

**NRC DISTRIBUTION FOR PART 50 DOCKET MATERIAL**  
(TEMPORARY FORM)

CONTROL NO: 5963  
FILE: \_\_\_\_\_

FROM: Duke Power Co Charlotte, N.C. A.C.Thies		DATE OF DOC 5-30-75	DATE REC'D 6-2-75	LTR XXX	TWX	RPT	OTHER
TO: Angelo Giambusso		ORIG 1 Signed	CC	OTHER	SENT NRC PDR <u>XXXX</u> SENT LOCAL PDR <u>XXXX</u>		
CLASS	UNCLASS XXXX	PROP INFO	INPUT	NO CYS REC'D 1	DOCKET NO: 50-269/270 <u>(287)</u>		

DESCRIPTION: Ltr. re our ltr. of 3-12-75 & their ltr. of 4-14-75, ...trans the following.....

ENCLOSURES: Providing info concerning performance of the Oconee Nuclear Station radwaste systems  
Table # 1-Two Week Test of Liquid Waste System.  
Table # 2-Summary of Boron Concentration in Evaporator Feed....  
Table # 3-1974 Liquid Waste Summary.....  
Table # 4-Drums of Evaporator Bottoms in Vermiculite Shipped in 1974.....

PLANT NAME: Oconee 1-2-3-  
(1 cy. Encl. Rec'd)

ACKNOWLEDGEMENT  
DO NOT WRITE

FOR ACTION/INFORMATION VCR -6-5-75

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|--|--|---|

# DUKE POWER COMPANY

POWER BUILDING

422 SOUTH CHURCH STREET, CHARLOTTE, N. C. 28201

A. C. THIES  
SENIOR VICE PRESIDENT  
PRODUCTION AND TRANSMISSION

P. O. Box 2178

May 30, 1975

Mr. Angelo Giambusso, Director  
Division of Reactor Licensing  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

Re: Oconee Nuclear Station  
Docket Nos. 50-269, -270, -287

Dear Mr. Giambusso:

With regard to Mr. Gordon Dicker's letter of March 12, 1975 concerning the performance of the Oconee Nuclear Station radwaste systems, and as per my letter of April 14, 1975, the following information is provided.

Early experience with the Oconee radwaste systems indicated that they did not perform as well as expected. The basic liquid waste management problem is the mixing of volumes of water containing no radioactivity, from miscellaneous sources, with small quantities of low-level waste water. Thus, the composite mixture must be processed as radioactive liquid waste. In addition, this inadequate separation of sources of miscellaneous water which contain oil, soap, and other chemicals has reduced the efficiency of the evaporators.

During the last six months of 1973, only one Oconee unit was in operation and measures to provide separation of the waste volumes were not complete. Therefore, data for 1973 is not considered to be representative. Since that time, improvements have been made to isolate non-radioactive waste from contaminated waste to the maximum extent possible; however, total separation is not practical. A test was performed during the period June 11 through June 25, 1974 to determine the liquid waste situation with both Oconee Unit 1 and 2 operational. The data from this test is presented in Table 1. An analysis of this data indicates that 3.4 percent and 51.7 percent of the liquid waste volume from the station came from the bleed holdup tanks (BHUT) for Units 1 and 2, respectively.

A summary is presented in Table 2 of the monthly liquid waste volume released from the station and identifies the evaporator bottoms disposed of, the average daily feed to the evaporators and the average boron concentration of the evaporator feedwater. It is difficult to determine

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Mr. Angelo Giambusso

Page 2

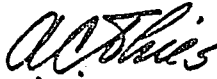
May 30, 1975

the percentage of liquid waste that is RC bleed as this will vary considerably with unit operation and core life. It is estimated that three-unit operation will result in 50 to 75 percent of the liquid effluent being from RC bleed.

Tables 3 and 4 summarize, by week, the liquid waste and evaporator bottoms which were disposed during 1974. It should be noted that three-unit operation was not achieved during this period.

We trust the information enclosed in this report will be helpful in your study of radwaste system performance.

Very truly yours,



A. C. Thies

ACT:vr

Enclosures

TABLE 1  
OCONEE NUCLEAR STATION  
TWO WEEK TEST OF LIQUID WASTE SYSTEM

Date	No. 1 UNIT				No. 2 UNIT				STATION
	Power	C <sub>B</sub> -RC	BHUT-A	BHUT-B	Power	C <sub>B</sub> -RC	BHUT-A	BHUT-B	CTT Release
1974	%	PPM	Gals.	Gals.	%	PPM	Gals.	Gals.	Gals.
6-11	90	449	3435	1000	75	1100	2290	1509	4041
6-12	100	479	279	620	75	1103	1461	5383	8267
6-13	100	460	358	1074	75	1086	3471	3934	9887
6-14	100	467	152	1106	75	1100	2060	4314	10185
6-15	100	459	0	1450	75	1090	1060	2387	10340
6-16	100	453	175	755	75	1085	3081	3494	11786
6-17	100	449	447	1661	75	1088	2707	1060	7999
6-18	100	442	374	1335	75	1080	4223	1596	5990
6-19	100	450	160	862	80	1124	880	3984	10279
6-20	100	436	0	1716	100	1109	3139	4268	8305
6-21	100	433	356	1269	100	1093	3371	4413	8622
6-22	100	419	432	349	80	1081	3788	3651	8802
6-23	70	424	606	807	80	1077	4312	2685	8620
6-24	82	426	0	3100	90	1088	4198	6951	9869
6-25	100	428	0	2360	80	1136	883	1663	7079
Avg.	96	445	452	1298	81	1096	2728	3420	8671

Avg. No. of Drums/day (6-11 → 6-25) = 20.07

Gals. of Evap. Bottoms/drum = 22  
 Boron Core of Evap. Bottoms = 10% BA

C<sub>B</sub>-RC      Boron Concentration of Reactor Coolant  
 BHUT      Bleed Holdup Tank  
 CTT      Condensate Test Tank

TABLE 2  
 OCONEE NUCLEAR STATION  
 SUMMARY OF BORON CONCENTRATION IN EVAPORATOR FEED

	<u>Total Liq. Waste Released (Gals.)</u>	<u>Avg. Daily Liq. Waste Released (Gals.)</u>	<u>Total Evap. Bottoms Disposed (Gals.)</u>	<u>Avg. Daily Evap. Bottoms Disposed (Gals.)</u>	<u>Avg. Daily Feed To Evaps. (Gals)</u>	<u>Avg. Boron Conc. Of Evap. Feed (PPM)</u>
1974						
Jan.	286,048	9227	15,484	499	9726	897
Feb.	233,194	8328	12,207	436	8764	870
Mar.	243,130	7843	11,938	385	8228	818
Apr.	188,890	6297	11,499	383	6680	1002
May	248,232	8007	13,307	429	8436	889
June	262,533	8762	12,895	430	9192	818
July	234,458	7208	13,156	424	7632	971
Aug.	251,657	8118	11,484	370	8488	762
Sept.	286,560	9552	12,540	418	9970	732
Oct.	270,638	8730	9,941	321	9051	619
Nov.	232,926	7764	10,010	334	8098	721
Dec.	227,504	7339	11,682	377	7716	854
1975						
Jan.	287,039	9259	10,571	341	9600	621
Feb.	242,383	8656	10,892	389	9045	753
Mar.	373,614	12052	13,361	431	12,483	604

TABLE 3  
OCONEE NUCLEAR STATION  
1974 LIQUID WASTE SUMMARY

<u>(Week)</u> <u>(1974)</u>	<u>Avg. Daily</u> <u>Inventory (Gal.)</u>	<u>Avg. Daily Releases From</u>		<u>Total Avg.</u> <u>Released (Gal.)</u>	<u>Shipments Off</u> <u>Site By Tank Truck (Gal.)</u>
		<u>C.T.T. (Gal.)</u>	<u>L.A.W.T. (Gal.)</u>		
1	10615	15574	569	16143	0
2	6833	7997	1049	9046	0
3	9817	5773	74	5847	0
4	7566	8092	0	8092	0
5	13882	8589	0	8589	5000
6	14638	7839	316	8155	0
7	14125	7655	0	7655	0
8	14103	7011	1856	8781	0
9	12804	7663	738	8401	0
10	13713	4751	0	4751	0
11	13188	7898	181	8079	0
12	15303	9422	216	9638	0
13	11465	6825	583	7408	0
14	13825	6044	450	6494	0
15	22017	3471	0	3471	5000
16	17190	6935	0	6935	0
17	12570	7672	0	7672	0
18	23275	3501	492	3993	0
19	23370	3741	671	4412	15000
20	18168	10093	0	10093	5000
21	19156	9980	0	9980	0
22	13045	10197	0	10197	5000
23	11110	9276	0	9276	0

CTT Condensate Test Tank  
LAWT Low Activity Waste Tank

TABLE 3

(Week) (1974)	Avg. Daily Inventory (Gal.)	Avg. Daily Releases From		Total Avg. Released (Gal.)	Shipments Off- Site By Tank Truck (Gal.)
		C.T.T. (Gal.)	L.A.W.T. (Gal.)		
24	14632	8312	0	8312	0
25	14602	8826	0	8826	0
26	18802	8770	0	8770	0
27	18893	8131	0	8131	0
28	18998	8006	0	8006	5000
29	33850	6474	57	6531	0
30	29709	6880	0	6880	5000
31	35354	7153	0	7153	5000
32	28769	6435	1540	7975	5000
33	22063	7282	380	7662	0
34	26383	5293	0	5293	0
35	19182	6105	1029	7134	0
36	15803	10719	0	10719	0
37	23098	10015	0	10015	0
38	19143	7864	0	7864	0
39	16341	9851	0	9851	0
40	15380	10675	0	10675	0
41	20614	9497	0	9497	0
42	25918	14850	0	14850	0
43	18715	9011	0	9011	0
44	20541	10791	0	10791	0
45	17084	6840	0	6840	0
46	25926	8185	0	8185	0
47	20962	7534	0	7534	0
48	16931	8099	0	8099	0
49	17067	4957	0	4957	0
50	33628	9273	0	9273	0
51	29006	7117	0	7117	0
52	18126	7913	0	7913	0
Daily				8211	151

TABLE 4  
OCONEE NUCLEAR STATION  
DRUMS OF EVAPORATOR BOTTOMS  
IN VERMICULITE SHIPPED IN 1974

<u>Week</u>	<u>No. Drums</u>	<u>Curies</u>
1	212	5.55
2	192	8.91
3	56	1.53
4	77	2.45
5	153	3.356
6	160	3.97
7	138	4.00
8	158	2.78
9	88	1.16
10	151	1.957
11	69	0.62
12	210	3.78
13	0	0
14	102	1.13
15	185	1.33
16	96	1.545
17	172	0.96768
18	93	0.53251
19	181	1.55338
20	128	6.29772
21	231	15.4083
22	86	3.0171
23	136	4.37208
24	115	3.5095
25	136	2.6507
26	121	2.2876



OCONEE NUCLEAR STATION  
DRUMS OF EVAPORATOR BOTTOMS  
IN VERMICULITE SHIPPED IN 1974

<u>Week</u>	<u>No. Drums</u>	<u>Curies</u>
27	167	7.2382
28	95	2.31
29	230	2.2922
30	185	2.7837
31	88	1.719
32	0	0
33	306	4.1241
34	53	0.7984
35	75	1.1684
36	62	2.0624
37	220	8.9763
38	94	2.1686
39	194	2.8989
40	0	0
41	155	4.9594
42	76	3.7309
43	142	10.6595
44	136	6.5806
45	130	15.0098
46	85	10.6741
47	112	5.0673
48	128	7.355
49	129	6.042
50	94	10.41
51	134	7.676
52	<u>220</u>	<u>9.0892</u>
TOTAL	6756	220.45857
	18.5	0.604

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U. S. Nuclear Regulatory Commission  
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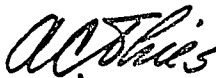
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20	18168	10093	0	10093	5000
21	19156	9980	0	9980	0
22	13045	10197	0	10197	5000
23	11110	9276	0	9276	0

CTT Condensate Test Tank  
LAWT Low Activity Waste Tank

TABLE 3

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32	28769	6435	1540	7975	5000
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34	26383	5293	0	5293	0
35	19182	6105	1029	7134	0
36	15803	10719	0	10719	0
37	23098	10015	0	10015	0
38	19143	7864	0	7864	0
39	16341	9851	0	9851	0
40	15380	10675	0	10675	0
41	20614	9497	0	9497	0
42	25918	14850	0	14850	0
43	18715	9011	0	9011	0
44	20541	10791	0	10791	0
45	17084	6840	0	6840	0
46	25926	8185	0	8185	0
47	20962	7534	0	7534	0
48	16931	8099	0	8099	0
49	17067	4957	0	4957	0
50	33628	9273	0	9273	0
51	29006	7117	0	7117	0
52	18126	7913	0	7913	0
Daily				8211	151

TABLE 4  
OCONEE NUCLEAR STATION  
DRUMS OF EVAPORATOR BOTTOMS  
IN VERMICULITE SHIPPED IN 1974

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2	192	8.91
3	56	1.53
4	77	2.45
5	153	3.356
6	160	3.97
7	138	4.00
8	158	2.78
9	88	1.16
10	151	1.957
11	69	0.62
12	210	3.78
13	0	0
14	102	1.13
15	185	1.33
16	96	1.545
17	172	0.96768
18	93	0.53251
19	181	1.55338
20	128	6.29772
21	231	15.4083
22	86	3.0171
23	136	4.37208
24	115	3.5095
25	136	2.6507
26	121	2.2876



OCCONEE NUCLEAR STATION  
DRUMS OF EVAPORATOR BOTTOMS  
IN VERMICULITE SHIPPED IN 1974

<u>Week</u>	<u>No. Drums</u>	<u>Curies</u>
27	167	7.2382
28	95	2.31
29	230	2.2922
30	185	2.7837
31	88	1.719
32	0	0
33	306	4.1241
34	53	0.7984
35	75	1.1684
36	62	2.0624
37	220	8.9763
38	94	2.1686
39	194	2.8989
40	0	0
41	155	4.9594
42	76	3.7309
43	142	10.6595
44	136	6.5806
45	130	15.0098
46	85	10.6741
47	112	5.0673
48	128	7.355
49	129	6.042
50	94	10.41
51	134	7.676
52	<u>220</u>	<u>9.0892</u>
TOTAL	6756	220.45857
Daily Avg	18.5	0.604