



INTERSTATE NUCLEAR SERVICES
A SUBSIDIARY OF UNIFIRST CORPORATION

Enclosure # 2

May 30, 1997

Mr. John D. Kinneman, Chief
Nuclear Material Safety Branch 2
Division of Nuclear Material Safety
U.S. Nuclear Regulatory Commission, Region I
475 Allendale Road
King of Prussia, PA 19406-1415

Re: License No. 37-23341-01 Quarterly Report - 1st Quarter 1997

Dear Mr. Kinneman:

In accordance with License Condition No. 16, enclosed is the quarterly report for the first quarter of 1997. You will notice that the format of the report has changed slightly to communicate additional detail. The major changes are summarized for your convenience.

First, the axes of the report have been inverted to allow for information regarding many additional nuclides to be concisely presented. This will allow INS to provide the NRC with every data point that is collected. Second, continuing with the philosophy stated in the INS letter dated March 31, 1997, tritium and carbon-14 activities are totaled and reported separately to more readily demonstrate compliance with the limits specified in 20 CFR 20.2003. It should be noted that the sum of the fractions of actual to allowable discharge concentrations will appropriately continue to include tritium and carbon-14. Finally, an entry will be made in all blocks to indicate whether results are less than MDA, not found in gamma spectrum searches, or nuclides for which analysis was not conducted. Previously, blank entries did not specify this information. The blocks for the remaining alpha emitters will be annotated subsequent to the fourth quarter of each year as INS performs additional alpha spectroscopy on a representative annual composite sample.

INS hopes that this new format and additional detail will be helpful to the NRC. Please do not hesitate to call if you have any questions or concerns regarding the new format or information presented.

Sincerely,

Glenn Roberts
INS Corporate Health Physicist

RETURN ORIGINAL TO
REGION I

cc: Mike Fuller, Manager, Health Physics and Engineering
Dan Neely, Plant Manager/RSO

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1997 - ROYERSFORD WASTEWATER DISCHARGE SUMMARY												
MONTH	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC
GALLONS	550000	855000	775000	580000								
H-3	2.57E-05	2.57E-05	2.57E-05									
mCi H-3	53.50098	83.1697	75.38774									
C-14	1.33E-06	1.33E-06	1.33E-06									
mCi C-14	2.768728	4.304113	3.901389									
K-40	NF	NF	NF									
Cr-51	NF	1.36E-07	2.70E-07									
Mn-54	NF	1.50E-07	5.90E-07	7.95E-07								
Fe-55	1.55E-06	1.55E-06	1.55E-06									
Fe-59	NF	NF	6.52E-08	5.75E-08								
Co-57	NF	NF	NF									
Co-58	7.59E-08	3.53E-08	2.78E-07	7.11E-08								
Co-60	1.05E-07	4.39E-07	9.75E-07	7.07E-07								
Ni-63	2.84E-08	2.84E-08	2.84E-08									
Zn-65	NF	1.04E-06	3.17E-07	2.43E-07								
Sr-89	*	*	*									
Sr-90	1.25E-08	1.25E-08	1.25E-08									
Zr-95	NF	NF	NF									
Nb-95	NF	NF	NF									
Tc-99	8.15E-08	8.15E-08	8.15E-08									
Ag-110m	NF	NF	NF	1.23E-08								
Sb-125	NF	NF	NF									
I-129	1.71E-08	1.71E-08	1.71E-08									
Cs-134	4.00E-08	2.82E-08	2.66E-07	1.60E-07								
Cs-137	2.57E-07	1.53E-07	1.40E-06	5.00E-07								
Eu-152	NF	NF	NF									
Eu-154	NF	NF	NF									
Th-234	4.06E-07	NF	NF									
U-234												
U-235												
U-238												
Pu-238												
Pu-239												
Np-237												
Am-241												
Cu-244												
CONC.	2.57E-06	3.67E-06	5.85E-06	2.55E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ACTIVITY	5.357404	11.87026	17.16027	5.588509	0	0	0	0	0	0	0	0

ANNUAL TOTALS
2760000 GALLONS

212.0584 mCi H-3

10.97423 mCi C-14

39.97644 mCi AORN

262 mCi GRAND TOTAL

Notes: CONC. is total concentration for all nuclides except H-3 and C-14.

All concentrations are in uCi/ml. All activities are in mCi.

NF - Not found in gamma spectra search.

<MDA - Less than minimal detection limit for analytical method.

*Sr-89/90 analyzed and reported as total Sr unless >50 pCi/L. Conservatively assigned to Sr-90

AORN - All other radionuclides (except for H-3 and C-14)

ND - No Data

019 - ROYERSFORD RATIOS OF DISCHARGES TO LIMITS													
	LIMIT	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC
H-3	1.0E-02	0.00257	0.00257	0.00257									
C-14	3.0E-04	0.00443	0.00443	0.00443									
K-40	4.0E-05												
Cr-51	5.0E-03		0.00003	0.00005									
Mn-54	3.0E-04		0.00050	0.00197	0.00265								
Fe-55	1.0E-03	0.00155	0.00155	0.00155									
Fe-59	1.0E-04			0.00065	0.00058								
Co-57	6.0E-04												
Co-58	2.0E-04	0.00038	0.00018	0.00139	0.00036								
Co-60	3.0E-05	0.00350	0.01463	0.03250	0.02357								
Ni-63	1.0E-03	0.00003	0.00003	0.00003									
Zn-65	5.0E-05		0.02074	0.00634	0.00486								
Sr-89	8.0E-05												
Sr-90	5.0E-06	0.00250	0.00250	0.00250									
Zr-95	2.0E-04												
Nb-95	3.0E-04												
Tc-99	6.0E-04	0.00014	0.00014	0.00014									
Ag-110m	6.0E-05				0.00020								
Sb-125	3.0E-04												
I-129	2.0E-06	0.00855	0.00855	0.00855									
Cs-134	9.0E-06	0.00445	0.00313	0.02956	0.01778								
Cs-137	1.0E-05	0.02574	0.01529	0.13990	0.04995								
Eu-152	1.0E-04												
Eu-154	7.0E-05												
Th-234	5.0E-05	0.00811											
U-234	3.0E-06												
U-235	3.0E-06												
U-238	3.0E-06												
Pu-238	2.0E-07												
Pu-239	2.0E-07												
Np-237	2.0E-07												
Am-241	2.0E-07												
Cu-244	3.0E-07												
TOTAL	1.00	0.06195	0.07426	0.23213	0.09995	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

