



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

April 19, 2019

Bruce A. Reynolds, Chief Operating Officer
Tidewater, Inc.
6625 Selnick Drive, Suite A
Elkridge, MD 21075

SUBJECT: TIDEWATER, INC., REQUEST FOR ADDITIONAL INFORMATION, MAIL
CONTROL NO. 611343

Dear Mr. Reynolds:

This is in reference to your letter dated February 12, 2019, requesting a new NRC License No. 19-35526-01. In order to continue our review, we need the following additional information:

1. The letter was signed by James Reese, your proposed Radiation Safety Officer; the application was signed by you. 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.
2. You requested a Type B broad scope license. As we discussed in a telephone conversation, the types and quantities of material you requested do not meet the Type B materials and quantities specified in 10 CFR 33.100, Schedule A. In addition, a broad scope license adds an additional fee category to your licensed activities. Based on your application, we believe that you can carry out your program as described in the application, without having the Type B license. Confirm if you withdraw the request for a Type B broad scope license.

If you still wish to request a Type B broad scope license, please review the regulations in 10 CFR Part 33 for Type B broad scope licenses. Note that the possession limit for a Type B broad scope license, if only one radionuclide is possessed, is the quantity specified for that radionuclide in 10 CFR 33.100, Schedule A, Column I. If two or more radionuclides are possessed, the possession limit is determined as follows. For each radionuclide, determine the ratio of the quantity to be possessed to the applicable quantity specified in 10 CFR 33.100, Schedule A, Column I, for that radionuclide. The sum of the ratios for all radionuclides possessed under the license may not exceed unity. Therefore, Applicants for a Type B broad scope license should request any chemical or physical form of byproduct material specified in 10 CFR 33.100, Schedule A. Type B applicants should request the quantity of material specified in 10 CFR 33.11(b). Your request does not appear to require this authorization. In addition, you should submit the information requested in the applicable sections of NUREG 1556, Volume 11, Revision 1, "Consolidated Guidance about Materials Licenses, Program-Specific Guidance about License of Broad Scope."

3. Please provide a copy of your licenses in Agreement States so that we may determine if a pre-licensing visit should be performed prior to issuance of a new license by the NRC.
4. In your letter, you stated that that you do not wish to request source material (pursuant to 10 CFR Part 40) or special nuclear material (SNM) (pursuant to 10 CFR Part 70) at this time. You further stated that, should your encounter those materials, you will manage those items under one of the Agreement State Material License. It is not clear how this would be managed; if the temporary job site is in NRC jurisdiction, the source or SNM materials should be managed under this license. Please either confirm that you will not possess, use, or store these materials at temporary job sites in NRC jurisdiction; or request materials authorized by 10 CFR Part 40 and 10 CFR Part 70.
5. As a result of a review of all licenses and program codes over the past 2 years, the NRC identified that decommissioning service provider activities under program code 03219, as well as waste service provider activities under program codes 03233, 03234 and 03236 may require that an environmental assessment be performed. Confirm if you ever were requested to provide information to support an environmental assessment for your decommissioning service activities by the NRC or an Agreement State, or if an environmental assessment was performed for your licensed activities as described in this application. 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.
6. 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 3 of your application to restrict quantities possessed below those limits requiring provision of financial assurance, or an emergency plan pursuant to 10 CFR 30.32(i).

No response to this item is required, unless you are requesting authorization to possess materials other than as described above. If so, please note that the quantity of radium-226 greater than 0.01 millicuries in "any" form requires financial assurance, as could 500

millicuries of some materials that fall in the category of "any byproduct material with atomic numbers 1-83."

7. Section 2 of your license requests radium-226 (Ra-226) in "any" form, with a limit of 0.001 curie of Ra-226 per item.
 - a. Confirm if you are requesting "any" form, which encompasses both sealed and unsealed. If so, specify the maximum Ra-226 limit to be authorized on the license for site remediation activities.
 - b. Confirm if you wish a separate line item for Ra-226 in the form of sealed sources or items. If so, the 100 items at 0.001 curie each would be a total limit of 0.1 curie in the form of sealed sources and devices or "items".
 - c. As we discussed during a telephone conversation, if you only require the authorization for Ra-226 for items which could be possessed the provisions of the general license in 10 CFR 31.12, you could withdraw your request for Ra-226.
8. Section 2 of your application does not provide any information related to radioactive materials in the form of sealed sources, as requested in NUREG-1556, Volume 18, Rev 1, "Consolidated Guidance About Materials Licenses - Program-Specific Guidance About Service Provider Licenses." (NUREG-1556, Vol. 18, Rev. 1) Sections 3, 6, 9 and 10 of your application discuss the use of calibration and check sources, but only once on page 12 are exempt check sources stated. Section 8.5.1 of NUREG-1556, Vol. 18, Rev. 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;
 - 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; and
 - 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.

Please provide this information for any sources you wish authorization for under this specific license. Alternately, you may provide information as described in 10 CFR 30.32(g)(4), or commit to possession and use only of sources that are exempt from the requirements of a specific license, or are possessed under a general license.

9. In addition to the information provided in Section 3, "Purpose of Use of Licensed Material" of your application, please provide more specific information regarding the types of activities you expect to perform related to site characterization, decontamination and decommissioning of facilities. Based on the application, it appears you intend only

to remediate equipment and tools removed from radiologically controlled areas. In particular,

- a. specify if procedures will be limited to surveys of tools and equipment. Confirm if you also intend to survey and perform routine cleaning activities of indoor facilities and/or 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 you intend to perform remediation of outdoor areas. If so, specify if the procedures you expect to perform in outdoor areas will be limited to surveys and to 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.
10. In Section 3 of the application, you stated that one of the purposes of use was to "transport in packages or container approved for use under the provisions of 10 CFR Part 71 for transfers to licensees authorized to receive the materials, in accordance with the terms and conditions of licenses issued by the NRC or Agreement States." Based on the quantities of materials requested, it seems unlikely that you would require use of Type B packages. However, if you plan to use Type B package, please note that you must be registered with NRC as a user of the Type B package, and have an NRC-approved quality assurance (QA) plan

Confirm that you do not expect to require use of Type B packages; or provide your procedure for packaging material in a Type B package.
11. 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 generated 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."
12. Section 4, "Responsible Individuals," of your application does not include all the 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 [note: the application states that an organization chart was attached in Appendix A, but appears to be missing]; and
 - b. Confirm that the RSO will be available for emergencies and can be on-site at temporary job sites within 24-48 hours, if applicable

13. Section 5 of your application, "Training", does not specify when training will be provided. Section 5.6 of your Radiation Safety Plan (RSP) states that employees will have initial training prior to working with licensed materials, and that refresher training would be every 2 years. NUREG-1556, Vol. 18, Rev 1. states that refresher training should be provided every year. Please justify why refresher training is only needed every 2 years for your activities.
14. NUREG-1556, Vol. 18, Rev 1., considers decommissioning services to be "high risk" activities. Therefore, in accordance with Section 8.10.1, operating procedures should be submitted with the application. Operating procedures should provide personnel with specific guidance for all operations they will perform, and include topics important to safe operations as applicable to the materials and uses proposed in the application. NUREG-1556, Volume 18 further states that emergency procedures should be submitted with all license applications, and should address all likely scenarios that may be encountered. Some of the items in Section 8.10.1 include, but are not limited to: steps to take and whom to contact when an emergency occurs; methods and occasions for conducting radiation surveys; procedures for personnel monitoring, including bioassays; procedures to be taken in emergency situations to prevent spread of contamination; procedures to be followed in the event of an uncontrolled release to the environment. Please provide your operating and emergency procedures for the types of activities you expect to perform under this license. In particular,
 - a. Provide procedures related to surveys and routine cleaning activities of indoor facilities and equipment: and procedures for use of 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 protective clothing such as use of respirators.
 - b. Provide procedures related to surveys and remediation in outdoor areas, for activities such as soil sampling in the top 15 centimeters; 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, and use of other specialized equipment.
 - c. Provide operating and emergency procedures for other basic radiation safety activities related to the authorized uses under the license, such as procedures for proper use of protective clothing and equipment; respirator use; air sampling and air monitoring; radiation and contamination surveys; scanning surveys and static measurements for total contamination to determine if facilities may be released for unrestricted use; removable contamination (wipe) surveys; handling of samples and chain-of-custody; issuance of radioactive work permits or equivalent procedures, etcetera.
 - d. Confirm that surveys to determine if licensee facilities are suitable for release for unrestricted use will meet the criteria in 10 CFR Part 20, Subpart E "Radiological Criteria for License Termination" and will implement the current guidance such as the Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM) and NUREG-1757 "Consolidated Decommissioning Guidance."

15. Your application states that inventory of materials at temporary job sites will be performed every 12 months. In accordance with NRC standard license conditions, please 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 3 years and will include the radionuclides, quantities, manufacturer's name and model numbers, and date of the inventory
16. Pursuant to NUREG 1556, Vol. 18, Rev 1, Section 8.10.2, state "We will develop, implement, and maintain procedures for ensuring accountability of licensed materials at all times."
17. In the section "Contamination Limits" on page 18 of your application, it states that tools and equipment used in radiologically controlled or contaminated areas that meet the Table 2 contamination limits may be used outside of those areas. The same table is shown in Section 9.4, "Contamination Surveys for Material Release" in your RSP. Furthermore, Section 11.0 "Controlling Surface Contamination," states that surface contamination levels in unrestricted areas must meet these limits. Please note that these limits for alpha emitters and some beta/gamma emitters may not meet the 10 CFR Part 20, Subpart E criteria for release of facilities for unrestricted use. Your Table 2 is similar to Appendix L of NUREG-1556, Volume 11, Rev. 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 (building surfaces).
 - b. Confirm that your criteria for release of facilities [buildings and outdoor areas] will meet 10 CFR Part 20, Subpart E, "Radiological Criteria for License Termination", and that you will use the guidance in NUREG 1757, Volume 1, "Decommissioning Process for Materials Licensees," and Volume 2, "Characterization, Survey, and Determination of Radiological Criteria," to develop and implement appropriate release criteria, and site remediation and decommissioning activities.
18. In accordance with Section 8.10.4, "Surveys" 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, Volume 18, Revision 1," or submit alternate survey methods and frequency for demonstrating how to evaluate a radiological hazard.
19. The section "Leak Testing" on page 20 of your application is not clear if you plan to perform leak tests under your license, or you will have another authorized facility perform leak testing. NUREG-1556, Vol. 18, Rev. 1. Section 8.10.5 states to provide either
 - a. "Leak tests sample collection or analysis will be performed by an organization authorized by NRC or an Agreement State to provide leak testing services to other licensees. Leak tests may be collected by the licensee using a leak test kit supplier's instructions. Such leak test kits will be supplied by an organization authorized by the NRC or an Agreement State to provide leak testing services."OR

- b. "Leak testing and analysis will be done by the applicant." If you will perform both leak testing and sample analysis, provide the information in Appendix G of this NUREG supporting a request to perform leak testing and sample analysis and either (1) state that the applicant will follow the model procedures in Appendix G of NUREG-1556, Volume 18, Revision 1 "Consolidated Guidance About Materials Licenses: Program-Specific Guidance About Service Provider Licenses," or (2) submit alternative procedures.
20. The section "Personnel Dosimetry" on page 17 of your application refers to a requirement that workers wear a TLD. It later refers to film badge, TLD, OSL, etc. It is not necessary to specify the type of dosimetry you will assign to individuals. In accordance with Section 8.10.6 of NUREG 1556, Vol. 18, Rev. 1, state "We will monitor individuals in accordance with the criteria in Section 8.10.6, "Radiation Safety Program – Occupational Dose" of NUREG 1556, Vol. 18, Rev. 1. You may also 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."
21. Section 8.10.1 of NUREG 1556, Vol. 18, Rev. 1, states that you should have a procedure for obtaining an agreement with customers when performing service operations at a customer facility which also holds an NRC license, and describes the information that should be in that agreement. 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].*
22. 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.*

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

Betsy Ullrich
Mail Control No. 611343
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 to Elizabeth.Ullrich@nrc.gov

Thank you for your cooperation.

Sincerely,



Betsy Ullrich, Senior Health Physicist
Commercial, Industrial, R&D
and Academic Branch

License No. 19-35526-01
Docket No. 030-39153
Mail Control No. 611343

cc: James Reese, Radiation Safety Officer

TIDEWATER. INC., REQUEST FOR ADDITIONAL INFORMATION, MAIL CONTROL NO.
611343 DATED APRIL 19, 2019

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SUNSI Review Complete: Betsy Ullrich

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