



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

AUG 12 1980

Mrs. Lynn R. Chong
West Rumney Village
Rumney, New Hampshire 03266

Dear Mrs. Chong:

This letter is in response to your letter of June 30, 1980 to the TMI Support Staff. You requested information concerning the identity of radionuclides in the Three Mile Island Unit 2 reactor building. It should be noted that purging of the reactor building atmosphere was approved by the Commission on June 12, 1980 and commenced on June 28 and was concluded on July 11 when the concentration of Kr-85 was reduced to a level of approximately 2.0×10^{-5} $\mu\text{Ci/cc}$. Thus, the following discussion of reactor building airborne radioactivity pertains to conditions prior to the purge.

Licensee sample data shows that particulate levels were less than 1×10^{-9} $\mu\text{Ci/cc}$, the primary radionuclide being Cesium-137. Gross beta analyses were carried out specifically to determine the level of Strontium-89/90. These analyses show that the concentrations of these isotopes were small, on the order of 1×10^{-10} $\mu\text{Ci/cc}$. Gross α measurements indicate that transuranic concentrations are less than 2×10^{-10} $\mu\text{Ci/cc}$. Tritium concentrations were measured at 8.4×10^{-5} $\mu\text{Ci/cc}$. All other radionuclide concentrations were below the minimum detectable levels ($<1 \times 10^{-10}$ $\mu\text{Ci/cc}$) for the analytical instrumentation system.

When the above measured concentrations are compared with the measured Krypton-85 concentration of $1.0 \mu\text{Ci/cc}$ it can readily be seen that Krypton-85 was the dominant radionuclide in the Unit 2 reactor building.

Sincerely,

Richard A. Weller
for

Bernard J. Snyder, Program Director
Three Mile Island Program Office
Office of Nuclear Reactor Regulation

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