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January 14, 1963

ATOMIC ENERGY COMMISSION

FEDERAL RADIATION COUNCIL

Note by the Secretary

The Director of Regulation has requested that the following enclosures be circulated for the information of the Commission:

- Enclosure I - Letter of December 26, 1962 from Dr. Seaborg to Anthony J. Celebrezze, Chairman, FRC;
- Enclosure II - Proposed FRC Statement, "Council Policy Concerning Radioactive Iodine in Fallout";
- Enclosure III - Reply of January 4, 1963 from Boisfeuillet Jones, Special Assistant to the Secretary, Department of Health, Education, and Welfare;
- Enclosure IV - Reply of November 29, 1962 from Roswell Gilpatrick, Deputy Secretary of Defense;
- Enclosure V - Reply of November 28, 1962 from Orville L. Freeman, Secretary, Department of Agriculture; and
- Enclosure VI - Reply of December 21, 1962 from John C. Donovan, Special Assistant to the Secretary, Department of Labor.

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W. B. McCool
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By: *J. Diaz* 5/3/85

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ENCLOSURE I

UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON 25, D. C.

December 26, 1962

Dear Mr. Celebrezze:

The draft statement on "Council Policy Concerning Radioactive Iodine in Fallout" (WG/CR/8), forwarded November 9, 1962 by the Chairman of the Working Group to members of the Council for comment, is under study by members of the Atomic Energy Commission staff. While our consideration of the draft is not complete, the following comments are submitted at this time in the hope that they will contribute to the progress of the Council.

It is unlikely that the Atomic Energy Commission will concur in this draft. One of our major difficulties is with the assumption that in areas bearing so directly on questions of national defense and international position, the government should attempt to control exposures to radiation on the basis of a single set of more or less arbitrary numbers fixed in advance of knowledge of need for exposure.

Urgency for specific guidance on radioactive iodine in fallout has greatly decreased since last May, at which time the Working Group was directed to prepare a statement on this subject for consideration by the Council. However, there is no less urgent need for development by the Council of general guidance on fallout, as promised in its press release of September 10. To avoid hasty decisions, such guidance must be formulated and published before the occurrence of renewed public concern over rising levels of fallout. Guidance provided by the Council may also be expected to receive better acceptance if published before such concern develops. A necessary first step in the development of such guidance is further clarification, by the Council, of principles generally applicable to fallout.

Fallout of iodine-131 from the major test series of the past year is essentially complete, although there may be some added amount from the recent flurry of Russian tests. However, on the basis of past experience, we expect maximum rates of fallout of strontium-90 and cesium-137 from tests since September 1961 to occur in the spring of 1963.

We are engaged in the development of a proposal dealing with the more general question of the policy of the federal government with respect to fallout from tests. We expect to submit the proposal to the Council early in 1963, after which we would appreciate an opportunity to discuss it in a meeting of the Council. Hopefully, from such discussion, the Council would develop policy guidance for the staff in preparing an appropriate statement on this subject.

Sincerely yours,

/s/Glenn T. Seaborg

Honorable Anthony J. Celebrezze
Chairman
Federal Radiation Council
718 Jackson Place, N.W.
Washington 25, D. C.

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ENCLOSURE II

RADIATION PROTECTION GUIDANCE FOR FEDERAL AGENCIES
Council Policy Concerning Radioactive Iodine in Fallout

This statement is being issued by the Federal Radiation Council to provide guidance to Federal agencies in conjunction with their radiation protection activities related to radioactive iodine in the environment from fallout.

In 1960 and 1961, the Federal Radiation Council recommended guidance for controlling the exposure of industrial workers and the public from radiation resulting from operations in the nuclear industry. In reaching these recommendations, the Council recognized the responsibility for defining measurable criteria within which the peaceful applications of nuclear energy could be safely developed. These permissive exposure guides, as given in the Council's first two reports, "Background Material for the Development of Radiation Protection Standards," were, and still are, considered to represent health risks so low as to be compatible with the natural development of society for generations to come. The philosophy on which these Guides were founded is in consonance with the philosophy of radiation protection as it has been developed over the past three decades by the National Committee on Radiation Protection and Measurements and the International Commission on Radiological Protection.

More recently, with increases in the amount of radioiodine from fallout appearing in the environment and food supplies of man, there has been concomitant interest in considering the need or desirability for instituting precautionary actions against exposure from this source of radiation. In protecting health, primary concern is directed toward the magnitude of exposure, its potential consequences compared to the radiation dose

[REDACTED]

believed to produce medically significant injury, and the possibility of undesirable consequences associated with alternative measures which might be initiated to reduce potential exposure.

Iodine, radioactive and non-radioactive, characteristically tends to concentrate in the human thyroid. Radioactive iodine has the same biological effect on the thyroid regardless of the specific source of the iodine; as a medically indicated tracer administered for diagnostic purposes; from a plant using or processing nuclear reactor fuels; or from tests of nuclear devices.

In considering health implications of thyroid irradiation, consultants to the Federal Radiation Council have concluded that radiation dose many times higher than the Radiation Protection Guide for the thyroid would be necessary to produce a detectable increase in adverse health effects --- specifically, thyroid cancer. Other biological effects, either somatic or genetic, are believed to be quantitatively even less important.

When sources of potential exposure which cannot be controlled at the point of origin are involved, and other means of exposure control may be indicated, full consideration must be given to the direct and indirect effects of such measures on the public, health, agriculture, industry and government. Such actions should be considered when it is believed that inherent health risks of a specific precautionary measure are less than potential health risks due to the exposure, but action should be instituted only when the total impact of the measure is less than the health risk due to exposure.

Radiation exposure from fallout from nuclear weapons tests in the range of existing guides for industrial application involves risks so slight that control measures may have a net adverse, rather than favorable, effect on public well-being. The Council

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believes that in situations where source control is practicable, the Guides should be applied as originally promulgated. In situations not subject to this control, however, such as resultant from fallout, it is consistent with the general philosophy of Radiation Protection Guides to use different criteria in determining when specific precautionary measures should be instituted. For example, guidance designed to limit the controllable release of radioactive material into the environment are appropriately much lower than levels at which detectable health effects may result.

The Federal Radiation Council therefore recommends that the guidance outlined in the accompanying table be used specifically in assessing the need for control action for exposures from radioiodine in the environment due to the testing of nuclear weapons.

This guidance is intended for administrative use by Federal agencies in planning and implementing radiation protection programs in connection with radioactive iodine in fallout. Federal agencies are requested to provide assistance to State and local agencies in accordance with the guidance of the Council and to apprise the Council of their activities in this area.

As desirable as many believe it would be for the Council to designate specific control measures, it acts by providing guidance to the agencies of Government most directly involved in programs of this type in developing specific measures and operational criteria for determining when and how these should be effected. Those Federal agencies which deal most directly with the public should be prepared to develop the administrative and technical features of specific alternative measures which lie within their statutory responsibilities. For tasks which the agencies cannot undertake individually, the Council will assist in the development of coordinated plans.

GUIDANCE FOR ASSESSMENT OF RADIOIODINE IN THE ENVIRONMENT FROM FALLOUT

| <u>Annual Radioiodine*</u> <u>Intake (I-131)</u> | <u>Average Thyroid</u> <u>Dose Equivalent</u> <u>(Infant)</u> | <u>Risk Assessment</u> | <u>Indicated Action</u> |
|--|---|---|---|
| (a) 36,500 $\mu\mu\text{c}$ | 0 - 0.5 Rem | Acceptable. Com - parable with natural background | No protective action indicated. Surveillance and exposure eval- uation maintained. |
| (B) 36,500 $\mu\mu\text{c}$ to 365,000 $\mu\mu\text{c}$ | 0.5 - 5 Rem | Acceptable, with slightly increas- ed risk. Health risk from radia- tion exposure is less than or com- parable to overall effects associated with protective action. | Increased exposure evaluation. Tech- nical advice and assistance pro- vided by Federal agencies. General- ly no protective action indicated. |
| (C) Above 365,000 $\mu\mu\text{c}$ | Above 5 Rems | Health risk in- creases in pro- portion to the magnitude of the exposure and the number of people exposed. | Appropriate pro- tective actions. Feasible and available means of reducing ex- posure at State and local level indicated. Technical assist- ance and advice by Federal agen- cies. |

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- * - Cumulative level over any period of 12 consecutive months.
- $\mu\mu\text{c}$ --- micromicrocuries (unit of measurement of radioactivity)

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