



**ENERGYSOLUTIONS**

Commercial Processing Division 1560 Bear Creek Road Oak Ridge, TN 37831 865 481-0222

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February 5, 2009

Mr. Scott Moore  
Deputy Director - Office of International Programs  
US Nuclear Regulatory Commission  
Mail Stop 4E21  
Washington, DC 20555

Dear Mr. Moore:

In accordance with instructions in 10 CFR 110.4 we are providing the attached NRC Form 7 as notification of EnergySolutions' intent to export empty containers to AECL, Chalk River Laboratories in Chalk River, Ontario, Canada.

These are reusable containers dedicated to radioactive materials shipments and the interiors are surficially contaminated, albeit at very low levels. The containers are being exported under the General License for Export provisions of 10 CFR 110.-21(e), 22(a), and 23(c) for Special Nuclear Material, Source Material, and By-Product Material.

Contact me if additional information or clarification is required.

Respectfully,



Philip Gianutsos, CHP  
Radiation Safety Officer  
Commercial Processing Division

Attachments:  
NRC Form 7

cc: Mr. Tim Ryder, Monserco

NM  
Recd  
02-09-09

|   |  |   |   |  |   |  |  |
|---|--|---|---|--|---|--|--|
| NRC FORM 7<br>(8-2007)<br>10 CFR 110  |  | U.S. NUCLEAR REGULATORY COMMISSION  |   | APPROVED BY OMB: NO. 3150-0027   |   | EXPIRES: 06/30/2009  |  |
| APPLICATION FOR NRC EXPORT/IMPORT<br>LICENSE, AMENDMENT, OR RENEWAL<br>(See Instructions on Page 5)   |  |   |   | Estimated burden per response to comply with this mandatory collection request: 2.4 hours. This submittal is reviewed to ensure that the applicable statutory, regulatory, and policy considerations are satisfied. Send comments regarding burden estimate to the Records and FOIA/Privacy Services Branch (T-5 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0027), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection. |   |  |  |
| PART A. FOR NRC USE ONLY  |  | <input checked="" type="checkbox"/> PUBLIC OR <input type="checkbox"/> NON-PUBLIC |   | DATE RECEIVED<br>02/09/09  |   |  |  |
| LICENSE NUMBER  |  | DOCKET NUMBER   |   | ADAMS ACCESSION NUMBER   |   |  |  |
| PART B. TO BE COMPLETED FOR ALL LICENSES, AMENDMENTS, OR RENEWALS<br>(If more space is needed to complete any of the items, use Pages 3-4 first, and then attach additional sheets, if necessary.)  |  |   |   |  |   |  |  |
| 1. NAME AND ADDRESS OF APPLICANT/LICENSEE<br>EnergySolutions<br>1560 Bear Creek Rd<br>Oak Ridge, TN 37831   |  |   | 1a. NAME OF APPLICANT'S CONTACT<br>Philip Gianutos                          |  | 1b. APPLICANT'S REFERENCE NUMBER<br>---N/A--- |  |  |
|   |  |   | 1c. PHONE NUMBER<br>865 220-1478  |  | 1d. FAX NUMBER<br>865 220-1668                |  |  |
|   |  |   | 1e. E-MAIL ADDRESS<br>pgianutos@energysolutions.com                         |  |   |  |  |
| 2. TYPE OF NRC LICENSE REQUESTED (Check One)<br><input type="checkbox"/> EXPORT (Parts B, C, E) <input checked="" type="checkbox"/> NOTIFICATION OF EXPORT OF INCIDENTAL RADIOACTIVE MATERIAL (PART C,E) <input type="checkbox"/> IMPORT (Parts B, D, E) <input type="checkbox"/> COMBINED EXPORT/IMPORT (Parts B, C, D, E) <input type="checkbox"/> AMENDMENT/RENEWAL Existing License Number:   |  |   |   |  |   |  |  |
| 3. CONTRACT NUMBER(S)<br>Not Applicable   |  | 4. FIRST SHIPMENT DATE<br>2/10/09   |   | 5. LAST SHIPMENT DATE<br>12/31/09  |   | 6. PROPOSED EXPIRATION DATE<br>---N/A---   |  |
| PART C. TO BE COMPLETED FOR EXPORT ONLY OR COMBINED LICENSES, AMENDMENTS, OR RENEWALS<br>(If more space is needed to complete any of the items, use Pages 3-4 first, and then attach additional sheets, if necessary.)  |  |   |   |  |   |  |  |
| 7. NAME(S) / ADDRESS(ES) OF SUPPLIERS AND/OR OTHER PARTIES TO THE EXPORT<br>EnergySolutions<br>1560 Bear Creek Rd<br>Oak Ridge, TN 37831  |  |   | 8. NAME(S) / ADDRESS(ES) OF INTERMEDIATE FOREIGN CONSIGNEE(S)<br>---NONE--- |  |   | 9. NAME(S) / ADDRESS(ES) OF ULTIMATE FOREIGN CONSIGNEE(S)<br>AECL Chalk River Laboratories<br>Chalk River Ontario<br>Canada K0J 1J0<br>Contact: Bart Campbell<br>Ph: 613-584-8811  |  |
| 7a. LIST FUNCTIONS PERFORMED/SERVICE PROVIDED<br>Empty, reusable containers being returned to AECL Chalk River Laboratories.  |  |   | 8a. INTERMEDIATE USE(S)<br>---NONE---                                       |  |   | 9a. ULTIMATE END USE(S)<br>The containers were exported from AECL Chalk River to Oak Ridge, TN by a Canadian Broker (Monserco) in accordance with !W017. After emptying the containers of their contents, the containers are being returned to AECL Chalk River. |  |
| 10. DESCRIPTION OF RADIOACTIVE MATERIALS, SEALED SOURCES, NUCLEAR FACILITIES, EQUIPMENT, OR COMPONENTS: FOR NUCLEAR EQUIPMENT INCLUDE TOTAL DOLLAR VALUE OF EQUIPMENT FOR EXPORT<br>Forty-eight (48) DOT Empty containers to be shipped to AECL Chalk River (Canada). The containers consist of one nominal 8'x8'x20' cargo container weighing approximately 5500 kgs (12,000 pounds); thirty (30) B-25 boxes (nominal 4'X4'X8' weighing approximately 325 kgs or 720 pounds); and seventeen (17) roll-off containers (nominal 6'X8'X21' weighing 2500kgs or 5500 pounds). Incidental radioactive material is present as contamination on the interior surfaces of the containers. The contamination is predominantly byproduct material, with traces of source and special nuclear material. All radioactive material is in the form of solid metal oxides. See attached page for quantities of Appendix L materials. Several Appendix P radionuclides will be present, with each shipment << 0.1% of the Category 2 limit (calculation is also presented in attachment) |  |   |   | 10a. MAX TOTAL VOLUME/ELEMENT WGT (KG), OR TOTAL ACTIVITY (TBq)<br>Total for 48 containers:<br>Approx 1.68E-5 TBq (0.454E-4 Ci) of byproduct material.<br>Approx 0.119 kgs of source Material<br>< 0.002 grams of SNM (Pu)   |   | 10b. MAX ENRICHMENT OR WGT %<br>No enriched U  | 10c. MAX ISOTOPE WGT (KG)<br>Total for 48 containers:<br>PU-238 4 02E-11<br>PU-239 9 09E-8<br>PU-240 2 46E-8 |
| 11. FOREIGN OBLIGATIONS (BY COUNTRY AND BY PERCENTAGE OF MAXIMUM TOTAL VOLUME)<br>-----NONE-----  |  |   |   |  |   |  |  |

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 02-07-09

NRC FORM 7  
(8-2007)  
10 CFR 110

U.S. NUCLEAR REGULATORY COMMISSION

APPLICATION FOR NRC EXPORT/IMPORT  
LICENSE, AMENDMENT, OR RENEWAL (Continued)

|                |               |                        |   |
|----------------|---------------|------------------------|---|
| LICENSE NUMBER | DOCKET NUMBER | ADAMS ACCESSION NUMBER | <input checked="" type="checkbox"/> PUBLIC OR <input type="checkbox"/> NON-PUBLIC |
|----------------|---------------|------------------------|---|

**PART D. TO BE COMPLETED FOR IMPORT ONLY, OR COMBINED LICENSES, AMENDMENTS, OR RENEWALS**  
(If more space is needed to complete any of the items, use Pages 3-4 first, and then attach additional sheets, if necessary.)

|  |   |   |
|--|---|---|
| 12. NAME(S) / ADDRESS(ES) OF FOREIGN SUPPLIERS AND/OR OTHER PARTIES TO IMPORT<br><br>-----N/A----- | 13. NAME(S) / ADDRESS(ES) OF INTERMEDIATE CONSIGNEE(S)<br><br>-----N/A-----           | 14. NAME(S) / ADDRESS(ES) OF ULTIMATE CONSIGNEE(S)<br><br>-----N/A----- |
| 12a. NRC EXPORT LICENSE NUMBER(S) (if applicable)<br><br>-----N/A-----                             | 13a. LICENSE NUMBER(S) / EXPIRATION DATE(S)<br><br>-----N/A-----                      | 14a. LICENSE NUMBER(S) / EXPIRATION DATE(S)<br><br>-----N/A-----        |
|  | 13b. INTERMEDIATE USE(S)<br><br>-----N/A-----   | 14b. INTERMEDIATE USE(S)<br><br>-----N/A-----                           |
| 15. DESCRIPTION OF RADIOACTIVE MATERIALS, SEALED SOURCES, NUCLEAR FACILITIES<br><br>-----N/A-----  | 15a. MAX TOTAL VOLUME/ ELEMENT WGT (KG), OR TOTAL ACTIVITY (TBq)<br><br>-----N/A----- | 15b. MAX ENRICHMENT OR WGT %<br><br>-----N/A-----                       |
|  |   | 15c. MAX ISOTOPE WGT (KG)<br><br>-----N/A-----                          |

16. FOREIGN OBLIGATIONS (BY COUNTRY AND BY PERCENTAGE OF MAXIMUM TOTAL VOLUME)

**PART E. TO BE COMPLETED FOR ALL LICENSES, AMENDMENTS, OR RENEWALS**

|   |  |
|---|--|
| 17. ADDITIONAL INFORMATION PROVIDED ON PAGE 3 AND/OR ON SEPARATE SHEETS?<br><br><input checked="" type="checkbox"/> YES <input type="checkbox"/> NO   | 17a. COPIES OF RECIPIENTS' AUTHORIZATIONS PROVIDED?<br><br><input type="checkbox"/> YES <input checked="" type="checkbox"/> NO   |
| 18. CERTIFICATION: I, the applicant's authorized official, hereby certify that this application is prepared in conformity with Title 10, Code of Federal Regulations, and that all information provided is correct to the best of my knowledge. |  |
| 18a. PRINT NAME AND TITLE OF AUTHORIZED OFFICIAL<br><br>Philip Gianutsos, CHP Radiation Safety Officer  | 18b. SIGNATURE - AUTHORIZED OFFICIAL<br><br> |
|   | 18c. DATE<br><br>01/26/09  |

*N/A  
REC'D  
02-09-09*

NRC FORM 7  
(8-2007)  
10 CFR 110

U.S. NUCLEAR REGULATORY COMMISSION

APPLICATION FOR NRC EXPORT/IMPORT  
LICENSE, AMENDMENT, OR RENEWAL (Continued)

LICENSE NUMBER      DOCKET NUMBER      ADAMS ACCESSION NUMBER       PUBLIC OR  NON-PUBLIC

ADDITIONAL INFORMATION (Reference applicable block numbers from page 1 and/or page 2 for each entry)

Block 10 DESCRIPTION OF RADIOACTIVE MATERIALS, SEALED SOURCES, NUCLEAR FACILITIES, EQUIPMENT, OR COMPONENTS; FOR NUCLEAR EQUIPMENT INCLUDE TOTAL DOLLAR VALUE OF EQUIPMENT FOR EXPORT

Activity in each empty package to be returned is estimated to be approximately 1% of the incoming manifested material.

|              | Radiological Content |                 |                 |                 |                 |                 |
|--------------|----------------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|              | B-25                 |                 | Bin             |                 | Cargo           |                 |
|              | Bq                   | mCi             | Bq              | mCi             | Bq              | mCi             |
| Cs-137       | 2.32E+05             | 6.25E-03        | 1.40E+04        | 3.79E-04        | 2.90E+04        | 7.83E-04        |
| Sr-90        | 2.32E+05             | 6.25E-03        | 1.40E+04        | 3.79E-04        | 2.90E+04        | 7.83E-04        |
| Co-60        | 1.13E+03             | 3.06E-05        | 7.94E+03        | 2.14E-04        | 1.60E+04        | 4.32E-04        |
| Nb-94        | 2.46E+01             | 6.63E-07        | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00        |
| Nb-95        | 2.78E+01             | 7.50E-07        | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00        |
| Ra-226       | 4.67E+00             | 1.26E-07        | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00        |
| Eu-154       | 1.13E+01             | 3.06E-07        | 0.00E+00        | 0.00E+00        | 0.00E+00        | 0.00E+00        |
| Am-241       | 4.26E+03             | 1.15E-04        | 2.99E+03        | 8.08E-05        | 6.10E+03        | 1.65E-04        |
| Pu-238       | 4.98E+02             | 1.34E-05        | 7.59E+02        | 2.05E-05        | 6.90E+02        | 1.86E-05        |
| Pu-239       | 4.86E+03             | 1.31E-04        | 3.35E+03        | 9.03E-05        | 7.00E+03        | 1.89E-04        |
| Pu-240       | 4.86E+03             | 1.31E-04        | 3.35E+03        | 9.03E-05        | 7.00E+03        | 1.89E-04        |
| U-235        | 2.44E+03             | 6.59E-05        | 9.93E+02        | 2.68E-05        | 2.06E+03        | 5.58E-05        |
| U-238        | 3.95E+04             | 1.07E-03        | 1.52E+04        | 4.10E-04        | 3.15E+04        | 8.51E-04        |
| <b>Total</b> | <b>5.21E+05</b>      | <b>1.41E-02</b> | <b>6.26E+04</b> | <b>1.69E-03</b> | <b>1.26E+05</b> | <b>3.47E-03</b> |

| TBq/Ci | Total for 30 B-25's | Total for 17 bins | Total for one Cargo Cont. |
|--------|---------------------|-------------------|---------------------------|
|        | 1.56E-05            | 4.22E-04          | 1.06E-06                  |
|        |                     | 2.87E-05          | 1.28E-07                  |
|        |                     |                   | 3.47E-06                  |

|                                    | SNM and Source Material |          |                  |          |                  |          |
|------------------------------------|-------------------------|----------|------------------|----------|------------------|----------|
|                                    | B-25                    |          | Bin              |          | Cargo            |          |
|                                    | SNM (gms)               | SM (kgs) | SNM (gms)        | SM (kgs) | SNM (gms)        | SM (kgs) |
| Pu-238                             | 7.90E-10                |          | 1.26E-09         |          | 1.09E-09         |          |
| Pu-239                             | 2.10E-06                |          | 1.46E-06         |          | 3.05E-06         |          |
| Pu-240                             | 5.70E-07                |          | 3.93E-07         |          | 8.22E-07         |          |
| U-235                              | No                      | 3.16E-05 | No               | 1.22E-05 | No               | 2.53E-05 |
| U-238                              | Enriched Uranium        | 3.15E-03 | Enriched Uranium | 1.21E-03 | Enriched Uranium | 2.50E-03 |
| <b>total source material (kgs)</b> |                         |          | <b>1.19E-01</b>  |          |                  |          |

| APPENDIX P EVALUATION  |           |          |                   |          |                   |          |                   |
|--|-----------|----------|-------------------|----------|-------------------|----------|-------------------|
| APP P, Cat 2   |           |          |                   |          |                   |          |                   |
| nuclide  | B-25      |          | Bin               |          | Cargo             |          | Fraction of Limit |
|  | limit MBq | MBq      | Fraction of Limit | MBq      | Fraction of Limit | MBq      |                   |
| Am-241   | 6.00E+05  | 4.26E-03 | 7.10E-09          | 2.99E-03 | 4.99E-09          | 6.10E-03 | 1.02E-08          |
| Co-60  | 3.00E+05  | 1.13E-03 | 3.78E-09          | 7.94E-03 | 2.65E-08          | 1.60E-02 | 5.33E-08          |
| Cs-137   | 1.00E+06  | 2.32E-01 | 2.32E-07          | 1.40E-02 | 1.40E-08          | 2.90E-02 | 2.90E-08          |
| Pu-238   | 6.00E+05  | 4.98E-04 | 8.30E-10          | 3.35E-03 | 5.58E-09          | 6.90E-04 | 1.15E-09          |
| Sr-90  | 1.00E+07  | 2.32E-01 | 2.32E-08          | 1.40E-02 | 1.40E-09          | 2.90E-02 | 2.90E-09          |
| <b>Sum of Fractions</b>                                      |           |          | <b>2.67E-07</b>   |          | <b>5.25E-08</b>   |          | <b>9.66E-08</b>   |
| <b>Most restrictive shipment 24 B-25's, sum of fractions</b> |           |          |                   |          |                   |          | <b>6.40E-06</b>   |

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