

U.S. ATOMIC ENERGY COMMISSION
DIRECTORATE OF REGULATORY OPERATIONS
REGION I

RO Inspection Report No: 50-219/74-04 (Addendum) Docket No: 50-219

Licensee: Jersey Central Power & Light Company License No: DPR-16

Madison Avenue at Punch Bowl Road

Priority: _____

Morristown, New Jersey 07860

Category: C

Location: Oyster Creek Nuclear Station (OC)
Forked River, New Jersey

Type of Licensee: 640 MWe-BWR (GE)

Type of Inspection: Special - (Environmental Monitoring)

Dates of Inspection: March 20, 1974

Dates of Previous Inspection: February 6-13, 1974

Reporting Inspector: _____

R. J. Bores, Radiation Specialist

7-26-74

Date

Accompanying Inspectors: _____

None

Date

Date

Date

Date

Other Accompanying Personnel: _____

W.M. Lowder, Physicist, USAEC-HASL

K.M. Miller, Physicist, USAEC-HASL

A. Zawistowski, NJ Bureau of Rad. Protection

C. McNally, NJ Bureau of Rad. Protection

R. Lessler, USAEC - DL(RAB)

Date

Reviewed By: _____

J. P. Stohr, Senior Environmental Scientist

7/29/74

Date

61487

SUMMARY OF FINDINGS

Enforcement Action

None

Licensee Action on Previously Identified Enforcement Items
(Environmental monitoring)

Not Applicable

Design Changes

None

Other Significant Findings

None

Management Interview

(See RO Inspection Report 50-219/74-04)

DETAILS

Radionuclide Concentrations in Sediment Samples

On March 20, 1974, four sediment samples (three from Oyster Creek and one from Forked River) were split for analysis by both Bureau of Radiological Protection, State of New Jersey and by USAEC, Idaho Health Services Laboratory. The results of these analyses are appended to this report as Attachments I and II, respectively. The results of the two laboratories are in essential agreement for the major radionuclides present, i.e., for Ce-144, Cs-134, Cs-137, Mn-54 and Co-60. The K-40 levels were not reported by New Jersey but comprise a major portion of the total activity at each of the sampling locations. The nuclide activities reported for the Forked River sample were lower than those for Oyster Creek. Part of this difference can be attributed to the smaller amount of silt in that sample. The Forked River sample was visibly more gravelly in nature, lacking the silty sediment and organic materials present in the Oyster Creek samples. The smaller amount of natural K-40 found in the Forked River sample reflects this difference, as seen in Attachment II.

ATTACHMENT I

STATE OF NEW JERSEY ANALYSES BUREAU OF RADIATION PROTECTION

Loc. Descrip.	Sand Pt. Marina Dock	Rue's Boat Yard Dock	Oyster Creek Marina Docks	Forked River S. Branch Shoreline, N. Bank, 300 yds. E of Rt. #9
Sample Type	Sediment	Sediment	Sediment	Sediment
Loc. Code	15-26-34-26	15-26-08-26	15-26-35-26	15-26-26-26
RH No.	18896	18897	18898	18899
Coll. Date	3-20-74	3-20-74	3-20-74	3-20-74
Count Date	4-24-74	5-15-74	5-15-74	4-23-74
Nuclides	Concentrations of Radionuclides pCi/G			
Ce-144	1.1±0.3	0.6±0.2	0.9±0.2	0.1±0.1
Ce-141	0.18±0.16	<0.2	0.28±0.16	<0.08
Cr-51	<2	<2	<2	<0.6
I-131	*	*	*	*
Ru-103	<0.3	<0.2	<0.2	<0.05
Ru-106	<1.7	<0.9	1.2±0.7	<0.3
Ba-140	<4	<4	<7	<0.4
Cs-134	0.18±0.16	0.16±0.08	0.5±0.1	0.04±0.03
Cs-137	1.12±0.15	0.47±0.08	1.6±0.1	0.06±0.03
Zr-95	<0.6	0.4±0.3	0.3±0.3	0.10±0.07
Nb-95	0.3±0.2	0.2±0.2	0.3±0.2	0.07±0.05
Co-58	<0.3	<0.16	<0.2	<0.04
Mn-54	2.8±0.2	0.66±0.10	1.5±0.1	0.04±0.03
Fe-59	0.5±0.5	<0.8	<0.6	<0.11
Zn-65	0.5±0.3	<0.3	<0.4	<0.10
Co-60	10.7±0.4	2.9±0.2	9.7±0.2	0.15±0.03

* - Not analyzed due to time lapse between collection and counting.

ATTACHMENT II

USAEC ANALYSES
IDAHO HEALTH SERVICES LABORATORY

Sediment samples collected 3-20-74

<u>Nuclides</u>	<u>Concentration in picocuries/gram (dry)</u>			
<u>Collect. Location</u>	<u>Sand Point Marina Dock</u>	<u>Rue's Boat Yard Dock</u>	<u>Oyster Creek Marina Docks</u>	<u>Forked River S. Branch Shoreline</u>
Ce-144	0.8±0.1	0.46±0.09	0.5±0.1	---
Cs-134	---	0.09±0.02	0.40±0.03	---
Cs-137	1.25±0.03	0.52±0.02	1.90±0.04	0.05±0.02
Mn-54	2.76±0.04	0.81±0.02	1.52±0.03	0.024±0.006
Co-60	11.1±0.1	3.56±0.04	9.97±0.07	0.10±0.01
K-40	13.4±0.2	9.0±0.2	13.4±0.2	1.36±0.09
Be-7	1.2±0.3	1.1±0.3	1.0±0.3	---
Sb-125	0.24±0.06	---	---	---
U-235	0.18±0.02	0.9±0.2	0.27±0.02	0.09±0.02
Pb-212	0.95±0.03	0.72±0.02	0.86±0.03	0.58±0.02
Pb-214	0.72±0.05	0.50±0.03	0.89±0.05	0.51±0.02
Ac-228	0.7±0.2	0.38±0.05	0.58±0.09	0.44±0.03

--- indicates activity was less than detectible limits