UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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COVER LETTER FR-51(43FR39801)

Mr. John K. Lerohl, Chief
Technology Assessment Branch
Division of Fuel Cycle and Material Safety
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Lerohl:

This is in response to the Nuclear Regulatory Commission's (NRC) request for comments regarding the update of the Environmental Survey of the Uranium Fuel Cycle (WASH-1248) as appeared in the Federal Register (43 F.R. 39802) on September 7, 1978. In accordance with Section 309 of the Clean Air Act, as amended, the U.S. Environmental Protection Agency (EPA) offers comments for consideration by the NRC in their revision of WASH-1248.

In light of the considerable additional information now available, which was not available six years ago when the existing document was prepared, we commend NRC on initiating this update. In particular, we encourage NRC to express environmental impacts in terms of potential consequences to human health, since for radioactive materials and ionizing radiation the most important impacts are those ultimately affecting human health. Such a presentation of environmental impact in terms of human health impact fosters a better understanding of the radiation protection afforded the public. Since the updated WASH-1248 potentially will be used in numerous future reactor licensing cases, it is most important that NRC continue its efforts in this manner.

In providing estimates of human health effects from ionizing radiation, it is pointed out that EPA and others have had a significant disagreement with the health effects model used in the NRC's Reactor Safety Study (WASH-1400) because the conversion of radiation exposures to health effects used in that study probably underestimate the potential health effects. EPA believes risk estimates should be based on findings by the National Academy of Sciences' Biological Effects of Ionizing Radiation (BEIR) Committee in 1972 and on subsequent NAS-BEIR reports. Contrary to WASH-1400 where

the lowest estimate was used, the new WASH-1248 should reflect the range and average of BEIR risk estimates. Also, we would like to point out to you that a new NAS-BEIR report will be published in late 1978 or early 1979.

A second major concern of EPA deals with the discharge and dispersal of long-lived radionuclides into the general environment. In the areas addressed in WASH-1248, there are several cases in which radioactive mat rials of long persistence are released into the environment. The resulting consequences may extend over many generations and constitute irreversible public health commitments. This long-term potential impact should be considered in any assessment on health impact. EPA has consistently found inadequate the NRC's estimates of population doses for these persistent radioactive materials. In particular, the NRC has generally limited their analyses to the population within 50 miles of a facility, or in rare cases, to the U.S. population and to doses committed for a 50-year period by an annual release. These limitations produce incomplete estimates of environmental impacts and underestimate the impact in some cases, such as from releases of tritium, krypton-85, carbon-14, technetium-99 and iodine-129. The total impact of these persistent radionuclides should be assessed, qualifying such estimates as appropriate to reflect the large uncertainties. In this regard, we note that the NEA is addressing this approach in making assessments and that the NRC is represented in this effort.

Another major consideration in updating WASH-1248 is the health impact from radon-222 from the uranium mining and milling industry. Estimates made by EPA among others indicate that radon-222 contributes the greatest fraction of the total health impact from nuclear power generation. In preparing an updated WASH-1248, we believe NRC should:

a. Include the radon-222 contribution from both the uranium mining and milling industries.

b. Determine the health impact to larger populations than only the local population.

c. Recognize the persistent nature of the radon-222 precursors (Th-230 and Ra-226) by estimating the health impact for a period reflecting multi-generation times.

A final comment relates to the use of previous assessments as supporting documentation for the updated WASH-1248. As discussed above, we have a significant disagreement with the health effects model used in the RSS (WASH-1400). It is also noted that in the current rulemaking regarding impacts from fuel cycle activities in Table-S-3 (20 CFR 51.20) considerable reliance was placed on the GESMO reports which we consider inappropriate since the GESMO proceedings were not completed. If assessments such as WASH-1400 and GESMO are used in the updated WASH-1248, it should be recognized that there are many unresolved issues concerning the adequacy of these assessments. It is emphasized that reference of such previous reports does not preclude consideration of the unresolved issues in this proceeding.

Other topics which should be included in the updated WASH-1248 are risks resulting from accidents in fuel cycle facilities and process steps, decommissioning of facilities, sites and materials in the fuel cycle and the management and disposal of radioactive wastes from fuel cycle activities. If you wish, we would be most happy to discuss these comments.

Sincerely yours,

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Deputy Assistant Administrator
for Radiation Programs (ANR-458)