REQUEST REPLY BY COB 9/13/96

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555

COMGD-96-002

OFFICE OF THE
COMMISSIONER

September 4, 1996

TO: Chairman Jackson
Commissioner Rogers
Commissioner Diaz
Commissioner McGaffigan

FROM: Commissioner Dicus

RE: U.S.-Russian Joint Coordinating Committee for Radiation Effects Research - Status Report and Plans

Background: On July 22, 1992, Dr. Gail de Planque, then an NRC Commissioner, brought to the attention of Robert L. Gallucci, Department of State Senior Coordinator for the Deputy Secretary, that a unique opportunity existed for cooperative research programs with Russian scientists that could provide significant new insights on radiation health and environment effects (attachment 1). Russian operations at the nuclear weapons production complex at Mayak, near Chelyabinsk, resulted in the release of enormous amounts of radioactive materials into the environment and serious overexposures of thousands of Mayak workers and citizens in the surrounding area from both external and internal sources of radiation. The Mayak worker and citizen populations provide a unique opportunity for radiation health effects research to validate the models used by the NRC and other organizations for early morbidity and mortality after irradiation from external and internal sources.

Most of our knowledge of radiation health effects is based upon studies of atomic bomb survivors in Hiroshima and Nagasaki and persons deliberately exposed for medical reasons. The atomic bomb survivors were exposed to a very short burst of external radiation which is not characteristic of radiation worker exposures nor of population exposures from normal operations or accidents at nuclear facilities. The studies of medically exposed persons are confounded by the facts that the exposed populations are already diseased and have age and gender characteristics different from worker and public populations. The extrapolation of health effects observed at high doses or dose rates in the atom bomb survivor and medical patient populations to low doses and dose rates has not been validated. The method selected to make such extrapolations is controversial because the method affects the estimate of the risk of injury

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which, in turn, is a critical factor in regulatory decision making on radiation protection standards. Therefore, the results of studies of populations such as the workers of Mayak and citizens of surrounding areas who were exposed over long periods of time from both external and internal sources could have a major impact on the world's radiation protection standards.

As a result of Dr. de Planque's letter and communications from other scientists, the Russian Federation and the United States engaged in negotiations to develop a framework to support and facilitate joint cooperative research and exchange of information between the United States and the Russian Federation on the health and environmental effects of radiation. On January 14, 1994 at the Moscow Summit Secretary of State Christopher and Foreign Minister Kozyrev signed a bilateral agreement for this purpose.

The group established to implement the Agreement is known as the Joint Coordinating Committee for Radiation Effects Research (JCCRER). Currently, U.S. members are DOE, HHS, DOD and NRC. The DOE is the Executive Agent for the U.S. side. Its representative, Tara O'Toole, Assistant Secretary for Environment, Safety and Health serves as JCCRER Co-chair. I am the NRC representative. The Russian Federation Co-chair is Vicktor Vladimirov, First Deputy Minister, Ministry of the Russian Federation for Civil Defense Affairs, Emergencies and Elimination of Consequences of Natural Disasters (EMERCOM). JCCRER representatives are Presidential appointee or Ministerial level government personnel.

The JCCRER held its first, and only, meeting in Washington, DC on October 24-26, 1994. An organizational structure was approved that called for an Executive Committee (EC) to effectively be responsible for day-to-day communications and coordination of JCCRER activities. The EC also serves as a liaison between the JCCRER and the Scientific Review Groups (SRGs) which serve in an advisory capacity. Individual projects are carried out by Project Research Teams.

Three main areas of research were proposed:

Community Populations Health Effects (Direction 1)

Worker Populations Health Effects (Direction 2)

Information Technologies and Decision Making Support for Radiation Accidents and Health Effects from Radiation Exposure (Direction 3)

Feasibility studies for Directions 1 and 2 were approved at the October, 1994 meeting.

In 1995 the JCCRER sponsored public workshops in Clearwater, FL and St. Petersburg, Russia on worker and population studies.

Current Issues: In 1996 the SRGs provided their comments on the feasibility studies to date. The U.S. SRG also expressed concern about the overall management and focus of the U.S. side of the JCCRER and about the uncertainty of long term U.S. funding for projects conducted under the JCCRER.

In FY 96 the U.S. provided direct funding for JCCRER projects totaling $1.07 million. Of this, NRC contributed $0.1 million (which was transferred to the DOE in support of Direction 2.3, discussed below) and DOE the rest. The DOE and the NRC as well as HHS and DOD also funded travel, salaries etc. of their staffs who are engaged in research carried out under the JCCRER. The Russian Federation has provided about $ 1 million in "in kind" support.

Partly in response to the U.S. SRG comments, a meeting of the U.S. side of the JCCRER was convened on August 20, 1996. At that meeting, which was also attended by representatives of the Office of Science and Technology Policy and the Department of State (DOS) (see attachment 2 for attendance list), it was proposed that the U.S. JCCRER should refocus its attention on coordination and promotion of the radiation effects research, fostering of radiation effects research partnerships with other organizations,[1] and increasing public awareness of the value of the research.[2] Under this proposal the JCCRER would leave the selection and management of research projects to the funding agencies but would retain a sufficient degree of oversight to

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[1] For example, in an August 6, 1996 letter to the EDO, Mme. Annie Sugier identified as an area of common interest between the NRC and the Institut de Protection et de Surete Nucleaire (IPSN) the "follow up of ex USSR workers (case of deterministic effects)." IPSN has transferred $250,000 to the NRC to augment the funding of radiation health effects studies to be conducted under the U.S. Ukraine leukemia protocol. Also, at the April, 1996 international conference on Chernobyl sponsored by the IAEA, Dr. Jaak Sinnaeve, Head of the Radiation Protection Research Action of the CEC met with Commissioner Dicus to discuss coordination of radiation health effects studies in the Russian Federation.

[2] As an example, the DOS representative stated that there is Congressional interest in radiation effects research arising out of the Chernobyl accident but that Congress' perception of Mayak and the surrounding areas is that it is a Pu production facility with little or no recognition of its potential for radiation health effects studies.

assure that overlaps and duplication are minimized. It was also agreed that there was a need for increased involvement of the DOS.

The DOE is estimating a shortfall in its FY 97 contribution of $1.14 million (attachment 3). DOE commitments beyond FY 97 are uncertain. Absent alternative sources of funding, the JCCRER will have to prioritize projects based upon available funds.

With respect to the NRC's direct support, it is focussed upon Project 2.3 which will examine the deterministic radiation health effects observed in the Mayak worker population. Such studies would help to validate the models used by the NRC (see NUREG/CR-4214, "Health Effects Models for Nuclear Power Plant Accident Consequence Analysis"). The feasibility study for this project is in progress and the SRGs strongly suggested that this project be given high priority.

Current, preliminary estimates are that a full scale Project 2.3 will take 3 to 5 years to complete and direct costs will total approximately $1.5 million. Under the proposed revised management approach and focus, the NRC could directly fund this study (replacing the current arrangement whereby NRC funds are transferred to the DOE) and manage it. NRC administrative and staffing costs are not expected to be significantly changed and this arrangement would enable more direct interactions between NRC and Russian scientists. It must be stressed that Project 2.3 is a long term effort, 3 to 5 years and thus will require funding over this period to attain a full return on the investment assuming the availability of funds and no funding constraints due to unforeseen circumstances.

For FY 97, the EDO has indicated that up to $ 500,000 could be made available from the Office of Nuclear Regulatory Research (RES) budget to support JCCRER activities. JCCRER sponsored research, particularly, Project 2.3, would benefit NRC licensees by validating radiation effect models for regulatory purposes. Other JCCRER sponsored research has the promise of yielding data on radiation health effects in dose and dose rate ranges comparable to those encountered in the nuclear industry. These data could enable refining of current standards for radiation protection including those for waste disposal and for decommissioning with the potential for commensurate benefits to the regulated community.

Future Actions: At the August 20th meeting I expressed my personal support for the proposal to refocus the U.S. JCCRER and the need to prioritize JCCRER research in view of budget constraints. I noted, however, that I could not speak for the Commission. Further, I noted that the Commission, in addition to budgetary constraints, is also undergoing a strategic assessment

and rebaseling. Therefore, I would be consulting with my fellow Commissioners on these developments.

Dr. O'Toole will convene a telephone conference of the U.S. JCCRER principals on September 16th. This will be followed by a meeting of the principals on October 9th. The U.S. JCCRER principals and their staffs will depart on October 19th for the 2nd JCCRER meeting which will be held in Moscow and visits to the Mayak complex and the cooperating scientific institutions. In order to hold effective and meaningful discussions with the Russians the U.S. JCCRER must first reach final agreement on the proposed revised U.S. JCCRER focus and must have in hand commitments, to the extent possible, from the participating agencies for funding JCCRER projects in 1997.

Therefore, your concurrence in the proposed revised focus of the JCCRER and NRC direct funding for FY 97, as follows, is requested:

I recommend that the Commission support the revised focus of the U.S. JCCRER. It will result in more effective use of the principals' resources and will focus their energies on developing support both inside and outside of the government for research covered by the Agreement. Oversight to assure that overlaps and duplication are minimized will be maintained. Operating principles and guidelines will be developed to implement the new direction.

I recommend that the NRC explore direct funding and management of the research proposed under Project 2.3. This arrangement, made possible under the revised focus of the U.S. JCCRER, will enable NRC scientists to interact more directly with their Russian Federation counterparts. To support this research, NRC would provide up to $ 500,000 in FY 97 from RES' budget for direct support of JCCRER activities with the intent that, subject to future budget constraints or unforeseen circumstances, Project 2.3 will be funded to completion at a total cost not expected to exceed $1.5 million total over the next 5 years. This proposal is predicated on a positive report resulting from the feasibility study. It is expected that about two-thirds of the funds will be for support of U.S. scientists working on this project and the remainder will be used to support Russian Federation researchers. I further recommend that NRC pursue sources of outside funding to support Project 2.3 activities, for example, additional funds from IPSN, the European Commission or from Japan.[3] If such

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[3] Funds for this work in Russia are not currently available from the Agency for International Development (AID) which at this time has limited AID funds to strengthening the regulatory organizations in Russia and Ukraine.

outside funding becomes available, it should be noted that since Project 2.3 directly benefits NRC licensees by validating existing radiation health effects models, then such funds would be used in direct support of research activities and not for recovery of NRC staff costs.

A timely response is requested to enable my presenting the Commission's decision at the September 16th teleconference.

SECY: Please track.

Attachments: As stated