

U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Report No. 70-820/88-03

Docket No. 70-820

License No. SNM-777

Priority 1

Category UHD

Licensee: United Nuclear Corporation
Recovery Systems
Wood River Junction, Rhode Island 02894

Facility Name: UNC Recovery Systems

Inspection At: Wood River Junction, Rhode Island

Inspection Conducted: September 14-16, 1988

Inspectors: J. Roth
J. Roth, Project Engineer

10/24/88
date

M. Austin
M. A. Austin, Radiation Specialist

10/24/88
date

Approved by: W. J. Pasciak
W. J. Pasciak, Chief
Effluents Radiation Protection Section,
DRSS

10/27/88
date

Inspection Summary: Inspection on September 14-16, 1988 (Inspection Report No. 70-820/88-03).

Areas Inspected: Special announced inspection by region-based inspectors for the purpose of obtaining water samples from selected monitoring wells, to examine the status of decommissioning the site and the buildings and to conduct a verification survey of outside areas of the facility.

Results: No violations were identified. The licensee completed removal of additional contaminated soil from areas inside (Grid No. B-126) the restricted area fence. The inspector conducted a verification survey and obtained soil samples for analysis.

DETAILS

1. Persons Contacted

K. Helgeson, Manager Nuclear and Industrial Safety

2. Monitoring Well Water Sampling

The inspector observed the sampling of each monitoring well. Prior to sampling, each well was pumped for about 5 minutes in order to clear the lines of standing water. This water was discarded. The licensee took a five (5) gallon sample from each well and the NRC samples (one (1) gallon) were taken (split) from the licensee's samples.

a. Well Water Sampling

The conditions under which each well sample was obtained are shown in the enclosed table (Attachment 1).

b. Sample Analysis

The well water samples marked in the table (Attachment 1) with an * were split by the NRC inspector with the licensee. Samples obtained by the NRC were sent to the USDOE Radiological and Environmental Services Laboratory (RESL) located in Idaho Falls, Idaho, for analysis. The licensee's samples were sent to Controls for Environmental Pollution, Inc., located in Santa Fe, New Mexico. Samples in excess of 5 picocuries/liter gross alpha and/or 50 picocuries/liter gross beta will be further analyzed, as necessary, for strontium-90, cesium-137, uranium isotopic, thorium isotopic, and gamma spectroscopy.

c. Sample Analysis Results

The sample analysis results from each laboratory will be compared by Region I. This comparison and a trend analysis, utilizing results from prior years, will be addressed in a subsequent inspection report.

3. NRC Independent Review

a. Observations Concerning the Status of Site Decontamination

During Inspection No. 70-820/88-01, the inspector conducted radiation surveys and took soil samples of Grid No. B-126 (see Attachment No. 2). Each soil sample was mixed and split with the licensee. The NRC samples were packaged and sent to the NRC contractor's, Oak Ridge Associated Universities (ORAU), laboratory for analysis.

The analysis results for the samples analyzed for Grid No. B-126 are as follows:

Sample	Analyses by	Concentration (pCi/gram)		
		U-234	U-235	U-238
Southwall before cleanup	ORAU CEP	2436±78	94±20	9.7±5.2
		960±2	35.5±1.7	-
Southwall after cleanup	ORAU CEP	2733±82	99±20	8.2±4.8
		997±4	43.6±0.9	-
Composite	ORAU CEP	40.4±0.3	1.4±0.2	0.4±0.1
		35.2±3	1.4±0.9	-

Subsequent to that inspection, the licensee took additional remedial action and removed additional soil from the southwall of Grid No. B-126.

During this inspection, the inspector conducted radiation surveys of Grid No. B-126 at the surface and at 1 meter above the surface. Radiation levels were found to be at background levels (1000-2000 counts per minute), using a Ludlum Model 16 Analyzer with a sodium iodide crystal detector. A soil sample taken from the south wall was mixed and split with the licensee. The NRC sample was packaged and sent to ORAU for analysis. If the analytical results are lower than the NRC guidance value of 30 picocuries total uranium per gram of soil, Region I will recommend that NRC-NMSS release the licensee's outside area, within the restricted area fence, for unrestricted use.

4. Licensee Discussions

The inspector held continuing discussions with Mr. K. Helgeson during the inspection. The findings were presented as they were identified. At no time during this inspection was written material provided to the licensee by the inspector.

Attachment No. 1

WELL WATER SAMPLEDSpecific

Well No.	Sampling Date	Sampling Time	Conductivity (umhos)	Water Level (ft)	Well Depth (ft)
T-1*	9/15	0923	51	18	65
T-2	9/15	0833	60	23	57
T-3*	9/14	1411	56	22	62
T-4	9/14	0915	53	21	62
T-5	9/14	1119	48	22	65
T-6*	9/14	1135	88	24	52
T-7	9/14	0930	53	21	65
T-8*	9/14	1216	44	20	65
T-9	9/14	1205	Could Not Pump	24	53
PW-1	Not In Service		--	--	--
PW-2*	9/15	1018	44	--	--
W-A	Not In Service		--	--	--
W-B*	9/14	0825	69	23	28
W-D	9/14	1431	51	21	30
W-E*	9/15	0948	43	19	28
W-3*	9/15	0853	76	21	25
W-5	9/15	0934	45	18	26
W-6	9/15	0907	50	20	26
W-7*	9/14	1105	72	--	26
W-8A*	9/14	1419	67	20	30
W-9	9/14	0900	73	20	33
W-10	9/15	1012	40	19	35
W-11	Not In Service		--	--	--
W-12*	9/14	1357	63	22	35
76-U*	9/14	0944	125	--	75
77-B*	9/14	1020	>1000	17	75
77-D*	9/14	1000	55	25	85
DH-1*	9/14	1150	67	24	23-35
DH-1-1	Not In Service		--	--	--
DH-2-1	Not In Service		--	--	--
DH-2-2	Not In Service		--	--	--
DH-2-2	Note In Service		--	--	--

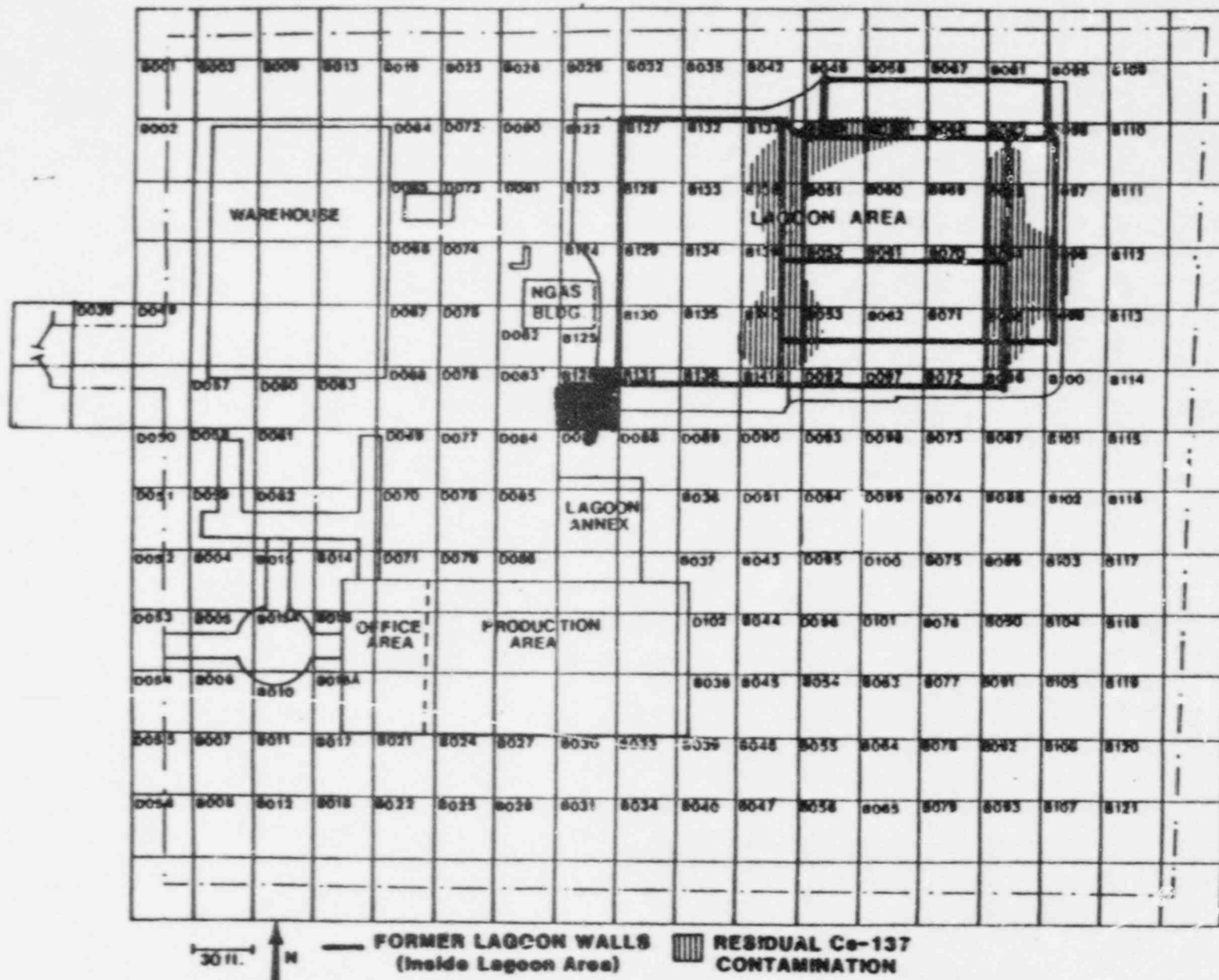


FIGURE 9: Locations in the Lagoon Area Containing Residual Cs-137 Contamination.

Attachment No. 2