

ABRAHAM RIBICOFF, CONN., CHAIRMAN

HENRY M. JACKSON, WASH.
THOMAS F. EAGLETON, MO.
LAWTON CHILES, FLA.
SAM NUNN, GA.
JOHN GLENN, OHIO
JIM SASSER, TENN.
DAVID PRYOR, ARK.
CARL LEVIN, MICH.

CHARLES H. PERCY, ILL.
JACOB K. JAVITS, N.Y.
WILLIAM V. ROTH, JR., DEL.
TED STEVENS, ALASKA
CHARLES MC C. MATHIAS, JR., MD.
JOHN C. DANFORTH, MO.
WILLIAM S. COHEN, MAINE
DAVID DURENBERGER, MINN.

RICHARD A. WEGMAN
CHIEF COUNSEL AND STAFF DIRECTOR

SUBCOMMITTEE:

JOHN GLENN, OHIO, CHAIRMAN

THOMAS F. EAGLETON, MO. JACOB K. JAVITS, N.Y.
HENRY M. JACKSON, WASH. D.C. TED STEVENS, ALASKA
CARL LEVIN, MICH. DAVID DURENBERGER, MINN.

LEONARD WEISS, STAFF DIRECTOR
8206 DIRKSEN BUILDING

United States Senate

COMMITTEE ON
GOVERNMENTAL AFFAIRS
SUBCOMMITTEE ON ENERGY, NUCLEAR
PROLIFERATION AND FEDERAL SERVICES
WASHINGTON, D.C. 20510

May 24, 1979

Dr. Joseph M. Hendrie, Chairman
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Dr. Hendrie:

On May 10, 1979, a panel of non-governmental witnesses testified before the Subcommittee on Energy, Nuclear Proliferation and Federal Services concerning various aspects of the Federal government's radiation protection efforts. One of the members of that panel, Mr. Robert Alvarez of the Environmental Policy Center in Washington, D.C., raised several questions regarding the thoroughness and precision of monitoring conducted by government agencies at and around the Three Mile Island accident site.

In his testimony, Mr. Alvarez made a number of criticisms of the report entitled "Preliminary Estimates of Population Dose and Health Effects". Specifically, he asserted that the report fails to answer a number of questions about the Three Mile Island accident because it:

- (1) does not mention possible effects from the inhalation of beta or gamma-emitting radionuclides from ingestion of contaminated food;
- (2) does not mention the risk of cataracts from beta and gamma skin exposures;
- (3) provides no basis for its estimate "that the beta dose to the skin is probably four times...the gamma dose";

1372 357

7911200 309

- (4) states that the only radionuclides released were iodine-131 and xenon-133 (which Mr. Alvarez described as "the least biologically significant because they decay to stable isotopes"), when in reality there must have been releases of other isotopes and of krypton;
- (5) does not account for strontium in either the containment building or the environment, although krypton decays to strontium;
- (6) offers the "highly unlikely" explanation that all the cesium detected in milk after the accident was from spring fallout; and
- (7) does not discuss the possibility that radionuclide levels in milk will increase as cattle eat grass that was growing at the time of the accident rather than food that had been stored.

Mr. Alvarez also suggested that the Federal government's dose models may underestimate the liver dose of cobalt-60 by a factor of 2300. (He cited in this regard a paper, submitted to the IAEA in March, suggesting that cobalt-60 "combines rather rapidly to become vitamin-B complex and is taken up in the liver.")

In addition, Mr. Alvarez submitted for the record a report by Craig Swick entitled "Environmental Monitoring of Radioactivity", published in April 1979 by the Radiation Health Information Project of the Environmental Policy Center. Mr. Swick finds fault with NRC (and EPA) for not assuring that laboratories under its direction follow standardized methods. His report includes particular criticism of the following aspects of NRC radiation monitoring practices:

- (1) the decision to eliminate the strontium-90 monitoring requirement rather than to investigate collection methods and laboratory procedures that yielded no evidence of Sr-90;
- (2) requiring labs to participate in EPA's Environmental Radioactivity Laboratory Intercomparison Studies without (a) setting standards for the level of work, (b) requiring utilities to use the studies' results or -- perhaps most important -- (c) acknowledging that the program is inappropriate

Page Three
May 24, 1979

because it was designed to monitor fallout from nuclear explosions, i.e., radiation levels higher than those generally found around nuclear power plants; and

- (3) the policy of collecting milk samples only twice monthly--allowing nearly two I-131 half-lives to pass between collections-- and then diluting them with other milk, which may result in an estimated "typical" dose but not comply with EPA guidelines setting an annual whole-body dose limit of 25 mr for each person in the general public.

Mr. Swick also says in his report that the initial use of only thermoluminescence dosimeters at Three Mile Island points up the inadequacy of NRC's monitoring practices. Because TLD's can detect only gamma radiation, he asserts, "the major source of radiation, the beta emissions from the noble gases, were totally unmonitored until special equipment was brought in."

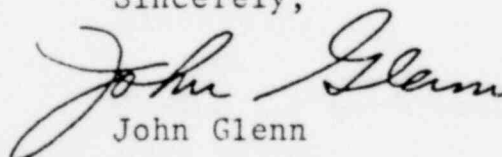
Mr. Swick urges that NRC quickly establish a standardized monitoring program--perhaps modeled after the one developed in 1977 for the Department of Energy's Environment Division--and publish its guidelines in the Federal Register.

The Subcommittee would like you to discuss the points raised in both Mr. Alvarez' testimony and in Mr. Swick's report. In doing so, please describe NRC's monitoring program as it looks on paper and as it looked at Three Mile Island. From both viewpoints, assess the validity of the above criticisms and explain any recent or planned changes designed to improve the monitoring program. Please submit your responses to the Subcommittee by June 5, 1979.

Thank you for your cooperation.

Best regards.

Sincerely,


John Glenn

JG/lmm

1372 359