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ES-2022-005

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Subject: Response to Request for Additional Information, Renewal of License
No. 39-35044-01

Reference: Elizabeth Ullrich, U.S. Nuclear Regulatory Commission, Letter to Gerard van
Noordennen, EnergySolutions, LLC, "EnergySolutions, LLC Request for Additional
Information, Mail Control No. 629324," dated March 8, 2022

EnergySolutions, LLC received a request for additional information, related to the renewal of License No. 39-35044-01, on March 8, 2022 (Reference). The purpose of this letter is to provide responses to the requests for additional information in the Reference. Responses to the information requests are provided in the Attachment to this letter. Supporting documents, referenced in the responses, are provided with this submittal.

Respectfully,

Gerard van Noordennen

Senior Vice President Regulatory Affairs

Attachment: Response to Request for Additional Information, Renewal of
License No. 39-35044-01

ATTACHMENT

**Response to Request for Additional Information,
Renewal of License No. 39-35044-01**

NRC RAI 1: Confirm that the types, forms and quantities of materials listed on the current license should continue to be authorized or provide revised information.

EnergySolutions Response: The types, forms, and quantities listed on the current license should continue to be authorized. Given that EnergySolutions, LLC (EnergySolutions) is a nuclear services company, flexibility in the type, form, and quantities of radioactive material is necessary to safely recycle, process, and dispose of material which may be encountered in the scope of contracted work.

NRC RAI 2: The list of activities you submitted in the application were

- Sample collection and analysis of leak tests;
 - Sample collection and analysis of environmental samples;
 - Training/instruction to individuals on radiation safety-related topics;
 - Other low-risk services not identified above, where radioactive material is used for commercial serviced activities; AND
 - Storage of radioactive material for other entities;
 - Use of remote activated robotics in radioactive contaminated areas;
 - Decontamination and decommissioning services;
 - Waste management services including packaging and repackaging of radioactive waste for transportation, commercial incineration, compaction, super compaction, solidification, or vitrification; and
 - Other high-risk activities not identified above, excluding activities involving critical mass quantities of special nuclear material.
- a. Your current license also authorizes installation and removal from gauging devices; and handling of radioactive materials and media other than waste in support of client manufacturing processes. Confirm if these activities should still be authorized.
 - b. Waste processing services currently authorized on the license are limited to solidification and treatment to include chemical treatment, resource recovery or other similar operations. Confirm if you are requesting to expand waste activities to include commercial incineration, compaction, super compaction, and vitrification. If so, procedures for these activities should be provided as required by Section 8.10.1 of NUREG-1556, Volume 18, Revision 1, "Consolidated Guidance About Materials Licenses: Program-Specific Guidance About Service Provider Licenses." (NUREG-1556, Vol. 18, Rev. 1). See Item 6 below.
 - c. You requested storage of radioactive materials for other entities. Please describe this activity, given that work with licensed activities is limited to temporary job sites only. A procedure for this activity should be provided as required by Section 8.10.1 of NUREG-1556, Vol. 18, Rev. 1. See Item 6 below.
 - d. You requested the use of remote activated robotics in radioactive contaminated areas. Please describe if this activity is in support of other authorized activities, or if it may be separate from currently authorized activities. A procedure for this activity should be provided as required by Section 8.10.1 of NUREG-1556, Vol. 18, Rev. 1. See Item 6 below.
 - e. Please provide examples of other high-risk activities which you have done or may perform

in the future. If such activities are significantly different from current activities, procedures for the activities should be provided as required by Section 8.10.1 of NUREG-1556, Vol. 18., Rev. 1. See Item 6 below.

EnergySolutions Response:

The bulleted items summarized in this section were detailed in the license renewal application and do constitute services and activities which EnergySolutions has performed under 39-35044-01 and are likely to perform in future contracted work under this RML. As detailed in this section, EnergySolutions does not intend to conduct any activities involving critical mass quantities of special nuclear material.

Use of RML 39-35044-01 has generally been focused on temporary job sites, and as such, there has not been equipment or facilities at these job sites to perform incineration, compaction, solidification, or vitrification. The EnergySolutions waste management strategy under this license has been to package wastes generated at the job site and transport these materials to a fixed EnergySolutions facility for further processing or further preparation for disposal. It is requested that the various waste management techniques continue to be included in the list of permitted waste management techniques listed in this license to maintain operational flexibility going forward.

2.a. EnergySolutions could be contracted to install or remove a radioactive source from a gauging device or handle other radioactive material in support of a client manufacturing process. It is requested that these activities continue to be authorized to maintain operational flexibility in scope of work that can be performed as a nuclear service. EnergySolutions does possess technical and radiological control expertise to perform work of this type and scope.

2.b. Waste processing services likely to occur at a temporary job site under RML 39-35044-01 would be limited to the scope described in this section of the RAI, namely chemical treatment, resource recovery, or similar operations. EnergySolutions has no plan or need to expand these waste activities under RML 39-35044-01. Waste activities including commercial incineration, compaction, super compaction, and vitrification are managed at our other facilities under different licenses.

Any additional waste processing necessary to support a project conducted under RML 39-35044-01 would most likely involve shipment of the material to the EnergySolutions Bear Creek facility for processing under their facility license. Their operational efficiency helps to ensure the appropriate level of radiological control appropriate for the hazard introduced by the material and process necessary for treatment.

2.c. The scope of contracted work performed under RML 39-35044-01 occasionally involves possession of radioactive material for a temporary time frame until other work supporting the project can be completed.

A recent example of this involved possession of containerized irradiated components which had been subject to temporary outdoor storage at a nuclear plant site under their Part 50 reactor license.

As part of a contract to dispose of these containers, EnergySolutions initiated transportation of these containers to an industrial site with rail spur facilities. EnergySolutions established and maintained radiological controls and security consistent with RML 39-35044-01 and supporting procedures for temporary storage of this material at that site while the rail cars could be prepared for rail transport to the disposal site.

This LSA radioactive material was transported and temporarily stored under RML 39-35044-01 at an industrial site with rail spur facilities. EnergySolutions controls were in place for an approximate 4 week duration while EnergySolutions possessed the material under RML 39-3504-01 on behalf of the waste generator while the containers were secured and prepared for rail shipment.

Similar periods of temporary storage for other entities in support of a decommissioning or waste shipment project at a temporary job site is anticipated. No long-term storage of radioactive material is considered under this license.

2.d. EnergySolutions does possess the resources and technical expertise to develop and apply remotely-operated equipment in radiological environments when this technology can provide ALARA and project execution benefits. However, there is no specific plan or project to apply this technology in contaminated areas; and this subject was included in the application as a provision for possible future benefit.

Given the above context, this application will be modified to omit the scope of this activity. If a future need surfaces to apply remotely operated equipment in radiological environments, future correspondence will accompany the scope and approval of this activity.

2.e. There is no current specific plan or project to apply this technology in contaminated areas; and this subject was included in the application as a provision for possible future benefit.

Given the current context, this application will be modified to omit the scope of this activity. In the event that a future need surfaces to apply remotely-operated equipment in radiological environments, future correspondence will accompany the request and approval of this activity.

NRC RAI 3: In accordance with Section 8.7.2 of NUREG-1556, Vol. 18, Rev. 1, state that “Before using licensed material, authorized users will receive the training described in Appendix D in NUREG-1556, Vol. 18., Rev. 1; OR describe the training and experience for proposed authorized users under this license.

EnergySolutions Response: Before using licensed material, authorized users will receive the training described in Appendix D in NUREG-1556, Vol. 18. Rev1.

NRC RAI 4: In accordance with Section 8.7.2 of NUREG-1556, Vol. 18, Rev. 1, provide a description of the radiation safety training involving the use of licensed material that will be provided as a service to customers.

EnergySolutions Response: Objectives and details of radiation safety training involving the use of licensed material that would be provided as a service to customers is summarized in CS-RS-PR-003. A copy of this document is provided with this submittal.

NRC RAI 5: In accordance with Section 8.8 of NUREG-1556, Vol. 18, Rev. 1, state that “Before working in the vicinity of licensed materials, personnel will have successfully completed training commensurate with assigned duties.”; OR provide a description of the radiation safety training program, including topics covered, groups of workers, assessment of training, qualifications of instructors, and the method and frequency of refresher training

EnergySolutions Response: Before working in the vicinity of licensed materials, personnel will have successfully completed training commensurate with assigned duties. This training is detailed in CS-RS-PR-003.

NRC RAI 6: In accordance with Section 8.10.1 of NUREG-1556, Vol. 18, Rev. 1, submit your operating and emergency procedures for radiological conditions that might be encountered as part of your licensed service activities. In support of this, the previous renewal application in 2011 included the following documents:

EnergySolutions' RPP Procedure List

Commercial Services Radiation Protection Program Rev.1

Radiation Protection and Surveillance & Assessment Program, Rev. 0

Selection and Use of Radiological Protective Clothing, Rev. 1 Personnel

Survey and Decontamination Procedure, Rev. 2 Commercial Services

Field Project Training Requirements, Rev. 1 Emergency Actions

Procedure, Rev. 0

Unconditional Release of Tools, Equipment and Waste Materials from Projects Rev. 0

Radioactive Source inventory, Leak Testing, and Control at Field Projects, Rev. 0

Personnel Monitoring for Exposure, Rev. 1

Air Sampling and Analysis, Rev. 0

Bioassay Sampling, Rev. 0

Internal Dose Assessments, Rev. 0

Radioactive Materials Management program for Commercial Service Projects, Rev. 1

Performance of Radiological Surveys, Rev. 1

Calibration and Maintenance of Radiological Survey Instruments, Rev. 1

QA/QC of Portable Radiological Survey instruments, Rev. 1

- a. These documents were provided as a basis for understanding the scope of the activities you provide as services to customers, and as examples of the radiation safety practices you will employ during such services. Please provide updated versions of these procedures.
- b. In addition, provide procedures for: waste treatment(s); installation or removal of sources from gauging devices, and other procedures with gauges for which you are requesting authorization (and see Section 8.10.9); leak test collection and analysis; storage of radioactive materials for others; and use of robotics in contaminated areas.

EnergySolutions Response: In accordance with Section 8.10.1 of NUREG 1556, updated operating and emergency procedures consistent with licensed service activities are provided with this submittal. Any future contracted job involving source handling would be developed separately consistent with the controls listed in program procedures.

NRC RAI 7: In accordance with Section 8.10.2 of NUREG-1556, Vol. 18, Rev. 1, State "We will develop, implement, and maintain procedures for ensuring accountability of licensed materials at all times." Also, state "We will comply with the National Source Tracking System (NSTS) reporting requirements as described in 10 CFR 20.2207."

EnergySolutions Response: *EnergySolutions* will develop, implement, and maintain procedures for ensuring accountability of licensed materials at all times. *EnergySolutions* will comply with the National Source Tracking System (NSTS) reporting requirements described in 10 CFR 20.2207.

NRC RAI 8: In accordance with Section 8.10.3 of NUREG-1556, Vol. 18, Rev. 1,

- a. As outlined in Section 8.10.3, provide a description of the instrumentation that will be used to perform required radiological surveys. Note that this includes both portable instrumentation, instrumentation for sample analysis, and instrumentation and equipment used to collect samples for later analysis, such as air and water.
- b. State “We will use instruments that meet the radiation monitoring instrument specifications published in Appendix F of NUREG-1556, vol. 18, Rev. 1. We reserve the right to upgrade our instruments as necessary.”
- c. If you will calibrate your own instruments and equipment, state “We will implement the model radiation survey meter calibration program published in Appendix F of NUREG-1556, Vol. 18, Rev.1.”

EnergySolutions Response:

8.a and 8.b. As outlined in Section 8.10, instrumentation used to perform radiological surveys and collect samples for analysis will meet specifications summarized in Appendix F of NUREG 1556, Vol. 18, Rev. 1. We reserve the right to upgrade our instruments as necessary.

8.c. We do not calibrate our instruments and equipment. We procure calibrated instruments from a vendor who maintains their own program consistent with their own license.

NRC RAI 9: In accordance with Section 8.10.4 of NUREG-1556, Vol. 18, Rev. 1, state “We will conduct surveys and maintain contamination levels in accordance with the survey frequencies and contamination levels published in Section 8.10.4 of NUREG-1556, Vol. 18, Rev 1.

EnergySolutions Response: *EnergySolutions* will conduct surveys and maintain contamination levels in accordance the survey frequencies and contamination levels published in Section 8.10.4 of NUREG 1556, Vol, 18, Rev.1.

NRC RAI 10: In accordance with Section 8.10.5 of NUREG-1556, Vol. 18, Rev. 1, provide the information required in Appendix G of NUREG-1556, Vol. 18, Rev. 1 supporting your request to perform leak testing and sample analysis as a commercial service. In addition, either state that you will follow the model procedures in Appendix G or submit alternate procedures.

EnergySolutions Response: *EnergySolutions* has no specific plans to perform source leak testing and sample analysis as a commercial service in accordance with Appendix G of NUREG, Vol.18, Rev. 1, but *EnergySolutions* has the expertise and equipment available to perform this function and wanted to preserve the operational flexibility to perform this type of work at some future date if circumstances warranted.

NRC RAI 11: In accordance with Section 8.10.6 of NUREG-1556, Vol. 18, Rev. 1, state either

“We will maintain, for inspection by the NRC, documentation demonstrating that unmonitored individuals are not likely to receive a radiation dose in excess of the limits in 10 CFR 20.1502.” or “We will monitor individuals in accordance with the criteria in Section 8.10.6 of NUREG-1556, Vol. 18, Rev. 1.”

EnergySolutions Response:

EnergySolutions will maintain, for inspection by the NRC, documentation demonstrating that unmonitored individuals are not likely to receive a radiation dose in excess of limits specified in 10CFR20.1502. To meet this commitment, EnergySolutions will monitor individuals in accordance with the criteria detailed in Section 8.10.6 of NUREG 1556, Vol. 18, Rev. 1.

NRC RAI 12: In accordance with Section 8.11 of NUREG-1556, Vol. 18, Rev. 1,

- a. state “We will use the model waste procedures published in Appendix M of NUREG-1556, Vol. 18, Rev. 1.” Alternately, you may commit to specified sections of Appendix M, or submit your own procedures for review.
- b. If you wish to compact or incinerate radioactive waste, provide the requested information concerning these activities in Appendix M.
- c. If you wish to dispose of radioactive waste by methods other than described in Section 8.11 and Appendix M, describe the alternate processes.
- d. If needed, request authorization for extended interim storage of waste, and submit the required information using the references listed in Section 8.11.

EnergySolutions Response: EnergySolutions will use the model waste procedures published in Appendix M of NUREG-1556, Vol. 18, Rev 1 for any processing leading to waste disposal that differ from our standard internal processes utilizing other EnergySolutions resources at our Bear Creek or Clive facilities.