



DEPARTMENT OF MECHANICAL ENGINEERING

THE UNIVERSITY OF TEXAS AT AUSTIN

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May 3, 1993

Document Control Desk  
U.S. Nuclear Regulatory Commission  
Washington, DC. 20555

Subject: Inspection Report 50-192/93-01  
Confirmation survey  
Removal of pool liner

Dear Sir:

The University of Texas scheduled removal of the pool liner in Taylor Hall room 131 for the week of April 19. Removal of the liner by the project contractor, Quadrex Recycle Center, was completed April 23. Surveys subsequent to the liner removal included scans with a thin window pancake GM type probe, direct 1 minute readings with the probe and contamination swipes of the remaining tank structure surface. All measurements were within the release criteria of Regulatory Guide 1.86. Previous measurements with a RS-111 had demonstrated gamma exposure rates less than  $< 5 \mu\text{R/hr}$  (submittal letter December 17, 1992 and March 22, 1993).

Pool liner material, aluminum, was transported to Quadrex Recycle Center for survey for release or disposal. No contamination of the liner exceeding Reg. Guide 1.86 was found.

Observation of the removal of the liner noted one to two hundred milliliters of water trapped between the concrete wall and the aluminum liner. Surveys in the area of the entrapped water indicated no residual activity. Liner contact with the structural concrete did not contain areas that could contain amounts of water in excess of 100 - 200 milliliters. Except for the noticed drainage no accumulations of water from pool overflow were indicated.

Radioactive contamination previously noted along the surface edge of the pool liner were essentially the same after removal of the liner. Remedial actions were taken to remove small amounts of concrete in the previously defined areas along the pool liner to concrete interface and in the flat area adjacent to the pool. These areas exceeded release levels at several spots prior to the remedial work. Material removed and rubble from the liner removal was sent to the Quadrex Recycle Center for release or disposal. A small fraction of 1 cubic foot was removed from the surface area adjacent to the pool.

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PDR ADOCK 05000192  
Q PDR

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Enclosed are tables of the surveys, of the pool area with the liner removed. This data supplements the submittals of Dec. 17, 1992 and March 22, 1993. No new sources of radioactivity were found.

The University continues to maintain a ground water pumping and monitoring program until the results of the NRC confirmation survey are complete.

Sincerely

*Thomas L. Bauer*

T.L. Bauer  
Assistant Director  
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Approval:

*Bernard W. Wehring*

Bernard W. Wehring, Director  
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Enclosure: Termination Survey, Pool Liner Removal

cc: J. Adams, NRC with Enclosure  
Region IV USNRC " "  
Monroe UT SO " "

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J. DeCamp	"
K. Diller	"
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The University of Texas

Termination Survey

April 22-23, 1993

Pool Liner Removal

Table 1

Direct readings (drt) consist of #1 - #60. #1 is the top level south side of tank. Measurements are numbered top to bottom each level moving clockwise around the tank.

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--->West      *****
               *47          54          1          6 *
               * 48          55          2          7 *
               *   49          56          3          8 *
               *    50          57          4          9 *
               *     51          58          5         10 *
               *      52          59
               *       53          60
               * 40 41 42 43 44 45 46  >Bottom< 15 14 13 12 11 *
               *        39
               *      38 32          26
               *      37 31          25 20
               *      36 30          24 19
               *      35 29          23 18
               *      34 28          22 17
               *      33 27          21 16 *
               *****

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Smear samples (smr) alternate the same pattern as the direct readings in the tank. Smears number #1 - #27. Smears in the upper section of the tank are 10 per level on two levels.



Direct readings (drr) along the rim of the tank consist of #1 - #18. Measurements begin on the north east corner and number clockwise around the tank.

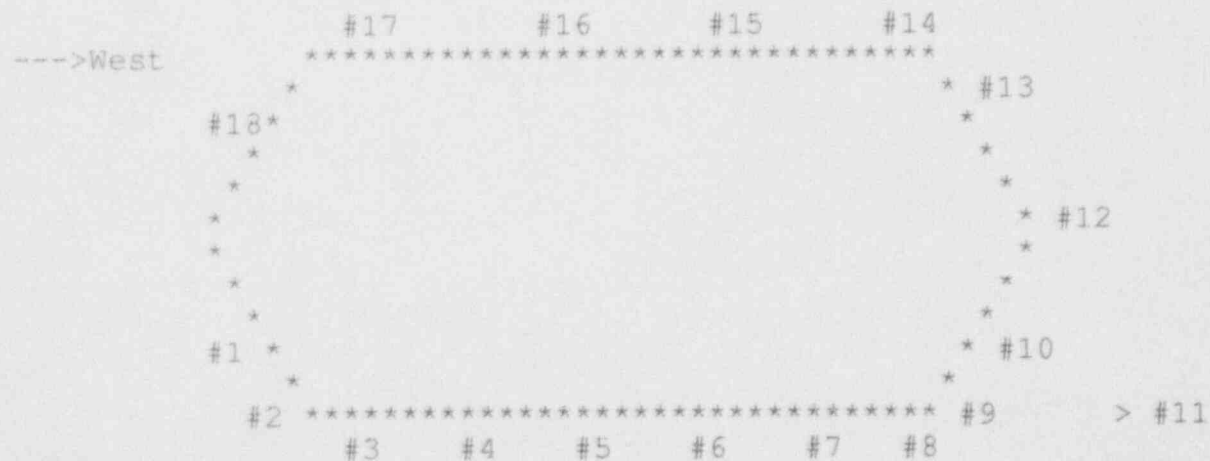


Table 1  
Survey Report For Liner Removal

Note: Direct Readings on side walls of concrete

1 - minute counts

Detector Serial # QP-38

Ludlum 2221 Serial #97843

Background 40 Counts

Efficiency = .15

Probe Area = 15.2cm<sup>2</sup>

Location #	Gross Counts	NET Counts	DPM per Probe	DPM per 100cm <sup>2</sup>	DPM per 100cm <sup>2</sup>	±1σ
#1	43	3	20	134	131	399
#2	44	4	27	179	175	402
#3	45	5	33	223	219	404
#4	44	4	27	179	175	402
#5	51	11	73	491	482	418
#6	44	4	27	179	175	402
#7	43	3	20	134	131	399
#8	45	5	33	223	219	404
#9	42	2	13	89	88	397
#10	36	0	0	0	0	0
#11	36	0	0	0	0	0
#12	37	0	0	0	0	0
#13	45	5	33	223	219	404
#14	42	2	13	89	88	397
#15	38	0	0	0	0	0
#16	42	2	13	89	88	397
#17	39	0	0	0	0	0
#18	41	1	7	45	44	394
#19	42	2	13	89	88	397
#20	46	6	40	268	263	406
#21	42	2	13	89	88	397

#22	41	1	7	45	44	394
#23	39	0	0	0	0	0
#24	45	5	33	223	219	404
#25	46	6	40	268	263	406
#26	46	6	40	268	263	406
#27	44	4	27	179	175	402
#28	47	7	47	313	307	409
#29	46	6	40	268	263	406
#30	44	4	27	179	175	402
#31	42	2	13	89	88	397
#32	35	0	0	0	0	0
#33	45	5	33	223	219	404
#34	42	2	13	89	88	397
#35	39	0	0	0	0	0
#36	43	3	20	134	131	399
#37	45	5	33	223	219	404
#38	46	6	40	268	263	406
#39	41	1	7	45	44	394
#40	40	0	0	0	0	0
#41	36	0	0	0	0	0
#42	42	2	13	89	88	397
#43	35	0	0	0	0	0
#44	48	8	53	357	351	411
#45	45	5	33	223	219	404
#46	44	4	27	179	175	402
#47	42	2	13	89	88	397
#48	45	5	33	223	219	404



#49	43	3	20	134	131	399
#50	46	6	40	268	263	406
#51	44	4	27	179	175	402
#52	43	3	20	134	131	399
#53	42	2	13	89	88	397
#54	48	8	53	357	351	411
#55	44	4	27	179	175	402
#56	45	5	33	223	219	404
#57	47	7	47	312	307	409
#58	43	3	20	134	131	399
#59	45	5	33	223	219	404
#60	43	3	20	134	131	399

Table 2  
Survey Report For Liner Removal

Note: 100 cm<sup>2</sup> smears taken on concrete walls  
Count Time 5 min.  
Background 4.85 counts  
LLD DPM 9.64

Location #	Gross Counts per min.	Net Counts per min.	DPM per 100cm <sup>2</sup>	±1σ
#1	37	32.15	85.88	17
#2	15	10.15	27.01	12
#3	16	11.15	29.67	12
#4	21.8	16.95	45.1	14
#5	64.2	59.35	157.93	22
#6	10.2	5.34	14.24	10
#7	7.8	2.95	7.85	10
#8	7	2.15	5.72	9
#9	14	9.15	24.35	12
#10	4.4	-0.45	-1.20	8
#11	234.4	229.55	610.03	41
#12	14	9.15	24.35	12
#13	18.8	13.95	37.12	13
#14	18.6	13.75	36.59	13
#15	29.4	24.55	65.33	16
#16	9.4	4.55	12.11	10
#17	11	6.15	16.37	11
#18	9.8	4.95	13.17	10
#19	8.4	3.55	9.45	10
#20	9.2	4.35	11.58	10
#21	11.2	6.35	16.9	11



#22	6.6	1.75	3.06	9
#23	7.6	2.75	7.32	9
#24	6	1.15	4.66	9
#25	19.60	14.75	39.25	13
#26	7.8	2.95	7.85	10
#27	8	3.15	8.38	10

Table 3  
Survey Report For Liner Removal

Note: Direct Readings on Top Rim of concrete  
1 - minute counts  
Detector Serial # QP-38  
Ludlum 2221 Serial #97843  
Background 60 Counts

Efficiency = .15  
Probe Area = 15.2cm<sup>2</sup>

Location #	Gross Counts	NET Counts	DPM per Probe	DPM per 100cm <sup>2</sup>	DPM per 100cm <sup>2</sup>	±1σ
#1	64	4	27	175	175	488
#2	87	27	180	1206	1183	531
#3	70	10	66	446	438	500
#4	74	14	93	625	614	507
#5	81	21	140	938	920	520
#6	107	47	313	2099	2060	566
#7	76	16	107	715	701	511
#8	59	0	0	0	0	0
#9	80	20	133	893	877	519
#10	90	30	200	1340	1315	537
#11	81	21	140	938	920	520
#12	87	27	180	1206	1183	531
#13	71	11	73	491	482	502
#14	55	0	0	0	0	0
#15	69	9	60	402	394	498
#16	75	15	100	670	657	509
#17	88	28	186	1251	1227	533
#18	66	6	40	268	263	492