1991." W/920226 ltr.	9203020260	12/31/1991
Millstone	"Semiannual Radioactive Effluents Release Rept," Jan-June 1979.	7909100491	08/29/1979
Millstone	"Semiannual Radioactive Effluents Release Rept,Jul-Dec 1987."	8802290272	12/31/1987
Millstone	"Semiannual Radioactive Effluents Release Rept,Jan-June 1988." W/880830 ltr.	8809060001	06/30/1988
Millstone	Draft "Effluent & Waste Disposal Annual Rept for 1988."	9008070357	12/31/1988
Millstone	"Milestone Nuclear Power Station,Units 1,2 & 3 Semiannual Radioactive Effluents Release Rept,Jan-June 1988." W/880830 ltr.	8903100351	12/31/1988
Millstone	"Semiannual Radioactive Effluents Rept for Jul-Dec 1989." W/900228 ltr.	9003150272	12/31/1989
Millstone	Draft "Effluent & Waste Disposal Annual Rept for 1990."	9207200138	12/31/1990
Millstone	"Semiannual Radioactive Effluent Release Rept for Jul-Dec 1990." W/910301 ltr.	9103110143	12/31/1990
Millstone	"Millstone Nuclear Power Station,Units 1,2 & 3 Semiannual Radioactive Effluents Rept,Jan-June 1991." W/910301 ltr.	9109110009	06/30/1991
Millstone	Corrected draft "Effluent & Waste Disposal Annual Rept for 1991 for Millstone Nuclear Power Station." W/910301 ltr.	9305270224	12/31/1991
Millstone	"Millstone Nuclear Power Station Units 1,2 & 3 Semiannual Radioactive Effluents Release Rept,Jan-June 1991." W/910301 ltr.	9203020250	12/31/1991
Millstone	"Radiological Effluent Monitoring & Offsite Dose Calculation Manual," for Millstone Nuclear Power Station, Units 1,2 & 3.	9805040461	05/30/1997
Millstone	Rev 12 to "Radiological Effluent Monitoring Manual for MNPS Units 1,2 & 3."	9905060113	12/14/1998
Millstone	Revised "Radiological Effluent Monitoring & Offsite Dose Calculation Manual (REMODOC) for Millstone Nuclear Power Station, Units 1,2 & 3."	9905060120	04/30/1999
Oyster Creek	SEMIANNUAL REPORT RADIOACTIVE EFFLUENT RELEASES JANUARY 1-JULY 1 1976	4005001894	01/01/1976
Oyster Creek	Addendum 1 to Semi-Annual Effluent Release Rept 78-2, Jul-Dec 1978.	7908060255	08/01/1979
Oyster Creek	Addendum 1 to Semi-Annual Effluent Release Rept 78-2, Jul-Dec 1978.	7908060255	08/01/1979
Oyster Creek	"Semiannual Rept 79-2,Radioactive Effluent Releases, Jul-Dec 1979."	8003110020	12/31/1979
Oyster Creek	Addendum to "Semiannual Radioactive Effluent Releases, Jul-Dec 1979."	8005080272	04/30/1980
Oyster Creek	Semiannual Rept 80-1, "Radioactive Effluent Releases,Jan- June 1980."	8009090371	09/02/1980
Oyster Creek	"Semiannual Effluent Release Rept for June-Dec 1983." W/840229 ltr.	8403260074	12/31/1983
Oyster Creek	"Semiannual Effluent Release Rept for Jan-June 1984." W/840830 ltr.	8409170588	06/30/1984
Oyster Creek	"Oyster Creek Nuclear Generating Station 1988-1 Semiannual Effluent Release Rept."	8810120117	06/30/1988
Oyster Creek	"Oyster Creek Nuclear Generating Station 1988-2 Semiannual Effluent Release Rept." W/8810120117 ltr.	8903090383	12/31/1988
Oyster Creek	"Oyster Creek Nuclear Generating Station 1989-1 Semiannual Effluent Release Rept," for 1989.	8909080080	06/30/1989
Oyster Creek	"Oyster Creek Nuclear Generating Station 1990-1 Semiannual Effluent Release Rept," for 1990.	9009070085	06/30/1990
Oyster Creek	Revised Figure 1 to 1990-1 semiannual effluent release rept.	9011290095	06/30/1990
Oyster Creek	"Semiannual Radiological Effluent Release Rept for Jul-Dec 1990." W/910302 ltr.	9103150426	12/31/1990
Oyster Creek	"Oyster Creek Nuclear Generating Station Semiannual Effluent Release Rept,Jan-June 1991." W/910302 ltr.	9109100395	06/30/1991
Oyster Creek	Correction to "Semi-Annual Radiological Effluent Release Rept,Third Quarter 1991."	9206240470	06/30/1991
Oyster Creek	Correction to "Semi-Annual Radiological Effluent Release Rept,Third Quarter 1991."	9206240470	06/30/1991

Oyster Creek	"1991-2 Semiannual Effluent Release Rept." W/920303 ltr.	9203180414	12/31/1991
Oyster Creek	Correction to "Semi-Annual Radiological Effluent Release Rept,Fourth Quarter 1991."	9206240467	12/31/1991
Oyster Creek	Correction to "Semi-Annual Radiological Effluent Release Rept,Fourth Quarter 1991."	9206240467	12/31/1991
Oyster Creek	"Oyster Creek Nuclear Generating Station Semi-Annual Radiological Release Rept,Jan-Ju	9209040201	06/30/1992
Oyster Creek	"Oyster Creek Nuclear Generating Station Semi-Annual Radiological Release Rept,Jan-Ju	9209040201	06/30/1992
Oyster Creek	"Semiannual Effluent Release Rept for Jul-Dec 1992."	9303110274	12/31/1992
Oyster Creek	"Oyster Creek Nuclear Station 1993-1 Semiannual Effluent Rept." W/930827 ltr.	9309080118	06/30/1993
Oyster Creek	"Annual Radioactive Effluent Release Rept for period covering Jan-Dec 1997." W/980227	9803090037	12/31/1997
San Onofre	CORRECTIONS TO 11 SEMIANNUAL REPORT: JULY--DECEMBER 1976--RAD IOACTIVE EFFLU	4007000448	06/28/1977
San Onofre	"San Onofre Nuclear Generating Station Semiannual Operating Rept," for Jan-June 1980	8009030538	08/27/1980
San Onofre	"Radioactive Effluent Release Semiannual Rept 27,Jul-Dec 1980."	8205280307	02/27/1981
San Onofre	"Semiannual Effluent Rept,Jul-Dec,1981."	8203050413	12/31/1981
San Onofre	Revised & expanded "Radioactive Effluent Release Semiannual Rept,Jan-June 1981."	8202230164	02/19/1982
San Onofre	"San Onofre Nuclear Generating Station Unit 1 Semiannual Effluent Rept,Jan-June 1982."	8308120173	08/30/1982
San Onofre	"Semiannual Effluent Rept,Jul-Dec 1982." W/830223 ltr.	8308120050	02/23/1983
San Onofre	"Semiannual Effluent Rept,Jan-June 1983." W/830816 ltr.	8312210151	06/30/1983
San Onofre	"Semiannual Effluent Rept,Jul-Dec 1983."	8404100229	12/31/1983
San Onofre	"San Onofre Nuclear Generating Station Unit 1 Semiannual Effluent Rept Jan-June 1984."	8409130351	06/30/1984
San Onofre	"Semiannual Effluent Rept for Jul-Dec 1984." W/850228 ltr.	8503140409	12/31/1984
San Onofre	"Semiannual Radioactive Effluent Release Rept,Jan-June 1985."	8509030350	06/30/1985
San Onofre	"San Onofre Nuclear Generating Station Semiannual Effluent Rept,Jul-Dec 1985."	8603180254	12/31/1985
San Onofre	"San Onofre Nuclear Generating Station Semiannual Effluent Rept for Jul-Dec 1986." W/	8703040463	12/31/1986
San Onofre	"Semiannual Effluent Release Rept for Jan-June 1987." W/ 870831 ltr.	8709100106	06/30/1987
San Onofre	"Semiannual Effluent Rept,Jul-Dec 1987." W/880229 ltr.	8803070104	12/31/1987
San Onofre	"San Onofre Nuclear Generating Station Semiannual Effluent Rept Jan-June 1988."	8809020196	08/30/1988
San Onofre	"San Onofre Nuclear Generating Station Semiannual Effluent Rept Jul-Dec 1988." W/890	8903080428	12/31/1988
San Onofre	"Semiannual Effluent Rept,Jan-June 1989."	8909130167	06/30/1989
San Onofre	"San Onofre Nuclear Generating Station Semiannual Effluent Rept Jan-June 1990."	9009040199	06/30/1990
San Onofre	"Semiannual Effluent Rept Jul-Dec 1990."	9103060019	12/31/1990
San Onofre	"San Onofre Nuclear Generating Station Semiannual Effluent Release Rept,Jan-June 199	9109030194	06/30/1991
San Onofre	"Semiannual Radioactive Effluent Release Rept for Jul-Dec 1991."	9203090322	12/31/1991
San Onofre	"Semiannual Radioactive Effluent Release Rept for San Onofre Nuclear Generating Static	9209010190	06/30/1992
San Onofre	"SONGS Semiannual Radioactive Effluent Release Rept for Jul- Dec 1992."	9303040299	12/31/1992
San Onofre	"SONGS Annual Radioactive Effluent Release Rept Jan-Dec 1995."	9605060039	12/31/1995

San Onofre	"Annual Radioactive Effluent Release Rept for 1996."	9705050230	12/31/1996
San Onofre	"SONGS Annual Radioactive Effluent Release Rept for 1997."	9805070165	12/31/1997
LaSalle	Corrected draft "Effluent & Waste Disposal Annual Rept for 1991 for Millstone Nuclear F	9305270224	12/31/1991
Millstone	Summarizes environ radiation effluent radioactivity measurements made at plant on 71	8306150027	08/29/1971
Oyster Creek	Semiannual Rept#78-1 Provisional Oper Lic #DPR-16: Radioactive Effluent Releases 7801	7809150385	08/29/1978
Dresden	Forwards semiannual rept re radioactive effluent discharges & solid radioactive waste fc	8103020369	02/06/1981
Braidwood	"1998 Radioactive Effluent Release Rept."	9905050129	12/31/1998
LaSalle	"Semi-Annual Radioactive Effluent Rept,Jan-June 1997." W/970829 ltr.	9709030276	06/30/1997
Dresden	Forwards second portion of "Semiannual Rept Jan-June 1975" re radioactive effluent dis	8010100474	08/22/1975
Dresden	Forwards second portion of semiannual radioactive effluent discharges, environ monitor	8010160870	08/05/1977
Dresden	Forwards corrected radioactive effluent rept for Jul-Dec 1988 for plant.Final data for Sr-i	8904210150	03/28/1989
Dresden	Forwards corrected "Radioactive Effluent Rept for Jul-Dec 1989," containing final data fc	9009040144	08/01/1990
Haddam	Forwards "Radioactive Effluents Release Rept Jul-Dec 1992," including summary of quan	9303040275	02/26/1993
LaSalle	Part 2 of "Rept of Radioactive Effluents,1982."	8405070418	12/31/1982
LaSalle	Rev 0 to "Rept of Radioactive Effluents,Jul-Dec 1983." W/ 840116 ltr.	8403060150	12/31/1983
LaSalle	Errata to "Rept of Radioactive Effluents," Jul-Dec 1983.	8408300393	12/31/1983
LaSalle	"Rept of Radioactive Effluents," Jan-June 1984.	8408300513	06/30/1984
LaSalle	Errata to Part I of Rev 0 to, "Rept of Radioactive Effluents,Jan-June 1985."	8601080126	06/30/1984
LaSalle	Forwards errata to Part I of Rev 0 to "Rept of Radioactive Effluents,Jan-June 1984." Radi	8601080120	02/11/1985
Millstone	"Millstone Nuclear Power Station Radioactive Effluents Release Rept Jul-Dec 1992."	9303040222	12/31/1992
Oyster Creek	"Effluent Release Rept 1981-1,Dec 1980-June 1981."	8109110375	09/01/1981
Oyster Creek	"Effluent Release Rept,1981-82."	8203090491	02/26/1982
Oyster Creek	Forwards revised "Effluent & Release Rept for Jan-Dec 1997." Rev bars in right-hand mai	9806080067	05/27/1998
San Onofre	NRC DRAFT OF DATA RE RADIOACTIVE EFFLUENTS RELEASED FROM THE PLANT DURING	4008000539	08/26/1977
San Onofre	Rept of radioactive effluents,1976 & 77.	8109240183	12/31/1977
San Onofre	Forwards revised & expanded "Radioactive Effluent Release Semiannual Rept,Jan-June 1	8202230157	02/19/1982
San Onofre	"Technical Evaluation Rept for Radiological Effluent Release & Environ Operating Repts f	8707160862	06/30/1987
San Onofre	"San Onofre Nuclear Generating Station Annual Radioactive Effluent Release Rept Jan-D	9405040065	12/31/1993
San Onofre	"San Onofre Nuclear Generating Station Annual Radioactive Effluent Release Rept Jan-D	9505040122	12/31/1994
Big Rock	LACK OF STACK GAS EFFLUENT MONITORING	3001005287	02/11/1974
Big Rock	Responds to NRC Dec 1977 discussions identifying areas requiring amplification re site n	8101100625	02/08/1978
Big Rock	Submits corrections to dates in 840529 revised proposed findings on monitoring.Effluen	8406180414	06/12/1984
Braidwood	LER [Licensee Event Report] 86-006-00:on 861204,Action Statement 3.3.3.10 re failure c	8612290233	12/23/1986
Dresden	FAILURE TO MONITOR PLANT CHIMNEY EFFLUENTS JULY 26 1972.	3000005722	01/01/1972

Dresden	Forwards analysis of split samples on effluents during 1973 per cooperative agreement I	8010220709	04/03/1974
Dresden	Forwards results of analyses re effluent sample splits. Split samples analyzed by Health S	8009250535	04/03/1974
Dresden	LER 88-014-00:on 880803,tritium activity in airborne effluents exceeded allowable Tech	8809140053	09/01/1988
Haddam	INSPECTION OF ACTIVITY LEVELS OF EFFLUENTS (CONFIRMATORY MEASUREMENT)	4006005585	03/08/1977
Haddam	Verifies discrepancies noted in summary of radioactive effluents,in response to NRC 800	8008260484	08/14/1980
Haddam	"Radiological Effluent Monitoring Manual for Haddam Neck Plant."	8509170374	09/05/1985
Haddam	LER 97-005-00:on 970206,determined potentially inadequate methods used to calibrat	9704090009	04/01/1997
Haddam	LER 97-005-01:on 970206,determined that methods used to calibr liquid & gaseous radi	9710280369	10/20/1997
Millstone	Summarizes & updates info from naval reactors & naval reactors group re detection & r	8306150109	10/15/1971
Millstone	RADIOACTIVE LIQUID EFFLUENTS WERE DISCHARGED FROM AN UNMONITORED SUMP	3003000401	04/01/1975
Oyster Creek	Submits additional info re draft environ impact statement for plant.Release of holo	9604150009	09/06/1973
Oyster Creek	FAILURE TO MONITOR THE STACK EFFLUENT FOR IODINES AND PARTICULATES FOR THR	3003004489	08/28/1975
Oyster Creek	Revised 79-041/03L-1:on 791102,radwaste bldg ventilation monitoring sys found not yie	8002120745	02/07/1980
San Onofre	CHEMICAL EFFLUENTS AND REPORTING REQUIREMENTS	4004004037	03/17/1976
San Onofre	IE Insp Rept 50-206/81-36 on 810928-1002,19-25 & 1104-05. Noncompliance noted:fail	8201110655	12/10/1981
San Onofre	Insp repts 50-206/92-01,50-361/92-01 & 50-362/91-01 on 920106-10.Violations noted.N	9202180155	01/31/1992
	u_1976_Big Rock_vol 2.pdf	4006003629	
	u_1978_SONGS vol 1.pdf	8109240181	
	u_1978_SONGS vol 2.pdf	none	
	u_1979_Millstone vol 2.pf	8003040509	
	u_1980_Dresden vol 2.pdf	8103020374	
	u_1980_Dresden vol 2 copy.pdf	8103020374	
	u_1980_Haddam vol 2.pdf	8103030827	
	u_1981_Big Rock vol 2.pdf	8203030453	
	u_1982_Big Rock vol 2.PDF	9201150030	
	u_1982_Dresden vol 2.PDF	8306130275	
	u_1982_Millstone vol 2.PDF	8303080218	
	u_1983_Big Rock vol 1.PDF	8403080131	
	u_1984_Millstone vol 1.PDF	8409140038	
	u_1984_Millstone vol 2.pdf	8503200331	
	u_1985_Millstone vol 2.PDF	8805170213	
	u_1986_Big Rock vol 1 revised.PDF	9109100159	
	u_1987_Braidwood errata for May June.PDF	8712110256	
	u_1987_Braidwood vol 1.PDF	8709210432	

u_1987_Braidwood vol 2.PDF	8803160298
u_1988_Braidwood vol 2.PDF	8903060124
u_1989_Braidwood vol 1.PDF	8908290259
u_1989_Braidwood vol 2.PDF	9002260572
u_1990_Big Rock vol 1 duplicate microfiche scan.PDF	9009070216
u_1990_Big Rock vol 1.PDF	9009070216
u_1990_Braidwood vol 2 poor copy.PDF	9102250048
u_1991_Braidwood vol 1.PDF	9108230053
u_1992_Braidwood vol 1 errata.PDF	130072 or 9303090090
u_1992_Braidwood vol 1.PDF	9209020252
u_1992_Braidwood vol 2.PDF	9304130080
u_1992_Dresden vol 2 corrected.PDF	9308300229
u_1992_Dresden vol 2_ML14106A276.pdf	14106A276
u_1993_Big Rock vol 1.PDF	9309020163
u_1995 Dresden vol 1 errata.PDF	9610080143
u_1995_Braidwood annual effluent release and disposal report.PDF	9603050232
u_1995_Dresden vol 1.PDF	9508300293
u_1996_Braidwood annual effluent release and disposal.PDF	220183 or 9706230183
u_1997_Braidwood annual effluent release and waste report.PDF	9804270439
u_1998_Dresden_ML14106A297.pdf	14106A297
u_1998_LaSalle.PDF	9905050336
u_1998_SONGS.PDF	9905050173

t Page Cou	Microform Addresses	Source of Requested New ML #s	note
16	48624:161-48624:176	Master List 1	
26	60783:281-60783:306	Master List 1	
100	15001:226-15001:337	Master List 1	
73	44566:244-44566:316	Master List 1	
86	46747:163-46747:247	Master List 1	
45	54897:215-54897:260	Master List 1	
84	48813:279-48813:362	Master List 1	
94	53028:001-53028:094	Master List 1	
93	62450:003-62450:095	Master List 1	
93	56940:213-56940:305	Master List 1	
56	59091:079-59091:161	Master List 1	
89	75051:037-75051:125	Master List 1	
87	60788:001-60788:087	Master List 1	
120	A3344:121-A3344:240	Master List 1	
30	A7988:078-A7988:107	Master List 1	
120	A7988:214-A7988:335	Master List 1	
42	50219-973	Master List 1	
6	00558:196-00558:201	Master List 1	
6	00558:196-00558:201	Master List 1	
78	04166:264-04166:342	Master List 1	
3	04867:034-04867:036	Master List 1	
100	06498:303-06499:012	Master List 1	
170	22749:202-22750:016	Master List 1	
175	26494:041-26494:207	Master List 1	
31	47119:117-47119:147	Master List 1	
39	48799:146-48799:183	Master List 1	
32	51149:277-51149:308	Master List 1	
37	55149:153-55149:193	Master List 1	
1	55961:059-55961:059	Master List 1	
27	57053:274-57053:305	Master List 1	
37	59087:224-59087:260	Master List 1	
2	62134:175-62134:176	Master List 1	
2	62134:175-62134:176	Master List 1	

34	60975:307-60975:340	Master List 1
2	62134:173-62134:174	Master List 1
2	62134:173-62134:174	Master List 1
30	63018:325-63018:354	Master List 1
30	63018:325-63018:354	Master List 1
41	74244:220-74244:260	Master List 1
32	76388:318-76388:349	Master List 1
46	A2560:308-A2560:353	Master List 1
1	50010-775	Master List 1
7	06463:337-06463:343	Master List 1
8	13283:212-13283:219	Master List 1
33	12136:159-12136:191	Master List 1
33	12012:073-12012:105	Master List 1
38	20016:190-20016:229	Master List 1
39	20012:238-20012:275	Master List 1
42	21600:257-21600:298	Master List 1
38	22960:194-22960:231	Master List 1
41	26465:235-26465:274	Master List 1
40	29382:018-29382:057	Master List 1
87	32447:140-32447:227	Master List 1
104	34984:002-34984:104	Master List 1
107	39876:291-39877:037	Master List 1
92	42593:047-42593:138	Master List 1
115	44626:341-44627:095	Master List 1
96	46751:054-46751:149	Master List 1
112	48742:087-48742:198	Master List 1
146	51174:164-51174:309	Master List 1
113	55078:143-55078:255	Master List 1
304	56899:099-56900:042	Master List 1
383	58950:003-58951:025	Master List 1
117	60863:331-60864:087	Master List 1
102	62929:004-62929:105	Master List 1
117	74122:039-74122:155	Master List 1
105	88132:002-88132:106	Master List 1

102	92763:016-92763:117	Master List 1		
107	A3412:002-A3412:108	Master List 1		
89	75051:037-75051:125	List 2		No ML #?
3	23045:082-23045:084	List 2		No ML #?
62		List 2		No ML #?
15	07784:234-07784:249	List 2	ML14094A258	duplicate of ML14094A256-- title listed in ADAMS is incorrect
63	A7992:175-A7992:237	List 2	ML14090A042	incorrect #
26	A0273:221-A0273:245	List 2	ML14140A622	incorrect ML#
4	06932:073-06932:076	List 2	ML14093A359	no results found
2	06925:330-06925:331	List 2	ML14093A364	no results found
1	49444:223-49444:238	List 2	ML14093A363	no results found
4	55094:338-55095:029	List 2	ML14093A366	no results found
16	74161:337-74161:353	List 2	ML14092A044	no results found
6	24342:017-24342:022	List 2	ML14140A830	no results found
9	22513:337-22513:345	List 2	ML14099A513	no results found
8	26308:152-26308:159	List 2	ML14104A827	no results found
13	26313:312-26313:324	List 2	ML14099A515	no results found
10	34214:215-34214:224	List 2	ML14104A832	no results found
1	34214:214-34214:224	List 2	ML14104A857	no results found
76	74121:189-74121:266	List 2	ML14105A423	no results found
108	09687:150-09687:256	List 2	ML14093A170	no results found
150	12162:290-12163:076	List 2	ML14093A206	no results found
8	A3766:213-A3766:220	List 2	ML14093A086	no results found
1	50206-801	List 2	ML13319A527	no results found
7	09889:068-09889:076	List 2	ML14105A378	no results found
1	12012:072-12012:105	List 2	ML13311B125	no results found
167	41730:139-41730:305	List 2	ML13308A985	no results found
130	79174:003-79174:132	List 2	ML13326A156	no results found
476	83794:001-83795:112	List 2	ML13326A188	no results found
2	50155-195	List 3		
11	08140:006-08140:016	List 3		
3	24978:127-24978:129	List 3		
5	39092:083-39092:087	List 3		
1	50237-247	List 3		

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6	11566:352-11566:357,06911	List 3
7	11587:107-11587:113,06911	List 3
4	46846:170-46846:173	List 3
14	50213-684	List 3
2	06411:104-06411:105	List 3
25	32638:037-32638:061	List 3
5	92498:109-92498:113	List 3
5	A0908:067-A0908:071	List 3
4	23045:110-23045:113	List 3
1	50245-495	List 3
2	88573:217-88573:218	List 3
3	50219-720	List 3
4	01952:063-01952:066	List 3
12	50206-524	List 3
26	11542:221-11542:247	List 3
10	60580:009-60580:018	List 3

[illegible]

Subject: Effluent records update meeting with NAS
Location: 3WFN; 12th floor, 3WF-9A32

Start: Thu 09/04/2014 1:00 PM
End: Thu 09/04/2014 2:00 PM
Show Time As: Tentative

Recurrence: (none)

Meeting Status: Not yet responded

Organizer: Brock, Terry
Required Attendees: Pinckney, David; Ramsey, Kevin; Tadesse, Rebecca; Ourania Kosti (OKosti@nas.edu); Heimberg, Jennifer (JHeimberg@nas.edu)

Kevin reserved us room 3WF-9A32. Thanks.

Rania and Jennifer,

I'll meet you at the security gate and escort you up.

Terry

From: Lee, Dinah M <dmlee@nuclearfuelservices.com>
Sent: Tuesday, September 16, 2014 3:27 PM
To: Ramsey, Kevin
Subject: NFS Reports
Attachments: Effluent 8-29-89.pdf; Effluent 2-28-00.pdf; Effluent 2-29-88.pdf; Effluent 3-1-90.pdf; Effluent 3-1-91.pdf; Effluent 8-27-94.pdf; Effluent 8-29-88.pdf

Kevin,
Marie Moore asked me to send these reports to you. These are the reports that have been located so far. She is continuing to look.

Thank you,
Michelle Lee
NFS Licensing Specialist
423-735-5595

~~----- This message is intended only for the individual or entity to which it is addressed and contains information that is proprietary to The Babcock & Wilcox Company and/or its affiliates, or may be otherwise confidential. If the reader of this message is not the intended recipient, or the employee agent responsible for delivering the message to the intended recipient, you are hereby notified that any dissemination, distribution or copying of this communication is strictly prohibited. If you have received this communication in error, please notify the sender immediately by return e-mail and delete this message from your computer. Thank you.~~



21G-89-0049
GOV-01-55-03
ACF1531 *val*

Nuclear Fuel Services, Inc.
205 Banner Hill Rd.
Erwin, TN 37650
(615) 743-9141

AUGUST 29, 1989

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

U. S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT
SUITE 2900
101 MARIETTA STREET, NW
ATLANTA, GA 30323

Attention: Steward Ebnetter
Regional Administrator

Reference: (1) Docket No. 70-143/SNM-124

Gentlemen:

In accordance with the requirements set forth in Title 10 CFR, Part 70.59, Nuclear Fuel Services, Inc., submits the attached report of its effluent monitoring at the Erwin, Tennessee Plant for the period covering January through June 1989. Please contact us if you have any questions regarding this report.

Use our unique identification number (21G-89-0049) in any correspondence concerning this letter.

Sincerely,

B. E. Knight
B. E. Knight
Director of Safety

BEK/CAH:bjf2

Attachment

cc: Director
Office of Nuclear Material Safety and Safeguards
U. S. Nuclear Regulatory Commission
Washington, DC 20555

Mr. Leland R. Rouse, Chief
Fuel Cycle Safety Branch
Division of Industrial, and Medical
Nuclear Safety
U.S. Nuclear Regulatory Commission
Washington, DC 20555

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NUCLEAR FUEL SERVICES, INC
Erwin, Tennessee

REPORT OF EFFLUENT MONITORING
AND
RELEASE TO UNRESTRICTED AREAS

License No.: SNM-124
Docket No.: 70-143

Period Covered: JANUARY 1, 1989 thru
JUNE 30, 1989

I. Gaseous Effluents

Radionuclide	Quantity Released (Curies)		
Uranium-234	1.53E-03	+/-	1.05E-04
Uranium-235	2.88E-05	+/-	1.99E-06
Uranium-236	1.51E-07	+/-	1.05E-08
Uranium-238	3.04E-07	+/-	2.60E-08
Plutonium-238	1.06E-08	+/-	3.22E-09
Plutonium-239	5.70E-09	+/-	1.72E-09
Plutonium-240	5.14E-09	+/-	1.56E-09
Plutonium-241	7.03E-07	+/-	2.12E-07
Plutonium-242	7.31E-12	+/-	2.21E-12
Americium-241	6.57E-09	+/-	1.99E-09

II. Liquid Effluents

Radionuclide			
Uranium-234	3.41E-02	+/-	6.35E-03
Uranium-235	1.24E-03	+/-	1.20E-04
Uranium-238	1.71E-03	+/-	2.47E-04
Thorium-228	9.81E-05	+/-	2.69E-04
Thorium-230	1.93E-04	+/-	3.03E-04
Thorium-232	4.02E-05	+/-	3.98E-05
Thorium-234	1.60E-03	+/-	3.62E-04
Plutonium-238	7.38E-06	+/-	2.38E-06
Plutonium-239	2.73E-05	+/-	1.24E-04
Technetium-99	5.00E-02	+/-	1.35E-02

1 0 4 3 0 0 2 1 9 6 9



Nuclear Fuel Services, Inc.
P.O. Box 337, MS 123
Enrich, TN 37650

(423) 743-9141

**CERTIFIED MAIL
RETURN RECEIPT REQUESTED**

February 28, 2000

21G-00-0026
GOV-01-55-03
ACF-00-0032

Mr. Luis A. Reyes, Regional Administrator
U. S. Nuclear Regulatory Commission
Region II, Atlanta Federal Center
61 Forsyth Street, SW, Suite 23T85
Atlanta, GA 30303

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References: 1) Docket No. 70-143; SNM License 124

Subject: Bi-Annual Effluent Monitoring Report July - December 1999

Dear Mr. Reyes:

In accordance with the requirements set forth in 10 CFR, Part 70.59, Nuclear Fuel Services, Inc. (NFS) submits the attached reports. Attachment A reports the Radioactivity in Effluent Liquid for the period July-December 1999. Attachment B reports the Radioactivity in Effluent Air for the period July-December 1999. Attachment C summarizes an evaluation of the dose and air activity concentration for the maximally exposed offsite individual, due to effluents during the period July-December 1999. A minor formatting change was made in the reports provided in Attachments A and B. The last column in these reports was changed from a percent value to a fraction value for each individual radionuclide listed. These fractions are summed to give a "Total" sum of fractions for each effluent source.

If you or your staff have any questions, require additional information, or wish to discuss this, please contact me or Ms. Janice Greene, Environmental Safety Manager at (423) 743-1730. Please reference our unique document identification number (21G-00-0026) in any correspondence concerning this letter.

Sincerely,

NUCLEAR FUEL SERVICES, INC.

B. Marie Moore
B. Marie Moore
Vice President
Safety and Regulatory

TEH/rcy

Attachments

T. S. Baer to Mr. Luis Reyes (NRC)
Page 2

21G-00-0026
GOV-01-55-03
ACF-00-0032

xc: Mr. William Gloersen, Project Inspector
U. S. Nuclear Regulatory Commission
Region II, Atlanta Federal Center
61 Forsyth Street, SW
Suite 23T85
Atlanta, GA 30303

Director
Office of Nuclear Material Safety & Safeguards
U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555

Mr. C. W. Emeigh, Section Chief
Licensing and International Safeguards Branch
Division of Fuel Cycle Safety and Safeguards
Office of Nuclear Materials Safety & Safeguards
U. S. Nuclear Regulatory Commission
Two White Flint North
11545 Rockville Pike
Rockville, MD 20852-2738

Mr. Mark G. Poirier, Account Engineer
American Nuclear Insurers
Town Center, Suite 300 S. 29 South Main Street
West Hartford, CT 06107-2430

Mr. Gary Humphrey
Senior Resident Inspector
U. S. Nuclear Regulatory Commission

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21G-00-0026
GOV-01-55-03
ACF-00-0032

Attachment A
To Letter Dated February 28, 2000
B. M. Moore to Mr. Luis A. Reyes (NRC)

Report of Radioactivity in Effluent Liquid for the Period
July - December 1999

(One Page to Follow)

10430022972

Radioactivity in Effluent Liquid **July 1, 1999 to December 31, 1999**

Location	Total Volume (l)	Activity Concentration (μCi/ml)	Error Estimate (μCi/ml)	L.L.D (μCi/ml)	Quantity Released (Ci)	Quantity Released (g)	Fraction of ECL ¹
Banner Spring Down							
Pu-238	266,863,608	7.36E-12	1.32E-10	3.19E-10	1.96E-06	1.15E-07	3.68E-04
Pu-239/240	266,863,608	1.51E-10	1.62E-10	2.69E-10	4.03E-05	6.48E-04	7.56E-03
Tc-99	266,863,608	1.63E-09	6.26E-09	1.30E-08	4.35E-04	2.57E-02	2.72E-05
Th-228	266,863,608	9.58E-12	1.77E-10	4.39E-10	2.54E-06	3.12E-09	4.79E-05
Th-230	266,863,608	3.05E-10	2.88E-10	3.00E-10	8.15E-05	4.03E-03	3.05E-03
Th-232	266,863,608	4.65E-11	1.26E-10	2.71E-10	1.24E-05	1.14E-02	1.55E-03
U-234	266,863,608	7.74E-09	1.60E-09	3.30E-10	2.07E-03	3.31E-01	2.58E-02
U-235/236	266,863,608	3.48E-10	2.62E-10	2.72E-10	9.28E-05	4.30E-01	1.16E-03
U-238	266,863,608	1.12E-09	4.94E-10	2.67E-10	2.99E-04	8.91E-02	3.73E-03
					Total:		4.24E-02
News							
Pu-238	20,149,362	1.39E-13	2.52E-10	4.56E-10	2.80E-09	1.64E-10	6.94E-07
Pu-239/240	20,149,362	1.12E-10	2.11E-10	4.03E-10	2.26E-06	3.63E-05	5.60E-04
Tc-99	20,149,362	2.14E-08	7.07E-09	1.36E-08	4.32E-04	2.56E-02	3.57E-05
Th-228	20,149,362	1.17E-10	2.78E-10	6.23E-10	2.37E-06	2.89E-09	5.87E-05
Th-230	20,149,362	6.98E-10	5.19E-10	4.53E-10	1.41E-05	6.96E-04	6.98E-04
Th-232	20,149,362	1.57E-11	8.07E-11	4.25E-10	3.16E-07	2.90E-00	5.23E-03
U-234	20,149,362	2.07E-08	3.54E-09	5.33E-10	4.06E-04	6.51E-02	6.72E-03
U-235/236	20,149,362	8.77E-10	5.27E-10	3.86E-10	1.77E-05	8.18E-00	2.92E-04
U-238	20,149,362	3.63E-09	1.13E-09	4.50E-10	7.31E-05	2.18E-02	1.21E-03
					Total:		9.63E-03
WWTF							
Cs-137	2,911,911	1.66E-08	3.59E-09	2.96E-09	4.82E-05	5.54E-07	1.66E-02
Na-22	2,911,911	6.66E-08	8.88E-09	3.07E-09	1.94E-04	3.11E-08	1.11E-02
Pu-238	2,911,911	1.80E-11	9.28E-11	1.26E-10	5.25E-08	3.07E-09	9.02E-04
Pu-239/240	2,911,911	2.13E-10	1.31E-10	1.45E-10	6.22E-07	9.99E-06	1.07E-02
Ra-224	2,911,911	3.58E-08	2.25E-08	3.58E-08	1.04E-04	6.56E-10	1.79E-01
Ra-226	2,911,911	1.86E-09	2.98E-10	2.91E-10	5.42E-06	5.48E-06	3.10E-02
Tc-99	2,911,911	8.33E-07	2.18E-08	1.34E-08	2.43E-03	1.44E-01	1.39E-02
Th-228	2,911,911	6.67E-11	2.49E-10	4.15E-10	1.94E-07	2.37E-10	3.34E-04
Th-230	2,911,911	5.79E-10	2.72E-10	2.03E-10	1.69E-06	8.35E-05	5.79E-03
Th-232	2,911,911	1.22E-11	7.69E-11	1.71E-10	3.56E-08	3.26E-01	4.07E-04
U-234	2,911,911	4.40E-08	5.57E-09	2.47E-10	1.28E-04	2.05E-02	1.47E-01
U-235/236	2,911,911	3.11E-09	7.04E-10	2.20E-10	9.06E-06	4.19E-00	1.04E-02
U-238	2,911,911	3.92E-09	8.20E-10	2.39E-10	1.14E-05	3.41E-01	1.31E-02
					Total:		4.40E-01

¹ ECL: Effluent Concentration Limit from 10 CFR 20, Appendix B

1 0 4 3 0 3 2 9 7 3

21G-00-0026
GOV-01-55-03
ACF-00-0032

Attachment B
To Letter Dated February 28, 2000
B. M. Moore to Mr. Luis A. Reyes (NRC)

Report of Radioactivity in Effluent Air for the Period
July - December 1999

(Three Pages to Follow)

10430022974

Radioactivity in Effluent Air July 1, 1999 to December 31, 1999

Location	Total Volume (m ³)	Activity Concentration (μCi/ml)	Error Estimate (μCi/ml)	LLD (μCi/ml)	Quantity Released (Ci)	Quantity Released (g)	Fraction of ECL ¹
Main Stack 416	1147.47 m³/min	19.12 m³/sec					
Tc-99	310,313,078	2.44E-11	9.12E-14	3.40E-14	7.56E-03	4.48E-01	2.71E-02
Th-228	310,313,078	1.01E-16	1.42E-17	1.37E-17	3.15E-08	3.85E-11	5.07E-03
U-232	310,313,078	4.59E-16	6.41E-17	6.15E-17	1.42E-07	6.65E-09	4.59E-02
U-234	310,313,078	4.31E-13	2.86E-14	2.09E-14	1.34E-04	2.14E-02	8.63E+00
U-235	310,313,078	7.91E-15	4.95E-16	3.50E-16	2.46E-06	1.14E+00	1.32E-01
U-236	310,313,078	7.83E-14	5.54E-15	4.22E-15	2.43E-05	3.74E-01	1.30E+00
U-238	310,313,078	2.63E-16	1.76E-17	1.29E-17	8.17E-08	2.44E-01	4.39E-03
					Total:		1.01E+01
Stack 185 Bldg. 131	70.37 m³/min	1.17 m³/sec					
Tc-99	18,543,210	5.21E-14	2.88E-14	3.78E-14	9.66E-07	5.72E-05	5.79E-03
U-234	18,543,210	1.48E-15	4.58E-15	9.54E-15	2.74E-08	4.40E-06	2.96E-02
U-238	18,543,210	2.87E-15	8.88E-15	1.85E-14	5.33E-08	1.59E-01	4.79E-02
					Total:		7.75E-02
Stack 2nd Bldg. 234	105.44 m³/min	1.76 m³/sec					
Am-241	27,785,069	2.40E-15	1.22E-15	1.45E-15	6.66E-08	1.94E-08	1.20E-01
Pu-238	27,785,069	4.78E-16	2.43E-16	2.89E-16	1.33E-08	7.76E-10	2.39E-02
Pu-239	27,785,069	4.93E-15	2.49E-15	2.95E-15	1.37E-07	2.20E-06	2.46E-01
Pu-240	27,785,069	1.68E-15	8.50E-16	1.01E-15	4.67E-08	2.05E-07	8.40E-02
Pu-241	27,785,069	2.83E-14	6.60E-15	5.90E-15	7.86E-07	7.63E-09	3.54E-02
					Total:		5.10E-01
Stack 2B Bldg. 234	141.03 m³/min	2.35 m³/sec					
Am-241	37,164,547	2.94E-15	1.27E-15	1.48E-15	1.09E-07	3.19E-08	1.47E-01
Pu-238	37,164,547	5.88E-16	2.54E-16	2.97E-16	2.19E-08	1.28E-09	2.94E-02
Pu-239	37,164,547	5.96E-15	2.56E-15	3.00E-15	2.22E-07	3.56E-06	2.98E-01
Pu-240	37,164,547	2.04E-15	8.78E-16	1.03E-15	7.59E-08	3.33E-07	1.02E-01
Pu-241	37,164,547	2.58E-14	6.35E-15	6.01E-15	9.58E-07	9.30E-09	3.22E-02
					Total:		6.09E-01
Stack 332 Bldg. 120	50.18 m³/min	0.84 m³/sec					
Tc-99	13,222,764	6.84E-14	3.13E-14	3.78E-14	9.05E-07	5.35E-05	7.60E-05
Th-228	13,222,764	4.30E-16	8.50E-16	1.63E-15	5.68E-09	6.94E-12	2.15E-02
Th-230	13,222,764	2.00E-16	3.96E-16	7.57E-16	2.64E-09	1.31E-07	1.00E-02
Th-232	13,222,764	4.22E-16	8.36E-16	1.60E-15	5.58E-09	5.12E-02	1.06E-01
U-234	13,222,764	3.40E-15	6.73E-15	1.29E-14	4.50E-08	7.21E-06	6.80E-02
U-235	13,222,764	5.56E-16	1.10E-15	2.10E-15	7.35E-09	3.40E-03	9.26E-03
U-238	13,222,764	2.41E-15	4.76E-15	9.12E-15	3.18E-08	9.50E-02	4.01E-02
					Total:		2.55E-01
Stack 3rd Bldg. 301	118.34 m³/min	1.9th m³/sec					
Tc-99	31,183,933	6.70E-14	1.94E-14	2.69E-14	2.09E-06	1.24E-04	7.44E-05
U-234	31,183,933	7.93E-15	9.82E-15	1.96E-14	2.47E-07	3.96E-05	1.59E-01
U-235	31,183,933	1.21E-16	1.49E-16	2.99E-16	3.76E-09	1.74E-03	2.01E-03

¹ECL: Effluent Concentration Limit (see 10-CFR 26, Appendix B). Fraction of ECL at the stack is provided for reference only. Concentrations at off-site receptors are significantly less than those reported here (at stack) due to the atmospheric dispersion that occurs before the effluent enters the site.

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Radioactivity in Effluent Air July 1, 1999 to December 31, 1999

Location	Total Volume (m ³)	Activity Concentration (μCi/ml)	Error Estimate (μCi/ml)	LLD (μCi/ml)	Quantity Released (Ci)	Quantity Released (g)	Fraction of ECL ¹
Stack 376 Bldg. 301		118.34 mYmin	1.97 mYsec				
U-236	31,183,933	4.02E-18	4.98E-18	9.97E-18	1.25E-10	1.93E-06	6.70E-05
U-238	31,183,933	2.41E-18	2.99E-18	5.98E-18	7.53E-11	2.25E-04	4.02E-05
						Total:	1.61E-01
Stack 421 Bldg. 100		30.30 mYmin	0.50 mYsec				
Tc-99	7,984,400	8.55E-14	2.12E-14	2.69E-14	6.83E-07	4.04E-05	9.50E-05
Tb-228	7,984,400	4.98E-17	1.45E-17	1.99E-17	3.97E-10	4.85E-13	2.49E-03
U-232	7,984,400	2.24E-16	6.51E-17	8.97E-17	1.79E-09	8.36E-11	2.24E-02
U-234	7,984,400	3.97E-14	1.15E-14	1.59E-14	3.17E-07	5.08E-05	7.95E-01
U-235	7,984,400	5.72E-16	1.66E-16	2.29E-16	4.57E-09	2.12E-03	9.54E-05
U-236	7,984,400	9.17E-15	2.67E-15	3.67E-15	7.32E-08	1.13E-03	1.53E-01
U-238	7,984,400	2.49E-17	7.23E-18	9.97E-18	1.99E-10	5.93E-04	4.15E-04
						Total:	9.82E-01
Stack 547 Bldg. 100		54.93 mYmin	0.92 mYsec				
Tc-99	14,476,389	7.17E-14	3.14E-14	3.72E-14	1.04E-06	6.14E-05	7.97E-05
Tb-228	14,476,389	8.87E-18	1.50E-17	2.77E-17	1.28E-10	1.57E-13	4.44E-04
U-232	14,476,389	3.99E-17	6.74E-17	1.24E-16	5.78E-10	2.70E-11	3.99E-03
U-234	14,476,389	7.08E-15	1.20E-14	2.21E-14	1.03E-07	1.64E-05	1.42E-01
U-235	14,476,389	1.02E-16	1.72E-16	3.18E-16	1.48E-09	6.84E-04	1.70E-03
U-236	14,476,389	1.63E-15	2.76E-15	5.09E-15	2.37E-08	3.64E-04	2.72E-02
U-238	14,476,389	4.44E-18	7.49E-18	1.38E-17	6.42E-11	1.92E-04	7.39E-05
						Total:	1.79E-01
Stack 573 Bldg 306-W		92.57 mYmin	1.54 mYsec				
Tc-99	25,193,248	7.70E-14	2.46E-14	3.49E-14	1.94E-06	1.15E-04	8.55E-05
U-234	25,193,248	9.54E-15	1.26E-14	2.54E-14	2.40E-07	3.85E-05	1.91E-01
U-235	25,193,248	1.45E-16	1.91E-16	3.87E-16	3.66E-09	1.69E-03	2.42E-03
U-236	25,193,248	4.84E-18	6.38E-18	1.29E-17	1.22E-10	1.88E-06	8.07E-05
U-238	25,193,248	2.91E-18	3.83E-18	7.74E-18	7.32E-11	2.19E-04	4.84E-05
						Total:	1.93E-01
Stack 583 Bldg. 234		10.82 mYmin	0.18 mYsec				
Am-241	2,852,463	2.68E-15	1.39E-15	1.48E-15	7.65E-09	2.23E-09	1.34E-01
Pu-238	2,852,463	5.36E-16	2.78E-16	2.96E-16	1.53E-09	8.95E-11	2.68E-02
Pu-239	2,852,463	5.44E-15	2.82E-15	3.00E-15	1.55E-08	2.49E-07	2.72E-01
Pu-240	2,852,463	1.86E-15	9.66E-16	1.03E-15	5.31E-09	2.33E-08	9.31E-02
Pu-241	2,852,463	8.49E-14	1.05E-14	6.00E-15	2.42E-07	2.35E-09	1.06E-01
						Total:	6.32E-01
Stack 600 Bldg. 110		290.45 mYmin	4.84 mYsec				
Tc-99	79,047,764	2.09E-13	3.02E-14	3.49E-14	1.65E-05	9.76E-04	2.32E-04
Tb-228	79,047,764	3.53E-17	1.59E-17	2.58E-17	2.79E-09	3.41E-12	1.77E-03
U-232	79,047,764	1.59E-16	7.14E-17	1.16E-16	1.26E-08	5.87E-10	1.59E-02
U-234	79,047,764	2.82E-14	1.27E-14	2.06E-14	2.23E-06	3.57E-04	5.64E-01

¹ECL: Effluent Concentration Limit from 10-CFR-21 Appendix B. Fraction of ECL at the stack is provided for reference only. Concentrations at off-site locations are significantly less than those reported here (if stack) due to the atmospheric dispersion that occurs before the effluent reaches the site.

Radioactivity in Effluent Air July 1, 1999 to December 31, 1999

Location	Total Volume (m³)	Activity Concentration (μCi/ml)	Error Estimate (μCi/ml)	LLD (μCi/ml)	Quantity Released (Ci)	Quantity Released (g)	Fraction of ECL¹
Stack 600 Bldg. 110 290.45 m³/min 4.84 m³/sec							
U-235	79,047,764	4.06E-16	1.83E-16	2.97E-16	3.21E-08	1.40E-02	6.77E-03
U-236	79,047,764	6.51E-15	2.92E-15	4.75E-15	5.14E-07	7.93E-03	1.08E-01
U-238	79,047,764	1.77E-17	7.94E-18	1.29E-17	1.40E-09	4.17E-03	2.94E-04
						Total:	6.98E-01
Stack 615 Bldg. 306-W 46.61 m³/min 0.78 m³/sec							
Tc-99	12,685,251	6.73E-14	2.39E-14	3.49E-14	8.54E-07	5.04E-05	7.48E-05
U-234	12,685,251	8.89E-15	1.24E-14	2.54E-14	1.13E-07	1.81E-05	1.78E-01
U-235	12,685,251	1.35E-16	1.89E-16	3.87E-16	1.72E-09	7.95E-04	2.26E-03
U-236	12,685,251	4.52E-18	6.30E-18	1.29E-17	5.73E-11	8.83E-07	7.53E-05
U-238	12,685,251	2.71E-18	3.78E-18	7.74E-18	3.44E-11	1.03E-04	4.52E-05
						Total:	1.88E-01
Stack 646 Bldg. 110 63.80 m³/min 1.06 m³/sec							
Tc-99	16,812,013	4.25E-14	2.72E-14	3.77E-14	7.14E-07	4.22E-05	4.72E-05
Th-232	16,812,013	3.80E-18	1.32E-17	2.80E-17	6.39E-11	7.81E-14	1.90E-04
U-232	16,812,013	1.71E-17	5.92E-17	1.26E-16	2.88E-10	1.34E-11	1.71E-03
U-234	16,812,013	3.04E-15	1.05E-14	2.24E-14	5.10E-08	8.18E-06	6.07E-02
U-235	16,812,013	4.37E-17	1.51E-16	3.22E-16	7.35E-10	3.40E-04	7.29E-04
U-236	16,812,013	7.01E-16	2.42E-15	5.16E-15	1.18E-08	1.81E-04	1.17E-02
U-238	16,812,013	1.90E-18	6.58E-18	1.40E-17	3.20E-11	9.54E-05	3.17E-05
						Total:	7.51E-02
Stack 649 Bldg. 330 34.52 m³/min 0.41 m³/sec							
Tc-99	6,462,141	6.86E-14	1.96E-14	2.69E-14	4.43E-07	2.62E-05	7.62E-05
U-234	6,462,141	6.12E-15	7.59E-15	1.53E-14	3.96E-08	6.34E-06	1.22E-01
U-235	6,462,141	2.07E-16	2.56E-16	5.18E-16	1.34E-09	6.19E-04	3.45E-03
U-238	6,462,141	1.63E-15	2.02E-15	4.09E-15	1.05E-08	3.15E-02	2.72E-02
						Total:	1.53E-01
Stack 667 Bldg. 410 1648.72 m³/min 27.48 m³/sec							
Am-241	434,470,767	1.86E-15	3.00E-16	3.25E-16	8.09E-07	2.36E-07	9.32E-02
Pu-238	434,470,767	3.33E-16	5.36E-17	5.81E-17	1.45E-07	8.47E-09	1.67E-02
Pu-239	434,470,767	3.82E-15	6.15E-16	6.66E-16	1.66E-06	2.67E-05	1.91E-01
Pu-240	434,470,767	1.29E-15	2.07E-16	2.24E-16	5.58E-07	2.45E-06	6.43E-02
Pu-241	434,470,767	1.45E-13	1.54E-14	1.71E-14	6.28E-05	6.10E-07	1.81E-01
Ra-224	434,470,767	7.00E-15	1.13E-15	1.22E-15	3.04E-06	1.91E-11	3.50E-03
Th-228	434,470,767	7.00E-15	1.13E-15	1.22E-15	3.04E-06	3.72E-09	3.50E-01
Th-230	434,470,767	3.56E-15	5.73E-16	6.21E-16	1.55E-06	7.66E-05	1.78E-01
Th-232	434,470,767	7.00E-15	1.13E-15	1.22E-15	3.04E-06	2.79E-01	1.75E-00
U-234	434,470,767	1.75E-14	2.82E-15	3.05E-15	7.61E-06	1.22E-03	3.50E-01
U-235	434,470,767	2.73E-15	4.40E-16	4.76E-16	1.19E-06	5.50E-01	4.36E-02
U-238	434,470,767	1.59E-14	2.55E-15	2.77E-15	6.89E-06	2.06E-01	2.64E-01
						Total:	3.49E-00

ECL: Effluent Concentration Limit from 10-CFR-26, Appendix B. Fraction of ECL at the start is provided for reference only. Concentrations at effluent monitors are significantly less than those reported here (at stack) due to the atmospheric dispersion that occurs before the effluent enters the air.

1 0 4 3 0 0 2 2 9 7 7

21G-00-0026
GOV-01-55-03
ACF-00-0032

Attachment C
To Letter Dated February 28, 2000
B. M. Moore to Mr. Luis A. Reyes (NRC)

**Report of Dose and Activity Concentration for the Maximally Exposed
Off-Site Individual for the Release Period
July - December 1999**

(Two Pages to Follow)

**Summary of Dose and Activity Concentrations
from Radioactive Air Effluents Released
July to December 1999**

Introduction

Average radionuclide concentrations in air effluents from stacks 416 and 667 (as measured at the point of release) exceeded values listed in 10 CFR Part 20, Appendix B, Table 2, Column 1 during the release period (i.e., the sum of fractions exceeded 1.0 at the point of release). For this reason, an evaluation was performed in accordance with SNM-124, Part I, Section 5.1.1.3 to estimate the potential dose to the maximally exposed off-site individual (MEI) and the maximum off-site activity concentrations in air. The source term for this evaluation was gaseous effluents released by NFS stacks and vents from July 1, 1999 to December 31, 1999 (given in Attachment B of this correspondence). Methods used and results of this evaluation are summarized below.

Summary of Methods

In accordance with SNM-124, Section 5.1.1.4, the U.S. Department of Energy's CAP88-PC computer program (version 2.0) was used to estimate off-site doses and activity concentrations for gaseous effluents. CAP88-PC accommodates up to six stacks and considers stacks to be co-located (i.e., at the same physical location on the site). NFS operated fifteen (15) radiological stacks during the 2nd half of 1999. Releases from these stacks were grouped into four effective stacks for modeling purposes. The location of the four effective stacks for modeling purposes was taken to be the approximate center of the plant site. The distance to the site boundary (nearest model receptor distance) was taken to be 100 meters for all sectors and is conservative. Meteorological data were based on five-year average wind speed and direction frequencies as presented in NFS' 1996 Environmental Report. Atmospheric stability class D (neutral atmosphere) was used for all releases (default value recommended by the U.S. Environmental Protection Agency in "User's Guide for COMPLY"). The most conservative inhalation class and particle size were assumed for modeling purposes.

Because CAP88-PC models releases over an entire year, the six-month source term (i.e., total curies of each radionuclide released over the period, given in Attachment B) had to be annualized (i.e., transformed into a 12-month release) so that airborne activity concentrations would not be under-estimated during the release period. To annualize releases the six-month source term was multiplied by a normalization factor, NF, of 1.98 (NF = 365/184).

Summary of Results

The dose results reported below are equal to the CAP88-PC dose output at the location of the maximally exposed individual (MEI) divided by the normalization factor above (to adjust annualized results back to the six-month release period). Activity concentrations reported below come directly from the CAP88-PC concentration output file (available at the NFS plant site for inspection).

Table 1 summarizes the dose to a hypothetical individual at the MEI location, which was determined to be approximately 450 meters toward the North Northeast of the center of the plant site. The effective dose equivalent (EDE) to the MEI was estimated to be 0.027 mrem for gaseous effluents released during the 2nd half of 1999. The highest organ committed dose equivalent (CDE) to the MEI was estimated to be 0.194 mrem to the endosteal tissue (bone surfaces). These MEI doses are well below SNM-124 license action levels and applicable regulatory limits/ALARA constraints.

Table 2 summarizes the maximum off-site air activity concentrations, as determined by CAP88-PC, for radionuclides released. The total sum of fractions based on maximum values indicates that exposures to off-site public from gaseous effluents were much less than 1% of the limit that applies to the public. The sum of fractions at the boundary to the NFS unrestricted area would be even lower than this value based on the maximums. It is noted that the location of the maximum airborne concentration for a given

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radionuclide will not necessarily correspond to the MEI location. This is due in part to the fact that the MEI dose includes both inhalation and ingestion pathways. Also, locations of maximum concentrations will generally vary among radionuclides due to differences in inputs to the dispersion model for each of the effective stacks—such inputs include stack height, stack diameter, flow rate, and isotopic breakdown of radionuclides released per stack.

Table 1. Organ Dose Equivalents and Effective Dose Equivalent at the MEI Location

Organ	Committed Dose Equivalent (mrem per 2 nd Half of 1999)
Gonads	2.02E-3
Breast	8.11E-4
Red Bone Marrow	1.59E-2
Lungs	1.09E-1
Thyroid	1.54E-2
Endosteal Tissue (Bone Surfaces)	1.94E-1
Remainder Organs	1.57E-2
Effective Dose Equivalent	2.64E-2 mrem
Location of MEI:	450 meters North Northeast

Notes: Dose results are from the CAP88-PC "Synopsis Report" generated for the 2nd Half of 1999. CAP88-PC uses organ dose weighting factors from 10 CFR Part 1.11003 to compute the effective dose equivalent.

Table 2. Maximum Off-site Air Concentrations

Nuclide	Maximum Offsite Airborne Concentration (uCi/ml)	Location of Maximum Offsite Airborne Concentration		Value from 10 CFR Part 20, Appendix B, Table II, Col. I (uCi/ml)	Ratio of Maximum Concentration to 10 CFR Part 20 Value
		Sector	Distance (m)		
Tc-99	8.70E-16	NNE	700	9.00E-10	9.67E-07
Th-228	1.90E-18	NNE	250	2.00E-14	9.50E-05
Th-230	9.90E-19	NNE	300	2.00E-14	4.95E-05
Th-232	1.90E-18	NNE	250	4.00E-13	4.75E-04
Ra-224	1.90E-18	NNE	250	9.00E-13	2.11E-06
U-232	2.10E-20	NNE	650	1.00E-14	2.10E-06
U-234	1.90E-17	NNE	650	5.00E-14	3.80E-04
U-235	8.40E-19	NNE	300	6.00E-14	1.40E-05
U-236	3.00E-18	NNE	700	6.00E-14	5.00E-05
U-238	4.50E-18	NNE	300	6.00E-14	7.50E-05
Am-241	7.10E-19	NNE	250	2.00E-14	3.55E-05
Pu-238	1.30E-19	NNE	250	2.00E-14	6.50E-06
Pu-239	1.40E-18	NNE	250	2.00E-14	7.00E-05
Pu-240	4.90E-19	NNE	250	2.00E-14	2.45E-05
Pu-241	4.20E-17	NNE	250	8.00E-13	5.25E-05
Total Sum of Ratios:					1.33E-03 (0.133%)

Notes: The maximum activity values shown above were extracted from the CAP88-PC "Concentration" output report generated for the 2nd Half of 1999.

Prepared by: J.E. Austin
Date Prepared: 1/20/2000

Reviewed by: J.W. Hager
Date Reviewed: 1/31/00



21G-88-0019
GOV-01-55-03
ACF 1095

Nuclear Fuel Services, Inc.
205 Banner Hill Rd.
Erwin, TN 37650
(615) 743-9141

February 29, 1988

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

U.S. Nuclear Regulatory Commission
Office of Inspection & Enforcement
Suite 2900
101 Marietta Street, NW
Atlanta, Georgia 30323

Attention: Dr. J. Nelson Grace
Regional Administrator

Reference: (1) Docket No. 70-143/SNM-124

Gentlemen:

In accordance with the requirements set forth in Title 10 CFR, Part 70.59, Nuclear Fuel Services, Inc., submits the attached report of its effluent monitoring at the Erwin, Tennessee, plant for the period covering July through December 1987. Please contact us if you have any questions regarding this report.

Yours very truly,


B. E. Knight
Director of Safety

BEK:CAH:rej

Attachment

cc: Director
Office of Nuclear Material Safety & Safeguards
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Mr. Leland R. Rouse, Chief
Fuel Cycle Safety Branch
Division of Industrial, & Medical,
Nuclear Safety
U.S. Nuclear Regulatory Commission
Washington, DC 20555

INFORMATION CATEGORY
UNCLASSIFIED


Authorized Classifier

2/29/88
Date

REEL #

Mr. T. D. Lee, NRC Resident Inspector
FRAME #

2 7 2 0 0 1 0 4 0 2 3

NUCLEAR FUEL SERVICES, INC
Erwin, Tennessee

REPORT OF EFFLUENT MONITORING
AND
RELEASE TO UNRESTRICTED AREAS

License No.: SNM-124
Docket No.: 70-143

Period Covered: JULY 1, 1987 thru
DECEMBER 31, 1987

I. Gaseous Effluents

Radionuclide	Quantity Released (Curies)		
Uranium-234	9.35E-04	+/-	1.31E-04
Uranium-235	2.43E-05	+/-	3.86E-06
Uranium-236	5.65E-07	+/-	1.39E-07
Uranium-238	3.44E-05	+/-	8.73E-06
Plutonium-238	1.82E-08	+/-	3.32E-09
Plutonium-239	9.75E-09	+/-	1.78E-09
Plutonium-240	8.80E-09	+/-	1.60E-09
Plutonium-241	1.20E-06	+/-	2.19E-07
Plutonium-242	1.25E-11	+/-	2.28E-12
Americium-241	1.12E-08	+/-	2.05E-09

II. Liquid Effluents

Radionuclide			
Uranium-234	1.64E-02	+/-	1.41E-03
Uranium-235	1.76E-03	+/-	2.24E-04
Uranium-236	3.14E-05	+/-	1.12E-05
Uranium-238	9.08E-04	+/-	1.76E-04
Thorium-228	3.14E-04	+/-	1.29E-04
Thorium-230	1.77E-04	+/-	1.15E-04
Thorium-232	9.44E-05	+/-	8.45E-05
Thorium-234	6.65E-04	+/-	1.93E-04
Plutonium-238	5.65E-06	+/-	7.25E-05
Plutonium-239	3.59E-05	+/-	7.71E-05
Technetium-99	1.36E-01	+/-	5.60E-03

NRS

21G-90-0023
GOV-01-55-03
~~ACF-90-071~~
ACF90-071 ✓dlw
March 1, 1990

Nuclear Fuel Services, Inc.
205 Marine Hall Rd.
Erwin, TN 37600
(615) 743-9941

**CERTIFIED MAIL
RETURN RECEIPT REQUESTED**

U. S. Nuclear Regulatory Commission
Office of Inspection and Enforcement
Region II
Suite 2900
101 Marietta Street, N. W.
Atlanta, Georgia 30323

Attention: Stewart Ebner
Regional Administrator

Reference: (1) Docket No. 70-143
License SNM-124

Gentlemen:

In accordance with the requirements set forth in Title 10 CFR, Part 70.59, Nuclear Fuel Services, Inc. submits the attached report of its effluent monitoring at the Erwin, Tennessee Plant for the period covering July through December, 1989. Please contact us if you have any questions regarding this report.

Use our unique identification number (21G-90-0023) on any correspondence concerning this letter.

Sincerely,



A. M. Maxin
Safety Director

AMN/DEG:klz2/27
Attachment

FRAME # _____

cc: Director
Office of Nuclear Material Safety and Safeguards
U. S. Nuclear Regulatory Commission
Washington, DC 20555

Charles T. Haughney, Chief
Fuel Cycle Safety Branch
Division of Industrial and Medical Nuclear Safety
U. S. Nuclear Regulatory Commission
Washington, DC 20555

ACF	FIG
ELI	ICM
NR(2)	CUJ
CUJ	ECJ
Actyl	SAJ
JAL	ASALTS
LS	BI
RLS	SWP
ROB	DEK
QES	AMN
SLB	TPR
NEB	Orig ^{DEC}
CLS	Rev Control
DPF	Chen
SLG	File

NUCLEAR FUEL SERVICES, INC
Erwin, Tennessee

REPORT OF EFFLUENT MONITORING
AND
RELEASE TO UNRESTRICTED AREAS

License No.: SNM-124 Period Covered: JULY 1, 1989 thru
Bucket No.: 70-143 DECEMBER 31, 1989

I. Gaseous Effluents

Radionuclide	Quantity Released (Curies)		
Uranium-234	1.19E-03	+/-	1.19E-04
Uranium-235	2.79E-03	+/-	2.21E-06
Uranium-236	1.99E-07	+/-	1.60E-08
Uranium-238	1.93E-07	+/-	2.00E-08
Plutonium-238	1.29E-08	+/-	3.25E-09
Plutonium-239	6.88E-09	+/-	1.74E-09
Plutonium-240	6.21E-09	+/-	1.57E-09
Plutonium-241	8.49E-07	+/-	2.11E-07
Plutonium-242	8.83E-12	+/-	2.23E-12
Americium-241	7.03E-09	+/-	2.00E-09

II. Liquid Effluents

Radionuclide	Quantity Released (Curies)		
Uranium-234	1.18E-02	+/-	8.56E-01
Uranium-235	1.51E-03	+/-	3.14E-04
Uranium-238	8.56E-04	+/-	1.60E-01
Thorium-228	1.20E-04	+/-	7.77E-05
Thorium-230	2.21E-04	+/-	3.18E-05
Thorium-232	1.12E-04	+/-	3.11E-05
Thorium-234	1.30E-03	+/-	1.30E-04
Plutonium-238	1.90E-05	+/-	6.34E-06
Plutonium-239	2.97E-05	+/-	1.58E-06
Technetium-99	6.17E-03	+/-	1.02E-03



21G-90-0023
GOV-01-55-03
ACF-90-071

21G-90-0023
GOV-01-55-03
ACF-90-071

DES
only
RT.

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

U. S. Nuclear Regulatory Commission
Office of Inspection and Enforcement
Region II
Suite 2900
101 Marietta Street, N. W.
Atlanta, Georgia 30323

Attention: Stewart Ebnetter
Regional Administrator

Reference: (1) Docket No. 70-143
License SNM-124

Gentlemen:

In accordance with the requirements set forth in Title 10 CFR, Part 70.59, Nuclear Fuel Services, Inc. submits the attached report of its effluent monitoring at the Erwin, Tennessee Plant for the period covering July through December, 1989. Please contact us if you have any questions regarding this report.

Use our unique identification number (21G-90-0023) on any correspondence concerning this letter.

Sincerely,

A. M. Maxin
Safety Director

AMM/DEG:klz2/27
Attachment

cc: Director
Office of Nuclear Material Safety and Safeguards
U. S. Nuclear Regulatory Commission
Washington, DC 20555
Charles T. Hargney
~~Leland R. Rouse~~, Chief ← *Charles T. Hargney*
Fuel Cycle Safety Branch
Division of Industrial and Medical Nuclear Safety
U. S. Nuclear Regulatory Commission
Washington, DC 20555

NUCLEAR FUEL SERVICES, INC
Erwin, Tennessee

REPORT OF EFFLUENT MONITORING
AND
RELEASE TO UNRESTRICTED AREAS

License No.: SNM-124 Period Covered: JULY 1, 1989 thru
Docket No.: 70-143 DECEMBER 31, 1989

I. Gaseous Effluents

Radionuclide	Quantity Released (Curies)		
Uranium-234	1.49E-03	+/-	1.19E-04
Uranium-235	2.79E-03	+/-	2.21E-06
Uranium-236	1.99E-07	+/-	1.60E-08
Uranium-238	1.03E-07	+/-	2.00E-08
Plutonium-238	1.29E-08	+/-	3.25E-09
Plutonium-239	6.88E-09	+/-	1.74E-09
Plutonium-240	6.21E-09	+/-	1.57E-09
Plutonium-241	8.49E-07	+/-	2.11E-07
Plutonium-242	8.83E-12	+/-	2.23E-12
Americium-241	7.93E-09	+/-	2.00E-09

II. Liquid Effluents

Radionuclide			
Uranium-234	1.48E-02	+/-	8.56E-04
Uranium-235	1.54E-03	+/-	3.44E-04
Uranium-238	8.56E-04	+/-	1.60E-04
Thorium-228	1.20E-04	+/-	2.77E-05
Thorium-230	2.21E-04	+/-	3.48E-05
Thorium-232	1.12E-04	+/-	3.41E-05
Thorium-234	1.30E-03	+/-	1.38E-04
Plutonium-238	1.90E-05	+/-	4.34E-06
Plutonium-239	2.97E-05	+/-	1.58E-06
Technetium-99	6.17E-03	+/-	1.02E-03

6 4 8 0 0 1 0 4 4 6 9



CERTIFIED MAIL
RETURN RECEIPT REQUESTED

U. S. Nuclear Regulatory Commission
Office of Inspection and Enforcement
101 Marietta Street, N. W., Suite 2900
Atlanta, GA 30323

Attention: Stewart Ebner, Regional Administrator

Reference: (1) Docket No 70-143/SNN-124

Gentlemen:

In accordance with the requirements set forth in Title 10 CFR, Part 70.59, Nuclear Fuel Services, Inc., submits the attached report of its effluent monitoring at the Erwin, Tennessee Plant for the period covering June through December, 1990. Samples used for isotopic analyses of the October discharge from our Waste Water Treatment Facility were lost at the offsite laboratory and will not be available. Consequently the October isotopic values were based on an average of those months having gross alpha values within October's error band (113-769 pCi/l). Please contact us if you have any questions regarding this report.

Use our unique identification number (21G-91-0030) in any correspondence concerning this letter.

Sincerely,

NUCLEAR FUEL SERVICES, INC.

Donald Paine
Donald Paine, Ph.D.
Vice President,
Safety and Regulatory

DP/SMF:klz/28
Attachment

cc: Director
Office of Nuclear Material Safety and Safeguards
U. S. Nuclear Regulatory Commission
Washington, DC 20555

Mr. Charles J. Haughney, Chief
Fuel Cycle Safety Branch
U. S. Nuclear Regulatory Commission
Division of Industrial and Medical Nuclear Safety, NMSS
Washington, DC 20555

REEL # _____ FRAME # _____

Nuclear Fuel Services
1205 Banner Hill Road
Erwin, TN 37600
(615) 743-9141

BBMC DIST
CRJ
MTN/JRC
GEB
RLB
BKK/OTF/NES/CWT
CLB
BULLETIN BOARD
RPD
EDH
SCJ
HCT
RBS
GEN. SYST.
AMM
RLI
JEX
TPR
CHRON FILE
FILE COPY
ORIG. SMV

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NUCLEAR FUEL SERVICES, INC
Erwin, Tennessee

REPORT OF EFFLUENT MONITORING
AND
RELEASE TO UNRESTRICTED AREAS

License No.: SNH-124 Period Covered: JULY 1, 1990
Docket No.: 70-143 DECEMBER 31, 1990

I. Gaseous Effluents

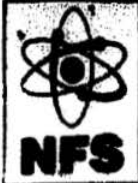
Radionuclide	Quantity Released (Curies)		
Uranium-234	8.56E-04	+/-	1.69E-05
Uranium-235	1.67E-05	+/-	3.33E-07
Uranium-236	1.02E-07	+/-	2.13E-09
Uranium-238	4.77E-08	+/-	1.52E-08
Plutonium-238	4.49E-09	+/-	7.28E-10
Plutonium-239	2.40E-09	+/-	3.90E-10
Plutonium-240	2.17E-09	+/-	3.52E-10
Plutonium-241	2.96E-07	+/-	4.81E-08
Plutonium-242	3.08E-12	+/-	5.00E-13
Americium-241	2.77E-09	+/-	4.49E-10

II. Liquid Effluents

Radionuclide			
Uranium-234	9.35E-03	+/-	1.06E-03
Uranium-235	3.22E-04	+/-	3.75E-05
Uranium-238	2.99E-04	+/-	3.76E-04
Thorium-228	9.78E-05	+/-	1.06E-05
Thorium-230	1.51E-04	+/-	2.14E-06
Thorium-232	2.10E-05	+/-	1.50E-06
Thorium-234	1.41E-03	+/-	2.06E-04
Plutonium-238	1.44E-04	+/-	1.34E-06
Plutonium-239	8.49E-05	+/-	1.93E-05
Technetium-99	1.21E-03	+/-	3.14E-04

84289 7900508135

216-84-0186
GOV-01-55-03



Nuclear Fuel Services, Inc. ERWIN, TENNESSEE 37650

(615) 743-1

411

August 27, 1984

ACF# 411

Date: 8/28 By: Hw

Distribution:

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

U.S. Nuclear Regulatory Commission
Office of Inspection and Enforcement
101 Marietta Street, Suite 3100
Atlanta, GA 30303


Attention: Mr. J. P. O'Reilly
Regional Administrator

Reference: (1) Docket No. 70-143; SNM-124

Gentlemen:

In accordance with the requirements set forth in Title 10 CFR, Part 70.59, Nuclear Fuel Services, Inc., submits the attached report of its effluent monitoring at the Erwin, Tennessee plant for the period covering January through June, 1984. Please contact us if you have any questions regarding this report.

Yours very truly,


R. L. Icker, Manager
Safety & Decommissioning

RLI:tlw

Attachment

cc: Director of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, DC 20555

FRAME # _____

REEL # _____

INFORMATION CATEGORY

UNCLASSIFIED ☒

CLASSIFIED ☐


REVIEWED BY

8/27/84
DATE

17900508136

NUCLEAR FUEL SERVICES, INC.
Erwin, Tennessee

REPORT OF EFFLUENT MONITORING

AND

RELEASE TO UNRESTRICTED AREAS

License No: SNM-124
Docket No: 70-143

PERIOD COVERED: January 1, 1984
to June 30, 1984

I. GASEOUS EFFLUENTS

Radionuclide

Quantity Released (Curies)

Uranium-233

U-233 stacks were decommissioned as of 04/13/82

Uranium-234

$1.82 \times 10^{-2} + 2.11 \times 10^{-3}$

Uranium-235

$7.23 \times 10^{-6} + 8.55 \times 10^{-3}$

Uranium-236

$4.66 \times 10^{-5} + 5.67 \times 10^{-6}$

Uranium-238

$3.82 \times 10^{-3} + 4.67 \times 10^{-6}$

Plutonium-238

$4.38 \times 10^{-9} + 1.44 \times 10^{-8}$

Plutonium-239

$2.34 \times 10^{-9} + 7.69 \times 10^{-9}$

Plutonium-240

$2.11 \times 10^{-9} + 6.94 \times 10^{-9}$

Plutonium-241

$2.89 \times 10^{-7} + 9.48 \times 10^{-7}$

Plutonium-242

$3.00 \times 10^{-12} + 9.86 \times 10^{-12}$

Americium-241

$2.70 \times 10^{-9} + 8.86 \times 10^{-9}$

II. LIQUID EFFLUENTS

Radionuclide

Quantity Released (Curies)

Uranium-234

$5.91 \times 10^{-2} + 4.72 \times 10^{-3}$

Uranium-235

$2.07 \times 10^{-3} + 4.35 \times 10^{-6}$

Uranium-236

$1.69 \times 10^{-5} + 6.28 \times 10^{-8}$

Uranium-238

$1.93 \times 10^{-3} + 7.63 \times 10^{-6}$

Thorium-228

$7.94 \times 10^{-5} + 1.72 \times 10^{-6}$

Thorium-230

$1.14 \times 10^{-6} + 1.92 \times 10^{-6}$

Thorium-232

$1.42 \times 10^{-5} + 3.25 \times 10^{-5}$

Thorium-234

$3.63 \times 10^{-3} + 8.25 \times 10^{-6}$

Plutonium-238

$1.64 \times 10^{-6} + 2.77 \times 10^{-6}$

Plutonium-239

$1.57 \times 10^{-6} + 2.00 \times 10^{-6}$

Technetium-99

$1.05 \times 10^{-1} + 3.39 \times 10^{-3}$

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NFS

21G-88-0086
GOV-01-55-03
ACF1207 ✓
August 29, 1988

Nuclear Fuel Services, Inc.
205 Barrister Hall Rd.
Erwin, TN 37650
(615) 743-9141

ACF	PS
Dist	Q
IN(2)	CSJ
CSJ	SCJ
Actvt	SLJ
JAL	RESULTS
LS	SN
RLB	DES
ROB	DEK
CSB	ANN
SLB	TPB
NEB	Orig CAH
CLB	Sec Cont
DBF	Chron
BLG	File

**CERTIFIED MAIL
RETURN RECEIPT REQUESTED**

U.S. Nuclear Regulatory Commission
Office of Inspection & Enforcement
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30323

Attention: Dr. J. Nelson Grace, Regional Administrator

Reference: (1) Docket No. 70-143/SNM-124

Gentlemen:

In accordance with the requirements set forth in Title 10 CFR, Part 70.59, Nuclear Fuel Services, Inc., submits the attached report of its effluent monitoring at the Erwin, Tennessee, plant for the period covering January through June 1988.

A review of the data NFS has reported in the last two years for Uranium-236 indicates that this isotope contributes less than 0.1% of the total uranium activity in our effluents. NFS, therefore, does not consider U-236 to be a "principal radionuclide" as specified in 10 CFR 70.59(a)(1) and with this report will discontinue reporting this isotope. This position is consistent with the guidance provided in Regulatory Guide 4.16 and was discussed with USNRC-Region II. NFS will, however, continue to monitor the U-236 analysis results on our feed material and reconsider this position if its contribution becomes significant.

Please contact us if you have any questions regarding this report.

Yours very truly,


B. E. Knight
Director of Safety

BEK:CAH:rej REEL #
Attachment

FRAME #

cc: Director, Office of Nuclear Material Safety & Safeguards
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Mr. Leland C. Rouse, Chief
Fuel Cycle Safety Branch
Division of Industrial, & Medical,
Nuclear Safety, NMSS
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Mr. T. D. Lee, NRC Resident Inspector

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NUCLEAR FUEL SERVICES, INC
Erwin, Tennessee

REPORT OF EFFLUENT MONITORING
AND
RELEASE TO UNRESTRICTED AREAS

License No.: SNM-124
Docket No.: 78-143

Period Covered: JANUARY 1, 1988 thru
JUNE 30, 1988

I. Gaseous Effluents

Radionuclide	Quantity Released (Curies)		
Uranium-234	9.32E-04	+/-	1.62E-04
Uranium-235	1.92E-05	+/-	2.25E-06
Uranium-238	3.28E-06	+/-	1.67E-06
Plutonium-238	1.87E-08	+/-	3.93E-09
Plutonium-239	1.00E-08	+/-	2.10E-09
Plutonium-240	9.05E-09	+/-	1.90E-09
Plutonium-241	1.24E-06	+/-	2.59E-07
Plutonium-242	1.29E-11	+/-	2.69E-12
Americium-241	1.16E-08	+/-	2.42E-09

II. Liquid Effluents

Radionuclide			
Uranium-234	1.88E-02	+/-	1.42E-03
Uranium-235	7.93E-04	+/-	1.76E-04
Uranium-238	8.25E-04	+/-	1.96E-04
Thorium-228	1.17E-04	+/-	4.87E-05
Thorium-230	1.13E-04	+/-	5.03E-05
Thorium-232	3.66E-05	+/-	1.63E-05
Thorium-234	8.00E-04	+/-	1.31E-04
Plutonium-238	4.25E-06	+/-	2.73E-05
Plutonium-239	3.35E-06	+/-	2.15E-05
Technetium-99	5.54E-02	+/-	2.17E-03

NUCLEAR FUEL SERVICES, INC
Erwin, Tennessee

REPORT OF EFFLUENT MONITORING
AND
RELEASE TO UNRESTRICTED AREAS

License No.: SNM-124
Docket No.: 78-143

Period Covered: JANUARY 1, 1988 thru
JUNE 30, 1988

I. Gaseous Effluents

Radionuclide	Quantity Released (Curies)		
Uranium-234	9.32E-04	+/-	1.62E-04
Uranium-235	1.92E-05	+/-	2.23E-06
Uranium-238	3.28E-06	+/-	1.67E-06
Plutonium-238	1.87E-08	+/-	3.93E-09
Plutonium-239	1.88E-08	+/-	2.18E-09
Plutonium-240	9.85E-09	+/-	1.98E-09
Plutonium-241	1.24E-06	+/-	2.59E-07
Plutonium-242	1.29E-11	+/-	2.69E-12
Americium-241	1.16E-08	+/-	2.42E-09

II. Liquid Effluents

Radionuclide			
Uranium-234	1.88E-02	+/-	1.42E-03
Uranium-235	7.93E-04	+/-	1.76E-04
Uranium-238	8.25E-04	+/-	1.96E-04
Thorium-228	1.17E-04	+/-	4.87E-05
Thorium-230	1.13E-04	+/-	5.83E-05
Thorium-232	3.66E-05	+/-	1.63E-05
Thorium-234	8.88E-04	+/-	1.31E-04
Plutonium-238	4.25E-06	+/-	2.73E-05
Plutonium-239	3.35E-06	+/-	2.15E-05
Technetium-99	5.54E-02	+/-	2.17E-03

From: Moore, B. Marie <BMMoore@nuclearfuelservices.com>
Sent: Tuesday, September 16, 2014 4:13 PM
To: Ramsey, Kevin
Subject: RE: Looking for old effluent reports for cancer study

I ask Michelle to email the ones we have located. Let me know if you do not receive

From: Ramsey, Kevin [mailto:Kevin.Ramsey@nrc.gov]
Sent: Monday, September 15, 2014 04:47 PM Eastern Standard Time
To: Moore, B. Marie; Sabisch, Andrew T
Subject: EXTERNAL: RE: Looking for old effluent reports for cancer study

I like e-mail. I can get the documents to our ADAMS staff much faster.

From: Moore, B. Marie [mailto:BMMoore@nuclearfuelservices.com]
Sent: Monday, September 15, 2014 10:01 AM
To: Ramsey, Kevin; Sabisch, Andrew T
Subject: RE: Looking for old effluent reports for cancer study

Do you have a preference?

From: Ramsey, Kevin [mailto:Kevin.Ramsey@nrc.gov]
Sent: Monday, September 15, 2014 08:48 AM Eastern Standard Time
To: Moore, B. Marie; Sabisch, Andrew T
Subject: EXTERNAL: RE: Looking for old effluent reports for cancer study

A few pieces of puzzle will still be a big help. Do you plan to scan and e-mail the reports, or just drop them in the mail?

From: Moore, B. Marie [mailto:BMMoore@nuclearfuelservices.com]
Sent: Friday, September 12, 2014 4:19 PM
To: Ramsey, Kevin; Sabisch, Andrew T
Subject: RE: Looking for old effluent reports for cancer study

We only started microfilming in the mid 80's. It appears that we may have 1999 through 1987. They are logged into the system. They are going to pull them on Monday to verify the entire report was microfilmed. As for the earlier reports 1984 and earlier we are still looking to see if it is possible that we have them in offsite storage.

From: Ramsey, Kevin [mailto:Kevin.Ramsey@nrc.gov]
Sent: Thursday, September 11, 2014 03:37 PM Eastern Standard Time
To: Sabisch, Andrew T; Moore, B. Marie
Subject: EXTERNAL: Looking for old effluent reports for cancer study

We are trying to find Biannual Effluent Monitoring Reports to support the cancer study pilot project by the National Academy of Science. After searching our records, we have some gaps. Can you check you files and tell us if you can provide a copy of the following reports?

- 1999
 - Jul - Dec

- 1990
 - Jul – Dec
- 1989
 - Jul – Dec
 - Jan – Jun
- 1988
 - Jan – Jun
- 1987
 - Jul – Dec
- 1984
 - Jan – Jun
- 1981
 - Jul – Dec
 - Jan – Jun
- 1980
 - Jul – Dec
- 1978
 - Jul – Dec
 - Jan – Jun
- 1977
 - Jul – Dec
- 1976
 - Jan – Jun
- 1975
 - Jan – Jun
- Any reports for earlier periods.

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Subject: Review and Process NFS Collection of documents
Location: HQ-3WFN-5A32-16p

Start: Tue 09/23/2014 2:00 PM
End: Tue 09/23/2014 3:00 PM
Show Time As: Tentative

Recurrence: (none)

Meeting Status: Not yet responded

Organizer: Pinckney, David
Required Attendees: Hall, Patricia; Nguyen, Kenny; Ramsey, Kevin; Brock, Terry; Dove, Marna; Armentrout, Deborah; Deahl, Elizabeth; Canty, Adetutu

This meeting is to discuss the review and processing of Nuclear Fuel Services (70-143) correspondences related to the Cancer Risk project. Processing into ADAMS includes: development of template, file structure, amount of correspondences, time table, etc.

From: Brock, Terry
Sent: Thursday, September 18, 2014 8:41 AM
To: Ramsey, Kevin
Subject: RE: NFS Reports

Great. Ok to share with NAS?

Terry Brock, Ph.D.
Office of Nuclear Regulatory Research
U.S. Nuclear Regulatory Commission
Washington D.C. 20555
Mail Stop CSB-3A07
phone: 301-251-7487

From: Ramsey, Kevin
Sent: Thursday, September 18, 2014 8:18 AM
To: Brock, Terry
Subject: FW: NFS Reports

See attached. NFS helped fill a few gaps.

Subject: Status of Cancer Study Effluent Records Retrieval
Location: Telecon - number in message

Start: Wed 09/24/2014 1:00 PM
End: Wed 09/24/2014 2:00 PM
Show Time As: Tentative

Recurrence: (none)

Meeting Status: Not yet responded

Organizer: Brock, Terry
Required Attendees: Pinckney, David; Ramsey, Kevin; Heimberg, Jennifer (JHeimberg@nas.edu); Ourania Kosti (OKosti@nas.edu)

Meeting to discuss status of effluent record retrieval for NAS cancer study. Call-in numbers below

USA
Toll-Free: 866-528-2256
Caller Paid: 216-706-7052
Access Code: (b)(6)

From: Canty, Adetutu
Sent: Wednesday, September 24, 2014 8:48 AM
To: Ramsey, Kevin
Cc: Pinckney, David
Subject: Emailing: NFS Docket 07000143 Effluent Reports.csv
Attachments: NFS Docket 07000143 Effluent Reports.csv

Good Morning, Kevin,

I am not sure if this will be of any help to you, but I did a quick search in the ADAMS Legacy Library for documents associated with docket 70-143 that are related to effluent reporting. The attached is a report of the documents found. You may use this list to cross check against the boxes you are reviewing, especially when you come across documents that are missing the NUDOCs labels.

Thanks,

Adetutu Grace Canty
Information Management Analyst
OIS/PMPD/IPB
Phone: 301.287.0793
E-mail: Adetutu.Canty@nrc.gov

7.91E+09 Non-Public IE Insp Rept 70-0143/79-12 on 790321.Nc	7000143 Sensitive	INSPECTION	00357:199-00357:201
7.91E+09 Non-Public IE Insp Rept 70-0143/79-29 on 790723-08	7000143 Sensitive	INSPECTION	02439:294-02439:297
7.91E+09 Non-Public Forwards "Rept of Effluent Monitoring" for	7000143 Sensitive	CORRESPONDE	01027:071-01027:072
7.91E+09 Non-Public "Rept of Effluent Monitoring" for Jan-June	7000143 Sensitive	ENVIRONMENT	01027:072-01027:072
7.91E+09 Non-Public PNS-II-79-102E supplementing 790924 Pt	7000143 Sensitive	PRELIMINARY	01192:200-01192:200
8E+09 Non-Public IE Insp Rept 70-0143/79-40 on 790917-27	7000143 Sensitive	INSPECTION	01964:345-01965:001
8E+09 Non-Public IE Insp Rept 70-0143/79-40 on 791127.Nc	7000143 Non-Sensi	INSPECTION	04015:249-04015:268
8E+09 Non-Public Forwards "Effluent Monitoring Rept," Jul-D	7000143 Sensitive	CORRESPONDE	04719:051-04719:052
8E+09 Non-Public "Effluent Monitoring Rept," Jul-Dec 1979.	7000143 Sensitive	ENVIRONMENT	04719:052-04719:052
8.01E+09 Non-Public Requests info re encl G McKinney ltr comr	7000143 Non-Sensi	CORRESPONDE	02602:256-02602:258
8.01E+09 Non-Public Amends rept of effluent monitoring & relea	7000143 Sensitive	CORRESPONDE	06438:040-06438:040
8.01E+09 Non-Public Forwards "Rept of Effluent Monitoring & R	7000143 Sensitive	CORRESPONDE	06505:183-06505:184
8.01E+09 Non-Public "Rept of Effluent Monitoring & Release to l	7000143 Sensitive	ENVIRONMENT	06505:184-06505:184
8.01E+09 Non-Public Responds to NRC 800626 ltr re violations	7000143 Sensitive	CORRESPONDE	06604:220-06604:223
8.01E+09 Non-Public IE Insp Rept 70-143/80-01 on 800109-10 :	7000143 Sensitive	INSPECTION	06699:306-06699:313
8.01E+09 Non-Public "Analysis of Ventilation Scrubbers & Gase	7000143 Sensitive	CONTRACTED	06699:314-06699:349
8.01E+09 Non-Public IE Insp Rept 70-0143/80-28 on 800818-22	7000143 Sensitive	INSPECTION	07072:326-07072:330
8.1E+09 Non-Public IE Insp Rept 70-0143/80-42 on 801027-12	7000143 Sensitive	INSPECTION	07913:222-07913:225
8.1E+09 Non-Public IE Insp Rept 70-0143/80-36 on 801103-04	7000143 Sensitive	INSPECTION	08040:216-08040:219
8.1E+09 Non-Public Forwards "Radioactive Effluent Release Q	7000143 Sensitive	CORRESPONDE	08381:191-08381:203
8.1E+09 Non-Public "Radioactive Effluent Release Quarterly R	7000143 Sensitive	ENVIRONMENT	08381:192-08381:203
8.21E+09 Non-Public IE Insp Rept 70-0143/82-28 on 820712-16	7000143 Sensitive	INSPECTION	14712:095-14712:102
8.21E+09 Non-Public Forwards "Rept of Effluent Monitoring & R	7000143 Non-Sensi	CORRESPONDE	66285:227-66285:228
8.21E+09 Non-Public "Rept of Effluent Monitoring & Release to l	7000143 Non-Sensi	ENVIRONMENT	66285:228-66285:228
8.21E+09 Non-Public Discusses commitment re bioassay progr	7000143 Sensitive	CORRESPONDE	16143:254-16143:254
8.21E+09 Non-Public Application to amend License SNM-124,pe	7000143 Sensitive	APPLICATION,S	16158:100-16158:132
8.21E+09 Non-Public Requests G Kosinski technical assistance	7000143 Sensitive	CORRESPONDE	16158:133-16158:135
8.31E+09 Non-Public "Rept of Effluent Monitoring & Release to l	7000143 Non-Sensi	ENVIRONMENT	66866:011-66866:012
8.31E+09 Non-Public "Rept of Effluent Monitoring & Releases to	7000143 Sensitive	ENVIRONMENT	20084:183-20084:184
8.31E+09 Non-Public "Rept of Effluent Monitoring & Release to l	7000143 Sensitive	ENVIRONMENT	20084:185-20084:186
8.31E+09 Non-Public "Rept of Effluent Monitoring & Release to l	7000143 Sensitive	ENVIRONMENT	20084:187-20084:188
8.31E+09 Non-Public "Effluent Monitoring & Release to Restrict	7000143 Non-Sensi	ENVIRONMENT	66994:001-66994:002
8.4E+09 Non-Public IE Insp Rept 70-0143/83-46 on 831128-12	7000143 Sensitive	INSPECTION	21753:243-21753:251
8.4E+09 Non-Public "Rept of Effluent Monitoring & Release to l	7000143 Sensitive	ENVIRONMENT	22920:005-22920:006
8.41E+09 Non-Public IE Insp Rept 70-0143/84-10 on 840319-23	7000143 Sensitive	INSPECTION	24336:308-24336:312
8.41E+09 Non-Public Forwards proposed stack effluent monitori	7000143 Sensitive	CORRESPONDE	27826:139-27826:145

8.41E+09 Non-Public Forwards 841022 revised proposed stack	7000143 Sensitive	CORRESPONDE	27826:140-27826:145
8.5E+09 Non-Public Forwards response to environ questions,p	7000143 Sensitive	CORRESPONDE	29169:067-29169:126,29144:026
8.5E+09 Non-Public Vol 1 to "Sampling Study of Process Efflu	7000143 Sensitive	TECHNICAL	29169:088-29169:126
8.5E+09 Non-Public "Rept of Effluent Monitoring & Release to l	7000143 Sensitive	ENVIRONMENT	29399:359-29399:361
8.5E+09 Publicly Av. IE Info Notice 85-031, "Buildup of Enrich	07000008 Non-Sensi	GENERIC	30027:001-30027:066,30027:001
8.51E+09 Non-Public Effluent monitoring rept for Jan-June 1985	7000143 Sensitive	ENVIRONMENT	32754:267-32754:272
8.6E+09 Non-Public Forwards Nov 1985, "Radiological Monitor	7000143 Sensitive	CORRESPONDE	34463:037-34463:083
8.6E+09 Non-Public "Radiological Monitoring of Stack Effluents	7000143 Sensitive	CONTRACTED	34463:039-34463:083
8.6E+09 Non-Public Effluent monitoring rept for Jul-Dec 1985.v	7000143 Sensitive	ENVIRONMENT	35153:256-35153:258
8.6E+09 Non-Public Ack receipt of Oak Ridge Associated Univ:	7000143 Sensitive	CORRESPONDE	35223:317-35223:319
8.6E+09 Non-Public Insp Rept 70-0143/86-04 on 860121-24.Vi	7000143 Sensitive	INSPECTION	35642:007-35642:018
8.61E+09 Non-Public "Rept of Effluent Monitoring & Release to l	7000143 Sensitive	ENVIRONMENT	37952:232-37952:233
8.61E+09 Non-Public Insp Rept 70-0143/86-44 on 861006-24.Nr	7000143 Sensitive	INSPECTION	38724:228-38724:241
8.7E+09 Non-Public "Rept of Effluent Monitoring & Release to l	7000143 Sensitive	ENVIRONMENT	40086:339-40086:342
8.7E+09 Non-Public Insp Rept 70-0143/87-06 on 870209-13 &	7000143 Sensitive	INSPECTION	40367:126-40367:133
8.7E+09 Non-Public Advises that 861218 revs to Chapter 2.0 &	7000143 Sensitive	CORRESPONDE	40437:249-40437:250
8.71E+09 Non-Public "Rept of Effluent Monitoring & Release to l	7000143 Sensitive	ENVIRONMENT	40877:352-40877:354
8.71E+09 Non-Public "Rept of Effluent Monitoring & Release to l	7000143 Sensitive	ENVIRONMENT	42586:329-42586:331
8.81E+09 Non-Public Insp Rept 70-0143/88-18 on 880711-15.Nr	7000143 Sensitive	INSPECTION	46591:247-46591:253
8.81E+09 Non-Public Application for amend to License SNM-124	7000143 Sensitive	APPLICATION,S	47903:311-47903:313
8.9E+09 Non-Public Insp Rept 70-0143/88-31 on 881128-1202	7000143 Sensitive	INSPECTION	48107:286-48107:295
8.9E+09 Non-Public "NFS Rept of Effluent Monitoring & Releas	7000143 Sensitive	ENVIRONMENT	48979:042-48979:044
8.91E+09 Non-Public Insp Rept 70-0143/89-20 on 890814-18.Nr	7000143 Sensitive	INSPECTION	51366:166-51366:171
9.01E+09 Non-Public Insp Rept 70-0143/90-08 on 900319-23.Nr	7000143 Sensitive	INSPECTION	53780:021-53780:028
9.01E+09 Non-Public Insp Rept 70-0143/90-16 on 900716-20 &	7000143 Sensitive	INSPECTION	55030:006-55030:017
9.01E+09 Non-Public Effluent monitoring rept for Jan-June 1990	7000143 Sensitive	ENVIRONMENT	55142:348-55142:350
9.01E+09 Non-Public Submits amended rept of effluent monito	7000143 Sensitive	CORRESPONDE	55500:325-55500:326
9.01E+09 Non-Public Amended rept of effluent monitoring & rele	7000143 Sensitive	ENVIRONMENT	55500:326-55500:326
9.11E+09 Non-Public Forwards NFS weekly status rept for wks c	7000143 Sensitive	INTERNAL OR	58007:354-58007:355
9.11E+09 Non-Public Forwards "Monthly Discharge Monitoring F	7000143 Sensitive	CORRESPONDE	59023:339-59023:360
9.11E+09 Non-Public "Toxicological Evaluation of Treated Efflu	7000143 Sensitive	ENVIRONMENT	59023:346-59023:360
9.11E+09 Non-Public Forwards corrected rept of effluent monito	7000143 Sensitive	CORRESPONDE	59304:079-59304:081
9.11E+09 Non-Public Corrected "Rept of Effluent Monitoring & F	7000143 Sensitive	ENVIRONMENT	59304:080-59304:081
9.11E+09 Non-Public Forwards amended rept of effluent monito	7000143 Sensitive	CORRESPONDE	59356:272-59356:273
9.11E+09 Non-Public Insp rept 70-0143/91-29 on 911021-25 & 3	7000143 Sensitive	INSPECTION	59961:343-59961:356
9.2E+09 Non-Public "Biannual Effluent Monitoring Rept," for Ju	7000143 Sensitive	ENVIRONMENT	61280:348-61280:349

9.21E+09 Publicly Av. Discusses State of NY Health & Safety Lal	7000143 Non-Sensi	INTERNAL OR	63569:288-63569:289
9.3E+09 Non-Public Forwards corrected Page 11 to licensee 9:	7000143 Sensitive	CORRESPONDE	64807:244-64807:245
9.31E+09 Non-Public "Biannual Effluent Monitoring Rept Jul-Dec	7000143 Sensitive	ENVIRONMENT	74934:257-74934:259
9.31E+09 Non-Public Forwards insp rept 70-0143/93-13 on 9305	7000143 Sensitive	CORRESPONDE	75617:022-75617:034
9.31E+09 Non-Public "Rept of Effluent Monitoring & Release to I	7000143 Sensitive	ENVIRONMENT	76771:352-76771:356
9.41E+09 Non-Public Insp rept 70-0143/94-05 on 940414,18-22	7000143 Sensitive	INSPECTION	79610:239-79610:256
9.41E+09 Non-Public "PCE WWTF Effluent Concentration Jan 1	7000143 Sensitive	ENVIRONMENT	80405:342-80405:347
9.41E+09 Non-Public "Rept Of Effluent Monitoring & Release To	7000143 Sensitive	ENVIRONMENT	80404:266-80404:267
9.41E+09 Non-Public Requests authorization of addl effluent str	7000143 Sensitive	CORRESPONDE	80727:348-80727:349
9.41E+09 Non-Public Forwards "Rept of Effluent Monitoring & R	7000143 Sensitive	CORRESPONDE	80960:250-80960:253
9.41E+09 Non-Public "Rept of Effluent Monitoring & Release to I	7000143 Sensitive	ENVIRONMENT	80960:251-80960:251
9.41E+09 Non-Public Amended "Effluent Monitoring Rept for Fir	7000143 Sensitive	ENVIRONMENT	80960:252-80960:253
9.5E+09 Non-Public Submits plans for remediating areas of Po	7000143 Sensitive	CORRESPONDE	82780:305-82780:336
9.5E+09 Non-Public "Summary Rept:Impact of Airborne Radioa	7000143 Sensitive	NON-	82780:310-82780:319
9.5E+09 Non-Public "Bi-annual Effluent Monitoring Rept Jul-De	7000143 Sensitive	ENVIRONMENT	83043:359-83043:360
9.51E+09 Non-Public Insp rept 70-0143/95-03 on 950522-26.No	7000143 Sensitive	INSPECTION	84441:050-84441:067
9.51E+09 Non-Public "Radioactivity in Effluent Liquid & Air,Jan-	7000143 Sensitive	ENVIRONMENT	85419:310-85419:318
9.51E+09 Non-Public Insp rept 70-0143/95-06 on 950807-11.No	7000143 Sensitive	INSPECTION	85502:109-85502:124
9.6E+09 Non-Public "Biannual Effluent Monitoring Rept Jul-Dec	7000143 Sensitive	ENVIRONMENT	87395:278-87395:286
9.61E+09 Non-Public "Radioactivity in Effluent Liquid & Air from	7000143 Sensitive	ENVIRONMENT	88883:352-88883:360
9.61E+09 Non-Public "Bi-Annual Effluent Monitoring Rept for Jar	7000143 Sensitive	ENVIRONMENT	89523:353-89523:360
9.7E+09 Non-Public "Bi-annual Effluent Monitoring Rept for Jul	7000143 Sensitive	ENVIRONMENT	91992:287-91992:294
9.71E+09 Non-Public Insp rept 70-0143/97-05 on 970512-16.No	7000143 Sensitive	INSPECTION	93629:130-93629:149
9.71E+09 Non-Public "Bi-Annual Effluent Monitoring Rept in Efflu	7000143 Sensitive	ENVIRONMENT	A0465:077-A0465:084
9.8E+09 Non-Public Forwards "Bi-Annual Effluent Monitoring R	7000143 Sensitive	CORRESPONDE	A2539:115-A2539:132
9.8E+09 Non-Public "Bi-Annual Effluent Monitoring Rept of Rac	7000143 Sensitive	ENVIRONMENT	A2539:117-A2539:118
9.8E+09 Non-Public "Bi-Annual Effluent Monitoring Rept of Rac	7000143 Sensitive	ENVIRONMENT	A2539:119-A2539:122
9.8E+09 Non-Public Amended "Bi-Annual Effluent Monitoring F	7000143 Sensitive	ENVIRONMENT	A2539:123-A2539:128
9.8E+09 Non-Public Amended "Bi-Annual Effluent Monitoring F	7000143 Sensitive	ENVIRONMENT	A2539:129-A2539:129
9.8E+09 Non-Public Amended "Bi-Annual Effluent Monitoring F	7000143 Sensitive	ENVIRONMENT	A2539:130-A2539:130
9.8E+09 Non-Public Amended "Bi-Annual Effluent Monitoring F	7000143 Sensitive	ENVIRONMENT	A2539:131-A2539:131
9.8E+09 Non-Public Amended "Bi-Annual Effluent Monitoring F	7000143 Sensitive	ENVIRONMENT	A2539:132-A2539:132
9.81E+09 Non-Public Forwards "Biannual Effluent Monitoring rep	7000143 Sensitive	CORRESPONDE	A3465:094-A3465:095
9.81E+09 Non-Public "Rept of Effluent Monitoring & Release to I	7000143 Sensitive	ENVIRONMENT	A3465:095-A3465:095
9.81E+09 Non-Public Forwards draft "Environ Assessment for R	7000143 Non-Sensi	CORRESPONDE	73762:163-73762:281
9.81E+09 Non-Public Forwards "Rept of Radioactivity in Effluent	7000143 Sensitive	CORRESPONDE	A4934:325-A4934:345

9.81E+09 Non-Public "Radioactivity in Effluent Liquid Jan-June 1	7000143 Sensitive	ENVIRONMENT	A4934:329-A4934:342
9.81E+09 Non-Public Amended "Radioactivity in Effluent Liquid ,	7000143 Sensitive	ENVIRONMENT	A4934:343-A4934:345
9.81E+09 Non-Public Forwards addl info on radiological air & liq	7000143 Sensitive	CORRESPONDE	A5345:221-A5345:251
9.9E+09 Non-Public Forwards "Rept of Radioactivity in Effluent	7000143 Sensitive	CORRESPONDE	A7297:259-A7297:268
9.9E+09 Non-Public "Rept of Radioactivity in Effluent Liquid for	7000143 Sensitive	ENVIRONMENT	A7297:261-A7297:262
9.9E+09 Non-Public "Rept of Radioactivity in Effluent Air for Pe	7000143 Sensitive	ENVIRONMENT	A7297:263-A7297:268
9.91E+09 Non-Public Forwards bi-annual effluent monitoring rep	7000143 Sensitive	CORRESPONDE	A9131:331-A9131:345
9.91E+09 Non-Public "Rept of Radioactivity in Effluent Liquid for	7000143 Sensitive	ENVIRONMENT	A9131:333-A9131:334
9.91E+09 Non-Public "Rept of Radioactivity in Effluent Air for Pe	7000143 Sensitive	ENVIRONMENT	A9131:335-A9131:339

From: Heimberg, Jennifer <JHeimberg@nas.edu>
Sent: Wednesday, September 24, 2014 3:00 PM
To: Brock, Terry; Ramsey, Kevin; Pinckney, David; Kosti, Ourania
Subject: follow-up from our meeting today
Attachments: Documents Identified in Archive Boxes for Nuclear Fuel Services_docket 07000143_USNRC.pdf; Full List of Remaining Files Requested of USNRC_2September2014.xlsx

Dear Terry, Kevin, and David,

Attached is a scanned and annotated copy of the contents of the NFS boxes. I have identified ~14 documents that appear to contain data that may be relevant for dose estimation. You will see a few notes that indicate one sample of a particular type of report is requested (e.g., the NPDES reports on pages 4 and 5). I assumed it would be less work to copy/scan one file instead of the full series. However, if it is easier for you to copy/scan the full series as long as you have the contents of the box available, please let me know and I will revise my list.

Also, I have attached the list of files that we were discussing today—just to make sure we are in agreement that this is the list of files that we were discussing today.

Thanks for all of your time and effort,
Jenny

Jennifer Heimberg, Ph.D.

Senior Program Officer
Nuclear and Radiation Studies Board (NRSB)
The National Academies

202-334-3293 (o)
(b)(6) (c)
jheimberg@nas.edu

Documents Identified in Archive Boxes for Nuclear Fuel Services (Docket 07000143)

Accession No.	Box No.	Subject	Date
431-01-1210	27	Assume no effluent records (Reviewed by Terry)	
431-01-1210	28	Aerial Radiological Measuring Survey (ARMS) Support Summary	07/03/1969
		Independent Measurement Program Report, July – October 1969	07/10/1970
		Note to File re: Management Meeting on July 30, 1970	08/05/1970
		Amendment Request to Change Location of Surface Water Samples	05/07/1969
		Note to File re: Compliance Inspection Report dated 02/07/1969	02/14/1969
		Compliance Inspection Report	02/06/1969
		Report of Uranium Losses, BPID and Inventory for NFS as of 12/31/1968	02/28/1969
431-01-1210	29	Detailed Description of Waste Management Program	10/4/71
431-01-1210	30	Memo transmitting first two reports of Independent Measurement Program	03/02/1970
		Enclosure 1 - Independent Measurement Program Report, July 1968 – March 1969	Undated
		Enclosure 2 - Independent Measurement Program Report, April – June 1969	Undated
		Letter responding to Senator Sasser re: Possible Discharge from NFS	07/26/1978
		Independent Measurement Program Report, July – October 1969	July 1970
431-01-1210	31	Compliance Inspection Report for NFS	5/5/69
		Compliance Inspection Report for NFS	3/3/70
		Draft Environmental Information Report for NFS	6/30/75
431-01-1210	32	Inspection Report 70-143/71-01	7/22/71
		Response to NRC Comments on Environmental Information Report Supporting Application for License Renewal	11/1/76
		Environmental Impact Appraisal of NFS	January 1978
431-01-1210	33	Process Flow Sheets and Summary of Waste Water Discharges	05/12/1976
		Tennessee Report of Monitoring Data for NFS	08/30/1976
		✓ NFS Effluent Monitoring Report July – December 1975	02/26/1976

Documents Identified in Archive Boxes for Nuclear Fuel Services (Docket 07000143)

Accession No.	Box No.	Subject	Date
=====	=====	=====	=====
431-01-1277	2	No effluent records	
431-01-1277	3	No effluent records	
=====	=====	=====	=====
431-03-0116	1	Revised Pages for Environmental Information report for NFS	11/3/76
		Responses to NRC Comments on Environmental Information Report for NFS	1/17/77
		✓ Effluent Monitoring Report, July - December 1976	2/9/77
431-03-0116	2	✓ Effluent Monitoring Report, July - December 1979	2/26/80
		Evaluation of Remedial Actions and Alternatives for Soil Contamination North of Site	6/6/80
		Withholding of Inspection Report 70-143/80-01 including Union Carbide Report "Analysis of Ventilation Scrubbers and Gaseous Effluent Measurement Systems"	7/9/80
		Letter Releasing Land Adjacent to Clinchfield Railroad for Unrestricted Use	9/18/80
		Report that U-234 Concentration in Scrubber Stack of Building 233 Exceeded Limit	10/30/80
		Report of Coorective Actions on Main Process Stacks and Daily Air Concentrations	12/9/80
		Evaluation of Stacks at NFS	1/30/81
		Stack Release Data and Evaluation of Potential Offsite Exposure	3/2/81
		Stack Concentrations for May 1981	6/12/81
		Stack Concentrations for June 1981	7/15/81
		Gross Alpha Analysis of Environmental Air Samplers for June 1981	7/21/81
		Gross Alpha Analysis of Environmental Air Samplers for July 1981	8/12/81
		Stack Concentrations for July 1981	8/13/81
		Gross Alpha Analysis of Environmental Air Samplers for August 1981	9/15/81
		Sampling for Total Fluoride in Scrubber Stacks	9/29/81
		Stack Concentrations for September 1981	10/14/81
		Gross Alpha Analysis of Environmental Air Samplers for September 1981	10/14/81

note: provide a sample of each report.
 • stack concent.
 • gross & after review, determine if rest of reports are needed

Documents Identified in Archive Boxes for Nuclear Fuel Services (Docket 07000143)

Accession No.	Box No.	Subject	Date
		Gross Alpha Analysis of Environmental Air Samplers for October 1981	11/11/81
		Stack Concentrations for October 1981	11/13/81
		Gross Alpha Analysis of Environmental Air Samplers for November 1981	12/15/81
		Meteorological Assessment of NFS	1/15/82
		Gross Alpha Analysis of Environmental Air Samplers for December 1981	1/25/82
		Stack Concentrations for January 1982	2/15/82
		Stack Concentrations for February 1982	3/15/82
		Stack Concentrations for June 1982	7/16/82
		Stack Concentrations for July 1982	8/13/82
		✓ Effluent Monitoring Report, January – June 1982	8/16/82
		Stack Concentrations for October 1982	11/17/82
		Stack Concentrations for November 1982	12/14/82
		✓ Effluent Monitoring Report, July – December 1982	2/24/82
		Stack Concentrations for February 1983	3/15/83
		Stack Concentrations for March 1983	4/14/83
		Stack Concentrations for April 1983	5/13/83
		Stack Concentrations for May 1983	6/14/83
		Stack Concentrations for June 1983	7/13/83
		Stack Concentrations for July 1983	8/11/83
		Stack Concentrations for August 1983	9/13/83
		Stack Concentrations for September 1983	10/12/83
		Stack Concentrations for October 1983	11/15/83
		Concentrations Released from Main Stack	4/24/84
		Groundwater Monitoring Report	8/17/84
431-03-0116	3	Groundwater Monitoring Report	10/29/84
		Groundwater Monitoring Report	11/20/84
		✓ Effluent Monitoring Report, July – December 1984	2/28/85
		Groundwater Monitoring - 1984 Annual Summary	4/1/85
		Groundwater Monitoring Report	4/9/85
		Groundwater Monitoring Report	4/19/85
		Groundwater Monitoring Report	6/7/85
		Groundwater Monitoring Report	8/9/85
		Groundwater Monitoring Report	8/29/85

Documents Identified in Archive Boxes for Nuclear Fuel Services (Docket 07000143)

Accession No.	Box No.	Subject	Date
		✓ Effluent Monitoring Report, January – June 1985	8/29/85
		Groundwater Monitoring Report	10/1/85
		NRC/Tennessee/NFS Triple Split Results for NFS Onsite Sewer	12/13/85
		NFS Stack Effluent Study	1/22/86
		✓ Effluent Monitoring Report, July – December 1985	2/28/86
		Evaluation of Possible Under-reporting of Stack Effluent	3/4/86
		Groundwater Monitoring Report	3/6/86
		Groundwater Monitoring Report (enclosure only)	3/31/86
		Groundwater Monitoring - 1985 Annual Summary	4/2/86
		Groundwater Monitoring Report	7/8/86
		Groundwater Monitoring Report	8/4/86
		✓ Effluent Monitoring Report, January – June 1986	8/29/86
		Groundwater Monitoring Report	9/29/86
		Groundwater Monitoring Report	12/16/86
		Groundwater Monitoring Report	1/16/87
		✓ Effluent Monitoring Report, July – December 1986	2/27/87
		TN report of Sludge Samples from Erwin Sewage Treatment Plant Between March 1986 and January 1987	3/20/87
		Groundwater Monitoring Report	3/17/87
	✗ →	Revised Effluent Monitoring Report, July – December 1986	3/24/87
		Groundwater Monitoring - 1986 Annual Summary	4/2/87
		TN letter re: Decreasing Activity in Erwin Sludge	4/2/87
		Groundwater Monitoring Report	4/16/87
		Groundwater Monitoring Report	4/29/87
		Groundwater Monitoring Report	6/3/87
		Groundwater Monitoring Report	8/10/87
		✓ Effluent Monitoring Report, January – June 1987	8/28/87
		Groundwater Monitoring Report	11/9/87
431-03-0116	4	✓ Effluent Monitoring Report, July – December 1988	3/1/89
		✓ Effluent Monitoring Report, January – June 1990	8/31/90
431-03-0116	5	NPDES Monitoring Report for August 1991	10/10/1991
		✓ Effluent Monitoring Report, July – December 1991	2/28/1992

sample one
report to it is
see if it is
useful

Tennessee's National Pollutant Discharge Elimination System
(for example, liquid effluents into nearby streams)

Documents Identified in Archive Boxes for Nuclear Fuel Services (Docket 07000143)

Accession No.	Box No.	Subject	Date
		NPDES Monitoring Report for Feb 1992	3/13/1992
		NPDES Monitoring Report for May 1992	6/12/1992
		Response to NPDES Violation, Description of Discharge to Storm Water Drainage Ditch	8/20/1992
		NPDES Monitoring Report for August 1992	10/8/1992
		NPDES Monitoring Report for September 1992	10/15/1992
		NPDES Monitoring Report for October 1992	11/15/1993
		NPDES Monitoring Report for November 1992	12/15/1992
		NPDES Monitoring Report for December 1992	1/15/1993
		NPDES Monitoring Report for January 1993	2/15/1993
		NPDES Monitoring Report for February 1993	3/15/1993
		NPDES Monitoring Report for March 1993	4/15/1993
		NPDES Monitoring Report for April 1993	5/15/1993
		NPDES Monitoring Report for May 1993	6/15/1993
		✓ Effluent Monitoring Report, July – December 1992	3/1/1993
		EA and FONSI for amendment to authorize processing of material containing HEU and thorium carbide	7/27/1993
		EA and FONSI for Research and Development Laboratory Project	7/28/1993
		✓ Effluent Monitoring Report, January – June 1993	8/27/1993
		NPDES Monitoring Report for August 1993	9/15/1993
		Storm Water Monitoring Report, 10/1/92 – 9/30/93	10/29/1993
		Quarterly RFI Progress Report for HSWA permit	10/18/1993
		Quarterly RFI Progress Report for HSWA permit	1/14/1994
		Quarterly RFI Progress Report for HSWA permit	4/14/1994
		NPDES Monitoring Report for January 1994	2/15/1994
		NPDES Monitoring Report for February 1994	3/15/1994
		NPDES Monitoring Report for March 1994	4/15/1994
		NPDES Monitoring Report for April 1994	5/13/1994
		NPDES Monitoring Report for May 1994	6/15/1994
431-03-0116	6	✓ Effluent Monitoring Report, January – June 1995	8/29/95
		✓ Effluent Monitoring Report, July – December 1995	2/29/96
		✓ Effluent Monitoring Report, January – June 1996	8/22/96
		✓ Effluent Monitoring Report, January – June 1997	8/29/97

Documents Identified in Archive Boxes for Nuclear Fuel Services (Docket 07000143)

Accession No.	Box No.	Subject	Date
		✓ Effluent Monitoring Report, July – December 1997	2/27/98
		✓ Effluent Monitoring Report, January – June 1998	8/28/98
431-03-0116	7	✓ Additional Information on Effluents for First Six Months of 1998	9/28/98
		KAST Fuel Manufacturing Process – Revised response to NRC Questions	10/1/98
431-03-0116	8	No effluent records	
431-03-0116	9	✓ Effluent Monitoring Report, January – June 1979	8/31/79
		Inspection Report 70-143/80-18, Environmental Protection and Emergency Response	9/15/80
		Report of Stack Monitoring - November 1982	12/14/83
431-03-0116	10	Report of Stack Monitoring – December 1982	1/17/83
		Report of Stack Monitoring – January 1983	2/11/83
		Report of Stack Monitoring – February 1983	3/15/83
		Report of Stack Monitoring – March 1983	4/14/83
		Report of Stack Monitoring – April 1983	5/13/83
		Report of Stack Monitoring – June 1983	7/13/83
		Report of Stack Monitoring – July 1983	8/11/83
		✓ Effluent Monitoring Report, January – June 1983	8/31/83
		Inspection Report 70-143/85-07, Counting Room Quality Control, Waste Management, and Environmental Monitoring	3/25/85
		Assessment of Dose to Persons from Sewage Sludge from Erwin Publicly Owned Treatment Works (POTW)	undated
		Inspection Report 70-143/96-05, Augmented Inspection Team (AIT) investigation of Incinerator Fire in 300 Complex on April 2, 1996	undated (May 1996)
		✓ Effluent Monitoring Report, July-Dec 83	2/24/84
431-03-0116	12	Environmental Impact Appraisal for NFS	Jan 1978
		Letter from NFS transmitting Environmental Report	7/27/1984
431-03-0116	13	Assume no effluent records (reviewed by Terry)	

note: need a sample before report determining if all are needed

Documents Identified in Archive Boxes for Nuclear Fuel Services (Docket 07000143)

Accession No.	Box No.	Subject	Date
431-03-0116	14	Update to Section 13, Part II of License SNM-124	8/15/89
431-03-0116	15	Hydrogeologic Characterization Study of NFS, Volume 1, Technical Overview	March 1989
431-03-0116	16	Finding of No Significant Impact and Notice of Opportunity for a Hearing re: Renewal of License SNM-124, Nuclear Fuel Services, Erwin, TN	8/13/91
431-03-0116	17	Confirmatory Sampling Work Plan for Solid Waste Management Units (SWMU) 8 and 11 at NFS	2/9/93
		RCRA Facility Investigation Phase II Sampling and Analysis Work Plan for SWMU 2, 4, and 6 at NFS	2/11/93
		RCRA Facility Investigation Work Plan for NFS	5/26/93
		RCRA Facility Investigation Sampling and Analysis Work Plan for SWMU 1 and AOC 5 at NFS	5/26/93
		RCRA Facility Investigation Sampling and Analysis Work Plan for SWMU 1 and AOC 5 at NFS	9/14/93
		Confirmatory Sampling Report for SWMU 8 and 11 at NFS	11/30/93
431-03-0116	18	No effluent records.	
431-03-0116	19	Revised Table 13.1 in Part II of License SNM-124	7/9/95
431-03-0116	20	No effluent records	
431-03-0116	21	Update to Chapter 13 (Environmental Safety) in Part II of License SNM-124	6/10/96
		Environmental Report for Renewal of License SNM-124	December 1996
431-03-0116	22	No effluent records	
431-03-0116	23	Draft Environmental Assessment for Renewal of SNM-124	June 1998
431-03-0116	24	Environmental Assessment for Renewal of SNM-124	July 1998

Documents Identified in Archive Boxes for Nuclear Fuel Services (Docket 07000143)

Accession No.	Box No.	Subject	Date
431-03-0116	26	No effluent records	
431-03-0116	27	No effluent records	
=====	=====	=====	=====
431-03-0186	1	Letter to Senator Sasser re: Response to Constituent Concerns	11/4/92
431-03-0186	2	Letter submitting plan for remediating Pond 4 including estimate of worker and public dose and potential groundwater impact	2/8/1995
431-03-0186	3	No effluent records Note: North Site Characterization Report, 11/20/97, Accession 9711240097, (very thick, didn't copy)	
431-03-0186	4	No effluent records	

Facility	Document Title	Accession Number	Document Date
Dresden	"Effluent & Waste Disposal Semiannual Rept Jul-Dec 1988." W/890206 ltr.	8902280406	12/31/1988
LaSalle	"Effluent & Waste Disposal Semi-Annual Report,Jul-Dec 1991." W/920226 ltr.	9203020260	12/31/1991
Millstone	"Semiannual Radioactive Effluents Release Rept," Jan-June 1979.	7909100491	08/29/1979
Millstone	"Semiannual Radioactive Effluents Release Rept,Jul-Dec 1987."	8802290272	12/31/1987
Millstone	"Semiannual Radioactive Effluents Release Rept,Jan-June 1988." W/880830 ltr.	8809060001	06/30/1988
Millstone	Draft "Effluent & Waste Disposal Annual Rept for 1988."	9008070357	12/31/1988
Millstone	"Milestone Nuclear Power Station,Units 1,2 & 3 Semiannual Radioactive Effluents Relea:	8903100351	12/31/1988
Millstone	"Semiannual Radioactive Effluents Rept for Jul-Dec 1989." W/900228 ltr.	9003150272	12/31/1989
Millstone	Draft "Effluent & Waste Disposal Annual Rept for 1990."	9207200138	12/31/1990
Millstone	"Semiannual Radioactive Effluent Release Rept for Jul-Dec 1990." W/910301 ltr.	9103110143	12/31/1990
Millstone	"Millstone Nuclear Power Station,Units 1,2 & 3 Semiannual Radioactive Effluents Rept,J:	9109110009	06/30/1991
Millstone	Corrected draft "Effluent & Waste Disposal Annual Rept for 1991 for Millstone Nuclear F	9305270224	12/31/1991
Millstone	"Millstone Nuclear Power Station Units 1,2 & 3 Semiannual Radioactive Effluents Relea	9203020250	12/31/1991
Millstone	"Radiological Effluent Monitoring & Offsite Dose Calculation Manual," for Millstone Nuc	9805040461	05/30/1997
Millstone	Rev 12 to "Radiological Effluent Monitoring Manual for MNPS Units 1,2 & 3."	9905060113	12/14/1998
Millstone	Revised "Radiological Effluent Monitoring & Offsite Dose Calculation Manual (REMODOCN	9905060120	04/30/1999
Oyster Creek	SEMIANNUAL REPORT RADIOACTIVE EFFLUENT RELEASES JANUARY 1-J ULY 1 1976	4005001894	01/01/1976
Oyster Creek	Addendum 1 to Semi-Annual Effluent Release Rept 78-2, Jul-Dec 1978.	7908060255	08/01/1979
Oyster Creek	Addendum 1 to Semi-Annual Effluent Release Rept 78-2, Jul-Dec 1978.	7908060255	08/01/1979
Oyster Creek	"Semiannual Rept 79-2,Radioactive Effluent Releases, Jul-Dec 1979."	8003110020	12/31/1979
Oyster Creek	Addendum to "Semiannual Radioactive Effluent Releases, Jul-Dec 1979."	8005080272	04/30/1980
Oyster Creek	Semiannual Rept 80-1, "Radioactive Effluent Releases,Jan- June 1980."	8009090371	09/02/1980
Oyster Creek	"Semiannual Effluent Release Rept for June-Dec 1983." W/840229 ltr.	8403260074	12/31/1983
Oyster Creek	"Semiannual Effluent Release Rept for Jan-June 1984." W/840830 ltr.	8409170588	06/30/1984
Oyster Creek	"Oyster Creek Nuclear Generating Station 1988-1 Semiannual Effluent Release Rept."	8810120117	06/30/1988
Oyster Creek	"Oyster Creek Nuclear Generating Station 1988-2 Semiannual Effluent Release Rept." W.	8903090383	12/31/1988
Oyster Creek	"Oyster Creek Nuclear Generating Station 1989-1 Semiannual Effluent Release Rept," fo	8909080080	06/30/1989
Oyster Creek	"Oyster Creek Nuclear Generating Station 1990-1 Semiannual Effluent Release Rept," fo	9009070085	06/30/1990
Oyster Creek	Revised Figure 1 to 1990-1 semiannual effluent release rept.	9011290095	06/30/1990
Oyster Creek	"Semiannual Radiological Effluent Release Rept for Jul-Dec 1990." W/910302 ltr.	9103150426	12/31/1990
Oyster Creek	"Oyster Creek Nuclear Generating Station Semiannual Effluent Release Rept,Jan-June 19	9109100395	06/30/1991
Oyster Creek	Correction to "Semi-Annual Radiological Effluent Release Rept,Third Quarter 1991."	9206240470	06/30/1991
Oyster Creek	Correction to "Semi-Annual Radiological Effluent Release Rept,Third Quarter 1991."	9206240470	06/30/1991

Oyster Creek	"1991-2 Semiannual Effluent Release Rept." W/920303 ltr.	9203180414	12/31/1991
Oyster Creek	Correction to "Semi-Annual Radiological Effluent Release Rept,Fourth Quarter 1991."	9206240467	12/31/1991
Oyster Creek	Correction to "Semi-Annual Radiological Effluent Release Rept,Fourth Quarter 1991."	9206240467	12/31/1991
Oyster Creek	"Oyster Creek Nuclear Generating Station Semi-Annual Radiological Release Rept,Jan-Ju	9209040201	06/30/1992
Oyster Creek	"Oyster Creek Nuclear Generating Station Semi-Annual Radiological Release Rept,Jan-Ju	9209040201	06/30/1992
Oyster Creek	"Semiannual Effluent Release Rept for Jul-Dec 1992."	9303110274	12/31/1992
Oyster Creek	"Oyster Creek Nuclear Station 1993-1 Semiannual Effluent Rept." W/930827 ltr.	9309080118	06/30/1993
Oyster Creek	"Annual Radioactive Effluent Release Rept for period covering Jan-Dec 1997." W/980227	9803090037	12/31/1997
San Onofre	CORRECTIONS TO 11 SEMI-ANNUAL REPORT: JULY--DECEMBER 1976--RAD IOACTIVE EFFLU	4007000448	06/28/1977
San Onofre	"San Onofre Nuclear Generating Station Semiannual Operating Rept," for Jan-June 1980	8009030538	08/27/1980
San Onofre	"Radioactive Effluent Release Semiannual Rept 27,Jul-Dec 1980."	8205280307	02/27/1981
San Onofre	"Semiannual Effluent Rept,Jul-Dec,1981."	8203050413	12/31/1981
San Onofre	Revised & expanded "Radioactive Effluent Release Semiannual Rept,Jan-June 1981."	8202230164	02/19/1982
San Onofre	"San Onofre Nuclear Generating Station Unit 1 Semiannual Effluent Rept,Jan-June 1982.	8308120173	08/30/1982
San Onofre	"Semiannual Effluent Rept,Jul-Dec 1982." W/830223 ltr.	8308120050	02/23/1983
San Onofre	"Semiannual Effluent Rept,Jan-June 1983." W/830816 ltr.	8312210151	06/30/1983
San Onofre	"Semiannual Effluent Rept,Jul-Dec 1983."	8404100229	12/31/1983
San Onofre	"San Onofre Nuclear Generating Station Unit 1 Semiannual Effluent Rept Jan-June 1984.	8409130351	06/30/1984
San Onofre	"Semiannual Effluent Rept for Jul-Dec 1984." W/850228 ltr.	8503140409	12/31/1984
San Onofre	"Semiannual Radioactive Effluent Release Rept,Jan-June 1985."	8509030350	06/30/1985
San Onofre	"San Onofre Nuclear Generating Station Semiannual Effluent Rept,Jul-Dec 1985."	8603180254	12/31/1985
San Onofre	"San Onofre Nuclear Generating Station Semiannual Effluent Rept for Jul-Dec 1986." W/	8703040463	12/31/1986
San Onofre	"Semiannual Effluent Release Rept for Jan-June 1987." W/ 870831 ltr.	8709100106	06/30/1987
San Onofre	"Semiannual Effluent Rept,Jul-Dec 1987." W/880229 ltr.	8803070104	12/31/1987
San Onofre	"San Onofre Nuclear Generating Station Semiannual Effluent Rept Jan-June 1988."	8809020196	08/30/1988
San Onofre	"San Onofre Nuclear Generating Station Semiannual Effluent Rept Jul-Dec 1988." W/890	8903080428	12/31/1988
San Onofre	"Semiannual Effluent Rept,Jan-June 1989."	8909130167	06/30/1989
San Onofre	"San Onofre Nuclear Generating Station Semiannual Effluent Rept Jan-June 1990."	9009040199	06/30/1990
San Onofre	"Semiannual Effluent Rept Jul-Dec 1990."	9103060019	12/31/1990
San Onofre	"San Onofre Nuclear Generating Station Semiannual Effluent Release Rept,Jan-June 199	9109030194	06/30/1991
San Onofre	"Semiannual Radioactive Effluent Release Rept for Jul-Dec 1991."	9203090322	12/31/1991
San Onofre	"Semiannual Radioactive Effluent Release Rept for San Onofre Nuclear Generating Static	9209010190	06/30/1992
San Onofre	"SONGS Semiannual Radioactive Effluent Release Rept for Jul- Dec 1992."	9303040299	12/31/1992
San Onofre	"SONGS Annual Radioactive Effluent Release Rept Jan-Dec 1995."	9605060039	12/31/1995

San Onofre	"Annual Radioactive Effluent Release Rept for 1996."	9705050230	12/31/1996
San Onofre	"SONGS Annual Radioactive Effluent Release Rept for 1997."	9805070165	12/31/1997
LaSalle	Corrected draft "Effluent & Waste Disposal Annual Rept for 1991 for Millstone Nuclear F	9305270224	12/31/1991
Millstone	Summarizes environ radiation effluent radioactivity measurements made at plant on 71	8306150027	08/29/1971
Oyster Creek	Semiannual Rept#78-1 Provisional Oper Lic #DPR-16: Radioactive Effluent Releases 7801	7809150385	08/29/1978
Dresden	Forwards semiannual rept re radioactive effluent discharges & solid radioactive waste fc	8103020369	02/06/1981
Braidwood	"1998 Radioactive Effluent Release Rept."	9905050129	12/31/1998
LaSalle	"Semi-Annual Radioactive Effluent Rept,Jan-June 1997." W/970829 ltr.	9709030276	06/30/1997
Dresden	Forwards second portion of "Semiannual Rept Jan-June 1975" re radioactive effluent dis	8010100474	08/22/1975
Dresden	Forwards second portion of semiannual radioactive effluent discharges,environ monitor	8010160870	08/05/1977
Dresden	Forwards corrected radioactive effluent rept for Jul-Dec 1988 for plant.Final data for Sr-i	8904210150	03/28/1989
Dresden	Forwards corrected "Radioactive Effluent Rept for Jul-Dec 1989," containing final data fc	9009040144	08/01/1990
Haddam	Forwards "Radioactive Effluents Release Rept Jul-Dec 1992," including summary of quan	9303040275	02/26/1993
LaSalle	Part 2 of "Rept of Radioactive Effluents,1982."	8405070418	12/31/1982
LaSalle	Rev 0 to "Rept of Radioactive Effluents,Jul-Dec 1983." W/ 840116 ltr.	8403060150	12/31/1983
LaSalle	Errata to "Rept of Radioactive Effluents," Jul-Dec 1983.	8408300393	12/31/1983
LaSalle	"Rept of Radioactive Effluents," Jan-June 1984.	8408300513	06/30/1984
LaSalle	Errata to Part I of Rev 0 to, "Rept of Radioactive Effluents,Jan-June 1985."	8601080126	06/30/1984
LaSalle	Forwards errata to Part I of Rev 0 to "Rept of Radioactive Effluents,Jan-June 1984." Radi	8601080120	02/11/1985
Millstone	"Millstone Nuclear Power Station Radioactive Effluents Release Rept Jul-Dec 1992."	9303040222	12/31/1992
Oyster Creek	"Effluent Release Rept 1981-1,Dec 1980-June 1981."	8109110375	09/01/1981
Oyster Creek	"Effluent Release Rept,1981-82."	8203090491	02/26/1982
Oyster Creek	Forwards revised "Effluent & Release Rept for Jan-Dec 1997." Rev bars in right-hand mai	9806080067	05/27/1998
San Onofre	NRC DRAFT OF DATA RE RADIOACTIVE EFFLUENTS RELEASED FROM THE PLANT DURING	4008000539	08/26/1977
San Onofre	Rept of radioactive effluents,1976 & 77.	8109240183	12/31/1977
San Onofre	Forwards revised & expanded "Radioactive Effluent Release Semiannual Rept,Jan-June 1	8202230157	02/19/1982
San Onofre	"Technical Evaluation Rept for Radiological Effluent Release & Environ Operating Repts f	8707160862	06/30/1987
San Onofre	"San Onofre Nuclear Generating Station Annual Radioactive Effluent Release Rept Jan-D	9405040065	12/31/1993
San Onofre	"San Onofre Nuclear Generating Station Annual Radioactive Effluent Release Rept Jan-D	9505040122	12/31/1994
Big Rock	LACK OF STACK GAS EFFLUENT MONITORING	3001005287	02/11/1974
Big Rock	Responds to NRC Dec 1977 discussions identifying areas requiring amplification re site n	8101100625	02/08/1978
Big Rock	Submits corrections to dates in 840529 revised proposed findings on monitoring.Effluen	8406180414	06/12/1984
Braidwood	LER [Licensee Event Report] 86-006-00:on 861204,Action Statement 3.3.3.10 re failure c	8612290233	12/23/1986
Dresden	FAILURE TO MONITOR PLANT CHIMNEY EFFLUENTS JULY 26 1972.	3000005722	01/01/1972

Dresden	Forwards analysis of split samples on effluents during 1973 per cooperative agreement I	8010220709	04/03/1974
Dresden	Forwards results of analyses re effluent sample splits. Split samples analyzed by Health S	8009250535	04/03/1974
Dresden	LER 88-014-00:on 880803,tritium activity in airborne effluents exceeded allowable Tech	8809140053	09/01/1988
Haddam	INSPECTION OF ACTIVITY LEVELS OF EFFLUENTS (CONFIRMATORY MEASUREMENT)	4006005585	03/08/1977
Haddam	Verifies discrepancies noted in summary of radioactive effluents,in response to NRC 800	8008260484	08/14/1980
Haddam	"Radiological Effluent Monitoring Manual for Haddam Neck Plant."	8509170374	09/05/1985
Haddam	LER 97-005-00:on 970206,determined potentially inadequate methods used to calibrac	9704090009	04/01/1997
Haddam	LER 97-005-01:on 970206,determined that methods used to calibr liquid & gaseous radi	9710280369	10/20/1997
Millstone	Summarizes & updates info from naval reactors & naval reactors group re detection & r	8306150109	10/15/1971
Millstone	RADIOACTIVE LIQUID EFFLUENTS WERE DISCHARGED FROM AN UNMONITORED SUMP	3003000401	04/01/1975
Oyster Creek	Submits additional info re draft environ impact statement for plant.Release of hlogens	9604150009	09/06/1973
Oyster Creek	FAILURE TO MONITOR THE STACK EFFLUENT FOR IODINES AND PARTICULATES FOR THR	3003004489	08/28/1975
Oyster Creek	Revised 79-041/03L-1:on 791102,radwaste bldg ventilation monitoring sys found not yie	8002120745	02/07/1980
San Onofre	CHEMICAL EFFLUENTS AND REPORTING REQUIREMENTS	4004004037	03/17/1976
San Onofre	IE Insp Rept 50-206/81-36 on 810928-1002,19-25 & 1104-05. Noncompliance noted:fail	8201110655	12/10/1981
San Onofre	Insp repts 50-206/92-01,50-361/92-01 & 50-362/91-01 on 920106-10.Violations noted.M	9202180155	01/31/1992
	u_1976_Big Rock_vol 2.pdf	4006003629	
	u_1978_SONGS vol 1.pdf	8109240181	
	u_1978_SONGS vol 2.pdf	none	
	u_1979_Millstone vol 2.pf	8003040509	
	u_1980_Dresden vol 2.pdf	8103020374	
	u_1980_Dresden vol 2 copy.pdf	8103020374	
	u_1980_Haddam vol 2.pdf	8103030827	
	u_1981_Big Rock vol 2.pdf	8203030453	
	u_1982_Big Rock vol 2.PDF	9201150030	
	u_1982_Dresden vol 2.PDF	8306130275	
	u_1982_Millstone vol 2.PDF	8303080218	
	u_1983_Big Rock vol 1.PDF	8403080131	
	u_1984_Millstone vol 1.PDF	8409140038	
	u_1984_Millstone vol 2.pdf	8503200331	
	u_1985_Millstone vol 2.PDF	8805170213	
	u_1986_Big Rock vol 1 revised.PDF	9109100159	
	u_1987_Braidwood errata for May June.PDF	8712110256	
	u_1987_Braidwood vol 1.PDF	8709210432	

u_1987_Braidwood vol 2.PDF	8803160298
u_1988_Braidwood vol 2.PDF	8903060124
u_1989_Braidwood vol 1.PDF	8908290259
u_1989_Braidwood vol 2.PDF	9002260572
u_1990_Big Rock vol 1 duplicate microfiche scan.PDF	9009070216
u_1990_Big Rock vol 1.PDF	9009070216
u_1990_Braidwood vol 2 poor copy.PDF	9102250048
u_1991_Braidwood vol 1.PDF	9108230053
u_1992_Braidwood vol 1 errata.PDF	130072 or 9303090090
u_1992_Braidwood vol 1.PDF	9209020252
u_1992_Braidwood vol 2.PDF	9304130080
u_1992_Dresden vol 2 corrected.PDF	9308300229
u_1992_Dresden vol 2_ML14106A276.pdf	14106A276
u_1993_Big Rock vol 1.PDF	9309020163
u_1995 Dresden vol 1 errata.PDF	9610080143
u_1995_Braidwood annual effluent release and disposal report.PDF	9603050232
u_1995_Dresden vol 1.PDF	9508300293
u_1996_Braidwood annual effluent release and disposal.PDF	220183 or 9706230183
u_1997_Braidwood annual effluent release and waste report.PDF	9804270439
u_1998_Dresden_ML14106A297.pdf	14106A297
u_1998_LaSalle.PDF	9905050336
u_1998_SONGS.PDF	9905050173

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86		46747:163-46747:247	Master List 1	
45		54897:215-54897:260	Master List 1	
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94		53028:001-53028:094	Master List 1	
93		62450:003-62450:095	Master List 1	
93		56940:213-56940:305	Master List 1	
56		59091:079-59091:161	Master List 1	
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87		60788:001-60788:087	Master List 1	
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30		A7988:078-A7988:107	Master List 1	
120		A7988:214-A7988:335	Master List 1	
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6		00558:196-00558:201	Master List 1	
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175		26494:041-26494:207	Master List 1	
31		47119:117-47119:147	Master List 1	
39		48799:146-48799:183	Master List 1	
32		51149:277-51149:308	Master List 1	
37		55149:153-55149:193	Master List 1	
1		55961:059-55961:059	Master List 1	
27		57053:274-57053:305	Master List 1	
37		59087:224-59087:260	Master List 1	
2		62134:175-62134:176	Master List 1	
2		62134:175-62134:176	Master List 1	

34	60975:307-60975:340	Master List 1
2	62134:173-62134:174	Master List 1
2	62134:173-62134:174	Master List 1
30	63018:325-63018:354	Master List 1
30	63018:325-63018:354	Master List 1
41	74244:220-74244:260	Master List 1
32	76388:318-76388:349	Master List 1
46	A2560:308-A2560:353	Master List 1
1	50010-775	Master List 1
7	06463:337-06463:343	Master List 1
8	13283:212-13283:219	Master List 1
33	12136:159-12136:191	Master List 1
33	12012:073-12012:105	Master List 1
38	20016:190-20016:229	Master List 1
39	20012:238-20012:275	Master List 1
42	21600:257-21600:298	Master List 1
38	22960:194-22960:231	Master List 1
41	26465:235-26465:274	Master List 1
40	29382:018-29382:057	Master List 1
87	32447:140-32447:227	Master List 1
104	34984:002-34984:104	Master List 1
107	39876:291-39877:037	Master List 1
92	42593:047-42593:138	Master List 1
115	44626:341-44627:095	Master List 1
96	46751:054-46751:149	Master List 1
112	48742:087-48742:198	Master List 1
146	51174:164-51174:309	Master List 1
113	55078:143-55078:255	Master List 1
304	56899:099-56900:042	Master List 1
383	58950:003-58951:025	Master List 1
117	60863:331-60864:087	Master List 1
102	62929:004-62929:105	Master List 1
117	74122:039-74122:155	Master List 1
105	88132:002-88132:106	Master List 1

102	92763:016-92763:117	Master List 1		
107	A3412:002-A3412:108	Master List 1		
89	75051:037-75051:125	List 2		No ML #?
3	23045:082-23045:084	List 2		No ML #?
62		List 2		No ML #?
15	07784:234-07784:249	List 2	ML14094A258	duplicate of ML14094A256-- title listed in ADAMS is incorrect
63	A7992:175-A7992:237	List 2	ML14090A042	incorrect #
26	A0273:221-A0273:245	List 2	ML14140A622	incorrect ML#
4	06932:073-06932:076	List 2	ML14093A359	no results found
2	06925:330-06925:331	List 2	ML14093A364	no results found
1	49444:223-49444:238	List 2	ML14093A363	no results found
4	55094:338-55095:029	List 2	ML14093A366	no results found
16	74161:337-74161:353	List 2	ML14092A044	no results found
6	24342:017-24342:022	List 2	ML14140A830	no results found
9	22513:337-22513:345	List 2	ML14099A513	no results found
8	26308:152-26308:159	List 2	ML14104A827	no results found
13	26313:312-26313:324	List 2	ML14099A515	no results found
10	34214:215-34214:224	List 2	ML14104A832	no results found
1	34214:214-34214:224	List 2	ML14104A857	no results found
76	74121:189-74121:266	List 2	ML14105A423	no results found
108	09687:150-09687:256	List 2	ML14093A170	no results found
150	12162:290-12163:076	List 2	ML14093A206	no results found
8	A3766:213-A3766:220	List 2	ML14093A086	no results found
1	50206-801	List 2	ML13319A527	no results found
7	09889:068-09889:076	List 2	ML14105A378	no results found
1	12012:072-12012:105	List 2	ML13311B125	no results found
167	41730:139-41730:305	List 2	ML13308A985	no results found
130	79174:003-79174:132	List 2	ML13326A156	no results found
476	83794:001-83795:112	List 2	ML13326A188	no results found
2	50155-195	List 3		
11	08140:006-08140:016	List 3		
3	24978:127-24978:129	List 3		
5	39092:083-39092:087	List 3		
1	50237-247	List 3		

replace las transmittal letteronly

6	11566:352-11566:357,06911	List 3
7	11587:107-11587:113,06911	List 3
4	46846:170-46846:173	List 3
14	50213-684	List 3
2	06411:104-06411:105	List 3
25	32638:037-32638:061	List 3
5	92498:109-92498:113	List 3
5	A0908:067-A0908:071	List 3
4	23045:110-23045:113	List 3
1	50245-495	List 3
2	88573:217-88573:218	List 3
3	50219-720	List 3
4	01952:063-01952:066	List 3
12	50206-524	List 3
26	11542:221-11542:247	List 3
10	60580:009-60580:018	List 3

[illegible]

From: Heimberg, Jennifer <JHeimberg@nas.edu>
Sent: Thursday, October 02, 2014 12:51 PM
To: Ramsey, Kevin; Kosti, Ourania; Brock, Terry
Subject: RE: Notification of DPC Completion of Processing for ML14251A294, ML14251A298, ML14251A107, ML14251A109

Thanks, Kevin.

I can hardly wait to start downloading these documents.
Unfortunately, I will be busy for the rest of today. I did try to access the document from your last email and was successful.

Jenny

From: Ramsey, Kevin [mailto:Kevin.Ramsey@nrc.gov]
Sent: Thursday, October 02, 2014 12:49 PM
To: Heimberg, Jennifer; Kosti, Ourania; Brock, Terry
Subject: FW: Notification of DPC Completion of Processing for ML14251A294, ML14251A298, ML14251A107, ML14251A109

Here are 4 more.

From: Davis, Donna
Sent: Tuesday, September 30, 2014 7:54 AM
To: Ramsey, Kevin
Subject: Notification of DPC Completion of Processing for ML14251A294, ML14251A298, ML14251A107, ML14251A109

[View ADAMS P8 Properties ML14251A294](#)
[Open ADAMS P8 Document \(Nuclear Fuel Services - Biannual Effluent Monitoring Report January through June 1985.\)](#)

[View ADAMS P8 Properties ML14251A298](#)
[Open ADAMS P8 Document \(Nuclear Fuel Services - Biannual Effluent Monitoring Report January through June 1987.\)](#)

[View ADAMS P8 Properties ML14251A107](#)
[Open ADAMS P8 Document \(Nuclear Fuel Services - Biannual Effluent Monitoring Report January through June 1982.\)](#)

[View ADAMS P8 Properties ML14251A109](#)
[Open ADAMS P8 Document \(Nuclear Fuel Services - Biannual Effluent Monitoring Report January through June 1983.\)](#)

If you have any questions or require additional information, you may contact the ADAMS Customer Support Center by sending an e-mail to ADAMS IM.

Thanks,
Donna Davis
NRC Document Processing Center

From: Heimberg, Jennifer <JHeimberg@nas.edu>
Sent: Friday, October 03, 2014 1:48 PM
To: Ramsey, Kevin; Kosti, Ourania; Brock, Terry
Subject: RE: Notification of DPC Completion of Processing for ML14251A294, ML14251A298, ML14251A107, ML14251A109

Kevin,

Thank you for moving the reports forward. I did a quick search on ADAMS' recently loaded documents and found a total of ten (previously archived) NFS effluent release reports. Keep 'em coming!

Thanks again,
Jenny

From: Ramsey, Kevin [mailto:Kevin.Ramsey@nrc.gov]
Sent: Thursday, October 02, 2014 12:49 PM
To: Heimberg, Jennifer; Kosti, Ourania; Brock, Terry
Subject: FW: Notification of DPC Completion of Processing for ML14251A294, ML14251A298, ML14251A107, ML14251A109

Here are 4 more.

From: Davis, Donna
Sent: Tuesday, September 30, 2014 7:54 AM
To: Ramsey, Kevin
Subject: Notification of DPC Completion of Processing for ML14251A294, ML14251A298, ML14251A107, ML14251A109

[View ADAMS P8 Properties ML14251A294](#)

[Open ADAMS P8 Document \(Nuclear Fuel Services - Biannual Effluent Monitoring Report January through June 1985.\)](#)

[View ADAMS P8 Properties ML14251A298](#)

[Open ADAMS P8 Document \(Nuclear Fuel Services - Biannual Effluent Monitoring Report January through June 1987.\)](#)

[View ADAMS P8 Properties ML14251A107](#)

[Open ADAMS P8 Document \(Nuclear Fuel Services - Biannual Effluent Monitoring Report January through June 1982.\)](#)

[View ADAMS P8 Properties ML14251A109](#)

[Open ADAMS P8 Document \(Nuclear Fuel Services - Biannual Effluent Monitoring Report January through June 1983.\)](#)

If you have any questions or require additional information, you may contact the ADAMS Customer Support Center by sending an e-mail to ADAMS IM.

Thanks,
Donna Davis
NRC Document Processing Center

From: Garry, Steven
Sent: Monday, October 06, 2014 8:38 AM
To: Brock, Terry; Ramsey, Kevin; Conatser, Richard
Subject: RE: Fact checking - Cancer Risk Study Report

Terry

they mis-spell principle vs principal.

The way they describe NRC Tech Specs is wrong i.e., they say tech specs and then put in parenthesis 10 CFR 50.36(a)(2) as though that is tech specs. They should say NRC regulations in 50.36(a)(2) establish requirements for effluent tech specs.

Also, the description of the NRC libraries is probably confusing to the public. Somehow, they should better differentiate between the Legacy Library and the Public Library. An uninformed reader may not recognize that they are talking about 2 different libraries. Also, I thought the public library told us that their reports were not official, or were they only talking about reports before 1995?

Steve

From: Brock, Terry
Sent: Monday, October 06, 2014 8:24 AM
To: Garry, Steven; Ramsey, Kevin; Conatser, Richard
Subject: FW: Fact checking - Cancer Risk Study Report

Fellas,

Below is NAS' description of NRC's effluent program and document retrieval in support of the cancer study. Any comments/errors?

Thx,
Terry

"Required first by the Atomic Energy Commission and later by the U.S. NRC, licensees submit effluent release reports throughout the operational lifetime of the facility and during decommissioning. The U.S. NRC technical specifications (10 CFR 50.36 (a)(2)) define the content of nuclear power facilities' effluent release reports to include the quantity of principle radionuclides released to unrestricted areas in gaseous and liquid form including additional information needed to estimate maximum potential doses to the public (i.e., the locations of the release points, information on batch and/or episodic releases, and meteorological data such as wind speed, direction and stability). The effluent reports routinely list 20 to 35 radionuclides. Carbon-14, a radionuclide of particular interest today, was first required to be reported in effluent release reports in 2010. For licensees of facilities processing special nuclear material, the U.S. NRC technical specifications (10 CFR 70.59) define similar effluent release reporting requirements."

"The USNRC's ADAMS Public Legacy Library was used to identify microfiche numbers associated with copies of effluent reports submitted to the USNRC before approximately 1995. These microfiche are available at the USNRC's Public Documents Room in Rockville, Maryland, however they are not considered the official effluent release reports. The ADAMS Public Library was used to identify effluent reports submitted to the USNRC after about 1995. Reports retrieved from ADAMS Public Library are considered official reports."

From: Conatser, Richard
Sent: Monday, October 06, 2014 9:35 AM
To: Brock, Terry
Cc: Garry, Steven; Ramsey, Kevin
Subject: RE: Fact checking - Cancer Risk Study Report

Terry,

I've got some comments. See changes in yellow highlighted text below.

I'd recommend we delete the wording about requiring reporting C-14, as I've shown in the yellow highlights below. This is because the NRC didn't require licensees to report C-14. Instead, in 2009, the NRC said:

1. licensees are required to report the principal radionuclides, and
2. licensees should evaluate whether C-14 is a principal radionuclide at their site, and
3. if C-14 is determined to be a principal radionuclide, it should be reported in accordance with 10 CFR 50.36a.

Are you sure the Annual Reports in the legacy library are not the official reports? The licensees were required to submit the reports to the NRC, and the reports in the legacy library are the reports that were submitted, so why are they not official? (Is nothing in the legacy library considered to be official, or have we made a special arrangement for the Annual Effluent Reports?) This basically says that the NRC doesn't have official copies of Annual Reports submitted before about 199X, even though the NRC required licensees to submit the reports to the NRC.

Best Regards,

Richard

From: Brock, Terry
Sent: Monday, October 06, 2014 8:24 AM
To: Garry, Steven; Ramsey, Kevin; Conatser, Richard
Subject: FW: Fact checking - Cancer Risk Study Report

Fellas,

Below is NAS' description of NRC's effluent program and document retrieval in support of the cancer study. Any comments/errors?

Thx,
Terry

"Required first by the Atomic Energy Commission and later now required by the U.S. NRC (per 10 CFR 50.36a(a)(2)), licensees submit effluent release reports throughout the operational lifetime of the facility and during decommissioning. The U.S. NRC licensee's technical specifications (required by 10 CFR 50.36 a(a)(2)) also contain reporting requirements for radioactive effluents, and the licensee's FSARs identify commitments regarding ~~define~~ the content of nuclear power facilities' effluent release reports, ~~to~~ which include the quantity of principal radionuclides released to unrestricted areas in gaseous and liquid form including additional information needed to estimate maximum potential doses to the public (i.e., the locations of the

release points, information on batch and/or episodic releases, and meteorological data such as wind speed, direction and stability). The effluent reports routinely list 20 to 35 radionuclides. Carbon-14, a radionuclide of particular interest today, was first ~~required to be~~ reported in effluent release reports in 2010. For licensees of facilities processing special nuclear material, the U.S. NRC technical specifications (10 CFR 70.59) define similar effluent release reporting requirements.”

“The USNRC’s ADAMS Public Legacy Library was used to identify microfiche numbers associated with copies of effluent reports submitted to the USNRC before approximately 1995. These microfiche are available at the USNRC’s Public Documents Room in Rockville, Maryland, however they are not considered the official effluent release reports. The ADAMS Public Library was used to identify effluent reports submitted to the USNRC after about 1995. Reports submitted since 199X that are retrieved from ADAMS Public Library are considered official reports.”

From: Heimberg, Jennifer <JHeimberg@nas.edu>
Sent: Tuesday, October 07, 2014 8:45 AM
To: Ramsey, Kevin; Brock, Terry; Kosti, Ourania
Subject: RE: Notification of DPC Completion of Processing for
ML14251A300,ML14251A296,ML14251A106,ML14251A108,ML14251A110,ML14251A293
3

All,

A quick update: a total of 21 NFS reports in ADAMS now.

Jenny

From: Heimberg, Jennifer
Sent: Monday, October 06, 2014 9:14 AM
To: 'Ramsey, Kevin'; Brock, Terry; Kosti, Ourania
Subject: RE: Notification of DPC Completion of Processing for
ML14251A300,ML14251A296,ML14251A106,ML14251A108,ML14251A110,ML14251A293

Kevin,

Thank you for sending the updates. I just finished downloading the latest reports.

We are very glad to have access to the new files. Thank you for your work on this.

Just to keep track of the process, I have done a quick accounting of the list of released reports from your emails versus the reports available on ADAMS.

Over the last week, you have reported 13 effluent release reports and one redacted letter have been released to ADAMS. As of this morning, nine of the files are publicly available. I believe the remaining five files will likely be released over the next day or two (FYI, the files not yet found in ADAMS are effluent reports for 1975-vol. 2, 1976-vol. 2, 1988-vol. 2, 1986-vols. 1 and 2). I will continue to check ADAMS first thing every morning during this week.

Thanks again,
Jenny

From: Ramsey, Kevin [<mailto:Kevin.Ramsey@nrc.gov>]
Sent: Monday, October 06, 2014 8:04 AM
To: Brock, Terry; Kosti, Ourania; Heimberg, Jennifer
Subject: FW: Notification of DPC Completion of Processing for
ML14251A300,ML14251A296,ML14251A106,ML14251A108,ML14251A110,ML14251A293

More records.

From: DeWolfe, Wendy
Sent: Monday, October 06, 2014 7:34 AM
To: Ramsey, Kevin
Subject: Notification of DPC Completion of Processing for
ML14251A300,ML14251A296,ML14251A106,ML14251A108,ML14251A110,ML14251A293

[View ADAMS P8 Properties ML14251A300](#)

[Open ADAMS P8 Document \(Nuclear Fuel Services - Biannual Effluent Monitoring Report January through June 1990.\)](#)

[View ADAMS P8 Properties ML14251A296](#)

[Open ADAMS P8 Document \(Nuclear Fuel Services - Biannual Effluent Monitoring Report January through June 1986.\)](#)

[View ADAMS P8 Properties ML14251A106](#)

[Open ADAMS P8 Document \(Nuclear Fuel Services - Biannual Effluent Monitoring Report July through December 1979.\)](#)

[View ADAMS P8 Properties ML14251A108](#)

[Open ADAMS P8 Document \(Nuclear Fuel Services - Biannual Effluent Monitoring Report July through December 1982.\)](#)

[View ADAMS P8 Properties ML14251A110](#)

[Open ADAMS P8 Document \(Nuclear Fuel Services - Biannual Effluent Monitoring Report July through December 1983.\)](#)

[View ADAMS P8 Properties ML14251A293](#)

[Open ADAMS P8 Document \(Nuclear Fuel Services - Biannual Effluent Monitoring Report July through December 1984.\)](#)

If you have any questions or require additional information, you may contact the ADAMS Customer Support Center by sending an e-mail to ADAMS IM.

Thanks,
Wendy
NRC Document Processing Center

From: Pinckney, David
Sent: Tuesday, October 07, 2014 9:30 AM
To: Ramsey, Kevin
Cc: Brock, Terry
Subject: RE: Legacy documents needed to fill gaps

Kevin,

The documents that you requested to be reproduced from microfiche are ready for your review. Where are you located? I can bring them to you.

Thanks
David

From: Ramsey, Kevin
Sent: Wednesday, September 03, 2014 12:15 PM
To: Pinckney, David
Cc: Brock, Terry
Subject: Legacy documents needed to fill gaps

See attached. Can you help get these legacy documents blown back from microfiche?

From: Interested parties list for activities pertaining to the Cancer Risk project
<CANCERRISKSTUDY@LSW.NAS.EDU> on behalf of Greenleaf, Toni
<TGreenle@NAS.EDU>
Sent: Tuesday, October 07, 2014 12:35 PM
To: CANCERRISKSTUDY@LSW.NAS.EDU
Subject: News: NAS study on Analysis of Cancer Risks near Nuclear Facilities

*Please do NOT reply to this email. All comments/questions should be sent to: **CRS@NAS.EDU***

Interested Parties:

We would like to inform you about the release of two documents related to the National Academy of Sciences' study on *Analysis of Cancer Risks near Nuclear Facilities*.

1. A **Request for Information (RFI)** issued by the National Academy of Sciences regarding provision of research support and the associated costs for executing the pilot study on cancer risks near seven nuclear facilities in the United States. The pilot study is designed to help confirm whether a nationwide study of cancer risks near nuclear facilities is feasible.
2. A **Frequently Asked Questions (FAQ)** document created by National Academy of Sciences staff in an effort to communicate with stakeholders information about the study. The FAQ document will be updated with new information as the study progresses.

You can access both documents from the study website here:

<http://nas-sites.org/cancerriskstudy/>.

Please direct comments and questions to the project email: crs@nas.edu

Thank you for your continued interest in this study. If you are no longer interested in receiving these emails please send an email to crs@nas.edu and put REMOVE in the subject line.

Toni Greenleaf

*The National Academies
Nuclear and Radiation Studies Board
202/334-3066
Fax: 202/334-3077*

From: Heimberg, Jennifer <JHeimberg@nas.edu>
Sent: Friday, October 10, 2014 11:03 AM
To: Ramsey, Kevin; Brock, Terry; Pinckney, David; Kosti, Ourania
Subject: RE: NFS Effluent Records Table for NAS Cancer Study

Kevin,

This is very helpful. I have confirmed the numbers. There should have been 79 reports created between 1975 and the first half of 2014.

Of those 79, eight reports have not been found by the USNRC (per your spreadsheet).

Twelve additional reports are waiting to be loaded into ADAMS.

We have downloaded all of the reports currently available in ADAMS Public Library so we have 75 percent of the expected NFS reports from 1975 through 2014. Once the 12 reports are available in ADAMS this percentage will increase to 90%.

Not great news about the reports prior to 1975. We will wait and see what happens. Thank you for the update.

Jenny

From: Ramsey, Kevin [mailto:Kevin.Ramsey@nrc.gov]
Sent: Friday, October 10, 2014 10:26 AM
To: Brock, Terry; Pinckney, David; Heimberg, Jennifer; Kosti, Ourania
Subject: NFS Effluent Records Table for NAS Cancer Study

OK, folks. The attached table is my current understanding of the paper chase.

David – The red stuff is things I hope are still on your “to do” list.

As you may or may not have heard, our friends in DOE Naval Reactors have identified terms in some of the older documents (60s and 70s) that weren't considered classified then, but are considered classified now. That means all release of older stuff is on hold until authorized classifiers can do a detailed review to verify markings and control. No idea how long it will take, but you won't be getting the older stuff anytime soon. I can keep pushing out reports that are mostly numbers without any discussion of the processing operations. Hard to find time for this while other fires are raging, but I will try to keep a trickle of documents in the pipeline.

From: Heimberg, Jennifer <JHeimberg@nas.edu>
Sent: Monday, October 20, 2014 4:55 PM
To: Ramsey, Kevin
Subject: RE: Hydrogeologic Study

Kevin,

ADAMS will not let me download this package due to its size. Is it possible for you to send it to me directly?

Jenny

From: Ramsey, Kevin [mailto:Kevin.Ramsey@nrc.gov]
Sent: Tuesday, October 14, 2014 7:20 AM
To: Heimberg, Jennifer
Subject: Hydrogeologic Study

There is a ton of information in this package. The study is located in Enclosure E (ML101590134).

[View ADAMS P8 Properties ML101590160](#)

[Open ADAMS P8 Package \(Response to the Request for Additional Information Regarding the Environmental Assessment for Nuclear Fuel Services, Inc. Materials License SNM-124 Renewal.\)](#)

From: Heimberg, Jennifer <JHeimberg@nas.edu>
Sent: Tuesday, October 21, 2014 8:52 AM
To: Ramsey, Kevin
Subject: RE: Emailing: Renewal EA response to RAI Encl E.pdf

Got it!

-----Original Message-----

From: Ramsey, Kevin [mailto:Kevin.Ramsey@nrc.gov]
Sent: Monday, October 20, 2014 5:07 PM
To: Heimberg, Jennifer
Subject: Emailing: Renewal EA response to RAI Encl E.pdf

If you get this, the mail server accepted a 16 MB file.

From: Erlanger, Craig
Sent: Monday, October 27, 2014 12:29 PM
To: Ramsey, Kevin
Subject: RE: Update: NAS study on Analysis of Cancer Risks near Nuclear Facilities

Thanks Kevin. Craig

From: Ramsey, Kevin
Sent: Monday, October 27, 2014 11:40 AM
To: Johnson, Robert; Park, James; Erlanger, Craig; Bailey, Marissa; Stancil, Charles; Rivera, Carmen; Hickey, James; Weil, Jenny; McIntyre, David; Ledford, Joey; Hannah, Roger
Subject: FW: Update: NAS study on Analysis of Cancer Risks near Nuclear Facilities
Importance: High

See below FYI. NAS is preparing a cost estimate for performing the pilot study. It has issued a request for information (RFI) asking contractors estimate how much it would cost to support the study. Some Q&As are available at the link provided below. NAS hopes to provide its cost estimate to NRC by the end of the year. Then NRC will have to decide whether to commit the funds to proceed.

From: Interested parties list for activities pertaining to the Cancer Risk project
[mailto:CANCERRISKSTUDY@LSW.NAS.EDU] **On Behalf Of** Greenleaf, Toni
Sent: Monday, October 27, 2014 11:06 AM
To: CANCERRISKSTUDY@LSW.NAS.EDU
Subject: Update: NAS study on Analysis of Cancer Risks near Nuclear Facilities
Importance: High

PLEASE REPLY to CRS@NAS.EDU – DO NOT REPLY TO THIS EMAIL.

Dear Interested Parties:

On October 7, 2014, we informed you that the National Academy of Sciences (NAS) issued a Request for Information (RFI) regarding provision of research support and the associated costs for carrying out the pilot study on cancer risks near seven nuclear facilities in the United States. The pilot study is designed to help confirm whether a nationwide study of cancer risks near nuclear facilities is feasible.

To ensure that all prospective responders have the same information to use in preparing their responses to the RFI, NAS staff is posting the questions it receives from potential responders and the answers it provides. Visit the study website for the most up-to-date list of questions and answers here: <http://nas-sites.org/cancerriskstudy/>.

Please direct comments and questions to the project email: crs@nas.edu.

Ourania (Rania) Kosti, Ph.D.
Senior Program Officer
Nuclear and Radiation Studies Board
The National Academies

=====

=====

Toni Greenleaf

*The National Academies
Nuclear and Radiation Studies Board
202/334-3066
Fax: 202/334-3077*

From: Heimberg, Jennifer <JHeimberg@nas.edu>
Sent: Monday, October 27, 2014 12:54 PM
To: Ramsey, Kevin; Kosti, Ourania; Brock, Terry
Subject: RE: More NFS stuff

Thanks, Kevin.

Got it.

Jenny

From: Ramsey, Kevin [mailto:Kevin.Ramsey@nrc.gov]
Sent: Monday, October 27, 2014 9:03 AM
To: Heimberg, Jennifer; Kosti, Ourania; Brock, Terry
Subject: More NFS stuff

See ML number below.

From: DeWolfe, Wendy
Sent: Monday, October 27, 2014 8:15 AM
To: Ramsey, Kevin
Subject: Immediate Release ML14297A284 Has Been Replicated

[View ADAMS P8 Properties ML14297A284](#)

[Open ADAMS P8 Package \(Redacted Memo Transmitting First Two Reports of Independent Measurements Program for Nuclear Fuel Services.\)](#)

If you have any questions or require additional information, you may contact the ADAMS Customer Support Center by sending an e-mail to ADAMS IM.

Thanks,
Wendy
NRC Document Processing Center

From: Heimberg, Jennifer <JHeimberg@nas.edu>
Sent: Monday, October 27, 2014 1:01 PM
To: Ramsey, Kevin; Kosti, Ourania; Brock, Terry
Subject: RE: Updated table for NFS stuff

Kevin,

My numbers agree with this table.

Jenny

From: Ramsey, Kevin [mailto:Kevin.Ramsey@nrc.gov]
Sent: Wednesday, October 22, 2014 4:07 PM
To: Heimberg, Jennifer; Kosti, Ourania; Brock, Terry
Subject: Updated table for NFS stuff

attached

From: Heimberg, Jennifer <JHeimberg@nas.edu>
Sent: Monday, October 27, 2014 1:25 PM
To: Ramsey, Kevin; Kosti, Ourania; Brock, Terry
Subject: RE: Two more NFS documents

Kevin,

Very interesting reports. Thank you for your efforts to get them released.

Jenny

From: Ramsey, Kevin [mailto:Kevin.Ramsey@nrc.gov]
Sent: Monday, October 27, 2014 1:13 PM
To: Heimberg, Jennifer; Kosti, Ourania; Brock, Terry
Subject: Two more NFS documents

See below

From: Davis, Donna
Sent: Monday, October 27, 2014 12:09 PM
To: Ramsey, Kevin
Subject: Immediate Release Has Been Replicated - ML14297A289 - ML14297A288

[View ADAMS P8 Properties ML14297A289](#)

[Open ADAMS P8 Document \(Atomic Energy Commission - Redacted Environmental Measurements Around Nuclear Fuel Services July - October 1969.\)](#)

[View ADAMS P8 Properties ML14297A288](#)

[Open ADAMS P8 Document \(Nuclear Fuel Services, Inc., Redacted Description of Waste Management Program.\)](#)

If you have any questions or require additional information, you may contact the ADAMS Customer Support Center by sending an e-mail to ADAMS IM.

Thanks,
Donna Davis
NRC Document Processing Center

Subject: Cancer Risk Study Effluent Report Status Meeting
Location: telecon number in message

Start: Wed 10/29/2014 1:00 PM
End: Wed 10/29/2014 2:00 PM
Show Time As: Tentative

Recurrence: (none)

Meeting Status: Not yet responded

Organizer: Brock, Terry
Required Attendees: Ramsey, Kevin; Pinckney, David; Ourania Kosti (OKosti@nas.edu); Heimberg, Jennifer (JHeimberg@nas.edu)
Optional Attendees: Tadesse, Rebecca

USA

Toll-Free: 866-528-2256
Caller Paid: 216-706-7052
Access Code: (b)(5)

Discuss status of document retrieval.

From: Heimberg, Jennifer <JHeimberg@nas.edu>
Sent: Wednesday, October 29, 2014 2:16 PM
To: Ramsey, Kevin; Kosti, Ourania; Brock, Terry
Subject: RE: 10/29 Update to NFS Effluent Records Table

Kevin,

This is great. Above and beyond what we had requested.

The committee should be very pleased to see a full year of stack effluent reports by month (instead of summed over 6 months).

Jenny

From: Ramsey, Kevin [mailto:Kevin.Ramsey@nrc.gov]
Sent: Wednesday, October 29, 2014 1:52 PM
To: Heimberg, Jennifer; Kosti, Ourania; Brock, Terry
Subject: 10/29 Update to NFS Effluent Records Table

attached

Effluent Records for
Nuclear Fuel Services
(NFS Effluent Records Table for NAS Cancer Study.docx)
UPDATED and sent by email on October 22, 2014

Record Title	ADAMS Public Record
Biannual Effluent Monitoring Jan – Jun 2014	ML14251A017
Biannual Effluent Monitoring Jul – Dec 2013	ML14057A396
Biannual Effluent Monitoring Jan – Jun 2013	ML13254A069
Biannual Effluent Monitoring Jul – Dec 2012	ML13064A286
Biannual Effluent Monitoring Jan – Jun 2012	ML12249A027
Biannual Effluent Monitoring Jan – Jun 2011, Rev. 1	ML12059A303
Biannual Effluent Monitoring Jul – Dec 2011	ML12055A051
Biannual Effluent Monitoring Jan – Jun 2011	ML11249A064
Biannual Effluent Monitoring Jul – Dec 2010	ML110610416
Biannual Effluent Monitoring Jan – Jun 2010	ML102360147
Biannual Effluent Monitoring Jul – Dec 2009	ML100700519
Biannual Effluent Monitoring Jan – Jun 2009	ML092570831
Biannual Effluent Monitoring Jul – Dec 2008	ML090710718
Biannual Effluent Monitoring Jan – Jun 2008	ML082960743
Biannual Effluent Monitoring Jul – Dec 2007	ML081500695
Biannual Effluent Monitoring Jan – Dec 2007	ML072670156
Biannual Effluent Monitoring Jul – Dec 2006	ML070590627
Biannual Effluent Monitoring Jan – Jun 2006	ML080510464
Biannual Effluent Monitoring Jul – Dec 2005 Missing Page	ML061000099
Biannual Effluent Monitoring Jul – Dec 2005	ML060590265
Biannual Effluent Monitoring Jan – Jun 2005	ML060860092
Biannual Effluent Monitoring Jul – Dec 2004	ML051150075
Biannual Effluent Monitoring Jul – Dec 2004 Amendments	ML051150066
Biannual Effluent Monitoring Jan – Jun 2004	ML042600037
Biannual Effluent Monitoring Jul – Dec 2003	ML040760278
Biannual Effluent Monitoring Jan – Jun 2003	ML032720728
Biannual Effluent Monitoring Jul – Dec 2002	ML030690609
Biannual Effluent Monitoring Jan – Jun 2002	ML080510458
Biannual Effluent Monitoring Jul – Dec 2001	ML020710079
Biannual Effluent Monitoring Jan – Jun 2001	ML012490200
Biannual Effluent Monitoring Jul – Dec 2000	ML010650462
Biannual Effluent Monitoring Jan – Jun 2000	ML003746676
Biannual Effluent Monitoring Jul – Dec 1999	ML14260A302
Biannual Effluent Monitoring Jan – Jun 1999	ML003670798
Biannual Effluent Monitoring Jul – Dec 1998	received from Legacy Library 10/7/14, page missing
Biannual Effluent Monitoring Jan – Jun 1998	ML14248A618
Biannual Effluent Monitoring Jan – Jun 1998 Additional Info	ML14248A619
Biannual Effluent Monitoring Jul – Dec 1997	ML14248A617**

Deleted: Sent to DPC 9/17/14

Record Title	ADAMS Public Record
Biannual Effluent Monitoring Jan – Jun 1997	ML14248A616 ** amended in ML14248A617
Biannual Effluent Monitoring Jul – Dec 1996	Sent to DPC 10/10/14 ** amended in ML14248A617
Biannual Effluent Monitoring Jan – Jun 1996	ML14248A463 ** amended in ML14248A617
Biannual Effluent Monitoring Jul – Dec 1995	ML14248A462 ** amended in ML14248A617
Biannual Effluent Monitoring Jan – Jun 1995	ML14248A461
Biannual Effluent Monitoring Jul – Dec 1994	received from Legacy Library 10/7/14, to DPC 10/10/14
Biannual Effluent Monitoring Jan – Jun 1994	received from Legacy Library 10/7/14, to DPC 10/10/14
Biannual Effluent Monitoring Jul – Dec 1993	received from Legacy Library 10/7/14, to DPC 10/10/14
Biannual Effluent Monitoring Jan – Jun 1993	ML14248A460
Biannual Effluent Monitoring Jan – Jun 1993 Amended	** see Jan – Jun 1994
Biannual Effluent Monitoring Jul – Dec 1992	ML14248A459
Biannual Effluent Monitoring Jan – Jun 1992	received from Legacy Library 10/7/14, to DPC 10/10/14
Biannual Effluent Monitoring Jul – Dec 1991	ML14248A458
Biannual Effluent Monitoring Jan – Jun 1991	received from Legacy Library 10/7/14, to DPC 10/10/14
Biannual Effluent Monitoring Jul – Dec 1990	ML14260A301
Biannual Effluent Monitoring Jan – Jun 1990	ML14251A300
Biannual Effluent Monitoring Jan – Jun 1990	received from Legacy Library 10/7/14, can't read
Biannual Effluent Monitoring Jul – Dec 1989	ML14260A300
Biannual Effluent Monitoring Jan – Jun 1989	ML14260A299
Biannual Effluent Monitoring Jul – Dec 1988	ML14251A299
Biannual Effluent Monitoring Jan – Jun 1988	ML14260A298
Biannual Effluent Monitoring Jul – Dec 1987	ML14260A297
Biannual Effluent Monitoring Jan – Jun 1987	ML14251A298
Biannual Effluent Monitoring Jul – Dec 1986	ML14251A297
Biannual Effluent Monitoring Jan – Jun 1986	ML14251A296
Biannual Effluent Monitoring Jul – Dec 1985	ML14251A295
Biannual Effluent Monitoring Jan – Jun 1985	ML14251A294
Biannual Effluent Monitoring Jul – Dec 1984	ML14251A293
Biannual Effluent Monitoring Jan – Jun 1984	ML14260A296
Biannual Effluent Monitoring Jul – Dec 1983	ML14251A110
Biannual Effluent Monitoring Jan – Jun 1983	ML14251A109

Deleted: Sent to DPC 9/17/14

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Record Title	ADAMS Public Record
Biannual Effluent Monitoring Jul – Dec 1982	ML14251A108
Biannual Effluent Monitoring Jan – Jun 1982	ML14251A107
Biannual Effluent Monitoring Jul – Dec 1981	Not found
Biannual Effluent Monitoring Jan – Jun 1981	Not found
Biannual Effluent Monitoring Jul – Dec 1980	Not found
Biannual Effluent Monitoring Jan – Jun 1980 [8009090504, 8009090507]	Requested from Legacy Library
Biannual Effluent Monitoring Jul – Dec 1979 Amended [8008280445]	Requested from Legacy Library
Biannual Effluent Monitoring Jul – Dec 1979	ML14251A106
Biannual Effluent Monitoring Jan – Jun 1979	ML14251A105
Biannual Effluent Monitoring Jul – Dec 1978	Not found
Biannual Effluent Monitoring Jan – Jun 1978	Not found
Biannual Effluent Monitoring Jul – Dec 1977	Not found
Biannual Effluent Monitoring Jan – Jun 1977 [8308160165]	Requested from Legacy Library
Biannual Effluent Monitoring Jul – Dec 1976	ML14251A104
Biannual Effluent Monitoring Jan – Jun 1976	Not found
Biannual Effluent Monitoring Jul – Dec 1975	ML14251A103
Biannual Effluent Monitoring Jan – Jun 1975	Not found
Redacted Letter responding to Senator Sasser re: Possible Discharge from NFS (dated 7/26/78)	ML14269A112
Tennessee Report of Monitoring Data (dated 8/30/76)	received
Redacted Report re: Stack Concentration Exceeding Limit (dated 10/30/80)	received
Stack Concentrations for June 1981 (dated 7/15/81)	To DPC 10/10/14
Gross Alpha Analysis for Environmental Air Samplers (dated 7/21/81)	received
Concentrations Released from Main Stack (dated 4/24/84)	To DPC 10/10/14
Biannual Effluent Monitoring Report for July-December 1986 w/values not available in 2/27/87 report (dated 3/24/87)	To DPC 10/10/14
Evaluation of Possible Under-Reporting of Stack Effluent (dated 3/4/86)	received
NPDES Permit Discharge Monitoring Report for February 1992 (dated 3/13/92)	To DPC 10/10/14
Concentrations Released from Plant Stacks in November 1982 (dated 12/14/82)	received
Plans for Remediating Areas of Pond 4 Outside of Building 410 (dated 2/8/95)	received
Response to Senator Sasser re: Constituent Concerns About NFS (dated 11/4/92)	To DPC 10/22/14
Independent Measurement Program report, July-Aug. 1969 (dated 7/10/70)	Received
Stack Concentrations for July 1981 (dated 8/13/81)	
NFS Stack Effluent Study (dated 1/22/86)	
Hydrogeologic Characteristics Study of NFS, vol 1 (March 1989)	Received

Deleted: To DPC 10/10/14

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Deleted: To DPC 10/10/14

Deleted: To DPC 10/22/14

From: Brock, Terry
Sent: Wednesday, December 03, 2014 1:32 PM
To: Milligan, Patricia; Burnell, Scott; Garry, Steven; Ramsey, Kevin; Diaz, Marilyn; Cassidy, John; Nimitz, Ronald; Stearns, Don; McCoppin, Michael; Jones, Andrea; Weil, Jenny; Rakovan, Lance; Cai, June; Pinckney, David
Cc: Tadesse, Rebecca; McIntyre, David; Dacus, Eugene
Subject: UPDATE-HEADS-UP: Cancer Risk Study - Pilot Planning Project Coming to an End
Attachments: 2012-0136scy.pdf

The attached SECY Paper is publicly available at
<https://www.nrc.gov/reading-rm/doc-collections/commission/secys/2012/2012-0136scy.pdf>.

All,

Terry Brock here from RES. We're coming to the end of another stage of the NRC –sponsored National Academy of Sciences Cancer Risk Study. As you may recall, we informed the Commission in SECY 2012-0136 (attached) that we were embarking on the Phase 1 NAS recommendation to perform pilot studies at seven sites: Dresden, SONGS, Oyster Creek, Haddam Neck, Millstone, Big Rock Point, and Nuclear Fuel Services. In the last year, NAS assembled a committee to plan the pilot project to give NRC the best cost estimate for performing the pilot study. Another two important parts of this effort were to determine the feasibility of retrieving cancer data from the various State agencies and the availability of effluent records for the dose assessment part of the study. On this last point, I must acknowledge the excellent help I received in retrieving and reviewing archived effluent records from David Pinckney (OIS), Kevin Ramsey/Marilyn Diaz (NMSS), and Steve Garry (NRR).

NAS is planning on briefing the RES Office Director on the results of the planning project **next Friday, December 12, 2014 from 1:00 to 2:00**. NAS will publicly release the report on **Monday, December 15**. RES plans to review the report and I'll distribute it to you all. In January I'll meet with you all to discuss the findings and our recommendation for the next step. This may involve another SECY paper to the Commission depending on the resource implications to complete the pilot execution phase of the study. At this point I don't have anything to share because NAS holds things close to the vest until they brief us, so stay tuned.

Thanks,
Terry
Terry Brock, Ph.D.
Office of Nuclear Regulatory Research
U.S. Nuclear Regulatory Commission
Washington D.C. 20555
Mail Stop CSB-3A07
phone: 301-251-7487

From: Brock, Terry
Sent: Tuesday, December 16, 2014 8:27 AM
To: Milligan, Patricia; Burnell, Scott; Garry, Steven; Ramsey, Kevin; Diaz, Marilyn; Cassidy, John; Nimitz, Ronald; Stearns, Don; McCoppin, Michael; Jones, Andrea; Weil, Jenny; Rakovan, Lance; Pinckney, David; Mroz, Sara
Cc: Tadesse, Rebecca; McIntyre, David; Dacus, Eugene
Subject: NEW DATE AND TIME: Cancer Risk Study - Pilot Planning Project Coming to an End

NAS has confirmed these dates and times for the cancer study pilot planning project briefing and report release.

- Tuesday, December 23, 1 PM: Committee Chair briefs NRC
- Monday, December 29, 11 AM: Release of report to the public

Terry Brock, Ph.D.
Office of Nuclear Regulatory Research
U.S. Nuclear Regulatory Commission
Washington D.C. 20555
Mail Stop CSB-3A07
phone: 301-251-7487

From: Brock, Terry
Sent: Thursday, December 11, 2014 8:43 AM
To: Milligan, Patricia; Burnell, Scott; Garry, Steven; Ramsey, Kevin; Diaz, Marilyn; Cassidy, John; Nimitz, Ronald; Stearns, Don; McCoppin, Michael; Jones, Andrea; Weil, Jenny; Rakovan, Lance; Cai, June; Pinckney, David
Cc: Tadesse, Rebecca; McIntyre, David; Dacus, Eugene
Subject: UPDATE RE: UPDATE-HEADS-UP: Cancer Risk Study - Pilot Planning Project Coming to an End

Hi All,

The cancer study briefing will not happen tomorrow. NAS needs some more time to get the cost estimates for the pilot execution phase ready. It may happen on 12/23 if all the briefings can be scheduled. If not, we're looking early in January for the brief. I'll let you know.

Terry

Terry Brock, Ph.D.
Office of Nuclear Regulatory Research
U.S. Nuclear Regulatory Commission
Washington D.C. 20555
Mail Stop CSB-3A07
phone: 301-251-7487

From: Brock, Terry
Sent: Wednesday, December 03, 2014 1:32 PM
To: Milligan, Patricia; Burnell, Scott; Garry, Steven; Ramsey, Kevin; Diaz, Marilyn; Cassidy, John; Nimitz, Ronald; Stearns, Don; McCoppin, Michael; Jones, Andrea; Weil, Jenny; Rakovan, Lance; Cai, June; Pinckney, David
Cc: Tadesse, Rebecca; McIntyre, David; Dacus, Eugene
Subject: UPDATE-HEADS-UP: Cancer Risk Study - Pilot Planning Project Coming to an End

All,

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Thanks,

Terry

Terry Brock, Ph.D.

Office of Nuclear Regulatory Research

U.S. Nuclear Regulatory Commission

Washington D.C. 20555

Mail Stop CSB-3A07

phone: 301-251-7487

From: Ramsey, Kevin
Sent: Tuesday, January 06, 2015 7:35 AM
To: Johnson, Robert; Erlanger, Craig; Bailey, Marissa; Rivera Diaz, Carmen; Stancil, Charles
Subject: NFS in the News

NAS Report Outlines Methods For Conducting Radiation Risk Study. Homeland Security News Wire (1/6) reports on the National Academy of Sciences report "which provides an expert committee's advice about general methodological considerations for carrying out a pilot study of cancer risks near seven nuclear facilities" in the US. The pilot study "will assess the feasibility of two approaches" that could be used in a nationwide analysis of cancer risk near nuclear facilities regulated by the U.S. Nuclear Regulatory Commission. The NAS "notes that the report comprises the committee's advice, which is presented in the form of fourteen considerations related to procedures and methodologies for carrying out the pilot study; it is not intended to be a comprehensive workplan of how to conduct the pilot study."

From: Brock, Terry
Sent: Friday, January 16, 2015 1:13 PM
To: Ramsey, Kevin
Subject: RE: Analysis of Cancer Risks in Populations Near Nuclear Facilities: Phase 2 Pilot Planning Report Release

Check calendar for meeting and all your questions will be answered!!!

From: Ramsey, Kevin
Sent: Thursday, January 15, 2015 9:59 AM
To: Brock, Terry
Subject: FW: Analysis of Cancer Risks in Populations Near Nuclear Facilities: Phase 2 Pilot Planning Report Release

Where do we stand on this? Is a SECY paper the next step? If so, what is the target date?

From: Ramsey, Kevin
Sent: Wednesday, December 31, 2014 11:35 AM
To: Brock, Terry
Subject: FW: Analysis of Cancer Risks in Populations Near Nuclear Facilities: Phase 2 Pilot Planning Report Release

What happened to the cost estimate? I don't see any cost information in the report.

From: Interested parties list for activities pertaining to the Cancer Risk project
[mailto:CANCERRISKSTUDY@LSW.NAS.EDU] **On Behalf Of** Greenleaf, Toni
Sent: Monday, December 29, 2014 4:28 PM
To: CANCERRISKSTUDY@LSW.NAS.EDU
Subject: Analysis of Cancer Risks in Populations Near Nuclear Facilities: Phase 2 Pilot Planning Report Release

DO NOT REPLY TO THIS EMAIL. IF YOU HAVE QUESTIONS PLEASE EMAIL CRS@nas.edu

Dear colleagues:

I am writing to inform you that the National Academy of Sciences (NAS) report titled "Analysis of Cancer Risks in Populations Near Nuclear Facilities: Phase 2 Pilot Planning," was posted on the National Academies Press website earlier today. You can download a free copy of the report here: <http://www.nap.edu/catalog/18968/analysis-of-cancer-risks-in-populations-near-nuclear-facilities-phase>.

NAS had planned to release this report to the public at 11:00 am on January 5, 2015. Today's early release was in error. Please accept my apologies on behalf of NAS if this early release has disrupted your holiday plans.

Sincerely yours,

Kevin Crowley
Director
Nuclear and Radiation Studies Board

=====

From: Ramsey, Kevin
Sent: Thursday, January 22, 2015 8:13 AM
To: Bailey, Marissa; Erlanger, Craig; Johnson, Robert
Cc: Cuadrado, Leira
Subject: NFS in the News

NAS Cancer Risk Study Moves Ahead. The Erwin (TN) Record (1/22, Parkey, 12K) reports that the “pilot planning phase” of the National Academy of Sciences’ study on the risks of cancer in populations near nuclear facilities was recently concluded. The NRC asked the NAS to undertake the study, which will examine the populations near seven nuclear facilities “including Nuclear Fuel Services (NFS) in Erwin.” Phase 1 of the study was conducted from September 2010 through May 2012, and the pilot planning portion of Phase 2 “took place from September 2013 through December 2014.” The second portion of Phase 2, “pilot execution,” which will carry out the pilot study “has not yet been announced.”

Subject: Proposal Attached: Reschedule: Cancer Study Update and Discussions on Path Forward
Location: HQ-OWFN-04B06-30p

Start: Tue 02/10/2015 1:30 PM
End: Tue 02/10/2015 3:00 PM
Show Time As: Tentative

Recurrence: (none)

Meeting Status: Not yet responded

Organizer: Brock, Terry
Required Attendees: Milligan, Patricia; Ramsey, Kevin; Garry, Steven; Tadesse, Rebecca; Burnell, Scott; Weil, Jenny; Nimitz, Ronald; Rakovan, Lance; Mroz, Sara; Cassidy, John; Stearns, Don; Jones, Andrea; Woodruff, Gena; Mizuno, Beth; Hinson, Charles



Hi All, one advantage of the delay in this meeting is that NAS submitted the proposal to perform the execution phase of the cancer study pilot project (attached). I'll go over this too at the meeting. Please read beforehand so we can have a meaningful discussion on the path forward.

Thanks
Terry

Hi All, meeting rescheduled. New Teleconference number and pin below

Passcodes/Pin codes:

Participant passcode: (b)(6)

For security reasons, the passcode will be required to join the conference.

Dial in numbers:

Country	Toll Numbers		Freephone/ Toll Free Number
USA			888-793-1858

Hi All,

The National Academy of Science - Analysis of Cancer Risks in Populations near Nuclear Facilities: **Phase 2 Pilot Planning Project One-Pager - 01/16/2015**

➤ **Background**

In 2012 The NAS Phase 1 committee recommended **two study designs to be considered for a pilot study:**

1. A **population-level, or ecologic, study** of cancer incidence and mortality in populations living in census tracts within ~50 km (30 miles) of the nuclear facilities. (All cancer types, All ages, All years of operation (as early as 1957). Exposure based on geographic centroid of census tract where diagnosed or died.

2. A **linkage-based case-control study of children** younger than 15 years of age born within ~50 km (30 miles) of the nuclear facilities. (Pediatric cancers, In utero – 15 years old, About 1995 - today) Exposure based on address where the mother lived at time of delivery.

➤ **NAS Key Messages to NRC on Pilot Planning**

- Need for transparency and ongoing communication with stakeholders.
- Need for comprehensive discussion of assumptions and uncertainties.
- Use common protocols and methodologies when appropriate; modifications when needed.
- Independently validate dosimetry data.
- Need caution with presenting and interpreting risk estimates from the pilot study.
- Feasibility of ecologic study may be compromised
 - ✓ The year at which address at time of death from cancer is first recorded electronically ranges from 1949 to 2008. In fact, five out of the seven pilot states for which information is available started collecting address at time of death from cancer electronically in 2000 or later.
 - ✓ Information on the specific cancer site as underlying cause of death may be missing from the death certificate in some states. Also, in some cases, if a cancer metastasizes, the metastatic site may be listed as the underlying cause of death instead of the primary cancer site.
- Case-control study should have more detailed dosimetry than ecologic study.
- Any data collected during the pilot study will have **limited use for estimating cancer risks** in populations near each of the nuclear facilities or for the seven nuclear facilities combined because of the imprecision inherent in estimates from small samples.
- **Interpretation and communication of risk estimates from the pilot study, if reported, should be done with great caution.**
- **The decision to proceed with the nationwide study should be based solely on conclusions related to feasibility and not on risk estimates.**

➤ **NAS Draft Budget Proposal for Pilot Execution**

39 months ~\$7.9 M (~2.5M/yr); estimate based on NAS' "Sources Sought" type request

THE NATIONAL ACADEMIES

Advisers to the Nation on Science, Engineering, and Medicine

Executive Office
Division on Earth and Life Studies

500 Fifth Street, NW
Washington, DC 20001
Phone: 202 334-3600
Fax: 202 334-3362
www.nationalacademies.org

January 30, 2015

Sarah Shaffer
Office of Nuclear Regulatory Research
U.S. Nuclear Regulatory Commission
CSB Mailstop 6D20M
Washington D.C. 20555

RE: Proposal No. 10002496

Dear Ms. Shaffer:

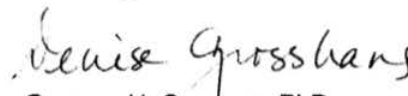
We are pleased to submit the enclosed proposal, prepared by the Nuclear and Radiation Studies Board, requesting support of the study titled *Analysis of Cancer Risks in Populations near Nuclear Facilities: Phase 2 Pilot Execution*. The total estimated cost of this project is \$8,044,958. We anticipate the period of performance to be March 1, 2015 through April 30, 2018 (39 months).

Acceptance of funds for this activity is subject to approval by the Executive Committee of the National Research Council Governing Board at its February 11, 2015 meeting.

The responsible staff officer for this project is Ourania Kosti, Sr. Project Officer, Nuclear and Radiation Studies Board. She can be reached at 202-334-3066 or okosti@nas.edu. She may be contacted regarding program matters. Business negotiations are the responsibility of Douglas Denning, Contract Manager, Office of Contracts and Grants. He may be reached at 202-334-1422.

Thank you for your consideration of this request.

Sincerely,


for Gregory H. Symmes, PhD
Executive Director

Enclosures

cc: Terry Brock, USNRC

THE NATIONAL ACADEMIES

Advisers to the Nation on Science, Engineering, and Medicine

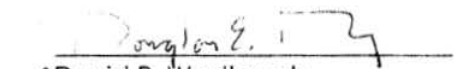
DIVISION ON EARTH AND LIFE STUDIES

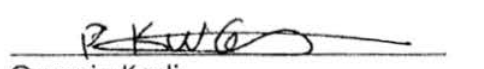
NUCLEAR AND RADIATION STUDIES BOARD

Proposal No. 10002496

***Analysis of Cancer Risks in Populations near Nuclear Facilities:
Phase 2 Pilot Execution***

January 2015


David P. Westbrook
Director
Office of Contracts and Grants
National Academy of Sciences
Telephone: (202) 334-2254
E-mail: dwestbro@nas.edu


Ourania Kosti
Sr. Staff Officer
Nuclear and Radiation Studies Board
Division on Earth and Life Studies
Telephone: (202) 334-3066
E-mail: okosti@nas.edu

The National Academies consists of four organizations: the National Academy of Sciences, the National Academy of Engineering, the Institute of Medicine, and the National Research Council. The National Research Council is the principal operating agency of the National Academy of Sciences and the National Academy of Engineering. **This proposal is submitted by the NATIONAL ACADEMY OF SCIENCES (NAS), which assumes full technical and legal responsibility under its Act of Incorporation for the work to be carried out under any resultant agreement.** We are a nonprofit publicly supported organization exempt from federal income tax under Internal Revenue Service Code section 501(C)(3). The Taxpayer Identification Number is 53-0196932. DUNS Number is 04-196-4057. **Awards resulting from this proposal should be issued to NATIONAL ACADEMY OF SCIENCES and payment directed to:**

National Academy of Sciences
Accounting Office
ATTN: Cash Management Section
500 Fifth Street, NW
Washington, DC 20001
Telephone: 202-334-3351 or 202-334-1476

(rev. 2/27/09)

THE NATIONAL ACADEMIES

Advisers to the Nation on Science, Engineering, and Medicine

Nuclear and Radiation Studies Board

500 Fifth Street, NW
Washington, DC 20001
Phone: 202 334-3066
Fax: 202 334-3077
www.nationalacademies.org

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

Note: The project on which this proposal is based is subject to approval by the Governing Board Executive Committee of the National Research Council.

SUMMARY

The National Research Council of the National Academy of Sciences will perform a pilot study of cancer risks in populations near seven U.S.NRC-licensed nuclear facilities using two epidemiologic study designs: (i) an ecologic study of multiple cancer types in populations of all ages and (ii) a record-linkage-based case-control study of cancers in children. The pilot study is designed to determine whether it is scientifically feasible to carry out a nationwide assessment of cancer risks in populations near U.S.NRC-licensed facilities.

POLICY CONTEXT

The U.S.NRC has requested the characterization of cancer risks near the nuclear facilities that it regulates for use in communicating with the public about health risks around nuclear facilities. This requested characterization is being carried out in three National Research Council studies:

1. The Phase 1 study identified appropriate study designs to carry out an analysis of cancer risks near nuclear facilities in the United States. The Phase 1 report¹ recommended two study designs appropriate for assessing cancer risks near nuclear facilities. It also recommended a pilot study of seven nuclear facilities to assess the technical feasibility of the recommended study designs.
2. The Phase 2 pilot planning study assessed the availability of data to support the studies recommended in the Phase 1 report and prepared a draft budget for the study. The Phase 2 pilot planning report² provides advice on general methodological considerations for carrying out the pilot study.
3. A Phase 2 pilot execution study, which is described in this proposal, will evaluate the technical feasibility of implementing the two study designs recommended in the Phase 1 report.

¹ http://www.nap.edu/catalog.php?record_id=13388

² http://www.nap.edu/openbook.php?record_id=18968

If found to be feasible, the methods developed and tested in this proposed study could be used to conduct a nationwide study of cancer risks in populations near U.S.NRC-regulated nuclear facilities.

TECHNICAL CONTEXT

This proposed study will examine the feasibility of two epidemiologic study designs:

1. A *population-level or ecologic* study of cancer incidence and mortality in populations living in census tracts within approximately 50 kilometers (30 miles) of the nuclear facilities. This examination would include all relatively common cancer types at all ages in populations potentially exposed to radiation from nuclear facility operations.
2. A *linkage-based case-control* study (hereafter referred to as a *case-control* study) that would assess whether children younger than 15 years of age born close to the nuclear facilities are at higher risk of developing cancer compared to those who were born farther away but within a 50 kilometer (30-mile) radius of the facilities. This study would attempt to provide a more focused assessment of the association between pediatric cancers and early life exposure to radiation.

These ecologic and case-control study designs were recommended in the Phase 1 report based on scientific merit, a preliminary analysis of their technical feasibility, and their suitability for addressing public concerns about cancer risks near nuclear facilities.

The pilot study will use existing health and effluent release data (these data are described in the Work Plan). No new data (e.g., from interviews, environmental radiation measurements) will be collected.

The seven facilities that are part of this proposed study are

- Dresden Nuclear Power Station, Illinois;
- Millstone Power Station, Connecticut;
- Oyster Creek Nuclear Generating Station, New Jersey;
- Haddam Neck Nuclear Facility, Connecticut;
- Big Rock Point Nuclear Power Plant, Michigan;
- San Onofre Nuclear Generating Station, California; and
- Nuclear Fuel Services, Tennessee.

A pilot study of these nuclear facilities will likely reveal the difficulties with accessing the information needed to perform a nationwide study of cancer risks in populations near U.S.NRC-regulated nuclear facilities.

STATEMENT OF TASK

An ad hoc committee under the auspices of the National Research Council of the National Academy of Sciences will perform a pilot study of cancer risks in populations near seven U.S. Nuclear Regulatory Commission (U.S.NRC)-licensed nuclear facilities using two epidemiologic study designs: (i) an ecologic study of multiple cancer types in populations of all ages and (ii) a record-linkage-based case-control study of cancers in children. The pilot study will focus on the five activities described below:

1. Obtain nuclear facility airborne and waterborne effluent release and meteorology data and digitize these data into a form that is usable for dose estimation.
2. Develop a computer model to obtain estimates of absorbed doses to individual organs resulting from effluent releases.
3. Obtain cancer incidence and mortality data at the census-tract level to assess the feasibility of the ecologic study.
4. Link birth registration and cancer incidence data to identify eligible cases of pediatric cancers and matched controls to assess the feasibility of the record-linkage-based case-control study.
5. Develop processes for involving and communicating with the public.

At the conclusion of the pilot study, the committee will issue a report with findings regarding the scientific feasibility of carrying out a nationwide assessment of cancer risks in populations near U.S.NRC-licensed facilities. The report will also include, if appropriate, an analysis of cancer risks in the populations near the seven pilot facilities.

WORK PLAN

This study involves original data collection and analysis with assistance from technical subcontractors. The following sections provide a detailed description of the work to be carried out.

Committee Composition and Staff Support

An ad hoc committee comprised of about 12 members will be appointed by the chair of the National Research Council to provide oversight of this study. One of these members will be an international expert who was involved in one or more of the studies of cancer risks in populations near nuclear facilities in Europe. (See Attachment 1 for an explanation on why it is important to have this perspective in the committee.) An effort will be made to recruit 6-8 committee members who served on the Phase 1 or Phase 2 pilot planning studies. National Research Council technical staff supporting the study will include three senior program officers: two from the Nuclear and Radiation Studies Board and one from the Committee on National Statistics.

Tasks

The following tasks related to epidemiology, dosimetry, and public engagement will be carried out during this study:

Epidemiology

1. Develop a timeline for task completion.
2. Develop research protocols for carrying out the ecologic and case-control studies.
3. Obtain any necessary institutional review board (IRB) and other approvals to carry out the studies.
4. Obtain cancer incidence and mortality data to conduct the ecologic study.
5. Geocode address information to place study populations within a geographic context.
6. Link birth registration and cancer incidence data to identify appropriate cases and controls for the case-control study.
7. Obtain data to characterize the study populations.
8. Obtain data to characterize the study areas.
9. Characterize in- and out-migration of the study populations.
10. Develop and manage the databases that contain the data collected under tasks 4-8.
11. Develop a data-quality management plan.
12. Incorporate radiation doses to the populations or individuals included in the studies.
13. Devise a plan of statistical analysis for the recommended studies.
14. Perform the statistical analysis, if appropriate.
15. Prepare a technical report that describes all tasks performed and research results.

Dosimetry

1. Develop a timeline for task completion.
2. Develop research protocols for calculating the organ absorbed doses for the ecologic and case-control study populations.
3. Develop a data-quality management plan.
4. Create an electronic database of airborne and waterborne effluent-release data.
5. Assemble information on site-specific topography and land and water use over time.
6. Create a database of meteorological and hydrological data for the pilot nuclear facilities.
7. Estimate effluent releases for years when data are missing.
8. Model the site-specific atmospheric and aquatic dispersion of radioactive material from effluent releases from the pilot nuclear facilities.
9. Estimate annual organ doses from external and internal exposure to radiation from all potential exposure pathways for each pilot facility.
10. Validate the effluent releases and doses and describe their uncertainties.
11. Investigate possible sources of exposure from natural background radiation with distance and direction from the pilot facilities.
12. Prepare a technical report that describes all tasks performed and research results.

Public Engagement

1. Develop a plan for ongoing communication with stakeholders.
2. Maintain the dedicated project website.

3. Maintain a listserv to notify interested parties about project milestones such as meeting dates, locations, open data-gathering meeting agendas, and publication of the final report.
4. Maintain a Frequently Asked Questions document.
5. Host public meetings to communicate progress on the study.
6. Develop derivative products from the final report for different public audiences.
7. Host public meetings for report dissemination.

Work Coordination and Oversight

One or more subawards will be issued to appropriate individuals and/or organizations to provide research support for the epidemiology and dosimetry tasks. Subcontractors will be selected based on responses to a request for proposal (RFP). Subcontractors may contract for services with other parties to obtain needed expertise and capabilities.

The study will utilize a large amount of original data, including personally identifiable information that will be protected from public release. The subcontractors (and their subcontractors, if any) will be responsible for complying with all applicable Department of Health and Human Services policies and regulations on the protection of human subjects in research. Subcontractors will also be responsible for ensuring initial and continuing review by the subcontractors' IRB. National Research Council staff will obtain institutional IRB approval for the study, as appropriate.

Final Reporting

At the conclusion of the pilot study, the committee will prepare a consensus report with findings regarding the scientific feasibility of carrying out a nationwide assessment of cancer risks in populations near U.S.NRC-licensed facilities. The report will also include, if appropriate, an analysis of cancer risks in the populations near the seven pilot facilities.

Other information that relate to science, process, and resources may be included in the report. For example:

- A research protocol for assessing cancer risks near the U.S.NRC-regulated facilities. (This protocol could be used for the assessment of cancer risks near other nuclear facilities.)
- A characterization of the populations and geographic areas within a 50 kilometer (30-mile) radius of the pilot nuclear facilities.
- A characterization of releases (radioactive, chemical) from other industries and sources located in the study area.
- Sample size estimations to determine how many nuclear facilities need to be examined to enable reliable conclusions to be made about cancer risks near these facilities.
- A description of challenges related with work coordination and oversight and data retrieval, management, and analysis.
- Conclusions about resources (funding, staff, time) needed for a nationwide study of cancer risks near U.S.NRC-regulated nuclear facilities.

The study report is expected to be public in its entirety. The report will be subjected to National Research Council review before being released to the study sponsor and the public. Dissemination of the report will include briefings to the U.S. NRC, congressional staff, interest groups, and communities near the pilot facilities. The committee will also organize a half-day meeting in Washington, DC, to discuss the study findings and give interested individuals and organizations an opportunity to make comments and ask questions.

FEDERAL ADVISORY COMMITTEE ACT (FACA)

The Academy has developed policies and procedures to implement Section 15 of the Federal Advisory Committee Act, 5 U.S.C. App., Section 15. Section 15 includes certain requirements Regarding public access and conflicts of interest that are applicable to agreements under which the Academy, using a committee, provides advice or recommendations to a Federal agency. In accordance with its Congressional Charter and the requirements of Section 15, the Academy must provide independent, unbiased advice without actual or perceived interference or management of the outcome (findings and recommendations). Therefore, the Academy requires the right to publish all unclassified materials without any restriction over content and release, including any restriction that may require prior approval from the sponsoring agency.

In accordance with Section 15 of FACA, the Academy shall submit to the government sponsor(s) following delivery of each applicable report a certification that the policies and procedures of the Academy that implement Section 15 of FACA have been substantially complied with in the performance of the contract/grant/cooperative agreement with respect to the applicable report.

PUBLIC INFORMATION ABOUT THE PROJECT

In order to afford the public greater knowledge of Academy activities and an opportunity to provide comments on those activities, the Academy may post on its website (<http://www.national-academies.org>) the following information as appropriate under its procedures: (1) notices of meetings open to the public; (2) brief descriptions of projects (3) committee appointments, if any (including biographies of committee members); (4) report information; and (5) any other pertinent information.

ESTIMATE OF COSTS

The total estimated cost of this project is \$8,044,958 for 39 months.

GENERAL BUDGETARY CONSIDERATIONS

Budget Period

The budget period for this proposed study is 39 months. The first three months of the budget period will be used to assemble the study committee, finalize the RFP, and issue subawards to the epidemiology and dosimetry subcontractors. The work of the subcontractors is expected to take about 30 months to complete. We have budgeted 3 months after completion of the subcontractors' work for the committee to finalize its consensus report and 3 additional months to allow the committee and staff to participate in the report dissemination activities described in the Work Plan section.

Labor

The following National Research Council staff will support the study:

- A senior program officer (Dr. Ourania Kosti) who will serve as the study director for this project. She will be responsible for managing the committee recruiting and appointment process and, working in close consultation with the committee, overseeing the work of the subcontractors, developing the committee's consensus report, shepherding the report through National Research Council internal peer review, and disseminating the completed report to the sponsor, congressional staff, interest groups, and local communities. She will also be responsible for providing all required technical progress reports to the U.S.NRC. She is budgeted at 75 percent time during the first 36 months of the project and 5 percent time during the last 3 months of the project.
- Two additional senior program officers who will provide support to the study director. The first is budgeted at 15 percent time for the first 36 months of the project to assist with the dosimetric tasks of the study. The second is budgeted at 12 percent time during the first 36 months of the project to assist with the preparation of the statistical plan and analyses.
- The director of the Nuclear and Radiation Studies Board who will advise the study director and provide programmatic oversight. He is budgeted at 8 percent time during the first 36 months.
- A senior program assistant who will provide administrative support for the project. Working at the direction of the study director, the senior program assistant is responsible for arranging committee meeting and site visit venues and hotels, committee and staff travel, and travel expense reimbursements. She is budgeted at 50 percent time during the first 36 months of the project and 1 percent time during the last three months.
- A web editor who will be responsible for maintaining the project's study website. She is budgeted 5 percent time during the first 36 months of the project.
- A financial associate who is responsible for budget and expense tracking, auditing, and reporting to the study director and project sponsor. She is budgeted at 20 percent time during the first 36 months of the project and 2 percent time during the last three months of the project.

Travel and Meeting Expenses

The following categories of travel are budgeted for the study:

- Committee meetings. Funds have been budgeted to support the travel of committee and staff (the latter when meetings are held outside of Washington, DC) to three committee meetings each year for the first 36 months of the study: One meeting each year at National Academy of Sciences facilities in Washington, DC; one meeting each year at National Academy of Sciences facilities in Irvine, CA; and one meeting each year at National Academy of Sciences facilities in Woods Hole, MA. The meetings will bring together the committee and subcontractors to create a study workplan, discuss progress, and resolve problems. Selected portions of the meetings' open sessions will be webcasted for interested individuals.
- Site visits and public meetings. Travel funds have been budgeted to support visits of a subgroup of committee members and staff to the pilot nuclear facilities and host public meetings to report on the study's objectives and progress and receive input from members of the public.
- Report dissemination. Funds have been budgeted to support the travel of the committee chair and a subgroup of committee members to Washington, DC, after the study is completed to brief the study report to the project sponsor, congressional staff, and other interested parties. The National Research Council staff will organize a half-day meeting in Washington, DC, to discuss the study findings and give stakeholders an opportunity to provide comments and ask questions. This meeting will be webcasted.

Costs for Retrieval of Health and Other Information

Costs for retrieval of health and other information by the state cancer registries and vital statistics offices were informed by rough estimates provided by a sample of these offices. Because of several uncertainties associated with data processing and linkages, the proposed budget is based on the cost ranges provided by the responders at the higher end of the cost spectrum.

See Attachment 2 for additional information on the cost estimates for retrieval of health and other information.

Subawards to Epidemiology and Dosimetry Subcontractors

Budgets for subawards to the epidemiology and dosimetry subcontractors were estimated using cost information provided by responders to a request for information (RFI).³ Six organizations responded to the RFI:

- Oak Ridge Associated Universities (ORAU) (for epidemiology and dosimetry tasks)
- RTI International (for epidemiology and dosimetry tasks)
- University of Illinois (for epidemiology tasks)
- Westat (for epidemiology tasks)
- Dade Moeller (for dosimetry tasks)
- Idaho State University (for dosimetry tasks)

³ The RFI was issued October 7, 2014, and was open for about 1.5 months.

The informational costs provided by these responders ranged from about \$650,000 to \$13,000,000 for the epidemiology tasks and \$1,400,000 to \$13,600,000 for the dosimetry tasks. Three of the four responders for the epidemiology tasks and two of the four responders for the dosimetry tasks provided itemized cost estimates (or cost ranges) per task as requested. The responders who provided the highest cost estimates did not provide itemized costs.

National Research Council staff evaluated the RFI responses to prepare an estimated budget for the epidemiology and dosimetry tasks in this proposal. When evaluating the responses staff paid particular attention to:

- Responders' understanding of the tasks to be carried out.
- Responders' expertise and capabilities to support the epidemiology and/or dosimetry tasks.
- Cost estimates that appeared to be inflated and reasons for the inflation.
- Tasks associated with greater-than-5 percent variability in cost estimates across responders and reasons for the variability.

The proposed budget is based on the cost ranges provided by the responders at the lower end of the cost spectrum with an additional ten percent to account for the uncertainty in the RFI process. The actual cost of the epidemiology and dosimetry tasks will be determined through a competitive award using an RFP. If the costs for these tasks are higher than estimated in this proposal, the National Research Council will notify the U.S.NRC and discuss increasing the study funding and/or adjusting the study tasks.

See Attachment 2 for additional information on the cost estimates for the subawards to epidemiology and dosimetry subcontractors.

Costs for Geocoding

Cost estimates provided by RFI responders did not account for address geocoding. Responders and other organizations were subsequently contacted for geocoding cost estimates. Their informational cost estimates ranged from about (b)(4) to (b)(4). The average cost estimate was used for budgeting purposes and incorporated into the cost estimate for the epidemiology subaward.

See Attachment 2 for additional information on the cost estimates for geocoding.

Other Expenses

Funds have been budgeted to support webcasting of some of the public meetings at National Academy of Sciences' facilities, report development, and printing. Funds have also been budgeted for copying, postage, and to cover required technology charges (assessed based on percent staff time on the project).

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

BUDGETARY EXPLANATIONS

European Expert in the Committee

We propose to include in the committee membership an international expert who was involved in one or more of the studies of cancer risks in populations near nuclear facilities in Europe. It is important to have this perspective in the committee and learn from past experience of conducting such studies and be kept up-to-date with current efforts. As with the Phase 1 and Phase 2 pilot planning studies European experts have offered insights in epidemiology, dosimetry and public engagement.

Site Visits and Public Meetings

We propose to perform two site visits each year to the pilot nuclear facilities and host public meetings in areas near these facilities.

Site visits will help committee members that are not familiar with nuclear facility operations to learn about the effluent release and environmental monitoring programs of the facilities. Site visits also provide an opportunity to committee members to tour the environs of the facilities and appreciate the difficulties of reconstructing doses to the populations near these facilities.

Public meetings are the best way, based on our experience with the Phase 1 and Phase 2 pilot planning studies, to collect information from the local communities and communicate the study process and objectives to interested individuals.

Webcasting

We propose to webcast the open session of one committee meeting annually, as well as the report dissemination meeting. Our experience with the Phase 1 study taught us that this is an important way for members of the public and other interested individuals to be kept informed about the study progress. Also, it is a record of what transpired in the open meetings.

Conferences

We have budgeted funds for the study director to attend three conferences annually. The following sections provide justifications as to why attendance to these conferences is important for the successful conduct of the study and interpretation of its results.

The North American Association of Central Cancer Registries (NAACCR) Conference

The NAACCR conference will provide an opportunity to learn from national experts in cancer surveillance, cancer registry operations, and cancer research. In addition, since representatives

ATTACHMENT 1

from cancer registries are required to attend this conference, it will provide an opportunity to the study director to meet with the cancer registry representatives and discuss study progress without having to travel to each state individually.

Radiation Research Society (RADRES) Conference

The RADRES conference is the main conference within the United States that brings experts in radiation research to present novel research. Attending this meeting will help with interpreting study findings. In addition, it provides a unique opportunity to identify experts that could brief the committee on the topics to be addressed in its report.

Multidisciplinary European Low Dose Initiative (MELODI) Workshop

MELODI dedicates workshop sessions on the topic of cancer risks near nuclear facilities. The MELODI workshops are a great opportunity to keep the study director up-to-date with the European initiatives and understand the epidemiologic study designs and dosimetric considerations for conducting studies of cancer risks near nuclear facilities.

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

ADDITIONAL BUDGETARY EXPLANATIONS

Cost estimates for Epidemiology and Dosimetry Subawards

Budgets for subawards to the epidemiology and dosimetry subcontractors were estimated using cost information provided by responders to a request for information (RFI).¹ A summary of the responses and associated costs is presented in Table 1. Responses to the RFI can be provided upon request.

Table 1: Summary of responses to the RFI and associated costs

Organization	Estimated Cost for Epidemiology Tasks	Estimated Cost for Dosimetry Tasks	Total Estimated Cost (epidemiology + dosimetry)
RTI International	(b)(4)	(b)(4)	(b)(4)
ORAU ¹			
Idaho State			
University of Illinois			
Westat			
Dade Moeller			

¹ ORAU = Oak Ridge Associated Universities

Cost estimates provided by RFI responders to the epidemiology tasks did not account for geocoding about 6 million addresses that have not been geocoded by the state offices. Responders (ORAU, RTI International, Westat) and other organizations (Texas Center for Geographic Information Science, Texas A&M University) were subsequently contacted for geocoding cost estimates. A summary of the responses and associated costs is presented in Table 2. Responses of the organizations are attached.

¹ The RFI was issued October 7, 2014, and was open for about 1.5 months.

Table 2: Summary of responses to the request for geocoding cost

Organization	Estimated Cost for Epidemiology Tasks
RTI International	
ORAU	
Westat	
Texas Center for Geographic Information Science	
Texas A&M University	

^aWestat claims that they have accounted in the submitted cost estimate for the geocoding cost. However, committee and staff believe that the organization does not have the needed expertise to estimate the amount of work required for geocoding.

^bNote that in the email request to Dr. Zhan, Texas Center for Geographic Information Science, and Dr. Goldberg, Texas A&M University, was for geocoding 15 million addresses, that is the entire datasets held by state offices. Due to the large cost further requests to organizations was about geocoding only those addresses that have not been geocoded previously.

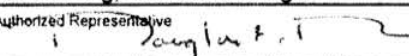
Costs for Retrieval of Health and Other Information

Costs for retrieval of health and other information by the state cancer registries and vital statistics offices were informed by rough estimates provided by a sample of these offices. A summary of the responses and associated costs is presented in Table 3. The responses are attached.

Table 3: Summary of responses to the request for data retrieval cost

State	Estimated Cost for Epidemiology Tasks
Michigan	~20,000 +
Connecticut	~18,000 +
Tennessee	~5,000
New Jersey	~5,000 +
California	~25,000 +
Illinois	~40,000

APPLICATION FOR
FEDERAL ASSISTANCE

1. Type of Submission: <div style="display: flex; justify-content: space-between;"> <div> Application <input type="checkbox"/> Construction <input checked="" type="checkbox"/> Non-Construction </div> <div> Preapplication <input type="checkbox"/> Construction <input type="checkbox"/> Non-Construction </div> </div>		2. Date Submitted 1/29/2015	Applicant Identifier NAS Proposal No. 10002496
		3. Date Received by State	State Application Identifier
		4. Date Received by Federal Agency	Federal Identifier
5. Applicant Information			
Legal Name: National Academy of Sciences National Research Council		Organizational Unit: Division on Earth and Life Studies Nuclear and Radiation Studies Board	
Address (give city, county, state, and zip code): 500 Fifth Street, NW Washington, D.C. 20001		Name and telephone number of the person to be contacted on matters involving this application (give area code): Douglas Denning Contract Manager, Office of Contracts and Grants 202-334-1422	
6. Employer Identification Number (EIN): 53-019-6932		7. Type of Applicant: (enter appropriate letter in box) n	
8. Type of Application: <input checked="" type="checkbox"/> New <input type="checkbox"/> Continuation <input type="checkbox"/> Revision If Revision, enter appropriate letter(s) in box(es): <div style="display: flex; justify-content: space-around;"> <input type="checkbox"/> <input type="checkbox"/> </div> A. Increase Award B. Decrease Award C. Increase Duration D. Decrease Duration Other (specify): _____		A. State H. Independent School Dist B. County I. State Controlled Institution of Higher Learning C. Municipal J. Private University D. Township K. Indian Tribe E. Interstate L. Individual F. Intermunicipal M. Profit Organization G. Special District N. Other (Specify): <u>Non-profit research</u>	
10. Catalog of Federal Domestic Assistance Number: Title:		9. Name of Federal Agency: U.S. Nuclear Regulatory Commission	
12. Areas Affected by Project (cities, counties, states, etc.): N/A		11. Descriptive Title of Applicant's Project: Analysis of Cancer Risks in Populations Near Nuclear Facilities: Phase 2 Pilot Planning Execution	
13. Proposed Project:		14. Congressional Districts of:	
Start Date 3/1/15	Ending Date 4/30/18	a. Applicant DC-at-large	b. Project DC-at-large
15. ESTIMATED FUNDING		16. IS APPLICATION SUBJECT TO REVIEW BY STATE EXECUTIVE ORDER 12372 PROCESS?	
a. Federal (Agency (in Block 9))	\$8,044,958	a. YES. THIS PREAPPLICATION/APPLICATION WAS MADE AVAILABLE TO THE STATE EXECUTIVE ORDER 12372 PROCESS FOR REVIEW ON: Date _____	
b. Applicant		b. NO <input checked="" type="checkbox"/> PROGRAM IS NOT COVERED BY E.O. 12372	
c. State		<input type="checkbox"/> OR PROGRAM HAS NOT BEEN SELECTED BY STATE FOR REVIEW	
d. Local			
e. Other Federal			
f. Program Income	NONE	17. IS THE APPLICANT DELINQUENT ON ANY FEDERAL DEBT?	
g. Total	\$8,044,958	<input type="checkbox"/> yes If "Yes," attach an explanation <input checked="" type="checkbox"/> No	
18. To the best of my knowledge and belief, all data in this application/preapplication are true and correct, the document has been duly authorized by the governing body of the applicant and the application will comply with the attached assurances if the assistance is awarded.			
a. Typed Name of Authorized Representative Douglas Denning, Contract Manager		b. Title Office of Contracts and Grants	c. Telephone Number 202-334-1422
d. Signature of Authorized Representative 		e. Date Signed 1/30/2015	

BUDGET INFORMATION -- Non-Construction Programs

Section A - Budget Summary

Grant Program Function or Activity (a)	Catalog of Federal Domestic Assistance Number (b)	Estimated Unobligated Funds		New or Revised Budget		
		Federal (c)	Non-Federal (d)	Federal (e)	Other (f)	Total (g)
1.				\$8,044,958	\$0	\$8,044,958
2.				\$0		\$0
3.						
4.		0			\$0	
5. Totals		\$0	\$0	\$8,044,958	\$0	\$8,044,958

Section B - Budget Categories

6. Object Class Categories	Grant Program, Function or Activity					Total
	Year 1	Year 2	Year 3	Year 4		(6)
a. Personnel	\$176,771	\$164,537	178,296	\$3,621		\$523,225
b. Fringe Benefits	\$61,428	\$57,177	\$61,958	\$1,258		\$181,821
c. Travel	\$121,857	\$123,344	\$120,311			\$365,512
d. Equipment						
e. Supplies	\$2,400	\$2,400	\$2,400			\$7,200
f. Contractual	\$5,776,500	\$5,000	\$10,000			\$5,791,500
g. Construction						
h. Other	\$28,313	\$27,033	\$57,924	\$311		\$113,581
i. Total Direct Charges	6,167,269	\$379,491	\$430,889	\$5,190		\$6,982,839
j. Indirect Charges	\$497,638	\$266,590	\$292,783	\$5,108		\$1,062,119
k. Totals (sum of bi and bj)	\$6,664,907	\$646,081	\$723,672	\$10,298		\$8,044,958
7. Program Income	NONE	NONE	NONE	NONE	NONE	NONE

SECTION C - Non-Federal Resources						
(a) Grant Program		(b) Applicant	(c) State	(d) Other Sources	(e) Totals	
				\$0	\$0	
12. Totals (sum of lines 8 and 11)				\$0	\$0	
SECTION D - Forecasted Cash Needs						
		Total for 1st year	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
13. Federal		\$6,664,907	\$1,666,227	\$1,666,227	\$1,666,227	\$1,666,227
14. NonFederal						
15. Total (sum of lines 13 and 14)		\$6,664,907	\$1,666,227	\$1,666,227	\$1,666,227	\$1,666,227
SECTION E- Budget Estimates of Federal Funds Needed for Balance of Project						
(a) Grant Program		Future Funding Periods (years)				
		(b)First	(c)Second	(d)Third	(e)Fourth	
16.		\$646,081	\$723,672	\$10,298		
17.						
18.						
19.						
20. Totals (sum of lines 16-19)		\$646,081	\$723,672	\$10,298	\$0	
SECTION F - Other Budget Information (attach additional sheets if necessary)						
21. Direct Charges: \$6,982,839		22. Indirect Charges: \$1,062,119				
23. Remarks: See attached Negotiation Rate Agreement w/ONR.						

ASSURANCES - NON-CONSTRUCTION PROGRAMS

Public reporting burden for this collection of information is estimated to average 15 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction Project (0348-0040), Washington, DC 20503.

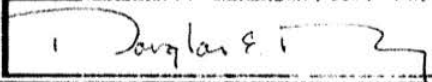
PLEASE DO NOT RETURN YOUR COMPLETED FORM TO THE OFFICE OF MANAGEMENT AND BUDGET. SEND IT TO THE ADDRESS PROVIDED BY THE SPONSORING AGENCY.

NOTE: Certain of these assurances may not be applicable to your project or program. If you have questions, please contact the awarding agency. Further, certain Federal awarding agencies may require applicants to certify to additional assurances. If such is the case, you will be notified.

As the duly authorized representative of the applicant, I certify that the applicant:

1. Has the legal authority to apply for Federal assistance and the institutional, managerial and financial capability (including funds sufficient to pay the non-Federal share of project cost) to ensure proper planning, management and completion of the project described in this application.
2. Will give the awarding agency, the Comptroller General of the United States and, if appropriate, the State, through any authorized representative, access to and the right to examine all records, books, papers, or documents related to the award; and will establish a proper accounting system in accordance with generally accepted accounting standards or agency directives.
3. Will establish safeguards to prohibit employees from using their positions for a purpose that constitutes or presents the appearance of personal or organizational conflict of interest, or personal gain.
4. Will initiate and complete the work within the applicable time frame after receipt of approval of the awarding agency.
5. Will comply with the Intergovernmental Personnel Act of 1970 (42 U.S.C. §§4728-4763) relating to prescribed standards for merit systems for programs funded under one of the 19 statutes or regulations specified in Appendix A of OPM's Standards for a Merit System of Personnel Administration (5 C.F.R. 900, Subpart F).
6. Will comply with all Federal statutes relating to nondiscrimination. These include but are not limited to: (a) Title VI of the Civil Rights Act of 1964 (P.L. 88-352) which prohibits discrimination on the basis of race, color or national origin; (b) Title IX of the Education Amendments of 1972, as amended (20 U.S.C. §§1681-1683, and 1685-1686), which prohibits discrimination on the basis of sex; (c) Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. §794), which prohibits discrimination on the basis of handicaps; (d) the Age Discrimination Act of 1975, as amended (42 U.S.C. §§6101-6107), which prohibits discrimination on the basis of age; (e) the Drug Abuse Office and Treatment Act of 1972 (P.L. 92-255), as amended, relating to nondiscrimination on the basis of drug abuse; (f) the Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment and Rehabilitation Act of 1970 (P.L. 91-616), as amended, relating to nondiscrimination on the basis of alcohol abuse or alcoholism; (g) §§523 and 527 of the Public Health Service Act of 1912 (42 U.S.C. §§290 dd-3 and 290 ee-3), as amended, relating to confidentiality of alcohol and drug abuse patient records; (h) Title VIII of the Civil Rights Act of 1968 (42 U.S.C. §§3601 et seq.), as amended, relating to nondiscrimination in the sale, rental or financing of housing; (i) any other nondiscrimination provisions in the specific statute(s) under which application for Federal assistance is being made; and, (j) the requirements of any other nondiscrimination statute(s) which may apply to the application.
7. Will comply or has already complied, with the requirements of Titles II and III of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (P.L. 91-646) which provide for fair and equitable treatment of persons displaced or whose property is acquired as a result of Federal or federally-assisted programs. These requirements apply to all interests in real property acquired for project purposes regardless of Federal participation in purchases.
8. Will comply, as applicable, with provisions of the Hatch Act (5 U.S.C. §§1501-1508 and 7324-7328) which limit the political activities of employees whose principal employment activities are funded in whole or in part with Federal funds.

9. Will comply, as applicable, with the provisions of the Davis-Bacon Act (40 U.S.C. §§276a to 276a-7), the Copeland Act (40 U.S.C. §276c and 18 U.S.C. §874), and the Contract Work Hours and Safety Standards Act (40 U.S.C. §§327-333), regarding labor standards for federally-assisted construction subagreements
10. Will comply, if applicable, with flood insurance purchase requirements of Section 102(a) of the Flood Disaster Protection Act of 1973 (P.L. 93-234) which requires recipients in a special flood hazard area to participate in the program and to purchase flood insurance if the total cost of insurable construction and acquisition is \$10,000 or more.
11. Will comply with environmental standards which may be prescribed pursuant to the following: (a) institution of environmental quality control measures under the National Environmental Policy Act of 1969 (P.L. 91-190) and Executive Order (EO) 11514; (b) notification of violating facilities pursuant to EO 11738; (c) protection of wetlands pursuant to EO 11990; (d) evaluation of flood hazards in floodplains in accordance with EO 11988; (e) assurance of project consistency with the approved State management program developed under the Coastal Zone Management Act of 1972 (16 U.S.C. §§1451 et seq.); (f) conformity of Federal actions to State (Clean Air) Implementation Plans under Section 176(c) of the Clean Air Act of 1955, as amended (42 U.S.C. §§7401 et seq.); (g) protection of underground sources of drinking water under the Safe Drinking Water Act of 1974, as amended (P.L. 93-523); and, (h) protection of endangered species under the Endangered Species Act of 1973, as amended (P.L. 93-205).
12. Will comply with the Wild and Scenic Rivers Act of 1968 (16 U.S.C. §§1271 et seq.) related to protecting components or potential components of the national wild and scenic rivers system.
13. Will assist the awarding agency in assuring compliance with Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. §470), EO 11593 (identification and protection of historic properties), and the Archaeological and Historic Preservation Act of 1974 (16 U.S.C. §§469a-1 et seq.).
14. Will comply with P.L. 93-348 regarding the protection of human subjects involved in research, development, and related activities supported by this award of assistance.
15. Will comply with the Laboratory Animal Welfare Act of 1966 (P.L. 89-544, as amended, 7 U.S.C. §§2131 et seq.) pertaining to the care, handling, and treatment of warm blooded animals held for research, teaching, or other activities supported by this award of assistance.
16. Will comply with the Lead-Based Paint Poisoning Prevention Act (42 U.S.C. §§4801 et seq.) which prohibits the use of lead-based paint in construction or rehabilitation of residence structures.
17. Will cause to be performed the required financial and compliance audits in accordance with the Single Audit Act Amendments of 1996 and OMB Circular No. A-133, "Audits of States, Local Governments, and Non-Profit Organizations."
18. Will comply with all applicable requirements of all other Federal laws, executive orders, regulations, and policies governing this program.
19. Will comply with the requirements of Section 106(g) of the Trafficking Victims Protection Act (TVPA) of 2000, as amended (22 U.S.C. 7104) which prohibits grant award recipients or a sub-recipient from (1) Engaging in severe forms of trafficking in persons during the period of time that the award is in effect (2) Procuring a commercial sex act during the period of time that the award is in effect or (3) Using forced labor in the performance of the award or subawards under the award.

SIGNATURE OF AUTHORIZED CERTIFYING OFFICIAL 	TITLE CONTRACT MANAGER
APPLICANT ORGANIZATION NATIONAL ACADEMY OF SCIENCES	DATE SUBMITTED 1/30/2015



DEPARTMENT OF THE NAVY
OFFICE OF NAVAL RESEARCH
876 NORTH RANDOLPH STREET
SUITE 1425
ARLINGTON, VA 22203-1996

Agreement Date: December 19, 2014
[Supersedes agreement dated: January 30, 2014]

NEGOTIATION AGREEMENT

INSTITUTION: National Academy of Sciences
500 Fifth Street
Washington, D.C. 20001

The Indirect Cost and Fringe Benefit rates and Cost of Money factors contained herein are for use on grants, contracts and/or other agreements issued or awarded to the National Academy of Sciences (NAS) by all Federal Agencies of the United States of America, in accordance with the cost principles and provisions mandated by 2 CFR 230. These rates shall be used for forward pricing and billing purposes for the NAS' Fiscal Years 2014 and 2015. This rate agreement supersedes all previous rate agreements for Fiscal Years 2014 and 2015.

SECTION I: RATES - TYPE: FIXED WITH CARRY-FORWARD PROVISIONS (FIXED)

FY 2014:

Type	Pool	From	To	Rate	Base	Activity	Location
Fixed	Overhead	1/1/14	12/31/14	54.19%	(a)	All	On Site
Fixed	Overhead	1/1/14	12/31/14	30.65%	(b)	All	Off Site
Fixed	Subagreement Flow-Thru	1/1/14	12/31/14	3.40%	(c)	All	All
Fixed	G&A	1/1/14	12/31/14	22.74%	(d)	All	All
Fixed	Leave	1/1/14	12/31/14	16.47%	(e)	All	All
Fixed	Fringe Benefits	1/1/14	12/31/14	32.29%	(f)	All	All

Cost of Money Rates:

Fixed	Overhead	1/1/14	12/31/14	4.3768%	(a)	All	On Site
Fixed	Subagreement Flow-Thru	1/1/14	12/31/14	0.1820%	(c)	All	All
Fixed	G&A	1/1/14	12/31/14	0.5219%	(d)	All	All

FY 2015:

Type	Pool	From	To	Rate	Base	Activity	Location
Fixed	Overhead	1/1/15	12/31/15	58.72%	(a)	All	On Site
Fixed	Overhead	1/1/15	12/31/15	30.65%	(b)	All	Off Site
Fixed	Subagreement Flow-Thru	1/1/15	12/31/15	3.40%	(c)	All	All
Fixed	G&A	1/1/15	12/31/15	24.20%	(d)	All	All
Fixed	Leave	1/1/15	12/31/15	17.00%	(e)	All	All
Fixed	Fringe Benefits	1/1/15	12/31/15	34.75%	(f)	All	All

<u>Type</u>	<u>Pool</u>	<u>From</u>	<u>To</u>	<u>Rate</u>	<u>Base</u>	<u>Activity</u>	<u>Location</u>
Cost of Money Rates:							
Fixed	Overhead	1/1/15	12/31/15	4.1250%	(a)	All	On Site
Fixed	Subagreement Flow-Thru	1/1/15	12/31/15	0.3096%	(c)	All	All
Fixed	G&A	1/1/15	12/31/15	0.5300%	(d)	All	All

DISTRIBUTION BASES

(a) Direct labor dollars composed of total direct salaries and wages, (including overtime) onsite leave, fringe benefits, temporary personnel onsite, base borrowed personnel onsite, and other personal services onsite performed at 2101 Constitution Ave. and 500 Fifth Street.

(b) Program Direct labor dollars composed of total direct salaries and wages, (including overtime), offsite leave, fringe benefits, temporary personnel offsite, base borrowed personnel offsite, and other personal services offsite performed outside of 2101 Constitution Ave., and 500 Fifth Street (excludes direct salaries and wages, accrued leave, and fringe benefits of NAS employees assigned to RERF).

(c) Subcontract/Flow-Thru Administration base is composed of Associateship/Fellowship, Honoraria, Subcontracts, Direct Charged Equipment, and Dues to International Organizations.

(d) G&A Base Value Added Cost Input is composed of Onsite base, Onsite Assessment, Offsite base, Offsite Assessment, Flow-Thru Assessment, Other Direct cost, and National Academy Press applicable costs.

(e) Gross salaries and wages less: spending account, overtime premium, annual leave, salary continuation, holiday leave, other leave, hourly employees, full time temporaries, part-time regular (<50%), part-time temporary, hourly and severance pay.

(f) The leave base described in (c) above, plus part-time regular (<50%), overtime premium and leave assessed.

SECTION II - GENERAL TERMS AND CONDITIONS

A. LIMITATIONS: Use of the rates set forth under Section I is subject to any statutory or administrative limitations and is applicable to a given grant, contract, or other agreement only to the extent that funds are available. Acceptance of the rates agreed to herein is predicated upon the following conditions: (1) that no costs other than those incurred by the grantee/contractor were included in this indirect cost pool as finally accepted and that such costs are legal obligations of the grantee/contractor and allowable under governing cost principles; (2) that the same costs that have been treated as indirect costs are not claimed as direct costs; (3) that similar types of costs have been accorded consistent accounting treatment, and (4) that the information provided by the grantee/contractor which was used as a basis for acceptance of the rates agreed to herein, and expressly relied upon by the Government in negotiating and accepting the said rates is not subsequently found to be materially incomplete or inaccurate.

B. ACCOUNTING CHANGES: The rates contained in Section I of this agreement are based on the accounting system in effect at the time the agreement was negotiated. Changes to the method(s) of accounting for costs, which affect the amount of reimbursement resulting from the use of these rates require the prior approval of the authorized representative of the cognizant negotiation agency. Such changes include but are not limited to changes in the charging of a particular type of cost from indirect to direct. Failure to obtain such approval may result in subsequent cost disallowances.

C. FIXED RATES WITH CARRY-FORWARD PROVISIONS: The fixed rates in this agreement are based on estimates of costs for Fiscal Years 2014 and 2015. When actual costs for Fiscal Years 2014 and 2015 are determined, an adjustment will be made to the rates of a future year to recognize the difference between the Fiscal Years 2014 and 2015 estimated costs used to establish the fixed rates and the Fiscal Years 2014 and 2015 negotiated actual costs.

D. CARRY-FORWARD AMOUNTS: The below estimated carry-forward amounts were included in the establishment of the FY 2014 and 2015 rates. Note: () reflects over-recovery

<u>Rate Category</u>	<u>Carry-forward Amounts Liquidated in FY14 Fixed Rates</u>			
	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>
Onsite Overhead		(\$2,068,843)	\$936,186	\$1,352,173
Off-site Overhead	(\$210,757)	(\$312,552)	\$418,874	\$456,531
Sub Agr Flow Thru		\$28,135	\$1,120,190	(\$633,325)
G&A		(\$3,591,714)	\$2,494,625	\$1,097,093
Leave Benefit		(\$890,916)	(\$530,000)	
Fringe Benefit		\$1,800,000		
Cost of Money				
Onsite Overhead		(\$625,515)	\$382,394	\$375,159
Sub Agr Flow Thru		(\$54,400)	\$61,200	
G&A		(\$151,647)	\$151,647	

<u>Rate Category</u>	<u>Carry-forward Amounts Liquidated in FY15 Fixed Rates</u>			
	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>
Onsite Overhead	\$0	\$0	\$0	\$0
Off-site Overhead	\$0	\$0	\$0	\$198,500
Sub Agr Flow Thru	\$0	\$0	\$207,132	\$0
G&A	\$0	\$0	\$0	\$2,200,000
Leave Benefit	\$0	\$0	\$0	(\$403,297)
Fringe Benefit	\$0	\$2,750,946	(\$1,761,579)	(\$1,599,367)
Cost of Money:				
Onsite Overhead	\$0	\$0	\$0	\$0
Sub Agr Flow Thru	\$0	\$0	\$18,884	\$91,977
G&A	\$0	\$0	\$0	\$0

E. USE BY OTHER FEDERAL AGENCIES. The rates set forth in Section I are negotiated in accordance with and under the authority set forth in 2 CFR 230. Accordingly, such rates shall be applied to the extent provided in such regulations to grants, contracts, and other transactions to which 2 CFR 230 applies, subject to any limitations in part A of this section. Copies of this document may be provided by either party to other federal agencies which have or intend to issue or award sponsored agreements using these rates or to otherwise provide such agencies with documentary notice of this agreement and its terms and conditions.


F. SPECIAL REMARKS:

1. The Government's agreement with the rates set forth in Section I is not an acceptance of the National Academy of Sciences' (NAS) accounting practices or methodologies. Any reliance by the Government on cost data or methodologies submitted by NAS is on a non-precedence-setting basis and does not imply Government acceptance.

2. The rates included in SECTION I are not applicable to Intergovernmental Personnel Act (IPA) costs, except for leave and Fringe Benefit rates. If the NAS elects to seek reimbursement of indirect costs associated with IPA agreements, the NAS and the Office of Naval Research shall establish a special indirect cost rate for IPA agreements in accordance with the provisions of 2 CFR 230 and Cost Accounting Standards.

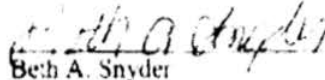
Accepted:

FOR THE NATIONAL ACADEMY
OF SCIENCES:


Mary B. Salmon
Chief Financial Officer

12/17/2014
Date

FOR THE U.S. GOVERNMENT


Beth A. Snyder
Contracting Officer

12/19/2014
Date

For information concerning this agreement, contact:

Beth A. Snyder (beth.snyder@navy.mil) (703) 696-5755, FAX: (703) 696-2870
Office of Naval Research, Indirect Cost Branch (ONR0242, Rm. 368)
875 N. Randolph Street, Suite 1425 Arlington VA 22203-1995

THE NATIONAL ACADEMIES

DIVISION ON EARTH AND LIFE STUDIES
NUCLEAR AND RADIATION STUDIES BOARD

Proposal No. 10002496

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

USNRC Cumulative Summary Estimate of Costs

3/1/15 to 04/30/18

	Year 1	Year 2	Year 3	Year 4	TOTAL
Direct Labor	\$238,199	\$221,714	\$240,254	\$4,879	\$705,046
Overhead	\$139,870	\$130,190	\$141,077	\$2,865	\$414,002
Overhead Cost of Money	\$9,826	\$9,146	\$9,910	\$201	\$29,083
Travel	\$121,857	\$123,344	\$120,311	\$0	\$365,512
Reports	\$0	\$0	\$28,933	\$0	\$28,933
Technology/Communication	\$18,033	\$17,023	\$17,083	\$311	\$52,450
Meeting Expense	\$8,700	\$8,700	\$8,700	\$0	\$26,100
Other Direct Costs	\$3,980	\$3,710	\$5,608	\$0	\$13,298
Subtotal:	\$540,465	\$513,827	\$571,876	\$8,256	\$1,634,424
General and Administrative Costs	\$130,793	\$124,346	\$138,394	\$1,998	\$395,531
G&A Cost of Money	\$2,864	\$2,723	\$3,031	\$44	\$8,662
Subagreements/Flow-Thru	\$5,776,500	\$5,000	\$10,000		\$5,791,500
Subagmt./Flow-thru Admin.	\$214,285	\$185	\$371		\$214,841
Total:	\$6,664,907	\$646,081	\$723,672	\$10,298	\$8,044,958

Amount Requested From USNRC **\$8,044,958**

It is requested that the award will provide for payment
via Letter of Credit or electronic transfer.

Footnote: These major cost categories reflect the billing structure used by the National Academy of Sciences. Cost and rate data are attached as background information and for use in the negotiation process. Please be advised, however, that all costs are systematically collected in our accounting system and are available for audit through arrangements with the Defense Contract Audit Agency and our cognizant Administrative Contracting Officer at the Office of Naval Research.

ESTIMATION DETAILS PROVIDED FOR NEGOTIATION PURPOSES ONLY

THE NATIONAL ACADEMIES

NATIONAL ACADEMY OF SCIENCES
INSTITUTE OF MEDICINE

NATIONAL ACADEMY OF ENGINEERING
NATIONAL RESEARCH COUNCIL

DIVISION ON EARTH AND LIFE STUDIES

NUCLEAR AND RADIATION STUDIES BOARD

Proposal No. 10002496

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

Estimate of Costs

3/1/15 to 2/28/16
12 months

DIRECT LABOR, ON-SITE	Percent of Time	Annual Salary	Total Salary	Project Totals
EXEMPT				
Sr. Staff Officer	75%	\$102,000	\$76,500	
Sr. Staff Officer	15%	\$121,500	\$18,225	
NRSB Board Director	10%	\$176,800	\$17,680	
DELS Web Editor	5%	\$60,500	\$3,025	
Financial Associate	20%	\$79,500	\$15,900	
Sr. Staff Officer/Statistics Branch	15%	\$135,650	\$20,348	
TOTAL EXEMPT				\$151,678
NON-EXEMPT				
Sr. Program Assistant (TBH)	52%	\$42,000	\$21,840	
TOTAL NON-EXEMPT				\$21,840
Total Salaries				\$173,518
Salary Adjustments [1]				<u>\$3,253</u>
Total Direct Labor, On-Site (2)				\$176,771
Fringe Benefits @	34.75% of Salaries			<u>\$61,428</u>
TOTAL DIRECT LABOR, ON-SITE, PLUS FRINGE				\$238,199
SUBTOTAL (On-site Overhead Base)				\$238,199
OVERHEAD, On-site	58.72%	of Base		\$139,870
COST OF MONEY (Labor)	4.1250%	of Base		\$9,826
TOTAL OVERHEAD, On-Site (3)				<u>\$149,696</u>

OTHER DIRECT COSTS

Travel Expenses (Domestic)

	#Pers.	#Mtg	Days/ Mtg	#Per X Mtg.	Mtg Cost	\$\Mtg	Subtotal
Committee	11	3	3	33	\$2,015	\$66,495	DC; Irvine; WH
Committee	4	2	2	8	\$1,523	\$12,184	
							\$78,679
Invitees	2	2	2	4	\$1,523	\$6,092	
							\$6,092
Staff	1	1	1	1	\$1,031	\$1,031	Meet w/Chair
Staff	3	2	3	6	\$2,015	\$12,090	Irvine; WH
Staff	2	2	2	4	\$1,523	\$6,092	Site visit
Staff	1	1	4	1	\$2,507	\$2,507	RRS Meeting
Staff	1	1	3	1	\$2,015	\$2,015	NAACCR Conference in Charlotte NC
							\$23,735
Chair	1	1	1	1	\$1,031	\$1,031	
							\$1,031

Total Domestic Travel

\$109,537

Travel Expenses (International)

Experts

From	To	#Pers	#Mtg.	Fare R/T	Subtotals
Paris or London	DC	1	1	\$1,800	\$1,800
Paris or London	Irvine	1	1	\$2,000	\$2,000
Paris or London	Woods Hole	1	1	\$1,900	\$1,900
					\$5,700

Staff From	To	#Pers	#Mtg.	Fare R/T	
WDC	Paris	1	1	\$1,200	\$1,200
					\$1,200

Experts Per Diem	#Days	#Pers	#Mtg.	Rate	
WDC	4	1	1	\$300	\$1,200
Irvine	4	1	1	\$209	\$836
Woods Hole	4	1	1	\$161	\$644
					\$2,680

Staff Per Diem	#Days	#Pers	#Mtg.	Rate	
Paris	5	1	1	\$548	\$2,740
					MELODI meeting (location \$2,740

Total International Travel

\$12,320

Total Travel

\$121,857

Other Costs

Photocopies (6)	\$50 /mo	\$600
Postage and Delivery		
Project	\$40 /mo	\$480
Technology/Communications		
Long Distance Telephone	\$70.00 /mo	\$840
Conference Calls	2 @ \$60.00	\$120
Technology Services (7)	\$1,422.72 /mo	\$17,073
Office supplies	\$200 /mo	\$2,400
Meeting Expenses		\$8,700
Books and Periodicals (e.g., newsletters, interlibrary loan)		\$500
Total Other		\$30,713

TOTAL OTHER DIRECT COSTS

\$152,570

SUBTOTAL		\$540,465
General & Administrative Costs	24.20% of Net Direct Labor, Overhead, and Direct Costs.	\$130,793
Cost of Money	0.5300% of Net Direct Labor, Overhead, and Direct Costs.	\$2,864
TOTAL GENERAL AND ADMINISTRATIVE COSTS (8)		\$133,657

SUBAGREEMENTS AND/OR OTHER FLOW-THRU

Advertising for RFP		\$1,500
NAS Subcontractor for Dosimetry		\$2,900,000
Health Data Retrieval 9 states @ \$30,000 each		\$270,000
NAS Subcontractor for Epidemiology		\$2,600,000
Webcasting (1 Meeting)		\$5,000
Subtotal		\$5,776,500

Subagreements/Flow-thru Admin (9)	3.710%	\$214,285
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Total Subagreements/Flow-Thru		\$5,990,785
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TOTAL ESTIMATED COST		\$6,664,907
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Amount Requested From USNRC	\$6,664,907
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It is requested that the award will provide for payment via Letter of Credit or electronic transfer.

ESTIMATION DETAILS PROVIDED FOR NEGOTIATION PURPOSES ONLY

THE NATIONAL ACADEMIES

NATIONAL ACADEMY OF SCIENCES
INSTITUTE OF MEDICINE

NATIONAL ACADEMY OF ENGINEERING
NATIONAL RESEARCH COUNCIL

DIVISION ON EARTH AND LIFE STUDIES
NUCLEAR AND RADIATION STUDIES BOARD

Proposal No. 10002496

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

Estimate of Costs

2/29/16 to 1/31/17

12 months

DIRECT LABOR, ON-SITE		Percent of Time	Annual Salary	Total Salary	Project Totals
EXEMPT					
	Sr. Staff Officer	75%	\$102,000	\$76,500	
	Sr. Staff Officer	15%	\$121,500	\$18,225	
	NRSB Board Director	5%	\$176,800	\$8,840	
	DELS Web Editor	5%	\$60,500	\$3,025	
	Financial Associate	20%	\$79,500	\$15,900	
	Sr. Staff Officer/Statistics Branch	10%	\$135,650	\$13,565	
TOTAL EXEMPT					\$136,055
NON-EXEMPT					
	Sr. Program Assistant (TBH)	52%	\$42,000	\$21,840	
TOTAL NON-EXEMPT					\$21,840
Total Salaries					\$157,895
Salary Adjustments	[1]				<u>\$6,642</u>
Total Direct Labor, On-Site	(2)				\$164,537
Fringe Benefits @	34.75%	of Salaries			<u>\$57,177</u>
TOTAL DIRECT LABOR, ON-SITE, PLUS FRINGE					\$221,714
SUBTOTAL (On-site Overhead Base)					\$221,714
OVERHEAD, On-site		58.72%	of Base		\$130,190
COST OF MONEY (Labor)		4.1250%	of Base		\$9,146
TOTAL OVERHEAD, On-Site (3)					\$139,336

OTHER DIRECT COSTS

Travel Expenses (Domestic)

	#Pers.	#Mtg	Days/ Mtg	#Per X Mtg.	Mtg Cost	\$\Mtg	Subtotal
Committee	11	3	3	33	\$2,015	\$66,495	
Experts	4	2	2	8	\$1,523	\$12,184	
							\$78,679
Invitees	2	2	3	4	\$2,015	\$8,060	
							\$8,060
Staff	3	2	3	6	\$2,015	\$12,090	
Staff	2	2	2	4	\$1,523	\$6,092	
Staff	1	1	3	1	\$2,015	\$2,015	
Staff	1	1	4	1	\$2,507	\$2,507	
							\$22,704
Chair	1	1	1	1	\$1,031	\$1,031	
							\$1,031
Total Domestic Travel							\$110,474

Travel Expenses (International)

Experts

From	To	#Pers	#Mtg.	Fare R/T	Subtotals	
Paris or London	DC	1	1	\$1,800	\$1,800	
Paris or London	Irvine	1	1	\$2,000	\$2,000	
Paris or London	Woods Hole	1	1	\$1,900	\$1,900	
						\$5,700

Staff From	To	#Pers	#Mtg.	Fare R/T	
WDC	Europe (Lonc	1	1	\$1,800	\$1,800 MELODI meeting
					\$1,800

Experts	#Days	#Pers	#Mtg.	Rate	
Per Diem					
DC	4	1	1	\$300	\$1,200
Irvine	4	1	1	\$209	\$836
Woods Hole	4	1	1	\$161	\$644
					\$2,680

Staff	#Days	#Pers	#Mtg.	Rate	
Per Diem					
London	5	1	1	\$538	\$2,690
					\$2,690

Total International Travel	\$12,870
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Total Travel	\$123,344
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Other Costs

Photocopies (6)	\$50 /mo	\$600
Postage and Delivery		
Project	\$25 /mo	\$300
Technology/Communications		
Long Distance Telephone	\$70.00 /mo	\$840
Conference Calls	2 @	\$0.00
Technology Services (7)	\$1,348.62 /mo	\$16,183
Office supplies	\$200 /mo	\$2,400
Meeting Expenses		\$8,700
Books and Periodicals (e.g., newsletters, interlibrary loan)		\$410
Total Other		\$29,433

TOTAL OTHER DIRECT COSTS	\$152,777
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SUBTOTAL		\$513,827
General & Administrative Costs	24.20% of Net Direct Labor, Overhead, and Direct Costs.	\$124,346
Cost of Money	0.5300% of Net Direct Labor, Overhead, and Direct Costs.	\$2,723
TOTAL GENERAL AND ADMINISTRATIVE COSTS (8)		\$127,069
SUBAGREEMENTS AND/OR OTHER FLOW-THRU		
Webcast - Annual		\$5,000
Subtotal		\$5,000
Subagreements/Flow-thru Admin (9)	3.710%	\$185
Total Subagreements/Flow-Thru		\$5,185
TOTAL ESTIMATED COST		\$646,081
Amount Requested From USNRC		\$646,081

It is requested that the award will provide for payment
via Letter of Credit or electronic transfer.

ESTIMATION DETAILS PROVIDED FOR NEGOTIATION PURPOSES ONLY

THE NATIONAL ACADEMIES

NATIONAL ACADEMY OF SCIENCES
INSTITUTE OF MEDICINE

NATIONAL ACADEMY OF ENGINEERING
NATIONAL RESEARCH COUNCIL

DIVISION ON EARTH AND LIFE STUDIES

NUCLEAR AND RADIATION STUDIES BOARD

Proposal No. 10002496

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

Estimate of Costs

2/1/17 to 1/31/18

12 months

DIRECT LABOR, ON-SITE	Percent of Time	Annual Salary	Total Salary	Project Totals
EXEMPT				
Sr. Staff Officer	75%	\$102,000	\$76,500	
Sr. Staff Officer	12%	\$121,500	\$14,580	
NRSB Board Director	10%	\$176,800	\$17,680	
DELS Web Editor	5%	\$60,500	\$3,025	
Financial Associate	20%	\$79,500	\$15,900	
Sr. Staff Officer/Statistics Branch	15%	\$135,650	\$20,348	
TOTAL EXEMPT				\$148,033
NON-EXEMPT				
Sr. Program Assistant (TBH)	45%	\$42,000	\$18,900	
TOTAL NON-EXEMPT				\$18,900
Total Salaries				\$166,933
Salary Adjustments [1]				\$11,363
Total Direct Labor, On-Site (2)				\$178,296
Fringe Benefits @	34.75% of Salaries			\$61,958
TOTAL DIRECT LABOR, ON-SITE, PLUS FRINGE				\$240,254
SUBTOTAL (On-site Overhead Base)				\$240,254
OVERHEAD, On-site	58.72% of Base			\$141,077
COST OF MONEY (Labor)	4.1250% of Base			\$9,910
TOTAL OVERHEAD, On-Site (3)				\$150,987

OTHER DIRECT COSTS

Travel Expenses (Domestic)

	#Pers.	#Mtg.	Days/ Mtg	#Per X Mtg.	Mtg Cost	\$\Mtg	Subtotal
Committee	11	3	3	33	\$2,015	\$66,495	
Committee	4	2	2	8	\$1,523	\$12,184	
							\$78,679
Invitees	2	2	2	4	\$1,523	\$6,092	
							\$6,092
Staff	3	2	3	6	\$2,015	\$12,090	
Staff	2	2	2	4	\$1,523	\$6,092	
Staff	1	1	4	1	\$2,507	\$2,507	
Staff	1	1	3	1	\$2,015	\$2,015	
							\$22,704
Chair	1	1	1	1	\$1,031	\$1,031	
							\$1,031
Total Domestic Travel							\$108,506

Travel Expenses (International)

Experts				Fare R/T	Subtotals	
From	To	#Pers	#Mtg.			
Paris or London	WDC	1	1	\$1,800	\$1,800	
Paris or London	Irvine	1	1	\$2,000	\$2,000	
Paris or London	WH	1	1	\$1,900	\$1,900	
						\$5,700
Staff				Fare R/T		
From	To	#Pers	#Mtg.			
WDC	Vienna	1	1	\$1,500	\$1,500	MELODI Meeting (TBD)
						\$1,500
Experts				Rate		
Per Diem	#Days	#Pers	#Mtg.			
WDC	4	1	1	\$300	\$1,200	
Irvine	4	1	1	\$209	\$836	
WH	4	1	1	\$161	\$644	
						\$2,680
Staff				Rate		
Per Diem	#Days	#Pers	#Mtg.			
Vienna	5	1	1	\$385	\$1,925	
						\$1,925
Total International Travel						\$11,805

Total Travel

\$120,311

Other Costs

Reports (4) (5)

Master Manuscript	1 copies		\$12,848	
Report Prod.	200 copies @	\$50.00	\$10,000	
Project Management	1 @	\$5,000.00	\$5,000	
Digitization	3.1 @	\$350.00	\$1,085	
Total Reports				\$28,933
Photocopies (6)	\$50 /mo			\$600
Postage and Delivery				
Project	\$65 /mo			\$780
Report disseminations	150 @	\$8.85	\$1,328	
Technology/Communications				
Long Distance Telephone	\$70.00 /mo			\$840
Conference Calls	1 @	\$60.00	\$60	
Technology Services (7)	\$1,348.62 /mo			\$16,183

Office supplies	\$200 /mo	\$2,400	
Meeting Expenses		\$8,700	
Books and Periodicals (e.g., newsletters, interlibrary loan)		\$500	
Total Other			\$60,324
TOTAL OTHER DIRECT COSTS			\$180,635
SUBTOTAL			\$571,876
General & Administrative Costs	24.20% of Net Direct Labor, Overhead, and Direct Costs.	\$138,394	
Cost of Money	0.5300% of Net Direct Labor, Overhead, and Direct Costs.	\$3,031	
TOTAL GENERAL AND ADMINISTRATIVE COSTS (8)			\$141,425
SUBAGREEMENTS AND/OR OTHER FLOW-THRU			
Dissemination DVD		\$5,000	
Webcast		\$5,000	
Subtotal			\$10,000
Subagreements/Flow-thru Admin (9)	3.710%	\$371	
Total Subagreements/Flow-Thru			\$10,371
TOTAL ESTIMATED COST			\$723,672
Amount Requested From USNRC		\$723,672	

It is requested that the award will provide for payment
via Letter of Credit or electronic transfer.

ESTIMATION DETAILS PROVIDED FOR NEGOTIATION PURPOSES ONLY

THE NATIONAL ACADEMIES

NATIONAL ACADEMY OF SCIENCES
INSTITUTE OF MEDICINE

NATIONAL ACADEMY OF ENGINEERING
NATIONAL RESEARCH COUNCIL

DIVISION ON EARTH AND LIFE STUDIES

NUCLEAR AND RADIATION STUDIES BOARD

Proposal No. 10002496

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

Estimate of Costs

	2/1/18	to	4/30/18		
	3	months			
DIRECT LABOR, ON-SITE		Percent of Time	Annual Salary	Total Salary	Project Totals
EXEMPT					
Sr. Staff Officer		5%	\$102,000	\$1,275	
NRSB Board Director		2%	\$176,800	\$884	
Financial Associate		5%	\$79,500	\$994	
TOTAL EXEMPT					\$3,153
NON-EXEMPT					
Sr. Program Assistant (TBH)		2%	\$42,000	\$210	
TOTAL NON-EXEMPT					\$210
Total Salaries					\$3,363
Salary Adjustments [1]					\$258
Total Direct Labor, On-Site (2)					\$3,621
Fringe Benefits @		34.75% of Salaries			\$1,258
TOTAL DIRECT LABOR, ON-SITE, PLUS FRINGE					\$4,879
SUBTOTAL (On-site Overhead Base)					\$4,879
OVERHEAD, On-site	58.72%	of Base			\$2,865
COST OF MONEY (Labor)	4.1250%	of Base			\$201
TOTAL OVERHEAD, On-Site (3)					\$3,066
OTHER DIRECT COSTS					
Other Costs					
Technology Services (7)	\$103.74	/mo		\$311	
Total Other					\$311
TOTAL OTHER DIRECT COSTS					\$311
SUBTOTAL					\$8,256
General & Administrative Costs	24.20%	of Net Direct Labor, Overhead, and Direct Costs.			\$1,998
Cost of Money	0.5300%	of Net Direct Labor, Overhead, and Direct Costs.			\$44
TOTAL GENERAL AND ADMINISTRATIVE COSTS (8)					\$2,042

TOTAL ESTIMATED COST

\$10,298

Amount Requested From USNRC

\$10,298

It is requested that the award will provide for payment
via Letter of Credit or electronic transfer.

FOOTNOTES

1. An annual adjustment is applied to the salary base to provide for merit increases that will be awarded during the performance period of any award resulting from this proposal. The effective date for estimating such adjustments is June 1. The current merit pool is 2.5%
2. Direct Labor includes an accrual for personal leave, holidays, and other leave, such as jury duty and military service, at a rate of 17.00%
3. The total On-site/Off-site Overhead rates include Facilities Capital Cost of Money factors.

The National Academies annually draw upon more than 11,600 volunteer scientists, engineers, and other professionals, largely from universities and industry. This donated professional expertise provides an invaluable resource to the Federal Government and Private Sponsors and results in significant overall savings to the funding organization.

	Master				
4. Reports	Year 1	Year 2	Year 3	Year 4	Year 5
Master Manuscript production copies	0	0	1	0	0
Estimated report per copy cost	0	0	12848	0	0
Estimated total report charge	\$0.00	\$0.00	\$12,848.00	\$0.00	\$0.00
Report production copies	0	0	200	0	0
Estimated report per copy cost	\$0.00	\$0.00	\$50.00	\$0.00	\$0.00
Estimated total report charge	\$0.00	\$0.00	\$10,000.00	\$0.00	\$0.00
HTML Conversions	0	0	0	0	0
Estimated report per copy cost	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Estimated total report charge	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

5. Executive Order 12832 provides the authority for NAS to reproduce and disseminate Academy reports to the public as needed and therefore we have included in our estimate of costs an amount projected to cover the cost of producing and disseminating reports for this activity.

6. Copying	Year 1	Year 2	Year 3	Year 4	Year 5
Estimated pages	10,000	10,000	10,000	0	0
Cost per page			\$0.0600		

Copying is estimated on a monthly basis. The total estimated copying charge is derived by determining the total estimated number of pages that might be reproduced based on similar projects undertaken by the NRC and multiplying by the per copy cost.

7. Technology Services

(Total Full-time Equivalent employees reflected in estimated salaried staff and on-site borrowed personnel percent of time in Direct Labor section of estimate.)

Technology Services Cost \$342.00
Technology services charge equals Prorated labor hours times the total basic equipment charge, and prorated telephone and fax/modem usage, times the number of pay periods (bi-weekly) covered by the estimate.

8. NOTE: The total G&A rate includes a Facilities Capital Cost of Money rate, as approved in our ONR negotiated rate agreement.

The use of all rates in this proposal has been approved by the Administrative Contracting Officer, Office of Naval Research, to assist sponsors in accurate forward pricing. The NAS indirect rates are negotiated with the Office of Naval Research on a yearly basis. The proposed rates are provisional. For contract billing purposes, the rates proposed may change for subsequent fiscal years, and it is understood that any contractually-stipulated indirect rate would be modified in accordance with any revised negotiated indirect rates. Indirect rates include the corresponding negotiated rate agreement Facilities Cost of Money factors.

9. The Subagreements/Flow-Thru Administration rate includes a facilities capital cost of money factor applied to the subagreement/flow-thru.

Federal Negotiated Indirect Cost Rate Agmt - 12/19/14			
NAS FY 15 FIXED RATES	Rate Before Cost of Money	Cost of Money Additive	Total Rate
Offsite Overhead	30.65%	0.000%	30.6500%
Regular Overhead	58.72%	4.1250%	62.8450%
Flow-through Admin	3.40%	0.3096%	3.7096%
G&A	24.20%	0.5300%	24.7300%
Leave	17.00%	0.000%	17.00%
Fringe	34.75%	0.000%	34.75%
PRICES			
Prices are determined on an actual-cost basis, but are not included in the Negotiation Agreement with ONR.			
Copy Center		per impression	Total Price \$0.0600
Technology Services, bi-weekly		bi-weekly	\$342.00
Pay Periods	26	2.16667 per month	

From: Brock, Terry
Sent: Tuesday, March 31, 2015 10:22 AM
To: Ramsey, Kevin
Subject: RE: Cancer Study Update

Will do.

From: Ramsey, Kevin
Sent: Tuesday, March 31, 2015 10:18 AM
To: Brock, Terry
Subject: RE: Cancer Study Update

Remind Mike Weber that if fuel facilities get dropped, public stakeholders will complain (especially NFS stakeholders).

From: Brock, Terry
Sent: Tuesday, March 31, 2015 10:15 AM
To: Ramsey, Kevin
Subject: RE: Cancer Study Update

Not necessarily, NCRP is able to include new sites using the NCI protocol. I'll keep you in the loop as we move forward to some conclusion. Meeting with EDO tomorrow.

Thx,
Terry

From: Ramsey, Kevin
Sent: Tuesday, March 31, 2015 10:11 AM
To: Brock, Terry
Subject: RE: Cancer Study Update

Was unpacking in new office and missed the meeting. If NCRP option is selected, will fuel facilities be outside the scope of the effort? I don't believe fuel facilities were addressed in the original report, so there is nothing to update.

-----Original Appointment-----

From: Brock, Terry
Sent: Monday, March 30, 2015 8:48 AM
To: Milligan, Patricia; Garry, Steven; Burnell, Scott; Weil, Jenny; Ramsey, Kevin; Nimitz, Ronald; Hinson, Charles; Tadesse, Rebecca
Subject: Update: Slides attached - Cancer Study Update

When: Monday, March 30, 2015 3:00 PM-4:00 PM (UTC-05:00) Eastern Time (US & Canada).

Where: teleconference-bridge-line in message

Slides I'll be going over during the meeting.

<< File: cancer_study_pilot_options_0330201.pptx >> Hi All,

This call is to give you the program office staff and user-need requestors an update on what RES has been thinking about in regards to the NAS cancer risk pilot studies proposal. We've had some discussions internally and with NAS on their pilot study execution proposal and would like to share this with you as a heads-up and to solicit input in preparation for developing the SECY paper on the next steps of the study. Bridge-line below.

Thanks,
Terry

Passcodes/Pin codes:

Participant passcode: (b)(6)

For security reasons, the passcode will be required to join the conference.

Dial in numbers:

Country	Toll Numbers		Freephone/ Toll Free Number
USA			800-779-2652

Thanks,
Terry

From: Ramsey, Kevin
Sent: Friday, April 10, 2015 1:18 PM
To: Hickey, James
Cc: Johnson, Robert
Subject: RE: cancer_study_pilot_options

Be careful. The Commission hasn't decided whether anything is changing yet. RES is preparing a SECY to present the options to the Commission.

From: Hickey, James
Sent: Friday, April 10, 2015 1:13 PM
To: Ramsey, Kevin
Cc: Johnson, Robert
Subject: FW: cancer_study_pilot_options

FYI

From: Lesser, Mark
Sent: Friday, April 10, 2015 1:02 PM
To: McCree, Victor; Wert, Leonard
Cc: Hickey, James; Stancil, Charles
Subject: cancer_study_pilot_options

Not sure if you are aware, but the proposed National Academy of Sciences pilot cancer study of 7 plants, including NFS, is changing course.

- Concerns that the pilot would be very expensive to execute with limited usefulness
- NRC is evaluating alternatives
- New sites may need to be selected based on the adequacy of cancer registries
- Select sites with enough statistical power to draw conclusions
- SECY being developed

From: Ramsey, Kevin
Sent: Monday, April 27, 2015 4:42 PM
To: (b)(6)
Cc: (b)(6); Hickey, James; Johnson, Robert
Subject: Effluent Records for NAS Cancer Study
Attachments: NFS Effluent Records Table for NAS Cancer Study.docx

My list is attached. The current status is the Office of Research is preparing a paper to the Commission on options for the cancer study. The options include funding NAS to proceed with the studies as proposed, funding NAS to proceed with a study of reduced scope, or directing the staff to proceed in a different direction. We expect the paper to be issued in mid-Summer. Unclear how long it will take the Commission to respond.

Kevin M. Ramsey
Senior Project Manager
Fuel Manufacturing Branch
U.S. NRC
301-415-7506

From: Linda Cataldo Modica [mailto:(b)(6)]
Sent: Wednesday, April 22, 2015 4:26 PM
To: Hickey, James
Cc: (b)(6)
Subject: Re: NFS 1st Quarter Inspection Report

Belated thanks for this, Jim.

As you might recall, at the last meeting in Erwin, NRC stated that it was going through 40 or so boxes of archival files on NFS with the intention of making documents related to accidental and routine discharges and releases to the environment available to the National Academy of Sciences for its study on cancer incidence around nuclear facilities.

At tomorrow night's meeting, would it be possible to give us an update on the status of that work and also a list of the documents -- perhaps with their Accession Numbers, if they've been posted to ADAMS?

Thanks,
Linda.

-----Original Message-----

From: Hickey, James <James.Hickey@nrc.gov>

To: (b)(6)

(b)(6)

Sent: Fri, Apr 17, 2015 9:38 am

Subject: NFS 1st Quarter Inspection Report

Good Morning,

I just signed the 1st quarter inspection report which is attached. It will be publically available on Monday. The report contains our conclusions regarding two issues you were interested in. I wanted to provide you this information as soon as I could prior to the Licensee Performance Review meeting next Thursday.

Regards,
Jim



James Hickey
Chief, Projects Branch 1
Division of Fuel Facility Inspection
Region II
404-997-4628 (Office)
(b)(6) (Cell)
James.Hickey@nrc.gov

Effluent Records for
Nuclear Fuel Services
(NFS Effluent Records Table for NAS Cancer Study.docx)

Record Title	ADAMS Public Record
Biannual Effluent Monitoring Jan – Jun 2014	ML14251A017
Biannual Effluent Monitoring Jul – Dec 2013	ML14057A396
Biannual Effluent Monitoring Jan – Jun 2013	ML13254A069
Biannual Effluent Monitoring Jul – Dec 2012	ML13064A286
Biannual Effluent Monitoring Jan – Jun 2012	ML12249A027
Biannual Effluent Monitoring Jan – Jun 2011, Rev. 1	ML12059A303
Biannual Effluent Monitoring Jul – Dec 2011	ML12055A051
Biannual Effluent Monitoring Jan – Jun 2011	ML11249A064
Biannual Effluent Monitoring Jul – Dec 2010	ML110610416
Biannual Effluent Monitoring Jan – Jun 2010	ML102360147
Biannual Effluent Monitoring Jul – Dec 2009	ML100700519
Biannual Effluent Monitoring Jan – Jun 2009	ML092570831
Biannual Effluent Monitoring Jul – Dec 2008	ML090710718
Biannual Effluent Monitoring Jan – Jun 2008	ML082960743
Biannual Effluent Monitoring Jul – Dec 2007	ML081500695
Biannual Effluent Monitoring Jan – Dec 2007	ML072670156
Biannual Effluent Monitoring Jul – Dec 2006	ML070590627
Biannual Effluent Monitoring Jan – Jun 2006	ML080510464
Biannual Effluent Monitoring Jul – Dec 2005 Missing Page	ML061000099
Biannual Effluent Monitoring Jul – Dec 2005	ML060590265
Biannual Effluent Monitoring Jan – Jun 2005	ML060860092
Biannual Effluent Monitoring Jul – Dec 2004	ML051150075
Biannual Effluent Monitoring Jul – Dec 2004 Amendments	ML051150066
Biannual Effluent Monitoring Jan – Jun 2004	ML042600037
Biannual Effluent Monitoring Jul – Dec 2003	ML040760278
Biannual Effluent Monitoring Jan – Jun 2003	ML032720728
Biannual Effluent Monitoring Jul – Dec 2002	ML030690609
Biannual Effluent Monitoring Jan – Jun 2002	ML080510458
Biannual Effluent Monitoring Jul – Dec 2001	ML020710079
Biannual Effluent Monitoring Jan – Jun 2001	ML012490200
Biannual Effluent Monitoring Jul – Dec 2000	ML010650462
Biannual Effluent Monitoring Jan – Jun 2000	ML003746676
Biannual Effluent Monitoring Jul – Dec 1999	ML14260A302
Biannual Effluent Monitoring Jan – Jun 1999	ML003670798
Biannual Effluent Monitoring Jul – Dec 1998	received from Legacy Library 10/7/14, page missing
Biannual Effluent Monitoring Jan – Jun 1998	ML14248A618
Biannual Effluent Monitoring Jan – Jun 1998 Additional Info	ML14248A619
Biannual Effluent Monitoring Jul – Dec 1997	ML14248A617**
Biannual Effluent Monitoring Jan – Jun 1997	ML14248A616 ** amended in ML14248A617

Record Title	ADAMS Public Record
Biannual Effluent Monitoring Jul – Dec 1996	ML14287A253 ** amended in ML14248A617
Biannual Effluent Monitoring Jan – Jun 1996	ML14248A463 ** amended in ML14248A617
Biannual Effluent Monitoring Jul – Dec 1995	ML14248A462 ** amended in ML14248A617
Biannual Effluent Monitoring Jan – Jun 1995	ML14248A461
Biannual Effluent Monitoring Jul – Dec 1994	ML14287A252
Biannual Effluent Monitoring Jan – Jun 1994	ML14287A251
Biannual Effluent Monitoring Jul – Dec 1993	ML14287A250
Biannual Effluent Monitoring Jan – Jun 1993	ML14248A460
Biannual Effluent Monitoring Jan – Jun 1993 Amended	** see Jan – Jun 1994
Biannual Effluent Monitoring Jul – Dec 1992	ML14248A459
Biannual Effluent Monitoring Jan – Jun 1992	ML14287A249
Biannual Effluent Monitoring Jul – Dec 1991	ML14248A458
Biannual Effluent Monitoring Jan – Jun 1991	ML14287A248
Biannual Effluent Monitoring Jul – Dec 1990	ML14260A301
Biannual Effluent Monitoring Jan – Jun 1990	ML14251A300
Biannual Effluent Monitoring Jan – Jun 1990	received from Legacy Library 10/7/14, can't read
Biannual Effluent Monitoring Jul – Dec 1989	ML14260A300
Biannual Effluent Monitoring Jan – Jun 1989	ML14260A299
Biannual Effluent Monitoring Jul – Dec 1988	ML14251A299
Biannual Effluent Monitoring Jan – Jun 1988	ML14260A298
Biannual Effluent Monitoring Jul – Dec 1987	ML14260A297
Biannual Effluent Monitoring Jan – Jun 1987	ML14251A298
Biannual Effluent Monitoring Report for July-December 1986 w/values not available in 2/27/87 report (dated 3/24/87)	ML14288A429
Biannual Effluent Monitoring Jul – Dec 1986	ML14251A297
Biannual Effluent Monitoring Jan – Jun 1986	ML14251A296
Biannual Effluent Monitoring Jul – Dec 1985	ML14251A295
Biannual Effluent Monitoring Jan – Jun 1985	ML14251A294
Biannual Effluent Monitoring Jul – Dec 1984	ML14251A293
Biannual Effluent Monitoring Jan – Jun 1984	ML14260A296
Biannual Effluent Monitoring Jul – Dec 1983	ML14251A110
Biannual Effluent Monitoring Jan – Jun 1983	ML14251A109
Biannual Effluent Monitoring Jul – Dec 1982	ML14251A108
Biannual Effluent Monitoring Jan – Jun 1982	ML14251A107
Biannual Effluent Monitoring Jul – Dec 1981	Not found
Biannual Effluent Monitoring Jan – Jun 1981	Not found
Biannual Effluent Monitoring Jul – Dec 1980	Not found
Biannual Effluent Monitoring Jan – Jun 1980 [8009090504, 8009090507]	Requested from Legacy Library
Biannual Effluent Monitoring Jul – Dec 1979 Amended [8008280445]	Requested from Legacy Library
Biannual Effluent Monitoring Jul – Dec 1979	ML14251A106

Record Title	ADAMS Public Record
Biannual Effluent Monitoring Jan – Jun 1979	ML14251A105
Biannual Effluent Monitoring Jul – Dec 1978	Not found
Biannual Effluent Monitoring Jan – Jun 1978	Not found
Biannual Effluent Monitoring Jul – Dec 1977	Not found
Biannual Effluent Monitoring Jan – Jun 1977 [8308160165]	Requested from Legacy Library
Biannual Effluent Monitoring Jul – Dec 1976	ML14251A104
Biannual Effluent Monitoring Jan – Jun 1976	Not found
Biannual Effluent Monitoring Jul – Dec 1975	ML14251A103
Biannual Effluent Monitoring Jan – Jun 1975	Not found
Redacted Letter responding to Senator Sasser re: Possible Discharge from NFS (dated 7/26/78)	ML14269A112
Tennessee Report of Monitoring Data (dated 8/30/76)	ML14288A414
Redacted Report re: Stack Concentration Exceeding Limit (dated 10/30/80)	To DPC 10/10/14
Stack Concentrations for June 1981 (dated 7/15/81)	ML14288A419
Gross Alpha Analysis for Environmental Air Samplers for June 1981 (dated 7/21/81)	ML14288A421
Concentrations Released from Main Stack (dated 4/24/84)	ML14288A424
Evaluation of Possible Under-Reporting of Stack Effluent (dated 3/4/86)	ML14288A430
NPDES Permit Discharge Monitoring Report for February 1992 (dated 3/13/92)	ML14288A431
Concentrations Released from Plant Stacks in November 1982 (dated 12/14/82)	ML14288A432
Plans for Remediating Areas of Pond 4 Outside of Building 410 (dated 2/8/95)	ML14296A289
Response to Senator Sasser re: Constituent Concerns About NFS (dated 11/4/92)	ML14296A288
Package containing first 2 reports of Independent Measurements Program, July 1968 – June 1969 (dated 3/2/70)	ML14297A284
Report of Independent Measurements Program, July – October 1969 (dated July 1970)	ML14297A289
Detailed Description of Waste Management Program (dated 10/4/71)	ML14297A288
Hydrogeologic Characterization Study, March 1989	ML101590134
Stack Concentrations for July 1982	ML14308A026
Stack Concentrations for June 1982	ML14308A025
Stack Concentrations for February 1982	ML14308A024
Stack Concentrations for January 1982	ML14308A023
Stack Concentrations for October 1981	ML14308A022
Stack Concentrations for September 1981	ML14308A021
Sampling for Total Fluoride in Scrubber Stacks	ML14308A020
Stack Concentrations for July 1981	ML14308A019
Stack Concentrations for May 1981	ML14308A018

Record Title	ADAMS Public Record
Stack Release Data and Evaluation of Potential Off-Site Exposure	ML14308A017
Status of Investigative and/or Corrective Actions Taken on Main Process Stacks	ML14307B032
Evaluation of Stacks 1981	ML14307B031
Stack Concentrations for October 1982	ML14307B030
Stack Concentrations for November 1982	ML14307B029
Stack Concentrations for February 1983	ML14307B027
Stack Concentrations for March 1983	ML14307B026
Stack Concentrations for April 1983	ML14307B025
Stack Concentrations for May 1983	ML14307B024
Stack Concentrations for June 1983	ML14307B023
Stack Concentrations for July 1983	ML14307B022
Stack Concentrations for August 1983	ML14307B021
Stack Concentrations for September 1983	ML14307B020
Stack Concentrations for October 1983	ML14307B019
NUREG-1140, Regulatory Analysis on Emergency Preparedness	ML062020791
Gross Alpha Analysis of Environmental Air Samplers for July 1981	ML14311A734
Gross Alpha Analysis of Environmental Air Samplers for August 1981	ML14311A735
Gross Alpha Analysis of Environmental Air Samplers for September 1981	ML14311A736
Gross Alpha Analysis of Environmental Air Samplers for October 1981	ML14311A737
Gross Alpha Analysis of Environmental Air Samplers for November 1981	ML14311A738
Gross Alpha Analysis of Environmental Air Samplers for December 1981	ML14311A732
Meteorological Assessment of NFS Facility	ML14311A733
Environmental Impact Appraisal (1978)	ML14339A518

From: Ramsey, Kevin
Sent: Thursday, May 07, 2015 10:12 AM
To: Ledford, Joey
Cc: Hannah, Roger
Subject: RE: NFS in the News

I agree. I just don't want us to dismiss statements that have a large element of truth to them. If we acknowledge our past practice, and clarify that our current practice is much better, then we are in violent agreement.

From: Ledford, Joey
Sent: Thursday, May 07, 2015 9:56 AM
To: Ramsey, Kevin
Cc: Hannah, Roger
Subject: RE: NFS in the News

I understand all that. But the context of the media report is not historical. It implies that is going on currently.

From: Ramsey, Kevin
Sent: Thursday, May 07, 2015 9:30 AM
To: Ledford, Joey
Subject: RE: NFS in the News

But, the statement that we withheld NFS records for years is correct. When NNSA raised security concerns in 2004, we withdrew all records regarding NFS from the public domain. We went "black" and didn't release anything until Congress complained in 2007. Only then did we redact and release some (not all) records dated 2004 or later. To this day, we continue to withhold all pre-2004 records until we receive a valid request to release them (such as a FOIA or the NAS Cancer study).

From: Ledford, Joey
Sent: Thursday, May 07, 2015 8:17 AM
To: Ramsey, Kevin; Bailey, Marissa; Erlanger, Craig; Johnson, Robert; Cuadrado, Leira
Cc: Rivera-Crespo, Carmen; Stancil, Charles; Hannah, Roger; Lesser, Mark; Evans, Carolyn
Subject: RE: NFS in the News

Kevin, the main problem is she declared we have reduced the number of inspections, which may be technically accurate, but is terribly misleading when our main action was to reduce the number of residents, yet maintaining a daily presence. She got the name of the agency wrong that is conducting the cancer study, she called Roger a "spokeswoman," and this quote from Barbara is pure fiction:

"There is not that much available," she said. "The NRC has kept information like inspection reports, effluent releases - they've kept all of that stuff away from the public for years."

This paragraph is pretty outrageous as well:

A government investigation in 2006 discovered there was a uranium solution leak into an elevator shaft that could have caused a nuclear reaction.

We consider it sloppy reporting at best with only a cursory attempt at getting information from us and that deserves a follow-up.

Joey

From: Ramsey, Kevin
Sent: Thursday, May 07, 2015 8:06 AM
To: Ledford, Joey; Bailey, Marissa; Erlanger, Craig; Johnson, Robert; Cuadrado, Leira
Cc: Rivera-Crespo, Carmen; Stancil, Charles
Subject: RE: NFS in the News

I don't know. Seemed mostly accurate to me. I know Barbara treats action levels (stack limits) the same as the public dose limit, but you have to admit that it sounds pretty scary when the reports say daily stack limits were exceeded hundreds of times.

It's more important that we acknowledge they have good reason for concern, than it is to argue about technical accuracy. At the end of the day, it's still scary stuff no matter how many calculations you show them.

From: Ledford, Joey
Sent: Thursday, May 07, 2015 7:46 AM
To: Ramsey, Kevin; Bailey, Marissa; Erlanger, Craig; Johnson, Robert; Cuadrado, Leira
Cc: Rivera-Crespo, Carmen; Stancil, Charles
Subject: RE: NFS in the News

Kevin:

She didn't get anything right in that story. Roger, who responded to her brief email query for a comment, will be calling her today.

Joey

From: Ramsey, Kevin
Sent: Thursday, May 07, 2015 7:26 AM
To: Bailey, Marissa; Erlanger, Craig; Johnson, Robert; Cuadrado, Leira
Cc: Ledford, Joey; Rivera-Crespo, Carmen; Stancil, Charles
Subject: NFS in the News

Residents Cite Lingering Safety Concerns At NFS. Public News Service (5/6, 306) reports that northeast Tennessee residents are "speaking out against what they say is a questionable safety record of Nuclear Fuel Services, located in Erwin." NFS makes materials for the U.S. Navy and for private companies and recently the NRC "announced it was reducing the number of regular safety inspections NFS will undergo, and that concerns Barbara O'Neal," who said she feels "that the people have been told by the NRC for years that everything was OK." O'Neal recently "moved away from Erwin because of safety concerns," referencing public documents that "detail incidents at the facility where the environment was exposed to toxic materials." O'Neal said "she has analyzed thousands of pages of public documents that detail incidents of spills and releases of pollutants that exceed the legal limits." She said the "NRC has kept information like inspection reports, effluent releases – they've kept all of that stuff away from the public for years."

Kevin M. Ramsey
Senior Project Manager
Fuel Manufacturing Branch
U.S. NRC
301-415-7506

From: Ramsey, Kevin
Sent: Monday, June 01, 2015 10:11 AM
To: Haney, Catherine; Moore, Scott; Roman-Cuevas, Cinthya; Bailey, Marissa; Erlanger, Craig; Johnson, Robert; Baker, Merritt
Subject: FW: Heads-UP: Cancer Study Secy Paper coming

FYI. I haven't read the paper yet, but will probably recommend concurrence. The National Academy proposal was just too expensive and would take too long to complete.

From: Brock, Terry
Sent: Monday, June 01, 2015 10:02 AM
To: Mizuno, Beth; Burnell, Scott; Milligan, Patricia; Garry, Steven; Nimitz, Ronald; Ramsey, Kevin; Hinson, Charles; Ford, Jennifer
Cc: Tadesse, Rebecca
Subject: Heads-UP: Cancer Study Secy Paper coming

Hi All,

The cancer study Secy paper on the next steps will be on its way today for your office concurrence >> link below if you want to get a jump start. I identified you as the cognizant staff on the project for review of the paper. We're looking for a June 10th concurrence date so it can be in front of the Commission during budget deliberations later this month.

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Since we last spoke, RES has briefed the EDO and informed your Deputy Office Directors on our plan to use the National Council on Radiation Protection and Measurements to do a direct update of the 1990 NCI study. NAS proved to be too expensive and take too long to finish the study to have useful results. Below are the talking points we conveyed to your upper management. I'm briefing the Commissioners' CAs on Wed 6/10/15 from 2-3 PM in the OWFN 18th Floor Conference room if you want to attend.

Staff plans for the next steps of the Cancer Study

- Staff plans to sole-source with the congressionally chartered U.S. National Council on Radiation Protection and Measurements (NCRP) to provide a direct update to the 1990 National Cancer Institute (NCI) Cancer Study in approximately 2.5 years for 2.5 million dollars.
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- Discussed NCRP sole-source with the Business Advisory Center and received support for this approach.
- Staff plans to communicate the NCRP approach to the Commission through a CA brief and Information SECY paper.
- SECY paper will go out for a two week office concurrence the first week of June to provide to the Commission by the end of June.

- Staff on the cancer risk study team in each office will be notified of the paper and requested by RES to review for the office.
- Concurrently RES will work with the BAC to establish the contracting mechanism with NCRP.

Thx,
Terry

Terry Brock, Ph.D.
Office of Nuclear Regulatory Research
U.S. Nuclear Regulatory Commission
Washington D.C. 20555
Mail Stop CSB-3A07
phone: 301-251-7487

From: Erlanger, Craig
Sent: Tuesday, June 02, 2015 8:53 AM
To: Case, Michael; Bailey, Marissa
Cc: Ramsey, Kevin
Subject: RE: ACTION: Review & Concurrence of Info SECY paper - Results of the Analysis of Cancer Risk in Populations...

Got it Mike.

We will get it reviewed. Craig

From: Case, Michael
Sent: Tuesday, June 02, 2015 8:52 AM
To: Bailey, Marissa; Erlanger, Craig
Cc: Ramsey, Kevin
Subject: FW: ACTION: Review & Concurrence of Info SECY paper - Results of the Analysis of Cancer Risk in Populations...

Sorry folks, I must have pressed send too fast. I just wanted to let you know that we sent this to the OD Rids box looking for concurrence last night. It had a pretty tight due date because we wanted to get it up to the Commission in about the same time frame as the budget. I think the date we asked for was June 10th. It's not very long and Kevin should have some awareness of the situation.

Thanks for your help!

From: Case, Michael
Sent: Tuesday, June 02, 2015 8:49 AM
To: Bailey, Marissa; Erlanger, Craig
Cc: Ramsey, Kevin
Subject: FW: ACTION: Review & Concurrence of Info SECY paper - Results of the Analysis of Cancer Risk in Populations...

From: Pope, Tia
Sent: Monday, June 01, 2015 5:39 PM
To: RidsOpaMail Resource; RidsRgn1MailCenter Resource; RidsOcofMailCenter Resource; RidsNmssOd Resource; RidsNroMailCenter Resource; RidsNrrMailCenter Resource; RidsNsirMailCenter Resource; RidsOgcMailCenter Resource; RidsAdmMailCenter Resource
Cc: Brock, Terry; Coffin, Stephanie; Case, Michael; Tadesse, Rebecca; Ford, Jennifer; Ramsey, Kevin; Milligan, Patricia; Hinson, Charles; Garry, Steven; Mizuno, Beth; Burnell, Scott; Nimitz, Ronald
Subject: ACTION: Review & Concurrence of Info SECY paper - Results of the Analysis of Cancer Risk in Populations...

MEMORANDUM TO: THOSE ON THE ATTACHED LIST

FROM: MICHAEL J. CASE

SUBJECT: RESULTS OF THE ANALYSIS OF CANCER RISKS IN POPULATIONS
NEAR NUCLEAR FACILITIES: PHASE 2 PILOT PLANNING PROJECT
AND NEXT STEPS

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From: Roman, Cinthya
Sent: Tuesday, June 02, 2015 2:24 PM
To: McIntyre, David; Ramsey, Kevin
Subject: RE: Close Ticket NMSS201500317 (FCSE)-RESULTS OF THE ANALYSIS OF CANCER RISKS IN POPULATIONS NEAR NUCLEAR FACILITIES: PHASE 2 PILOT PLANNING PROJECT AND NEXT STEPS

Craig agree with Kevin's recommendation. No additional comments.

From: Roman, Cinthya
Sent: Tuesday, June 02, 2015 2:20 PM
To: McIntyre, David; Ramsey, Kevin
Subject: RE: Close Ticket NMSS201500317 (FCSE)-RESULTS OF THE ANALYSIS OF CANCER RISKS IN POPULATIONS NEAR NUCLEAR FACILITIES: PHASE 2 PILOT PLANNING PROJECT AND NEXT STEPS

Sorry Dave, can you wait on this? Craig wants to review it. He'll do it today.

From: Roman, Cinthya
Sent: Tuesday, June 02, 2015 2:05 PM
To: NMSS_TicketCloseout Resource; McIntyre, David
Cc: Ramsey, Kevin
Subject: Close Ticket NMSS201500317 (FCSE)-RESULTS OF THE ANALYSIS OF CANCER RISKS IN POPULATIONS NEAR NUCLEAR FACILITIES: PHASE 2 PILOT PLANNING PROJECT AND NEXT STEPS

Kevin Ramsey already provided his recommendation for concurrence (see attached). Please close the subject ticket for FCSE.

From: Rodgers, Mary
Sent: Tuesday, June 02, 2015 10:19 AM
To: Ramsey, Kevin; Amin, Rita; Rodgers, Mary; Roman, Cinthya; Sanchez, Chanel; Semmes, Mollie
Cc: McIntyre, David; Davis, Catherine; Poland, Catherine; Tressler, Patricia
Subject: NMSS201500317: Due to FO: 06/04/15; Due to RES: 06/10/15

RESULTS OF THE ANALYSIS OF CANCER RISKS IN POPULATIONS NEAR NUCLEAR FACILITIES: PHASE 2 PILOT PLANNING PROJECT AND NEXT STEPS (NMSS201500317)

TTS ticket is attached. Original email attached. No hard-copy provided.

**Mary L. Rodgers, NMSS
FOIA/Records Manager
(301) 415-5655**

From: Ramsey, Kevin
Sent: Wednesday, June 03, 2015 8:11 AM
To: Sykes, Marvin
Subject: FW: RECOMMENDATION: Cancer Study Secy Paper

FYI

From: Ramsey, Kevin
Sent: Monday, June 01, 2015 3:17 PM
To: Haney, Catherine; Moore, Scott; Roman, Cinthya; Bailey, Marissa; Erlanger, Craig; Johnson, Robert; Baker, Merritt
Cc: Lesser, Mark; Hickey, James; Hartland, David; Stancil, Charles; Peterka, Nicholas; Rivera-Crespo, Carmen; Ledford, Joey; Hannah, Roger; Weil, Jenny; McIntyre, David
Subject: RECOMMENDATION: Cancer Study Secy Paper

I recommend concurrence with 1 potential comment. On Page 4, the paper states that NCRP will be asked to include results for facilities not considered in the 1990 study. That may be enough, but only NFS is mentioned by name. It is unclear whether all major fuel facilities will be added. I suggest that we request adding the following fuel facilities:

- AREVA – Richland, WA
- B&W – Lynchburg, VA
- GNFA – Wilmington, NC
- Honeywell – Metropolis, IL
- LES – Eunice, NM (May be too new to draw any conclusions)
- NFS (already mentioned in the paper)
- Westinghouse – Columbia, SC

Please note that the RES Project Manager (Terry Brock) informed me that a formal user-need memo would help ensure that RES processes the request.

From: Brock, Terry
Sent: Monday, June 01, 2015 10:02 AM
To: Mizuno, Beth; Burnell, Scott; Milligan, Patricia; Garry, Steven; Nimitz, Ronald; Ramsey, Kevin; Hinson, Charles; Ford, Jennifer
Cc: Tadesse, Rebecca
Subject: Heads-UP: Cancer Study Secy Paper coming

Hi All,

The cancer study Secy paper on the next steps will be on its way today for your office concurrence >> link below if you want to get a jump start. I identified you as the cognizant staff on the project for review of the paper. We're looking for a June 10th concurrence date so it can be in front of the Commission during budget deliberations later this month.

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talking points we conveyed to your upper management. I'm briefing the Commissioners' CAs on Wed 6/10/15 from 2-3 PM in the OWFN 18th Floor Conference room if you want to attend.

Staff plans for the next steps of the Cancer Study

- Staff plans to sole-source with the congressionally chartered U.S. National Council on Radiation Protection and Measurements (NCRP) to provide a direct update to the 1990 National Cancer Institute (NCI) Cancer Study in approximately 2.5 years for 2.5 million dollars.
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- SECY paper will go out for a two week office concurrence the first week of June to provide to the Commission by the end of June.
- Staff on the cancer risk study team in each office will be notified of the paper and requested by RES to review for the office.
- Concurrently RES will work with the BAC to establish the contracting mechanism with NCRP.

Thx,
Terry

Terry Brock, Ph.D.
Office of Nuclear Regulatory Research
U.S. Nuclear Regulatory Commission
Washington D.C. 20555
Mail Stop CSB-3A07
phone: 301-251-7487

From: Ramsey, Kevin
Sent: Thursday, June 18, 2015 1:24 PM
To: Toth, Matthew
Subject: RE: Heads-UP: Cancer Study to be terminated

No. Nothing is official until the Commission responds. Just wanted to give everyone a warning of what is coming.

From: Toth, Matthew
Sent: Thursday, June 18, 2015 1:21 PM
To: Ramsey, Kevin
Subject: RE: Heads-UP: Cancer Study to be terminated

Thanks for the information Kevin. Is there anything I need to do here at NFS? I will be on-site through July 25.

From: Ramsey, Kevin
Sent: Thursday, June 18, 2015 1:17 PM
To: Haney, Catherine; Moore, Scott; Bailey, Marissa; Erlanger, Craig; Johnson, Robert
Cc: Weil, Jenny; Hannah, Roger; Ledford, Joey; McIntyre, David; Sykes, Marvin; Toth, Matthew; Rivera-Crespo, Carmen; Hartland, David; Cuadrado, Leira; Lesser, Mark; Evans, Carolyn
Subject: Heads-UP: Cancer Study to be terminated

If you thought our next public meeting Erwin was going to be easier, you should think again.

From: Brock, Terry
Sent: Thursday, June 18, 2015 1:05 PM
To: Mizuno, Beth; Burnell, Scott; Milligan, Patricia; Garry, Steven; Nimitz, Ronald; Ramsey, Kevin; Hinson, Charles; Ford, Jennifer
Cc: Tadesse, Rebecca
Subject: Cancer Study Update RE: Heads-UP: Cancer Study Secy Paper coming

All,

First off, thank you all for reviewing the cancer study SECY paper and getting your office concurrences. Late last week, senior management told us that the cancer study will not be moving forward because of the current budget issues impacting the agency. As a result, I have to redraft the SECY paper telling the Commission our plans to not move forward. In turn, I will have to ask for your office concurrences again in the short-term with this new direction. I plan to get the new paper out by next week. Again, thanks again for your review and comments on the original SECY paper. If you have any questions please e-mail or call me next week at my new TWFN number at 301-415-1793—I am currently between offices as we move from Church Street.

Terry

From: Brock, Terry
Sent: Monday, June 01, 2015 10:02 AM
To: Mizuno, Beth; Burnell, Scott; Milligan, Patricia; Garry, Steven; Nimitz, Ronald; Ramsey, Kevin; Hinson, Charles; Ford, Jennifer
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Terry Brock, Ph.D.
Office of Nuclear Regulatory Research
U.S. Nuclear Regulatory Commission
Washington D.C. 20555
Mail Stop CSB-3A07
phone: 301-251-7487

From: Ramsey, Kevin
Sent: Thursday, June 18, 2015 1:26 PM
To: ATSabisch@nuclearfuelservices.com
Subject: Heads-UP: Cancer Study may be terminated

FYI. Nothing is official until the Commission responds, but it doesn't appear that we have the money to finish the cancer study.

From: Brock, Terry
Sent: Thursday, June 18, 2015 1:05 PM
To: Mizuno, Beth; Burnell, Scott; Milligan, Patricia; Garry, Steven; Nimitz, Ronald; Ramsey, Kevin; Hinson, Charles; Ford, Jennifer
Cc: Tadesse, Rebecca
Subject: Cancer Study Update RE: Heads-UP: Cancer Study Secy Paper coming

All,

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Terry

From: Brock, Terry
Sent: Monday, June 01, 2015 10:02 AM
To: Mizuno, Beth; Burnell, Scott; Milligan, Patricia; Garry, Steven; Nimitz, Ronald; Ramsey, Kevin; Hinson, Charles; Ford, Jennifer
Cc: Tadesse, Rebecca
Subject: Heads-UP: Cancer Study Secy Paper coming

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Thx,
Terry

Terry Brock, Ph.D.
Office of Nuclear Regulatory Research
U.S. Nuclear Regulatory Commission
Washington D.C. 20555
Mail Stop CSB-3A07
phone: 301-251-7487

From: Ramsey, Kevin
Sent: Monday, June 22, 2015 8:02 AM
To: Roman, Cinthya
Cc: Johnson, Robert
Subject: RE: NMSS201500356 - Due to RES by 06/25/15.
Attachments: FW: Review & Concurrence of Info SECY Paper-Results of the Analysis of Cancer Risk Populations

Sorry. I guess closing the ticket before it is opened can be confusing.

From: Roman, Cinthya
Sent: Monday, June 22, 2015 7:49 AM
To: Ramsey, Kevin
Subject: FW: NMSS201500356 - Due to RES by 06/25/15.

I am confused...I thought you already did this....please let me know.

From: Davis, Catherine
Sent: Friday, June 19, 2015 4:02 PM
To: Roman, Cinthya; Ramsey, Kevin
Cc: Sanchez, Chanel; Amin, Rita; Tyler, Cynthia; Davis, Catherine; Moore, Wendy; Poland, Catherine; Rodgers, Mary; Tressler, Patricia
Subject: NMSS201500356 - Due to RES by 06/25/15.

NMSS201500356 – REVIEW AND CONCURRENCE OF INFO SECY PAPER – RESULTS OF THE ANALYSIS OF CANCER RISK POPULATIONS

Ticket and incoming are attached.

Catherine Davis
Management Analyst
NMSS/PBPA/OMB
U.S. Nuclear Regulatory Commission
Phone: 301-415-0600
Email: catherine.davis@nrc.gov

From: Ramsey, Kevin
Sent: Friday, June 19, 2015 3:19 PM
To: Haney, Catherine; Moore, Scott; Bailey, Marissa; Erlanger, Craig; Johnson, Robert; Baker, Merritt
Cc: Cuadrado, Leira
Subject: FW: Review & Concurrence of Info SECY Paper-Results of the Analysis of Cancer Risk Populations

I recommend concurrence. We may want to cite the need for a communication plan. The decision will be unpopular.

From: Gaskins, Kimberly
Sent: Friday, June 19, 2015 2:02 PM
To: RidsOpaMail Resource; RidsRgn1MailCenter Resource; RidsNmssOd Resource; RidsNroMailCenter Resource; RidsNrrMailCenter Resource; RidsNsirMailCenter Resource; RidsOgcMailCenter Resource
Cc: Brock, Terry; Coffin, Stephanie; Case, Michael; Tadesse, Rebecca; Ford, Jennifer; Ramsey, Kevin; Milligan, Patricia; Hinson, Charles; Garry, Steven; Mizuno, Beth; Burnell, Scott; Nimitz, Ronald
Subject: RE: Review & Concurrence of Info SECY Paper-Results of the Analysis of Cancer Risk Populations

All,

Please concur no later than COB June 25th. Please contact Terry Brock at Terry.brock@nrc.gov with any questions or comments concerning this document.

Thank you
Kim

From: Gaskins, Kimberly
Sent: Friday, June 19, 2015 1:57 PM
To: RidsOpaMail Resource; RidsRgn1MailCenter Resource; RidsNmssOd Resource; RidsNroMailCenter Resource; RidsNrrMailCenter Resource; RidsNsirMailCenter Resource; RidsOgcMailCenter Resource
Cc: Brock, Terry; Coffin, Stephanie; Case, Michael; Tadesse, Rebecca; Ford, Jennifer; Ramsey, Kevin; Milligan, Patricia; Hinson, Charles; Garry, Steven; Mizuno, Beth; Burnell, Scott; Nimitz, Ronald
Subject: Review & Concurrence of Info SECY Paper-Results of the Analysis of Cancer Risk Populations

MEMORANDUM TO: Those on the Attached List

FROM: M. Case

SUBJECT: SECY-RESULTS OF THE ANALYSIS OF CANCER RISKS
IN POPULATION NEAR NUCLEAR FACILITIES:
PHASE 2 PILOT PLANNING PROJECT AND NEXT STEPS

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[Open ADAMS P8 Package \(SECY - Results of the Analysis of Cancer Risks in Populations Near Nuclear Facilities: Phase 2 Pilot Planning Project and Next Steps\)](#)

From: Brock, Terry
Sent: Thursday, June 25, 2015 5:04 PM
To: Lopas, Sarah
Cc: Ramsey, Kevin
Subject: Re: Heads-UP: Cancer Study to be terminated

Hi Sarah,

We're working on it and will share before any announcements.

Terry

From: Lopas, Sarah
Sent: Thursday, June 25, 2015 4:52 PM
To: Brock, Terry
Cc: Ramsey, Kevin
Subject: FW: Heads-UP: Cancer Study to be terminated

Hi Terry,

I'm wondering if RES has a communication plan, or is thinking of developing one, for when we're ready to go public with this information? The RSLOs would like to be prepared to inform the States (notably CA, IL, CT, TN, and NJ) of this decision ahead of them hearing it from an official NRC OPA announcement or a trade paper or something along those lines.

If we don't have a communication plan - - can I just ask to be kept in the loop re: the timing of this announcement. Again, it's just so that the RSLOs can inform the SLOs before other folks in the State hear about it from either our website or some other source. And also, as I'm sure Kevin can attest, it will help our RSLO do outreach to the State of Tennessee to help them be prepared for possible backlash from folks concerned about NFS.

Thank you, thank you!

-Sarah

Sarah L. Lopas
Senior Liaison Program Manager
U.S. Nuclear Regulatory Commission
Office (301) 415-6360
BlackBerry (b)(6)
HQ Office Location T8F9
Mail Stop T8F42

From: Pelchat, John
Sent: Tuesday, June 23, 2015 12:44 PM
To: Lopas, Sarah
Cc: Lea, Edwin
Subject: FW: Heads-UP: Cancer Study to be terminated

From: Sykes, Marvin
Sent: Tuesday, June 23, 2015 11:33 AM
To: Pelchat, John
Subject: FW: Heads-UP: Cancer Study to be terminated

FYI

From: Ramsey, Kevin
Sent: Thursday, June 18, 2015 1:17 PM
To: Haney, Catherine; Moore, Scott; Bailey, Marissa; Erlanger, Craig; Johnson, Robert
Cc: Weil, Jenny; Hannah, Roger; Ledford, Joey; McIntyre, David; Sykes, Marvin; Toth, Matthew; Rivera-Crespo, Carmen; Hartland, David; Cuadrado, Leira; Lesser, Mark; Evans, Carolyn
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If you thought our next public meeting Erwin was going to be easier, you should think again.

From: Brock, Terry
Sent: Thursday, June 18, 2015 1:05 PM
To: Mizuno, Beth; Burnell, Scott; Milligan, Patricia; Garry, Steven; Nimitz, Ronald; Ramsey, Kevin; Hinson, Charles; Ford, Jennifer
Cc: Tadesse, Rebecca
Subject: Cancer Study Update RE: Heads-UP: Cancer Study Secy Paper coming

All,

First off, thank you all for reviewing the cancer study SECY paper and getting your office concurrences. Late last week, senior management told us that the cancer study will not be moving forward because of the current budget issues impacting the agency. As a result, I have to redraft the SECY paper telling the Commission our plans to not move forward. In turn, I will have to ask for your office concurrences again in the short-term with this new direction. I plan to get the new paper out by next week. Again, thanks again for your review and comments on the original SECY paper. If you have any questions please e-mail or call me next week at my new TWFN number at 301-415-1793—I am currently between offices as we move from Church Street.

Terry

From: Brock, Terry
Sent: Monday, June 01, 2015 10:02 AM
To: Mizuno, Beth; Burnell, Scott; Milligan, Patricia; Garry, Steven; Nimitz, Ronald; Ramsey, Kevin; Hinson, Charles; Ford, Jennifer
Cc: Tadesse, Rebecca
Subject: Heads-UP: Cancer Study Secy Paper coming

Hi All,

The cancer study Secy paper on the next steps will be on its way today for your office concurrence >> link below if you want to get a jump start. I identified you as the cognizant staff on the project for review of the paper. We're looking for a June 10th concurrence date so it can be in front of the Commission during budget deliberations later this month.

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Since we last spoke, RES has briefed the EDO and informed your Deputy Office Directors on our plan to use the National Council on Radiation Protection and Measurements to do a direct update of the 1990 NCI study. NAS proved to be too expensive and take too long to finish the study to have useful results. Below are the talking points we conveyed to your upper management. I'm briefing the Commissioners' CAs on Wed 6/10/15 from 2-3 PM in the OWFN 18th Floor Conference room if you want to attend.

Staff plans for the next steps of the Cancer Study

- Staff plans to sole-source with the congressionally chartered U.S. National Council on Radiation Protection and Measurements (NCRP) to provide a direct update to the 1990 National Cancer Institute (NCI) Cancer Study in approximately 2.5 years for 2.5 million dollars.
- The update through NCRP would be a more modest approach than what was proposed by the National Academies, however NCRP will provide final results in a reasonable time frame at a reduced cost.
- Discussed NCRP sole-source with the Business Advisory Center and received support for this approach.
- Staff plans to communicate the NCRP approach to the Commission through a CA brief and Information SECY paper.
- SECY paper will go out for a two week office concurrence the first week of June to provide to the Commission by the end of June.
- Staff on the cancer risk study team in each office will be notified of the paper and requested by RES to review for the office.
- Concurrently RES will work with the BAC to establish the contracting mechanism with NCRP.

Thx,
Terry

Terry Brock, Ph.D.
Office of Nuclear Regulatory Research
U.S. Nuclear Regulatory Commission
Washington D.C. 20555
Mail Stop CSB-3A07
phone: 301-251-7487

From: Poland, Catherine
Sent: Monday, June 29, 2015 2:35 PM
To: Ramsey, Kevin
Cc: McIntyre, David
Subject: The response you are looking for.....

Cathy gave the package to Dwight as he was walking out the door on Thursday. We are not sure what happened to the document but Cathy has re-concurred and I have the concurrence page if you would like to come by and get it. I am in T4E07.

Thanks, Cathy

From: Poland, Catherine
Sent: Monday, June 29, 2015 2:52 PM
To: Ramsey, Kevin; Rodgers, Mary
Cc: Davis, Catherine; NMSS_TicketCloseout Resource
Subject: RE: NMSS201500356 - Is this ticket closed?

Mary –

I just gave the concurrence copy to Kevin to take to RES. Cathy concurred on 6/25/15.

Thanks,
Cathy

From: Ramsey, Kevin
Sent: Monday, June 29, 2015 2:51 PM
To: Rodgers, Mary
Cc: Davis, Catherine; NMSS_TicketCloseout Resource; Poland, Catherine
Subject: RE: NMSS201500356 - Is this ticket closed?

My understanding is Cathy scribbled on hard copy package. Not sure how you document that.

From: Rodgers, Mary
Sent: Monday, June 29, 2015 1:42 PM
To: Ramsey, Kevin
Cc: Davis, Catherine; NMSS_TicketCloseout Resource
Subject: RE: NMSS201500356 - Is this ticket closed?

Did anyone send the response to RES. That is what we need for closeout. This is just to Cathy/Scott with a recommendation concur

From: Ramsey, Kevin
Sent: Monday, June 29, 2015 1:35 PM
To: NMSS_TicketCloseout Resource
Cc: Davis, Catherine; Rodgers, Mary
Subject: FW: NMSS201500356 - Is this ticket closed?

Ticket is closed. See attached.

From: Davis, Catherine
Sent: Friday, June 26, 2015 9:58 AM
To: Ramsey, Kevin
Cc: Davis, Catherine; Rodgers, Mary
Subject: NMSS201500356 - Is this ticket closed?

Good Morning Kevin,

Please see attached ticket that was due yesterday. If it is closed would you please send an e-mail to the NMSSTicketCloseout Resource? Thank you.

Catherine

Catherine Davis
Management Analyst
NMSS/PBPA/OMB
U.S. Nuclear Regulatory Commission
Phone: 301-415-0600
Email: catherine.davis@nrc.gov

From: Bailey, Marissa
Sent: Monday, June 22, 2015 2:07 PM
To: Haney, Catherine; Moore, Scott
Cc: Roman-Cuevas, Cinthya; Ramsey, Kevin; Johnson, Robert; Sun, Robert
Subject: Recommend NMSS Concurrence: Info SECY Paper-Results of the Analysis of Cancer Risk Populations (NMSS201500356, due 06/25/2015)

Cathy, Scott,

FCSE recommends concurrence on the subject SECY paper, which informs the Commission that the staff has decided to not move forward with the cancer risk study project due to the current budget environment and the need to prioritize and focus on activities directly related to protecting public health and safety.

This decision will be unpopular with some stakeholders; therefore, we also recommend that RES, in coordination with NRR, NMSS, NRO and OPA, develop a communication plan.

Marissa

From: Gaskins, Kimberly
Sent: Friday, June 19, 2015 2:02 PM
To: RidsOpaMail Resource; RidsRgn1MailCenter Resource; RidsNmssOd Resource; RidsNroMailCenter Resource; RidsNrrMailCenter Resource; RidsNsirMailCenter Resource; RidsOgcMailCenter Resource
Cc: Brock, Terry; Coffin, Stephanie; Case, Michael; Tadesse, Rebecca; Ford, Jennifer; Ramsey, Kevin; Milligan, Patricia; Hinson, Charles; Garry, Steven; Mizuno, Beth; Burnell, Scott; Nimitz, Ronald
Subject: RE: Review & Concurrence of Info SECY Paper-Results of the Analysis of Cancer Risk Populations

All,

Please concur no later than COB June 25th. Please contact Terry Brock at Terry.brock@nrc.gov with any questions or comments concerning this document.

Thank you
Kim

From: Gaskins, Kimberly
Sent: Friday, June 19, 2015 1:57 PM
To: RidsOpaMail Resource; RidsRgn1MailCenter Resource; RidsNmssOd Resource; RidsNroMailCenter Resource; RidsNrrMailCenter Resource; RidsNsirMailCenter Resource; RidsOgcMailCenter Resource
Cc: Brock, Terry; Coffin, Stephanie; Case, Michael; Tadesse, Rebecca; Ford, Jennifer; Ramsey, Kevin; Milligan, Patricia; Hinson, Charles; Garry, Steven; Mizuno, Beth; Burnell, Scott; Nimitz, Ronald
Subject: Review & Concurrence of Info SECY Paper-Results of the Analysis of Cancer Risk Populations

MEMORANDUM TO: Those on the Attached List

FROM: M. Case

SUBJECT: SECY-RESULTS OF THE ANALYSIS OF CANCER RISKS
IN POPULATION NEAR NUCLEAR FACILITIES:
PHASE 2 PILOT PLANNING PROJECT AND NEXT STEPS

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From: Brock, Terry
Sent: Monday, June 29, 2015 2:56 PM
To: Ramsey, Kevin
Subject: Re: Left copy of concurrence page on your chair - eom

Thanks

From: Ramsey, Kevin
Sent: Monday, June 29, 2015 2:48:35 PM
To: Brock, Terry
Subject: Left copy of concurrence page on your chair - eom

From: Ramsey, Kevin
Sent: Monday, July 06, 2015 2:52 PM
To: Jackson, Deborah
Subject: RE: Request for Draft of Cancer Study Paper

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From: Jackson, Deborah
Sent: Monday, July 06, 2015 2:06 PM
To: Ramsey, Kevin
Subject: Request for Draft of Cancer Study Paper

Kevin,

I hope this email finds you doing well.

I was told that I would be able to get a copy of the draft cancer study paper from you. If that is correct, please send me the draft.

Thanks
Debbie

p.s. I stopped by your office earlier, nice pic of the submarine.

From: Ramsey, Kevin
Sent: Tuesday, August 11, 2015 9:33 AM
To: Bailey, Marissa; Johnson, Robert
Subject: RE: SECY paper for Cancer Study

We recommend concurrence with all of the options:

- If they stop work for lack of funds, we concur.
- If they proceed with "simple" update of 1990 study, we concur.
- If they proceed with new (and expensive) study by National Academies, we concur.

Only comment on the 1990 study is we would prefer that update expand study to include fuel facilities (if funds allow).

From: Bailey, Marissa
Sent: Tuesday, August 11, 2015 9:20 AM
To: Ramsey, Kevin; Johnson, Robert
Subject: FW: SECY paper for Cancer Study
Importance: High

I thought the version that NMSS (Cathy) concurred on said that NRC was going to stop the cancer study. So this new conclusion would be very different from what NMSS we concurred on. Please advise.

From: Case, Michael
Sent: Tuesday, August 11, 2015 8:40 AM
To: Champion, Tanya <Tanya.Champion@nrc.gov>; Bailey, Marissa <Marissa.Bailey@nrc.gov>; Lewis, Robert <Robert.Lewis@nrc.gov>; Lorson, Raymond <Raymond.Lorson@nrc.gov>; Lee, Samson <Samson.Lee@nrc.gov>; Burnell, Scott <Scott.Burnell@nrc.gov>; Flanders, Scott <Scott.Flanders@nrc.gov>
Cc: Erlanger, Craig <Craig.Erlanger@nrc.gov>; Andersen, James <James.Andersen@nrc.gov>; Giitter, Joseph <Joseph.Giitter@nrc.gov>; Kock, Andrea <Andrea.Kock@nrc.gov>
Subject: FW: SECY paper for Cancer Study
Importance: High

Hello folks. The purpose of this email is to get you up-to-date with the latest version of the Cancer Study paper. It has been the subject of much negotiation among Brian, the 17th, and the 18th floors. Brian has even been to every Commission office to tell them about this version of the paper.

Most of the paper is the same (as far as telling the story). What is different is the Conclusion and Resource section. The punch line of the conclusion section is that we (the NRC) are going to proceed with small scale version of the Cancer Study which involves a "simple" update of the 1990 NCI Study. The punch line of the resource section is that it probably won't start until FY 17 for budgetary reasons (and may not proceed at all if the budget is unattainable).

We think the paper is still covered by one of your earlier concurrences, but we welcome your input if you feel that is not true (It actually will be signed by Mark S. now, so it still has some processing to go).

Thanks again for all your support and wisdom.

Mike

From: Coffin, Stephanie
Sent: Tuesday, August 11, 2015 8:09 AM
To: Tadesse, Rebecca; Case, Michael
Subject: FW: SECY paper for Cancer Study
Importance: High

Per our discussion this morning – you two have actions. ☺

From: Coffin, Stephanie
Sent: Thursday, August 06, 2015 11:25 AM
To: Pope, Tia <Tia.Pope@nrc.gov>; Tadesse, Rebecca <Rebecca.Tadesse@nrc.gov>; Case, Michael <Michael.Case@nrc.gov>
Cc: Brock, Terry <Terry.Brock@nrc.gov>
Subject: SECY paper for Cancer Study
Importance: High

Tia,

Please update the ADAMS version of the SECY paper with the attached which reflects changes to address Brian Sheron's and Steve West's comments. Please note that I still have a couple of comments in the attached to highlight for you some final editorial changes. When all done, you can route the formal package back through the RES mailroom. And thank you for your attention – the paper looks very polished and professional.

Rebecca,

Please take a look at the attached and scream if I got something wrong. I did not have the benefit of your wisdom when making these changes. And can you let the WG members know that Mike will be resending to his division counterparts tomorrow, as a courtesy? We believe their concurrence still holds but don't want them surprised.

Mike,

Per our discussion, please send this to our colleagues across the agency to give them the courtesy alert that the paper looks quite a bit different.

The right folks would be: Tanya Champion (CFO), Marissa Bailey/Craig Erlanger (NMSS), Rob Lewis/Jim Anderson (NSIR), Ray Lorson (RI), Joe Giitter/Sam Lee (NRR), Scott Burnell (OPA), Scott Flanders/Andrea Kock (NRO). OGC saw a pretty late version so I think we're okay with them.

Thanks all,
Stephanie

From: Ramsey, Kevin
Sent: Tuesday, August 11, 2015 12:17 PM
To: Bailey, Marissa; Johnson, Robert; Erlanger, Craig
Subject: FW: SECY paper for Cancer Study

See below FYI.

From: Brock, Terry
Sent: Tuesday, August 11, 2015 12:14 PM
To: Ramsey, Kevin
Subject: RE: SECY paper for Cancer Study

We left it vague to include other facilities not included in the original 1990 NCI study with a specific example reference to NFS. Other fuel cycle facilities will be added if this ever gets off the ground.

From: Ramsey, Kevin
Sent: Tuesday, August 11, 2015 9:03 AM
To: Brock, Terry
Subject: FW: SECY paper for Cancer Study
Importance: High

So, will the update expand the NCI study to include fuel facilities?

From: Ramsey, Kevin
Sent: Wednesday, August 12, 2015 1:26 PM
To: Brock, Terry
Cc: Johnson, Robert; Bailey, Marissa
Subject: FW: NMSS small change FW: UPDATE SECY paper for Cancer Study

Cathy's good.

From: Haney, Catherine
Sent: Wednesday, August 12, 2015 11:50 AM
To: Ramsey, Kevin
Subject: RE: NMSS small change FW: UPDATE SECY paper for Cancer Study

Yes. Thanks (although I would feel better if they left off "major" but I can live with it)

From: Ramsey, Kevin
Sent: Wednesday, August 12, 2015 11:13 AM
To: Haney, Catherine <Catherine.Haney@nrc.gov>
Cc: Bailey, Marissa <Marissa.Bailey@nrc.gov>; Johnson, Robert <Robert.Johnson@nrc.gov>
Subject: FW: NMSS small change FW: UPDATE SECY paper for Cancer Study
Importance: High

In the conclusion, RES replaced specific mention of Nuclear Fuel Services with a general reference to major fuel facilities. OK?

From: Brock, Terry
Sent: Wednesday, August 12, 2015 11:10 AM
To: Ramsey, Kevin
Subject: FW: NMSS small change FW: UPDATE SECY paper for Cancer Study
Importance: High

Here's what I changed

CONCLUSION:

After considering the approaches described above, the staff intends to proceed with updating the 1990 NCI study. Such an approach would be able to provide final results in a reasonable time period to meet the original staff goal of having updated information. The staff acknowledges that this update will be more modest than what NRC asked NAS to consider in a new update, but we have affirmed with our colleagues in NSIR, NRR, NRO, and OPA that a direct update would be both adequate and desirable for staff to discuss cancer risks with the public. The more modest scope is also consistent with the direction of the Commission in its response to the Project Aim 2020 Report, particularly with maintaining a "balanced perspective of the significance of the activity." The staff would ensure that such an update would include new results for NRC facilities not operational or considered at the time of the 1990 study (e.g., major fuel cycle facilities, Braidwood and Byron Nuclear Generating Stations in Illinois). The staff plans to engage the Office of Administration to ensure all procurement processes are followed to determine if NCRP or another entity would be the best to complete the NCI update.

Terry Brock, Ph.D.
Office of Nuclear Regulatory Research
U.S. Nuclear Regulatory Commission
Washington D.C. 20555
Mail Stop TWFN-10
phone: 301-415-1793

From: Brock, Terry
Sent: Wednesday, August 12, 2015 11:04 AM
To: Case, Michael; Coffin, Stephanie
Cc: Tadesse, Rebecca
Subject: NMSS small change FW: UPDATE SECY paper for Cancer Study
Importance: High

Mike/Stephanie,

I heard back from NMSS. Cathy wants to make sure any future study includes all fuel cycle facilities and wants that reflected in the paper. I spoke to my NMSS counterpart and changing the conclusion from "NFS" to "major fuel cycle facilities" should do it (attached). As a reminder NMSS joined the study after the original user-need request was made. Since they are showing even more interest in studying all their major facilities, I recommend we push for them to sign the user-need at a later date (maybe even get some resources?).

Terry

Terry Brock, Ph.D.
Office of Nuclear Regulatory Research
U.S. Nuclear Regulatory Commission
Washington D.C. 20555
Mail Stop TWFN-10
phone: 301-415-1793

From: Brock, Terry
Sent: Tuesday, August 11, 2015 12:31 PM
To: Milligan, Patricia; Garry, Steven; Ramsey, Kevin; Burnell, Scott; Nimitz, Ronald; Hinson, Charles; Mizuno, Beth
Cc: Weil, Jenny
Subject: UPDATE SECY paper for Cancer Study
Importance: High

Hi All,

FYI: No action needed. Your management has been informed already.

As a reminder, you've concurred on two versions of the paper that recommended going forward with the more modest NCRP approach to update the NCI study and the second version to cancel the project completely due to budget constraints. Since then, it has been the subject of much negotiation among Brian, the 17th, and the 18th floors. Brian has even been to every Commission office to tell them about this version of the paper.

Most of the paper is the same (as far as telling the story). What is different is the Conclusion and Resource section. The punch line of the conclusion section is that we (the NRC) are going to proceed with small scale version of the Cancer Study which involves a "simple" update of the 1990 NCI Study. The punch line of the

resource section is that it probably won't start until FY 17 for budgetary reasons (and may not proceed at all if the budget is unattainable).

Thanks

Terry

From: Ramsey, Kevin
Sent: Wednesday, August 26, 2015 10:44 AM
To: Hartland, David
Cc: Morgan, Nadiyah; Cuadrado, Leira; Johnson, Robert; Stancil, Charles; Sykes, Marvin
Subject: More info re: Cancer Study

Rebecca Tadesse in RES says a Communication Plan is being prepared. Release date for the paper is September 8. RII member of the communication team is Gena Woodruff.

Draft plan mentions NFS, but not ECAN. RES plans to have a conference call early next week to discuss the communications plan.

From: Ramsey, Kevin
Sent: Wednesday, August 26, 2015 10:18 AM
To: Hartland, David
Cc: Johnson, Robert; Cuadrado, Leira; Stancil, Charles; Sykes, Marvin
Subject: RE: Update: Cancer Study

The cancer study has been a recurring topic at public meetings conducted by RII for several years now. I haven't seen a communications plan. In the past, the RII Branch Chief had the lead for contacting ECAN. My role was usually limited to contacting Naval Reactors. I suggest you check with Marvin Sykes and Jim Hickey (maybe Alan Blamey too) to see if they believe we should change the point of contact to FMB.

Robert Johnson is (b)(6), but I believe we can do it if RII agrees with the change.

From: Hartland, David
Sent: Wednesday, August 26, 2015 9:54 AM
To: Ramsey, Kevin
Subject: FW: Update: Cancer Study

Kevin, Mark Lesser asked whether you intended to volunteer to notify ECAN at the appropriate time of the decision since you have enjoyed discussing this topic with them in the past.

From: Lesser, Mark
Sent: Monday, August 24, 2015 3:55 PM
To: Sykes, Marvin <Marvin.Sykes@nrc.gov>; Hartland, David <David.Hartland@nrc.gov>; Stancil, Charles <Charles.Stancil@nrc.gov>
Subject: FW: Update: Cancer Study

From: Pelchat, John
Sent: Monday, August 24, 2015 1:17 PM
To: Lesser, Mark <Mark.Lesser@nrc.gov>; Evans, Carolyn <Carolyn.Evans@nrc.gov>
Subject: FW: Update: Cancer Study

FYI – I will talk to Terry regarding the timing on notifying the State.

From: Brock, Terry

Sent: Monday, August 24, 2015 12:22 PM

To: Milligan, Patricia <Patricia.Milligan@nrc.gov>; Burnell, Scott <Scott.Burnell@nrc.gov>; Garry, Steven <Steven.Garry@nrc.gov>; Nimitz, Ronald <Ronald.Nimitz@nrc.gov>; Hinson, Charles <Charles.Hinson@nrc.gov>; Weil, Jenny <Jenny.Weil@nrc.gov>; Ramsey, Kevin <Kevin.Ramsey@nrc.gov>; Jones, Andrea <Andrea.Jones2@nrc.gov>; Mizuno, Beth <Beth.Mizuno@nrc.gov>; Cassidy, John <John.Cassidy@nrc.gov>; Stearns, Don <Don.Stearns@nrc.gov>; Woodruff, Gena <Gena.Woodruff@nrc.gov>

Cc: Tadesse, Rebecca <Rebecca.Tadesse@nrc.gov>

Subject: Update: Cancer Study

Hi All,

This is to inform you all that the cancer study has been canceled. Three of the four Commissioners specifically lined out the study from the budget. We had some back and forth with the OEDO about the SECY paper and we ended up not going forward with either the NAS or NCRP approaches. The final paper signed out by the EDO is here [ML15141A404](#)

At this point, I will be working with Scott (OPA) to work on the messaging for when the paper is made public in about ten days. We still have to communicate our decision with NAS, so please do not communicate this decision outside the agency until the Commission has an opportunity to read the paper and it's made public.

Thanks,
Terry

Terry Brock, Ph.D.
Office of Nuclear Regulatory Research
U.S. Nuclear Regulatory Commission
Washington D.C. 20555
Mail Stop TWFN-10
phone: 301-415-1793

From: Burnell, Scott
Sent: Wednesday, August 26, 2015 11:40 AM
To: Ramsey, Kevin; Brock, Terry; Tadesse, Rebecca; Coffin, Stephanie
Subject: RE: Comm plan

We can certainly have a discussion on this, but any calls in the "other stakeholder" category would have to be concurrent with the press release going public.

From: Ramsey, Kevin
Sent: Wednesday, August 26, 2015 10:50 AM
To: Burnell, Scott <Scott.Burnell@nrc.gov>; Brock, Terry <Terry.Brock@nrc.gov>
Subject: RE: Comm plan

RII asked who would give the bad news to the Erwin Citizens Awareness Network (ECAN). Rebecca Tadesse says the draft communication plan lists NFS, but not ECAN.

Most of the public meetings at NFS are led by RII because they are usually inspection-related. However, RII doesn't want the lead for this one. Rebecca plans to schedule a conference call to discuss the plan. Maybe we can sort out who calls ECAN at that time.

From: Burnell, Scott
Sent: Wednesday, August 26, 2015 10:44 AM
To: Ramsey, Kevin; Brock, Terry
Subject: Comm plan

Hi Kevin;

Terry and I have put a basic comm plan together and we'll be putting out a press release, so the various communities mentioned for the pilot study will be informed that way. Let me know if you need anything else. Thanks.

Scott

Subject: FW: Cancer study communication activities
Location: HQ-TWFN-06C01-20p

Start: Thu 09/03/2015 1:00 PM
End: Thu 09/03/2015 2:00 PM
Show Time As: Tentative

Recurrence: (none)

Meeting Status: Not yet responded

Organizer: Brock, Terry

This is when we are supposed to brief Craig on site visit. Would you like to cover this call?

-----Original Appointment-----

From: Brock, Terry
Sent: Tuesday, September 01, 2015 1:43 PM
To: Brock, Terry; Milligan, Patricia; Ramsey, Kevin; Garry, Steven; Hinson, Charles; Nimitz, Ronald; Woodruff, Gena; Cassidy, John; Stearns, Don; Lopas, Sarah; Mizuno, Beth; Burnell, Scott; Weil, Jenny; Pelchat, John; Tifft, Doug; McNamara, Nancy; Maier, Bill; McGrady-Finneran, Patricia; Logaras, Haral; Lea, Edwin; Barker, Allan; Tadesse, Rebecca; Rakovan, Lance
Subject: Cancer study communication activities
When: Thursday, September 03, 2015 1:00 PM-2:00 PM (UTC-05:00) Eastern Time (US & Canada).
Where: HQ-TWFN-06C01-20p

All,

This meeting is to coordinate the message to our stakeholders about the forthcoming public release of the SECY paper on the cancelling of the cancer study. I'll send the communication plan soon for our discussion and sequencing of notifications. Bridge-line info below:

Passcodes/Pin codes:

Participant passcode: (b)(6)

For security reasons, the passcode will be required to join the conference.

Dial in numbers:

Country	Toll Numbers		Freephone/ Toll Free Number
USA			888-989-7692

Thanks,
Terry

Terry Brock, Ph.D.
Office of Nuclear Regulatory Research
U.S. Nuclear Regulatory Commission

Washington D.C. 20555
Mail Stop TWFN-10
phone: 301-415-1793

Subject: UPDATE: COMM PLAN Available Cancer study communication activities
Location: HQ-TWFN-06C01-20p

Start: Thu 09/03/2015 1:00 PM
End: Thu 09/03/2015 2:00 PM
Show Time As: Tentative

Recurrence: (none)

Meeting Status: Not yet responded

Organizer: Brock, Terry
Required Attendees: Milligan, Patricia; Ramsey, Kevin; Garry, Steven; Hinson, Charles; Nimitz, Ronald; Woodruff, Gena; Cassidy, John; Stearns, Don; Lopas, Sarah; Mizuno, Beth; Burnell, Scott; Weil, Jenny; Pelchat, John; Tifft, Doug; McNamara, Nancy; Maier, Bill; McGrady-Finneran, Patricia; Logaras, Haral; Lea, Edwin; Barker, Allan; Tadesse, Rebecca; Rakovan, Lance
Optional Attendees: Mitlyng, Viktoria; Chandrathil, Prema; Heck, Jared; Johnson, Robert; Hartland, David; Sykes, Marvin; Hannah, Roger; Ledford, Joey

Hi All,

Below is the link to the cancer study comm plan for our meeting today. Brian Sheron hasn't signed it out yet because he is on vacation this week. I don't expect any dramatic changes between now and Monday when he gets back. Thanks, Terry

[View ADAMS P8 Properties ML15244A833](#)

[Open ADAMS P8 Document \(Communications Plan - Analysis of Cancer Risks in Populations Living Near Nuclear Facilities-Project Closeout\)](#)

All,

This meeting is to coordinate the message to our stakeholders about the forthcoming public release of the SECY paper on the cancelling of the cancer study. I'll send the communication plan soon for our discussion and sequencing of notifications. Bridge-line info below:

Passcodes/Pin codes:

Participant passcode: (b)(6)

For security reasons, the passcode will be required to join the conference.

Dial in numbers:

Country	Toll Numbers	Freephone/ Toll Free Number
USA		888-989-7692

Thanks,
Terry

Terry Brock, Ph.D.
Office of Nuclear Regulatory Research
U.S. Nuclear Regulatory Commission
Washington D.C. 20555
Mail Stop TWFN-10
phone: 301-415-1793

From: Johnson, Robert
Sent: Friday, September 04, 2015 9:46 AM
To: Burnell, Scott
Cc: Cuadrado, Leira; Ramsey, Kevin; Lesser, Mark; Sykes, Marvin; Erlanger, Craig; Evans, Carolyn; Johnson, Robert
Subject: RE: Communication Plan for Cancellation of NAS Cancer Risk Study

Scott,

Please blind copy the NRC staff CC'd on this email when you notify the "interested parties" that the cancer study has been closed out. We want to make sure that we are all on the same page when or if we have inquiries from these "interested parties."

Also, please note that the last two emails Kevin Ramsey sent yesterday (below) are the Nuclear Safety and Licensing Managers at Nuclear Fuel Services and should be notified as part of the site notifications, rather than "interested parties" notification.

Thanks,

Robert K. Johnson
Fuel Manufacturing Branch Chief
NRC / NMSS / FCSE / FMB
PHONE: 301.415.7314
OFFICE / MAIL STOP: T04-B06 / T04-A60
Robert.Johnson@NRC.gov

From: Ramsey, Kevin
Sent: Thursday, September 03, 2015 3:58 PM
To: Burnell, Scott <Scott.Burnell@nrc.gov>
Cc: Johnson, Robert <Robert.Johnson@nrc.gov>; Cuadrado, Leira <Leira.Cuadrado@nrc.gov>
Subject: RE: Communication Plan for Cancellation of NAS Cancer Risk Study

(b)(6)

Barbara O'Neal
Erwin Citizens Awareness Network (ECAN)

(b)(6)

Linda Modica
Sierra Club

ATSabisch@nuclearfuelservices.com
Andy Sabisch, Licensing & ISA Manager

WRShackelford@nuclearfuelservices.com
Randy Shackelford, Safety Manager

From: Johnson, Robert
Sent: Thursday, September 03, 2015 3:17 PM
To: Bailey, Marissa; Erlanger, Craig; Ramsey, Kevin
Subject: Communication Plan for Cancellation of NAS Cancer Risk Study
Importance: High

Marissa, Craig, and Kevin,

The Communication Plan for communicating the cancellation of the NAS cancer study is enclosed FYI

[View ADAMS P8 Properties ML15244A833](#)

[Open ADAMS P8 Document \(Communications Plan - Analysis of Cancer Risks in Populations Living Near Nuclear Facilities-Project Closeout\)](#)

Highlights for September 8, 2015, include:

09:00 – RES to inform NAS,
09:30 – internal press release on cancellation made available to internal stakeholders (TDEC to be informed at 0930),
~10:00 – interested parties around sites informed (e.g., ECAN, Barb, Linda, and others), and
10:30 – public release – SECY made publically available.

KEVIN ACTION: Please forward emails for the interested parties around NFS (e.g., ECAN, Barb, Linda, and others) to Scott Burnell today. Scott has offered to be the POC and to respond to public comment (at least on the first round).

Thanks,

Robert K. Johnson
Fuel Manufacturing Branch Chief
NRC / NMSS / FCSE / FMB
PHONE: 301.415.7314
OFFICE / MAIL STOP: T04-B06 / T04-A60
Robert.Johnson@NRC.gov

From: Ramsey, Kevin
Sent: Tuesday, September 08, 2015 10:43 AM
To: (b)(6)
Cc: Hartland, David; Johnson, Robert; Sykes, Marvin
Subject: FW: NRC announcement on NAS Cancer Risk Study
Attachments: SECY 15_0104.pdf; 15-055.pdf

The first attachment is publicly available as ML15141A404; the second attachment is publicly available as ML15251A111.

Barbara/Linda – This is to confirm you are aware of the Commission's decision to stop work on the cancer study.

Kevin M. Ramsey
Senior Project Manager
Fuel Manufacturing Branch
U.S. NRC
301-415-7506

From: Burnell, Scott
Sent: Tuesday, September 08, 2015 10:00 AM
To: Burnell, Scott
Subject: NRC announcement on NAS Cancer Risk Study

Hello;

Due to your ongoing interest in the National Academies' NRC-sponsored cancer risk study, the agency is providing you an advance copy of the NRC's decision to stop work on the project.

It is important to keep in mind the NAS, while stating the overall approach was scientifically sound, has pointed out the pilot study would focus on validating the research methods' feasibility. The latest NAS proposal said: "any data collected during the pilot study will have limited use for estimating cancer risks in populations near each of the nuclear facilities or for the seven nuclear facilities combined because of the imprecision inherent in estimates from small samples." The NAS Phase I report noted that even if the full nationwide study was completed, the work "may not have adequate statistical power to detect the presumed small increases in cancer risks arising from... monitored and reported releases." These issues, when considered alongside the significant time and resources estimated to carry out the pilot study, argue against continuing the project.

The NAS Phase I report is available in ADAMS here: <http://pbadupws.nrc.gov/docs/ml1503/ML15035A132.pdf>
The NAS Phase II report is available in ADAMS here: <http://pbadupws.nrc.gov/docs/ml1503/ML15035A135.pdf>

Since this is the NRC's decision, please direct any questions to me. Thank you.

Scott Burnell
Public Affairs Officer
Nuclear Regulatory Commission

From: Interested parties list for activities pertaining to the Cancer Risk project
<CANCERRISKSTUDY@LSW.NAS.EDU> on behalf of Greenleaf, Toni
<TGreenle@NAS.EDU>
Sent: Tuesday, September 08, 2015 10:47 AM
To: CANCERRISKSTUDY@LSW.NAS.EDU
Subject: [External_Sender] USNRC decides to terminate study on cancer risks near nuclear facilities
Importance: High

PLEASE DO NOT REPLY TO THIS EMAIL REPLY TO THE EMAIL LISTED IN THE MESSAGE BELOW

Dear Interested Parties:

The U.S. Nuclear Regulatory Commission (USNRC) announced today that it will terminate the study on cancer risks near nuclear facilities.

Here is the link to the USNRC's decision: <http://www.nrc.gov/reading-rm/doc-collections/news/2015/15-055.pdf>

Since this is the USNRC's decision, please direct any questions related to the decision to the USNRC's Public Affairs Officer Scott Burnell at 301-415-8200. If you have any questions about the proposal submitted by the National Academy of Sciences to the USNRC please email us at crs@nas.edu.

Thank you.

Nuclear and Radiation Studies Board
202/334-3066
Fax: 202/334-3077

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From: Bailey, Marissa
Sent: Tuesday, September 08, 2015 12:31 PM
To: Johnson, Robert; Ramsey, Kevin; Evans, Carolyn; Lesser, Mark
Subject: FW: 9/8/2015 Press Release No.15-055-NRC Ends Work on National Academy of Sciences
Attachments: Press Release No.15-055.pdf <http://www.nrc.gov/docs/ML1525/ML15251A111.pdf>

From: Henderson, Pamela
Sent: Tuesday, September 08, 2015 10:14 AM
To: Bailey, Marissa <Marissa.Bailey@nrc.gov>; Haney, Catherine <Catherine.Haney@nrc.gov>; Moore, Scott <Scott.Moore@nrc.gov>
Cc: Josie Piccone <josie@picconeit.com>
Subject: FW: 9/8/2015 Press Release No.15-055-NRC Ends Work on National Academy of Sciences

FYI

From: Patricia McGrady-Finneran [<mailto:Patricia.McGrady-Finneran@nrc.gov>]
Sent: Tuesday, September 08, 2015 10:08 AM
To: Henderson, Pamela <Pamela.Henderson@nrc.gov>
Subject: 9/8/2015 Press Release No.15-055-NRC Ends Work on National Academy of Sciences

Good Morning,

The attached press release will be issued within the hour. ■

From: Morgan, Nadiyah
Sent: Monday, September 14, 2015 3:10 PM
To: Ramsey, Kevin
Subject: RE: CORRECTION STATEMENT: NRC decides to terminate study on cancer risks near nuclear facilities

Thanks Kevin!

From: Ramsey, Kevin
Sent: Monday, September 14, 2015 2:39 PM
To: Sykes, Marvin <Marvin.Sykes@nrc.gov>; Bailey, Marissa <Marissa.Bailey@nrc.gov>; Erlanger, Craig <Craig.Erlanger@nrc.gov>; Johnson, Robert <Robert.Johnson@nrc.gov>; Hartland, David <David.Hartland@nrc.gov>; Morgan, Nadiyah <Nadiyah.Morgan@nrc.gov>; Cuadrado, Leira <Leira.Cuadrado@nrc.gov>; Stancil, Charles <Charles.Stancil@nrc.gov>
Subject: FW: CORRECTION STATEMENT: NRC decides to terminate study on cancer risks near nuclear facilities
Importance: High

FYI

From: Interested parties list for activities pertaining to the Cancer Risk project
[\[mailto:CANCERRISKSTUDY@LSW.NAS.EDU\]](mailto:CANCERRISKSTUDY@LSW.NAS.EDU) **On Behalf Of** Greenleaf, Toni
Sent: Friday, September 11, 2015 8:54 AM
To: CANCERRISKSTUDY@LSW.NAS.EDU
Subject: [External_Sender] CORRECTION STATEMENT: NRC decides to terminate study on cancer risks near nuclear facilities
Importance: High

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Date: Sept. 10, 2015

Correction regarding NRC cancellation of NAS study on cancer risks

The Nuclear Regulatory Commission (NRC) announced Tuesday that it has decided to stop work on the National Academy of Sciences (NAS) study on cancer risks in populations living near U.S. nuclear facilities. The NRC cited the long duration and high cost of the NAS pilot study, and the long duration of a subsequent nationwide study, as reasons to end the study.

Several media outlets have reported incorrectly that NAS estimated the pilot study would take 8 to 10 years to complete at a cost of \$8 million.

In fact, the NAS estimated that it would take 39 months at a cost of \$8 million to complete the pilot study of 7 nuclear facilities, which was intended to inform the feasibility, schedule, and cost of a nationwide study. NAS did not provide time or cost estimates for a nationwide study. The NRC made its own estimate that it may take 8 to 10 years to complete both the pilot and subsequent nationwide studies, and offered no additional cost estimate.

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