



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
631 PARK AVENUE
KING OF PRUSSIA, PENNSYLVANIA 19406

OCT 08 1987

Memorandum For: C. White, Director
Office of Investigations, Region I

Thru: *[Signature]* Thomas T. Martin, Director,
10/14/87 Division of Radiation Safety and Safeguards

From: John R. White, Chief,
Nuclear Materials Safety and Safeguards-Section C

Subject: New Information Concerning Waste Deposited Off-Site at
Radiation Technology, Incorporated-Rockaway, New Jersey

As part of NRC Region I's efforts to characterize the extent of contamination that may be present on RTI's property at Rockaway, NJ, technical assistance was previously requested from Oak Ridge Associated Universities-Radiological Monitoring Group (ORAU). In this regard, ORAU conducted radiological surveys of portions of RTI's facility from April 13-17, 1987. Results of this effort were reported in ORAU's report, RADIOLOGICAL SURVEY-RADIATION TECHNOLOGY INCORPORATED-(UNRESTRICTED AREA)-ROCKAWAY, NEW JERSEY, dated August 1987. In this report, ORAU indicated a small deposition of low-level cobalt-60 contamination outside the confines of the fenced property, i.e., less than 20 picocuries per gram of soil. (See attached figure)

Subsequently, NRC Region I initiated follow-up surveys to better characterize this indication. This survey effort confirmed low-level cobalt-60 contamination in the soil in the same vicinity, in an area of about 400 square feet (see attached sample results). Further sampling is in progress as of this date.

The licensee was informed of NRC Region I's concerns relative to this particular indication of activity in August 1987, and committed to initiate an extensive grid survey of the area to define the boundaries of the contaminated portion as soon as resources could be directed to that effort.

While the source of the contamination could not be confirmed, ORAU and the NRC postulated that water runoff from the site could possibly explain the indications of cobalt-60. However, on October 6, 1987, I was informed by Tass Varaklis that he had recently received the following information from Les Ross (via Dr. Robert Cockrell):

Previously, Dr. Arnold Orlander's brother had worked for Dr. Martin Welt at the RTI facility during the time of the cobalt-60 source leakage problem. The brother informed Cockrell, who subsequently informed Ross, that during this time period, he had observed a person (possibly Dr. Welt), back a truck into the loading ramp of building 60; load the truck with debris and garbage (some of which he believed was associated with the decontamination effort resulting from the cobalt-60 contamination); drive the truck into the wooded area adjacent to the lake (Lake Denmark); and unloaded the debris somewhere in that vicinity.

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This same date I had reason to call Dr. Cockrell with regard to an unrelated matter. In the course of that conversation I asked him about this report. Cockrell confirmed the details as indicated above, and added that he was told that there may have also been an attempt to put backfill over the debris.

One of the inspectors (Marlene Taylor), who has surveyed this area, reported seeing various debris in the vicinity, including chunks of hardened resinous material that is similar in appearance to the methyl methacrylate compound that was used in previous RTI operations.

While information on this matter is still only preliminary, there may be a connection between the cobalt-60 indications that have been noted and this piece of hearsay information related by Tass Varaklis.

This information was previously discussed in a telephone conversation with Barry Letts of your staff on October 7, 1987. We will continue to keep you informed of this matter.

A handwritten signature in black ink, appearing to be "John Letts", written in a cursive style.

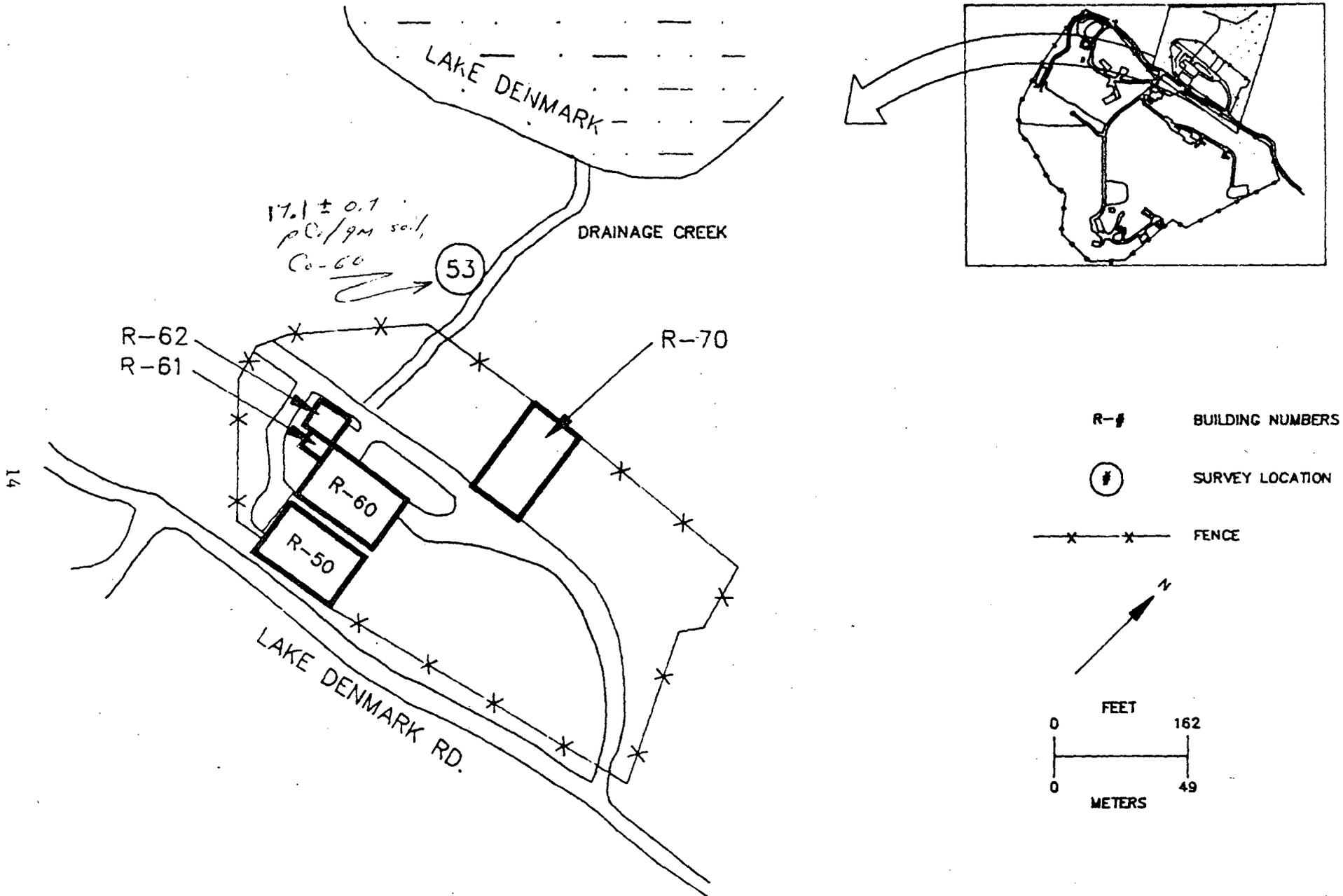


FIGURE 6: Map of Area D Indicating Survey Location 53

Urgent

UNITED STATES NUCLEAR REGULATORY COMMISSION
 REGION I LABORATORY
 SAMPLE RECORD SHEET

Serial No. 301241

Routine _____ Date Needed _____

File From: Radiation Technology

Samples Received: 8/25/87

Analyzed By: n.t.m.

Requested By: M. Taylor Date Sent _____

Analysis Completed: 8/26/87

Approved By: DK

Organization: DRSS

Notified: _____ Date: _____

Sample		Sample Description	Anal. for	Inst. used	Quant. used grams	Date cntd.	Count time	Gross count	Bkgd.	Net count	Eff.	Rec'd 97	Cobalt-60 Results $\pm 1\sigma$ $\mu\text{Ci/gm}$
Date	Hour												
8/24	11:57	Sail 124 feet	gamma scan	geli	787.6	8/25	1000 seconds					3.3	$(3.3 \pm 0.2) E-6$ (25%)
	12:03	131 ft 9 inches			691.1							9.9	$(9.9 \pm 0.3) E-6$ (25%)
	12:06	131 ft 5 inches			532.6						→	30.4	$(3.04 \pm 0.09) E-5$ (25%)
	12:25 11:38	44 ft. 5 inches			579.3						→	56	$(5.59 \pm 0.2) E-5$ (25%) ^{5.6}
	12:20	34 feet			912.4							1.25	$(1.25 \pm 0.08) E-6$ (25%)
	12:30	144 ft 8 in.			1054.3							1.68	$(1.68 \pm 0.09) E-6$ (25%)
	12:35	60 ft 8 in			573.2							16.1	$(1.61 \pm 0.05) E-5$ (25%)
	11:42	78 feet			565.4							14.2	$(1.42 \pm 0.05) E-5$ (25%)
	12:55	149 feet			619.5							2.97	$(2.97 \pm 0.2) E-6$ (25%)
	12:45	105 feet			406.8							10.5	$(1.05 \pm 0.04) E-5$ (25%)
	12:20	34 ft 5 in.			608.2							9.2	$(9.2 \pm 0.3) E-6$ (25%) ^{9.2}
	1:00	lake			703.9							4.4	$(4.39 \pm 0.2) E-6$ (25%) ^{4.4}
	1:15	BKGD			641.7								
	11:47	upstream fence			959.9							1.75	$(1.75 \pm 0.2) E-6$ (25%)
	11:50	upstream - 8 ft above fence			992.2							0.1	$(7.4 \pm 0.6) E-7$ (25%)

*Random uncertainties reported are 1 standard deviation, 10. small negative and other results $\leq 3\sigma$ are interpreted by NRC as