INTERSTATE NUCLEAR SERVICES
A SUBSIDIARY OF UNIFIRST CORPORATION

August 28, 1995

Mr. Anthony Kirkwood
Health Physicist
U.S. Nuclear Regulatory Commission, Region I
475 Allendale Road
King of Prussia, PA 19406

RE: Follow-up Information for License 20-03529-01

Mr. Kirkwood:

On Friday, August 25, 1995, you performed an inspection of the INS facility located in Springfield, MA. During this inspection, you asked INS to respond in writing to two questions. The questions as well as the INS response are outlined below.

NRC Question: INS Corporate performed the Annual Health Physics Audit in July of 1995 and determined that several environmental TLD's had potentially exceeded the 100 mR/year limit. During the on-site portion of the NRC audit, hand written calculations, from the draft INS audit (final report will not be finished for 30 days), were provided to outline why no limit was exceeded based on occupancy. Please provide these calculations as well as the circumstances surrounding the environmental TLD's that exceeded more than 100 mR/year for 1994 and 1995.

INS Response: <u>TLD Location: UniFirst Washroom</u> <u>1994 TLD Dose: 280 mR/year</u>

The Unifirst washroom borders the INS facility. The UniFirst washroom is occupied by UniFirst employees who have a standard 8 hour per day, 5 days per week work schedule. Based on the theoretical maximum occupancy by personnel of 2080 hours per year, the maximum dose would be 62.4 mR/year. ((280 mR per year/8760 hours per year = 0.03 mR/hour) * 2080 hours per year = 62.4 mR/year). Based on controlled occupancy, no limits were exceeded and no further actions are required.

<u>TLD Location: UniFirst Pit</u> <u>1994 TLD Dose: 680 mR/year</u>

The Unifirst pit borders the INS facility. The UniFirst pit area is not normally occupied. This area is inspected by personnel on a daily basis and on a less frequent basis maintenance evolutions are performed. Based on discussions with UniFirst plant management, the maximum occupancy for the area would not exceed 120 hours per year. Using a conservative occupancy

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of 400 hours per year, the theoretical maximum dose would be 32 mR/year. ((680 mR per year/8760 hours per year = 0.08 mR/hour) * 400 hours per year = 32 mR/year). Based on controlled occupancy, no limits were exceeded and no further actions are required.

TLD Location: UniFirst Hanger Station 1994 TLD Dose: 1530mR/year

The Unifirst Hanger Stations border the production area of the INS facility. The UniFirst Hanger Stations are occupied 8 hours per day, 5 days per week. The Environmental TLD is located on the brick wall separating the two companies. The actual UniFirst work stations are greater than 10 feet from the dividing wall and the work area is further segregated by a four foot walkway. The cause of the elevated dose rate was a mop sorting table that was placed against the wall within the INS facility. The environmental TLD is at the same height as the table and approximately at the same location separated only by the hollow block wall. Based on the information outlined above and using a standard point source calculation ($Dr^1 * (R1)^2 = Dr^2 * (R2)^2$), we determined that the maximally exposed individual at a conservative distance of 48 inches from the wall would have received 10 mR/year. ((1530 mR per year/8760 hours per year = Dr^1 at 0.175 mR/hour, R1 =8" and R2 = 48). Considering ALARA principles, the mop sorting table has been moved and additional TLD's will be placed at the hanger stations by the fourth quarter of 1995. Based on the above information, no limits were exceeded.

TLD Location: UniFirst Washroom 1995 TLD Dose: 290 mR/.5 year

See actions and assumptions as outlined previously for 1994 TLDs.

TLD Location: Prod. Wall Exterior 1995 TLD Dose: 470 mR/.5 year

This TLD is located on the outside of the building next to the railroad tracks. This area is routinely inspected for transients and no occupancy was ever identified. Assume the building is a plane source with a 16' height and length of 200'. It is approximately 90 feet to the industrial buildings across the railroad tracks. Based on some very conservative assumptions, the theoretical maximally exposed individual living 90 feet from our facility would receive 35 mR/year(or 17.5 mRem/.5 year). Because of this along with no identified occupancy, no limits will be exceeded.

TLD Location: Garage Gate 1995 TLD Dose: 120 mR/.5 year

This TLD is located on the chain link fence between the radioactive material storage area in the garage and the truck wash bay, also in the garage. Based on maximum occupancy of 2080 hours per year, the maximally exposed individual would receive .0274 mR/hr or 57 mR/year. Because of the controlled occupancy, no limits will be exceeded.

NRC Question: Please outline where and how INS is ensuring compliance with 10 CFR 30.35(g).

INS Response: As a general comment, the INS decommissioning plan and surety have been approved by the Commission.

30.35(g): INS maintains old license drawings, and available as-built drawings at the corporate office in Springfield, MA or at the Columbia, SC facility. The Corporate Engineer at our Columbia, SC facility maintains some of the drawings while the corporate office maintains the bulk of the documents in the records room.

30.35(g)(1): There are no instances of unusual occurrences or spills at an INS facility that is not addressed through the decommissioning plan. The only significant event worth noting would be major equipment configuration changes. This information is controlled in item 2 below.

30.35(g)(2): The Springfield INS facility received it's first radioactive materials license in 1957. Since then, several major changes have been made to the facility. For some of the earlier changes, as-built drawings are not available. However, some of the expired license drawings are on file. For all recent facility modifications, as-built drawings are available and maintained in the corporate records room.

30.35(g)(3): This information is maintained on file by the Corporate Engineer at the INS facility located in Columbia, SC.

If you need additional information, please do not hesitate to contact me at the telephone number on the letter head.

Sincerely,

Kent Anderson

Kent Anderson, Health Physicist
Interstate Nuclear Services Corp.

cc: M. Bovino
P. Manley
S. Berger
file

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TELEPHONE CONVERSATON RECORD	Date: August 31, 1995	Time: 12:06
Mail Control No.: N/A	License No.: 20-03529-01	Docket No.: 030-04632
Person Called: Steven Berger, Plant Manager/RSO	Organization: INS	Telephone Number: 413-543-8008
Person Calling: Anthony S. Kirkwood		
Subject: 95-001 on 25 Aug 95		
Summary: Mr. Berger said additional info requested: calculations showing annual exposure of non-rad workers in adjacent plant and 10 CFR 30.35 decommissioning records compliance evaluation, is in final form. He will address to Dr. Walter Pasciak since I will be out for two weeks.		
Action Required/Taken: Inform SC. File telerec in docket.		
Signature: A. Kirkwood	Date: 31 Aug 95	

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Springfield 1995 Water Results (uCi/ml)

	Cs-134	Cs-137	Co-58	Co-60	Mn-54	Zn-65	I-131	Ni-63	Nb-95	Cr-51	Tc-99
Jan	7.30E-08	6.99E-07	5.41E-08	2.54E-06	3.92E-07	5.12E-07		2.73E-06			1.51E-07
Feb	3.78E-07	1.37E-06	4.42E-07	2.52E-06	3.29E-07	5.38E-07	4.24E-08	2.73E-06			1.51E-07
Mar	2.77E-07	1.59E-06	3.45E-07	1.44E-06	2.98E-07			2.73E-06			1.51E-07
Apr	1.52E-[illegible]	1.17E-06	1.38E-07	7.94E-07	1.69E-07	6.89E-07					
May	7.96E-08	8.96E-07	5.29E-07	2.92E-06	4.75E-07	1.04E-06			1.7E-07		
Jun	1.43E-07	1.65E-06	8.29E-07	9.60E-06	1.16E-06	1.71E-06			2.39E-07		
Jul	1.42E-07	9.53E-07	1.17E-07	2.56E-06	1.31E-07	2.00E-07					
Aug											
Sep											
Oct											
Nov											
Dec											

	Fe-55	U-234	U-235	U-238	Sr-89	C-14	Sr-90	H-3	Gallons Disch	uC Disch
Jan	2.17E-06				3.11E-08	8.83E-07		3.58E-06	801575.4	20190
Feb	2.17E-06				3.11E-08	8.83E-07		3.58E-06	1020372.5	56490
Mar	2.17E-06				3.11E-08	8.83E-07		3.58E-06	1394000	71086
Apr									1470489.3	17321
May									1090685.1	25222
Jun									458088.87	28636
Jul									231549.6	5149
Aug										
Sep										
Oct										
Nov										
Dec										
							YTD Totals:		6287750.8	2300[illegible]

Fraction Totals

(% of Maximum Permissible Concentrations)

	Cs-134	Cs-137	Co-58	Co-60	Mn-54	Zn-65	I-131	Ni-63	Nb-95	Cr-51	Tc-99
Jan	0.81%	0.35%	0.03%	8.47%	0.13%	1.02%		0.27%			0.03%
Feb	4.20%	0.69%	0.22%	8.40%	0.11%	1.08%	0.42%	0.27%			0.03%
Mar	3.08%	0.80%	5.17%	4.80%	0.10%			0.27%			0.03%
Apr	1.69%	0.59%	0.07%	2.65%	0.08%	1.38%					
May	0.88%	0.45%	0.26%	9.73%	0.16%	2.08%			0.06%		
Jun	1.59%	0.83%	0.41%	32.00%	0.39%	3.42%			0.08%		
Jul	1.58%	0.48%	0.06%	8.53%	0.04%	0.40%					
Aug											
Sep											
Oct											
Nov											
Dec											

	Fe-55	U-234	U-235	U-238	Sr-89	C-14	Sr-90	H-3	Fraction Total
Jan	0.22%				0.04%	0.29%		0.04%	11.86%
Feb	0.22%				0.04%	0.29%		0.04%	16.00%
Mar	0.22%				0.04%	0.29%		0.04%	9.83%
Apr									6.42%
May									13.83%
Jun									38.71%
Jul									11.08%
Aug									
Sep									
Oct									
Nov									
Dec									

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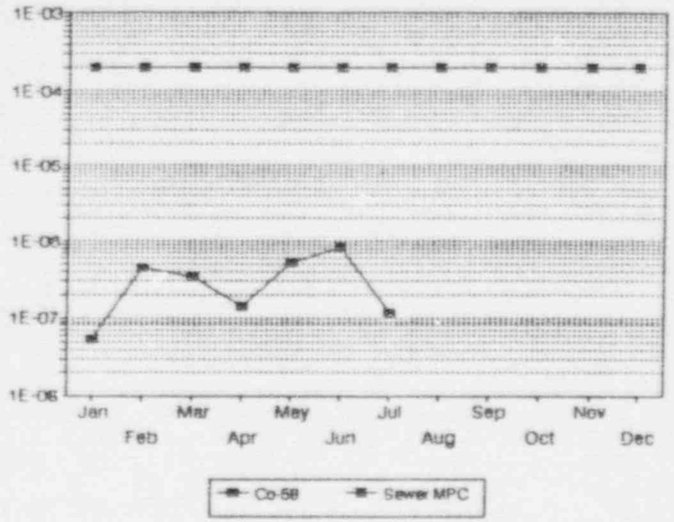
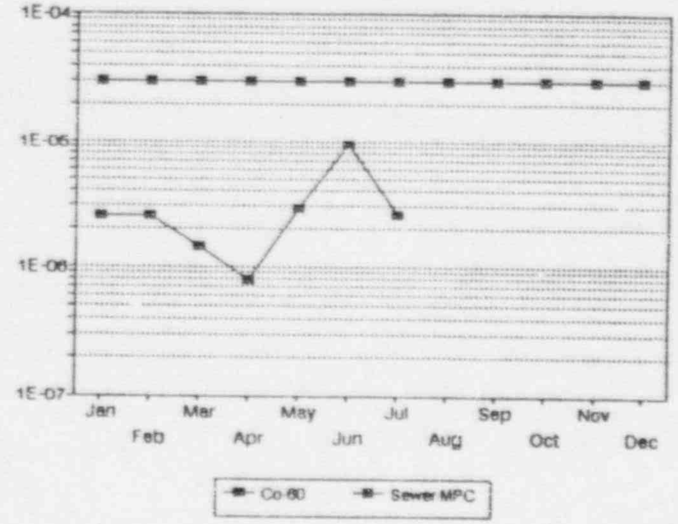
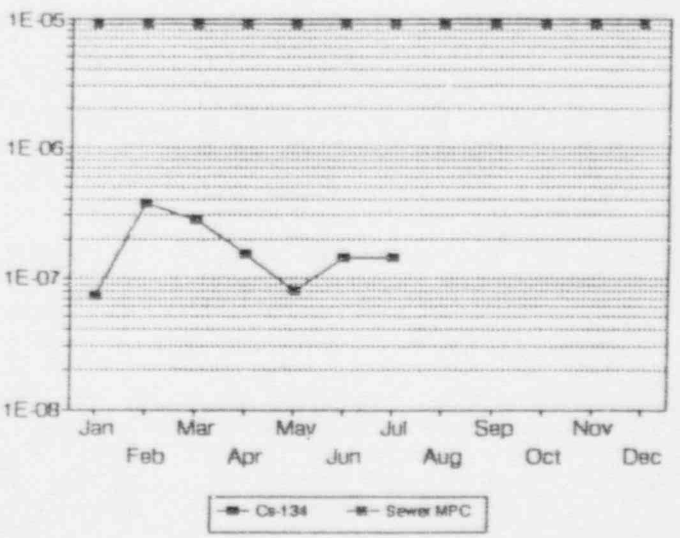
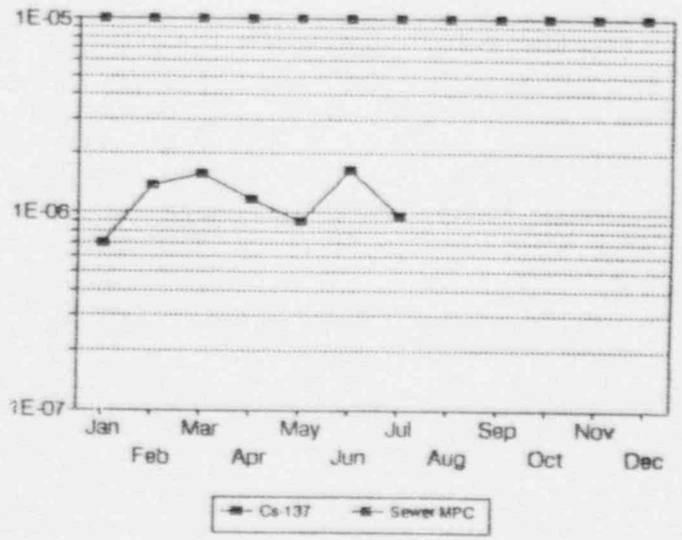
Springfield 1995 Water Results (uCi/ml)

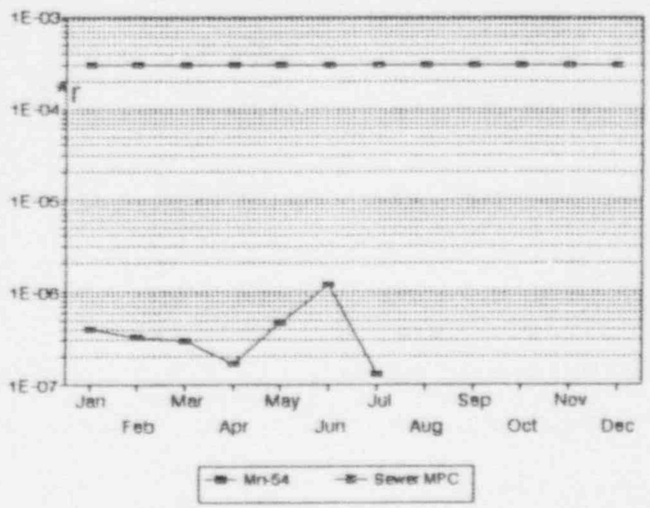


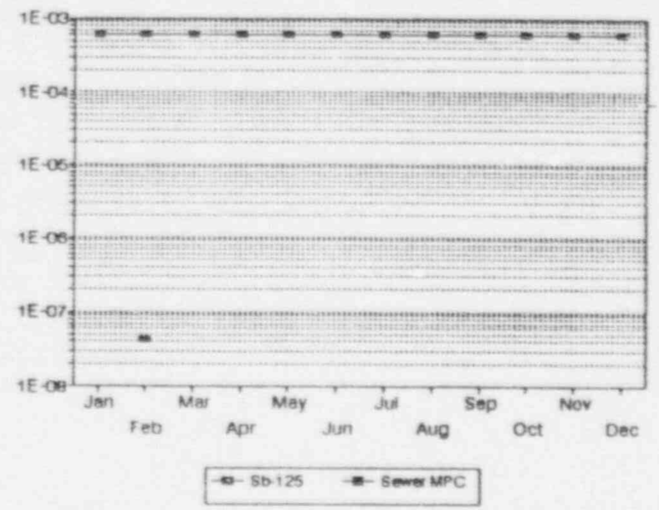


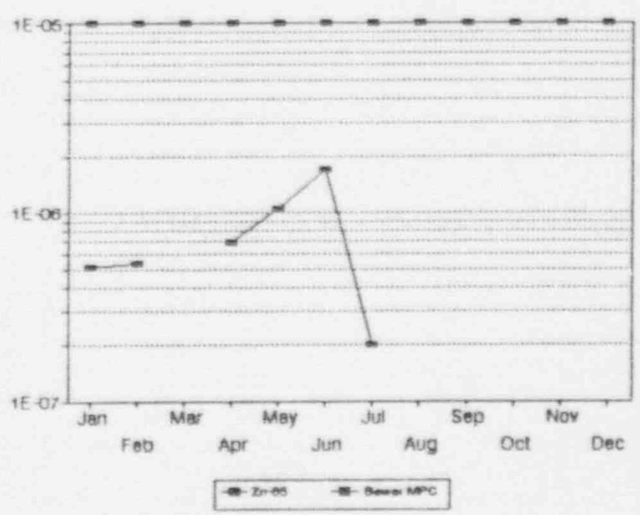


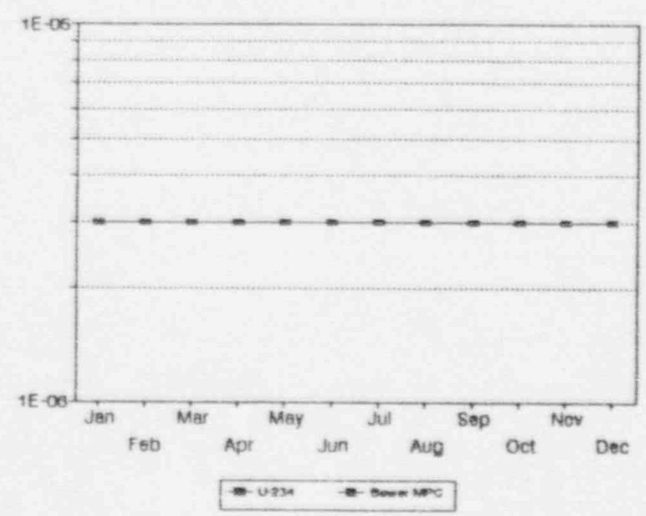


Springfield 1995 Water Results (uCi/ml)









Springfield 1994 Water Results (uCi/ml)

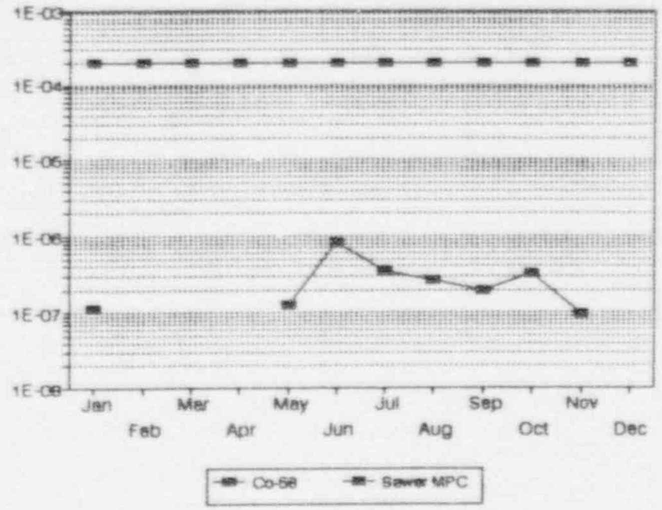
	Cs-134	Cs-137	Co-58	Co-60	Mn-54	Zn-65	Ni-63	Tc-99	U-235	Sr-89	I-129	C-14	Fe-55	Sr-90	[illegible]	[illegible]	[illegible]
Jan		4.93E-07	1.13E-07	1.21E-06	2.44E-07	5.15E-07	3.1E-08	2.8E-08					8.67E-07	1E-07	1.14E-05	308045.78	17377
Feb		3.85E-07		1.37E-06	2.77E-07	1.13E-06	3.1E-08	2.8E-08					8.67E-07	1E-07	1.14E-05	494572	28590
Mar	1.11E-07	4.27E-07		8.91E-07	2.31E-07	6.20E-07	3.1E-08	2.8E-08					8.67E-07	1E-07	1.14E-05	638219	35413
Apr		4.17E-07		2.59E-08	5.74E-07	1.01E-06	1.4E-08	7.5E-08					1.8E-07		4.07E-08	544081	18390
May		3.58E-07	1.24E-07	6.09E-07		1.81E-07	1.4E-08	7.5E-08					1.8E-07		4.07E-08	450567	9569
Jun		3.48E-07	8.20E-07	2.12E-06	4.57E-07	6.24E-07	1.4E-08	7.5E-08					1.8E-07		4.07E-08	382555	12809
Jul	1.48E-07	9.83E-07	3.46E-07	1.53E-06	2.08E-07	3.39E-07	1.23E-07	2.09E-07	3.08E-08		2.42E-07	6.67E-07	9.08E-07	3.1E-08	7E-08	308045	14807
Aug	3.08E-07	1.57E-06	2.65E-07	1.33E-06	1.79E-07	4.25E-07	1.23E-07	2.09E-07			2.42E-07	6.67E-07	9.08E-07	3.1E-08	7E-08	348549	17516
Sep	1.13E-07	1.02E-06	1.97E-07	1.79E-06	2.35E-07		1.23E-07	2.09E-07			2.42E-07	6.67E-07	9.08E-07	3.1E-08	7E-08	289043	13736
Oct	9.15E-08	7.98E-07	3.33E-07	2.13E-06	2.71E-07		1.25E-07	1.02E-07		1.81E-07	3.28E-07	1.75E-07	9.49E-07	5.08E-08	3.07E-08	374056	12179
Nov	1.12E-07	7.21E-07	9.87E-08	8.42E-07	1.24E-07	9.80E-08	1.25E-07	1.02E-07		1.81E-07	3.28E-07	1.75E-07	9.49E-07	5.08E-08	3.07E-08	289043.24	763
Dec	4.32E-08	4.06E-07		5.23E-07	1.38E-07		1.25E-07	1.02E-07		1.81E-07	3.28E-07	1.75E-07	9.49E-07	5.08E-0[illegible]	3.07E-08	442086.13	10188
														YTD Totals:		4546796.4	198007

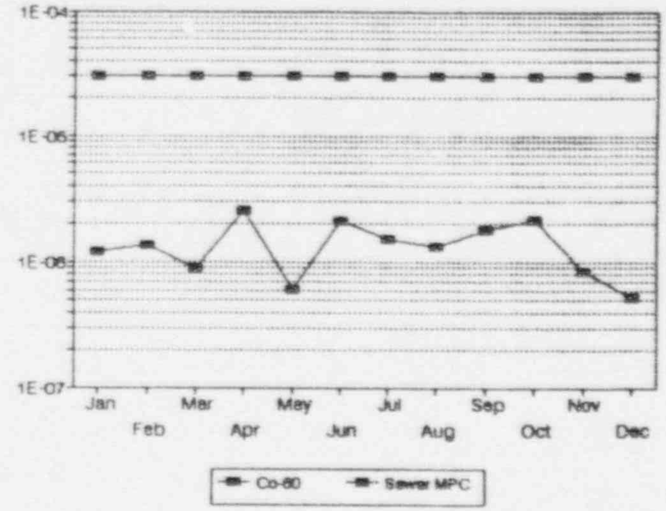
Fraction Totals

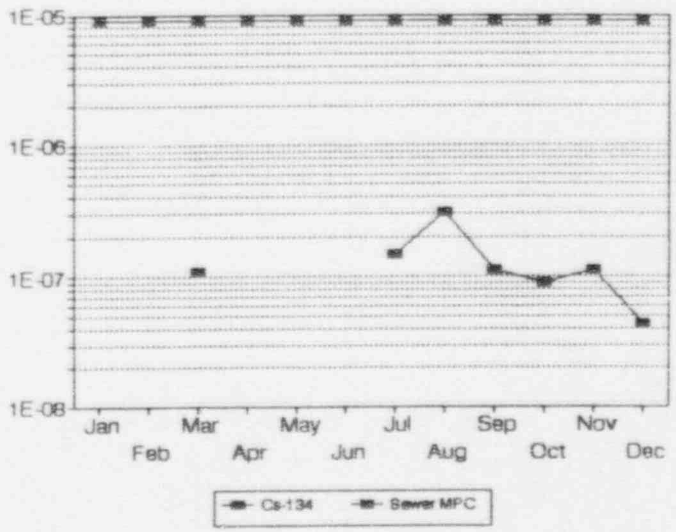
(% of Maximum Permissible Concentrations)

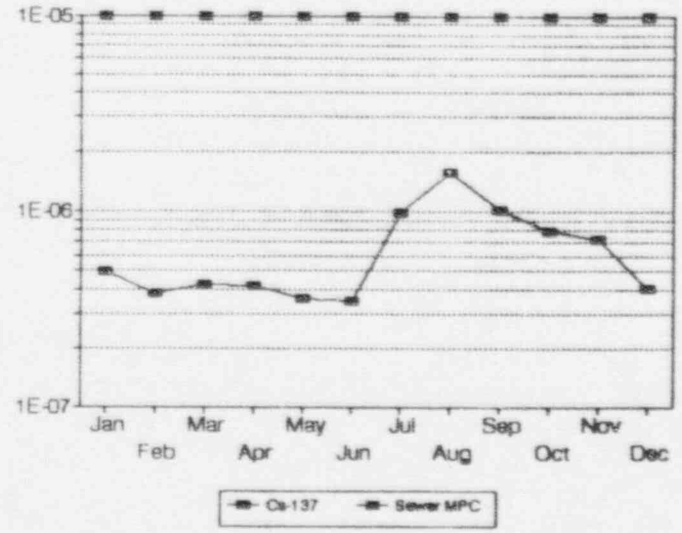
	Cs-134	Cs-137	Co-58	Co-60	Mn-54	Zn-65	Ni-63	Tc-99	U-235	Sr-89	I-129	C-14	Fe-55	Sr-90	H-3	Fraction Total
Jan		4.93%	0.06%	4.03%	0.08%	1.03%	0.00%	0.00%					0.09%	2.00%	0.11%	0.1234
Feb		3.85%		4.57%	0.09%	2.26%	0.00%	0.00%					0.09%	2.00%	0.11%	0.1296
Mar	1.23%	4.27%		2.97%	0.08%	1.24%	0.00%	0.00%					0.09%	2.00%	0.11%	0.1200
Apr		4.17%		8.63%	0.19%	2.02%	0.00%	0.01%					0.02%		0.04%	0.1509
May		3.58%	0.06%	2.03%		0.36%	0.00%	0.01%					0.02%		0.04%	0.0611
Jun		3.48%	0.41%	7.07%	0.15%	1.25%	0.00%	0.01%					[illegible].02%		0.04%	0.1243
Jul	1.64%	9.83%	0.17%	5.10%	0.07%	0.68%	0.01%	0.03%	0.01%		0.04%	0.11%	0.09%	0.62%	0.07%	0.1848
Aug	3.42%	15.70%	0.13%	4.43%	0.06%	0.85%	0.01%	0.03%			0.04%	0.11%	0.09%	0.62%	0.07%	0.2558
Sep	1.26%	10.20%	0.10%	5.97%	0.08%		0.01%	0.03%			[illegible]	0.11%	0.09%	0.62%	0.07%	0.1656
Oct	1.02%	7.98%	0.17%	7.10%	0.09%		0.01%	0.02%		0.03%	0.05[illegible]	0.0[illegible]	0.09%	1.02%	0.03%	0.1762
Nov	1.24%	7.21%	0.05%	2.81%	0.04%	0.20%	0.01%	0.02%		0.03%	0.05%	[illegible]	0.09%	1.02%	0.03%	0.1263
Dec	0.48%	4.06%		1.74%	0.05%		0.01%	0.02%		0.03%	0.05%	[illegible].03%	0.09%	1.02%	0.03%	0.0781

Springfield 1994 Water Results

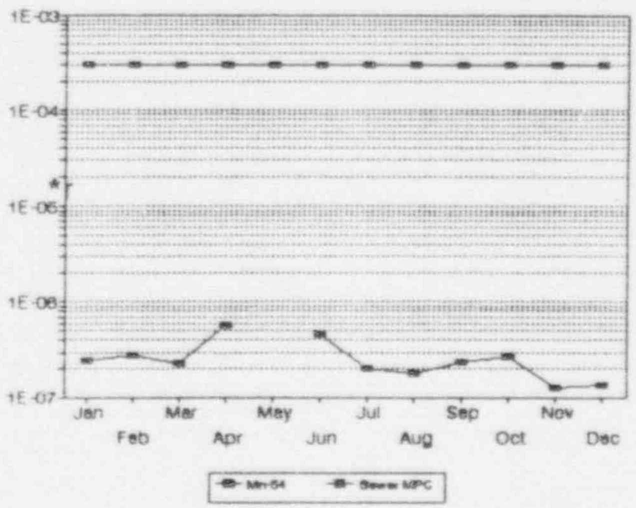


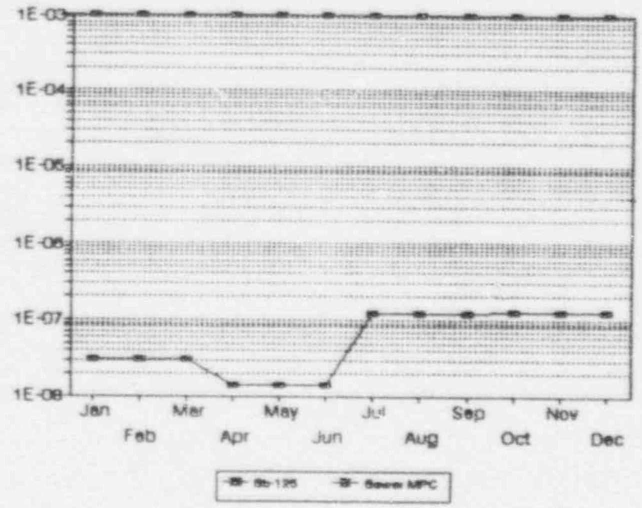


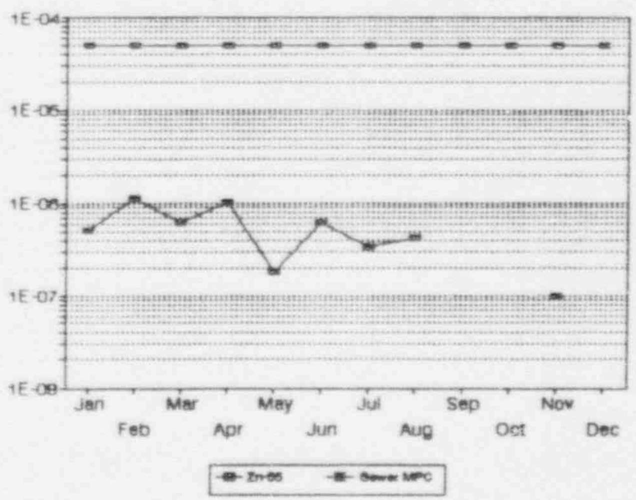




Springfield 1994 Water Results







TELEPHONE CONVERSATON RECORD	Date: September 20, 1995	Time: 14:45
Mail Control No.: N/A	License No.: 20-03529-01	Docket No.: 030-04632
Person Called: Steve Berger, RSO & Kent Anderson, HP	Organization: INS	Telephone Number: 413-543-8008 & 6911
Person Calling: Anthony S. Kirkwood		
Subject: 95-001 on 25 Aug 95		
Summary: Mr. Berger and Mr. Anderson were informed that a Clear 591 would be forthcoming. They agreed to list the locations of all 30.35 records in a central location (Springfield, MA., Corporate Office) and have them retrievable within a reasonable time frame. Older facility records not available are not applicable to 30.35 concerns.		
: Inform SC. File telerec in docket.		
Signature: A. Kirkwood	Date: 9/20/95	

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