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PREPARED FOR THE
UNITED STATES DEPARTMENT OF ENERGY
UNDER CONTRACT NUMBER EY-76-C-06-1857

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UNITED NUCLEAR INDUSTRIES, INC. REACTOR AND FUELS PRODUCTION FACILITIES 1978 EFFLUENT RELEASE REPORT

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BM-5000-305 (3-78)

UNITED NUCLEAR INDUSTRIES, INC.
REACTOR AND FUELS PRODUCTION FACILITIES
1978 EFFLUENT RELEASE REPORT

Compiled by: Eric M. Greager
E. M. Greager, Environmental Engineer

Approved by: J. J. Dorian
J. J. Dorian, Manager
Environmental Control Subsection

PURPOSE

This document has been prepared to fulfill the annual reporting requirements of MC 0513, "Effluent and Environmental Monitoring and Reporting", and DUN-M-31, "Environmental Control Manual".

All signficant discharges to the environs from UNI facilities for CY 1978 are reported in this document.

SUMMARY

An evaluation of radioactive effluent discharges from N Reactor during CY 1978 has been completed. Discharges were calculated from the results of gamma analyses of samples taken from liquid and airborne effluent streams using the Environmental Release Report computer program.

Graphical representation of cumulative effluent discharges are compared to the 1977 cumulative discharge in Figures 1 through 5. The "indicator" radionuclides chosen for the graphs represent the following releases:

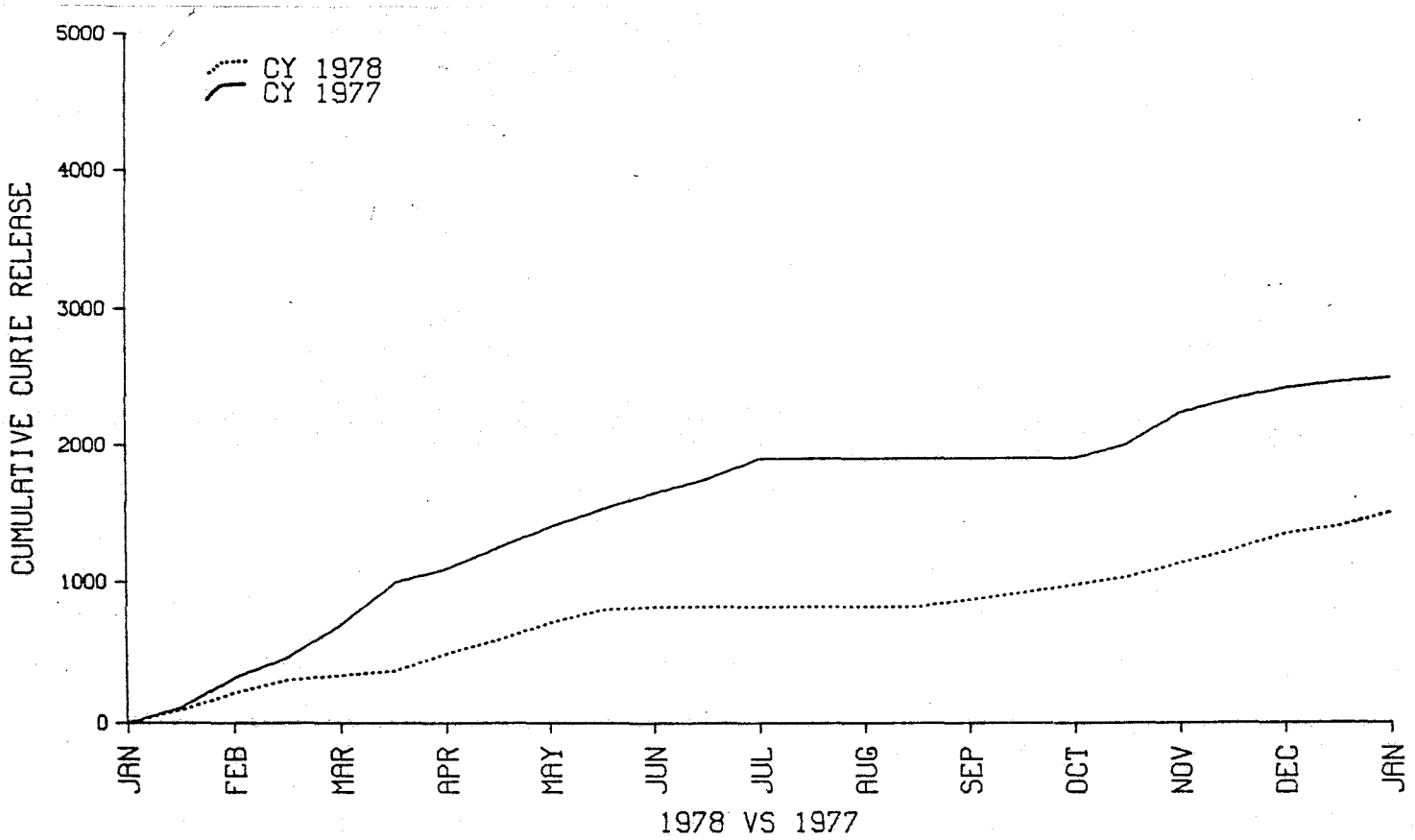
Ar-41 - Activation product in airborne release
Xe-135 - Fission product in airborne release
I-131 - Fission product to onsite ground disposal facility
I-131 - Anionic radionuclide discharge at river springs
Fe-59 - Corrosion product discharge to ground disposal facility

Results of an effluent sampling program for the period January 1 - December 31, 1978, indicated that:

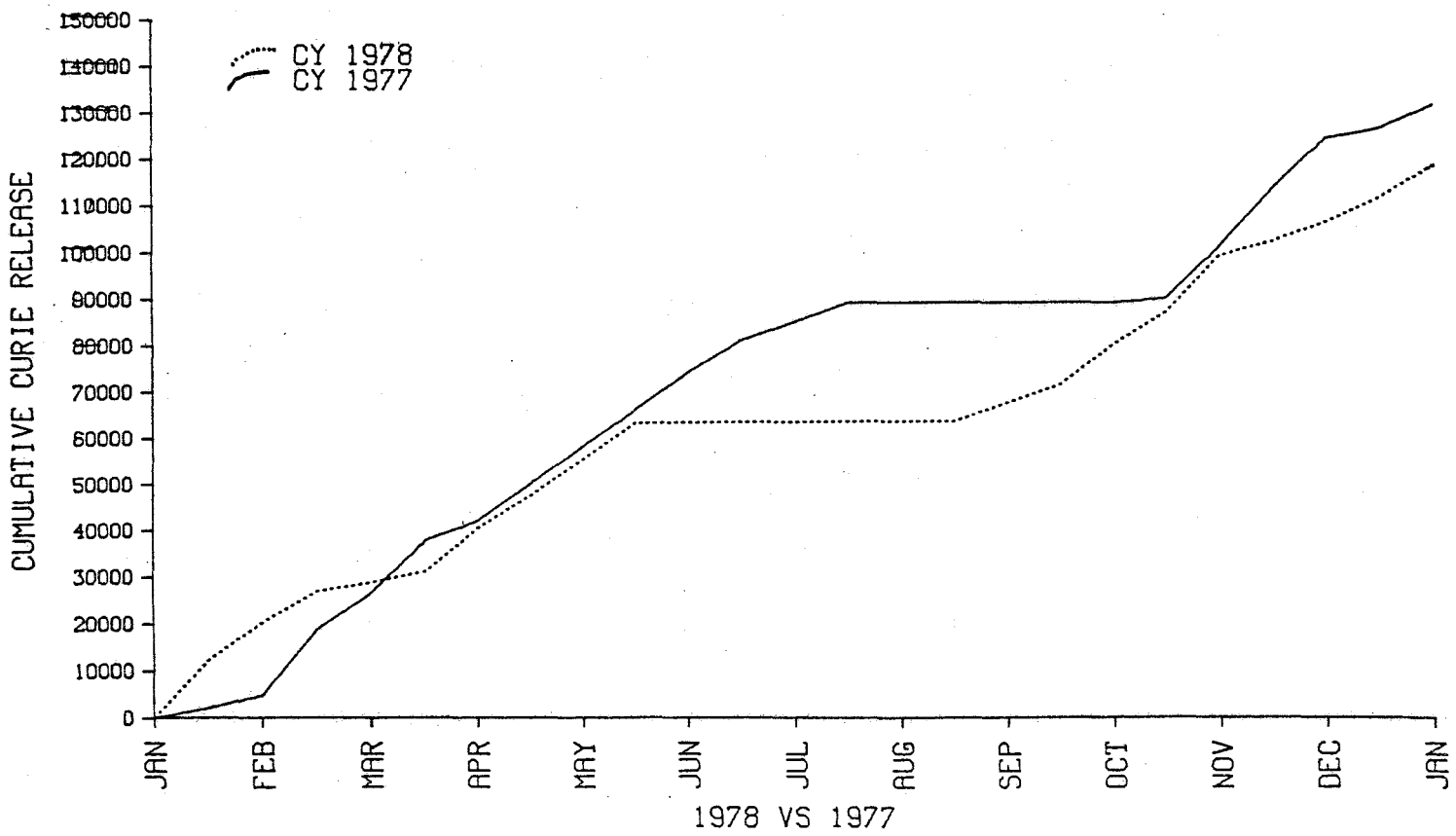
- No technical specification limit has been, or is in danger of being exceeded.
- All radionuclide releases are consistent with the release levels observed during recent years.
- The sharp increase in Iodine-131 released to the crib and river springs exhibited by the graphs represents the effects of the January 5 fuel failure. Argon-41 releases did not exceed the levels of CY 1977. Xenon-135 releases declined for the second consecutive year. The release of corrosion products such as Fe-59 were up to levels observed during CY 1976.

UNI-1261

XENON RELEASES (116-N STACK)



ARGON RELEASE (116-N STACK)



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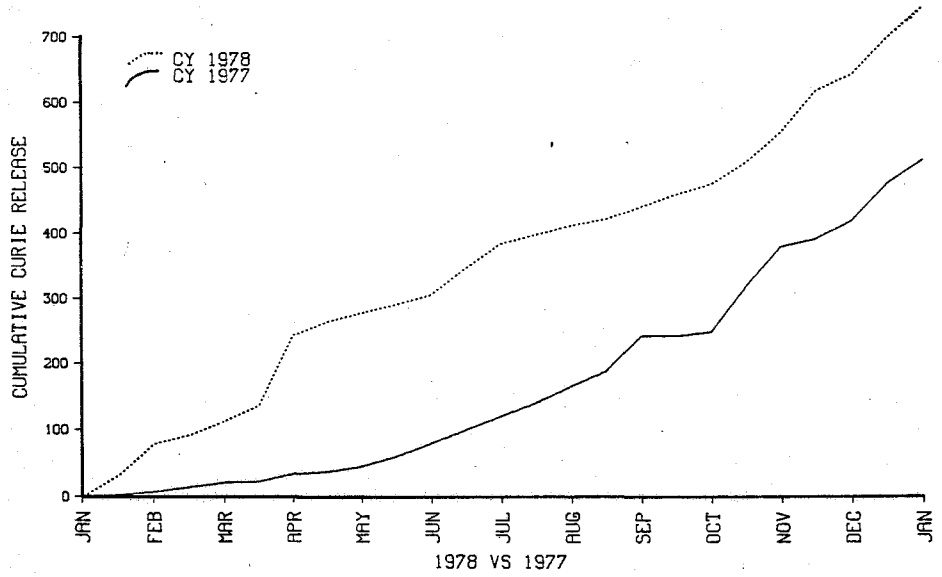
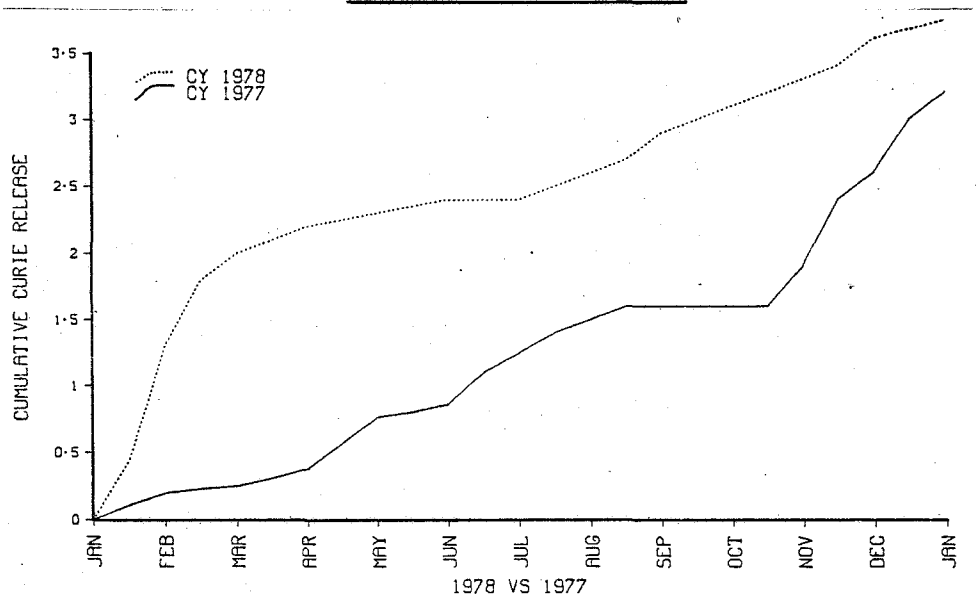
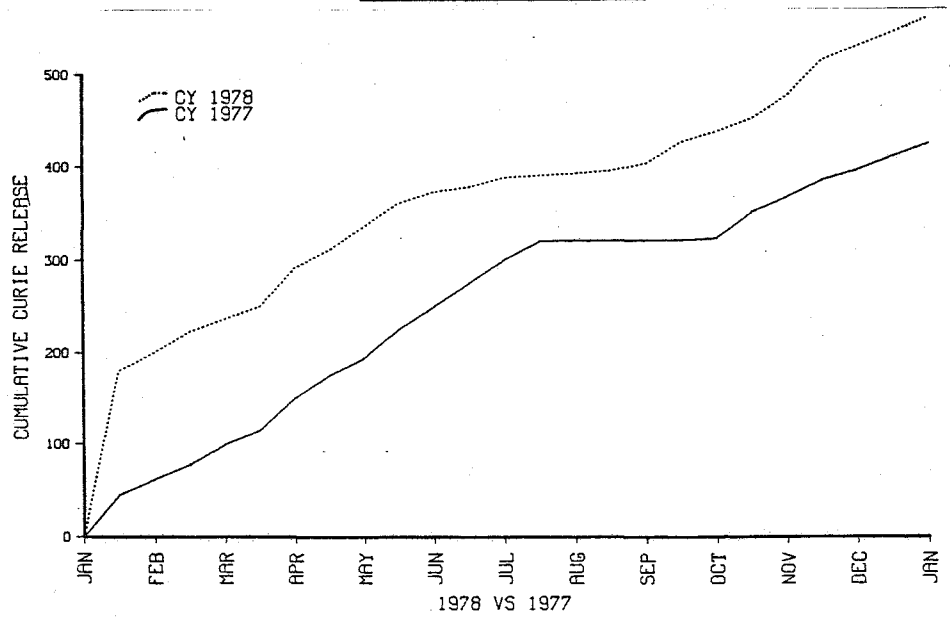
FE-59 TO THE CRIB



I-131 TO THE SPRINGS



I-131 TO THE CRIB



UNITED NUCLEAR INDUSTRIES, INC.
REACTOR AND FUELS PRODUCTION FACILITIES
1978 EFFLUENT RELEASE REPORT

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1.0 ATMOSPHERIC ENVIRONMENTAL RELEASES FROM THE 100 AREAS

1.1 Activity Discharged

1.1.1 Activity Discharged From 116-N Stack, 109-N Zone I Vent, and 109-N Cell No. 6 Vent

Radionuclides, Gases	116-N STACK			109-N ZONE I VENT			109-N CELL #6 VENT		
	Ave. Conc. pCi/ℓ	Peak Conc. pCi/ℓ	Release, Ci	Ave. Conc. pCi/ℓ	Peak Conc. pCi/ℓ	Release, Ci	Ave. Conc. pCi/ℓ	Peak Conc. pCi/ℓ	Release, Ci
H-3	1.1E1	6.0E1	3.2E1	1.0E-1	7.4E-1	1.9E-1	8.8E-2	1.0E0	3.7E-2
Ar-41	4.0E4	1.2E5	1.2E5	1.3E2	8.5E2	2.3E2	9.7E2	2.3E4	4.1E2
Kr-85m	1.3E2	3.4E2	3.9E2	7.6E1	3.1E2	1.4E2	3..9E1	4.1E2	1.6E1
KR-87	4.4E2	1.2E3	1.3E3	1.8E2	7.6E2	3.2E2	1.1E2	1.0E3	4.4E1
KrRb-88	3.1E2	8.1E2	9.0E2	1.7E2	7.8E2	3.2E2	9.5E1	9.4E2	4.0E1
I-129*	2.4E-8	---	8.1E-8	4.6E-8	---	1.0E-7	1.2E-8	---	2.6E-8
I-131	4.0E-2	3.7E-1	1.2E-1	1.5E-1	1.2E0	2.8E-1	1.7E-1	7.6E-1	7.3E-2
I-132	3.7E-1	1.0E0	1.1E0	2.0E0	8.0E0	3.7E0	3.3E0	1.8E1	1.4E0
I-133	1.6E-1	5.4E-1	4.6E-1	1.1E0	4.6E0	2.0E0	1.4E0	8.5E0	6.0E-1
I-135	3.7E-1	9.4E-1	1.1E0	1.8E0	7.0E0	3.3E0	4.1E0	1.3E1	1.7E0
Xe-133	2.4E1	1.4E2	7.0E1	1.4E1	7.7E1	2.6E1	1.1E1	5.7E1	4.5E0
Xe-135	5.0E2	1.3E3	1.5E3	3.7E2	1.4E3	6.6E2	2.1E2	1.6E3	8.8E1
Cs-138	1.4E3	4.3E3	4.2E3	5.1E2	4.0E3	9.3E2	4.3E2	4.0E3	1.8E2
Particulates									
Na-24	ND	ND	ND	7.3E-2	2.1E-1	1.3E-1	1.5E-1	5.0E0	6.2E-2
Cr-51	ND	ND	ND	2.0E-2	4.2E-2	3.7E-2	2.3E-2	1.0E-1	9.6E-3
Mn-54	8.6E-4	1.1E-3	2.5E-3	6.0E-3	3.0E-2	1.1E-2	1.6E-2	5.2E-2	6.8E-3
Mn-56	3.8E-2	7.9E-2	1.1E-1	1.2E0	4.1E0	2.1E0	3.6E0	1.5E1	1.5E0
Fe-59	2.0E-3	1.5E-2	5.8E-3	5.7E-3	2.6E-2	1.0E-2	1.7E-2	1.3E-1	6.9E-3
Co-58	4.7E-3	1.6E-2	1.4E-2	1.5E-3	3.3E-3	2.7E-3	6.4E-3	1.6E-2	2.7E-3
Co-60	2.1E-3	3.6E-3	6.1E-3	1.1E-2	5.5E-2	2.0E-2	2.9E-2	1.8E-1	1.2E-2
Zn-65	2.5E-3	2.5E-3	7.3E-3	1.4E-3	1.8E-3	2.5E-3	4.2E-3	1.1E-2	1.8E-3
As-76	1.3E0	1.1E1	4.0E0	1.5E0	9.2E0	2.6E0	1.0E-1	4.5E-1	4.3E-2
Sr-89	1.6E-4	2.8E-4	4.9E-4	8.7E-3	1.6E-2	1.6E-2	1.3E-2	2.5E-2	5.2E-3
Sr-90	2.0E-5	4.0E-5	5.8E-5	2.7E-4	6.2E-4	5.0E-4	3.9E-4	8.7E-4	1.6E-4
Sr-91	2.8E-4	2.8E-4	8.3E-4	2.6E-1	5.0E-1	4.6E-1	1.2E0	1.0E2	4.8E-1
ZrNb-95	7.8E-4	7.1E-3	2.3E-3	4.0E-3	3.2E-2	7.2E-3	1.3E-2	9.1E-2	5.5E-3
ZrNb-97	ND	ND	ND	ND	ND	ND	2.6E-2	1.5E-1	1.1E-2
MoTc-99m	2.8E-3	1.3E-2	1.2E-2	4.5E-1	2.0E0	8.1E-1	4.2E-1	1.8E0	1.7E-1

ND = Not Detected
* Based on single sample during DY 1977

Parti-culates (cont.)	116-N STACK			109-N ZONE I VENT			109-N CELL #6 VENT		
	Ave. Conc. pCi/ℓ	Peak Conc. pCi/ℓ	Release, Ci	Ave. Conc. pCi/ℓ	Peak Conc. pCi/ℓ	Release, Ci	Ave. Conc. pCi/ℓ	Peak Conc. pCi/ℓ	Release, Ci
Ru-103	2.5E-3	1.7E-2		3.8E-3	1.5E-2	6.8E-3	7.1E-3	4.6E-2	3.0E-3
Ru-106	ND	ND	ND	2.6E-2	2.6E-2	4.6E-2	3.3E-2	5.5E-2	1.4E-2
Sb-122	ND	ND	ND	1.9E-3	1.9E-3	3.4E-3	4.8E-3	1.3E-2	2.0E-3
Sb-124	ND	ND	ND	1.2E-3	2.8E-3	2.1E-3	2.0E-3	6.0E-3	8.4E-4
Sb-125	ND	ND	ND	1.7E-4	2.9E-4	3.0E-4	ND	ND	ND
Te-132	7.3E-4	7.3E-4	2.2E-3	9.3E-3	5.0E-2	1.7E-2	1.4E-2	3.3E-1	5.9E-3
Cs-137	3.2E-4	5.0E-4	9.4E-4	6.1E-4	5.1E-3	1.1E-3	6.8E-4	1.8E-3	2.9E-4
BaLa-140	1.2E-2	4.7E-2	3.6E-2	6.2E-1	5.5E0	9.7E-1	3.3E-1	2.2E0	1.4E-1
Ce-141	4.9E-4	1.2E-3	1.4E-3	2.1E-3	3.5E-2	3.7E-3	5.3E-3	1.2E-1	2.2E-3
CePr-144	5.1E-3	1.7E-2	1.5E-2	1.8E-2	7.4E-2	3.3E-2	2.0E-2	1.2E-1	8.5E-3
Nd-147	ND	ND	ND	4.1E-2	1.5E-1	7.4E-2	8.5E-3	4.8E-2	3.5E-3
SM-153	ND	ND	ND	9.2E-3	8.1E-2	1.7E-2	2.8E-2	1.2E0	1.2E-2
Eu-154	6.5E-3	1.2E-1	1.9E-2	6.9E-3	1.2E-2	1.2E-2	ND	ND	ND
Eu-155	1.8E-2	1.1E-1	5.2E-2	8.5E-3	1.2E-2	1.5E-2	8.0E-3	2.0E-2	3.4E-3
W-187	ND	ND	ND	1.7E-1	2.1E0	3.1E-1	7.2E-2	4.4E-1	3.0E-2
Pu-238	5.4E-8	6.5E-8	1.6E-7	7.6E-8	1.3E-7	1.4E-7	1.6E-7	2.5E-7	6.7E-8
Pu 239/240	1.1E-7	1.4E-7	3.2E-7	6.8E-7	1.1E-6	1.2E-6	1.6E-6	2.3E-6	6.7E-7
Np-239	2.3-E	3.8E-3	6.7E-3	ND	ND	ND	2.0E-2	5.9E-2	8.3E-3

ND = Not Detected

1.1.2 Miscellaneous Airborne Discharges

Radionu-clides, Gases	ZONE II	ZONE III		Transfer Area	105-N Dummy Spacer Decon Fac	105-N 14' Decon Fac	Sum Total, Ci
	EF 7 & 8	EF 10	EF 14 & 15				
I-131	6.36E-5	1.56E-3	ND	3.61E-4	4.83E-6	ND	1.99E-3
I-133	3.47E-4	1.52E-2	ND	3.07E-3	5.39E-5	ND	1.87E-2
As-76	4.78E-4	6.02E-3	ND	ND	ND	ND	6.50E-3
Parti-culates							
Co-60	1.23E-4	ND	ND	3.14E-4	ND	8.01E-3	8.45E-3
Mn-54	ND	ND	ND	7.33E-6	6.84E-3	ND	6.85E-3
MoTcm-99	2.40E-4	1.97E-3	1.66E-4	ND	ND	ND	2.38E-3
Ba-140	ND	6.83E-4	ND	ND	ND		6.83E-4
Nb-95	ND	ND	ND	1.82E-5	ND	ND	1.82E-5

ND = Not Detected
EF = Exhaust Fan

1.1.3 100-K Airborne Discharges

105-KE

Radionuclides	Ave. Conc. pCi/ℓ	Release, Ci
Mn-54	4.5E-4	1.8E-4
Co-60	5.5E-4	2.2E-4
Ru-106	1.7E-2	6.8E-3
Cs-134	8.9E-4	3.6E-4
Cs-137	2.4E-3	9.6E-4
Ce-144	1.5E-3	6.0E-4

1706-KEL

Radionuclides	Ave. Conc. pCi/ℓ	Release, Ci
Sr-90	3.8E-5	4.1E-6
Pu 239/240	1.7E-6	1.2E-7

1.1.4 Flow Rates

116-N Stack - 220,000 cfm

105-KE Vents - 27,000 cfm

1706-KEL Vents - 20,000 cfm

1.2 Chemicals Discharged to the Atmosphere

The following table lists the airborne emissions at 100-N Area due to the combustion of No. 6 Fuel Oil and No. 2 Diesel Oil. The weights of listed materials discharged as a result of fuel burning were calculated using the factors published by the Environmental Protection Agency in 1973 in "Compilation of Air Pollutant Emission Factors".

1.2.1 Airborne Emissions From Oil Combustion

Material	Emissions From				Total Emissions	
	No. 6 Oil		No. 2 Oil			
	lbs	Kg	lbs	Kg	lbs	Kg
Particulate	92,000	48,000	7,400	3,400	99,400	51,400
Sulfur Dioxide	1,070,000	480,000	32,000	15,000	1,102,000	495,000
Sulfur Trioxide	14,000	6,400	460	210	14,460	6,610
Carbon Monoxide	16,000	7,300	2,000	900	18,000	8,200
Hydrocarbons	12,000	5,400	1,500	680	13,500	6,080
Nitrogen Oxides	320,000	150,000	40,000	18,000	360,000	168,000
Aldehydes	4,000	1,800	1,000	450	5,000	2,250

1.2.2 Flow Rates

184-N Powerhouse - 10^{10} ft^3/year

Flow rate of the 184-N powerhouse was estimated using the factors published by the Hanford Environmental Health Foundation, in August, 1975, in "Particulate and Sulfur-Dioxide Emissions from the Foster Wheeler Boiler, 184-N Powerhouse". The flow rate should be considered as an estimate since there is no instrumentation on the boilers to measure flow rate and the steam loading on the boilers vary greatly throughout the year.

2.0 LIQUID ENVIRONMENTAL RELEASES FROM THE 100 AREAS

2.1 Radioactive Materials Dischargfed to the 1301-N Ground Disposal Crib and the Columbia River

2.1.1 Activity Discharged via the Crib and Seepage to the River

Radio-nuclides	TO THE 1301-N CRIB			SEEPAGE TO RIVER VIA SPRINGS		
	Ave. Conc. pCi/ℓ	Peak Conc. pCi/ℓ	Release, Ci	Ave. Conc. pCi/ℓ	Peak Conc. pCi/ℓ	Release, Ci
H-3	6.9E4	2.9E5	3.3E2	5.8E4	1.5E5	3.3E2
P-32	1.2E4	6.6E4	5.6E1	1.3E1	2.1E2	2.9E-2
Cr-51	7.9E4	2.1E5	3.7E2	6.4E1	7.7E1	1.4E-1
Mn-54	1.7E5	2.8E5	8.1E2			**
Fe-59	1.6E5	7.1E5	7.4E2			**
Co-58	1.4E4	3.1E4	6.4E1	7.8E0	8.9E0	1.7E-2
Co-60	2.0E5	5.6E5	9.4E2	1.8E2	3.9E2	4.1E-1
Zn-65	8.3E3	1.3E4	3.9E1			**
Sr-89	1.1E5	1.8E6	5.2E2	1.8E2	4.8E2	4.0E-1
Sr-90	2.5E4	9.6E4	1.2E2	5.9E2	1.5E3	1.3E0
ZrNb-95	1.3E5	1.1E6	1.2E3			**
MoTc-99m	3.3E5	5.6E6	1.6E3	5.9E2	1.4E3	1.3E0
Ru-103	6.3E4	5.6E5	3.0E2	1.4E2	4.3E2	3.1E-1
Ru-106	7.0E4	1.6E5	3.3E2	2.2E2	4.4E2	4.9E-1
Sb-124	1.3E4	1.2E4	6.2E1	2.8E1	8.0E1	6.2E-2
Sb-125	7.6E2	7.5E2	4.1E0	7.7E1	3.1E2	1.7E-1
I-129*	6.7E-3	---	1.4E-5	3.6E-3	---	8.2E-6
I-131	1.2E5	1.0E6	5.6E2	1.7E3	2.7E4	3.8E0
Xe-133	1.1E5	8.3E5	5.2E2	2.6E3	8.3E3	5.7E0
Cs-134	1.4E4	4.6E4	6.7E1			**
Cs-137	7.3E4	2.4E5	3.4E2	7.1E0	1.0E1	1.6E-2
BaLa-140	7.3E5	1.4E7	7.1E3			**
Ce-141	1.0E5	1.2E6	4.9E2			**
CePr-144	1.4E5	5.6E5	6.6E2			**
Eu-154	1.2E4	1.3E4	5.5E1			**
Eu-155	7.3E3	7.3E4	3.4E1			**
Pu-238	5.5E1	1.2E2	2.6E-1	5.7E-2	3.3E-1	1.3E-4
Pu 239/240	2.7E2	5.6E2	1.3E0	1.4E-1	1.3E0	3.0E-4
SLR	9.3E6	5.5E7	4.2E4			***

SLR = Short-lived radionuclides ($T_{1/2} < 48$ hours)
* Based on single sample during CY 1977
** Indicates short half-life radionuclides which have decayed beyond the detection limits before appearing in the river spring water.
*** Indicates radionuclides with a high ionic exchange potential and/or particulate forms which are trapped within the crib soil, therefore removed beyond detection limits.

2.1.2 Activity Discharged to the River Via 102" RWR

Radionuclide	TO COLUMBIA RIVER VIA 102" LINE		
	Ave. Conc. pCi/ℓ	Peak Conc. pCi/ℓ	Release Ci
Mn-54	3.1E-1	4.1E-1	1.8E-1
Mn-56	2.1E0	3.4E1	1.2E0
Fe-59	1.9E-1	4.6E-1	1.1E-1
Co-58	2.6E-2	3..7E-2	1.5E-2
Co-60	9.6E-1	1.2E0	5.5E-1
ZrNb-95	4.4E-1	8.4E-1	2.6E-1
Mo-99	2.2E0	2.1E1	1.3E0
Ru-103	9.5E-2	2.2E-1	5.5E-2
Ru-106	1.4E-1	2.8E-1	8.4E-2
I-129*	4.1E-9	---	2.5E-9
I-131	1.7E0	9.7E0	9.6E-1
I-133	1.7E0	8.2E0	9.5E-1
Cs-137	2.6E-2	7.3E-2	1.5E-2
BaLa-140	7.0E0	2.2E2	4.1E0
Ce-141	6.0E-2	1.4E-1	3.5E-2
Ce-144	2.5E-1	4.5E-1	1.5E-1
Nd-147	2.9E-1	2.9E-1	1.7E-1
Pu 239/240	1.5E-1	5.8E-1	8.5E-2

* Based on single sample during CY 1977

2.1.3 Total Flow

Stream	Total Flow, Gallons
To crib	1.2×10^{9}
To river via 102" RWR	1.5×10^{11}

2.2 Chemicals Consumed in the 100 Areas

Material	Total Consumed From				Total Consumed From All Facilities	
	100-KE		100-N			
	lbs	Kg	lbs	Kg	lbs	Kg
Aluminum Sulfate	26,000	11,800	309,000	141,000	335,000	152,800
Chlorine	4,000	1,800	22,000	10,000	26,000	11,000
Polyacrylamide	450	200	1,500	700	1,950	900
Sulfuric Acid			1,290,000	585,000	1,290,000	585,000
Ammonium Hydroxide			54,000	24,500	54,000	24,500
Hydrazine			14,600	6,600	14,600	6,600
Morpholine			900	400	900	400
Sodium Hydroxide			682,000	309,000	682,000	309,000

2.3 Fate of Chemicals Consumed in the 100 Areas

The chemicals consumed in the 100 Areas are used in several different applications. The following qualitative descriptions indicate the environmental discharges, if any, of each chemical noted in the above table.

2.3.1 Aluminum Sulfate

Aluminum sulfate is used as a flocculant in filtered water production in the 100-N and 100-KE Areas. Most of the sulfate is retained by the filtered water and either discharged to the Columbia River or trapped in the anion resins in the demineralized water plant and discharged to the 163-N/183-N waste disposal ponds when the resins are regenerated. The aluminum is trapped in the filters and is discharged to the 163-N/183-N waste disposal ponds during filter backwash at 100-N Area or settles out in the filtered water plant backwash hold-up basin in the 100-K Area.

2.3.2 Chlorine

Chlorine is used as an algaecide and for producing potable water in the 100-N and 100-KE Areas. After reacting with water, most of the chlorine is transformed to choloride ion and is discharged mainly to the 1301-N crib or the sanitary tile field.

2.3.3 Polyacrylamide

Polyacrylamide (Separan) is used as a filter aid/coagulant in filtered water production in the 100-N and 100-KE Areas. Most of the polyacrylamide is backwashed to the 163-N/183-N waste disposal ponds in 100-N Area or settles out in the filtered water plant backwash hold-up basin in the 100-KE Area.

2.3.4 Sulfuric Acid

Surfuric acid is used to regenerate the cation resins in the demineralized water plant. This chemical is flushed to the 163-N/183-N ground disposal ponds after resin regeneration.

2.3.5 Ammonium Hydroxide

Ammonium hydroxide is used to control the pH of the water in the primary cooling system (PCS) and the graphite and shield cooling system (GSCS). Small quantities of this chemical enter the 1301-N ground disposal crib as a purity bleed is maintained on the PCS and GSCS.

2.3.6 Hydrazine

Hdyrazine is used to control the oxygen concentration in the secondary cooling system (SCS), rod cooling system (RCS), PCS, and GSCS. Small quantities of hydrazine reach the ground disposal crib in the same manner as ammonium hydroxide. Small quantities of hydrazine are discharged from the SCS to the Columbia River via the steam air ejectors and the steam generator blowdown.

2.3.7 Morpholine

Morpholine is used to control the pH of the SCS. Small quantities of morpholine are discharged to the Columbia River in the same way that hydrazine is discharged to the river.

2.3.8 Sodium Hydroxide

Sodium hydroxide is used to regenerate the anion resins in the deminzeralized water plant. This chemical is flushed to the 163-N/183-N ground disposal ponds after resin regeneration.

2.3.9 Miscellaneous Chemicals

Small quantites of other chemicals used in the hot water quality lab at 100-N Area are discharged to the 1301-N ground disposal crib.

3.0 ATMOSPHERIC ENVIRONMENTAL RELEASES FROM THE 300 AREA

3.1 Radioactive Materials Discharged to the Atmosphere

3.1.1 Activity Released

Uranium (333 Building Cutoff Saw Stack) - 33 μCi

3.1.2 Flow Rate

333 Building cutoff saw stack - 2600 cfm

3.2 Chemicals Discharged to the Atmosphere

3.2.1 Quantities Discharged

The NO_x amount was calculated based on the number and model of fuel elements copper stripped and chemical milled and an average NO_x release per fuel element when the NO_x monitor was operating satisfactorily.

The amount of trichloroethylene, perchloroethylene and 1,1,1-trichloroethane is the amount consumed in CY 1978.

Material	Total Pounds	Total Kg	Ave. Conc. ppm
NO_x (333 Building Chemical Processing)	19,600	8,900	16.4
Trichloroethylene	20,460	9,300	
Perchloroethylene	29,750	13,500	
1,1,1-Trichloroethane	2,370	1,080	

3.2.2 Flow Rate

The flow rate was calculated from the Chem Bay stack totalizer (in cubic feet) for 98 days before the Summer outage and for 59 days after the Summer outage.

The 333 Building chemical processing exhaust stack (NO_x) averaged 25,500 cfm (720 cubic meter/min) from January 1 to August 4 and averaged 35,500 cfm (1000 cubic meter/min) from August 28 to December 31, 1978.

4.0 LIQUID ENVIRONEMENTAL RELEASES FROM THE 300 AREA

4.1 Materials Consumed at the 300 Area

Material	Total Consumed Pounds	Total Consumed Kg
Hydrofluoric Acid	24,200	11,000
Nitric Acid	190,000	86,000
Sodium Hydroxide	436,900	198,000
Sulfuric Acid	1,000	450
Trichlorethylene	20,400	9,300
Perchlorethylene	29,750	13,500
1,1,1 Trichloroethane	2,370	1,080

4.2 Calculated Quantities Discharged to the Process Trenches

The discharged quantities are based on the weekly water usage for the 333 and 313 Buildings and the weekly composite process sewer samples minus the average content in the inlet water. The quantities listed in the table below represent the total quantity discharged to the process trenches in CY 1978. The total volume of liquid entering the process sewer from the 333 and 313 Buildings during CY 1978 was 1.180×10^8 gallons (4.468×10^8 liters).

Quantatites of Materials Discharged to the Process Trenches

Material	Pounds	Kg	Ave. Conc. ppm
Nitrate ion	39,200	17,800	39.76
Fluoride ion	960	440	0.98
Copper	370	170	0.37
Uranium	220	100	0.22

5.0 MATERIALS DISCHARGED TO THE 183-H SOLAR EVAPORATION BASIN

The main purpose of the 183-H Solar Evaporation Basin is to dispose of the chemical wastes generated by the UNI Fuels Production Department. The basin is also used to dispose of chemical wastes from other company components and chemical wastes generated by other Hanford Project contractors.

The numbers in the following table represent the total quantities of chemical materials discharged to the 183-H basin for CY 1978. These totals are based on the the analysis of every load going to the basin for copper and uranium and an analysis of monthly composite samples for other materials. The total volume shipped to the 183-H Solar Evaporation Basin during CY 1978 was 150,000 gallons (570,000 liters).

Quantities of Materials Discharged to the 183-H Evaporation Basin

Material	Pounds	Kg
Ammonium ion	250	110
Fluoride ion	9,400	4,300
Nitrate ion	154,400	70,000
Chromium	110	50
Copper	28,400	12,900
Manganese	270	120
Sulfate ion	46,400	21,000
Uranium	340	150

6.0 SANITARY SEWAGE DISCHARGED TO THE GROUND

6.1 100 Area Facilities

The 100 Area sewage flows are calculated by assuming that 50 gallons of sewage are discharged per person per day. The number of people in each area is based on routine personnel assignment locations. Temporary personnel are not included in the tabulation.

	100-B	100-D	100-K	100-N	Total Released
Sanitary sewage (gpd)	0	1500	1500	31,000	34,000

6.2 300 Area Facilities

The 300 Area sanitary sewage system is operated and discharges are reported by the Westinghouse Hanford Company.

7.0 SOLID WASTE DISCHARGED TO THE GROUND

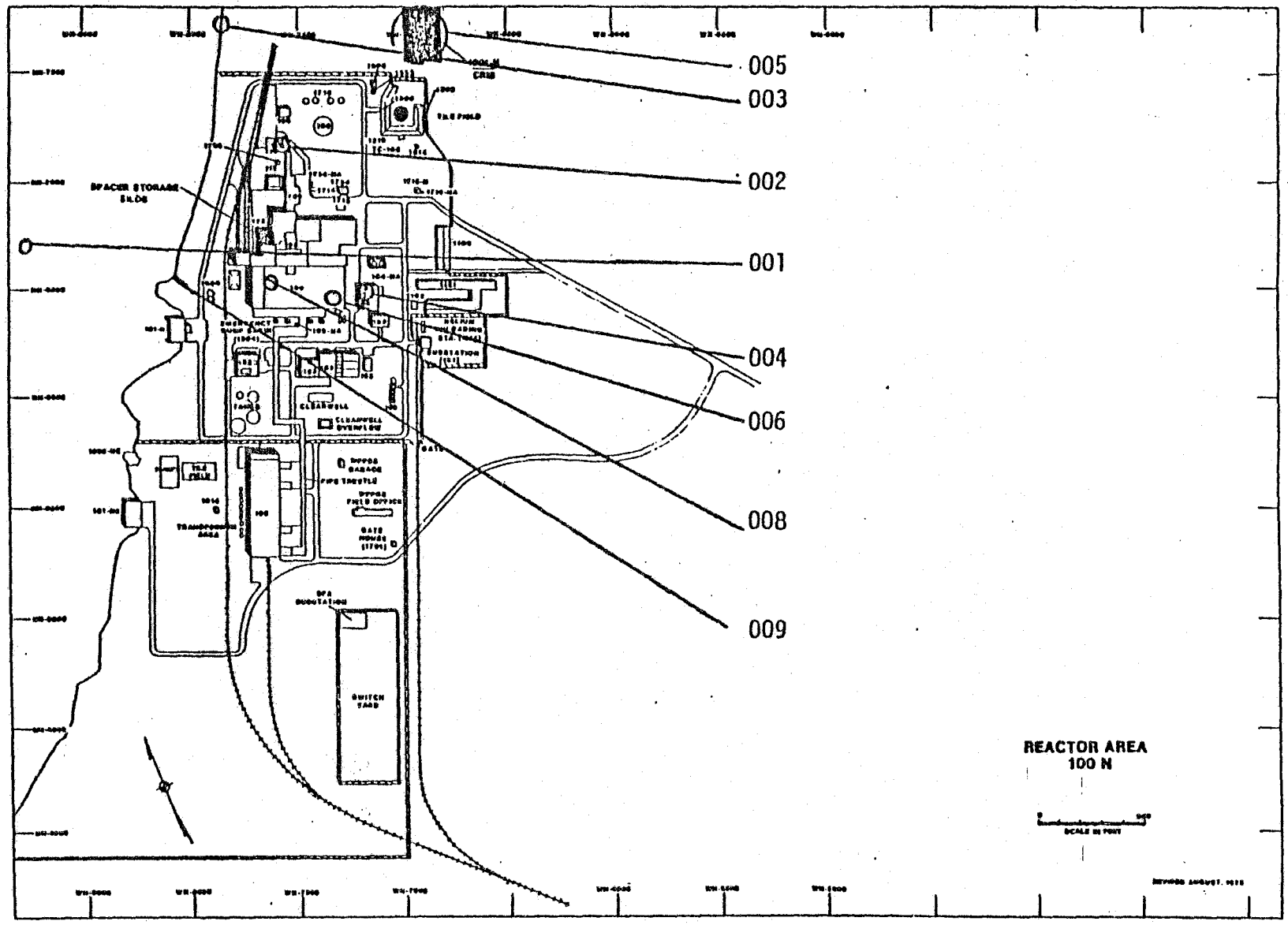
7.1 Radioactive Solid Waste

Radioactive solid wste generated in the 300 Area and 100 Area facilities is buried by Rockwell Hanford Company in the 200 Area waste disposal facilities.

7.2 Nonradioactive Solid Waste

Nonradioactive solid waste generated in the 300 and 100 Areas is compacted (when applicable) and buried by Rockwell Hanford Company in the central landfill facility.

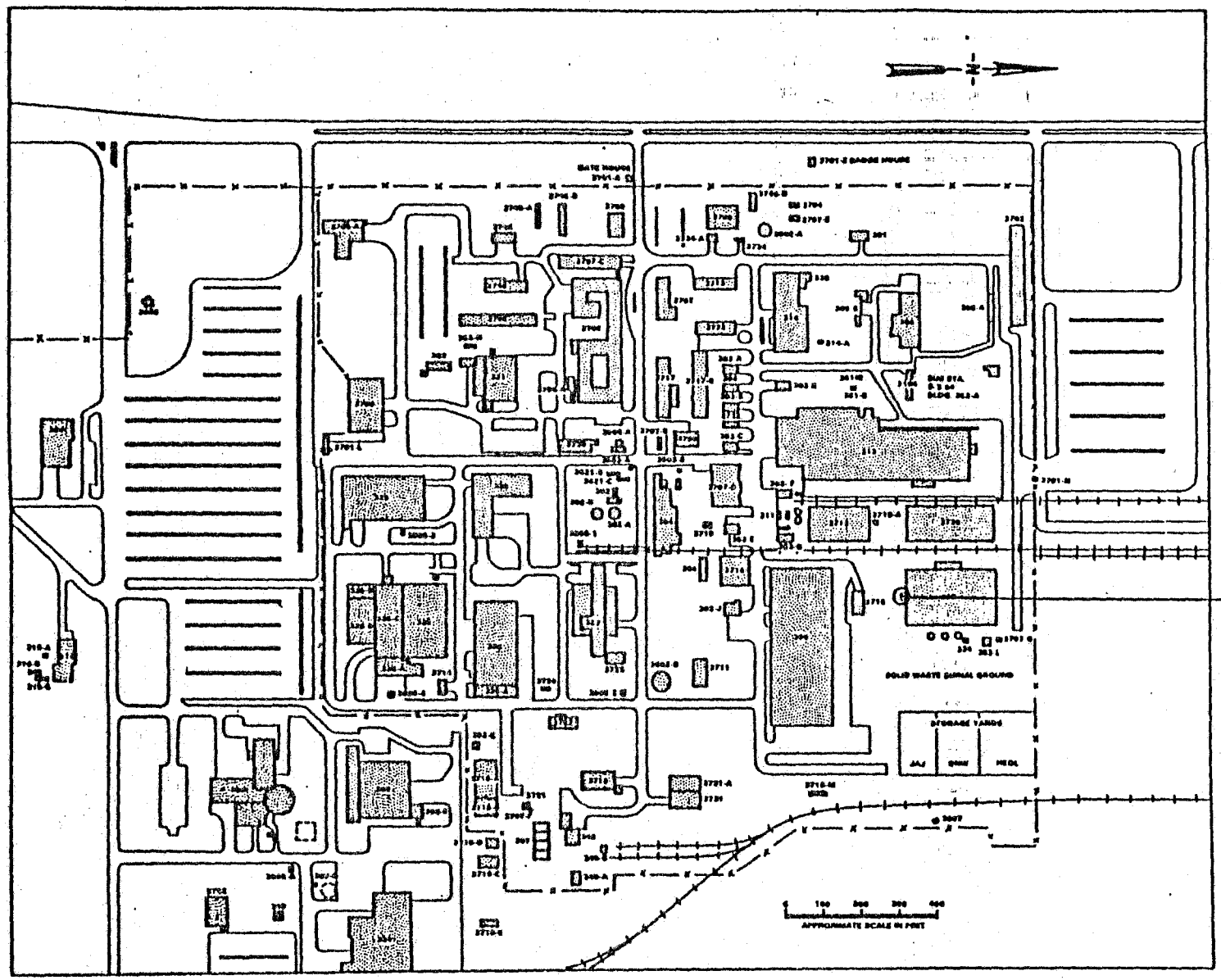
UNI EFFLUENT DISCHARGE POINTS



MAP NO. 001

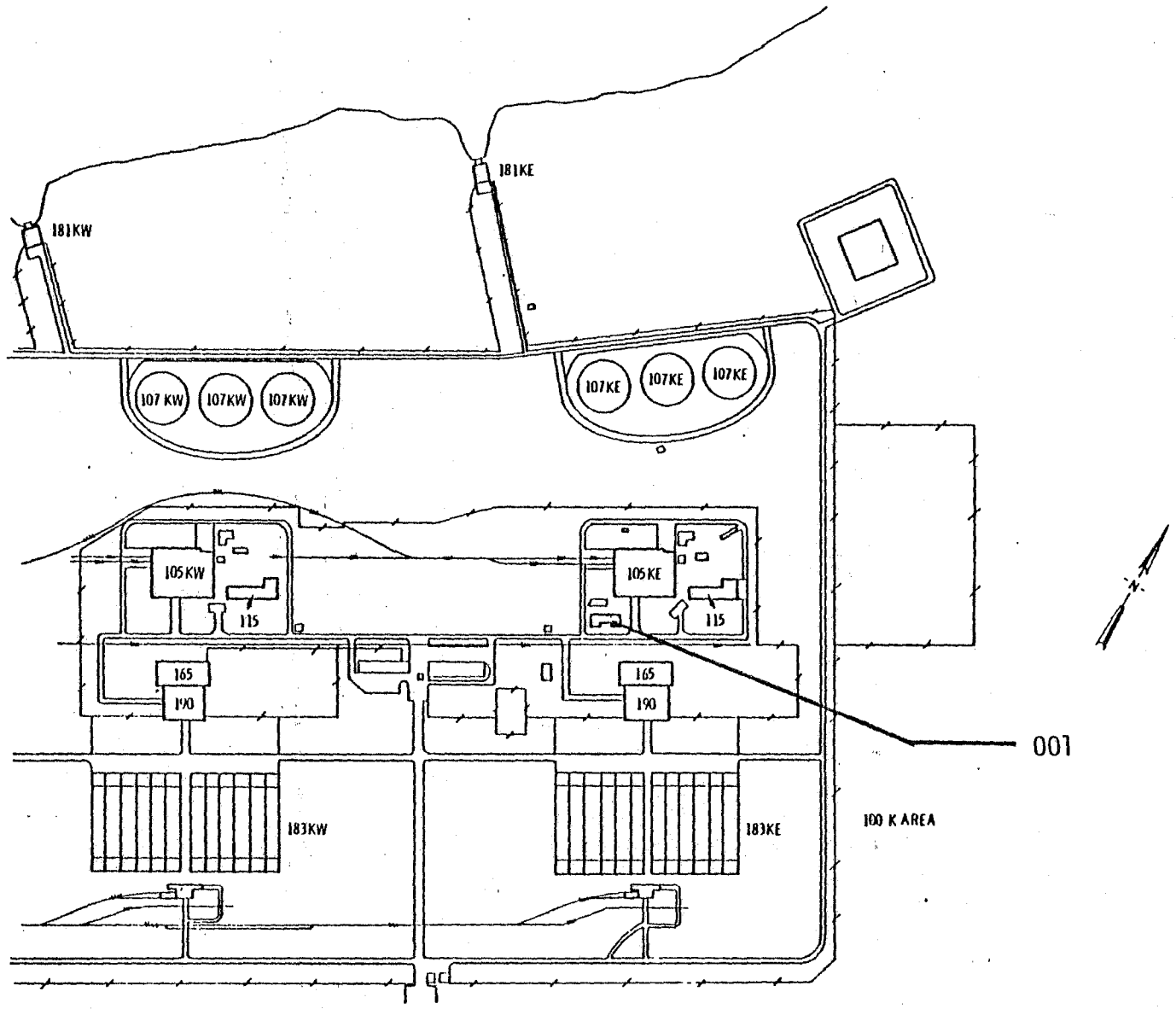
UNI-1861

UNI EFFLUENT DISCHARGE POINTS



MAP NO. 002

UNI-1961



MAP NO. 003

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U.S. DEPARTMENT OF ENERGY
RADIOACTIVE EFFLUENT/ONSITE DISCHARGES/UNPLANNED RELEASES

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SECTION 0

(A=Air Effl. B=Air Dischg. M=Liq. Dischg. L=Liq. Effl.)

REPORT CONTROL CODES					REFERENCE LOCATION IDENT.			INCIDENT REPORT DATE	NAVY-TIME ZONE	REPORT PERIOD FROM	REPORT PERIOD TO	SECURITY CLASS/ AMENDED DATA DESIGNATION
On. Ofc.	Area Ofc.	Contr.	Plant	Facility	Map No.	Effl. Dischg. Point Iden.		YY MM DD	HH MM Z	YY MM DD	YY MM DD	
2	3	4	5	6	7-9	10-12	13	14 19	20 25	20 25	26	
R	I	U	N	R	001	001	L	780101		781231		

KEYPUNCH Instr. cc 2-19 (All Cards) cc 20-26 (For Section 2 ONLY)

PREPARED BY: E. M. Greager
DATE | AREA CODE 509 | PHONE 942-1927

APPROVED BY
DATE | AREA CODE | PHONE

SECTION 1 NARRATIVE SUMMARY (For New Release Points and Amended Data Only)

01	21	22	23	
1	0	1	PLANT TITLE	
1	0	2	FACILITY TITLE	
2	0	1	EFFLUENT RELEASE POINT OR ONSITE WASTE DISCHARGE POINT	
2	0	2	OPERATIONS GENERATING POLLUTANTS	
2	0	3	WASTE TREATMENT SYSTEM	
2	0	4	MONITORING SYSTEM	
2	0	5	MONITORING SYSTEM CONTINUED	
2	0	6	NO. OF SAMPLES (Approximately)	SAMPLE INFORMATION 29
2	0	7	NAME OF RECEIVING MEDIA OR STORAGE/DISPOSAL FACILITY RECEIVING DISCHARGE	STORAGE/DISPOSAL FACILITY CLASS. CODE; STORAGE/DISPOSAL FACILITY NAME CODE 77 79 80
			Include Other Information—Detailed comments on the following lines of Section 1	
2	0	8		
2	0	9		
2	1	0		
2	1	1		
2	1	2		
2	1	3		
2	1	4		
2	1	5		
2	1	6		
2	1	7		
2	1	8		

DO NOT WRITE IN THIS SPACE

SECTION 2 NUCLIDE DATA

| 01 | STORAGE/DISPOSAL FACILITY OPERATIONAL STATUS | | | | |

UNI-1261

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(11-77)

U.S. DEPARTMENT OF ENERGY
RADIOACTIVE EFFLUENT/ONSITE DISCHARGES/UNPLANNED RELEASES

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Typewriter
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SECTION O

(A=Air Effl. B=Air Dischg. M=Liq. Dischg. L=Liq. Effl.)

REPORT CONTROL CODES					REFERENCE LOCATION IDENT.						
On. Ofc.	Area Ofc.	Contr.	Plant	Facility	Map No.	Effl. Dischg. Point Iden.		INCIDENT REPORT DATE YY MM DD	NAVY-TIME ZONE -HH MM Z	REPORT PERIOD FROM YY MM DD	TO YY MM DD
2	3	4	5	6	7-9	10-12	13	14 19	20 25	14 19	20 25
R	I	U	N	R	001	002	A			780101	781231

KEYPUNCH Instr. cc 2-19 (All Cards) cc 20-26 (For Section 2 ONLY)

SECURITY CLASS/ AMENDED DATA DESIGNATION 26 / 20

PREPARED BY: E. M. Greager

DATE | AREA CODE 509 | PHONE 942-1927

APPROVED BY

DATE | AREA CODE | PHONE

SECTION 1 NARRATIVE SUMMARY (For New Release Points and Amended Data Only)

01	21	22	23	
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			Include Other Information—Detailed comments on the following lines of Section 1	
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2	0	9		
2	1	0		
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SECTION 2 NUCLIDE DATA

| 01 | STORAGE/DISPOSAL FACILITY OPERATIONAL STATUS | | | | | |

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U.S. DEPARTMENT OF ENERGY
RADIOACTIVE EFFLUENT/ONSITE DISCHARGES/UNPLANNED RELEASES

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SECTION 0

(A=Air Effl. B=Air Dischg. M=Liq. Dischg. L=Liq. Effl.)

REPORT CONTROL CODES					REFERENCE LOCATION IDENT.			INCIDENT REPORT DATE	NAVY-TIME ZONE	REPORT PERIOD FROM	REPORT PERIOD TO	SECURITY CLASS/ AMENDED DATA DESIGNATION
On. Ofc.	Area Ofc.	Contr.	Plant	Facility	Map No.	Effl. Dischg. Point Iden.		YY MM DD	-HH MM Z	YY MM DD	YY MM DD	
2	3	4	5	6	7-9	10-12	13	14 19	20 25	14 19	20 25	26 / 20
R	I	U	N	R	001	003	L	780101	—	781231		

KEYPUNCH Instr. cc 2-19 (All Cards) cc 20-26 (For Section 2 ONLY)

PREPARED BY: E. M. Greager

DATE	AREA CODE	PHONE
	509	942-1927

APPROVED BY

DATE	AREA CODE	PHONE

SECTION 1 NARRATIVE SUMMARY (For New Release Points and Amended Data Only)

01	21	22	23	
1	0	1	PLANT TITLE	
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			Include Other Information—Detailed comments on the following lines of Section 1	
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2	0	9		
2	1	0		
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2	1	7		
2	1	8		

DO NOT WRITE IN THIS SPACE

SECTION 2 NUCLIDE DATA

01	STORAGE/DISPOSAL FACILITY OPERATIONAL STATUS	START-UP DATE (YY MM DD)	TERMINATION DATE (YY MM DD)	DISCHARGE/EFFL. POINT GROSS VOLUME	UNITS	SECTION "0" REPORT CONTROL CODES	SECTION "0" REPORT CONTROL CODES
3		28 33 64 01 01	35 40 ACTIVE	41 + 1.2 46 E +09 49	50 K	51 63	64 76

F-Cubic Feet, K-Gallons, L-Liters, M-Cubic Meters, P-Pounds

ASSOCIATED RELEASE/DISCHARGE POINT(S) REPORTED ON OTHER 789's AS EMANATING FROM DISPOSAL FACILITY LISTED IN SECTION 1 (Obtain data from other 789's)

DO NOT WRITE IN THIS SPACE

01	NUCLIDE DESCRIPTION (27–40)	AMOUNT OR CONCENTRATION (41–46)	(46–49)	UNITS (50)	(51)	BRIEF COMMENTS (52–80)
4	H-3	+ 3.3	E +02	C	U	
4	P-32	+ 2.9	E -02	C	U	
4	Cr-51	+ 1.4	E -01	C	U	
4	Co-60	+ 4.1	E -01	C	U	
4	Sr-89	+ 4.0	E -01	C	U	
4	Sr-90	+ 1.3	E +00	C	U	
4	Co-58	+ 1.7	E -02	C	U	
4	MoTc-99m	+ 1.3	E +00	C	U	
4	Ru-103	+ 3.1	E -01	C	U	
4	Ru-106	+ 4.9	E -01	C	U	
4	Sb-124	+ 6.2	E -02	C	U	
4	Sb-125	+ 1.7	E -01	C	U	
4	I-131	+ 3.8	E +00	C	U	
4	Pu-238	+ 1.3	E -04	C	U	
4	Pu-239/240	+ 3.0	E -04	C	U	
4	Mn-54	+ * *	E			Not detected
4	I-129	+ 8.2	E -06	C	U	
4	Xe-133	+ 5.7	E +00	C	U	
4	Cs-137	+ 1.6	E -02	C	U	
4		+ .	E			
4		+ .	E			
4		+ .	E			
4		+ .	E			
4		+ .	E			
4		+ .	E			

UNITS: C-Curies, G-Grams, D-Dis/SEC/ml., M-Microcuries/ml.

S-Soluble RCG is applicable
N-Insoluble RCG is applicable
U-Solubility is unknown

DO NOT WRITE IN THIS SPACE

2UNI-1261

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U.S. DEPARTMENT OF ENERGY
RADIOACTIVE EFFLUENT/ONSITE DISCHARGES/UNPLANNED RELEASES

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SECTION O

(A=Air Effl. B=Air Dischg. M=Liq. Dischg. L=Liq. Effl.)

REPORT CONTROL CODES					REFERENCE LOCATION IDENT.		INCIDENT REPORT DATE	NAVY-TIME ZONE	REPORT PERIOD FROM	REPORT PERIOD TO	SECURITY CLASS/ AMENDED DATA DESIGNATION
On. Ofc.	Area Ofc.	Contr.	Plant	Facility	Map No.	Effl. Dischg. Point Iden.	YY MM DD (14–19)	HH MM Z (20–25)	YY MM DD	YY MM DD	(26–20)
R	I	U	N	R	001	005	M 780101	781231			

KEYPUNCH Instr. cc 2-19 (All Cards) cc 20-26 (For Section 2 ONLY)

PREPARED BY: E. M. Greager
DATE | AREA CODE 509 | PHONE 942-1927
APPROVED BY
DATE | AREA CODE | PHONE

SECTION 1 NARRATIVE SUMMARY (For New Release Points and Amended Data Only)

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1	0	2	FACILITY TITLE
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			Include Other Information—Detailed comments on the following lines of Section 1
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2	0	9	
2	1	0	
2	1	1	
2	1	2	
2	1	3	
2	1	4	
2	1	5	
2	1	6	
2	1	7	
2	1	8	

DO NOT WRITE IN THIS SPACE

SECTION 2 NUCLIDE DATA

STORAGE/DISPOSAL FACILITY OPERATIONAL STATUS	START-UP DATE (YY MM DD)	TERMINATION DATE (YY MM DD)	DISCHARGE/EFFL. POINT GROSS VOLUME	UNITS (F-Cubic Feet, M-Cubic Meters, K-Gallons, P-Pounds, L-Liters)	SECTION "0" REPORT CONTROL CODES	SECTION "0" REPORT CONTROL CODES
3	84 01 01	ACTIVE	+ 1.2 E +09	K		

ASSOCIATED RELEASE/DISCHARGE POINT(S) REPORTED ON OTHER 789's AS EMANATING FROM DISPOSAL FACILITY LISTED IN SECTION 1 (Obtain data from other 789's)

DO NOT WRITE IN THIS SPACE

NUCLIDE DESCRIPTION	AMOUNT OR CONCENTRATION	UNITS (C-Curies, G-Grams, D-Dis/SEC/ml., M-Microcuries/ml.)	(S-Soluble RCG is applicable, N-Insoluble RCG is applicable, U-Solubility is unknown)	BRIEF COMMENTS
H-3	+ 3.3 E +02	C	U	
P-32	+ 5.6 E +01	C	U	
Cr-51	+ 3.7 E +02	C	U	
Mn-54	+ 8.1 E +02	C	U	
Co-58	+ 6.4 E +01	C	U	
Fe-59	+ 7.4 E +02	C	U	
Co-60	+ 9.4 E +02	C	U	
Sr-89	+ 5.2 E +02	C	U	
Sr-90	+ 1.2 E +02	C	U	
ZrNb-95	+ 1.2 E +03	C	U	
MoTc-99m	+ 1.6 E +03	C	U	
Ru-103	+ 3.0 E +02	C	U	
Ru-106	+ 3.3 E +02	C	U	
Sb-124	+ 6.2 E +01	C	U	
Sb-125	+ 4.1 E +00	C	U	
I-129	+ 1.4 E -05	C	U	
I-131	+ 5.6 E +02	C	U	
Xe-133	+ 5.2 E +02	C	U	
Cs-134	+ 6.7 E +01	C	U	
Cs-137	+ 3.4 E +02	C	U	
BaLa-140	+ 7.1 E +03	C	U	
Ce-141	+ 4.9 E +02	C	U	
CePr-144	+ 6.6 E +02	C	U	
Pu-238	+ 2.6 E -01	C	U	
Pu-239/240	+ 1.3 E +00	C	U	

DO NOT WRITE IN THIS SPACE

UNI-1261

DOE Form EV-789T
(11-77)

U.S. DEPARTMENT OF ENERGY
RADIOACTIVE EFFLUENT/ONSITE DISCHARGES/UNPLANNED RELEASES

Pica Font
Typewriter
compatible

SECTION O

(A=Air Effl. B=Air Dischg. M=Liq. Dischg. L=Liq. Effl.)

REPORT CONTROL CODES					REFERENCE LOCATION IDENT.			INCIDENT REPORT DATE	NAVY-TIME ZONE	REPORT PERIOD FROM	REPORT PERIOD TO	SECURITY CLASS/ AMENDED DATA DESIGNATION
On. Ofc.	Area Ofc.	Contr.	Plant	Facility	Map No.	Effl. Dischg. Point Iden.		YY MM DD	-HH MM Z	YY MM DD	YY MM DD	
2	3	4	5	6	7-9	10-12	13	14 19	20 25	14 19	20 25	26 / 20
R	I	U	N	R	001	006	A			780101	781231	

KEYPUNCH Instr. cc 2-19 (All Cards) cc 20-26 (For Section 2 ONLY)

PREPARED BY: E. M. Greager

DATE | AREA CODE 509 | PHONE 942-1927

APPROVED BY

DATE | AREA CODE | PHONE

SECTION 1 NARRATIVE SUMMARY (For New Release Points and Amended Data Only)

01	21	22	23	
1	0	1		PLANT TITLE
1	0	2		FACILITY TITLE
2	0	1		EFFLUENT RELEASE POINT OR ONSITE WASTE DISCHARGE POINT
2	0	2		OPERATIONS GENERATING POLLUTANTS
2	0	3		WASTE TREATMENT SYSTEM
2	0	4		MONITORING SYSTEM
2	0	5		MONITORING SYSTEM CONTINUED
2	0	6	NO. OF SAMPLES (Approximately)	SAMPLE INFORMATION 29
2	0	7	NAME OF RECEIVING MEDIA OR STORAGE/DISPOSAL FACILITY RECEIVING DISCHARGE	STORAGE/DISPOSAL FACILITY CLASS. CODE; STORAGE/DISPOSAL FACILITY NAME CODE 77 79 80
			Include Other Information—Detailed comments on the following lines of Section 1	
2	0	8		
2	0	9		
2	1	0		
2	1	1		
2	1	2		
2	1	3		
2	1	4		
2	1	5		
2	1	6		
2	1	7		
2	1	8		

DO NOT WRITE IN THIS SPACE

SECTION 2 NUCLIDE DATA

01	STORAGE/DISPOSAL FACILITY OPERATIONAL STATUS				F-Cubic Feet M-Cubic Meters K-Gallons P-Pounds L-Liters			ASSOCIATED RELEASE/DISCHARGE POINT(S) REPORTED ON OTHER 789's AS EMANATING FROM DISPOSAL FACILITY LISTED IN SECTION 1 (Obtain data from other 789's)		DO NOT WRITE IN THIS SPACE
	START-UP DATE			TERMINATION DATE	DISCHARGE/EFFL. POINT GROSS VOLUME		UNITS	SECTION "O" REPORT CONTROL CODES	SECTION "O" REPORT CONTROL CODES	
	YY	MM	DD	YY MM DD						
3	64	01	01	35 ACTIVE 40	41 + 6.4	46 E +10 49	50 F	51 63	64 76	

C-Curies
G-Grams
D-Dis/SEC/ml.
M-Microcuries/ml.

S-Soluble RCG is applicable
N-Insoluble RCG is applicable
U-Solubility is unknown

01	27 NUCLIDE DESCRIPTION 40	41 AMOUNT OR CONCENTRATION	46	49	50 UNITS	51	52 BRIEF COMMENTS 80
4	H-3	+ 1.9	E	-01	C	S	
4	Ar-41	+ 2.3	E	+02	C	S	
4	Mn-54	+ 1.1	E	-02	C	U	
4	Fe-59	+ 1.0	E	-02	C	U	
4	Co-58	+ 2.7	E	-03	C	U	
4	Co-60	+ 2.0	E	-02	C	U	
4	As-76	+ 2.6	E	+00	C	U	
4	Sr-89	+ 1.6	E	-02	C	U	
4	Sr-90	+ 5.0	E	-04	C	U	
4	Sr-91	+ 4.6	E	-01	C	U	
4	ZrNb-95	+ 7.2	E	-03	C	U	
4	MoTc-99m	+ 8.1	E	-01	C	U	
4	Ru-103	+ 6.8	E	-03	C	U	
4	Ru-106	+ 4.6	E	-02	C	U	
4	I-131	+ 2.8	E	-01	C	S	
4	I-133	+ 2.0	E	+00	C	S	
4	Cs-138	+ 9.3	E	+02	C	U	
4	I-135	+ 3.3	E	+00	C	S	
4	Xe-135	+ 6.6	E	+02	C	S	
4	Cs-137	+ 1.1	E	-03	C	U	
4	BaLa-140	+ 9.7	E	-01	C	U	
4	Ce-141	+ 3.7	E	-03	C	U	
4	CePr-144	+ 3.3	E	-02	C	U	
4	Pu-238	+ 1.4	E	-07	C	U	
4	Pu-239/240	+ 1.2	E	-06	C	U	

DO NOT WRITE IN THIS SPACE

UNI-1261

DOE Form EV-789T
(11-77)

U.S. DEPARTMENT OF ENERGY
RADIOACTIVE EFFLUENT/ONSITE DISCHARGES/UNPLANNED RELEASES

Pica Font Typewriter compatible

SECTION O

(A=Air Effl. B=Air Dischg. M=Liq. Dischg. L=Liq. Effl.)

REPORT CONTROL CODES					REFERENCE LOCATION IDENT.		INCIDENT REPORT DATE (YY MM DD)	NAVY-TIME ZONE (HH MM Z)	REPORT PERIOD FROM (YY MM DD)	TO (YY MM DD)	SECURITY CLASS/ AMENDED DATA DESIGNATION
On. Ofc.	Area Ofc.	Contr.	Plant	Facility	Map No.	Effl. Dischg. Point Iden.					
R	I	U	L	A	002	007	780101		781231		

KEYPUNCH Instr. cc 2-19 (All Cards) cc 20-26 (For Section 2 ONLY)

PREPARED BY: E. M. Greager
DATE | AREA CODE 509 | PHONE 942-1927

APPROVED BY
DATE | AREA CODE | PHONE

SECTION 1 NARRATIVE SUMMARY (For New Release Points and Amended Data Only)

101	PLANT TITLE
102	FACILITY TITLE
201	EFFLUENT RELEASE POINT OR ONSITE WASTE DISCHARGE POINT
202	OPERATIONS GENERATING POLLUTANTS
203	WASTE TREATMENT SYSTEM
204	MONITORING SYSTEM
205	MONITORING SYSTEM CONTINUED
206	NO. OF SAMPLES (Approximately) / SAMPLE INFORMATION
207	NAME OF RECEIVING MEDIA OR STORAGE/DISPOSAL FACILITY RECEIVING DISCHARGE / STORAGE/DISPOSAL FACILITY CLASS. CODE / STORAGE/DISPOSAL FACILITY NAME CODE
	Include Other Information—Detailed comments on the following lines of Section 1
208	
209	
210	
211	
212	
213	
214	
215	
216	
217	
218	

DO NOT WRITE IN THIS SPACE

SECTION 2 NUCLIDE DATA

STORAGE/DISPOSAL FACILITY OPERATIONAL STATUS	START-UP DATE (YY MM DD)	TERMINATION DATE (YY MM DD)	DISCHARGE/EFFL. POINT GROSS VOLUME	UNITS (F-Cubic Feet, M-Cubic Meters, K-Gallons, P-Pounds, L-Liters)	SECTION "0" REPORT CONTROL CODES	SECTION "0" REPORT CONTROL CODES
301	61 03 01	ACTIVE	1.3 E +08	F		

ASSOCIATED RELEASE/DISCHARGE POINT(S) REPORTED ON OTHER 789's AS EMANATING FROM DISPOSAL FACILITY LISTED IN SECTION 1 (Obtain data from other 789's)

DO NOT WRITE IN THIS SPACE

NUCLIDE DESCRIPTION	AMOUNT OR CONCENTRATION	UNITS (C-Curies, G-Grams, D-Dis/SEC/ml., M-Microcuries/ml.)	S-Soluble RCG is applicable, N-Insoluble RCG is applicable, U-Solubility is unknown	BRIEF COMMENTS
U-Nat	+3.3 E -05	C	U	
	+ . E			
	+ . E			
	+ . E	

UNI-1261

DOE Form EV-789T (11-77)

U.S. DEPARTMENT OF ENERGY
RADIOACTIVE EFFLUENT/ONSITE DISCHARGES/UNPLANNED RELEASES

Pica Font Typewriter compatible

SECTION 0

(A=Air Effl. B=Air Dischg. M=Liq. Dischg. L=Liq. Effl.)

REPORT CONTROL CODES					REFERENCE LOCATION IDENT.	
Op. Ofc.	Area Ofc.	Contr.	Plant	Facility	Map No.	Effl. Dischg. Point Iden.
R	I	U	N	R	001	008

INCIDENT REPORT DATE (YY MM DD) NAVY-TIME ZONE (-HH MM Z): 780101

REPORT PERIOD FROM (YY MM DD) TO (YY MM DD): 781231

SECURITY CLASS/AMENDED DATA DESIGNATION: A

KEYPUNCH Instr. cc 2-19 (All Cards) cc 20-26 (For Section 2 ONLY)

PREPARED BY: E. M. Greager

DATE | AREA CODE 509 | PHONE 942-1927

APPROVED BY

DATE | AREA CODE | PHONE

SECTION 1 NARRATIVE SUMMARY *(For New Release Points and Amended Data Only)*

101	
102	PLANT TITLE
103	FACILITY TITLE
201	EFFLUENT RELEASE POINT OR ONSITE WASTE DISCHARGE POINT
202	OPERATIONS GENERATING POLLUTANTS
203	WASTE TREATMENT SYSTEM
204	MONITORING SYSTEM
205	MONITORING SYSTEM CONTINUED
206	NO. OF SAMPLES *(Approximately)* / SAMPLE INFORMATION
207	NAME OF RECEIVING MEDIA OR STORAGE/DISPOSAL FACILITY RECEIVING DISCHARGE / STORAGE/DISPOSAL FACILITY CLASS. CODE / STORAGE/DISPOSAL FACILITY NAME CODE
	Include Other Information—Detailed comments on the following lines of Section 1
208	
209	
210	
211	
212	
213	
214	
215	
216	
217	
218	

DO NOT WRITE IN THIS SPACE

SECTION 2 NUCLIDE DATA

STORAGE/DISPOSAL FACILITY OPERATIONAL STATUS	START-UP DATE (YY MM DD)	TERMINATION DATE (YY MM DD)	DISCHARGE/EFFL. POINT GROSS VOLUME	UNITS (F-Cubic Feet, K-Gallons, L-Liters, M-Cubic Meters, P-Pounds)	SECTION "0" REPORT CONTROL CODES	SECTION "0" REPORT CONTROL CODES
301	64 01 01	ACTIVE	+ 1.5 E +10	F		

ASSOCIATED RELEASE/DISCHARGE POINT(S) REPORTED ON OTHER 789's AS EMANATING FROM DISPOSAL FACILITY LISTED IN SECTION 1 *(Obtain data from other 789's)*

DO NOT WRITE IN THIS SPACE

401	NUCLIDE DESCRIPTION	AMOUNT OR CONCENTRATION	UNITS (C-Curies, G-Grams, D-Dis/SEC/ml., M-Microcuries/ml.)	S-Soluble RCG is applicable, N-Insoluble RCG is applicable, U-Solubility is unknown	BRIEF COMMENTS
402	H-3	+ 3 · 7 E -02	C	S	
403	Ar-41	+ 4 . 1 E +02	C	S	
404	Mn-54	+ 6 · 8 E -03	C	U	
405	Fe-59	+ 6 · 9 E -03	C	U	
406	Co-58	+ 2 · 7 E -03	C	U	
407	Co-60	+ 1 · 2 E -02	C	U	
408	As-76	+ 4 · 3 E -02	C	U	
409	Sr-89	+ 5 · 2 E -03	C	U	
410	Sr-90	+ 1 · 6 E -04	C	U	
411	Sr-91	+ 4 · 8 E -01	C	U	
412	ZrNb-95	+ 5 · 5 E -03	C	U	
413	MoTc-99m	+ 1 · 7 E -01	C	U	
414	Ru-103	+ 3 · 0 E -03	C	U	
415	Ru-106	+ 1 · 4 E -02	C	U	
416	I-131	+ 7 · 3 E -02	C	S	
417	I-133	+ 6 · 0 E -01	C	S	
418	Cs-138	+ 1 · 8 E +02	C	U	
419	I-135	+ 1 · 7 E +00	C	S	
420	Xe-135	+ 8 · 8 E +01	C	S	
421	Cs-137	+ 2 · 9 E -04	C	U	
422	BaLa-140	+ 1 · 4 E -01	C	U	
423	Ce-141	+ 2 · 2 E -03	C	U	
424	CePr-144	+ 8 · 5 E -03	C	U	
425	Pu-238	+ 6 · 7 E -08	C	U	
426	Pu-239/240	+ 6 · 7 E -07	C	U	

DO NOT WRITE IN THIS SPACE

UNI-1261

DOE Form EV-789T (11-77)

U.S. DEPARTMENT OF ENERGY
RADIOACTIVE EFFLUENT/ONSITE DISCHARGES/UNPLANNED RELEASES

Pica Font Typewriter compatible

SECTION O

(A=Air Effl. B=Air Dischg. M=Liq. Dischg. L=Liq. Effl.)

REPORT CONTROL CODES					REFERENCE LOCATION IDENT.			INCIDENT REPORT DATE (YY MM DD)	NAVY-TIME ZONE (-HH MM Z)	REPORT PERIOD FROM (YY MM DD)	REPORT PERIOD TO (YY MM DD)	SECURITY CLASS/ AMENDED DATA DESIGNATION
On. Ofc.	Area Ofc.	Contr.	Plant	Facility	Map No.	Effl. Dischg. Point Iden.						
2	3	4	5	6	7-9	10-12	13	14 19	20 25	14 19	20 25	26 / 20
R	I	B	K	B	003	001	A	780101		781231		

KEYPUNCH Instr. cc 2-19 (All Cards) cc 20-26 (For Section 2 ONLY)

PREPARED BY: E. M. Greager

DATE	AREA CODE	PHONE
	509	942-1927

APPROVED BY

DATE	AREA CODE	PHONE

SECTION 1 NARRATIVE SUMMARY *(For New Release Points and Amended Data Only)*

1	0	1	PLANT TITLE
1	0	2	FACILITY TITLE
2	0	1	EFFLUENT RELEASE POINT OR ONSITE WASTE DISCHARGE POINT
2	0	2	OPERATIONS GENERATING POLLUTANTS
2	0	3	WASTE TREATMENT SYSTEM
2	0	4	MONITORING SYSTEM
2	0	5	MONITORING SYSTEM CONTINUED
2	0	6	NO. OF SAMPLES *(Approximately)* — SAMPLE INFORMATION 29
2	0	7	NAME OF RECEIVING MEDIA OR STORAGE/DISPOSAL FACILITY RECEIVING DISCHARGE — STORAGE/DISPOSAL FACILITY CLASS. CODE — STORAGE/DISPOSAL FACILITY NAME CODE 77 79 80
			Include Other Information—Detailed comments on the following lines of Section 1
2	0	8	
2	0	9	
2	1	0	
2	1	1	
2	1	2	
2	1	3	
2	1	4	
2	1	5	
2	1	6	
2	1	7	
2	1	8	

DO NOT WRITE IN THIS SPACE

SECTION 2 NUCLIDE DATA

STORAGE/DISPOSAL FACILITY OPERATIONAL STATUS	START-UP DATE (YY MM DD)	TERMINATION DATE (YY MM DD)	DISCHARGE/EFFL. POINT GROSS VOLUME	UNITS (F-Cubic Feet, K-Gallons, L-Liters, M-Cubic Meters, P-Pounds)	ASSOCIATED RELEASE/DISCHARGE POINT(S) REPORTED ON OTHER 789's AS EMANATING FROM DISPOSAL FACILITY LISTED IN SECTION 1 *(Obtain data from other 789's)* — SECTION "0" REPORT CONTROL CODES	SECTION "0" REPORT CONTROL CODES
3	77 01 01	35 ACTIVE 40	41 + 5.9 46 E +09 49	50 F	51 63	64 76

NUCLIDE DESCRIPTION	AMOUNT OR CONCENTRATION		UNITS		BRIEF COMMENTS
Sr-90	+4 .1	E -06	C	U	
Pu-239/240	+1 .2	E -07	C	U	
	+ .	E			
	+ .	E			
	+ .	E			
	+ .	E			
	+ .	E			
	+ .	E			
	+ .	E			
	+ .	E			
	+ .	E			
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	+ .	E			
	+ .	E			
	+ .	E			
	+ .	E			

C-Curies, G-Grams, D-Dis/SEC/ml., M-Microcuries/ml.
S-Soluble RCG is applicable, N-Insoluble RCG is applicable, U-Solubility is unknown

DO NOT WRITE IN THIS SPACE