



Pacific Northwest Laboratories
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May 9, 1985

Dr. Ronnie Lo
TMI Program Office
Office of Nuclear Reactor Regulation
Mail Stop AR5031
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

50-920

SUBJECT: WATER DATA USED TO PREPARE THE DOCUMENT "AN ANALYSIS OF THE
POSSIBLE OPTIONS FOR REDUCING OCCUPATIONAL DOSE FROM THE TMI-2
BASEMENT".

Dear Ronnie:

We are in the process of preparing the subject document, and have pulled together the most reliable data we could on the radionuclide concentration of water as it has come out of the basement. Unfortunately the available data summaries have dealt either with the operation of the SDS system or the purity of water after cleanup. It therefore, seemed advisable to compile this data together for use as an easy reference. I have enclosed three copies, one for each of the reading rooms, and one for your file.

If you have questions on any of this information, please let me know.

Very truly yours,

Linda F. Munson/eb

Linda F. Munson
Associate Section Manager
Dosimetry Technology Section
HEALTH PHYSICS DEPARTMENT

LFM:lb

Enclosure

Rev. R. Lo
Hool
Add: DSIC
1

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PDR ADDCK 05000320
P PDR

52-10-0002

Inter-Office Memorandum

February 11, 1982



Subject: SDS Sample Analyses at
ORNL

TMI U-2 Plant Engineering
4240-82-109

To: Distribution

Location

Attached are the results of SDS sample analyses performed by ORNL on samples taken during Reactor Building sump processing batch S-0011 and RCBT processing batch S-0012. Table 1 compares the on-site gamma and Sr^{90} analyses with the ORNL analyses on parallel samples. While our on-site Sr^{90} analyses seem to be consistent with the ORNL results (within $\pm 20\%$), our on-site Cs analyses for the feed samples seem to be biased low. The zeolite effluent sample results seem to be well within the expected $\pm 10\%$ error band.

Table 2 gives the TRU and solids analyses of the samples. It is interesting to note the higher Pu content on RCBT water relative to U content and the amount of solids in the zeolite effluent relative to the influent (quantity of resin fines?).

A handwritten signature in cursive script, likely belonging to E. H. Gischel.

E. H. Gischel
Plant Engineering Director
TMI-2

KJA
KJH/tn

Distribution:

J. J. Barton	L. P. King	H. K. Peterson
J. W. Brasher	J. E. Larson	
J. C. DeVine	W. Love	
S. Eichfeld	S. B. Presgrove	
R. Hahn	T. D. Lookabill	
K. L. Harner	L. Lilien	
C. G. Hitz	L. Zehner	
K. J. Hofstetter	J. Byrne	

TABLE 1

ACTIVITY, $\mu\text{Ci/ml}$

TMI/GPU SAMPLE #	SAMPLE POINT	90-Sr	134-Cs	137-Cs	106-Ru	125-Sb
92321/23	A	5.24 (5.3)*	13.0 (11)	119 (100)	<0.6 (< 0.9)	< 0.3 (< 0.8)
92322/24	C	5.11 (6.6)	13.5 (11)	124 (100)	<0.6 (< 0.9)	< 0.3 (< 0.8)
92430/25	D	5.34 (3.4)	14.2 (11)	130 (98)	<0.6 (< 0.9)	< 0.4 (< 0.8)
92431/26	2E	1.19 (0.97)	3.34 E-3 (2.9E-3)	3.14 E-2 (3.0E-2)	<7 E-4 (<6.9E-4)	1.12 E-2 (9.6 E-3)
92432/27	2F	5.26E-2 (5.1E-2)	1.7 E-4 (1.6 E-4)	1.59 E-3 (1.5 E-3)	3.6 E-4 (8.4 E-4)	1.13 E-2 (1.1 E-2)
92433/28	2G	1.18 E-2 (6.7 E-3)	7.1 E-5 (8.6 E-5)	7.03 E-4 (7.4 E-4)	3.1 E-4 (5.9 E-4)	1.14 E-2 (1.2 E-2)
434/29	2H	1.96 E-3 (7.8 E-3)	<3 E-5 (9.1 E-5)	7.22 E-4 (7.5 E-4)	<2 E-4 (<3.9 E-4)	1.12 E-2 (1.1 E-2)
92635/29	D	1.56 (0.78)	2.36 (1.8)	22.3 (16)	< 0.2 (< 0.1)	< 0.08 (< 0.1)
92636/30	1E	0.482 (0.30)	9.91 E-4 (9.0 E-4)	9.08 E-3 (9.1 E-3)	< 4 E-4 (6.0 E-4)	5.47 E-3 (5.0 E-3)
92637/31	1F	3.06 E-2 (2.6 E-2)	2.9 E-4 (3.7 E-4)	2.69 E-3 (3.5 E-3)	< 2 E-4 (< 3.1 E-4)	5.66 E-3 (5.1 E-3)

* TMI Analysis Results on Parallel Samples in Parentheses

TABLE 2

Concentration, $\mu\text{g/ml}$

<u>TMI/GPU</u> <u>SAMPLE #</u>	<u>Pu</u>	<u>U</u>	<u>Total Solids</u>	<u>Solids Suspended</u>
92321 A	2.1 E-7	3.2 E-3	6.9 E3 -	< 10
92322 C	0.7 E-7	3.0 E-3	6.3 E3	< 10
92430 D	0.7 E-7	4.0 E-3	6.7 E3	< 10
92431 2E	0.5 E-7	3.8 E-3	10.9 E3	< 10
92432 2F	0.3 E-7	3.2 E-3	11.3 E3	< 10
92433 2G	0.6 E-7	3.5 E-3	11.8 E3	< 10
92434 2H	0.8 E-7	3.0 E-3	12.8 E3	< 10
92635 D	5.7 E-7	3.5 E-3	12.2 E3	< 10
92636 1E	5.5 E-7	3.0 E-3	10.5 E3	< 10
92637 1F	3.0 E-7	3.0 E-3	10.6 E3	< 10

Inter-Office Memorandum



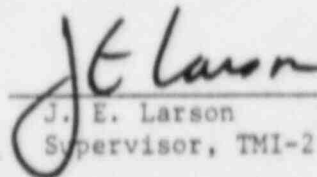
Date March 17, 1982
4400-82-M-0315

Subject ORNL ANALYSES OF SDS SAMPLES

To L. H. Barrett

Location TMI-2 Licensing

Attached for your information are the results of the analysis performed by ORNL on samples taken during batch 14, 15, and 17 processing.


J. E. Larson
Supervisor, TMI-2 Licensing

JEL:djb

Attachment

cc: J. J. Barton wo/a
J. J. Byrne "
E. H. Gischel "

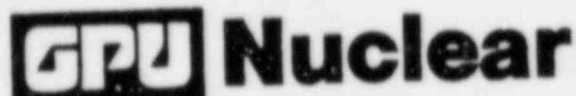
RECEIVED
MAR 18 1982

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REGULATORY
COMMISSION

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MAR 16 1982

Inter-Office Memorandum



Date March 15, 1982

Subject ORNL Analyses of SDS Samples

To Distribution

Location TMI U-2 Plant Engineering
4240-82-217

Attached are the results of analyses of SDS samples taken during batch 14, 15, and 17 processing. Table 1 gives the results of radioactivity analyses while Table 2 shows the plutonium, uranium and solids analyses.

Any questions concerning these sample results should be addressed to K. J. Hofstetter at extension 8709.

A handwritten signature in cursive script, likely belonging to E. H. Gischel.

E. H. Gischel
Plant Engineering Director
TMI-2



KJH/tn

cc: J. J. Barton
J. J. Byrne
J. C. DeVine
S. J. Eichfeld
R. E. Hahn
K. L. Harner
C. G. Hitz
J. E. Hildebrand
K. J. Hofstetter
L. P. King
J. E. Larson
L. A. Lilien
T. D. Lookabill
W. D. Love
H. K. Peterson

Table 1

TMI/GPU		Activity, $\mu\text{Ci/ml}$				
Sample No.		90-Sr	134-Cs	137-Cs	106-Ru	125-Sb
Batch-14	92869 A	5.50	13.3	132	<2	<1
	92870 C	5.53	13.2	130	<2	<1
	92959 D	5.20	13.2	122	<2	<1
	92960 E	0.233	3.7 E-4	3.3 E-3	<1 E-4	1.1 E-2
	92961 F	8.56 E-3	1.3 E-4	1.3 E-3	2.2 E-4	1.1 E-2
	92962 G	5.23 E-3	1.2 E-4	1.2 E-3	2.6 E-4	1.1 E-2
	92963 H	4.16 E-3	9.5 E-5	9.5 E-4	2.2 E-4	1.1 E-2
Batch-15	93002 A	5.65	13.9	133	<2	<1
	93003 C	5.20	13.6	132	<2	<1
	93073 D	5.32	13.4	129	<2	<1
	93074 E	1.33	1.0 E-3	9.8 E-3	4.2 E-3	1.1 E-2
	93075 F	4.01 E-2	1.1 E-4	9.9 E-4	1.2 E-4	1.1 E-2
	93076 G	4.67 E-3	9.1 E-5	9.0 E-4	2.9 E-4	1.1 E-2
	93077 H	2.48 E-3	7.0 E-5	7.0 E-4	2.2 E-4	1.1 E-2
Batch-17	93192 A	5.05	13.1	124	<1	<0.7
	93193 C	5.15	12.9	124	<1	<0.7
	93361 D	4.70	11.8	113	<1	<0.7
	93362 E	0.497	1.7 E-3	1.6 E-2	<5 E-4	1.1 E-2
	93363 F	3.13 E-2	2.5 E-4	2.1 E-3	<3 E-4	1.1 E-2
	93364 G	4.40 E-3	1.3 E-4	1.3 E-3	<3 E-4	1.1 E-2
	93365 H	5.34 E-3	1.2 E-4	1.1 E-3	<3 E-4	1.1 E-2

Table 2

TMI/GPU		Concentration, $\mu\text{g}/\text{ml}$			
Sample No.		Pu	U	Total Solids	Solids Suspended
BATCH-14	92869 A	4.2 E-7	3.8 E-3	11.4 E3	<10
	92870 C	4.7 E-7	3.6 E-3	10.5 E3	<10
	92959 D	3.7 E-7	3.2 E-3	11.1 E3	<10
	92960 E	1.9 E-7	2.9 E-3	10.4 E3	<10
	92961 F	2.6 E-7	2.9 E-3	10.2 E3	<10
	92962 G	4.9 E-7	3.9 E-3	10.0 E3	<10
	92963 H	2.9 E-7	3.4 E-3	9.8 E3	<10
BATCH-15	93002 A	9.4 E-7	3.7 E-3	12.3 E3	<10
	93003 C	10.1 E-7	3.4 E-3	11.8 E3	<10
	93073 D	1.8 E-7	4.0 E-3	10.6 E3	<10
	93074 E	1.3 E-7	4.5 E-3	10.5 E3	<10
	93075 F	3.2 E-7	3.2 E-3	9.9 E3	<10
	93076 G	1.8 E-7	3.6 E-3	9.8 E3	<10
	93077 H	3.6 E-7	3.2 E-3	10.0 E3	<10
BATCH-17	93192 A	2.6 E-7	11.3 E-3	15.4 E3	<10
	93193 C	2.3 E-7	11.6 E-3	14.6 E3	<10
	93361 D	2.1 E-7	11.1 E-3	12.7 E3	<10
	93362 E	2.1 E-7	10.2 E-3	10.0 E3	<10
	93363 F	1.7 E-7	11.2 E-3	9.8 E3	<10
	93364 G	1.7 E-7	11.3 E-3	9.2 E3	<10
	93365 H	2.0 E-7	11.4 E-3	9.1 E3	<10

Hal,
Are these numbers significantly different
from on site analyses?

Inter-Office Memorandum

April 22, 1982
4400-82-M-0457

GPU Nuclear

Subject OFFSITE SDS SAMPLE ANALYSES

To L. H. Barrett

Location TMI-2 Licensing

Attached for your information are the results of offsite analyses performed on SDS Batches 18 and 20.

If you have any questions please call.

J. E. Larson

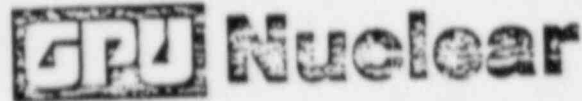
Supervisor, TMI-2 Licensing

JEL:djb

Attachment

cc: J. J. Barton
E. H. Gischel
K. J. Hofstetter
J. J. Byrne

Inter-Office Memorandum



Date April 14, 1982

Subject ORNL Analyses of SDS Samples

To Distribution

TMI U-2 Plant Engineering
Location 4240-82-317

Attached are the results of analyses of SDS samples taken during batch 18 and 20 processing*. Table 1 gives the results of radioactivity analyses while Table 2 shows the plutonium, uranium and solids analyses.

Any questions concerning these sample results should be addressed to K. J. Hofstetter at extension 8709.

Rowan
For E. H. Gischel
Plant Engineering Director
TMI-2

JDL
TDL/tn

* Batch 18 was processed 1/31/82 - 2/6/82 and batch 20 was processed 2/11/82 - 2/16/82

Distribution:

J. J. Byrne
J. C. DeVine
S. J. Eichfeld
R. E. Hahn
K. L. Harner
C. G. Hitz
J. E. Hildebrand
K. J. Hofstetter
L. P. King
J. E. Larson
L. M. Lilien
T. D. Lookabill
W. D. Love
R. K. Peterson

TABLE 1

SAMPLE NO.	SAMPLE PT.	SR ⁹⁰	CS ¹³⁴	CS ¹³⁷	RU ¹⁰⁶	SB ¹²⁵
91626	A	5.56	13.4 17.	128 170.	<1 <2.1	<0.7 <2.1
91627	C	5.34	12.8 15.	123 160.	<1 <2.4	<0.7 <2.6
91631	D	5.43 1.5	13 13	122 160	<1 <2.5	<0.7 <2.7
91632	E	1.74 1.7	0.39 .51	3.7 3.1	<2 E-4 2.4E-4	1.2 E-2 1.1 E-2
91633	F	0.2 0.2	3 E-4 1.1E-4	2.6 E-3 1.2E-3	<3 E-4 6.5E-4	4.1 E-2 1.1E-2
91634	G	3.77 E-3 2.2E-3	1.1 E-4 6.3E-5	1 E-3 6.7E-4	<3 E-4 7.7E-4	1.1 E-2 1.1E-2
91635	H	2.37 E-3 1.3E-3	1 E-4 6.1E-5	7.8 E-4 5.3E-4	<2 E-4 5.4E-4	1.1 E-2 1.1E-2
91657	A	5.67 .06	13.2 12.0	126 170	<1 <2.1	<0.7 <2.7
91658	C	5.61	13.1 14.	125 170.	<1 <2.5	<0.7 <2.7
91766	D	5.1 4.4	12.3 11.0	118 110.	<1 <2.1	<0.7 <2.6
91767	E	0.82 .13	2 E-3 1.3E-3	1.8 E-2 1.9E-2	<8 E-4 1.6E-4	1 E-2 1.1E-2
91768	F	4.19 E-2 4.7E-2	1.7 E-4 1.3E-4	1.7 E-3 1.6E-3	<2 E-4 7.3E-4	1.1 E-2 1.1E-2
91769	G	7.59 E-3 7.4E-3	8 E-5 1.0E-5	9 E-4 1.6E-4	<2 E-4 5E-4	1.1 E-2 1.1E-2
91770	H	1.67 E-3 6.5E-3	<8 E-5 6.7E-5	7.1 E-4 2.6E-4	<2 E-4 5E-4	1.1 E-2 1.1E-2

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TABLE 2

CONCENTRATION, $\mu\text{g, ml}$

TMI/GPU SAMPLE NO.	CONCENTRATION, $\mu\text{g, ml}$			
	Pu	U	TOTAL SOLIDS	SOLIDS SUSPENDED
$\frac{1}{30}$ 93426 \checkmark	1.9 E-7	4.0 E-3	1.55 E2	
93427	1.2 E-7	5.0 E-3	1.49 E2	<0.1
93531	0.8 E-7	3.9 E-3	1.65 E2	<0.1
93532	1.7 E-7	4.4 E-3	0.85 E2	<0.1
93533	2.2 E-7	3.2 E-3	0.89 E2	<0.1
93534	1.1 E-7	3.2 E-3	1.02 E2	<0.1
93535	0.6 E-7	2.9 E-3	1.05 E2	<0.1
$\frac{2}{10}$ 93657 \checkmark	1.2 E-7	3.8 E-3	1.35 E2	<0.1
93658	0.7 E-7	4.2 E-3	1.53 E2	<0.1
93766	1.8 E-7	4.8 E-3	1.41 E2	<0.1
93767	2.4 E-7	3.6 E-3	1.43 E2	<0.1
93768	1.2 E-7	3.1 E-3	1.17 E2	<0.1
93769	6.2 E-7	3.5 E-3	0.90 E2	<0.1
93770	2.4 E-7	3.9 E-3	0.86 E2	<0.1

121
Inter-Office Memorandum

Date June 15, 1982
4400-82-M-0720

GPU Nuclear

Subject OFF-SITE SDS SAMPLE ANALYSES

To L. H. Barrett

Location TMI-2 Licensing

Attached for your information are the results of off-site analyses performed on SDS Batches 8 and 9.

If you have any questions, please feel free to call.

J. J. Byrne for
J. J. Larson
Manager, TMI-2 Licensing

JEL:JJB:djb

Attachment

cc: J. J. Barton
J. J. Byrne
E. H. Gischel
K. J. Hofstetter

TALK to CAKE about abnormal
waste DOE / U.S. Ecology

REC JUN 16 PM 4 23

U.S. NUCLEAR
REGULATORY COMMISSION

JUN 15 1982

82-M-0994

Inter-Office Memorandum



Date June 14, 1982
4240-82-468

Subject ORNL Analyses of SDS Samples

To Distribution

Location TMI Nuclear Station

Attached are the results of analyses of SDS samples taken during batches 8 and 9 processing*. Table 1 gives the results of radioactivity analyses while Table 2 shows the plutonium, uranium and solids analyses.

Any questions concerning these samples should be addressed to K. J. Hofstetter at extension 8709.

RPW
for E. H. Gischel
Plant Engineering Director
TMI-2

sd
EHG:TDL:hh

*Batch 8 was processed 10/23/81 - 10/31/81 and batch 9 was processed 11/2/81 - 11/9/81.

DISTRIBUTION:

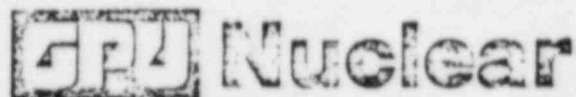
J. J. Bryne
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K. L. Harner
C. G. Hitz
J. E. Hildebrand
K. J. Hofstetter
L. P. King
L. H. Lillien
T. D. Lookabill
W. D. Love
E. K. Peterson

Table 2

TMI/GPU Sample No.	Concentration, $\mu\text{g/ml}$			
	Pu	U	Total Solids	Solids Suspended
91614 <i>IN</i>	1.3 E-7	3.8 E-3	15.9 E3	<10
91615 <i>Est</i>	1.0 E-7	2.8 E-3	15.9 E3	<10
91790	1.2 E-7	4.9 E-3	13.9 E3	<10
91791	0.8 E-7	2.8 E-3	11.4 E3	<10
91792	0.8 E-7	2.9 E-3	11.6 E3	<10
91793	0.6 E-7	2.7 E-3	11.2 E3	<10
91999	1.3 E-7	3.6 E-3	15.7 E3	<10
92000	0.5 E-7	3.2 E-3	13.4 E3	<10
92001	0.4 E-7	3.1 E-3	10.0 E3	<10
92002	0.6 E-7	3.3 E-3	10.3 E3	<10
92003	0.6 E-7	3.0 E-3	10.4 E3	<10

Inter-Office Memorandum

Date May 6, 1982
4400-82-M-0528



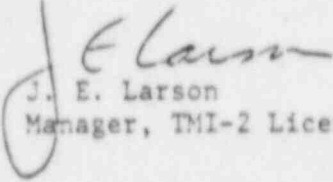
Subject OFF-SITE SDS SAMPLE ANALYSES

To L. H. Barrett

Location TMI-2 Licensing

Attached for your information are the results of off-site analyses performed on SDS Batches 5, 6, and 7.

If you have any questions, please feel free to call.


J. E. Larson
Manager, TMI-2 Licensing

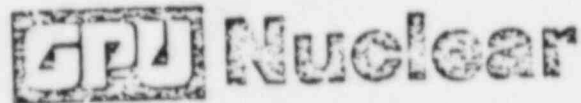
JEL/JJB/jep

Attachment

CC: J. J. Barton
J. J. Byrne
E. H. Gischel
K. J. Hofstetter

Inter-Office Memorandum

May 4, 1982



Subject: ORNL Analyses of SDS Samples

To: Distribution

Location: TMI U-2 Plant Engineering
4240-82-368

Attached are the results of analyses of SDS samples taken during batch 5, 6, and 7 processing*. Table 1 gives the results of radioactivity analyses while Table 2 shows the plutonium, uranium and solids analyses. Table 3 shows revised solids analyses for batches 18 and 20.

Any questions concerning these sample results should be addressed to K. J. Hofstetter at extension 8709.

A handwritten signature in dark ink, appearing to read "E. H. Gischel".

E. H. Gischel
Plant Engineering Director
TMI-2

308
TDL/tn

* Batch 5 was processed 9/23/81 - 9/25/81 and batch 6 was processed 9/27/81 - 10/4/81, and batch 7 was processed 10/10/81 - 10/18/81.

Distribution:

J. J. Byrne
J. C. DeVine
S. J. Eichfeld
R. E. Hahn
K. L. Harner
C. G. Hitz
J. E. Hildebrand
K. J. Hofstetter
L. P. King
L. H. Lallen
T. D. Lockabill
W. E. Love
K. H. Peterson

Table 1

TMI/GPU		Activity, $\mu\text{Ci/ml}$				
Sample No.		90-Sr	134-Cs	137-Cs	106-Ru	125-Sb
5005	91109 D	4.62	12.0	114	<0.9	<0.5
	91110 E	5.8 E-3	1.8 E-4	1.7 E-3	<2 E-4	9.4 E-3
	91111 F	4.6 E-3	1.4 E-4	1.3 E-3	<2 E-4	8.6 E-3
	91112 G	4.8 E-3	3.4 E-4	3.5 E-3	<2 E-4	8.4 E-3
	91113 H	4.3 E-3	1.1 E-4	1.0 E-3	<2 E-4	8.2 E-3
5006	91143 A	5.40	13.4	128	<1	<0.5
	91248 E	3.7 E-2	3.2 E-4	3.2 E-3	<3 E-4	1.1 E-2
	91249 F	3.5 E-3	1.8 E-4	1.8 E-3	<3 E-4	1.1 E-2
	91250 G	2.8 E-3	1.7 E-4	1.4 E-3	<3 E-4	1.1 E-2
	91251 H	2.7 E-3	0.8 E-4	0.93 E-3	2 E-4	1.1 E-2
5007	91358 A	5.06	13.3	129	≤ 2	≤ 0.9
	91359 C	5.07	13.7	131	≤ 2	≤ 0.9
	91482 D	4.88	12.8	123	≤ 2	≤ 0.9
	91483 E	1.8 E-2	2.8 E-4	2.4 E-3	≤ 3 E-4	9.1 E-3
	91484 F	4.8 E-3	1.9 E-4	1.8 E-3	≤ 3 E-4	9.9 E-3
	91485 G	5.2 E-3	1.2 E-4	1.1 E-3	≤ 2 E-4	1.1 E-2
D10028	91486 H	3.9 E-3	1.1 E-4	1.1 E-3	≤ 4 E-5	1.1 E-2
	93794	0.55	0.39	3.72	≤ 5 E-2	≤ 3 E-2
	D 10011	0.33	0.18	1.7	<1 E-2	<6 E-3
	D 10012	0.58	0.15	1.5	<1 E-2	1.0 E-2
	D 10013	0.22	2.6 E-3	2.6 E-2	<5 E-4	1.1 E-2
	D 10015	0.11	5.9 E-4	5.8 E-3	<3 E-4	1.8 E-3

Table 2

TMI/GPU Sample No.	Concentration, $\mu\text{g/ml}$			
	Pu	U	Total Solids	Solids Suspended
91109* D	$\leq 1.0 \text{ E-7}$	4.4 E-3	Insuff. samp.	Insuff. samp.
91110 E	2.2 E-7	2.7 E-3	11.1 E3	<10
91111 F	2.1 E-7	3.4 E-3	10.2 E3	<10
91112 G	2.1 E-7	2.8 E-3	10.0 E3	<10
91113 H	1.8 E-7	2.6 E-3	10.0 E3	<10
91143 A	2.3 E-7	3.1 E-3	15.2 E3	<10
91248 E	1.6 E-7	3.0 E-3	10.9 E3	<10
91249 F	0.8 E-7	3.2 E-3	10.1 E3	<10
91250 G	0.9 E-7	3.2 E-3	10.0 E3	<10
91251 H	0.8 E-7	3.9 E-3	10.3 E3	<10
91358 A	1.4 E-7	3.2 E-3	15.9 E3	<10
91359 C	1.2 E-7	2.9 E-3	15.1 E3	<10
91482 D	1.6 E-7	2.8 E-3	14.5 E3	<10
91483 E	2.2 E-7	2.5 E-3	11.5 E3	<10
91484 F	1.8 E-7	3.0 E-3	11.8 E3	<10
91485 G	2.0 E-7	2.6 E-3	12.1 E3	<10
91486 H	1.5 E-7	3.0 E-3	12.3 E3	<10
93794	1.6 E-7	3.0 E-3	12.9 E3	<10
D-10011	1.6 E-7	2.9 E-3	10.4 E3	<10
D-10012	1.6 E-7	2.8 E-3	9.7 E3	<10
D-10013	1.3 E-7	3.6 E-3	10.1 E3	<10
D-10015	1.2 E-7	1.3 E-3	3.8 E3	<10

*Received only 1 ml of sample; sample size too small to measure Pu to the sensitivity of other samples.

Table 3

TMI/GPU Sample No.	Concentration, ug/ml			
	Pu	U	Total Solids	Solids Suspended
93426 A			16.9 E3	
93427 C			16.4 E3	
93531 D			18.1 E3	
5018 93532 E			15.6 E3	
93533 F			12.8 E3	
93534 G			11.2 E3	
93535 H			11.5 E3	
93657 A			14.8 E3	
93658 C			16.8 E3	
93766 D			15.5 E3	
5020 93767 E			9.3 E3	
93768 F			9.7 E3	
93769 G			9.9 E3	
93770 H			9.4 E3	

OCT 06 1982

Inter-Office Memorandum

Date October 5, 1982
4240-82-755

Subject ORNL Analyses of SDS Samples

To Distribution

GPU Nuclear

Location TMI Nuclear Station

Attached are the results of analyses of SDS samples taken during batches 5 and 6 processing*. Table 1 gives the results of radioactivity analyses while Table 2 shows the plutonium, uranium and solids analyses.

Any questions concerning these samples should be addressed to K. J. Hofstetter at extension 8709.

RP Warner

for

E. H. Gischel
Plant Engineering Director
TMI-2

JDL

EHG:TDL:hh

*Batch 5 was processed 9/23/81 - 9/25/81 and batch
6 was processed 9/27/81 - 10/4/81.

Distribution:

J. J. Byrne
J. C. DeVine
S. J. Eichfeld
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K. L. Harner
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L. P. King
L. H. Lillian
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W. D. Love
K. E. Peterson

Table 1

TMI/GPU			Activity, $\mu\text{Ci/ml}^*$				
Sample No.			90-Sr	134-Cs	137-Cs	106-Ru	125-Sb
BATCH 5	{	A 91063	5.1	11.2	128	≤ 1	≤ 0.6
		C 91064	5.2	11.3	128	≤ 1	≤ 0.6
BATCH 6	{	C 91144	5.0	11.2	125	≤ 1	≤ 0.6
		D 91247	5.1	11.4	127	≤ 1	≤ 0.6

*Date of analysis 8/24/82.

Table 2

		TMI/GPU Sample No.	Concentration, $\mu\text{g, ml}$			
			Pu	U	Total Solids	Solids Suspended
BATCH 5	A	91063	2.9 E-6	7.3 E-3	14.1 E3	<10
	C	91064	2.7 E-7	3.4 E-3	11.3 E3	<10
	C	91144	3.4 E-7	3.5 E-3	4.5 E3	<10
BATCH 6	D	91247	N/A	5.4 E-3	13.7 E3	<10

Table 1

TMI/GPU			Activity, $\mu\text{Ci/ml}$				
Sample No.			90-Sr	134-Cs	137-Cs	106-Ru	125-Sb
B A T C H 2 1	93815	A	5.53	13.6	131	<1	<0.7
	93816	C	5.54	14.1	137	<1	<0.6
	93930	D	5.44	13.8	134	<1	<0.5
	93931	E	1.85	3.9 E-3	3.9 E-2	<9 E-4	1.1 E-2
	93932	F	0.13	1.5 E-4	1.6 E-3	<3 E-4	1.1 E-2
	93933	G	6.8 E-3	0.9 E-4	8.6 E-4	<2 E-4	1.1 E-2
	93934	H	2.5 E-3	0.8 E-4	6.7 E-4	<2 E-4	1.1 E-2
	93990	A	5.47	14.2	138	<1	<0.6
B A T C H 2 2	94092	D	5.73	14.0	138	<1	<0.5
	94093	E	3.16	0.31	3.0	<0.03	<0.02
	94094	F	0.41	1.8 E-4	2.1 E-3	<2 E-4	1.1 E-2
	94095	G	2.2 E-2	0.9 E-4	8.2 E-4	<2 E-4	1.1 E-2
	94096	H	2.2 E-3	0.7 E-4	5.9 E-4	<3 E-4	1.2 E-2

Wrong with this

Hal,
Are these numbers significantly different
from on site analyses? **Inter-Office Mem**

JEL

April 22, 1982
4400-82-M-0457

GPU Nucl

Subject OFFSITE SDS SAMPLE ANALYSES

To L. H. Barrett

Location TMI-2 Licensing

Attached for your information are the results of offsite analyses performed on SDS Batches 18 and 20.

If you have any questions please call.

J. E. Larson

J. E. Larson
Supervisor, TMI-2 Licensing

JEL:djb

Attachment

cc: J. J. Barton
E. H. Gischel
K. J. Hofstetter
J. J. Byrne

Inter-Office Memorandum

Date April 14, 1982



Subject ORNL Analyses of SDS Samples

To Distribution

Location TMI U-2 Plant Engineering
4240-82-317

Attached are the results of analyses of SDS samples taken during batch 18 and 20 processing*. Table 1 gives the results of radioactivity analyses while Table 2 shows the plutonium, uranium and solids analyses.

Any questions concerning these sample results should be addressed to K. J. Hofstetter at extension 8709.

TPWanner
For E. H. Gischel
Plant Engineering Director
TMI-2

JDL
TDL/tn

* Batch 18 was processed 1/31/82 - 2/6/82 and batch 20 was processed 2/11/82 - 2/16/82

Distribution:

J. J. Byrne
J. C. DeVine
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R. E. Hahn
K. L. Harner
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J. E. Hildebrand
K. J. Hofstetter
L. P. King
J. E. Larson
L. E. Lilien
T. D. Lookatill
W. D. Love
H. K. Peterson

Inter-Office Memorandum

July 30, 1982
4400-82-M-0931



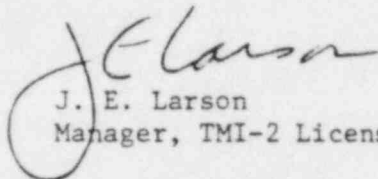
Subject: ORNL ANALYSES OF SDS SAMPLES

To: L. H. Barrett

Location: TMI-2 Licensing

Attached for your information are the ORNL analyses of SDS Sample Batches 12, 13, and 25.

Please call if you have any questions.


J. E. Larson
Manager, TMI-2 Licensing

JEL/DMT/jep

Attachments

CC: J. J. Barton	w/o attachment
J. J. Byrne	"
B. K. Kanga	"
D. M. Troebliker	"
R. P. Warren	"

U.S. NUCLEAR
REGULATORY COMMISSION
1982 JUL 3 PM 4 29

JUL 30 1982

82-m-0413

Inter-Office Memorandum

Date July 29, 1982
4240-82-592

Subject ORNL ANALYSES OF SDS SAMPLES

GPU Nuclear

To Distribution

Location TMI Nuclear Station

Attached are the results of analyses of SDS samples taken during processing of batches 12, 13 and 25. Table 1 gives the results of radioactivity analyses while Table 2 shows uranium, plutonium and solids analyses.

Batch 12 was processed 12/2/81, batch 13 was processed 12/11/81 and batch 25 was staged (filtered) 4/30/82.

Any questions concerning these sample results should be addressed to K. J. Hofstetter at ext. 8709.

RP Warren

for

E. H. Gischel
Plant Engineering Director
TMI-2

JOP

EHG:TDL:hh
Attachments

DISTRIBUTION

J. J. Byrne
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K. L. Harner
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J. E. Hildebrand
K. J. Hofstetter
L. P. King
L. H. Lilien
T. D. Lookabill
W. D. Love
E. K. Peterson

Table 1

BATCH	TMI/GPU Sample No.		Activity, $\mu\text{Ci/ml}$				
			90-Sr	134-Cs	137-Cs	106-Ru	125-Sb
12	92528	A	0.50	6.5 E-2	0.69	$\leq 7 \text{ E-3}$	5 E-3
	92529	C	0.48	7.0 E-2	0.73	$\leq 7 \text{ E-3}$	8 E-3
13	92700	A	0.61	9.1 E-2	0.98	$\leq 9 \text{ E-3}$	$\leq 3 \text{ E-3}$
	92701	C	0.57	9.2 E-2	0.98	$\leq 9 \text{ E-3}$	$\leq 3 \text{ E-3}$
	92809	D	0.78	0.60	6.2	$\leq 5 \text{ E-2}$	$\leq 3 \text{ E-2}$
	92810	E	7.7 E-2	5.7 E-4	6.1 E-3	$\leq 5 \text{ E-4}$	2.9 E-3
	92811	F	2.4 E-2	4.5 E-4	4.6 E-3	$\leq 2 \text{ E-4}$	2.9 E-3
25	94699	A	5.82	11.2	118	≤ 1	≤ 0.6
	94700	C	5.50	11.2	117	≤ 1	≤ 0.6
	94538		0.75	2.3 E-2	0.24	$\leq 2 \text{ E-3}$	9.9 E-3

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APPROX. TE

Table 2

TMI/GPU Sample No.	Concentration, $\mu\text{g/ml}$			
	Pu	U	Total Solids	Solids Suspended
92528	7.6 E-5	5.0 E-2	6.0 E3	<10
92529	2.2 E-5	1.8 E-2	6.0 E3	<10
92700	1.8 E-5	1.7 E-2	4.1 E3	<10
92701	5.3 E-6	6.9 E-3	4.4 E3	<10
92809	5.7 E-6	9.5 E-3	4.1 E3	<10
92810	3.4 E-6	4.5 E-3	3.8 E3	<10
92811	3.0 E-6	5.1 E-3	3.2 E3	<10
94699	6.1 E-6	2.8 E-1	18.4 E3	<10
94700	3.2 E-6	3.5 E-2	16.7 E3	<10
94538	1.4 E-7	3.0 E-3	11.3 E3	<10

ACE	STAGED TO SDS TANK FARM				RCS LETDOWN/MAKEUP			SDS PROCESSING					TOTAL
	THIS BATCH	R.B. BASEMENT ACCIDENT	DECON	TOTAL	BATCH NO.'s	THIS BATCH	TOTAL	WATER SOURCE	THIS BATCH	RCS	R.B. BASEMENT ACCIDENT	DECON	
S-034								TK FARM	18945		650753		150111
S-035								C'RCBT	3584				150507
S-036	R.B.	30031		30031				TK FARM	31734			31734	150776
S-037								C'RCBT	5122				150776
S-038	R.B.	41681		71712				TK FARM	44177			71712	150776
S-039								C'RCBT	1932				150776
S-040					R-006	40600	299120	C'RCBT	39407	289259			150776
S-041	R.B.	47920		119632				TK FARM	49343			119632	150776
S-042					R-007	40210	339330	C'RCBT	2000				150776
S-043					R-007			C'RCBT	46201	335460			150776
S-044					R-008	39950	379280	C'RCBT	40364	375824			150776
S-045	R.B.	41519		161151				TK FARM	43514		R.B. DeCON	161151	150776
S-046	R.B.	53425		214576				TK FARM	21786		DILUTION	150776	150776
S-047		-O-						R.B.	730381		300734	254590	150776
S-048	R.B.	S-046						TK FARM	33661				150776
S-049	SDS-T-1A	10274 (4/26/83)						TK FARM	10907				150776
S-050					R-009	14645	393925	C'RCBT	2000				150776
S-051					R-010	36585	430510	C'RCBT	48320	424144			150776
S-052	SDS-T-1A	10913 (5/12/83)						TK FARM	12355				150776
S-053					R-011	48980	479490	C'RCBT	2000				150776
S-054					R-011			C'RCBT	45300	469444			150776
S-055		-O-						R.B.	83081		113465	337690	150776
S-056					R-012	44400	523890	C'RCBT	2000				150776
S-057					R-012			C'RCBT	44106	513550			150776
S-058					R-013	44235	568125	C'RCBT	44597	558147			150776
S-059		-O-						R.B.	29093		142558	360413	150776
					R-014	2075	570200						150776
					R-015	2090	572290						150776
S-060					R-016	1400	573690	C'RCBT	31363	589510			150776
S-061								TK FARM	1732				150776
S-062	SDS-T-1A	7761 (10/6/83)						TK FARM	7168				150776
S-063	SDS-T-1A	9806 (6/6/83)						TK FARM	12922				150776

EPICOR II PROCESSING

BATCH NO.	WATER SOURCE	THIS BATCH	P.B. BASEMENT		TOTAL
			ACCIDENT	DECON	
THRU					
58					565 224
59	CC-T-1	28 001			593 225
60	CC-T-1	31 501			624 726
61	SDS-T-1A	10 620	10 620		635 346
62	SDS-T-1B	10 150	20 770		645 496
63	SDS-T-1A	20 000	22 770		647 496
64A	CC-T-1	38 350			685 846
64B	CC-T-1	51 50			690 996
65	1A/1B ¹ CC-T-1	25 541	47 311		716 537
66A	SDS-T-1A	10 311	57 622		726 848
66B	SDS-T-1B	11 127	68 749		737 975
67	SDS-T-1A	10 789	79 538		748 764
68	SDS-T-1B	4 601	84 139		753 365
69	CCB SUMP	27 46			756 111
70	CC-T-1	46 32			760 743
71	SDS-T-1A	10 101	92 240		770 844
72	SDS-T-1B	10 596	104 836		781 440
73	SDS-T-1A	10 651	115 487		792 091
74	SDS-T-1B	11 232	126 719		803 323
75	SDS-T-1A	11 051	137 770		814 374
76	SDS-T-1B	10 820	148 590		825 194
77	SDS-T-1A	10 718	159 308		835 912
78	SDS-T-1B	10 486	162 724	→ 7070 ARCST	846 398
79	SDS-T-1A	4 783	167 507		851 181
80	CC-T-1	50 80			856 261
81	SDS-T-1A	10 748	178 255		867 009
82	SDS-T-1B	10 616	188 871		877 625
83	SDS-T-1A	10 688	199 559		888 313
84	SDS-T-1B	10 705	210 264		899 018
85	SDS-T-1A	10 519	220 783		909 537
86	SDS-T-1B	10 891	231 674		920 428
87	SDS-T-1A	10 820	242 494		931 248
88	SDS-T-1B	10 914	253 408		942 162

SOURCE		THIS BATCH		P.B. BLEED AT	TOTAL
				ACCIDENT DECON	
				253408	342162
88	SDS-T-1A	10455			352627
89	SDS-T-1B	10842			363463
91	SDS-T-1A	11000			374463
92	SDS-T-1B	7900			382363
93	SDS-T-1B	10642	* 29335		993011
94	SDS-T-1A	11092	282743		1004103
95	SDS-T-1B	10011			1014114
96	SDS-T-1A	10916			1025030
97	SDS-T-1A	10961	293707		1035991
98	SDS-T-1B	10767	304471		1046758
99	SDS-T-1A	10500	314971		1057258
100	SDS-T-1B	10935	325906		1068193
101	SDS-T-1A	10869	336775		1079062
102	SDS-T-1B	10720	347495		1089782
103	SDS-T-1A	10782	358277		1100564
104	SDS-T-1B	10913	369190		1111477
105	SDS-T-1A	10810	380000		1122287
106	SDS-T-1B	10751	390751		1133038
107	SDS-T-1A	10713	401464		1143751
108	SDS-T-1B	10483	411947		1154234
109	SDS-T-1A	10530	422477		1164764
110	SDS-T-1B	10710	433187		1175474
111	SDS-T-1A	10662	443849		1186136
112	SDS-T-1B	10674	454523		1196810
112A	CCB SUMP	2492	457015		1199302
113	SDS-T-1A	10728	467743		1210030
114	SDS-T-1B	10788	478531		1220818
115	SDS-T-1A	11022	489553		1231840
116A	CC-T-1	1989			RECYCLE/FLUSH
116B	CC-T-1	1874			" "
116C	CC-T-1	2023			" "
117	SDS-T-1A	10672	500225		1242512
118	SDS-T-1B	11020	511245		1253532
119	SDS-T-1A	10800	522045		1264332

* SUMP WATER IN BLEED TANK BATCHES

EPICOR II PROCESSING

BATCH NO.	SOURCE	THIS BATCH	P. S. BASEMENT		TOTAL
			ACCIDENT	DECON	
			522045		1264332
120	SDS-T-1B	10862	532927		1275214
121	SDS-T-1A	10711	543638		1285925
122	SDS-T-1B	10835	554473		1296760
123	SDS-T-1A	10715	565188		1307475
124	SDS-T-1A	10802	575990		1318277
125	SDS-T-1B	9301	585291		1327528
126	SDS-T-1A	10797	596088		1338375
127	SDS-T-1B	11014	598513		1349389
128	SDS-T-1A	10796			1360185
129	CCB SUMP	1193			1361378
130	SDS-T-1A	10700			1372078
131	SDS-T-1A	10845			1382923
132	SDS-T-1B	6971			1389894
133	WDL-T-11A	2136			1392030
134	WDL-T-11A	2000			1394030
135	WDL-T-11A	1470			1395500
136	SDS-T-1A	10727	609240		1406227
137	SDS-T-1B	10890	620130		1417117
138	SDS-T-1A	10808	630938		1427925
139	SDS-T-1A	10612	641550		1438537
140	SDS-T-1B	10742	648711		1449279
141	SDS-T-1A	10624		10624	1459903
142	SDS-T-1B	10636		21260	1470539
143	SDS-T-1A	9682		30942	1480221
144	WDL-T-11B	1765			1481986
145	SDS-T-1A	4808			1486794
146	SDS-T-1A	10492		41434	1497286
147	SDS-T-1B	10599		52033	1507885
148	SDS-T-1A	10535		62568	1518420
149	SDS-T-1B	10640		73208	1529060
150	WDL-T-11A	2036			1531096
151	WDL-T-11A/B	26119			1557215
152	SDS-T-1A	10395		83603	1567610
153	SDS-T-1B	10681		94284	1578291

7. 3433/217

NO.	SOURCE	THIS BATCH	P.B. BASEMENT		TOTAL
			ACCIDENT	DECON	
			648711	94284	1578291
154	SDS-T-1A	10681		104284	528231
155	SDS-T-1B	10719		115003	1533010
156	SDS-T-1A	7453		122462	1606469
157	WDL-T-11A	1913			1608382
158	WDL-T-11B	1854			1610236
159	WDL-T-11A	2000			1612236
160	WDL-T-11B	2452			1614688
161	SDS-T-1A	9761		132223	1624449
162	SDS-T-1B	9765		141988	1634214
163	SDS-T-1A	10119		152107	1644333
164	SDS-T-1B	8508		160615	1652841
165	WDL-T-11B	1360			1654201
166	CCB SUMP	2723			1656924
167	CC-T-1	61140			1718064
168	SDS-T-1A	10195		170810	1728259
169	SDS-T-1B	10556		181366	1738815
170	SDS-T-1A	10309		191675	1749124
171	SDS-T-1B	10875		202550	1759999
172	SDS-T-1A	8013		210563	1768012
173	WDL-T-11A	1519			1769531
174	SDS-T-1A	10210		220773	1779741
175	SDS-T-1B	10334		231107	1790075
176	SDS-T-1A	10844		241951	1800915
177	SDS-T-1B	5000			1805919
178	SDS-T-1B	10867		252818	1816786
179	SDS-T-1A	9963		262781	1826749
180	SDS-T-1B	10818		273599	1837567
181	SDS-T-1A	10720		284319	1848287
182	SDS-T-1B	10975		295294	1859262
183	SDS-T-1A	10010		305304	1869272
184	SDS-T-1B	9154		314458	1878426
185	SDS-T-1A	9807		324265	1888233
186	SDS-T-1B	9653		333918	1897886
187	CCB SUMP	1069			1898955

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