



UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON, D. C. 20545

JAN 26 1970

PDR

Honorable Joseph E. Karth
House of Representatives

Dear Mr. Karth:

Thank you for your letter of January 2, 1970, concerning Dr. Tsivoglou's recent report to the Minnesota Pollution Control Agency on the Northern States Power Company's Monticello power reactor.

The Commission's limits on releases of radioactive materials to the environment by nuclear power plants in effluent air and water in 10 CFR Part 20 are based on the recommendations of the Federal Radiation Council, as approved by the President. The FRC has taken into account the recommendations of the International Commission on Radiological Protection and the National Council on Radiation Protection and Measurements.

The AEC limits on concentrations of radioactivity permitted in nuclear power reactor water effluents leaving a plant site, prior to dilution in the stream or other body of water, are such that a member of the public could use the effluent as a source of drinking water throughout his lifetime without exceeding the FRC Radiation Protection Guides for an individual in the population. Concentrations in the effluents are, of course, further reduced by dilution in the body of water into which they are discharged.

Releases of radioactive material in air from nuclear power reactors are limited by release rate limits included as conditions in the operating license. In specifying such limits the AEC determines that it is highly unlikely that, during normal operation, any individual member of the public will receive an exposure in excess of the FRC Radiation Protection Guide for an individual in the population, even if that individual is continuously present 365 days a year at a point of highest exposure rate at or near the site boundary.

The limit of 0.48 curies per second for gaseous releases was derived accordingly by the Northern States Power Company and proposed as their release limit. This proposal is currently under review by the

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Commission staff. The Monticello reactor will have provisions for a 30-minute holdup for all gaseous releases. Northern States Power Company has stated in its application that it expects that typical stack emissions will be of the order of 0.01 curies per second. However, upper limits on average levels of release during plant operation, based on the criteria described in the preceding paragraph, are established by the Commission staff and incorporated in the technical specifications of each operating license that may be issued.

Operating experience has shown that actual levels of radioactive materials released to the environment from nuclear power reactors have generally been a small percentage of the applicable limits. In this connection, it is important to recognize that the very low releases presently being achieved in reactor operation can be attributed to the careful design of waste treatment systems, operating practices by nuclear power reactor licensees, and to total regulatory controls. These include not only the standards or limits in 10 CFR Part 20, but requirements and limitations in other AEC regulations as well, and various restrictions in plant design and operation included in individual operating licenses.

The Commission's regulations in Part 20 also provide that the Commission may further limit quantities released if it appears that total intakes of radioactive material from air, water and food by a suitable sample of the exposed population would otherwise exceed the FRC Radiation Protection Guide for such groups. In practice, effluent and environmental levels resulting from nuclear power plant operation have been sufficiently low that the Commission has not found it necessary to use this provision of its regulations.

We expect that releases from power reactors will continue to be low; nevertheless, the Commission will continue to keep its standards and licensing requirements under close scrutiny to assure that they remain compatible with the most advanced technical knowledge available, and adequate to protect the health and safety of the public as well as the environment.

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