



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
REGION I
2100 RENAISSANCE BOULEVARD, SUITE 100
KING OF PRUSSIA, PA 19406-2713

May 21, 2014

Docket No. 03036563
Control No. 583823

License No. 44-30912-01

John J. Judge, Jr.
President/CEO
R.O.V. Technologies, Inc.
49 Bennett Drive
Brattleboro, VT 05301

SUBJECT: R.O.V. TECHNOLOGIES, INC., REQUEST FOR ADDITIONAL INFORMATION
CONCERNING APPLICATION FOR LICENSE RENEWAL, CONTROL NO.
583823

Dear Mr. Judge:

This is in reference to your application dated April 29, 2014 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML14127A452), requesting to renew Nuclear Regulatory Commission License No. 44-30912-01. In order to continue our review, we need the following additional information:

1. As stated in the notice of expiration which was sent to you, we reserve the right to request a complete, up-to-date application in cases where licenses have been amended frequently or are supported by a large number of fragmented or disjointed documents. License Condition 18 of your current license lists 13 tie-down documents dating back to 2004. We have reviewed your submission and existing license and request that you submit a single, complete application using NUREG -1556, Volume 18, "Consolidated Guidance About Materials Licenses, Program-Specific Guidance About Service Provider Licenses."
2. Provide a copy of senior management's written statement of delegation of authority to the Radiation Safety Officer (RSO). This statement should include the requisite authority to communicate with and direct your personnel regarding NRC regulations and license provisions and to enforce these requirements including the ability to terminate any unsafe operation involving the use of licensed material. Appendix J in NUREG-1556, Volume 11, "Consolidated Guidance About Materials Licenses: Program-Specific Guidance About Licenses of Broad Scope," contains a "Delegation of Authority" that is acceptable to the NRC.
3. Item 2 of NRC Form 313 dated April 29, 2014 indicates that all licensed activity will be conducted at your facility in Brattleboro, Vermont. Please confirm that you will not use your NRC specific license to conduct licensed activities at customer's facilities. If you intend to conduct licensed activities at customer's facilities, please provide the requested information described in Section 8.9 of NUREG-1556 Volume 18. Please describe if you

are using your NRC specific license or your customer's license, when your personnel are operating your remote operating vehicles at your customer's facilities. Since the remote operating vehicles and their accessories may have contamination in inaccessible areas or become contaminated, we need to understand who has the responsibility when working at customer's facilities.

4. Section 5.B of your application dated April 29, 2014, indicates that you would like to be authorized for any byproduct material with atomic numbers greater than 84. But Section 5.A of your application lists only atomic numbers 1 through 83. Please confirm that you would also like to be authorized for atomic number 84.
5. Since you have been in business for over ten years, please provide the upper atomic number for Section 5.B rather than leaving it open-ended. For instance, we could authorize atomic numbers 84 through 104.
6. Sections 5.C and 5.D of your application dated April 29, 2014, indicates that you would like to possess any special nuclear material and byproduct material in the form of plated or sealed sources. 10 CFR 30.32(g) requires that an application for a specific license to use byproduct material in the form of a sealed source or in a device that contains a sealed source must either identify the source or device by manufacturer and model number as registered with the U.S. Nuclear Regulatory Commission under 10 CFR 32.210 or with an Agreement State; or contain the information identified in 10 CFR 32.210(c). Please provide this information for the sealed source(s) requested in your application. In addition, please only provide specifically licensed material for inclusion in your specific NRC license. If you request for exempt or generally licensed material to be included on your specific license, then you will need to treat that material as specifically licensed (e.g., accountability, inventory, leak tests, disposal, etc.).
7. For your request to be authorized to use sealed sources, please provide the following:
 - a. Confirm that each sealed source, device, and source/device combination is registered as an approved sealed source or device by NRC or an Agreement State.
 - b. 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 NRC or by an Agreement State.
8. 10 CFR 30.35 requires that licensees authorized to possess and use unsealed licensed material with a half-life greater than 120 days in quantities greater than those described in 10 CFR 30.35(d) must submit certification for financial assurance and/or a decommissioning funding plan (DFP) in any renewal application submitted after July 27, 1990. 10 CFR 70.25 requires that licensees authorized to possess and use special nuclear material (SNM) must submit certification for financial assurance and/or a DFP. NUREG-1757, Volume 3, "Consolidated NMSS Decommissioning Guidance: Financial Assurance, Recordkeeping, and Timeliness" may be helpful in planning your response. Part II and Appendix A (particularly A.2.4, A.2.5, and A.3) of Volume 3 provide detailed information on financial assurance and DFP requirements. The DFP must include an

actual estimate of the costs for decommissioning your facility and a description of the methods of assuring funds in accordance with 10 CFR 30.35(e) and 10 CFR 70.25(e). 10 CFR 30.35(e) and 10 CFR 70.25(e) requires that your DFP include a means of adjusting your cost estimate and associated funding levels periodically over time. Please provide the method that you will use to adjust your decommissioning costs over time. NRC suggests that you evaluate decommissioning costs during each renewal of your license.

Please follow the recommended wording for financial assurance mechanisms found in Appendix A to NUREG-1757, Volume 3. Please note that escrow account and the line of credit are no longer accepted instruments. In addition, all licensees required to provide financial assurance must also submit a Certification of Financial Assurance such as the "Model Certification of Financial Assurance" shown in Appendix A.2.4 of NUREG-1757, "Consolidated NMSS Decommissioning Guidance", Volume 3, "Financial Assurance, Recordkeeping, and Timeliness."

9. In your application dated April 29, 2014, you did not describe a training program for radiation workers and ancillary personnel (technicians, maintenance, security, etc.). The training given to each group should be commensurate with the duties and responsibilities of the group. The training program must assure that personnel are instructed before assuming duties with, or in the vicinity of, licensed materials and specify a frequency for periodic refresher training. This training should also include a discussion on your emergency procedures. In addition, please provide the criteria that the RSO will use to determine when an individual has successfully completed the training program. Alternately, you may adopt the training program described in Appendix H of NUREG -1556, Volume 18.
10. Section 9 of your application dated April 29, 2014, describes a fenced area outside the building where licensed material may be stored in securely closed shipping containers and vehicles. Your training program should include training of personnel who would have access to this area. Please describe the training that will be provided to the personnel who have access to this area.
11. Your application dated April 29, 2014, does not clearly state what specific activities you intend to conduct in each of the four areas within the restricted area (Maintenance Enclosure, Contamination Control Area, Lease Storage Area and Fenced Truck Storage Area). Please provide a summary of the specific activities you are requesting to perform in each of the four facility areas. In preparing this information, please identify which activities in each area will involve the unpackaging and handling of unsealed licensed material.
12. Your application dated April 29, 2014, includes a description and drawing of the proposed restricted area (Maintenance Enclosure, Contamination Control Area, Leased Storage Area and Fenced Truck Storage Area). The information excludes several important features necessary for our review. Please revise and resubmit this drawing or provide additional information in regards to 1) all floor drains and sinks and the systems to which they drain, and, 2) the existence of any fire suppression detection systems, if applicable.

13. The site and building plan in your application dated April 29, 2014, shows a Leased Storage Area inside a restricted area. Please confirm if this will include storage of radioactive material for other licensed companies and specifically address the following items:
- a. Describe the management controls you will implement with potential lessees to ensure that the conditions of all licenses are met and that licensed materials are controlled by the respective licensees and not intermingled.
 - b. Please explain who has access to this area and the required training provided by R.O.V. Technologies.
 - c. Describe how licensed material, including waste, assigned to R.O.V. Technologies will be controlled and secured so that it does not inadvertently become mixed with material under the control of the lessee.
 - d. Submit the procedures that will be required if a lessee must transfer material through areas of the facility which are controlled by R.O.V. Technologies, for activities such as receiving and shipping materials from a common loading dock or moving waste to a storage area, which ensure that licensed material is controlled by the appropriate licensee.
 - e. If any areas are to be shared (such as hallways, Cold Rooms, Counting Rooms, or waste storage facilities), specify who will be responsible for control of licensed materials in these areas, performance of surveys, and other related activities including incidents such as spills.
 - f. If systems such as ventilation ducts and sewer lines will receive effluent materials from both R.O.V. Technologies and a lessee, specify who will be responsible for monitoring these systems, accounting for material released, and maintaining compliance with NRC regulations. Describe any changes in your procedures that may be required if a lessee shares such systems.
 - g. Describe any limitations imposed on the lessee/licensees who participate in the lease storage and equipment maintenance services other than the owner maintains responsibility for disposal of material. Please provide a summary of the constraints that you intend to place on lessee/licensees regarding use of your services. These constraints should include demonstration of continued financial viability responsibility, storage duration limitations, maximum removable surface and dose rate levels on equipment, exclusion for specific equipment, types, minimum equipment packaging standards, inventories of material within closed storage containers, limitations for hazardous, flammable and combustible materials contained within storage containers, and disposal of equipment deemed no longer useable.
 - h. Please describe the packaging standards that you intend to use for storage of licensee material within the Lease Storage Area and a summary of the package inspection program that you will use to assure that package degradation is addressed in a timely fashion. Please include the frequency of such inspections and the method to be used to address deficiencies identified.

14. Your application dated April 29, 2014, does not address the loading of combustible materials in the restricted area. Please describe the fire protection program that you intend to implement in support of your license renewal, if combustibles will be present.
15. For facilities where licensed materials may become airborne, include schematic descriptions of the ventilation system, with pertinent airflow rates, pressures, filtration equipment, sample collection, and monitoring instruments. Please identify each potential airborne effluent release point created as a result of the requested activities and the method by which you will estimate airborne releases from these release points. For the opening of packages or handling of materials having loose surface contamination levels above those established for unrestricted release not monitored by these release points, please describe the controls that will be used to minimize the likelihood of a release to the environment and the method used to verify that no such release occurred. Include a description for the frequency of filter exchanges. Diagrams should be drawn to a specified scale, or dimensions should be indicated.
16. In the Audit section of your application dated April 29, 2014, you reference NUREG-1556, Volume 19. Please note that Volume 19 is for reciprocity. Please confirm if you meant to reference NUREG-1556, Volume 18, "Consolidated Guidance About Materials Licenses: Program-Specific Guidance About Service Provider Licenses."
17. Your application dated April 29, 2014, did not address procedures for survey meter calibration. Please confirm which of the following applies:
 - a. Radiation monitoring instruments will be calibrated by a person qualified to perform survey meter calibrations; OR
 - b. You will implement the model survey meter calibration program published in Appendix J to NUREG-1556, Vol. 18 and you reserve the right to upgrade your survey instruments as necessary. If you will be performing your own calibrations, please identify the specifically licensed source that you will use by source manufacturer and model number, nuclide, activity, and calibration accuracy.
18. In your Dosimetry section of your application dated April 29, 2014, you discuss the possibility of bioassay. If bioassay will be used for internal dose assessment, describe your bioassay program, including the type of bioassay (thyroid counts, urine counts, whole body counts, etc.), the criteria and the frequency for performing bioassays, the type of action taken when positive results are obtained, the type of instrument used to perform bioassays and the instrument's sensitivity.
19. The Contamination Control section of your application dated April 29, 2014, addresses personnel exit monitoring/frisking requirements that will be used for the restricted area(s). However, there is no discussion regarding surveying of material that will exit the restricted area(s). Please describe material exit monitoring/frisking requirements that will be used for the restricted area(s).
20. The Radiological Survey section of your application dated April 29, 2014, does not address surveys of the trucks that are used to store radioactive material in your locked fenced area. Please provide additional details about the frequency and types of surveys for the trucks.

21. Isotopic analyses may be required during your operations. For example:
- Isotopic analysis of air samples may be needed to support effluent calculations;
 - Isotopic analysis of smears may be needed to support validation of the radioactive contaminants being received at your facility; and
 - Isotopic analysis of smears may be needed to support shipment of contaminated equipment that has undergone maintenance.
- Your application does not include instrumentation to perform isotopic analysis. Please explain how you will perform this type of analysis and maintain licensed material accountability for license possession limits and equipment that has undergone maintenance.
22. Specify the criteria used to set the type and frequency at which routine surveys for airborne licensed materials are performed (e.g., breathing zone and general work area air sampling, hood and room ventilation air flow rate measurement, and stack effluent sampling). Describe the instrumentation that will be used for sample collection and analysis, the calibration method and frequency for each, and specify the lower limit of detection and action levels for each.
23. The Radiological Survey section of your application dated April 29, 2014, states that any sources not exempt from leak testing shall be tested in accordance with regulatory requirements. Please provide your leak test procedures. Appendix O of NUREG-1556, Volume 18 contains model leak test procedures and may be helpful to you in developing your response.
24. The Security of Licensed Material section of your application dated April 29, 2014, states that security will be maintained in accordance with 10 CFR 20.1801 and 10 CFR 20.1802. Please provide your procedures that ensure unauthorized individuals do not have access to licensed material, including material stored in the outside locked, fenced truck storage area.
25. Your application dated April 29, 2014, did not address all the topics from NUREG-1556, Volume 18 in terms of your radiation safety program. Confirm that ROV Technologies:
- Only allows individuals qualified by training and experience to perform licensed activities;
 - Developed and implemented an ALARA program; and
 - Developed and maintained written operating procedures.
26. Please submit your emergency procedures for all likely scenarios (e.g., personal contamination; ingestion of radioactive material, leaking source, failure of the ventilation system, spill, natural disaster (fire, tornado, earthquake, flood, etc.)).
27. Please explain if there would be anytime where the remote operating vehicle(s) cannot be decontaminated due to internal contamination in inaccessible areas but were still needed for use at customer's facilities. If you lease the contaminated ROV to a customer, please provide a procedure for obtaining an agreement with customers outlining the responsibilities of both the customer and R.O.V. Technologies.

28. Your application dated April 29, 2014, did not address maintenance activities. If you intend to conduct maintenance on contaminated remote operating vehicles or their accessories either at your facility or at your customer's site, please state the following:

- a. "We will implement and maintain procedures for conducting routine maintenance of our device according to each manufacturer's (or distributor's) written recommendations and instructions."

OR

Alternative procedures are provided for NRC's review.

AND

- b. "We will have the device manufacturer (or distributor) or other person authorized by NRC or an Agreement State to perform non-routine maintenance on our devices."

OR

Information requested in Appendix P of NUREG- 1556, Vol. 18, is provided to support requests to conduct non-routine maintenance procedures.

29. Section 11 of your application dated April 29, 2014, describes your waste management program, but does not address each item listed in the general guidelines of Appendix N of NUREG-1556, Volume 18. You may either provide a statement that: "We will use the model waste procedures published in Appendix N of NUREG- 1556, Vol. 18." or revise your submission to address the general guidelines:

- a. All radioactivity labels must be defaced or removed from containers and packages prior to disposal into ordinary "non-radioactive" waste streams. If waste is compacted, all labels that are visible in the compacted mass must be defaced or removed.
- b. Remind workers that nonradioactive waste such as leftover reagents, boxes, and packaging material should not be mixed with radioactive waste.
- c. Occasionally monitor all procedures to ensure that radioactive waste is not created unnecessarily. Review all new procedures to ensure that waste is handled in a manner consistent with established procedures.
- d. In all cases, consider the entire impact of various available disposal routes. Consider occupational and public exposure to radiation, other hazards associated with the material and routes of disposal (e.g., toxicity, carcinogenicity, pathogenicity, inflammability), and costs.
- e. Waste management program should include waste handling procedures for the users within their laboratories or assigned areas, and for waste handlers who may collect waste from areas of use to bring to the storage area for eventual disposal.
- f. Housekeeping staff should be provided adequate training to avoid the possibility of unauthorized disposal or exposure of these individuals to radioactive materials or to radiation.

30. The requirements for maintaining records important to decommissioning, including the type of information required, are stated in 10 CFR Parts 30 and 70. Confirm that you are maintaining records important to decommissioning in accordance with 10 CFR 30.36(k) and 10 CFR 70.38(k).

When preparing your response, please do not provide personally identifiable information. NRC issued Information Notice 2013-022 titled "Recent Licensing Submittals Containing Personally Identifiable Information" on November 15, 2013. Information Notices can be found on our Web site.

Current NRC regulations and guidance are included on the NRC's website at www.nrc.gov; select **Nuclear Materials; Med, Ind, & Academic Uses**; then **Licensee Toolkits, see our toolkit index page**. You may also obtain these documents by contacting the Government Printing Office (GPO) toll-free at 1-866-512-1800. The GPO is open from 8:00 a.m. to 5:30 p.m. EST, Monday through Friday (except Federal holidays).

We will continue our review upon receipt of this information. Please reply to my attention at the Region I Office and refer to Mail Control No. 583823. If you have any technical questions regarding this deficiency letter, please call me at (610) 337-5251.

The NRC's Safety Culture Policy Statement became effective in June 2011. While a policy statement and not a regulation, it sets forth the agency's *expectations* for individuals and organizations to establish and maintain a positive safety culture. You can access the policy statement and supporting material that may benefit your organization on NRC's safety culture Web site at <http://www.nrc.gov/about-nrc/safety-culture.html>. We strongly encourage you to review this material and adapt it to your particular needs in order to develop and maintain a positive safety culture as you engage in NRC-regulated activities.

Your cooperation is appreciated.

Sincerely,

Original signed by Kathy Modes

Kathy Modes
Senior Health Physicist
Decommissioning Branch
Division of Nuclear Materials Safety

cc:
Thomas J. Dente, Radiation Safety Officer

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