



Public Service®

16805 WCR 19 1/2; Platteville, Colorado 80651

Public Service
Company of Colorado

April 17, 1995
Fort St. Vrain
P-95039

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

ATTN: Mr. Michael F. Weber, Chief
Decommissioning and
Regulatory Issues Branch

Docket No. 50-267

SUBJECT: Confirmatory Survey Measurements for FSV Repower Area

Dear Mr. Weber:

Attached for your information are radiation survey measurements taken by Public Service Company of Colorado (PSCo) in the Fort St. Vrain (FSV) Repower Area. This information was requested by the NRC and personnel from the Oak Ridge Institute for Science and Education (ORISE) to support ORISE's confirmatory survey of this area.

Attachment 1 contains a comparison of the exposure rate measurements collected by PSCo and ORISE to evaluate the exposure rate conditions at the time of the confirmatory survey.

Attachment 2 contains a comparison of the material background determination performed adjacent to the FSV Visitor Center, and the results of two total surface activity measurements collected within the Repower Area.

Attachment 3 contains the results of total surface activity measurements collected by PSCo during the final survey of the Repower Area at the locations selected for confirmation by ORISE. Also included with Attachment 3 are the detailed survey drawings indicating the selected measurement locations and the corresponding PSCo sample numbers. This data is provided to expedite the evaluation of the confirmatory survey of the Repower Area, however in the future PSCo expects that ORISE will be able to obtain this type of information by review of the Final Survey Report and information contained in the survey package.

9504260260 950417
PDR ADOCK 05000267
W PDR

April 11

P-95039
April 17, 1995
Page 2

If you have any questions regarding this information, please contact Mr. M. H. Holmes at (303) 620-1701.

Sincerely,

Mary J. Fisher by J. Borst

Mary J. Fisher
Decommissioning Program Director

MJF/SWC

Attachment

cc: w/attachment

Regional Administrator, Region IV

Mr. Robert M. Quillin, Director
Radiation Control Division
Colorado Department of Public Health and Environment

ATTACHMENT 1 **ORISE Exposure Rate Comparison** Repower Area - Soil, Exposure Rate Measurements

ORISE Sample#	PSCo NaI(Tl) ($\mu\text{R/hr}$)	PSCo Corrected ($\mu\text{R/hr}$) ⁽¹⁾	ORISE PIC ($\mu\text{R/hr}$)
1	26.52	17.00	17.7
2	28.50	18.27	18.0
3	35.35	22.66	20.5
4	34.14	21.88	18.3
5	49.37	31.65	25.7
6	32.89	21.09	21.0
7	29.10	18.65	19.0
8	25.80	16.54	17.1
9	24.13	15.47	16.4
10	22.70	14.55	16.3

⁽¹⁾ PSCo PIC Correction Factor = $(1.56)^{-1}$

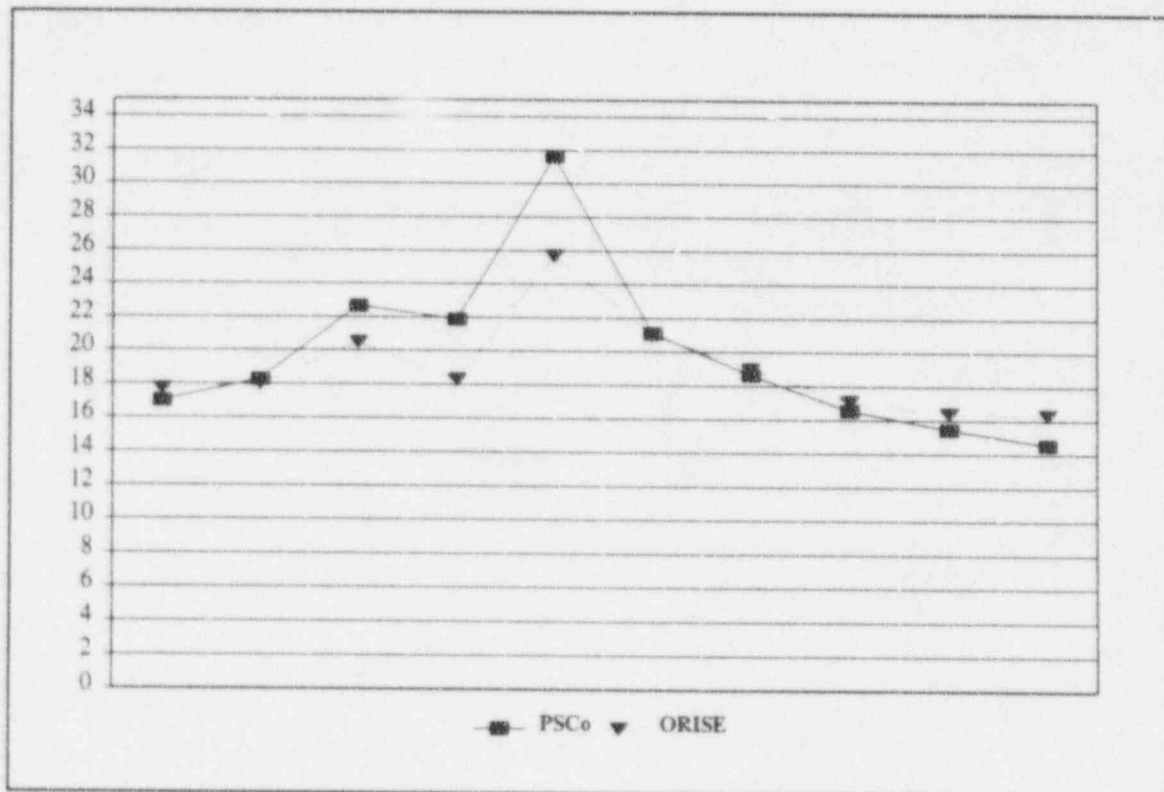


Figure 1
 PSCo/ORISE Exposure Rate Comparison

ATTACHMENT 2

Background Activity

Repower Area - Material Background, Concrete, Total Surface Activity

VISITOR CENTER - SHIELDED COUNTS FOR MATERIAL BACKGROUND

PSCo Sample#	Shielded Count (cpm/125cm ²)
3	529
4	536
5	476
16	490
17	480
18	499
	Avg: 501.7

VISITOR CENTER - UNSHIELDED COUNTS FOR MATERIAL BACKGROUND

PSCo Sample#	Unshielded Count (cpm/125cm ²)
6	782
7	812
8	806
9	798
10	806
11	750
12	816
13	760
14	836
15	898
	Avg: 806.4

Measurement Parameters:

Detector Efficiency (c/d) = 0.209

Detector Area (cm²) = 125

Unshielded Ct Rate (Avg. cpm/125cm²) = 806

Shielded Ct Rate (Avg. cpm/125cm²) = 502

Net Count Rate (cpm/125cm²) = 304.7

Net Count Rate (cpm/100cm²) = 243.9

Material Reference Background(dpm/100cm²) = 1166

Derivation:

(806.4-501.7)

(304.7*0.8)

(243.9/0.209)

ATTACHMENT 2 (cont.)
Total Surface Activity
 Repower Area - Concrete, Total Surface Activity

REPOWER AREA, ORIGINAL FINAL SURVEY LOCATION #10

PSCo Sample#	Shielded Local Area Background (cpm/125cm ²)	Unshielded Measurement (cpm/125cm ²)
19	514	
21	535	
	Avg: 524.5	
20		872

Measurement Parameters:

Derivation:

Detector Efficiency (c/d) = 0.209	
Detector Area (cm ²) = 125	
Shielded Local Area Bkgd(Avg. cpm/125cm ²) = 524.5	
Total Bkgd Ct Rate (cpm/125cm ²) = 829.2	(304.7 + 524.5)
Total Bkgd Ct Rate (cpm/100cm ²) = 663.4	(829.2 * 0.8)
Unshielded Meas Ct Rate (cpm/125cm ²) = 872	As Read
Unshielded Meas Ct Rate (cpm/100cm ²) = 697.6	(872.0 * 0.8)
Net Count Rate (cpm/100cm ²) = 34.2	(697.6 - 663.4)
<u>Net Total Surface Activity (dpm/100cm²) = 164</u>	(34.2 / 0.209)

REPOWER AREA - ORIGINAL FINAL SURVEY LOCATION #25

PSCo Sample#	Shielded Local Area Background (cpm/125cm ²)	Unshielded Measurement (cpm/125cm ²)
22	550	
24	507	
	Avg: 528.5	
23		856

Measurement Parameters:

Derivation:

Detector Efficiency (c/d) = 0.209	
Detector Area (cm ²) = 125	
Shielded Local Area Bkgd(Avg. cpm/125cm ²) = 528.5	
Total Bkgd Ct Rate (cpm/125cm ²) = 833.2	(304.7 + 528.5)
Total Bkgd Ct Rate (cpm/100cm ²) = 666.6	(833.2 * 0.8)
Unshielded Meas Ct Rate (cpm/125cm ²) = 856	As Read
Unshielded Meas Ct Rate (cpm/100cm ²) = 684.8	(856.0 * 0.8)
Net Count Rate (cpm/100cm ²) = 18.2	(684.8 - 666.6)
<u>Net Total Surface Activity (dpm/100cm²) = 87</u>	(18.2 / 0.209)

ATTACHMENT 3
Total Surface Activity Measurements
ORISE Confirmatory Survey - Repower Area

Survey Location	ORISE Sample#	PSCo Sample#	Download Sample#	Download File#	Misc. Metal	Misc. Concrete	Net Activity (dpm/100cm ²)
Evap. Cooler Building							
South Wall	N/A	18	20	144		X	449.5
	N/A	28	30	144		X	- 205.1
East Wall	N/A	3	5	144		X	114.9
	N/A	6	8	144		X	71.3
	N/A	11	13	144		X	- 452.4
	N/A	14	16	144		X	- 350.5
	N/A	15	17	144		X	- 117.8
	N/A	3	5	131	X		190.3
	N/A	16	18	131	X		44.8
	N/A	18	20	131	X		146.7
	N/A	20	22	131	X		- 71.5
Evap. Cooler Building							
Entrance	N/A	17	40	213		X	402.9
	N/A	17	41	213		X	317.2
	N/A	17	42	213		X	760.0
	N/A	17	43	213		X	588.6
	N/A	17	44	213		X	274.3
	N/A	17	45	213		X	702.9
	N/A	17	46	213		X	1060.0
	N/A	17	47	213		X	745.8
	N/A	17	48	213		X	588.6
	N/A	17	49	213		X	274.3

ATTACHMENT 3(cont.)
Total Surface Activity Measurements
ORISE Confirmatory Survey - Repower Area

Survey Location	ORISE Sample#	PSCo Sample#	Download Sample#	Download File#	Misc. Metal	Misc. Concrete	Net Activity (dpm/100cm ²)
Open Land - East Side of Evap. Bldg.							
Domestic Water Valve Risers	23	5	7	145	X		1001.8
	24	15	29	213		X	- 125.7
North Perimeter							
Light pole	25	12	26	213		X	602.9
	26	48	50	145	X		681.8
Monitoring Well Casings (Exterior)							
Well 2	27	35	37	145	X		274.5
	28	11	25	213		X	- 511.4
Well 3	37	4	9	213		X	- 340.0
	38	22	24	145	X		187.3
Septic Tank 2							
Cover	33	34	36	145	X		420.0
Southeast Corner							
Light Pole	34	8	22	213		X	517.2
	35	31	33	145	X		550.9
Piece of Concrete	36	9	23	213		X	31.5

ATTACHMENT 3(cont.)
Total Surface Activity Measurements
ORISE Confirmatory Survey - Repower Area

Survey Location	ORISE Sample#	PSCo Sample#	Download Sample#	Download File#	Misc. Metal	Misc. Concrete	Net Activity (dpm/100cm ²)
Valve Pit	29	16	38	145		X	-1039.6
	32	16	39	145		X	- 210.5
	N/A	16	40	145		X	284.0
	N/A	16	41	145		X	- 268.7
	N/A	16	42	145		X	- 661.4
	N/A	16	43	145		X	- 443.3
	N/A	16	44	145		X	- 36.0
	N/A	16	45	145		X	51.3
	N/A	16	46	145		X	65.8
	N/A	16	47	145		X	- 341.4
South Perimeter							
Security Isolation Zone Concrete	39	3	5	122		X	- 422.9
	40	7	9	122		X	144.3
	41	14	16	122		X	- 292.0
	42	19	21	122		X	- 248.4
	43	25	27	122		X	57.1
	44	30	32	122		X	- 146.6

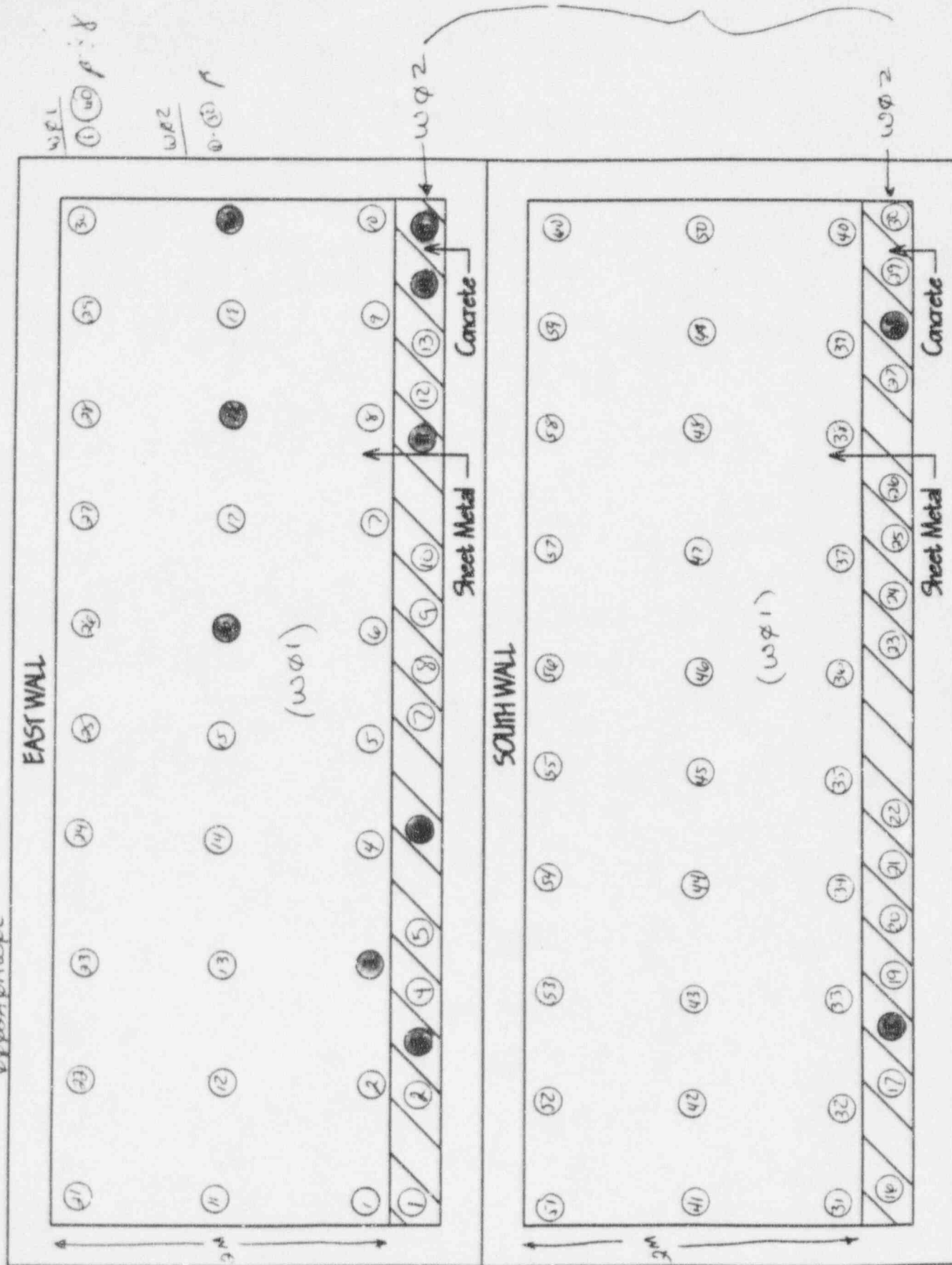
PAGE 2 of 2

Edward Cooker Bldg Repower

PAGE 2 OF 2

0767890001 / 18000 D07450

PACKAGE NUMBER 00002



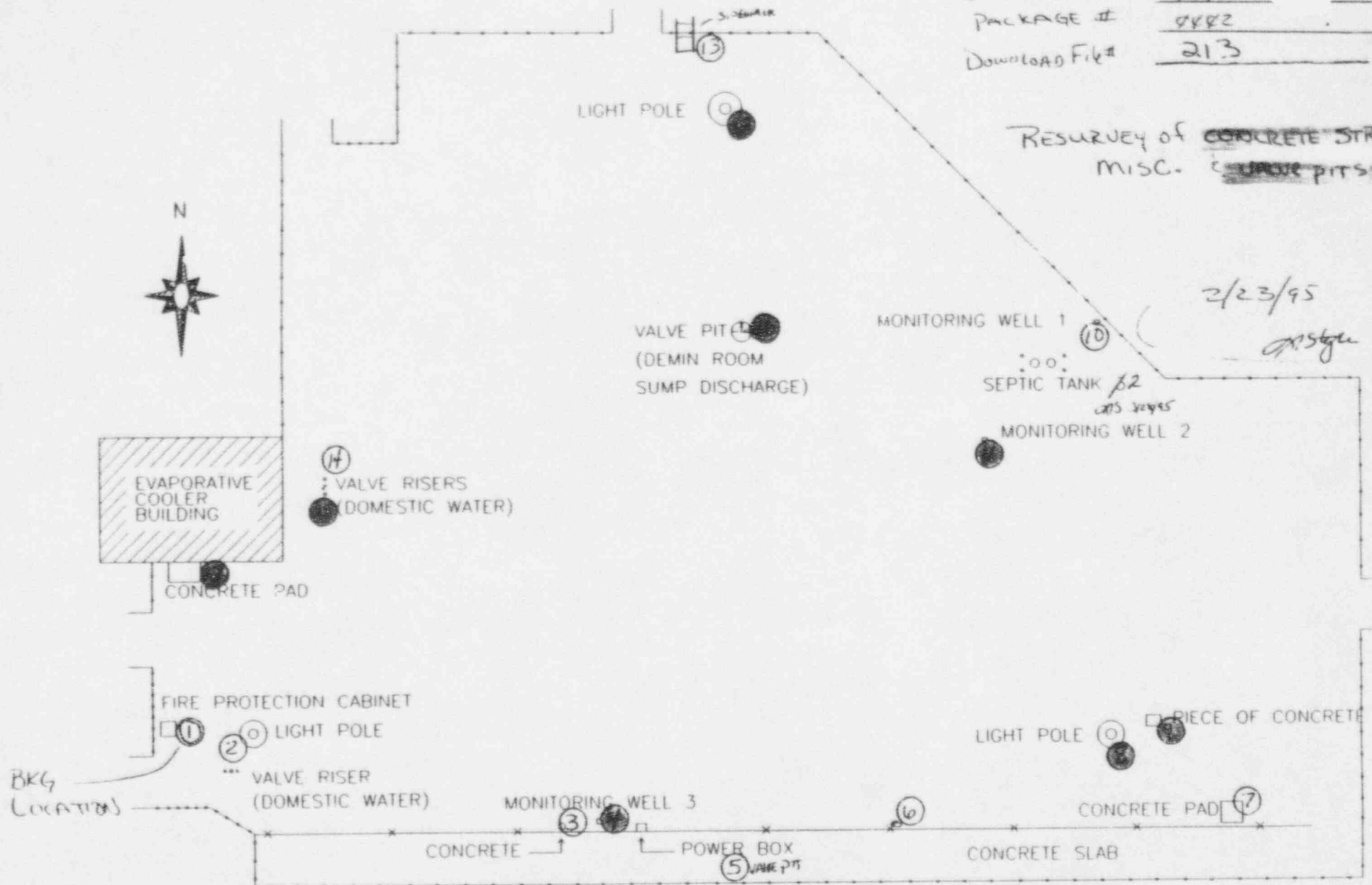
REPOWER AREA

LOCATION CODE: 0002A1A
 PACKAGE # 0002
 Download File # 213

RESURVEY of ~~CONCRETE~~ STRUCTURES
 MISC. ~~CONCRETE~~ PITS

2/23/95

MS



BKG
 LOCATION

