



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
2100 RENAISSANCE BLVD.
KING OF PRUSSIA, PA 19406-2713

January 9, 2019

Andrew Lombardo, CHP, Senior Vice-President,
Nuclear and Technical Services
Perma-Fix Environmental Services, Inc.
1093 Commerce Park Drive, Suite 300
Oak Ridge, TN 37830

SUBJECT: PERMA-FIX ENVIRONMENTAL SERVICES, INC., REQUEST FOR
ADDITIONAL INFORMATION, MAIL CONTROL NO. 610798

Dear Mr. Lombardo:

This is in reference to your application dated December 13, 2018, requesting a new license, NRC License No. 41-35520-01. In order to continue our review, we need the following additional information:

1. Please revise your requested list of byproduct materials to include only those that are covered by the definition in 10 CFR 30.4. In addition, please note that the following license conditions are standard on licenses for site remediation services:
 - *The licensee does not take possession of the radioactive materials and/or sealed sources while at the customer's facility [insert as needed - for example "except for analytical samples"].*
 - *Except for calibration sources, reference standards, and radioactively contaminated equipment owned by the licensee, receipt, storage, and use incidental to any activity of licensed material at each temporary job site shall be limited to material originating from each site. This material must either be transferred to an authorized recipient or remain at the site after licensee activities are completed.*

These conditions limit the site remediation licenses to the use of the radioactive materials for activities authorized on the license at temporary job sites only, and do not authorize possession of the material other than calibration and check sources, or analytical samples. Therefore you will not be required to provide financial assurance or emergency plans. Possession of the material remains under the financial assurance and other regulatory requirements of the site at which you are working. In addition, you committed in Section 5 to restrict quantities possessed below those limits requiring provision of financial assurance or an emergency plan. You should consider this when establishing the number of line items you are requesting for byproduct material and the quantities to be listed on the license for use.

2. In Section 5, you stated that you wish to define "possession" as the point at which materials are physically removed from their existing state prior to your work under this license. Please explain this statement more clearly, perhaps using an example.

Alternately, if the conditions and commitments discussed in item 1 above provide sufficient relief from this issue, you may retract the request for this definition.

3. The materials and activities you requested fall into several fee categories. Confirm that you wish to be authorized for the following activities and materials, and understand that you will be assessed an annual fee in each of the fee categories, in addition to the application fees for each category.
 - a. Program code 03219 is for decontamination services, and falls into fee category 3.N. This program code applies only to byproduct material, which you requested in Table 1 in six different line items. Activities with source and special nuclear material will fall under separate program codes and fee categories.
 - b. The source material you requested in Table 1 falls under program code 11300, source material, other, more than 150 kilograms. This is in fee category 2.F.
 - c. The special nuclear material you requested could belong to several program codes: 22110, SNM-plutonium, unsealed, less than critical mass; 22111 SNM-uranium-235, unsealed, less than critical mass; 22120 SNM plutonium, sealed neutron sources less than 200 grams; SNM plutonium, sealed sources in devices; 22150 SNM plutonium, sealed sources less than critical mass; and 22151 SNM uranium 235, sealed sources less than critical mass. All of these program codes are in fee category 1.D and a single fee would be assessed.
4. Section 5 of your application does not include information about calibration and check sources as described in Sections 9 and 10. NUREG-1556, Volume 18, Rev 1, "Consolidated Guidance About Materials Licenses Program-Specific Guidance About Service Provider Licenses, " Section 8.5.1, states that you should identify each radionuclide that will be possessed in each sealed source or device, and specify the maximum activity per source. Also, you should specify the maximum number of sources or the total activity for each radionuclide. Identify the manufacturer or distributor and model number of each type of sealed source and device requested, or provide the Sealed Source and Device (SSD) registration certificate number. Confirm that each sealed source, device, and source and device combination is registered as an approved sealed source or device by the NRC or an Agreement State. Confirm that the activity per source and maximum activity per device will not exceed the maximum activity listed on the approved certificate of registration issued by the NRC or by an Agreement State. Identify the special circumstances under which sealed sources and devices that are not registered by the NRC or an Agreement State may be possessed, used, or serviced. Alternately, you may provide information as described in 10 CFR 30.32(g)(4).
5. Based on review of the application, we understand that you are not planning to perform activities with radioactive wastes other than those generated by your site remediation activities. If this is correct, please state, "We will limit waste handling activities to those wastes generate by remediation and decommissioning services we provide. We will NOT take possession of waste generated by the customer as would a commercial waste service provider, or handle wastes we did not generate."
6. As a result of a review of all licenses and program codes over the past 2 years, the NRC identified that activities under program code 03219 may require that an environmental

assessment be performed. Confirm that you understand that the issuance of your new license may be delayed until a determination is made regarding the need for an environmental assessment for these activities.

7. Please provide more specific information regarding the types of activities you expect to perform related to site characterization, decontamination and decommissioning of facilities. In particular,
 - a. specify if procedures will be limited to surveys and routine cleaning activities of indoor facilities and equipment, or if you expect to use aggressive methods that could include grinding, cutting, scabbling or other activities that could generate airborne radioactivity; chemical methods that could result in generation of mixed wastes; or other methods that could require use of specialized protective clothing or equipment such as respirators.
 - b. specify if the procedures you expect to perform in outdoor areas will be limited to surveys and limited soil sampling in the top 15 centimeters, or if you expect to perform activities such as core sampling, soil removal, sampling and remediation below 15 centimeters, ground water and surface water sampling, or other similar activities that may require additional radiation or other safety precautions.
8. Section 7 of your application does not include information requested in NUREG-1556, Volume 18, Revision 1, Section 7, "Individuals Responsible for Radiation Safety Program and Their Training and Experience." In accordance with Section 8.7.1, provide the following:
 - a. Demonstrate that the RSO has sufficient independence and direct communication with responsible management officials by providing a copy of an organizational chart by position and demonstrating day-to-day oversight of the radiation safety activities;
 - b. Confirm that the RSO will be available for emergencies and can be on-site within 24-48 hours, if applicable;
 - c. Confirm that the duties of the RSO will include those described in Appendix C of NUREG-1556, Volume 18, Revision 1.
9. Your procedure RP-115, "Radiation Worker Training," stated that training would be provided bi-annually. According to the dictionary definition, bi-annual means twice each year. Confirm if you intended to provide training twice each year (semi-annually or bi-annually), or once every two years (biennially). If the latter, please justify why refresher training is only needed every 2 years, given that NUREG-1556, Volume 18, Revision 1 states that annual refresher training should be provided.
10. The Radiation Protection Program procedures submitted with your application do not include procedures for the various types of site remediation activities you intend to perform (see Item 7 above) other than surveys. Please submit operating and emergency procedures applicable to the decontamination and remediation activities you expect to perform.

11. Confirm that you will obtain agreements as described in the following license condition which is standard for site remediation licenses:

- *This license does not authorize the use of licensed material at temporary job sites for uses already specifically authorized by a customer's license. If a customer also holds a license issued by the U.S. Nuclear Regulatory Commission or an Agreement State, the licensee shall establish a written agreement between the licensee and the customer specifying which licensee activities shall be performed under the customer's license and supervision, and which licensee activities shall be performed under the licensee's supervision pursuant to this license. The agreement shall include a commitment by the licensee and the customer to ensure safety, and any commitments by the licensee to help the customer clean up the temporary job site if there is an accident. A copy of this agreement shall be included in the notification required by license condition [insert number].*

12. In accordance with Section 8.10.2, confirm that a physical inventory will be conducted at intervals not to exceed 6 months, to account for all sealed sources and devices possessed at temporary job sites under the license; and records of the inventory will be maintained for a period of 5 years and will include the radionuclides, quantities, manufacturer's name and model numbers, and date of the inventory.

13. The quantities of special nuclear material (SNM) you requested to be authorized on the license could include SNM of low strategic significance and/or strategic SNM. Provide your procedure for determining if you will be working with SNM of strategic or low strategic significance, and implementing the physical protection requirements of 10 CFR Parts 73 and 74, if applicable.

14. Your procedures RP-104, "Radiological Surveys" and RP-105, "Unrestricted Release Requirements" contain the table "Acceptable Surface Contamination Levels". The levels listed are outdated with respect to release of facilities, and have not been used for release of facilities for unrestricted use in many years, following the issuance of 10 CFR 20, Subpart E, "Radiological Criteria for License Termination" in 1998. In addition, these limits do not address soil, water, etc. NUREG-1757, Volume 2, Revision 1, discusses how facilities can demonstrate they meet 10 CFR Part 20, Subpart E criteria for release of facilities for unrestricted use. The values in your Table 2 do not meet the criteria for Subpart E for alpha emitters, and may not meet the Subpart E criteria for some beta and gamma emitters. (We note, however, that your table is similar to Appendix L of NUREG-1556, Volume 11, Revision 1 for acceptable contamination levels of items but not building surfaces.)

- a. Please confirm your understanding that this table is to be used only for individual item release and not for release of facilities, and that you will revise your procedures to make this clear.
- b. Confirm that your criteria for release of facilities under NRC jurisdiction will meet 10 CFR Part 20, Subpart E, "Radiological Criteria for License Termination", and that you will develop and implement appropriate release criteria, and site remediation and decommissioning activities, using guidance acceptable to the NRC. In addition, 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, Volume 18, Revision 1, "Consolidated Guidance About Materials Licensees: Program-Specific Guidance about Service Provider Licenses."

15. The procedures submitted do not address assessment of internal dose or conditions when external dosimetry would not be issued. In accordance with Section 8.10.6 of NUREG-1556, Volume 18, Revision 1, state "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." and "We will monitor individuals in accordance with the criteria in Section 8.10.6'Radiation Safety Program – Occupational dose' in NUREG-1556, Volume 18, Revision 1, "Consolidated Guidance About Materials Licensees: Program-Specific Guidance about Service Provider Licenses."
16. Confirm that you will abide by the following license conditions that are standard for site remediation service providers:
 - *The licensee shall notify the U.S. Nuclear Regulatory Commission in accordance with Appendix D of 10 CFR Part 20, in writing at least 14 days before initiating activities under this license at a temporary job site, excluding routine packaging or repackaging for purposes of transporting and not requiring a job or site specific work package, and characterization and/or final surveys where radioactive materials and/or radiation are not likely to be detected. This notification shall include: (1) The estimated type, quantity, and physical/chemical forms of licensed material to be used, (2) The specific site location, (3) A description of planned activities including waste management and disposition, (4) The estimated start date and completion date for the job, and (5) The name and title of a point of contact for the job, including information on how to contact the individual.*
 - *Within 30 days of completing activities at each job site location, the licensee shall notify the U.S. Nuclear Regulatory Commission in accordance with Appendix D of 10 CFR Part 20, in writing, of the temporary job site status and the disposition of any licensed material used.*
 - *The licensee shall maintain records of information important to decommissioning for each temporary job site pursuant to 10 CFR [30.35(g), 40.36(f), and 70.25(g)]. The records shall be made available to the customer upon request. At the completion of activities at a temporary job site, the licensee shall transfer these records to the customer for retention.*
 - *If approved by a Radiation Safety Officer specifically identified in this license, the licensee may take reasonable action in an emergency that departs from conditions in this license when the action is immediately needed to protect public health and safety and no action consistent with all license conditions that can provide adequate or equivalent protection is immediately apparent. The licensee shall notify the U.S. Nuclear Regulatory Commission Headquarters Operations Center at 301-816-5100 and the U.S. Nuclear Regulatory Commission Regional contact before, if practicable, and in any case immediately after taking such*

emergency action using the reporting procedure specified in Appendix D of 10 CFR Part 20.

When submitting future license amendments, please have the document signed by a management representative rather than the Radiation Safety Officer. The NRC views a letter signed by a management representative as indication that management has reviewed the application and concurs in the statements and representations contained therein.

We will continue our review upon receipt of this information. Please reply to my attention at:

Betsy Ullrich, Senior Health Physicist
Mail Control No. 610798
USNRC, Region I
Division of Nuclear Materials Safety
2100 Renaissance Boulevard
King of Prussia, PA 19406

In order to continue prompt review of your application, we request that you submit your response to this letter within 30 calendar days from the date of this letter.

An electronic version of the NRC's regulations is available on the NRC Web Site at: www.nrc.gov. Additional information regarding use of radioactive materials may be obtained on the NRC Web Site at: <http://www.nrc.gov/materials/miau/mat-toolkits.html>. This site also provides the link to the toolbox for updated information on the revised regulations for naturally-occurring and accelerator-produced radioactive materials (NARM).

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter will be available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS). ADAMS is accessible from the NRC Web Site at: <http://www.nrc.gov/reading-rm/adams.html>. Please be aware that you may request that certain portions of your submittal to NRC be withheld from public disclosure as proprietary information. To do this, you must execute an affidavit as specified in 10 CFR 2.390. You must list all portions that you wish to be held proprietary, along with your reasoning as to why that is appropriate. While it is allowable, please refrain from submitting proprietary information in support of a license unless necessary. Keep in mind that all NRC licenses are considered to be in the public domain, and therefore may be viewed by any member of the public who requests to see them.

If you have any questions regarding this request for additional information, please contact me at (610) 337-5040 or via electronic mail at Elizabeth.Ullrich@nrc.gov .

Thank you for your cooperation.

Sincerely,

A handwritten signature in black ink, appearing to read "Betsy Ullrich". The signature is fluid and cursive, with a large initial "B" and a stylized "U".

Betsy Ullrich, Senior Health Physicist
Commercial, Industrial, R&D
and Academic Branch
Division of Nuclear Materials Safety

License No. 41-35520-01
Docket No. 030-39147
Mail Control No. 610798

cc: S. Eric Miller, CHP, Radiation Safety Officer

PERMA-FIX ENVIRONMENTAL SERVICES, INC., REQUEST FOR ADDITIONAL
INFORMATION, MAIL CONTROL NO. 610798 DATED JANUARY 9, 2019

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SUNSI Review Complete: Betsy Iulrich After declaring this document "An Official Agency Record" it will be released to the Public.

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