

only when uses for the converted material are identified.

- The depleted uranium oxide will be used as much as possible and the remaining depleted uranium oxide will be stored for potential future uses or disposal, as necessary.

- Any proposal to proceed with the location, construction, and operation of a facility or facilities for conversion of the depleted UF₆ to a form other than depleted UF₆ will involve additional NEPA review (i.e., project-specific EIS).

- The proposed facilities to be constructed to support this conversion decision would be built consistent with the plan submitted as required by Public Law 105-204.

- DOE anticipates that approximately 4,700 cylinders containing depleted UF₆ that are located at the East Tennessee Technology Park at Oak Ridge would be shipped to a conversion facility.

- Depleted UF₆ will be available for use until all of it has been converted to another form.

XI. Conclusion

DOE believes conversion of the depleted UF₆ inventory to depleted uranium oxide as soon as possible is the prudent and proper decision. Several factors, including increased chemical stability, socioeconomic benefits associated with the conversion, and public and congressional desire to move forward with conversion, have contributed to this decision. Conversion to depleted uranium metal would be performed only when uses for the converted material are identified. At this time, the Department does not believe that long-term storage as depleted uranium metal and disposal as depleted uranium metal are reasonable alternatives; however, the Department remains open to exploring these options further. DOE will continue to safely maintain the depleted UF₆ cylinders while moving forward to implement the decisions set forth in this ROD.

Issued in Washington, D.C. this second day of August, 1999.

Bill Richardson,

Secretary of Energy.

[FR Doc. 99-20471 Filed 8-9-99; 8:45 am]

BILLING CODE 6450-01-P

DEPARTMENT OF ENERGY

Request for Information on Potential Studies in the Russian Federation of Low Dose-Rate Radiation Health Effects

AGENCY: Office of Environment, Safety and Health, DOE.

ACTION: Request for information.

SUMMARY: The U.S. Department of Energy (DOE), announces a request for information (RFI) on potential studies in the Russian Federation of low dose-rate radiation health effects. Specifically, DOE is interested in receiving information on new ideas for epidemiologic, dosimetric/ biosimetric, and/or molecular epidemiologic studies that would: (1) Build upon collaborative research already conducted on workers and populations in the Southern Urals; or (2) utilize information on other similar cohorts in the Russian Federation. Information submitted in response to this RFI will be used to define the scope of a Request for Applications (RFA) that may be issued in late calendar year 1999.

DATES: The deadline for receipt of submissions is October 5, 1999.

ADDRESSES: U.S. Department of Energy, Office of International Health Programs, EH-63/270CC, 19901 Germantown Road, Germantown, Maryland 20874-1290

FOR FURTHER INFORMATION CONTACT:

Requests for further information on this announcement may be directed to Elizabeth White, Office of International Health Programs (EH-63), U.S. Department of Energy, telephone: (301) 903-7582; facsimile: (301) 903-1413; electronic mail: elizabeth.white@eh.doe.gov. Responses may be submitted, preferably by electronic mail or facsimile, to Ms. White.

SUPPLEMENTARY INFORMATION:

Table of Contents

- I. Purpose
- II. Background
- III. Description of Ongoing JCCRER Projects
- IV. Submissions to this RFI
- V. Disclaimer

I. Purpose

The Office of International Health Programs, Office of Environment, Safety and Health, in partnership with ministries of the Russian Federation, funds epidemiologic studies of cohorts of workers and populations to evaluate the health consequences (cancer and other diseases) of exposure to low dose-rate ionizing radiation. These ongoing studies are coordinated through the Joint Coordinating Committee for Radiation Effects Research (JCCRER). Section II ("Background") provides a description of the JCCRER and Section III ("Description of Ongoing Projects") sets forth a description of the populations currently being studied in the Russian Federation under the auspices of the JCCRER.

The purpose of this Notice is to encourage the submission of information on potential radiation health effects research. The Office of International Health Programs is interested in ideas for new epidemiologic, dosimetric/ biosimetric, and/or molecular epidemiologic studies that would: (1) Build upon low dose-rate radiation health effects research already conducted under the auspices of the JCCRER in the Southern Urals. In particular, DOE is looking for ideas for new projects involving the worker and population cohorts (See Section II) affected by radiation emitted from the Mayak Production Association; or (2) use other similar epidemiologic and dosimetric databases in the Russian Federation to further elucidate the health effects of chronic low dose-rate radiation exposure. In particular, we are interested in learning about other cohorts or potential cohorts of radiation-exposed workers and populations, and the potential scientific studies that could be developed for these cohorts.

DOE, with the help of its standing Scientific Review Group, will review the information submitted in response to this RFI for use in defining the scope of an RFA that may be issued in late calendar year 1999. DOE anticipates that approximately \$1,000,000 may be available in fiscal year 2000 to initiate new feasibility projects.

II. Background

The JCCRER is a bilateral Government committee representing agencies from the United States and ministries from the Russian Federation. It was established to implement the Agreement on Cooperation in Research on Radiation Effects for the Purpose of Minimizing the Consequences of Radioactive Contamination on Health and the Environment signed on January 1, 1994, by U.S. Secretary of State Warren Christopher and Russian Foreign Minister Andrey Kozyrev to support and facilitate joint cooperative research.

Radiation research conducted jointly with the Russian Federation provides a unique opportunity to learn more about possible risks to groups of people from lengthy exposure to radiation. This could include people receiving exposure from uranium mining, operations of nuclear facilities, transport and disposal of radioactive materials, the testing and dismantling of nuclear weapons, radiation accidents, and grossly contaminated sites or facilities.

Currently, the JCCRER and DOE are focusing on population and worker studies in the Southern Urals region of

the Russian Federation. In 1948, a nuclear weapons production complex, the Mayak Production Association, was established by the Soviet Union in Southern Urals, about 100 km northwest of the city of Chelyabinsk. Large amounts of radioactive materials were released into the environment between 1948 and 1957. Liquid discharges into the Techa River from the Mayak Production Association occurred from 1949–1956. As a result, thousands of square kilometers have been contaminated and hundreds of thousands of people have received significant radiation exposures. Furthermore, because of limited and inadequate (by today's standards) radiation protection measures and procedures, thousands of MAYAK workers and the population along the Techa River were seriously overexposed to radiation.

The studies of Southern Urals' and other Russian Federation populations may provide an opportunity to answer the question of whether chronic low-level exposures pose a risk different from that previously assumed from studies of atomic bomb survivors in Japan and patients treated with radiation therapy. The atomic bomb survivors were exposed to very short bursts of external radiation, unlike the pattern of exposure normally encountered or expected in the nuclear industry and with other uses of radiation. The Southern Urals' populations experienced chronic exposures over a much longer period. The exposures were also from both external radiation and internally deposited radioactive compounds. Studies on these and similar populations in the Russian Federation, coupled with comparisons with U.S. nuclear worker data, may prove to be a key factor in future development of radiation protection standards and regulations in the United States and worldwide.

The current U.S. JCCRER members are the:

- U.S. Department of Energy (DOE);
- U.S. Nuclear Regulatory Commission (NRC);
- U.S. Department of Health and Human Services (HHS);
- U.S. Department of Defense (DoD);
- U.S. National Aeronautics and Space Administration (NASA); and
- U.S. Environmental Protection Agency (EPA).

The current Russian JCCRER members are the:

- Ministry for Civil Defense Affairs, Emergencies and Elimination of Consequences of Natural Disasters (EMERCOM);

- Ministry of Atomic Energy (MINATOM); and
- Ministry of Health (MINZDRAV).

The Russian institutions currently participating in JCCRER-coordinated radiation health effects research are the:

- Branch Number 1 of Biophysics Institute (FIB-1), Ozersk;
- Mayak Production Association, Ozersk;
- Urals Research Center for Radiation Medicine (URCRM), Chelyabinsk; and
- Institute of Marine Transport Hygiene, St. Petersburg.

III. Description of Ongoing JCCRER Projects

A. Description of Cohorts

Two different epidemiologic research directions currently are supported by the JCCRER: (1) studies of populations who live near the Techa River; and (2) studies of workers at the MAYAK facility.

1. Techa River Population Cohort

The liquid discharges to the Techa River from the Mayak Production Association (due to inadequate storage of radioactive waste) occurred from 1949–56, with 95 percent released in an 18-month period (March 1950 to November 1951), for a total release of about 3 million Ci.

The cohort registry consists of individuals born in 1949 or earlier, who lived for at least one (1) month during 1950 to 1952 in the villages along the Techa River. The cohort includes 28,000 individuals, about 20 percent of which have been estimated to have had average effective doses of exposure of more than 0.5 sievert (Sv). Thirty (30) percent of the cohort members were 0 to 14 years old at the time of exposure.

The external exposure was due from contaminated sediments in the river; the internal exposure (measured by whole body counts and conducted for half of the members of the cohort) was mainly due to intake of river water and milk and included Sr 89, 90, and Cs 137.

Published reports indicate a statistically significant increase in leukemia in the exposed versus control populations. Other cancers, including stomach, esophagus, and lung were also studied, but the results have not been conclusive.

2. Mayak Workers Cohort

The computerized registry of 19,000 Mayak Production Association workers contains: occupational histories; vital status; current place of residence or date and causes of death; annual and cumulative data doses; plutonium body burdens; and internal doses to the main organs (lungs, liver and bone marrow). In this cohort, 14,000 have known vital

status; 4,000 are dead; 1,000 died of cancer; and more than 4,000 have known plutonium body burdens. The average value of the equivalent dose to the lung for all workers with measured plutonium (Pu 239) body burden is 7.06 Sv, with external gamma doses of 0.88 gray (Gy) for all workers included in the registry. Radiation doses decreased significantly with time, for example:

Years hired	Average exposure (Gy)
1948–53	1.57
1954–58	0.57
1959–63	0.27
1964–72	0.15

More than 1,800 occupational diseases were diagnosed by 1959, 92 percent of which were noted between 1949 and 1953. Eighty-three (83) percent of these were diagnosed as "chronic radiation sickness" caused by radiation exposures of 1 to 10 Gy. Forty-one (41) cases were diagnosed as "acute radiation syndrome," four of which were fatal. Burns and other local radiation injury were reported for 188 workers. In addition, 110 cases of pneumosclerosis (66 in individuals whose internal lung exposure exceeded 4.0 Gy) were diagnosed.

B. JCCRER Directions

The JCCRER has initiated areas for study called Directions. Direction 1 focuses on the Techa River population and Direction 2 focuses on the MAYAK workers. All projects are jointly conducted by both U.S. and Russian principal investigators and their respective teams of researchers, and are summarized below.

Direction 1: "Medical Aspects of Radiation Exposure Effects on Population"

1. Project 1.1: "Dose Reconstruction for the Population Subjected to Radiation in the Urals"

Objectives: To reconstruct, validate and analyze data on individual radiation doses received by the population so that these can be used in studies assessing the risks of developing cancer in exposed populations. (U.S. support from DOE, with supplements from NASA and EPA.)

2. Project 1.2: "Risk Estimation of the Carcinogenic Effects in the Population Residing in the Region of the Mayak Production Association"

Objectives: To conduct studies to determine the risk of cancer in population groups exposed to

radioactive contaminants in the region, to characterize the quality and validity of the data for conducting such studies, and to preserve the existing data using modern technologies. (U.S. support from DOE on cancer incidence and data preservation projects; from National Cancer Institute (HHS) on cancer mortality project.)

3. Project 1.3: "Retrospective Reconstruction of Radionuclide Contamination of Techa River Caused by Liquid Waste Discharge from Radiochemical Production at the Mayak Production Association: 1949-1956"

Objectives: To supplement the population dose reconstruction study by determining source term of radioactive materials released into the Techa River. (U.S. support from DOE.)

Direction 2: "Medical Consequences of Occupational Exposure to Radiation"

1. Project 2.1: "Metabolism and Dosimetry of Plutonium Industrial Compounds"

Objectives: To conduct a joint analysis of the data collected by the U.S. Transuranium and Uranium Registry (USTUR) and the dosimetry registry at the First Institute of Biophysics/MAYAK on deceased people with occupational exposure to radiation. (U.S. support from DOE.)

2. Project 2.2: "Risk Estimation for Stochastic (Carcinogenic) Effects of Occupational Exposure"

Objectives: To determine risk estimates for cancer as a result of prolonged occupational exposure to radiation, from both external sources and internally-deposited radioactive compounds. (U.S. support from DOE.)

3. Project 2.3: "Non-cancerous Effects of Occupational Exposure to Radiation"

Objectives: To validate and analyze the data on acute and chronic effects of radiation, other than cancer, observed in a large number of workers at the Mayak Production Association. (U.S. support from NRC.)

4. Project 2.4: "Reconstruction of Individual Doses of Exposure to Mayak Production Association Workers"

Objectives: To develop an electronic database of reconstructed doses for external and internal exposures received by the Mayak worker cohort. (U.S. support from DOE.)

DOE Office of International Health Programs-Funded Direction 2 Molecular Epidemiology/Biodosimetry Projects

The Office of International Health Programs awarded five cooperative agreements in August 1998 for 15-month feasibility studies to support ongoing joint U.S.—Russian population-based studies in the Southern Urals on low dose-rate radiation health effects. These new studies are aimed at adding a molecular epidemiology/biodosimetry component to the ongoing epidemiologic and dose reconstruction work of the JCCRER. The feasibility studies have been jointly conducted by the FIB-1 in Ozersk and U.S. institutions, and the following three are being considered for long-term study:

1. "Improved Dosimetry and Risk Assessment for Plutonium-Induced Lung Disease Using a Microdosimetric Approach"

Objectives: To evaluate the potential for determining plutonium distribution in relation to pathology in preserved tissues.

2. "Establishment of a Repository Containing Tissues and Organs of Deceased Workers of the Mayak Production Association Who Were Exposed to Actinide Elements"

Objectives: To begin establishing a human tissue repository for cytogenetic and molecular biological research at the First Institute of Biophysics in Ozersk

3. "Molecular Epidemiology and Lung Cancer in Workers"

Objectives: To examine the potential to use molecular epidemiology approach in establishing in the MAYAK workers' cohort of association of lung cancer, smoking and radiation exposure.

IV. Submissions to this RFI

There are no eligibility requirements for this RFI. Responses should be no longer than 3 pages and should contain 2 sections: (1) A brief description of the cohort(s) and data available for study; and (2) a short summary of potential research topics. As is noted in Section I of this RFI, responses will be used to define the scope of an RFA that may be issued in late calendar year 1999.

Since DOE may use information submitted pursuant to this RFI to define the scope of an RFA, responses should not include business confidential or any other proprietary information.

V. Disclaimer

This RFI should not be construed as: (1) A commitment by the Department to enter into any agreement with any entity submitting response(s); (2) a commitment to issue any RFA

concerning the subject of this RFI; or (3) an RFA.

Issued in Washington, DC, on August 4, 1999.

Paul J. Seligman, M.D., M.P.H.

Deputy Assistant Secretary for Health Studies.

[FR Doc. 99-20536 Filed 8-9-99; 8:45 am]

BILLING CODE 6450-01-P

DEPARTMENT OF ENERGY

Development of Technologies and Analytical Capabilities for Vision 21 Energy Plants

AGENCY: Federal Energy Technology Center (FETC), U.S. Department of Energy (DOE).

ACTION: Notice inviting financial assistance applications.

SUMMARY: The Department of Energy announces that it intends to conduct a competitive Program Solicitation and award financial assistance (Cooperative Agreements) for the program entitled "Development of Technologies and Analytical Capabilities for Vision 21 Energy Plants." Through this solicitation, FETC seeks to support applications in the following areas of interest: development of (A) the enabling and supporting technologies upon which the components and subsystems ("modules") of Vision 21 plants depend, (B) systems integration capability needed to combine two or more modules in Vision 21 plants, and (C) advanced plant design and visualization software leading to demonstration of "virtual" plants. Awards will be made to a limited number of applicants based on an evaluation of the promise of the proposed technology, the quality of prior supporting scientific and engineering studies and of the technical approach to reduce the proposed technology to practice, appropriateness of the project plan, the technical and management capabilities of the applicant organization(s), and availability of DOE funding in the technical areas proposed.

FOR FURTHER INFORMATION CONTACT: Raymond D. Johnson, U.S. Department of Energy, Federal Energy Technology Center, Acquisition and Assistance Division, P.O. Box 10940, MS 921-143, Pittsburgh PA 15236-0940, Telephone: (412) 386-6109, FAX: (412) 386-6039, E-mail: johnson@fetc.doe.gov.

DATES: This solicitation (available in both WordPerfect 6.1 and Portable Document Format (PDF)) will be released on DOE's FETC Internet site (<http://www.fetc.doe.gov/business/solicit>) on or about September 30, 1999.