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# The Radiation Health Center

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OMAHA, NEBRASKA 68105

402/541-7800


50-320

April 13, 1979

Frank Young
Office of State Programs
United States Nuclear Regulatory Commission
Washington, D.C. 20555



Dear Mr. Young:

This communication is to report to you the assessment of patient [redacted] was seen at the request of the Department of Health, State of Nebraska, regarding his concerns at being in the vicinity of the Three Mile Island nuclear reactor while traveling through Pennsylvania by train in the vicinity of Harrisburg between the hours of 4:00 a.m. and 7:00 a.m. on the morning of March 28, 1979.

[redacted] was interviewed by members of the staff of The Radiation Health Center, University of Nebraska Medical Center on March 30, 1979, arriving at our facilities at approximately 10:30 a.m. on that date. As indicated above, [redacted] stated that the train upon which he was riding passed in the vicinity of the Three Mile Island Nuclear Generating Plant in the time frame between 4:00 a.m. and 7:00 a.m. on the morning of March 28, 1979. He believes at one point he passed approximately one-quarter mile from the nuclear generating facility. He indicates concern that he may have been contaminated and wishes to identify the possibility of the deposition of radioactive material within his body. He indicated that it was his impression that radioactive gases could enter the train by way of the ventilation system and this was based in part upon the fact that as they would pass through industrial areas he could smell the gaseous effluent from industrial facilities.

After the initial interview with my staff members, which included a physician and a nuclear medicine scientist, the following steps were taken to identify the possibility of internal deposition of radionuclides. Radiometric analysis related to the thyroid gland was accomplished utilizing standard clinical nuclear medicine procedures for thyroid uptake assessment. Utilizing a standardized calibrated sodium iodide scintillation detection probe, a 15 minute count of the thyroid area was accomplished. No significant difference from background level

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radiation was determined with reference to I-131 peak energies. In additon the pulse height analyzer was reset to accept a broader energy range to assess other possible radionuclides in this region and the 15 minute count was repeated. Again, no significant difference from background level radiation was determined For further analysis, using a large field of view Anger gamma camera with uncollimated crystal, assessment of a solid angle subtending the trunk region of [redacted] was accomplished. A 10 minute recording time was accomplished in this configuration and revealed no significant difference from a background determination under identical conditions.

[redacted] was requested to collect a 24 hour urine sample which he subsequently returned to The Radiation Health Center for additional analysis. This sample totaled 2000 milliliters in volume and was subjected to radiometric analysis which included assessment for tritium, utilizing liquid scintillation counting techniques. The result of this assessment again revealed no significant deviation from background. Assessment of aliquot of this 24 hour urine sample for gamma emitters utilizing sodium iodide crystal counting techniques did not reveal any significant deviation from background levels.

In summary, [redacted] was seen relative to concerns about exposure to radioactive materials and/or ionizing radiation relating to his proximity to the Three Mile Island Generating Station on the morning of March 28, 1979, while a passenger aboard a train passing that vicinity. Assessment of the patient consisted of radiometric analysis of the thyroid gland for evidence of $^{131}I$ as well as other radionuclides, using standard scintillation detection techniques in nuclear medicine. In addition, assessment of the trunk region utilizing uncollimated large field of view Anger gamma camera crystal detection field revealed no significant radioactivity level above that of background under identical conditions. Radiometric assay of a 24 hour urine sample which included assessment for gamma emitters by sodium iodide scintillation detection methodology and assessment for tritium with scintillation counting techniques again revealed no evidence above background. A brief report of our findings, that is finding no evidence of radioactivity levels above that of natural background, has been made available to the patient.

If we may assist you further regarding this case, please advise the undersigned and we will be pleased to respond.

Sincerely yours,

Merton A. Quaife M.D.

Merton A. Quaife, M.D.
Director

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