

August 29, 1991

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U. S. Nuclear Regulatory Commission
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SUBJECT: Arkansas Nuclear One - Units 1 & 2
Docket Nos. 50-313 and 50-368
License Nos. DPR-51 and NPF-6
Semiannual Radiological Effluent Release Report
First and Second Quarter of 1991

Gentlemen:

Arkansas Nuclear One, Units 1 and 2 (ANO-1 & 2) Technical Specifications 6.12.2.6 and 6.9.3, respectively, requires the submittal of a Semiannual Radioactive Effluent Release Report. The purpose of this letter is to complete this reporting requirement for ANO for the first and second quarter of 1991.

Attachment A provides the routine radioactive effluent release reports for the first and second quarters of 1991. A description of the unplanned releases during the first and second quarter of 1991 is contained in Attachment B. Attachment C describes changes to the Offsite Dose Calculational Manual and Process Control Program that have occurred during this reporting period.

In addition, ANO-1 Technical Specifications 3.5.6.3 and 3.5.7.3 and ANO-2 Technical Specifications 3.3.3.9 and 3.3.3.10 require that with less than the minimum number of channels operable, for radioactive liquid and gaseous effluent instrumentation respectively, return the instruments to operable status within 30 days or explain in the next Semiannual Radioactive Effluent Release Report why the inoperability was not corrected.

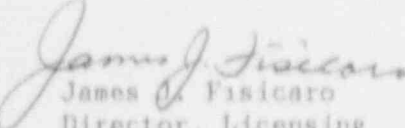
During the reporting period through May 6, 1991, ANO-1 liquid (RE-4642) and gaseous effluent (RE-4830) monitors were administratively declared inoperable while background radiation limits were being established for incorporation into the release procedures associated with these monitors. See ANO Semiannual Radiological Effluent Release Report dated March 1, 1991 (@CAN039101). During the reporting period, ANO-2 liquid (2RE-2330) and gaseous (2RE-2429) effluent monitors were also administratively declared inoperable while similar limits were being developed. Subsequent to this reporting period, the liquid and gaseous effluent monitors for ANO-2 were declared operable. During the time the monitors were inoperable, ANO took the actions required by ANO-1 Technical Specifications 3.5.6.3 and 3.5.7.3 and ANO-2 Technical Specifications 3.3.3.9 and 3.3.3.10 for monitoring offsite releases.

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Should you have any questions regarding this submittal, please contact me.

Very truly yours,


James J. Fisicaro
Director, Licensing

JJF/RWC/sjf

cc: Mr. Robert Martin
U. S. Nuclear Regulatory Commission
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ATTACHMENT A

SUMMARY OF THE QUANTITIES
OF RADIOACTIVE LIQUID AND GASEOUS
EFFLUENTS AND SOLID WASTE
RELEASE FROM ANO

~~9109100338~~ 25 pp.

ANO-1

CORRECTED COPY

: ARKANSAS POWER AND LIGHT COMPANY PAGE 1 OF 4

: ARKANSAS NUCLEAR ONE : UNIT 1

: SEMIANNUAL SUMMATION OF ALL RELEASES BY QUARTER

: ALL LIQUID EFFLUENTS

: QUARTER # 1 AND QUARTER # 2 OF 1991

REPORT CATEGORY	UNIT	QUARTER 1	QUARTER 2	SUM. TOTAL
TYPE OF ACTIVITY	HOURS	HOURS	ERROR %	
REPORTING PERIOD	1-21-91	21-61-4344		

A. FISSION AND ACTIVATION PRODUCTS

1. TOTAL RELEASE (NOT INCLUDING TRITIUM, GASES, ALPHA)	: Curies	: 4.01E-01	: 2.54E-01	: 0.00E-01
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	: UCI/ML	: 1.45E-09	: 7.34E-10	
3. PERCENT OF APPLICABLE LIMIT	: %	: 4.34E-01	: 2.45E-01	

B. TRITIUM

1. TOTAL RELEASE	: Curies	: 1.51E-02	: 3.42E-01	: 0.00E-01
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	: UCI/ML	: 5.55E-07	: 1.13E-07	
3. PERCENT OF APPLICABLE LIMIT	: %	: 1.65E-02	: 3.77E-03	

C. DISSOLVED AND ENTRAINED GASES

1. TOTAL RELEASE	: Curies	: 2.51E-03	: 3.33E-03	: 0.00E-01
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	: UCI/ML	: 9.03E-09	: 9.75E-09	
3. PERCENT OF APPLICABLE LIMIT	: %	: 4.54E-03	: 4.68E-03	

D. GROSS ALPHA RADIOACTIVITY

1. TOTAL RELEASE	: Curies	: 1.31E-03	: 1.67E-03	: 0.00E-01
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E. WASTE VOL RELEASED (PRE-DILUTION)	: GAL	: 4.63E-05	: 4.27E-05	: 0.00E-01
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F. VOLUME OF DILUTION WATER USED	: GAL	: 7.29E-10	: 9.1E-10	: 0.00E-01
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		: CONTINUOUS RELEASES :		BATCH	RELEASES :
	: UNIT	: QUARTER 1	: QUARTER 2	: QUARTER 1	: QUARTER 2 :
		: HOURS	: HOURS	: HOURS	: HOURS :
NUCLIDE	:	: 1-2160	: 2161-4344	: 1-2160	: 2161-4344 :

ALL NUCLIDES

H-3	: Curies	: 0.00E-01	: 0.00E-01	: 1.53E-02	: 3.92E-01 :
C-14	: Curies	: 0.00E-01	: 0.00E-01	: 0.00E-01	: 0.00E-01 :
NA-24	: Curies	: 0.00E-01	: 0.00E-01	: 4.06E-03	: 1.66E-02 :
P-32	: Curies	: 0.00E-01	: 0.00E-01	: 0.00E-01	: 0.00E-01 :
CR-51	: Curies	: 0.00E-01	: 0.00E-01	: 5.6E-03	: 1.50E-03 :
MN-54	: Curies	: 0.00E-01	: 0.00E-01	: 3.0E-02	: 2.45E-02 :
MN-55	: Curies	: 0.00E-01	: 0.00E-01	: 0.00E-01	: 0.00E-01 :
FE-55	: Curies	: 0.00E-01	: 0.00E-01	: 6.06E-03	: 1.21E-02 :
FE-59	: Curies	: 0.00E-01	: 0.00E-01	: 1.22E-03	: 1.73E-04 :
CO-58	: Curies	: 0.00E-01	: 0.00E-01	: 2.27E-01	: 7.53E-02 :
CO-60	: Curies	: 0.00E-01	: 0.00E-01	: 1.61E-02	: 6.77E-03 :
NI-63	: Curies	: 0.00E-01	: 0.00E-01	: 0.00E-01	: 0.00E-01 :
NI-65	: Curies	: 0.00E-01	: 0.00E-01	: 0.00E-01	: 0.00E-01 :
CU-64	: Curies	: 0.00E-01	: 0.00E-01	: 0.00E-01	: 0.00E-01 :
ZN-65	: Curies	: 0.00E-01	: 0.00E-01	: 1.19E-03	: 0.00E-01 :
ZN-69	: Curies	: 0.00E-01	: 0.00E-01	: 0.00E-01	: 0.00E-01 :
BR-80	: Curies	: 0.00E-01	: 0.00E-01	: 0.00E-01	: 0.00E-01 :
BR-84	: Curies	: 0.00E-01	: 0.00E-01	: 0.00E-01	: 0.00E-01 :
CR-88	: Curies	: 0.00E-01	: 0.00E-01	: 0.00E-01	: 0.00E-01 :
RS-90	: Curies	: 0.00E-01	: 0.00E-01	: 0.00E-01	: 0.00E-01 :
RE-96	: Curies	: 0.00E-01	: 0.00E-01	: 3.31E-03	: 0.00E-01 :
RE-99	: Curies	: 0.00E-01	: 0.00E-01	: 0.00E-01	: 0.00E-01 :
SR-90	: Curies	: 0.00E-01	: 0.00E-01	: 3.1E-03	: 3.0E-03 :
SR-91	: Curies	: 0.00E-01	: 0.00E-01	: 0.00E-01	: 0.00E-01 :
SR-92	: Curies	: 0.00E-01	: 0.00E-01	: 1.45E-04	: 8.87E-04 :
Y-90	: Curies	: 0.00E-01	: 0.00E-01	: 0.00E-01	: 0.00E-01 :
Y-91	: Curies	: 0.00E-01	: 0.00E-01	: 0.00E-01	: 0.00E-01 :
Y-91	: Curies	: 0.00E-01	: 0.00E-01	: 0.00E-01	: 0.00E-01 :
Y-92	: Curies	: 0.00E-01	: 0.00E-01	: 0.00E-01	: 0.00E-01 :
Y-93	: Curies	: 0.00E-01	: 0.00E-01	: 0.00E-01	: 0.00E-01 :
ZR-95	: Curies	: 0.00E-01	: 0.00E-01	: 1.79E-03	: 7.77E-04 :
ZR-97	: Curies	: 0.00E-01	: 0.00E-01	: 1.25E-05	: 2.37E-05 :
MO-99	: Curies	: 0.00E-01	: 0.00E-01	: 3.11E-03	: 9.29E-04 :
MO-99	: Curies	: 0.00E-01	: 0.00E-01	: 3.41E-04	: 3.33E-05 :
TC-99	: Curies	: 0.00E-01	: 0.00E-01	: 6.27E-04	: 2.17E-04 :
TC-101	: Curies	: 0.00E-01	: 0.00E-01	: 0.00E-01	: 0.00E-01 :
RU-103	: Curies	: 0.00E-01	: 0.00E-01	: 1.20E-04	: 0.00E-01 :
RU-105	: Curies	: 0.00E-01	: 0.00E-01	: 0.00E-01	: 0.00E-01 :
RU-106	: Curies	: 0.00E-01	: 0.00E-01	: 0.00E-01	: 0.00E-01 :
AG-110	: Curies	: 0.00E-01	: 0.00E-01	: 1.27E-03	: 9.72E-03 :
TE-125	: Curies	: 0.00E-01	: 0.00E-01	: 0.00E-01	: 0.00E-01 :
TE-127	: Curies	: 0.00E-01	: 0.00E-01	: 0.00E-01	: 0.00E-01 :
TE-127	: Curies	: 0.00E-01	: 0.00E-01	: 0.00E-01	: 0.00E-01 :
TE-129	: Curies	: 0.00E-01	: 0.00E-01	: 0.00E-01	: 0.00E-01 :
TE-129	: Curies	: 0.00E-01	: 0.00E-01	: 0.00E-01	: 0.00E-01 :
TE-131	: Curies	: 0.00E-01	: 0.00E-01	: 0.00E-01	: 0.00E-01 :

		CONTINUOUS RELEASES		BATCH RELEASES	
NUCLIDE	UNIT	QUARTER 1 HOURS	QUARTER 2 HOURS	QUARTER 1 HOURS	QUARTER 2 HOURS
		1-2160	2161-4344	1-2160	2161-4344

ALL NUCLIDES CONTINUED

TE-131	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
TE-132	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
I-130	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
I-131	CURIES	0.00E-01	0.00E-01	6.14E-02	2.74E-02
I-132	CURIES	0.00E-01	0.00E-01	7.06E-06	0.00E-01
I-133	CURIES	0.00E-01	0.00E-01	2.64E-03	5.16E-04
I-134	CURIES	0.00E-01	0.00E-01	0.00E-01	7.75E-06
I-135	CURIES	0.00E-01	0.00E-01	1.42E-04	4.22E-05
CS-134	CURIES	0.00E-01	0.00E-01	5.21E-03	2.74E-02
CS-136	CURIES	0.00E-01	0.00E-01	0.00E-01	1.72E-04
CS-137	CURIES	0.00E-01	0.00E-01	1.35E-02	4.17E-02
CS-138	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
BA-134	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
BA-140	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
BA-141	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
BA-142	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
LA-140	CURIES	0.00E-01	0.00E-01	1.29E-03	1.56E-03
LA-142	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
CE-141	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
CE-143	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
CE-144	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
PR-143	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
PR-144	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
ND-147	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
W-167	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
NP-239	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
KR-83M	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
KR-85M	CURIES	0.00E-01	0.00E-01	1.62E-02	0.00E-01
KR-85	CURIES	0.00E-01	0.00E-01	5.92E-02	1.93E-01
KR-87	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
KR-88	CURIES	0.00E-01	0.00E-01	5.92E-04	0.00E-01
KR-89	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
KR-90	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
XE-131M	CURIES	0.00E-01	0.00E-01	2.19E-02	1.34E-01
XE-133M	CURIES	0.00E-01	0.00E-01	1.42E-02	4.70E-02
XE-133	CURIES	0.00E-01	0.00E-01	2.36E-00	3.05E-00
XE-135M	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
XE-135	CURIES	0.00E-01	0.00E-01	3.04E-02	2.11E-04
XE-137	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
XE-138	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
AR-41	CURIES	0.00E-01	0.00E-01	5.78E-04	0.00E-01
SR-90	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
G ALPHA	CURIES	0.00E-01	0.00E-01	1.31E-03	1.67E-03
OTHER	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
GE-7	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
K-40	CURIES	0.00E-01	0.00E-01	1.26E-04	1.14E-04

		CONTINUOUS RELEASES :		BATCH	RELEASES :

	UNIT	:GUA	1 : QUARTER 2	:QUARTER 1	:QUARTER 2 :
		:HOURS	:HOURS	:HOURS	:HOURS :
NUCLIDE		: 1-2160	:2161-4344 :	1-2160	:2161-4344 :

ALL NUCLIDES CONTINUED

CO-56	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
CO-57	CURIES	0.00E-01	0.00E-01	4.65E-04	0.00E-01
SE-75	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
SR-85	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
Y-88	CURIES	0.00E-01	0.00E-01	2.49E-05	0.00E-01
NR-94	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
NR-97	CURIES	0.00E-01	0.00E-01	7.18E-05	9.81E-06
MO-90	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
CO-104	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
CO-113.4	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
SN-113	CURIES	0.00E-01	0.00E-01	1.66E-04	0.00E-01
SR-122	CURIES	0.00E-01	0.00E-01	2.62E-05	1.46E-05
SR-124	CURIES	0.00E-01	0.00E-01	4.47E-05	6.40E-05
SR-125	CURIES	0.00E-01	0.00E-01	6.24E-03	2.93E-03
SR-127	CURIES	0.00E-01	0.00E-01	0.00E-01	4.09E-05
LA-133	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
CE-134	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
EU-152	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
KG-203	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
PD-214	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
SI-214	CURIES	0.00E-01	0.00E-01	1.55E-03	0.00E-01
RA-226	CURIES	0.00E-01	0.00E-01	4.54E-06	0.00E-01
TH-232	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
U-235	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01

TOTAL FOR PERIOD	CURIES	0.00E-01	0.00E-01	1.56E-02	4.21E-01

: ARKANSAS POWER AND LIGHT COMPANY PAGE 1 OF 4
 : ARKANSAS NUCLEAR ONE : UNIT 1
 : SEMIANNUAL SUMMATION OF ALL RELEASES BY QUARTER
 : ALL AIRBORNE EFFLUENTS
 : QUARTER # 1 AND QUARTER # 2 OF 1991

REPORT CATEGORY
 TYPE OF ACTIVITY
 REPORTING PERIOD

	UNIT	QUARTER 1	QUARTER 2	EST. TOTAL
		HOURS	HOURS	ERROR %
TYPE OF EFFLUENT		1-2160	2161-4344	

A. FISSION AND ACTIVATION GASES

1. TOTAL RELEASE	: Curies	: 3.10E-01	: 2.01E-02	: 0.00E-01
2. AVERAGE RELEASE RATE FOR PERIOD	: UC1/SEC	: 3.95E-00	: 2.56E-01	:
3. PERCENT OF APPLICABLE LIMIT	: %	: 5.53E-02	: 3.58E-01	:

B. RADIOIODINES

1. TOTAL IODINE-131	: Curies	: 0.00E-01	: 7.22E-04	: 0.00E-01
2. AVERAGE RELEASE RATE FOR PERIOD	: UC1/SEC	: 0.00E-01	: 9.19E-05	:
3. PERCENT OF APPLICABLE LIMIT	: %	: 0.00E-01	: 2.57E-04	:

C. PARTICULATES

1. PARTICULATES (HALF-LIVES > 6 DAYS)	: Curies	: 2.27E-05	: 4.28E-03	: 0.00E-01
2. AVERAGE RELEASE RATE FOR PERIOD	: UC1/SEC	: 3.39E-06	: 5.44E-04	:
3. PERCENT OF APPLICABLE LIMIT	: %	: 9.51E-06	: 1.52E-03	:
4. GROSS ALPHA RADIOACTIVITY	: Curies	: 0.00E-01	: 0.00E-01	:

D. TRITIUM

1. TOTAL RELEASE	: Curies	: 2.26E-00	: 5.08E-00	: 0.00E-01
2. AVERAGE RELEASE RATE FOR PERIOD	: UC1/SEC	: 2.88E-01	: 6.47E-01	:
3. PERCENT OF APPLICABLE LIMIT	: %	: 4.03E-04	: 9.05E-04	:

NUCLIDE	UNIT	ELEVATED		GROUND	
		BATCH	RELEASES	BATCH	RELEASES
		QUARTER 1 HOURS	QUARTER 2 HOURS	QUARTER 1 HOURS	QUARTER 2 HOURS
		1-2160	2161-4344	1-2160	2161-4344

FISSION GASES

KR-83M	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
KR-85M	CURIES	0.00E-01	0.00E-01	0.00E-01	7.64E-01
KR-85	CURIES	0.00E-01	0.00E-01	1.33E-02	4.67E-00
KR-87	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
KR-88	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
KR-89	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
KR-90	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
XE-131M	CURIES	0.00E-01	0.00E-01	0.00E-01	8.71E-04
XE-133M	CURIES	0.00E-01	0.00E-01	0.00E-01	5.67E-01
XE-133	CURIES	0.00E-01	0.00E-01	2.89E-01	1.91E-02
XE-135M	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
XE-135	CURIES	0.00E-01	0.00E-01	2.12E-00	3.93E-00
XE-137	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
XE-138	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
AR-41	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
OTHER	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
TOTAL FOR PERIOD	CURIES	0.00E-01	0.00E-01	3.10E-01	2.01E-02

IODINES

I-130	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
I-131	CURIES	0.00E-01	0.00E-01	0.00E-01	7.22E-04
I-132	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
I-133	CURIES	0.00E-01	0.00E-01	0.00E-01	2.97E-04
I-134	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
I-135	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
OTHER	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
TOTAL FOR PERIOD	CURIES	0.00E-01	0.00E-01	0.00E-01	1.02E-03

PARTICULATES

H-3	CURIES	0.00E-01	0.00E-01	2.26E-00	5.03E-00
C-14	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
NA-24	CURIES	0.00E-01	0.00E-01	0.00E-01	5.53E-04
P-32	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
CR-51	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
MN-54	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
MN-56	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
FE-55	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
FE-59	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
CO-58	CURIES	0.00E-01	0.00E-01	0.00E-01	5.11E-05
CO-60	CURIES	0.00E-01	0.00E-01	5.16E-07	0.00E-01
NI-63	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
NI-65	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
CU-64	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
ZN-65	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01

		ELEVATED		GROUND		
		BATCH	RELEASES	BATCH	RELEASES	
		UNIT	QUARTER 1	QUARTER 2	QUARTER 1	QUARTER 2
			HOURS	HOURS	HOURS	HOURS
NUCLIDE			1-2160	2161-4344	1-2160	2161-4344
PARTICULATES CONTINUED						
ZN-69	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
BR-83	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
BR-84	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
BR-85	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
RB-86	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
RB-88	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
RB-89	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
SR-89	CURIES	0.00E-01	0.00E-01	3.74E-06	3.69E-06	
SR-91	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
SH-92	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
Y-90	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
Y-91M	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
Y-91	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
Y-92	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
Y-93	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
ZR-95	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
ZR-97	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
NB-99	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
MO-99	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
TC-99M	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
TC-101	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
RU-103	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
RU-105	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
RU-106	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
AG-110M	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
TE-125M	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
TE-127M	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
TE-127	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
TE-129M	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
TE-129	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
TE-131M	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
TE-131	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
TE-132	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
CS-134	CURIES	0.00E-01	0.00E-01	3.14E-06	1.63E-03	
CS-136	CURIES	0.00E-01	0.00E-01	0.00E-01	3.77E-05	
CS-137	CURIES	0.00E-01	0.00E-01	1.86E-05	2.51E-03	
CS-138	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
BA-139	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
BA-140	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
BA-141	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
BA-142	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
LA-140	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
LA-142	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
CE-141	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
CE-143	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
CE-144	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	

		ELEVATED		GROUND	
		BATCH	RELEASES	BATCH	RELEASES
UNIT		QUARTER 1	QUARTER 2	QUARTER 1	QUARTER 2
HOURS		HOURS	HOURS	HOURS	HOURS
NUCLIDE		1-2160	2161-4344	1-2160	2161-4344
PARTICULATES CONTINUED					
PR-143	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
PR-144	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
ND-147	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
W-187	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
NP-239	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
SR-90	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
G ALPHA	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
OTHER	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
BE-7	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
K-40	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
CO-56	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
CO-57	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
SE-75	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
SR-85	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
Y-88	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
NE-94	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
NE-97	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
MO-93	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
CD-109	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
CD-113M	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
SN-113	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
SE-122	CURIES	0.00E-01	0.00E-01	4.60E-07	0.00E-01
SE-124	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
SE-125	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
SE-127	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
RA-133	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
CS-134	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
EU-152	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
MG-203	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
PE-214	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
BI-214	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
RA-226	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
TH-228	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
U-235	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
TOTAL FOR PERIOD	CURIES	0.00E-01	0.00E-01	2.26E 00	5.04E 00

ANO-2

: ARKANSAS POWER AND LIGHT COMPANY PAGE 1 OF 4
 : ARKANSAS NUCLEAR ONE : UNIT 2
 : SEMIANNUAL SUMMATION OF ALL RELEASES BY QUARTER
 : ALL LIQUID EFFLUENTS
 : QUARTER # 1 AND QUARTER # 2 OF 1991

REPORT CATEGORY
 TYPE OF ACTIVITY
 REPORTING PERIOD

	UNIT	QUARTER 1	QUARTER 2	EST. TOTAL
		HOURS	HOURS	ERROR %
TYPE OF EFFLUENT		1-2160	2161-4344	

A. FISSION AND ACTIVATION PRODUCTS

1. TOTAL RELEASE (NOT INCLUDING TRITIUM, GASES, ALPHA)	CURIES	5.58E-01	5.10E-01	0.00E-01
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	UCI/ML	2.02E-09	1.47E-09	
3. PERCENT OF APPLICABLE LIMIT	%	6.74E-01	4.90E-01	

B. TRITIUM

1. TOTAL RELEASE	CURIES	1.26E-02	2.34E-02	0.00E-01
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	UCI/ML	4.50E-07	6.74E-07	
3. PERCENT OF APPLICABLE LIMIT	%	1.53E-02	2.25E-02	

C. DISSOLVED AND ENTRAINED GASES

1. TOTAL RELEASE	CURIES	2.78E-01	2.06E-01	0.00E-01
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	UCI/ML	1.01E-07	6.01E-10	
3. PERCENT OF APPLICABLE LIMIT	%	5.04E-02	3.00E-04	

D. GROSS ALPHA RADIOACTIVITY

1. TOTAL RELEASE	CURIES	3.78E-05	4.14E-04	0.00E-01
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E. WASTE VOL RELEASED (PRE-DILUTION)	GAL	1.11E-06	1.93E-06	0.00E-01
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F. VOLUME OF DILUTION WATER USED	GAL	7.29E-10	9.16E-10	0.00E-01
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		: CONTINUOUS RELEASES :		BATCH	RELEASES :

	: UNIT	: QUARTER 1	: QUARTER 2	: QUARTER 1	: QUARTER 2 :
	:	: HOURS	: HOURS	: HOURS	: HOURS :
NUCLIDE	:	: 1-2160	: 2161-4344	: 1-2160	: 2161-4344 :

ALL NUCLIDES

H-3	: CURIES	: 0.00E-01	: 0.00E-01	: 1.26E-02	: 2.34E-02
C-14	: CURIES	: 0.00E-01	: 0.00E-01	: 0.00E-01	: 0.00E-01
NA-24	: CURIES	: 0.00E-01	: 0.00E-01	: 2.65E-05	: 1.74E-04
P-32	: CURIES	: 0.00E-01	: 0.00E-01	: 0.00E-01	: 0.00E-01
CR-51	: CURIES	: 0.00E-01	: 0.00E-01	: 1.91E-02	: 5.05E-02
MN-54	: CURIES	: 0.00E-01	: 0.00E-01	: 4.60E-03	: 6.06E-03
MN-55	: CURIES	: 0.00E-01	: 0.00E-01	: 0.00E-01	: 0.00E-01
FE-55	: CURIES	: 0.00E-01	: 0.00E-01	: 2.32E-03	: 4.01E-03
FE-59	: CURIES	: 0.00E-01	: 0.00E-01	: 7.55E-04	: 1.58E-03
CO-58	: CURIES	: 0.00E-01	: 0.00E-01	: 1.76E-01	: 1.71E-01
CO-60	: CURIES	: 0.00E-01	: 0.00E-01	: 1.06E-02	: 2.00E-02
NI-63	: CURIES	: 0.00E-01	: 0.00E-01	: 0.00E-01	: 0.00E-01
NI-65	: CURIES	: 0.00E-01	: 0.00E-01	: 0.00E-01	: 0.00E-01
CU-64	: CURIES	: 0.00E-01	: 0.00E-01	: 0.00E-01	: 0.00E-01
ZN-65	: CURIES	: 0.00E-01	: 0.00E-01	: 0.00E-01	: 0.00E-01
ZN-66	: CURIES	: 0.00E-01	: 0.00E-01	: 0.00E-01	: 0.00E-01
BR-81	: CURIES	: 0.00E-01	: 0.00E-01	: 0.00E-01	: 0.00E-01
BR-84	: CURIES	: 0.00E-01	: 0.00E-01	: 0.00E-01	: 0.00E-01
BR-86	: CURIES	: 0.00E-01	: 0.00E-01	: 0.00E-01	: 0.00E-01
RU-96	: CURIES	: 0.00E-01	: 0.00E-01	: 0.00E-01	: 0.00E-01
RU-98	: CURIES	: 0.00E-01	: 0.00E-01	: 0.00E-01	: 0.00E-01
RU-99	: CURIES	: 0.00E-01	: 0.00E-01	: 0.00E-01	: 0.00E-01
RU-100	: CURIES	: 0.00E-01	: 0.00E-01	: 0.00E-01	: 0.00E-01
RU-101	: CURIES	: 0.00E-01	: 0.00E-01	: 0.00E-01	: 0.00E-01
RU-102	: CURIES	: 0.00E-01	: 0.00E-01	: 0.00E-01	: 0.00E-01
RU-103	: CURIES	: 0.00E-01	: 0.00E-01	: 0.00E-01	: 0.00E-01
RU-104	: CURIES	: 0.00E-01	: 0.00E-01	: 0.00E-01	: 0.00E-01
RU-105	: CURIES	: 0.00E-01	: 0.00E-01	: 0.00E-01	: 0.00E-01
RU-106	: CURIES	: 0.00E-01	: 0.00E-01	: 0.00E-01	: 0.00E-01
AG-110M	: CURIES	: 0.00E-01	: 0.00E-01	: 7.00E-02	: 2.72E-02
TE-125M	: CURIES	: 0.00E-01	: 0.00E-01	: 0.00E-01	: 0.00E-01
TE-127M	: CURIES	: 0.00E-01	: 0.00E-01	: 0.00E-01	: 0.00E-01
TE-127	: CURIES	: 0.00E-01	: 0.00E-01	: 0.00E-01	: 0.00E-01
TE-129M	: CURIES	: 0.00E-01	: 0.00E-01	: 0.00E-01	: 0.00E-01
TE-129	: CURIES	: 0.00E-01	: 0.00E-01	: 0.00E-01	: 0.00E-01
TE-131M	: CURIES	: 0.00E-01	: 0.00E-01	: 0.00E-01	: 0.00E-01

		CONTINUOUS RELEASES		BATCH RELEASES	
NUCLIDE	UNIT	QUARTER 1	QUARTER 2	QUARTER 1	QUARTER 2
		HOURS	HOURS	HOURS	HOURS
		1-2160	2161-4344	1-2160	2161-4344

ALL NUCLIDES CONTINUED

TE-131	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
TE-132	CURIES	0.00E-01	0.00E-01	3.50E-03	0.00E-01
I-130	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
I-131	CURIES	0.00E-01	0.00E-01	1.76E-01	1.38E-02
I-132	CURIES	0.00E-01	0.00E-01	8.04E-03	0.00E-01
I-133	CURIES	0.00E-01	0.00E-01	3.46E-03	1.06E-03
I-134	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
I-135	CURIES	0.00E-01	0.00E-01	0.00E-01	2.09E-04
CS-134	CURIES	0.00E-01	0.00E-01	7.16E-03	1.69E-02
CS-136	CURIES	0.00E-01	0.00E-01	4.29E-05	0.00E-01
CS-137	CURIES	0.00E-01	0.00E-01	2.13E-02	4.14E-02
CS-138	CURIES	0.00E-01	0.00E-01	3.99E-05	3.38E-04
BA-139	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
BA-140	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
BA-141	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
BA-142	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
LA-140	CURIES	0.00E-01	0.00E-01	2.23E-03	1.42E-04
LA-142	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
CE-141	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
CE-143	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
CE-144	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
PR-143	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
PR-144	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
ND-147	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
W-167	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
NP-239	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
KR-83M	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
KR-83M	CURIES	0.00E-01	0.00E-01	4.25E-04	3.87E-04
KR-85	CURIES	0.00E-01	0.00E-01	2.82E-02	0.00E-01
KR-87	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
KR-88	CURIES	0.00E-01	0.00E-01	9.89E-03	1.32E-04
KR-89	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
KR-90	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
XE-131M	CURIES	0.00E-01	0.00E-01	3.20E-01	0.00E-01
XE-133M	CURIES	0.00E-01	0.00E-01	3.53E-01	1.21E-03
XE-133	CURIES	0.00E-01	0.00E-01	2.70E-01	2.06E-01
XE-135M	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
XE-135	CURIES	0.00E-01	0.00E-01	1.55E-01	5.34E-04
XE-137	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
XE-138	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
AR-41	CURIES	0.00E-01	0.00E-01	0.00E-01	1.82E-04
SR-90	CURIES	0.00E-01	0.00E-01	1.41E-04	8.43E-04
G ALPHA	CURIES	0.00E-01	0.00E-01	3.78E-03	4.14E-04
DT-2H	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
BE-7	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
K-40	CURIES	0.00E-01	0.00E-01	2.17E-03	3.31E-04

		CONTINUOUS RELEASES		BATCH RELEASES	
NUCLIDE	UNIT	QUARTER 1	QUARTER 2	QUARTER 1	QUARTER 2
		HOURS	HOURS	HOURS	HOURS
		1-2160	2161-4344	1-2160	2161-4344

ALL NUCLIDES CONTINUED

CO-56	:	CURIES	:	0.00E-01	:	0.00E-01	:	0.00E-01	:	0.00E-01	:
CO-57	:	CURIES	:	0.00E-01	:	0.00E-01	:	2.99E-04	:	5.95E-04	:
SE-75	:	CURIES	:	0.00E-01	:	0.00E-01	:	0.00E-01	:	0.00E-01	:
SR-85	:	CURIES	:	0.00E-01	:	0.00E-01	:	0.00E-01	:	0.00E-01	:
Y-88	:	CURIES	:	0.00E-01	:	0.00E-01	:	0.00E-01	:	0.00E-01	:
NE-94	:	CURIES	:	0.00E-01	:	0.00E-01	:	0.00E-01	:	0.00E-01	:
NE-97	:	CURIES	:	0.00E-01	:	0.00E-01	:	4.30E-04	:	5.80E-03	:
MO-90	:	CURIES	:	0.00E-01	:	0.00E-01	:	0.00E-01	:	0.00E-01	:
CD-109	:	CURIES	:	0.00E-01	:	0.00E-01	:	0.00E-01	:	0.00E-01	:
CD-113M	:	CURIES	:	0.00E-01	:	0.00E-01	:	0.00E-01	:	0.00E-01	:
SN-113	:	CURIES	:	0.00E-01	:	0.00E-01	:	3.99E-04	:	1.02E-03	:
SE-122	:	CURIES	:	0.00E-01	:	0.00E-01	:	2.17E-04	:	1.57E-04	:
SE-124	:	CURIES	:	0.00E-01	:	0.00E-01	:	2.20E-03	:	6.55E-03	:
SE-125	:	CURIES	:	0.00E-01	:	0.00E-01	:	2.23E-02	:	9.76E-02	:
SE-127	:	CURIES	:	0.00E-01	:	0.00E-01	:	1.72E-04	:	0.00E-01	:
BA-133	:	CURIES	:	0.00E-01	:	0.00E-01	:	0.00E-01	:	0.00E-01	:
CE-139	:	CURIES	:	0.00E-01	:	0.00E-01	:	0.00E-01	:	0.00E-01	:
EU-152	:	CURIES	:	0.00E-01	:	0.00E-01	:	0.00E-01	:	0.00E-01	:
AG-203	:	CURIES	:	0.00E-01	:	0.00E-01	:	0.00E-01	:	0.00E-01	:
PO-214	:	CURIES	:	0.00E-01	:	0.00E-01	:	0.00E-01	:	0.00E-01	:
BI-214	:	CURIES	:	0.00E-01	:	0.00E-01	:	0.00E-01	:	3.17E-03	:
RA-226	:	CURIES	:	0.00E-01	:	0.00E-01	:	0.00E-01	:	0.00E-01	:
TH-232	:	CURIES	:	0.00E-01	:	0.00E-01	:	0.00E-01	:	0.00E-01	:
U-235	:	CURIES	:	0.00E-01	:	0.00E-01	:	0.00E-01	:	0.00E-01	:

TOTAL FOR PERIOD	:	CURIES	:	0.00E-01	:	0.00E-01	:	1.55E-02	:	2.34E-02	:

CORRECTED COPY

: ARKANSAS POWER AND LIGHT COMPANY PAGE 1 OF 4
 : ARKANSAS NUCLEAR ONE : UNIT 2
 : SEMIANNUAL SUMMATION OF ALL RELEASES BY QUARTER
 : ALL AIRBORNE EFFLUENTS
 : QUARTER # 1 AND QUARTER # 2 OF 1991

REPORT CATEGORY
 TYPE OF ACTIVITY
 REPORTING PERIOD

	: UNIT	: QUARTER 1	: QUARTER 2	: EST. TOTAL
		: HOURS	: HOURS	: ERROR %
TYPE OF EFFLUENT	:	1-2160	2161-4344	:

A. FISSION AND ACTIVATION GASES

1. TOTAL RELEASE	: CURIES	: 3.55E-02	: 8.99E-01	: 0.00E-01
2. AVERAGE RELEASE RATE FOR PERIOD	: UCI/SEC	: 4.51E-01	: 1.14E-01	:
3. PERCENT OF APPLICABLE LIMIT	: %	: 6.32E-01	: 1.60E-01	:

B. RADIOIODINES

1. TOTAL IODINE-131	: CURIES	: 4.31E-04	: 7.07E-04	: 0.00E-01
2. AVERAGE RELEASE RATE FOR PERIOD	: UCI/SEC	: 5.45E-05	: 8.99E-05	:
3. PERCENT OF APPLICABLE LIMIT	: %	: 1.54E-04	: 2.52E-04	:

C. PARTICULATES

1. PARTICULATES(HALF-LIVES>8 DAYS)	: CURIES	: 6.32E-04	: 4.30E-02	: 0.00E-01
2. AVERAGE RELEASE RATE FOR PERIOD	: UCI/SEC	: 6.65E-05	: 5.47E-03	:
3. PERCENT OF APPLICABLE LIMIT	: %	: 2.43E-04	: 1.53E-02	:
4. GROSS ALPHA RADIOACTIVITY	: CURIES	: 0.00E-01	: 0.00E-01	:

D. TRITIUM

1. TOTAL RELEASE	: CURIES	: 2.30E-00	: 1.25E-00	: 0.00E-01
2. AVERAGE RELEASE RATE FOR PERIOD	: UCI/SEC	: 2.92E-01	: 1.60E-01	:
3. PERCENT OF APPLICABLE LIMIT	: %	: 4.09E-04	: 2.23E-04	:

		ELEVATED		GROUND	
		BATCH	RELEASES	BATCH	RELEASES
		QUARTER 1	QUARTER 2	QUARTER 1	QUARTER 2
		HOURS	HOURS	HOURS	HOURS
NUCLIDE	UNIT	1-2160	2161-4344	1-2160	2161-4344
FISSION GASES					
KR-83M	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
KR-85M	CURIES	0.00E-01	0.00E-01	1.24E-00	0.00E-01
KR-85	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
KR-87	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
KR-88	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
KR-89	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
KR-90	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
XE-131M	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
XE-133M	CURIES	0.00E-01	0.00E-01	2.89E-01	0.00E-01
XE-133	CURIES	0.00E-01	0.00E-01	3.49E-02	3.50E-01
XE-135M	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
XE-135	CURIES	0.00E-01	0.00E-01	4.09E-00	4.03E-00
XE-137	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
XE-138	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
AR-41	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
OTHER	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
TOTAL FOR PERIOD	CURIES	0.00E-01	0.00E-01	3.55E-02	3.94E-01
IODINES					
I-130	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
I-131	CURIES	0.00E-01	0.00E-01	4.31E-04	7.07E-04
I-132	CURIES	0.00E-01	0.00E-01	1.09E-05	0.00E-01
I-133	CURIES	0.00E-01	0.00E-01	2.75E-06	5.49E-05
I-134	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
I-135	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
OTHER	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
TOTAL FOR PERIOD	CURIES	0.00E-01	0.00E-01	4.45E-04	7.92E-04
PARTICULATES					
H-3	CURIES	0.00E-01	0.00E-01	2.30E-00	1.25E-00
C-14	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
NA-24	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
P-32	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
CR-51	CURIES	0.00E-01	0.00E-01	0.00E-01	4.00E-01
MN-54	CURIES	0.00E-01	0.00E-01	0.00E-01	1.87E-04
MN-55	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
FE-55	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
FE-59	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
CO-58	CURIES	0.00E-01	0.00E-01	5.64E-04	1.03E-02
CO-60	CURIES	0.00E-01	0.00E-01	2.47E-05	4.45E-04
NI-63	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
NI-65	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
CU-64	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01
ZN-65	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01

		ELEVATED		GROUND		
		BATCH	RELEASES	BATCH	RELEASES	
		UNIT	QUARTER 1	QUARTER 2	QUARTER 1	QUARTER 2
		HOURS	HOURS	HOURS	HOURS	
NUCLIDE		1-2160	2161-4344	1-2160	2161-4344	
PARTICULATES CONTINUED						
ZN-69	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
BR-83	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
BR-84	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
BR-85	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
RB-86	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
RE-88	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
RE-89	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
SR-89	CURIES	0.00E-01	0.00E-01	6.75E-07	6.27E-07	
SR-91	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
SR-92	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
Y-90	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
Y-91M	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
Y-91	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
Y-92	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
Y-93	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
ZR-95	CURIES	0.00E-01	0.00E-01	4.58E-06	1.48E-05	
ZR-97	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
NB-99	CURIES	0.00E-01	0.00E-01	5.41E-05	2.37E-03	
MO-99	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
TC-99M	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
TC-101	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
RU-103	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
RU-105	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
RU-106	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
AG-110M	CURIES	0.00E-01	0.00E-01	0.00E-01	6.96E-04	
TE-125M	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
TE-127M	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
TE-127	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
TE-129M	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
TE-129	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
TE-131M	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
TE-131	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
TE-132	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
CS-134	CURIES	0.00E-01	0.00E-01	1.39E-06	9.25E-05	
CS-136	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
CS-137	CURIES	0.00E-01	0.00E-01	3.25E-05	1.41E-02	
CS-138	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
BA-139	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
BA-140	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
BA-141	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
BA-142	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
LA-140	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
LA-142	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
CE-141	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
CE-143	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
CE-144	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	

		ELEVATED		GROUND		
		BATCH	RELEASES	BATCH	RELEASES	
		UNIT	QUARTER 1	QUARTER 2	QUARTER 1	QUARTER 2
			HOURS	HOURS	HOURS	HOURS
NUCLIDE			1-2160	2161-4344	1-2160	2161-4344
PARTICULATES CONTINUED						
PR-143	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
PR-144	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
ND-147	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
W-167	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
NP-239	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
SR-90	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
G ALPHA	CURIES	0.00E-01	0.00E-01	3.70E-07	1.05	
OTHER	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
BE-7	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
K-40	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
CO-56	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
CO-57	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
SE-75	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
SR-85	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
Y-88	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
NB-94	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
NB-97	CURIES	0.00E-01	0.00E-01	0.00E-01	3.53E-05	
MO-99	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
CO-109	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
CO-113M	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
SN-113	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
SR-122	CURIES	0.00E-01	0.00E-01	0.00E-01	5.20E-05	
SE-124	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
SE-125	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
SE-127	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
BA-133	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
CE-134	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
EU-152	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
HG-203	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
Pb-214	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
BI-214	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
RA-226	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
TH-232	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
U-235	CURIES	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
TOTAL FOR PERIOD		CURIES	0.00E-01	0.00E-01	2.30E 00	1.30E 00

*** REGULATORY GUIDE 1.21 REPORT ***

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT (1991)

SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

ARKANSAS NUCLEAR ONE

ROUTE 3 BOX 137G

RUSSELLVILLE, AR 72801

JANUARY 1, 1991 THROUGH JUNE 1, 1991

A. SOLID WASTE SHIPPED OFFSITE FOR BURIAL OR DISPOSAL (Not irradiated fuel)

1. Type of waste	Unit	6-month Period	Est. Total Error, %
a. Spent resins, filter sludges, evaporator bottoms, etc.	m ³ Ci	0.00E-00 0.00E-00	0.00E-00
b. Dry compressible waste, contaminated equip, etc.	m ³ Ci	4.17E+01 7.81E+00	7.58E-01
c. Irradiated components, control rods, etc.	m ³ Ci	0.00E-00 0.00E-00	0.00E-00
d. Other (describe)	m ³ Ci	0.00E-00 0.00E-00	0.00E-00

2. Estimate of major nuclide composition (by type of waste)

a. _____	%	. E
----------	---	-----

b. CS 137

FE 55	32.9 %	2.57E+00
CO 58	19.6 %	1.53E+00
NI 63	15.9 %	1.24E+00
CS 134	12.0 %	9.38E-01
CO 60	9.50 %	7.41E-01
C 14	6.90 %	5.39E-01
MN 54	2.80 %	2.15E-01
NB 95	0.10 %	9.39E-03
ZR 95	0.09 %	7.17E-03
	0.07 %	5.85E-03

c.

%	. E
---	-----

d.

%	. E
---	-----

3. Solid Waste Disposition

<u>Number of Shipments</u>	<u>Mode of Transportation</u>	<u>Destination</u>
9	Unshielded Van/Truck	Oak Ridge, TN
1	Unshielded Van/Truck	Warpum, PA

B. IRRADIATED FUEL SHIPMENTS (Dispositon)

<u>Number of Shipments</u>	<u>Mode of Transportation</u>	<u>Destination</u>
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ATTACHMENT P

UNPLANNED RELEASES TO
UNRESTRICTED AREAS

Arkansas Nuclear One, Unit 1

- UNPLANNED RELEASE NUMBER 1

On May 21, 1991, Arkansas Nuclear One, Unit 1 (ANO-1) tripped, resulting in an unplanned steam release. A total volume of 1.176×10^7 cubic feet of steam was released to the atmosphere. A critical organ dose of 8.32×10^{-2} mrem resulted from the release. This represents 0.55% of the annual limit. The total curies released was 8.86×10^{-3} .

Arkansas Nuclear One, Unit 2

- UNPLANNED RELEASE NUMBER 1

On February 1, 1991, Arkansas Nuclear One, Unit 2 (ANO-2) tripped, resulting in an unplanned steam release. A total volume of 11762 cubic feet of steam was released. The total curie content of the release was 7.27×10^{-3} curies. The critical organ dose was 4.511×10^{-6} mrem which is $3.0 \times 10^{-5}\%$ of the annual limit.

- UNPLANNED RELEASE NUMBER 2

On February 26, 1991, during a refueling outage, the ANO-2 containment exhaust was isolated. This caused a loss of vacuum in the containment building allowing air flow through the equipment hatch (CA-3). This resulted in an unplanned release. The total volume of the release was 1.238×10^6 cubic feet with a total curie content of 0.7 curies. The critical organ dose for the release was 1.6199×10^{-6} mrem which is $1.08 \times 10^{-5}\%$ of the annual limit.

- UNPLANNED RELEASE NUMBER 3

On March 11, 1991, the ANO-2 containment vent sampling apparatus was found to be without a charcoal and particulate filter. This resulted in an unmonitored release from the containment vent. Upon discovery of this event, a charcoal and particulate filter was put into service. The samples taken from this pathway for the week of March 5 through March 12, 1991, were analyzed and used to calculate the doses for the unmonitored period. The total curies for the release during the specified week was 0.149 curies. The critical organ dose was 4.73×10^{-4} mrem which represents $3.15 \times 10^{-3}\%$ of the annual limit.

ATTACHMENT C

CHANGES TO THE OFFSITE DOSE
CALCULATIONAL MANUAL AND
PROCESS CONTROL PROGRAM

No changes were made to the Offsite Dose Computational Manual (ODCM) during the first six months of 1991.

The Process Control Program was revised to list Entergy Operations in the general policy statement and to list the Manager, Radiation Protection / Radwaste in Section VII.F.3. The revision was approved on June 12, 1991. The revised program is attached for your information.

Safety Related

Emergency
Operations

ENERGY OPERATIONS INCORPORATED ARKANSAS NUCLEAR ONE

TITLE: SOLID RW MANAGEMENT PROCESS
CONTROL PROGRAM FOR ANO UNITS 1 & 2

PROC/WORK PLAN
NO. 1012.003

REV.
2

EXP.
DATE
N/A

SAFETY-RELATED
YES ☒ NO ☐

Controlled Copy #59

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ARKANSAS NUCLEAR ONE

PROC./WORK PLAN NO.

1012 003

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SOLID RW MANAGEMENT PROCESS

ADMIN

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1.0 PURPOSE

The purpose of this procedure is to delineate the Solid Radioactive Waste Management Process Control Program for Arkansas Nuclear One Units 1 and 2.

2.0 SCOPE

- 2.1 The scope of this procedure is to describe the policies to be followed for the safe handling and disposal of solid radioactive waste.
- 2.2 This procedure contains requirements for assessing conformance with the Unit's 1 & 2 Technical Specifications Limiting Conditions for Operations (LCO).
- 2.3 This procedure satisfies the requirements of the following Technical Specification surveillances: Unit 1 - 4.29.4 and Unit 2 - 4.11.4.

3.0 REFERENCES

3.1 References used in developing this procedure:

- 3.1.1 Title 10 of the Code of Federal Regulations
- 3.1.2 NUREG-0472 and 0473
- 3.1.3 Units 1 Technical Specifications - 3.25.4, 4.29.4, 6.5.2.7.J and 6.5.2.8.J.
- 3.1.4 Unit 2 Technical Specification - 3/4.11.4.

3.2 References used to implement this procedure:

- 3.2.1 1603 series procedures, "Radioactive Waste Control"

3.3 Related ANO procedures:

None

3.4 Regulatory correspondence containing NRC commitments which are implemented in this procedure include:

None

4.0 DEFINITIONS

None



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5.0 RESPONSIBILITIES

- 5.1 The Manager of Radiation Protection/Radwaste has overall responsibility for Solid Radioactive Waste activities.
- 5.2 The Manager of Radiation Protection/Radwaste is responsible for the implementation of this procedure.
- 5.3 The Manager of Radiation Protection/Radwaste is responsible for developing procedures to implement the requirements of this procedure.

6.0 INSTRUCTIONS

- 6.1 Procedures shall be developed, approved and implemented covering the activities and requirements of 1012.003, Attachment A, "Process Control Program."

7.0 ATTACHMENTS AND FORMS

7.1 ATTACHMENTS

- 7.1.1 Attachments A, "Process Control Program"

7.2 FORMS

- 7.2.1 None

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ATTACHMENT A

PROCESS CONTROL PROGRAM

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GENERAL POLICY STATEMENT

Entergy Operations' policy on Solid Radioactive Waste is to conscientiously apply emphasis and attention to those activities involved in the Solid Radioactive Waste Management program at Arkansas Nuclear One to maintain a high level of assurance that radioactive waste products are properly processed, packaged, and shipped in such a manner as to meet or exceed applicable federal and state regulations and Radioactive Waste Burial Site License Criteria.

I. PURPOSE

The purpose of the Process Control Program (PCP) is to define the necessary program guidance used at Arkansas Nuclear One to ensure that Solid Radioactive Waste Management activities result in solid waste products meeting the criteria contained in the Code of Federal Regulations, State Regulations and Radioactive Waste Burial Site License Criteria for Solid Radioactive Waste shipment and disposal.

II. WET WASTE

A. Liquid Wet Waste

Liquid wet wastes at Arkansas Nuclear One are processed by the Radioactive Waste Management program to a condition meeting shipping and disposal criteria on Free Standing Water (FSW). Specific instructions on processing and required FSW limits are contained in plant approved procedures and/or qualified vendor procedures approved by Arkansas Nuclear One.

B. Containers, Shipping Casks and Packaging

Solid Radioactive Waste is processed, packaged, and shipped in accordance with Arkansas Nuclear One approved procedures and/or qualified vendor procedures which have been approved by Arkansas Nuclear One. These procedures provide specific instructions which ensure the containers, shipping casks and packaging methods comply with applicable Code of Federal Regulations, State Regulations and Radioactive Waste Burial Site Criteria.

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C. Shipping and Disposal

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Solid Radioactive Waste is prepared, loaded and shipped to a Federal and/or State Licensed Radioactive Waste Disposal Facility (Burial Site) in accordance with Arkansas Nuclear One approved procedures and/or qualified vendor procedures which have been approved by Arkansas Nuclear One. These procedures provide specific instructions which ensure the shipments meet the intended Burial Site License Requirements as well as applicable federal and state regulations.

D. Laboratory Mixing of Samples

Qualified vendor procedures approved by Arkansas Nuclear One provide written instructions on sample processing and handling to determine process parameters prior to actual solidification. Included in these procedures is a description of the laboratory mixing method used for these samples.

E. Solidification Process

Qualified vendors utilized by Arkansas Nuclear One for radioactive waste solidification are required to provide a Process Control Program and written procedures approved by the vendor and subsequently approved by Arkansas Nuclear One prior to use. Included in these documents are:

1. A description of the Solidification Process
2. Type of Solidification agent used
3. Process control parameters
4. Parameter boundary conditions
5. Proper waste form properties
6. Specific instructions to ensure the systems are operated within established process parameters

F. Sampling Program for Solidification

Vendors utilized by Arkansas Nuclear One for radioactive waste solidification are required to include in their approved procedures requirements to sample at least every tenth batch to ensure solidification and to provide actions to be taken if a sample fails to verify solidification. These procedures are approved by Arkansas Nuclear One prior to use.

G. Free Standing Water (FSW)

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Vendors utilized by Arkansas Nuclear One to process wet wastes are required to include in their approved procedures provisions to verify that the FSW Criteria in federal and state regulations and Burial Site License Criteria are met for the specific type of waste being processed. These procedures are approved by Arkansas Nuclear One prior to use.



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H. Corrective Actions for Free Standing Water (FSW)

Vendors utilized by Arkansas Nuclear One to process wet wastes are required to include in their approved procedures provisions for correcting processed waste in which free standing water in excess of FSW Criteria is detected. These procedures are approved by Arkansas Nuclear One prior to use.

I. Exothermic Processes

Vendors utilized by Arkansas Nuclear One for radioactive waste solidification are required to include in their approved procedures specific process control parameters for exothermic solidification methods that must be met before capping the container. These procedures are approved by Arkansas Nuclear One prior to use.

III. OILY WASTE

- A. Oily wastes at Arkansas Nuclear One are processed in accordance with approved plant procedures. These plant procedures specify the proper methods to treat oily waste to comply with the criteria in the Code of Federal Regulations, State Regulations and applicable Burial Site License Requirements.

IV. SKETCHES AND DRAWINGS

Arkansas Nuclear One utilizes vendors for wet waste processing. Vendors are required by Arkansas Nuclear One to provide Topical Reports or equivalent documents sufficient to allow the necessary approvals of their process to the Nuclear Regulatory Commission and Arkansas Nuclear One prior to use of their processing system at Arkansas Nuclear One. Sketches and drawings of the processing systems currently used at Arkansas Nuclear One are contained in Topical Reports previously submitted to the Nuclear Regulatory Commission.

V. SPECIAL CASES

Based on previous industry experience, Arkansas Nuclear One foresees the potential for situations arising that may be beyond existing plant capabilities. Anticipating this possibility, provisions are made herein to accommodate such situations in a timely manner by using special techniques or processes. These special cases would be controlled as follows:

- A. Implementing procedures would be developed comparable to those used for normal plant solid waste activities based on the guidance of this PCP and incorporating the applicable provisions for process control and testing.



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- B. The implementing procedures would be subjected to reviews by the Plant Safety Committee (PSC).
- C. A recommendation would be made to the Arkansas Nuclear One Manager of Radiation Protection/Radwaste for approval of the work to be performed by the procedure and his approval granted.
- D. Use of this provision and supporting information included in the next Solid Radioactive Waste report described in Section VIID.

VI. ALARA

FOR INFORMATION ONLY

Solid Radioactive Waste Management activities at Arkansas Nuclear One are conducted in accordance with the plant ALARA Manual and ALARA implementing procedures.

VII. ADMINISTRATIVE CONTROLS

A. Responsibilities

The Arkansas Nuclear One Manager of Radiation Protection/Radwaste has overall responsibility for Solid Radioactive Waste activities at Arkansas Nuclear One. The specific plant personnel responsible for the various activities involved in processing, packaging and shipment of radioactive waste material are identified by job functions in plant administrative procedures.

B. Quality Assurance

Reviews of Solid Radioactive Waste activities at Arkansas Nuclear One are performed at least once per 24 months by Arkansas Nuclear One Quality Assurance. The results of these reviews are evaluated by Arkansas Nuclear One and Entergy Operations management.

C. Records

Solid Radioactive Waste shipment records are developed, reviewed and filed in accordance with Arkansas Nuclear One station procedures. Specific retention periods for these records are addressed in the plant administrative procedures.



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D. Reports

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Information on Arkansas Nuclear One Solid Radioactive Waste shipped offsite is reported semi-annually to the Nuclear Regulatory Commission. Information reported includes:

1. Container volume
2. Total curie quantity and method of determination (measurement or estimate)
3. Principal radionuclides and method of determination (measurement or estimate)
4. Type of waste (e.g. spent resin, DAW, etc.)
5. Type of container (e.g. LSA, Type A, Type B, Large Quantity)
6. Solidification agent (e.g. cement, envirostone)
7. Supporting documentation of changes to the Process Control Program, and special cases.

E. Procedures

Procedures are written, approved, and implemented covering the activities and requirements addressed in this Process Control Program.

F. Changes to the Process Control Program

Changes to the Process Control Program are made as follows:

1. The change is properly described in the proposed revision and submitted to the Arkansas Nuclear One Plant Safety Committee (PSC) and Safety Review Committee (SRC) for review. Sufficient information is provided with the proposed revision to support the rationale for the change.
2. Upon completion of the review, if the PSC and SRC determines that the change does not reduce the overall conformance of the Solid Radioactive Waste program to existing criteria for solid waste, the PSC and SRC documents that the change has been reviewed and recommends approval.
3. The change becomes effective upon approval by the Arkansas Nuclear One Manager of Radiation Protection/Radwaste.
4. The change to the Process Control Program and the supporting documentation are included in the next Solid Radioactive Waste report to the Nuclear Regulatory Commission described in Section VIID above.

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