

NORTHEAST UTILITIES



THE CONNECTICUT LIGHT AND POWER COMPANY
THE HARTFORD ELECTRIC LIGHT COMPANY
WESTERN MASSACHUSETTS ELECTRIC COMPANY
NEW YORK WATER POWER COMPANY
NORTHEAST UTILITIES SERVICE COMPANY
NORTHEAST NUCLEAR ENERGY COMPANY

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September 13, 1982
MP-4108

Docket Nos. 50-245
50-336

Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
631 Park Avenue
King of Prussia, PA 19406

Attention: Mr. Ronald C. Haynes, Regional Administrator

Reference: Facility Operating License Nos. DPR-21 and DPR-65
ETS-NR/50-245/50-336/82-05

Dear Mr. Haynes:

Pursuant to the Millstone Environmental Technical Specifications, Section 3.2, Northeast Nuclear Energy Company hereby forwards the following report regarding anomalous radioactivity observed in oysters.

Very truly yours,

E. J. Mroczka
Station Superintendent
Millstone Nuclear Power Station

EJM/RAC:kac

Attachment

cc: Document Control Desk
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

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Facility: Millstone Nuclear Power Station
 Report Number: ETS-NR/50-245/50-336/82-05
 Report Date: September 13, 1982
 Occurrence Date: August 4, 1982

DESCRIPTION OF OCCURRENCE:

The following levels of activity were observed in a sample of oysters from within 500 feet of the discharge and this exceeded the control station average activity by greater than a factor of ten.

	Sample Date	Analysis Report Date	Results (pCi/g)			
			I-131	Ag-110m	Co-58	Co-60
Control Stations -						
Golden Spur	8/12	9/7	0±.07	0±.03	0±.03	0±.03
Giant's Neck	8/4	8/27	0±.03	0±.03	0±.02	0±.02
Within 500 feet of discharge	8/4	8/27	.20±.07	2.62±.13	.15±.08	.35±.06
		9/3*	0±.6	3.3±.2	.31±.08	.36±.08
	8/4**	8/23	.175±.014	3.85±.35	.188±.011	.373±.014

*reanalysis (either same sample or second aliquot)

**analysis of quality control sample by another laboratory

PLANT OPERATING CONDITIONS PRIOR TO OCCURRENCE:

Millstone Unit 1 - Operated at close to 100% thermal power throughout most of July. Experienced two day outage in the beginning of August.

Millstone Unit 2 - Operated at close to 100% power except for outages of 5 days in mid July and 12 1/2 days at the end of July through early August.

CAUSE OF OCCURRENCE:

The Ag-110m, Co-58, and Co-60 levels of activity reported above are typical of levels observed during the past few years and are due to the normal discharges from the station. The levels in oysters fluctuate from quarter to quarter, as does the amount of activity in station releases, and typically about one or two similar reports are required each year.

The I-131 levels of activity were less than those observed during the second quarter of 1982 due to the treatment and hence significant reduction of iodine releases from the Unit 2 steam generator blowdown. However, the I-131 levels remain above those observed in the past few years due to the increased iodine releases from the liquid radwaste systems. These increased releases were due to higher than normal primary coolant I-131 levels in Unit 2 and the unavailability of the Unit 1 liquid waste concentrator for a few days in July.

CORRECTIVE ACTION:

In response to these levels of activity, the dose consequences of the Unit 1 and Unit 2 discharges were evaluated for the third quarter of 1982 by using effluent transport models. Releases were assumed to remain at the same rate throughout the quarter as were measured for July and were input into the NRC computer code - LADTAP. This is conservative because the releases for August are lower than those for July. The results of this method were compared to doses calculated based on measured levels in the oyster sample.

The present reporting limits are based on a factor of ten times the value for the control location(s) (actually this turns out to be 10 times the statistical error in determining background since the background level is typically zero). This results in reports when fairly low levels of radioactivity are detected in the environment since background is measured with such a high degree of accuracy. As discussed below, since the resulting dose consequences are well below 10 CFR 50 Appendix I limits, and since the present reporting limits are overconservative, it was determined that no operational corrective actions are necessary.

DOSE CONSEQUENCES:

The results of the effluent method dose calculation for shellfish consumption indicate that the maximum dose for the third quarter to an individual would be 0.0064 millirem to the adult whole body, 0.11 millirem to the adult thyroid (critical organ), and 0.021 millirem to the adult gastrointestinal tract-lower large intestine (GI-LLI). (The dose from fish consumption is a factor of 4 higher for whole body, 2 higher for the GI-LLI and approximately the same for the thyroid as from shellfish consumption.)

The second method uses the concentrations that were measured in the oyster samples. These concentrations, as reported above, are reduced by a factor of 5 for dilution (quarry to L.I. Sound dilution factor) and are assumed to exist throughout the third quarter of 1982. This results in a dose estimate of 0.00078 millirem to the adult whole body, 0.093 to the adult thyroid, and 0.060 to the adult GI-LLI from shellfish consumption. This method confirms the relative accuracy of the first method. Both of these methods calculate doses to the maximum individual, someone who collects shellfish from near the discharge area and consumes 1.25 kilograms per quarter. Concentrations of station related activity decrease rapidly with distance from the discharge, as demonstrated by aquatic samples taken at other locations. Therefore, doses to the average population will be much less.

Using the most conservative dose calculation still demonstrates that the dose to the critical organ of an individual who would receive the maximum dose would be a small fraction (0.004) of the natural background radiation exposure (30 millirem) to which this individual is normally exposed over this period of time (third quarter).

Thus the dose consequence of this event is insignificant. The reporting requirement is overly conservative. In order to prevent future overconservative reports, proposed radiological effluent Technical Specifications have been submitted to the NRC. These specifications will have more realistic reporting requirements.