



A SUBSIDIARY OF UNIFIRST CORPORATION

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REGION 1

2002 FEB 14 AM 10:42

February 13, 2002

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

Q-5

37-23341-01  
030-20934


RE: License No. 37-23341-01 Quarterly Report- 4<sup>th</sup> Quarter 2001

Dear Mr. Kinneman:

In accordance with condition No. 16 of the referenced license, enclosed is the quarterly report for the fourth quarter of 2001.

If you have any questions or comments, please contact Michael Fuller, Manager, Health Physics & Engineering or me at (413) 543-6911, extensions 25 and 27, respectively.

Sincerely,



William Stevenson, Radiation Protection Engineer  
UniTech Services Group

cc: M. Fuller, Manager Health Physics and Engineering  
Dan Neely, Plant Manager/RSO, UniTech Royersford

1 3 1 0 1 2



NMSS/RGNI MATERIALS-002

2001 - ROYERSFORD WASTEWATER DISCHARGE SUMMARY												
MONTH	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC
GALLONS	395000	500000	875000	1175000	645000	310000	275000	320000	940000	990000	430000	235000
H-3	7.81E-06	7.81E-06	7.81E-06	8.20E-06	8.20E-06	8.20E-06	1.32E-05	1.32E-05	1.32E-05	5.04E-06	5.04E-06	5.04E-06
mCi H-3	11.676536	14.780425	25.865744	36.468475	20.018865	9.62147	13.73955	15.98784	46.96428	18.885636	8.202852	4.482954
C-14	3.55E-06	3.55E-06	3.55E-06	4.69E-06	4.69E-06	4.69E-06	5.25E-06	5.25E-06	5.25E-06	7.05E-06	7.05E-06	7.05E-06
mCi C-14	5.3075163	6.718375	11.757156	20.858189	11.449814	5.5030115	5.4645938	6.3588	18.678975	26.417408	11.474228	6.2707988
K-40	1.98E-07	2.12E-07	ND	ND	2.54E-07	ND	ND	1.22E-07	ND	ND	ND	2.72E-07
Cr-51	ND	3.43E-07	5.89E-07	5.72E-07	8.79E-07	ND	ND	ND	ND	2.61E-07	ND	ND
Mn-54	4.51E-07	5.77E-07	7.92E-07	5.90E-07	7.64E-07	6.36E-07	3.94E-07	9.56E-08	1.17E-07	9.08E-07	7.56E-07	1.22E-06
Fe-55	9.88E-06	9.88E-06	9.88E-06	1.29E-05	1.29E-05	1.29E-05	3.13E-06	3.13E-06	3.13E-06	1.36E-05	1.36E-05	1.36E-05
Fe-59	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	6.66E-08	ND
Co-57	ND	ND	ND	ND	2.37E-08	ND	ND	ND	ND	ND	ND	ND
Co-58	7.89E-07	8.80E-07	6.02E-07	1.45E-06	4.11E-06	6.01E-07	1.98E-07	5.63E-08	2.09E-07	1.18E-06	1.52E-06	1.53E-06
Co-60	1.41E-06	1.72E-06	1.40E-06	1.28E-06	1.70E-06	1.13E-06	1.04E-06	4.43E-07	6.11E-07	1.73E-06	1.25E-06	2.14E-06
Ni-63	3.58E-07	3.58E-07	3.58E-07	9.39E-07	9.39E-07	9.39E-07	9.98E-07	9.98E-07	9.98E-07	1.28E-06	1.28E-06	1.28E-06
Zn-65	2.40E-07	ND	ND	ND	ND	6.34E-08	ND	6.62E-08	4.97E-08	7.40E-08	ND	1.65E-07
Sr-89	*	*	*	*	*	*	*	*	*	*	*	*
Sr-90	5.39E-09	5.39E-09	5.39E-09	4.82E-09	4.82E-09	4.82E-09	5.38E-09	5.38E-09	5.38E-09	4.44E-09	4.44E-09	4.44E-09
Zr-95	ND	ND	5.64E-08	1.05E-07	3.43E-07	1.20E-07	ND	ND	ND	ND	7.69E-08	5.48E-08
Nb-95	5.06E-08	7.62E-08	7.47E-08	1.63E-07	5.77E-07	2.68E-07	ND	ND	ND	4.86E-08	9.18E-08	4.73E-08
Tc-99	4.37E-07	4.37E-07	4.37E-07	5.70E-07	5.70E-07	5.70E-07	3.32E-07	3.32E-07	3.32E-07	6.16E-07	6.16E-07	6.16E-07
Ag-110m	1.26E-07	ND	ND	ND	9.43E-08	ND	3.38E-08	ND	4.80E-08	6.17E-08	9.62E-08	ND
Sb-125	1.42E-07	ND	ND	ND	ND	7.37E-08	ND	ND	ND	ND	ND	ND
I-125	ND	ND	ND	1.14E-06	ND	ND	ND	ND	ND	ND	ND	ND
I-129	<MDA	<MDA	<MDA	2.45E-08	2.45E-08	2.45E-08	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA
Cs-134	1.62E-07	3.46E-08	6.71E-08	5.84E-08	1.09E-07	7.02E-08	5.39E-08	ND	6.53E-08	8.26E-08	8.53E-08	4.59E-08
Cs-137	1.04E-06	4.58E-07	5.00E-07	5.38E-07	1.01E-06	4.79E-07	4.51E-07	2.19E-07	5.95E-07	7.43E-07	8.71E-07	6.31E-07
Eu-152	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Eu-154	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pb-212	ND	ND	ND	ND	ND	ND	ND	ND	1.24E-07	ND	ND	ND
Ra-226	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Th-228	9.99E-10	9.99E-10	9.99E-10	9.99E-10	9.99E-10	9.99E-10	9.99E-10	9.99E-10	9.99E-10	9.99E-10	9.99E-10	9.99E-10
Th-230	1.15E-09	1.15E-09	1.15E-09	1.15E-09	1.15E-09	1.15E-09	1.15E-09	1.15E-09	1.15E-09	1.15E-09	1.15E-09	1.15E-09
Th-232	5.32E-10	5.32E-10	5.32E-10	5.32E-10	5.32E-10	5.32E-10	5.32E-10	5.32E-10	5.32E-10	5.32E-10	5.32E-10	5.32E-10
Th-234	ND	ND	ND	ND	ND	ND	ND	4.24E-07	3.94E-07	ND	ND	ND
U-234	7.85E-10	7.85E-10	7.85E-10	7.85E-10	7.85E-10	7.85E-10	7.85E-10	7.85E-10	7.85E-10	7.85E-10	7.85E-10	7.85E-10
U-235	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	2.48E-08	ND	ND	ND	ND
U-238	9.07E-10	9.07E-10	9.07E-10	9.07E-10	9.07E-10	9.07E-10	9.07E-10	9.07E-10	9.07E-10	9.07E-10	9.07E-10	9.07E-10
Pu-238	1.36E-09	1.36E-09	1.36E-09	1.36E-09	1.36E-09	1.36E-09	1.36E-09	1.36E-09	1.36E-09	1.36E-09	1.36E-09	1.36E-09
Pu-239	9.85E-10	9.85E-10	9.85E-10	9.85E-10	9.85E-10	9.85E-10	9.85E-10	9.85E-10	9.85E-10	9.85E-10	9.85E-10	9.85E-10
Np-237	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA
Am-241	1.72E-09	1.72E-09	1.72E-09	1.72E-09	1.72E-09	1.72E-09	1.72E-09	1.72E-09	1.72E-09	1.72E-09	1.72E-09	1.72E-09
Cm-244	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA	<MDA
CONC.	1.53E-05	1.50E-05	1.48E-05	2.03E-05	2.43E-05	1.79E-05	6.65E-06	5.92E-06	6.69E-06	2.06E-05	2.03E-05	2.16E-05
ACTIVITY	22.866063	28.3550966	48.910989	90.501004	59.363547	20.992285	6.9203907	7.1748799	23.793556	77.192069	33.080146	19.220201

ANNUAL TOTALS  
7090000 GALLONS

226.69463 mCi H-3

136.25886 mCi C-14

438.37023 mCi AORN

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 minimum detection limit for analytical method.

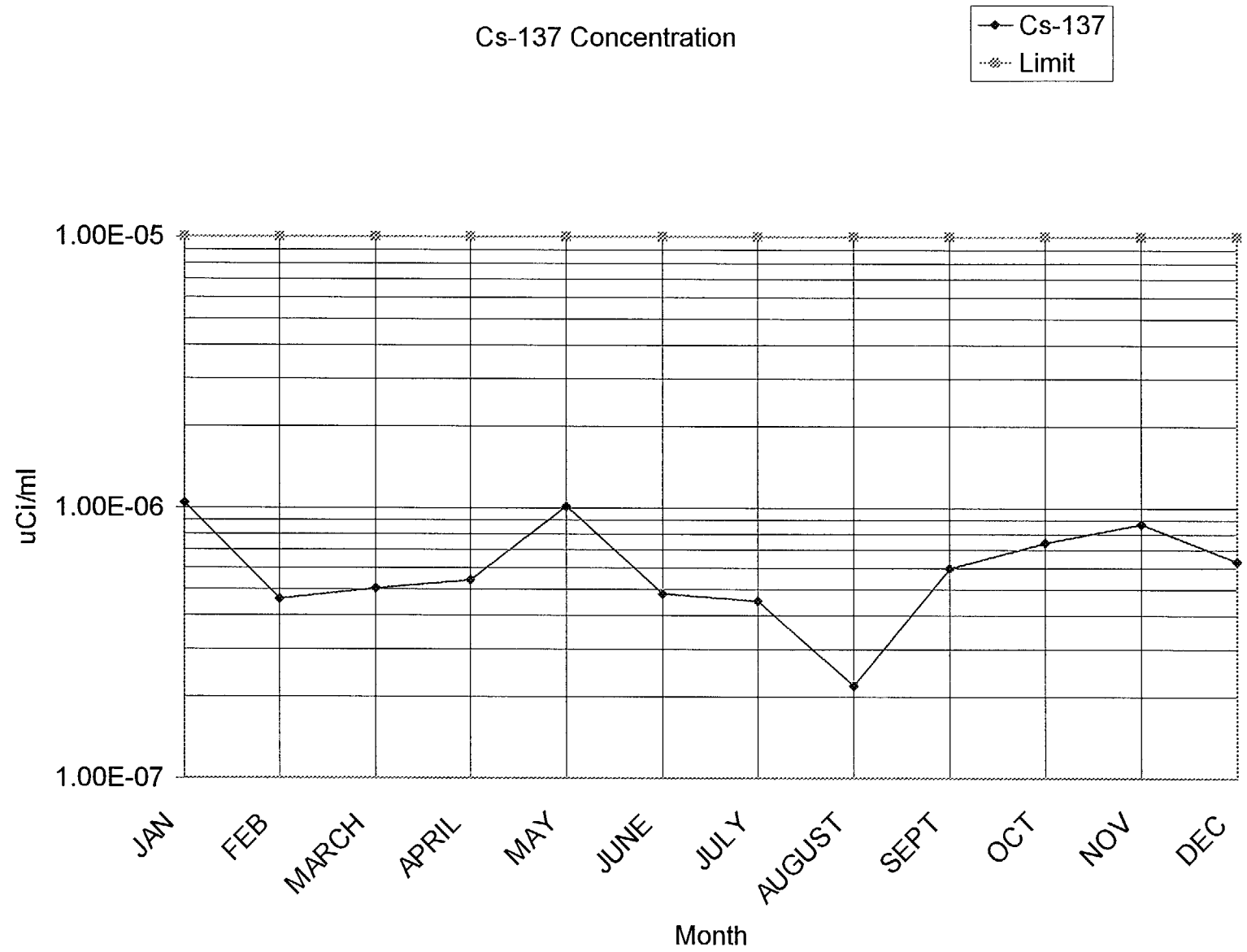
\*Sr-89/90 analyzed and reported as total Sr unless >50 pCi/L. Conservatively assigned to Sr-90

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

ND - No Data

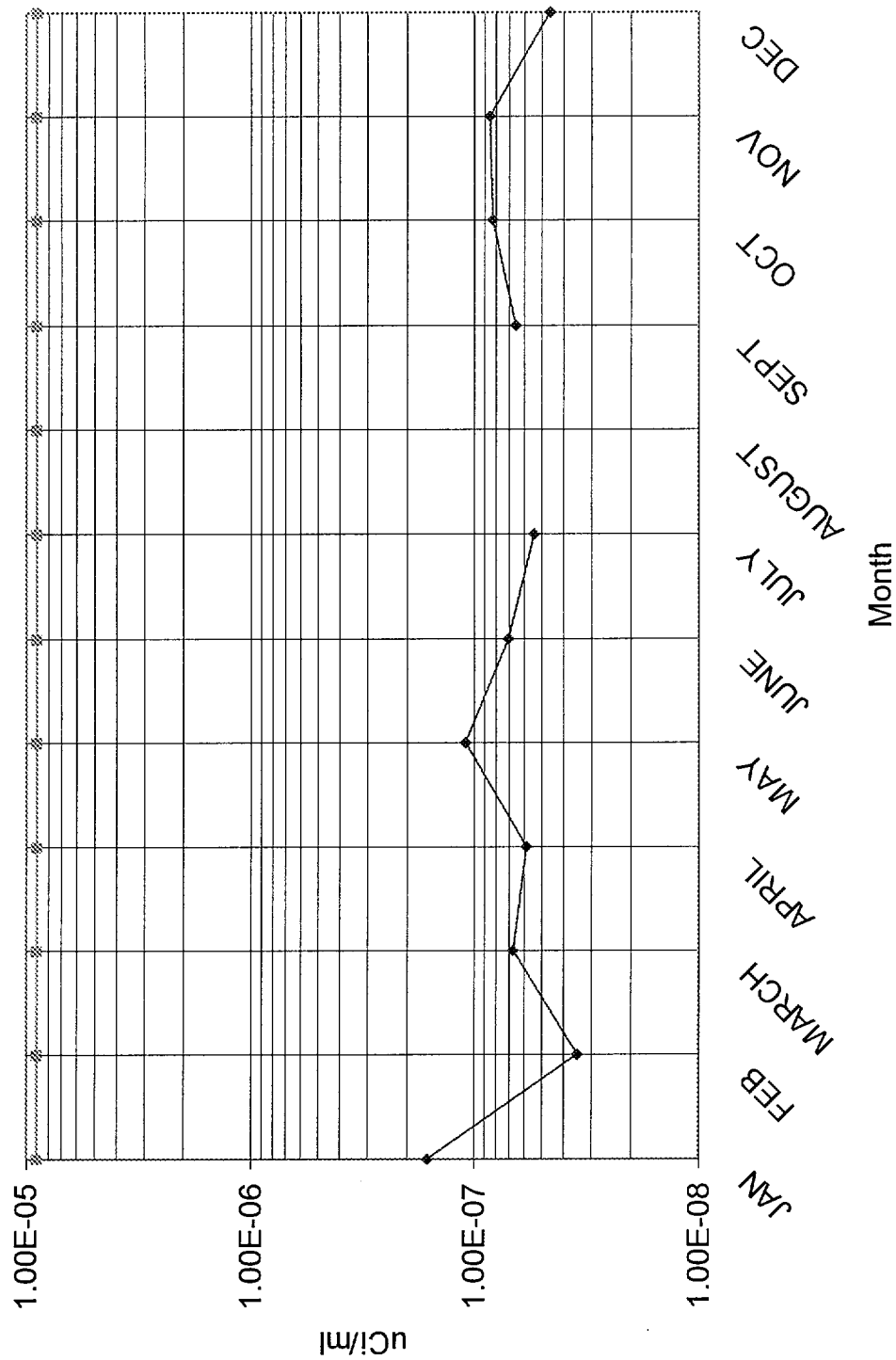
079 - ROYERSFORD RATIOS OF DISCHARGES TO LIMITS													
	LIMIT	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC
H-3	1.0E-02	0.00078	0.00078	0.00078	0.00082	0.00082	0.00082	0.00132	0.00132	0.00132	0.00050	0.00050	0.00050
C-14	3.0E-04	0.01183	0.01183	0.01183	0.01563	0.01563	0.01563	0.01750	0.01750	0.01750	0.02350	0.02350	0.02350
K-40	4.0E-05	0.00494	0.00530			0.00636			0.00305				0.00680
Cr-51	5.0E-03		0.00007	0.00012	0.00011	0.00018					0.00005		
Mn-54	3.0E-04	0.00150	0.00192	0.00264	0.00197	0.00255	0.00212	0.00131	0.00032	0.00039	0.00303	0.00252	0.00405
Fe-55	1.0E-03	0.00988	0.00988	0.00988	0.01290	0.01290	0.01290	0.00313	0.00313	0.00313	0.01360	0.01360	0.01360
Fe-59	1.0E-04											0.00067	
Co-57	6.0E-04					0.00004							
Co-58	2.0E-04	0.00394	0.00440	0.00301	0.00725	0.02055	0.00301	0.00099	0.00028	0.00105	0.00590	0.00761	0.00766
Co-60	3.0E-05	0.04703	0.05717	0.04660	0.04277	0.05677	0.03777	0.03480	0.01475	0.02037	0.05777	0.04170	0.07120
Ni-63	1.0E-03	0.00036	0.00036	0.00036	0.00094	0.00094	0.00094	0.00100	0.00100	0.00100	0.00128	0.00128	0.00128
Zn-65	5.0E-05	0.00479					0.00127		0.00132	0.00099	0.00148		0.00330
Sr-89	8.0E-05												
Sr-90	5.0E-06	0.00108	0.00108	0.00108	0.00096	0.00096	0.00096	0.00108	0.00108	0.00108	0.00089	0.00089	0.00089
Zr-95	2.0E-04			0.00028	0.00053	0.00172	0.00060					0.00038	0.00027
Nb-95	3.0E-04	0.00017	0.00025	0.00025	0.00054	0.00192	0.00089				0.00016	0.00031	0.00016
Tc-99	6.0E-04	0.00073	0.00073	0.00073	0.00095	0.00095	0.00095	0.00055	0.00055	0.00055	0.00103	0.00103	0.00103
Ag-110m	6.0E-05	0.00210				0.00157		0.00056		0.00080	0.00103	0.00160	
Sb-125	3.0E-04	0.00047					0.00025						
I-125	2.0E-05				0.05720								
I-129	2.0E-06				0.01225	0.01225	0.01225						
Cs-134	9.0E-06	0.01799	0.00384	0.00746	0.00648	0.01214	0.00780	0.00599		0.00725	0.00918	0.00948	0.00510
Cs-137	1.0E-05	0.10370	0.04577	0.05004	0.05379	0.10130	0.04787	0.04514	0.02190	0.05952	0.07426	0.08712	0.06305
Eu-152	1.0E-04												
Eu-154	7.0E-05												
Pb-212	2.0E-06									0.06190			
Ra-226	6.0E-07												
Th-228	2.0E-06	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050	0.00050
Th-230	1.0E-06	0.00115	0.00115	0.00115	0.00115	0.00115	0.00115	0.00115	0.00115	0.00115	0.00115	0.00115	0.00115
Th-232	5.0E-05	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
Th-234	5.0E-05								0.00847	0.00788			
U-234	3.0E-06	0.00026	0.00026	0.00026	0.00026	0.00026	0.00026	0.00026	0.00026	0.00026	0.00026	0.00026	0.00026
U-235	3.0E-06								0.00826				
U-238	3.0E-06	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030	0.00030
Pu-238	2.0E-07	0.00680	0.00680	0.00680	0.00680	0.00680	0.00680	0.00680	0.00680	0.00680	0.00680	0.00680	0.00680
Pu-239	2.0E-07	0.00493	0.00493	0.00493	0.00493	0.00493	0.00493	0.00493	0.00493	0.00493	0.00493	0.00493	0.00493
Np-237	2.0E-07												
Am-241	2.0E-07	0.00860	0.00860	0.00860	0.00860	0.00860	0.00860	0.00860	0.00860	0.00860	0.00860	0.00860	0.00860
Cm-244	3.0E-07												
TOTAL	1.00	0.23385	0.16593	0.15760	0.23764	0.27209	0.16858	0.13592	0.10548	0.20728	0.21620	0.21473	0.22495

## Cs-137 Concentration

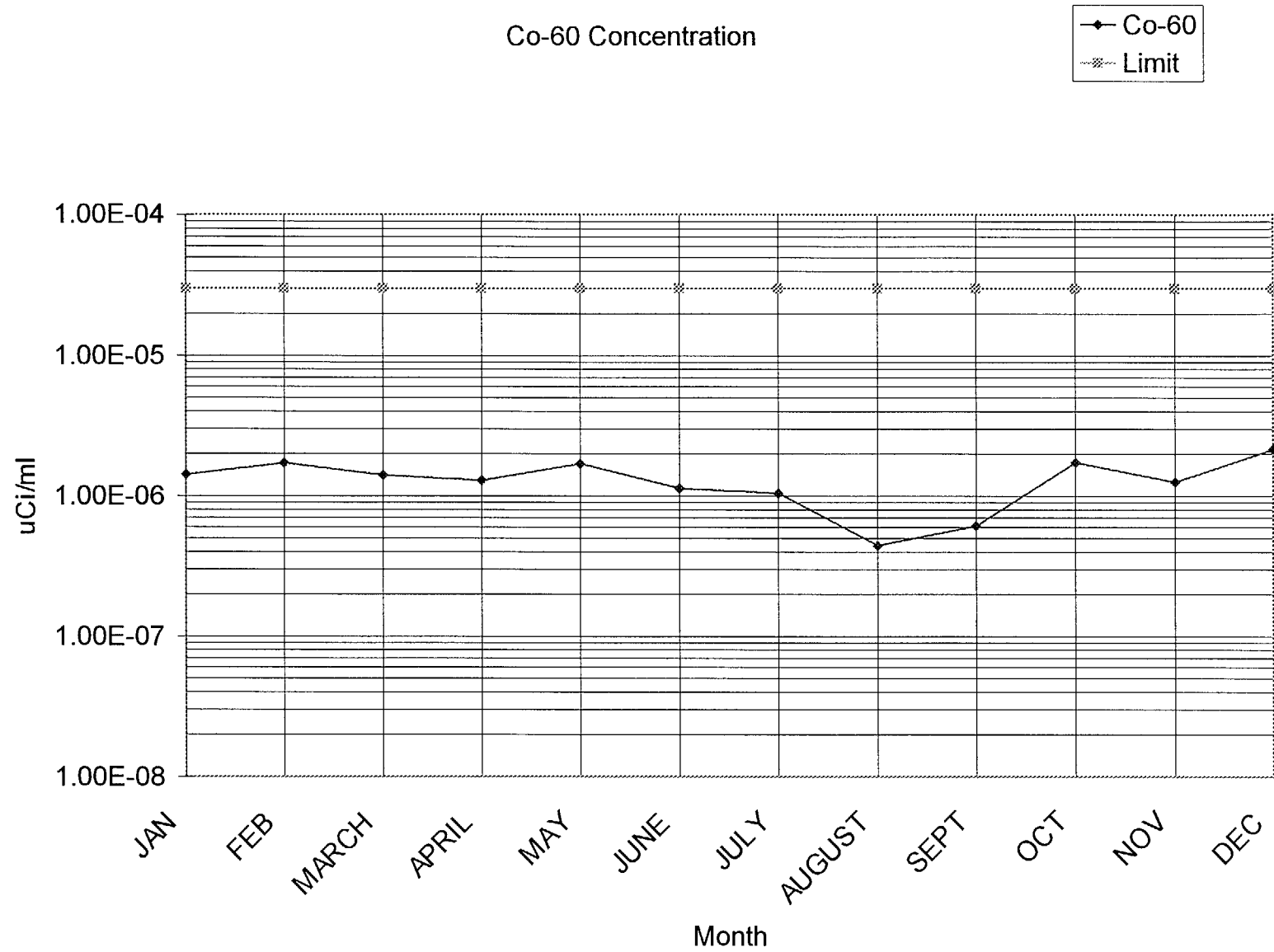


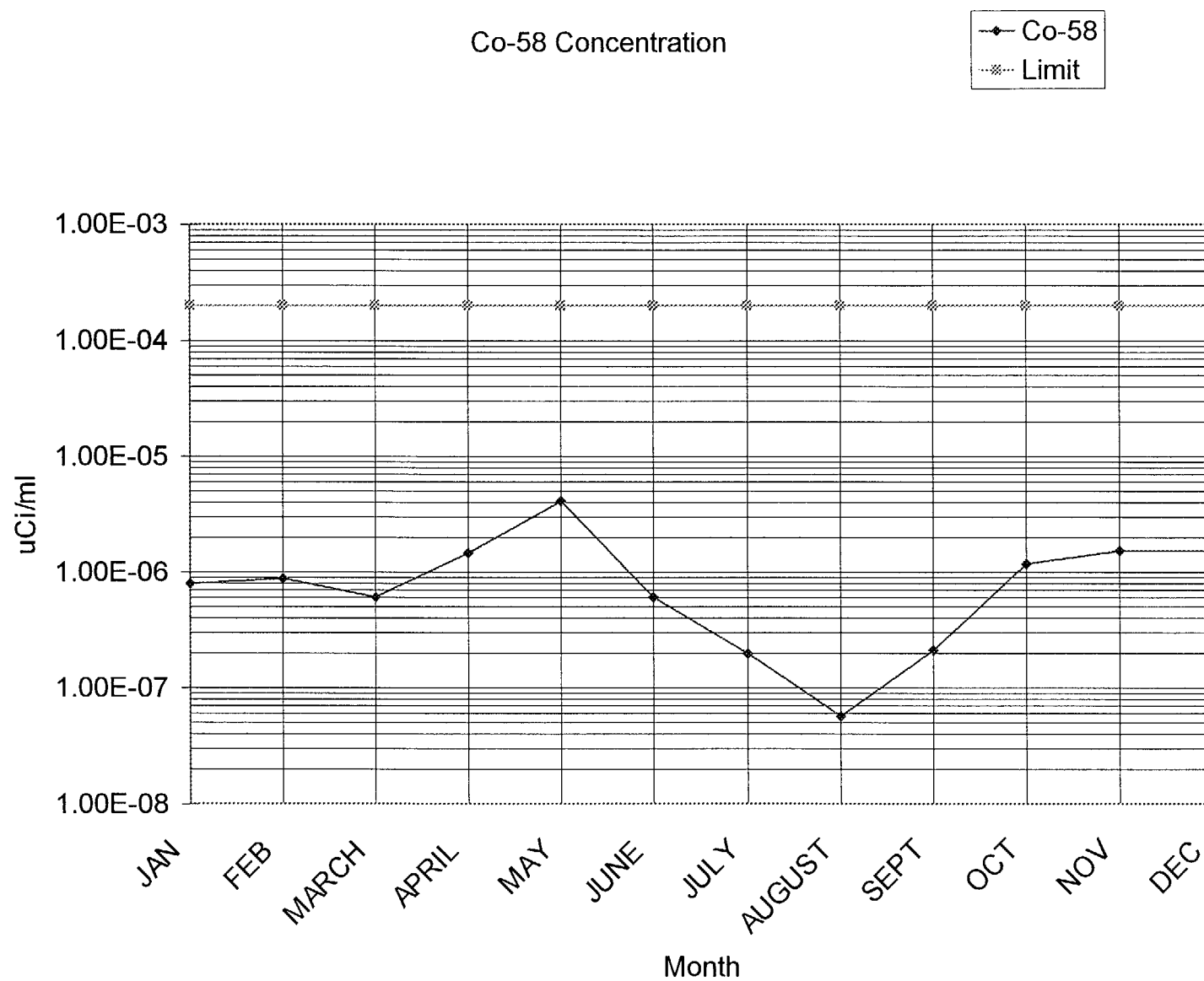
# Cs-134 Concentration

◆ Cs-134  
 ... Limit

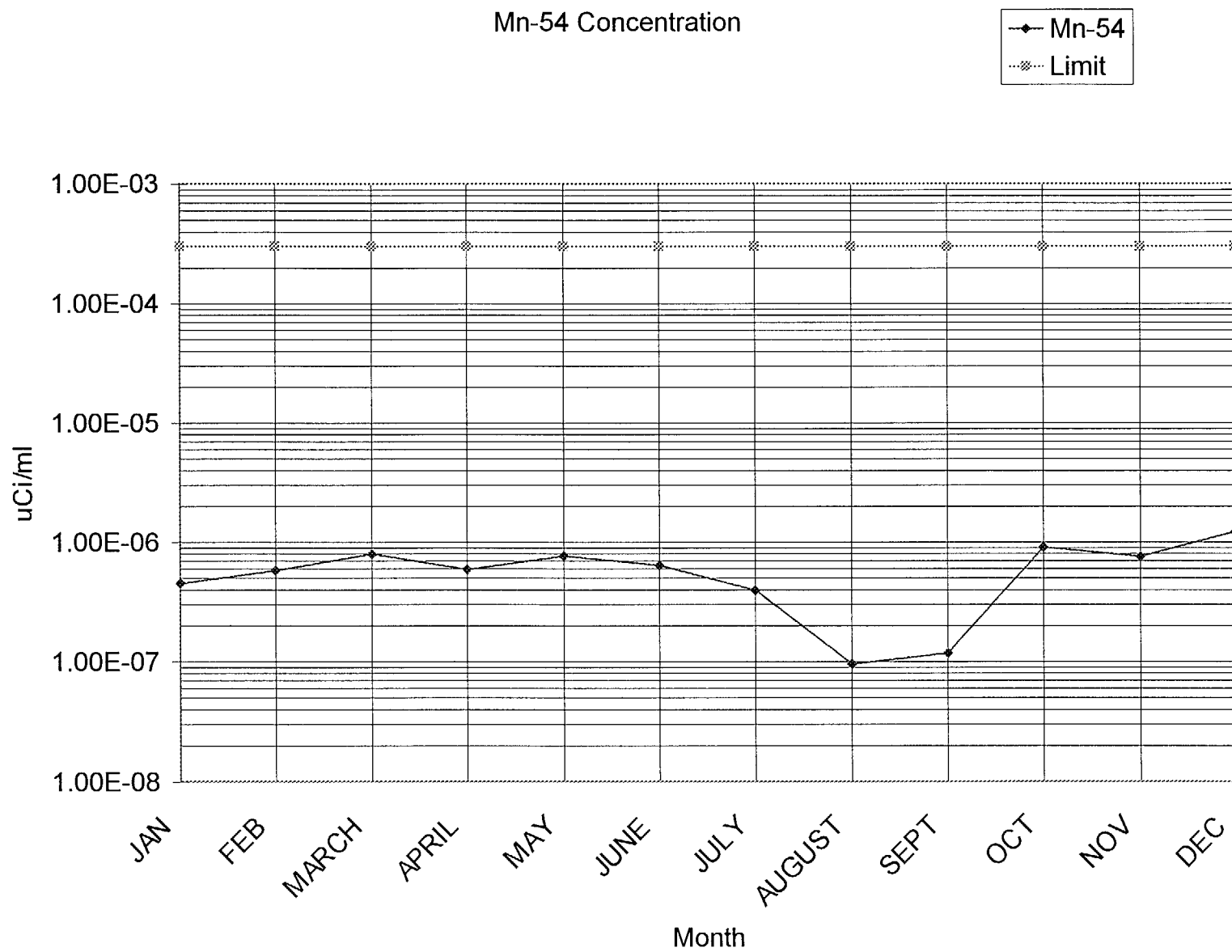


## Co-60 Concentration

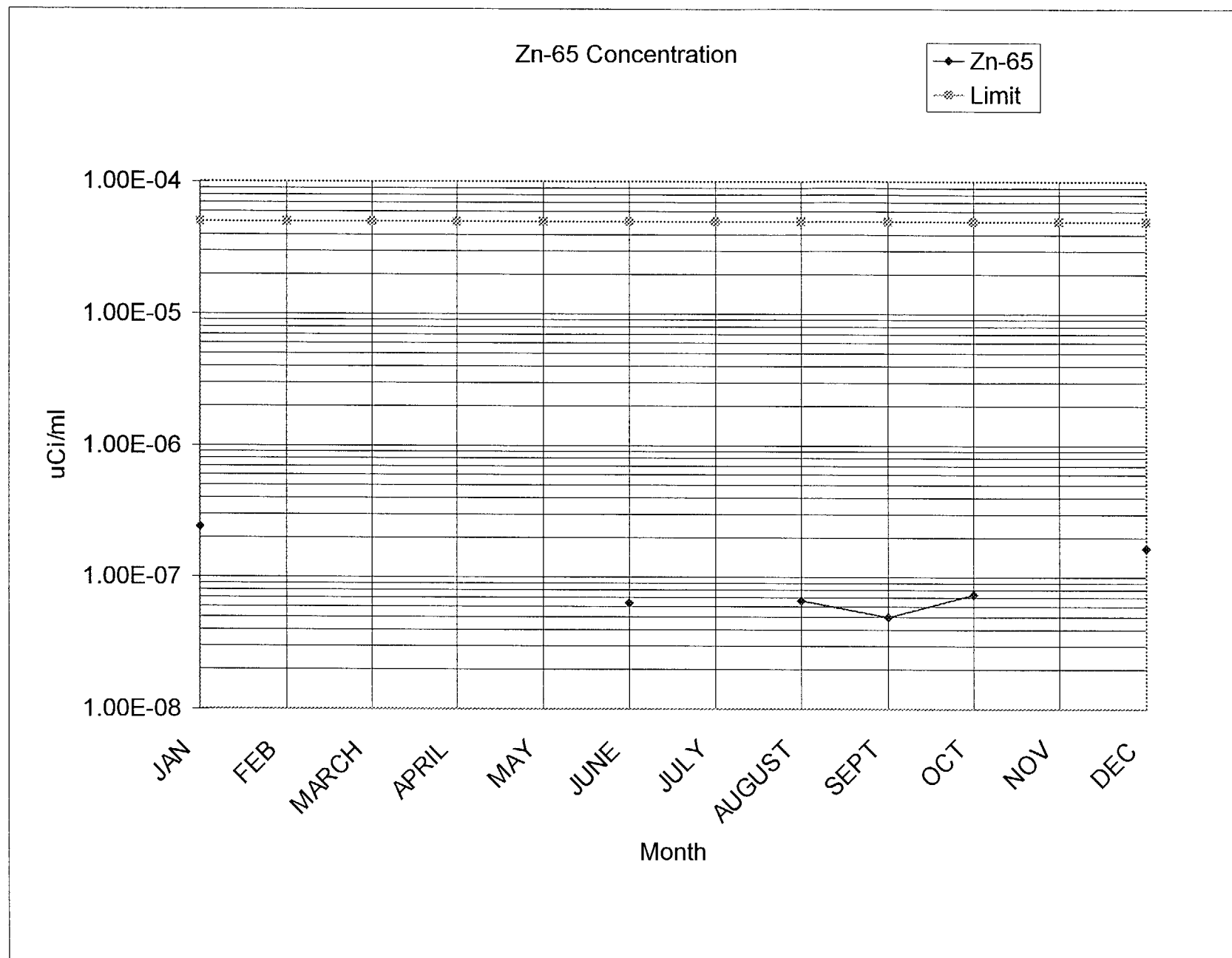




## Mn-54 Concentration







This is to acknowledge the receipt of your letter/application dated

2/13/2002, and to inform you that the initial processing which includes an administrative review has been performed.

☒ **NOTIFICATION 37-23341-01**  
There were no administrative omissions. Your application was assigned to a technical reviewer. Please note that the technical review may identify additional omissions or require additional information.

☐ Please provide to this office within 30 days of your receipt of this card

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A copy of your action has been forwarded to our License Fee & Accounts Receivable Branch, who will contact you separately if there is a fee issue involved.

Your action has been assigned **Mail Control Number** 1 3 1 0 1 2.  
When calling to inquire about this action, please refer to this control number.  
You may call us on (610) 337-5398, or 337-5260.

Sincerely,  
Licensing Assistance Team Leader

BETWEEN:

License Fee Management Branch, ARM  
and  
Regional Licensing Sections

: (FOR LFMS USE)  
: INFORMATION FROM LTS  
: -----  
:  
: Program Code: 03218  
: Status Code: 0  
: Fee Category: 6A  
: Exp. Date: 20050831  
: Fee Comments: CALIBRATION IS FOR THEM  
: Decom Fin Assur Req'd: Y  
: ::

LICENSE FEE TRANSMITTAL

A. REGION I

1. APPLICATION ATTACHED

Applicant/Licensee: UNITECH SERVICES GROUP, INC.  
Received Date: 20020214  
Docket No: 3020934  
Control No.: 131012  
License No.: 37-23341-01  
Action Type: Notifications

2. FEE ATTACHED

Amount: \_\_\_\_\_  
Check No.: \_\_\_\_\_

3. COMMENTS

Signed  
Date

M. A. Perkins  
2/15/2002

B. LICENSE FEE MANAGEMENT BRANCH (Check when milestone 03 is entered /\_\_ /)

1. Fee Category and Amount: \_\_\_\_\_

2. Correct Fee Paid. Application may be processed for:

Amendment \_\_\_\_\_  
Renewal \_\_\_\_\_  
License \_\_\_\_\_

3. OTHER \_\_\_\_\_  
\_\_\_\_\_

Signed  
Date

\_\_\_\_\_  
\_\_\_\_\_