



## **Global Nuclear Fuel**

A Joint Venture of GE, Toshiba, & Hitachi

### **Global Nuclear Fuel**

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SPM 13-014

February 27, 2013

Attn: Document Control Desk  
Director, Office of Nuclear Material Safety and Safeguards  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555-0001

Subject: Semi-Annual Effluent Monitoring Report

References: 1) NRC License SNM-1097, Docket 70-1113  
2) NRC Regulation 10CFR70.59

Dear Sir or Madam:

With respect to activities authorized by NRC License SNM-1097, the Global Nuclear Fuel-Americas, L.L.C. (GNF-A) facility in Wilmington, North Carolina hereby submits the semi-annual effluent monitoring report required by 10CFR70.59 for the time period of July through December 2012.

If you have any questions regarding this matter, please contact me at (910) 819-5950.

Sincerely,

A handwritten signature in black ink, appearing to read 'Scott Murray', is written over a horizontal line.

Scott Murray, Manager  
Facility Licensing

Commitments: None

Attachment: Semi-Annual Effluent Monitoring Report (July – December 2012)

cc: NRC Region II Administrator, Atlanta, GA  
Mary Thomas, USNRC, RII  
M.N (Nick) Baker, USNRC, NMSS  
Lee Cox, NCDHHS  
Mark Poirier, ANI

# SEMI-ANNUAL EFFLUENT REPORT

Global Nuclear Fuel - Americas, LLC  
Wilmington, North Carolina

July 2012 - December 2012

NRC License SNM 1097, Docket # 70-1113

Fiscal Weeks 27-52

## I. GASEOUS EFFLUENT-PARTICULATE

NUCLIDES	QUANTITY (Ci)	CONCENTRATION (uCi/cc)	* APPENDIX B LIMIT (uCi/cc)	% of LIMIT	CEDE mrem	CDE (Lung) mrem
U234	6.75E-06	3.85E-15	5.00E-14	7.70%	1.92E-02	1.62E-01
U235	2.62E-07	1.49E-16	6.00E-14	0.25%	6.27E-04	5.23E-03
U236	9.23E-09	5.26E-18	6.00E-14	0.01%	2.21E-05	1.84E-04
U238	8.84E-07	5.04E-16	6.00E-14	0.84%	2.12E-03	1.76E-02
<b>TOTAL</b>	<b>7.90E-06</b>	---	---	---	<b>0.0220</b>	<b>0.185</b>

EXHAUST VOLUME = 1.75E+15 (cc)

## II. LIQUID EFFLUENT

NUCLIDES	QUANTITY (Ci)	CONCENTRATION (uCi/cc)	* APPENDIX B LIMIT (uCi/cc)	% of LIMIT	CEDE (mrem)	CDE (Lung) (mrem)	CDE (Bone Surface) (mrem)
U234	5.31E-03	2.19E-08	3.E-07	7.30%	1.60E-06	1.01E-06	2.32E-05
U235	2.06E-04	8.51E-10	3.E-07	0.28%	8.85E-08	5.61E-08	1.28E-06
U236	7.26E-06	3.00E-11	3.E-07	0.01%	2.07E-09	1.32E-09	3.00E-08
U238	6.96E-04	2.87E-09	3.E-07	0.96%	1.90E-07	1.21E-07	2.75E-06
<b>TOTAL U</b>	<b>6.22E-03</b>	---	---	---	<b>1.88E-06</b>	<b>1.19E-06</b>	<b>2.73E-05</b>

TOTAL VOLUME OF LIQUID EFFLUENT = 2.42E+08 (litres)

## III. ABNORMAL RELEASES

	Air	Water	Total
# Releases	0	0	0
Activity Released (Ci)	0	0	0

## IV. SUMMARY

	** Max Release (uCi/cc)	CEDE, total (mrem)	CDE (Lung), total (mrem)
Value	3.85E-15	2.20E-02	1.85E-01
Limit	5.00E-14	25	25
% of Limit	7.70%	0.09%	0.74%

\* Limit from 10 CFR 20 Appendix B, Table 2, Column 1

\*\* From nuclide with release that is the largest percentage of its release limit.

### NOTES:

Air sampling is continuous. Water samples analyzed are representative, continuous composite samples of process effluent stream.

Reported values are representative of the effluent concentration at the point of release and do not consider effects of dilution from point of release to the plant site boundary.