RHS 8-7

TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF RADIOLOGICAL HEALTH
William R. Snodgrass Tennessee Tower 312 Rosa L. Parks Avenue, 15th Floor Nashville, Tennessee 37243
615-532-0364

RADIOACTIVE MATERIAL LICENSE

Amendment 199

Pursuant to Tennessee Department of Environment and Conservation Regulations, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess, and transfer radioactive material listed below; and to use such radioactive material for the purpose(s) and at the place(s) designated below. This license is subject to all applicable rules and regulations of the Tennessee Department of Environment and Conservation and orders of the Division of Radiological Health, now or hereafter in effect and to any conditions specified below.

LICENSEE	3. License Number
1. Name EnergySolutions Services, Inc.	R-73008-D24
	4. Expiration Date
2. Address 1560 Bear Creek Road Oak Ridge, Tennessee 37830	April 30, 2024
	5. File No.
	R-73008

6. Radioactive Material (Element and Mass Number)	8. Chemical and/or physical form	9. Maximum Radioactivity and/or quantity of material which licensee may possess at any one time.
SEE SUPPLEMENTARY SHEETS		

10. Authorized Use

SEE SUPPLEMENTARY SHEETS

CONDITIONS

11. Unless otherwise specified, the authorized place of use is the licensee's address stated in Item 2 above.

For the Commissioner
Tennessee Department of Environment and Conservation

Date of Issuance: January 26, 2022 By: _____

Division of Radiological Health
Ronald J. Parsons, Environmental Consultant

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6. Radioactive Material (Element and Mass Number)	8. Chemical and/or Physical Form	9. Maximum Radioactivity and/or Quantity of Material Which Licensee May Possess at Any One Time
A. Mixed activation and fission products with atomic numbers 3-83 inclusive (not C-14 or Fe-55)	A. Any form as suitable for transport under U. S. DOT Regulations	A. 10,000 Curies +
B. Hydrogen 3	B. Same as 8.A.	B. 5,000 Curies +
C. Carbon 14	C. Same as 8.A.	C. 500 Curies +
D. Iron 55	D. Same as 8.A.	D. 7,500 Curies +
E. Polonium 210	E. Same as 8.A.	E. 10 Curies +
F. Radium 226	F. Same as 8.A.	F. 20 Curies +
G. Thorium 232	G. Same as 8.A.	G. 20 Curies +
H. Uranium – depleted and natural	H. Same as 8.A.	H. 350 Curies +
I. Uranium (not U-233,U-235, or U-238)	I. Same as 8.A.	I. 2 Curies +
J. Uranium 233	J. Same as 8.A.	J. 200 grams *+
K. Uranium enriched in U-235	K. Same as 8.A.	K. 350 grams *+ of contained U-235
L. Plutonium	L. Same as 8.A.	L. 200 grams *+
M. Americium 241	M. Same as 8.A.	M. 10 Curies +

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N. Transuranics (not Pu or Am-241)	N. Same as 8.A.	N. 5 Curies +
O. Radioactive materials with atomic numbers 84-91 inclusive (not Po-210, Ra-226, or Th-232)	O. Same as 8.A.	O. 5 Curies +

+ Combined possession limit for Energy*Solutions* licenses R-73008 and R-73016 at the Bear Creek Operations facility

* For each kind of special nuclear material determine the ratio between the quantity of that special nuclear material and the quantity specified here for the same kind of special nuclear material. The sums of such ratios for all kinds of special nuclear material in combination shall not exceed "1" (i.e. unity).

P. Any radioactive material (except special nuclear material)	P. Sealed sources (Model numbers listed in NRC Registry of Sealed Sources and Devices), surface-deposited disc and plane sources, and volumetric reference sources	P. No single source to + exceed 5 millicuries. Total not to exceed 10 millicuries.
Q. Cesium 137	Q. Sealed sources (Model numbers listed on page 2 of NRC's Registry of Sealed Sources and Devices, Numbered CA 598D107S, dated August 22, 1995), J. L. Shepherd & Associates Type 6810 capsule Serial #132, and New England Nuclear Type G-316B Capsule, Serial #KR-2751)	Q. One (1) J. L. Shepherd source not to exceed 400 curies. One (1) New England Nuclear source not to exceed 140 millicuries.

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R. Cesium 137	R. Sealed source (Model numbers listed on page 2 of NRC's Registry of Sealed Sources and Devices, Numbered CA 598D106S dated September 29, 1998), J. L. Shepherd & Associates Type 6810 Capsule, Serial #Z-39	R. One (1) source not to exceed 30 millicuries.
S. Cesium 137	S. Sealed source (Model numbers listed on page 2 of NRC's Registry of Sealed Sources and Devices, Numbered CA 598D107S dated August 22, 1995), J. L. Shepherd & Associates Type A0096-5 S. N. 81Cs-s55)	S. One (1) source not to exceed 400 curies.
T. Cesium 137	T. Sealed source (Model numbers listed on page 2 of NRC's Registry of Sealed Sources and Devices, Safety Evaluation of Device, Numbered CA 598D106S dated September 29, 1998), J. L. Shepherd & Associates Type VDHP Capsule, S. N. CSV-105	T. One (1) source not to exceed 2 curies.
U. Plutonium 239	U. Sealed sources (Model numbers listed in NRC Registry of Sealed Sources and Devices), surface-deposited disc and plane sources	U. No single source to exceed 1 microcuries. Total not to exceed 10 millicuries.

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10. Authorized Use

A. through O. Receipt, possession, storage, unpacking, processing, compaction, incineration, decontamination, release for unrestricted use, repacking, and transfer of radioactive waste when packaged in accordance with U.S. Department of Transportation requirements for interstate commerce in accordance with documents referenced in conditions of this license

P. and U. Instrumentation standardization and calibration sources

Q. For use in J. L. Shepherd & Associates Model 89 calibrator for the purpose of calibration of radiation detection equipment

R. For use in J. L. Shepherd and Associates Model 28-5A low range beam calibrator for the purpose of calibration of portable radiation detection equipment and calibration of pocket and electronic dosimeters

S. For use in a J. L. Shepherd and Associates Model 89 calibrator for the purpose of calibration of radiation detection equipment

T. For use in a J. L. Shepherd & Associates Model 28-6A calibrator for the purpose of calibration of radiation detection equipment and calibration of pocket and electronic dosimeters.

Conditions

12. The licensee shall comply with applicable provisions of 0400-20-04, 0400-20-05, 0400-20-10, and 0400-20-13 of "State Regulations for Protection Against Radiation."

13. Radioactive material authorized by this license shall be used and stored at the Energy*Solutions* Services, Inc. Bear Creek Facility, 1560 Bear Creek Road, Oak Ridge, TN.

14. A. Radioactive material authorized by this license shall be used by, or under the supervision of, the following authorized users as specified:

Incinerator Facility -Brian Parsons, Chuck Norman, David Poole, David King, Daryl Burnworth, Keith Woods, Eric Boone, Jonathan Myers, Chris Thurman, Jack Clark, Kevin Grant, Blake Worley, Darik Brackett, Chuck Cooney, Tristan Mayton, Josh Sneed, Matthew Sneed, Stephen Yarber, Ryan Spurling, Devin Boggs, or Shane Goss

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Central Volume Reduction Facility (CVRF) -Brian Parsons, Chuck Norman, Jack Clark, Brian Crabtree, Chuck Cooney, Rhonda Jackson, Chris Thurman, or James Hutcheson

Site Logistics (storage, tracking, inventory) – Nick Arden, Ronald Hamilton, Jason Stafford, Randy Owensby, Kenny Bell, David Phillips, Tracey Shelton, or Brett Grizzard

Bear Creek East (BCE) – Clint Evans, Leona Gillam, Chuck Norman, Donna Webb, Keith Shillings, Jeff Humphreys, Jeff Dickinson, Mike Prysmont, or Mike Yonce

B. Authorized user presence during operations is defined below:

1. An authorized user shall be present on site during incinerator operation or Ultra Compactor use. An incinerator is considered to be in operation when burning fuel gas, oil, or waste, or when thermocouples T1, T2, or T3 indicate greater than or equal to 600 degrees C.

2. An authorized user shall be available for telephone consultation during periods when other authorized activities are being conducted in the Incinerator area, Sort A or B warehouse, LVRF and associated areas, CVRF area or warehouse and associated areas.

3. A Radiation Safety Technician shall be on site during all work performed in Radiologically Controlled Areas associated with this license.

C. The Radiation Safety Officer for this license is Duane R. Quayle.

15. A. The licensee shall develop and maintain a written radiation protection manual that ensures the implementation of the radiation protection program in accordance with "State Regulations for Protection Against Radiation" (SRPAR), ALARA, and documents referenced in conditions of this license. Changes to this manual require prior written approval from the Department.

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B. In addition, the licensee shall develop and implement written standard operating procedures to ensure all activities involving the handling and/or use of radioactive materials authorized by this license are carried out in a manner consistent with SRPAR, ALARA, the licensee's radiation protection manual, and the documents referenced in conditions of this license.

C. These procedures may be modified without prior approval of the Department when deemed appropriate and documented by the Radiation Safety Officer. However, adherence to the current procedures as written shall be considered a condition of this license. The written procedures required by this condition shall be available for inspection by the Department. A copy of the current procedures shall be forwarded to the Department upon request.

16. The licensee is authorized to operate the Instrument Services Facility (ISF) in Building B of the Bear Creek East (BCE) site which includes supply, maintenance, calibration, and repair of radiation detection equipment and pocket and electronic dosimeters including for external customers in accordance with statements, representations, and procedures contained in documents referenced in conditions of this license.

17. The gaseous effluent from incineration shall not exceed the annual average radionuclide limits specified for air in SRPAR 0400-20-05-.61, RHS 8-30, Table II, Col. 1.

18. The licensee in making disposal of radioactive wastes to the sanitary sewerage system shall do so in conformity with 0400-20-05-.122 of "State Regulations for Protection Against Radiation."

19. The licensee is authorized to release asphalt/concrete from areas previously used for radioactive material storage in accordance with statements, representations, and procedures contained in the Energy*Solutions* Tennessee Radiation Safety Guide (RSG-1). Asphalt/concrete released in accordance with this condition shall not be reintroduced to the general public for use as fill or recycling.

20. A. No radioactive material (excluding calibration and standardization sources) or radioactive waste (radioactive material that has no further use that is to be dispositioned for disposal) may be possessed under this license (to also include waste generated under the authority of this license) from the time of receipt acceptance until its transfer from the facility, for a period of time greater than three hundred sixty five (365) days. Exceptions to this constraint are listed as follows:

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1. Equipment, specifically licensed or otherwise authorized, and stored on-site for future use: (1) at a location authorized by an Energy*Solutions* Services Tennessee Radioactive Material License or (2) at a location where such equipment is authorized by the agency having jurisdiction.

2. Up to 20,000 cubic feet of radioactive waste may be stored for an unlimited period of time. This volume may be increased to 40,000 cubic feet through March 31, 2022, with this volume reverting back to 20,000 cubic feet on April 1, 2022. Radioactive waste stored under this provision shall not include TRU (waste containing concentrations greater than 100 nCi/gm of transuranics) or mixed waste (radioactive waste which exhibits the characteristics outlined in 40 CFR Part 261 Subpart C or which contain hazardous wastes listed in 40 CFR Part 261 Subpart D). The licensee shall maintain records of the receipt and storage of this material such that its volume and location are readily identifiable.

B. No radioactive material or radioactive waste may be stored so as to exceed the following stacking limits:

Container Type	Stacking Limit
1. Drums	3 high
2. B-25 Boxes	3 high
3. B-12 Boxes	5 high
4. Sea-Land Cont.	2 high
5. Any other strong tight container.	10 feet nominal

C. This condition also includes "waste radioactive material" generated under the authority of this license.

21. Radioactive material, contaminated equipment, and empty radioactive material containers may be stored in accordance with statements representations, and procedures contained in documents referenced in conditions of this license, provided that radiation levels for unrestricted areas are not exceeded. This material must be stored in either locked DOT intermodal containers as described in Title 49 Code of Federal Regulations (CFR), Part 171.8 or DOT approved strong tight containers. In addition to these requirements the following criteria and restrictions must be adhered to whenever radioactive materials are stored:

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1. Containers used for outside storage of radioactive materials must be capable of withstanding environmental conditions.

2. Radiation levels from stored empty containers shall not exceed an average of 0.5 mR/hr, and hot spot activity shall not exceed 2 mR/hr.

3. Outside storage of containers with radioactive waste and/or DOT Empty containers is only permitted in paved (asphalt or concrete) areas. Storage on grass, dirt, or gravel of containers with radioactive waste and/or DOT Empty containers is specifically prohibited.

4. Soil samples must be collected and analyzed at least quarterly along the edges of outside asphalt or concrete pads where radioactive materials are stored and along the perimeter fence to ensure that there is no buildup of radioactive contamination. Data from these samples must be maintained for inspection by the Department.

5. Each designated outside storage area shall be equipped with identifiable markers (sign postings) at each corner to clearly identify the boundary. In addition, the space between these markers shall be painted on the surface of the asphalt/concrete or otherwise marked to further identify the storage areas.

6. Energy*Solutions* Empty containers (loose surface contamination levels less than 1000 dpm/100 cm^2 beta/gamma and less than 100 dpm/100 cm^2 alpha external and internal) and Green Is Clean Empty containers are permitted to be stored on any surface (e.g. paved, grass, dirt, or gravel) within any area that is routinely monitored by the environmental sampling program for radioactivity within the licensed property.

The combined authorizations for storage under this license and R-73016-G25 shall be in accordance with the Bear Creek Operations Radioactive Material/Waste Container Storage Plan REV 12. The combined authorizations for storage granted by this license shall not exceed a total of 414,061.2 square feet.

22. The licensee shall maintain complete and accurate records of the receipt and disposal of radioactive material. The licensee shall, for radioactive material no longer useful for any purpose and for any equipment or supplies contaminated with such material for which further use and decontamination are not planned, define those materials as radioactive waste and treat them as such in accordance with the following provisions:

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A. Radioactive waste material shall not be stored with non-radioactive waste.

B. A written record of all radioactive waste material shall be maintained until it has been determined by a suitable survey or radioassay that it has decayed to background levels or until it has been shipped to an authorized recipient in accordance with applicable regulations. Accountability of radioactive waste material prepared for shipment but not yet shipped from the licensee's premises shall be maintained by the licensee by an internal record system such that the licensee is constantly aware of the material's location and the proposed time of shipment. Individuals who are involved in the shipping of such material and/or the storage of such material prior to shipment, shall be trained in the precautions necessary for such handling and storage.

C. For material which has decayed to background levels as determined by radioassay or external level as measured with appropriately calibrated instruments, records shall indicate that the material was determined to be no longer radioactive and will indicate the methods and results of the survey or analysis.

D. Shipment records of radioactive waste material shall be maintained and the licensee shall require written confirmation from the authorized recipient of such material that this material has been received.

E. Transfer of radioactive waste to a land disposal facility or a licensed waste handler shall be done in accordance with 0400-20-05-.125 of "State Regulations for Protection Against Radiation."

F. All records and written confirmations required by this condition shall be maintained for inspection by the Department.

The requirements of this condition are in addition to any other requirements for the handling and/or disposal of radioactive material contained in this license and "State Regulations for Protection Against Radiation."

23. The licensee shall not accept either radioactive waste and/or items contaminated or potentially contaminated with licensable quantities of radioactive material or radioactive materials or items from licensable activities for repackaging, processing, refurbishing, storage pending disposal or disposal unless the shipper of such waste possesses a valid license for delivery issued pursuant to 0400-20-10-.32 of "State Regulations for Protection Against Radiation."

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24. Written assurances must be furnished by the facility shipping the radioactive material indicating that the facility may accept return of the material processed or unprocessed. In addition, for states outside the Southeast Compact the state or appropriate Compact must be a signatory to the Interregional Access Agreement for Waste Management or assurances shall be obtained from the appropriate state governor's office, the state radiation control program, and the appropriate Compact official, if any.

25. The licensee shall establish in every contractual obligation relating to radioactive materials the ability to return radioactive materials, processed or unprocessed, to the prior licensed or exempt possessor.

26. A. Beta and/or gamma sealed sources containing more than 100 microcuries, and alpha sealed sources containing more than 10 microcuries, authorized by this license shall be tested for leakage and/or contamination at intervals not to exceed six (6) months. In the absence of a certificate from a transferor indicating that a test has been made within six (6) months prior to transfer, the sealed source shall not be put into use until tested.

B. The licensee is authorized to perform leak testing of sealed sources and analytical services for Energy*Solutions* facilities, and for hire, in accordance with statements, representations, and procedures contained documents referenced in conditions of this license. Customers shall be provided with leak test results in microcuries.

C. The tests shall be capable of detecting the presence of 0.005 microcurie of radioactive material on the test sample, or in the case of radium, the escape of radon at the rate of 0.001 microcurie per 24 hours. The test sample shall be taken from the sealed source or from the surface of the device in which the sealed source is permanently mounted or stored on which one might expect contamination to accumulate. Records of leak tests shall be kept in units of microcuries and maintained for inspection by the Department.

D. If the test reveals the presence of 0.005 microcurie or more of removable contamination, or in the case of radium, the escape of radon at the rate of 0.001 microcurie or more per 24 hours, the licensee shall immediately withdraw the sealed source from use and shall cause it to be decontaminated and repaired or to be disposed of in accordance with Department regulations. A report shall be filed within five (5) days of the test with the Division of Radiological Health, Tennessee Department of Environment and Conservation, William R. Snodgrass Tennessee Tower, 15th Floor, 312 Rosa L. Parks Avenue, Nashville, Tennessee, 37243, describing the equipment involved, the test results, and the corrective action taken.

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27. The licensee shall not open or remove sealed sources containing radioactive material from their respective source holders.

28. Maintenance and repair of instrument calibrators shall be performed in accordance with the manufacturer's instructions.

29. To prevent tampering or removal by unauthorized personnel, each calibration device containing radioactive material authorized by this license shall be secured in a locked storage container or area when not being used.

30. The licensee shall conduct a physical inventory every six (6) months to account for all sealed sources and/or devices received and possessed under this license. Records of inventories shall be maintained for inspection by the Department.

31. The licensee is authorized to receive, possess, and use any radioactive material distributed under a general license, issued by the U. S. Nuclear Regulatory Commission, or another Agreement State, without being specifically referenced in Items 6, 8, 9 and 10 of this license. Notwithstanding any other conditions of this license, the general licensee may possess and use radioactive material received under the provisions of 0400-20-10 of "State Regulations for Protection Against Radiation" in accordance with the requirements provided at the time of the transfer of the radioactive material under the terms of the general license.

32. The following evaluations shall be performed for all process ventilation systems:

    1) Air balance within the RCA at least semi-annually, and following any ventilation system or process changes which could potentially alter the effectiveness of the system,
    2) Particulate removal efficiency of the main filtration system HEPA filters by DOP or comparable testing in accordance with pertinent ANSI standards immediately following installation of new HEPA filters or at least semi-annually.

33. In addition to other requirements of this license or of Chapter 0400-20-05-.60 of "State Regulations for Protection Against Radiation," the licensee shall conduct operations so that radiation levels in unrestricted areas would not cause an individual, assuming an occupancy of one (1), to receive a total effective dose equivalent in excess of 500 millirems in one calendar year. These radiation levels shall be appropriately monitored by the licensee, and records of such monitoring shall be maintained for inspection by the Department. For calculational purposes of this condition, the licensee shall base its anticipated exposure to a member of the public upon the sum of the maximally exposed

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TLD (or equivalent dosimeter) and the highest air concentration derived using the latest available pertinent data.

34. The total annual maintenance fee amount due for this license is $72,000.00.

35. The licensee is authorized to utilize elemental partitioning factors presented in Table C3 of Draft NUREG-1783 "Assessment of Radioactivity in Sewage Sludge: Modeling to Assess Radiation Doses" to adjust the tritium, carbon, iodine, and selenium radioisotopes tracked to the hearth ash from the incinerator in accordance with statements, representations, and procedures contained in letter dated August 9, 2004, with attachments.

36. In accordance with statements, representations, and procedures contained in letter dated August 16, 2004, the licensee is authorized to simultaneously incinerate depleted uranium in proportions that will result in a depleted uranium ash (<0.711% enriched in the isotope Uranium 235). Notwithstanding the statement in the letter dated August 16, 2004, concerning the discontinuance of confirmatory sampling, the licensee shall perform confirmatory sampling to verify the downblended concentration in order to account for the disposition of incinerated uranium.

37. The licensee is authorized to incinerate non-explosive gaseous radioactive material by direct injection of these radiogases into the incinerator in accordance with statements, representations, and procedures contained in letter dated June 7, 2005.

38. The licensee is authorized to institute the contractual mechanisms described in letter dated November 15, 2005, for international customers to demonstrate compliance with the ability to return radioactive materials, processed or unprocessed, to the prior licensed or exempt possessor.

39. The licensee is authorized to process compressed gases and liquids contained in contaminated vessels in accordance with statements, representations, and procedures contained in letter dated February 21, 2006, with attachments.

40. The licensee is authorized to modify the Waste Attribution Section of the radioactive material license application to reflect changes in incinerator ash attribution and tracking in accordance with statements, representations, and procedures contained in letters dated August 9, 2004, with attachments, January 4, 2005, August 2, 2005, with attachments, and April 20, 2006, with attachment, document entitled "Incinerator Ash Attribution: Process Review" dated September 20, 2005, and e-mail (from Philip Gianutsos) dated April 12, 2006, with attachment.

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41. The licensee is authorized to implement a recycling/reuse process that uses waste ion exchange resins received from customers in accordance with statements, representations, and procedures contained in letter dated November 10, 2006.

42. The licensee is authorized to survey and release bulk tankers following shipment of liquids in accordance with statements, representations, and procedures contained in letter dated November 17, 2006.

43. The licensee is authorized to install, test, and operate a production process as described in attachment to letter dated June 11, 2009, for the production of usable reagents and waste treatment. This condition also grants authorization to use the output of the process for treatment of low level radioactive wastes that require treatment for leachable metals, neutralization of contaminated acids, and related applications. These authorizations shall be conducted in accordance with statements, representations, and procedures contained in letter dated June 11, 2009, with attachments.

44. The licensee is authorized to install and operate a continuously fed liquid drying unit for domestic and international high solid aqueous liquid waste streams in accordance with statements, representations, and procedures contained in letters dated March 7, 2011, with attachments, June 28, 2011, and February 21, 2013.

45. An exemption is granted to the requirements in 0400-20-05-.115(3) of "State Regulations for Protection Against Radiation" that a package received during normal working hours shall be monitored within 3 hours, and that a package not received during normal working hours shall be monitored no later than 3 hours after the beginning of the next working day. Instead, the licensee may monitor a package received during normal working hours within the shift that it is received, or for a package not received during normal working hours may monitor that package within the first shift of the next working day. This authorization does not relieve the licensee from monitoring packages as soon as practical after receipt.

    This exemption may be withdrawn or modified by the Department at any time it is determined necessary to protect the public health and safety or if it is found that the conditions on which this exemption is based have been violated.

46. Bulk Survey for Release (BSFR)

    A. The licensee is authorized to conduct the Bulk Waste Assay Program (BWAP) which includes Green is Clean (GIC), the Safe Check program for gamma emitters, the Safe Check program for non-gamma emitters, and Decay Check. The BWAP shall be

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conducted in accordance with statements, representations, and procedures contained in documents referenced in conditions of this license and applicable documents in Energy*Solutions* Tennessee Radioactive Material License R-73006. The Radium 226 disposal limit for Carter Valley Landfill will be 5 pCi per gram.

B. The licensee is authorized to implement BWAP release limits for Carter Valley Landfill disposal of Safe Check and Decay Check program licensed material in accordance with statements, representations, and procedures contained in documents referenced in conditions of this license and applicable documents in EnergySolutions R-73006 including the "Technical Basis for Safe Check and Decay Check Conditional Release Limits," Revision 5, and the most current BSFR concentration limits established by the Division of Radiological Health for Carter Valley Landfill.

C. Records of all disposals made under this condition shall be submitted quarterly to the Division of Radiological Health, William R. Snodgrass Tennessee Tower, 15th Floor, 312 Rosa L. Parks Avenue, Nashville, Tennessee 37243. Monitoring of materials for contamination for release as authorized by this condition is only to be conducted at the licensee's facilities specified in Condition 13 of this license, and not at customer or other job sites.

D. The licensee shall meet the requirements of the March 2020 DRH–RAM–G–410-004–03192020 Licensing Requirements for Evaluation and Acceptance of Licensee Requests for the Disposal of Materials with Extremely Low Levels of Contamination in Class 1 (Subtitle D) Landfills (Bulk Survey for Release (BSFR)).

E. For calendar year 2022 the licensee is approved to dispose of 2146 tons of material in the Carter Valley Landfill. This is a combined disposal limit with EnergySolutions R-73006-L24.

47. A. The Box Assay System shall be operated in accordance with the requirements and specifications found in the "Technical Basis for Design and Calibration of the Energy*Solutions* Box Assay System," Revision 2. Additionally, the waste density shall not exceed 3.0 g/cc, the volume of waste assayed in any single container shall have multiple counts to ensure each four-foot by six-foot cross section (or less) of the container or item is assayed by the system.

B. The Gardian Assay System shall be operated in accordance with the requirements and specifications found in the "Technical Basis for Design, Calibration, and Operation of the Gardian Mobile Assay System," Revision 0.

TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF RADIOLOGICAL HEALTH
William R. Snodgrass Tennessee Tower 312 Rosa L. Parks Avenue, 15th Floor
Nashville, Tennessee 37243
615-532-0364

RADIOACTIVE MATERIAL LICENSE

Amendment 199

License No. R-73008-D24

SUPPLEMENTARY SHEET

48. The licensee has provided $17, 390,570.40 US (five hundred thirty-seven thousand six hundred US Dollars) in financial assurance monies in accordance with "State Regulations for Protection Against Radiation" 0400-20-10-.12(4). This financial assurance amount is a combined amount for EnergySolutions licenses R-73008 and R-73016 at the Bear Creek Operations facility. The combined authorizations for storage granted by this license shall not exceed a total of 414,061.2 square feet.

48. No provision of this license relieves the licensee from compliance with other Federal, State, and local laws, ordinances, and regulations applicable to the licensee's activities.

49. Except as specifically provided otherwise by this license, the licensee shall possess and use radioactive material described in Items 6, 8, and 9 of this license in accordance with statements, representations, and procedures contained in the following:
    - Application dated February 14, 2014, with attachments
    - Document entitled "Incinerator Ash Attribution: Process Review" dated September 20, 2005
    - E-mail (from Philip Gianutsos) dated April 12, 2006, with attachments, December 4, 2019, with attachments
    - Letters dated August 9, 2004, with attachments, August 16, 2004, January 4, 2005, June 7, 2005, August 2, 2005, with attachments, November 15, 2005, February 21, 2006, with attachments, April 20, 2006, with attachment, November 10, 2006, November 17, 2006, June 11, 2009, with attachments, March 7, 2011, with attachments, June 28, 2011, February 21, 2013, with attachments, January 21, 2014, with attachments, February 11, 2014, with attachments, August 25, 2014, (two letters with this date, both with attachments), and March 3, 2015, with attached Energy*Solutions* Tennessee Radiation Safety Guide (RSG-1), Revision 10, November 4, 2016, with attachments, April 6, 2017, with attachments, May 4, 2017, August 3, 2017, with attachments, November 6, 2017, with attachments, November 14, 2017, with attached Energy*Solutions* Tennessee Radiation Safety Guide (RSG-1) Revision 11, December 5, 2017 (two letters with this date), April 16, 2018, September 11, 2018, with attachments, November 19, 2019, with attachments, December 2, 2020, with attachments, September 15, 2021, with attachments, and January 7, 2022, with attachments.