

NRC MEETING FOR NRC INSPECTION 99-13

JOHN WHITE, CHIEF, RADIATION SAFETY AND SAFEGUARDS BRANCH

**MARIE MILLER, SENIOR HEALTH PHYSICIST, DECOMMISSIONING AND
LABORATORY BRANCH**

**RICHARD CLEMENT, HEALTH PHYSICIST, OFFICE OF NUCLEAR
MATERIALS SAFETY**

Background

SALE OF PART OF THE OYSTER CREEK NUCLEAR GENERATING STATION SITE

- 09/02/99** NRC requests information regarding the basis for concluding that the property is suitable to be released in accordance with criteria in 10 CFR 20, Subpart E
- 10/12/99** NRC conducts a preliminary inspection to develop plans for a confirmatory survey. NJDEP participates in the inspection
- 10/19/99** NRC requests additional information from GPU Nuclear - received 11/12/99
- 10/20/99** NRC, GPU Nuclear, and NJDEP conduct a public meeting to discuss the sale of part of the Oyster Creek Site known as the Forked River Property
- 11/15/99** NRC conducts a confirmatory inspection which concludes on 11/18/99. Results documented in Report 50-219/99-13
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Purpose of Inspection

- Verify and confirm the licensee's survey of the Forked River property
- Assess the licensee's historical site assessment of the 657-acre land area and buildings
- Determine the adequacy and accuracy of the licensee's procedures and final status survey results
- Determine if NRC criteria was met

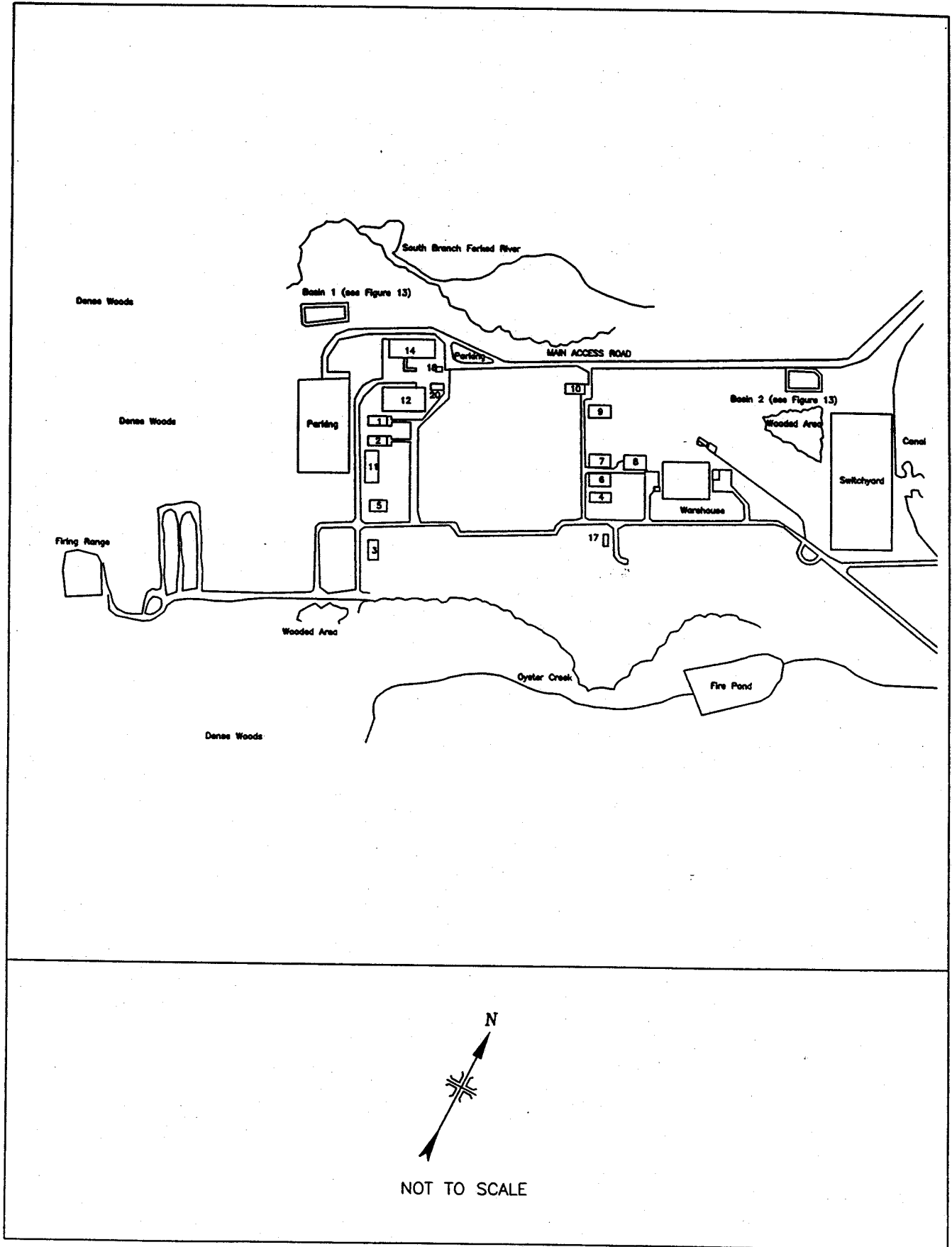


FIGURE 2: Oyster Creek Forked River Property – Plot Plan

Inspection Methods

- Records and procedures review
 - Interviews with licensee and contractor staff who performed the historical site assessment and scoping survey
 - Interviews with licensee staff responsible for radioactive waste management
 - Confirmatory measurements
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Inspection Conclusions

- Site was adequately characterized during characterization which included scoping survey and records review
 - Records for decommissioning now being maintained as required by 10 CFR 50.75(g)
 - Licensee maintained adequate radioactive liquid and gaseous effluent program - operational cycles with elevated activity did not appear to impact Forked River Property
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Inspection Conclusions (Con't)

- Licensee's procedures for in-field and laboratory measurements met required detection sensitivities. NJDEP also independently analysed survey samples
 - NRC independent measurements confirmed the adequacy of the licensee's survey findings. All soil results were below NRC approved screening DCGLs for Co-60: 3.8 pCi/g; and Cs-137: 11 pCi/g
 - Miscellaneous sampling also indicates no impact from plant related activities
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TABLE 1

**SUMMARY OF SURFACE ACTIVITY LEVELS
OYSTER CREEK FORKED RIVER PROPERTY
BUILDING INTERIORS
LACEY TOWNSHIP, NEW JERSEY**

Building ^a	Number of Direct Measurements	Total Activity (dpm/100 cm ²) ^b	Removable Activity (dpm/100 cm ²)	
			Alpha	Beta
Building 1 H.P. and Chemistry Laboratories	11	-200 to 810	0 to 3	-4 to 9
Building 5 Motor Pool Area	20	-250 to 700	0 to 3	-4 to 5
Building 6	23	-340 to 570	0 to 5	-5 to 18
Building 7	20	-360 to 410	0 to 1	-4 to 5
Building 8	20	-320 to 740	0 to 1	-4 to 6
Building 14 Whole Body Count Room	10	-290 to 600	0 to 3	-1 to 16
Building 20	20	-340 to 350	0 to 1	-4 to 3

^aRefer to Figures 3 through 9.

^bThe minimum detectable concentrations (MDCs) for direct measurements of surface activity ranged from 460 to 580 dpm/100 cm², depending on the surface material.

TABLE 2

**RADIONUCLIDE CONCENTRATIONS
IN SURFACE AND SUBSURFACE SOIL SAMPLES
OYSTER CREEK FORKED RIVER PROPERTY
LACEY TOWNSHIP, NEW JERSEY**

Sample Number ^a	Sample Depth (cm)	Radionuclide Concentrations (pCi/g)	
		Cs-137	Co-60
Firing Range			
S001	0-15	< 0.04	< 0.03
S002	0-15	< 0.02	< 0.02
S003	0-15	0.04 ± 0.02 ^b	< 0.05
S004	45-60	0.03 ± 0.02	< 0.02
S005	85-100	< 0.02	< 0.02
S006	0-15	< 0.03	< 0.04
S007	0-15	0.02 ± 0.02	< 0.02
S008	0-15	< 0.04	< 0.05
S009	45-60	< 0.04	< 0.04
S010	85-100	< 0.04	< 0.04
S011	0-15	< 0.02	< 0.02
S012	0-15	< 0.02	< 0.03
S013	0-15	0.03 ± 0.03	< 0.04
S014	0-15	< 0.02	< 0.02
S015	0-15	0.04 ± 0.02	< 0.02
S016	0-15	0.02 ± 0.01	< 0.02
S017	0-15	< 0.03	< 0.03
S018	0-15	0.04 ± 0.02	< 0.02
S019	0-15	0.14 ± 0.04	< 0.03

TABLE 2 (Continued)

**RADIONUCLIDE CONCENTRATIONS
IN SURFACE AND SUBSURFACE SOIL SAMPLES
OYSTER CREEK FORKED RIVER PROPERTY
LACEY TOWNSHIP, NEW JERSEY**

Sample Number	Sample Depth (cm)	Radionuclide Concentrations (pCi/g)	
		Cs-137	Co-60
Firing Range (continued)			
S020	0-15	0.04 ± 0.02	< 0.02
S021	0-15	0.03 ± 0.02	< 0.02
S022	0-15	0.05 ± 0.02	< 0.04
S023	0-15	0.12 ± 0.02	< 0.02
S024	0-15	0.53 ± 0.06	< 0.03
S025	0-15	0.03 ± 0.01	< 0.02
S026	0-15	< 0.03	< 0.03
Former Construction Site			
S027	0-15	< 0.03	< 0.03
S028	45-60	< 0.03	< 0.03
S029	85-100	0.02 ± 0.01	< 0.02
S030	0-15	< 0.03	< 0.04
S031	45-60	< 0.03	< 0.02
S032	85-100	< 0.02	< 0.02
S033	0-15	< 0.03	< 0.03
S034	45-60	< 0.02	< 0.02
S035	85-100	< 0.03	< 0.04
Building 17 Laydown and Depression Areas			
S036	0-15	< 0.02	< 0.02
S037	0-15	< 0.02	< 0.03

TABLE 2 (Continued)

**RADIONUCLIDE CONCENTRATIONS
IN SURFACE AND SUBSURFACE SOIL SAMPLES
OYSTER CREEK FORKED RIVER PROPERTY
LACEY TOWNSHIP, NEW JERSEY**

Sample Number	Sample Depth (cm)	Radionuclide Concentrations (pCi/g)	
		Cs-137	Co-60
Area South of Switchyard			
S038	0-15	0.11 ± 0.03	< 0.02
S039	0-15	0.29 ± 0.06	< 0.07
Spectrum Building Site			
S040	0-15	0.24 ± 0.04	< 0.03
S041	0-15	0.23 ± 0.03	< 0.02

*Refer to Figures 10 through 12.

^bUncertainties represent the 95% confidence level, based on total propagated uncertainty.

TABLE 3

**RADIONUCLIDE CONCENTRATIONS
IN SEDIMENT SAMPLES
OYSTER CREEK FORKED RIVER PROPERTY
LACEY TOWNSHIP, NEW JERSEY**

Sample Number ^a	Radionuclide Concentrations (pCi/g)	
	Cs-137	Co-60
Pond 1		
S045	0.43 ± 0.08 ^b	< 0.09
S046	< 0.02	< 0.02
S047	0.66 ± 0.12	< 0.10
Pond 2		
S042	0.21 ± 0.07	< 0.11
S043	0.23 ± 0.07	< 0.08
S044	0.03 ± 0.02	< 0.03

^aRefer to Figure 13.

^bUncertainties represent the 95% confidence level, based on total propagated uncertainty.

TABLE 4

**RADIONUCLIDE CONCENTRATIONS
IN WATER SAMPLES
OYSTER CREEK FORKED RIVER PROPERTY
LACEY TOWNSHIP, NEW JERSEY**

Sample Location (Number) ^a	Radionuclide Concentrations (pCi/L)			
	Gross Alpha	Gross Beta	Tritium	Sr-90
Well #1k (W001)	6.8 ± 1.5 ^b	10.6 ± 1.8	-10 ± 210	-1.3 ± 1.7
Well #2k (W002)	3.7 ± 1.2	5.9 ± 1.5	-160 ± 210	-0.9 ± 1.7
Well #1c (W003)	17.1 ± 2.8 ^c	15.2 ± 2.2 ^c	-90 ± 210	0.2 ± 1.7 ^d
Well #2c (W004)	8.1 ± 1.6	9.4 ± 1.7	-80 ± 210	-0.2 ± 1.7

^aRefer to Figure 14.

^bUncertainties represent the 95% confidence level, based on total propagated uncertainty.

^cAdditional analyses were performed on aliquots from sample W003 and the results were as follows:

Gross Alpha	Gross Beta
7.5 ± 1.4	7.9 ± 1.2
6.5 ± 1.3	7.8 ± 1.2
7.0 ± 1.4	8.0 ± 1.2

^dAdditional analysis was performed on an aliquot from sample W003. The Sr-90 result was 1.0 ± 1.8 pCi/L.

Sample Location (Number) ^a	Radionuclide Concentrations (pCi/L)						
	Mn-54	Co-60	Zn-65	Ag-110m	Cs-137	Eu-152	Am-241
Well #1k (W001)	< 3.9 ^b	< 4.7	< 8.1	< 3.6	< 4.7	< 9.9	< 5.6
Well #2k (W002)	< 2.9	< 3.8	< 6.3	< 2.6	< 2.9	< 7.8	< 4.6
Well #1c (W003)	< 5.1	< 6.2	< 11	< 4.9	< 5.4	< 14	< 7.6
Well #2c (W004)	< 4.0	< 4.8	< 7.5	< 3.7	< 4.7	< 10	< 5.7

^aRefer to Figure 14.

^bValues reported as "< #" refer to analytical results that are below the minimum detectable concentration (MDC) - i.e., the radionuclide was not detected in the sample.

Summary

- Forked River Property was adequately characterized and GPU Nuclear used adequate survey procedures and reported accurate survey results
 - NRC confirmatory survey results determined that residual radioactivity from plant related activities was well below the dose-based release criteria
 - NRC inspection results do not constitute approval, by the NRC, for partial release of the facility for unrestricted use
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Next Actions

- **NRC to inform GPU Nuclear of the NRC's position regarding the Forked River Property**
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