

"DRAFT"

U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

REGION III

Report No. 78-01

License No. 21-14161-01G; 21-14161-02 Priority 4;4 Category E;E

Licensee: Nuclear Diagnostics, Inc.
575 Robbins Drive
Troy, MI 48084

Inspection Conducted: August 22, 1978

Inspector: J. A. Finn

Approved by: J. A. Pagliaro, Chief
Materials Radiological
Protection Section No. 2

J. A. Finn
J. A. Pagliaro 9/14/78

Inspection Summary:

Inspection on August 22, 1978 (Report No. 78-01)

Areas Inspected: Special, announced inspection to followup on exposure to film badge reported by licensee letter dated July 25, 1978.

Results: No overexposures and no items of noncompliance or deviations were identified during the course of the inspection

DETAILS

A special announced inspection was conducted by J. A. Finn of Region III on August 22, 1978, to investigate the potential overexposure to radiation reported pursuant to 10 CFR 20.405 in a letter from the licensee dated July 25, 1978.

Dr. James B. Smart provided the information. In addition, Dr. Walter Nikesch, licensee consultant, was interviewed by telephone regarding radiation level estimates and instrument calibration.

The whole body film badge for [REDACTED] for the period 5/10/78 to 6/9/78 indicated an exposure of 3.22 Rems to energies in excess of 250 KEV. The TLD ring badge for the same period showed 1.78 Rems. A review of film badge records showed a year-to-date (1978) total for [REDACTED] of 3.25 Rems, whole body, and a "permanent" total of 3.32 Rems. [REDACTED] was first badged in [REDACTED] and terminated employment with the licensee on [REDACTED].

Film badge reports were reviewed by the inspector for the period 12/10/77 to 7/9/78 and no other unusual exposures were noted. The next highest whole body exposure for all employees during the second quarter 1978 was 30 millirem.

The licensee works with two radioisotopes: iodine 125 (with gamma energies much less than 250 KEV) and iron 59 (with a 1200 KEV gamma). On hand during the badge period in question was about 200 microcuries of iron 59. This was stored in the cold room except when being processed.

Dr. Smart stated that [REDACTED] terminated employment with the licensee to accept a better job. He said that [REDACTED] volunteered that, during the period in question, he left his badges in the cold room next to a bottle containing 0.2 mCi of iron 59 for five to seven days to see what kind of exposures he might be getting. Smart, together with Nikesch, made radiation measurements of various solutions and calculated that the badges could have received the reported exposures. They concluded that the high exposures were to the badges only and did not represent exposures to the individual.

The inspector toured the facilities with Dr. Smart and observed that very little radioactive material was on hand. Dr. Smart stated that this was typical. During the tour, radiation measurements were made, using a licensee-owned Victoreen survey meter, Model 493 (GM). In general, radiation levels were at or near background (.03 mr/hr). The highest level noted was 30 mr/hr at the surface of a bottle containing 0.15 mCi of iron 59.

In view of the above, it appears that the reported exposures were to badges only, as concluded by the licensee, and hence, were not reportable under 10 CFR 20.405.

No items of noncompliance were identified during the inspection.