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COMPTROLLER GENERAL OF THE UNITED STATES
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The Honorable Jack Brooks
Chairman, Committee on
Government Operations
House of Representatives

MAY 28 1980

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Dear Mr. Chairman:

(2A)

On March 18, 1980, you requested [comments on H.R. 6745], 96th Congress. The bill requires (1) consolidating in the Environmental Protection Agency (EPA) the major Federal Government responsibilities with respect to ionizing radiation and (2) making comparisons of the risks and effects of radiation, from both nuclear and non-nuclear sources, to make the Congress and the general public aware of those risks and effects.

In recent years, we have recommended to the Congress and the involved agencies that they better define the radiation control authorities and responsibilities of EPA and the other Federal agencies involved in radiation control. In order to better protect the public and the environment from radiation hazards, we pointed out that the Federal Government, States, and industry should provide more assertive leadership and direction in this area.

Our reports, entitled "The Environmental Protection Agency Needs Congressional Guidance and Support to Guard the Public in a Period of Radiation Proliferation" (CED-78-27, Jan. 20, 1978) and "Radiation Control Programs Provide Limited Protection" (HRD-80-25, Dec. 4, 1979), have discussed various radiation control difficulties experienced by the agencies and have made recommendations for improvements.

On December 4, 1979, we testified before the Subcommittee on Energy, Nuclear Proliferation, and Federal Services, Senate Committee on Governmental Affairs, in favor of S. 1938, which also offered an approach toward defining and asserting a more coordinated Federal role in radiation protection activities.

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In general we endorse the objectives of H.R. 6745. We believe, however, that its coverage should be broadened to include the nonionizing radiation area as well as the ionizing radiation area. Although we endorse the need for a coordinated Federal research program in this area, we believe that all Federal radiation research activities should not be consolidated in EPA or any single agency because of the diverse aspects of radiation control that these activities encompass.

As you know, the Radiation Policy Council and the Interagency Radiation Research Committee, established by the President on February 21, 1980, oversee many of the Government's radiation control functions mentioned in H.R. 6745, including radiation research, health risk assessment, and regulation setting activities. However, we believe that establishing such organizations by legislation would be more desirable. In the past, the agencies have more effectively asserted their program authority when established by specific legislation rather than by Executive Order.

We have the following comments regarding specific sections of the bill.

--The wording of sections 2(2) and 2(3), describing the various sources of radiation exposure, suggests that nuclear power is a major contributor of ionizing radiation. According to the "Report of the Work Group on Exposure Reduction" by the Interagency Task Force on the Health Effects of Ionizing Radiation, slightly more than one-tenth of 1 percent of ionizing radiation exposure comes from nuclear powerplants and related fuel cycle facilities. This compares with natural background radiation which accounts for 50 percent of exposure and medical activities which account for 45 percent. Wording should be added to the bill to place the limited degree that nuclear power contributes to ionizing radiation exposure in perspective.

--Section 2(4) indicates that epidemiological studies have provided data on the harmful effects of radiation on population groups, particularly at higher levels of exposure. However, according to the Interagency Task Force on the Health Effects of Ionizing Radiation, epidemiological

studies can only reveal how many cancers occurred but generally cannot establish whether the cancers were caused by radiation or by other carcinogens. Sections 4(5) and 5(b)(1) specify the need for epidemiological studies. We agree that epidemiological studies should be performed, particularly studies involving large numbers of people and a range of radiation doses. We also agree that such studies involving low levels of radiation exposure can be useful in setting upper limits of health risk exposure. However, based on our current work, as we testified on December 4, 1979, we believe basic laboratory cell studies and mammal cell research is the most promising area for eventually defining the relationship between cancer and low-level ionizing radiation exposure. We believe the bill should specify that mammal cell research be required as well as epidemiological research.

--It is important to point out that the estimated degree of health risk from exposure to different forms of radiation as discussed in section 2~~(6)~~ are not proven absolutely and that health risk estimates are currently surrounded by a great deal of controversy. For example, conventional risk estimates have been based on a linear mathematical model. The model predicts that if radiation exposure doubles, the number of cancers caused by the exposure also will double. Some recent studies have suggested that conventional risk estimates may be low by a factor of 10 or more. Other studies dispute this, and a large segment of the research community believes that conventional health risk estimates are conservative. We believe the controversy over health risk estimates from small doses of radiation versus proportionately larger doses of radiation should be expressly acknowledged in this section.

Sincerely yours,

SIGNED ELMER B. STAATS

Comptroller General
of the United States