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January 2, 2014

Attention: Dennis Lawyer, Health Physicist  
Licensing Assistance Team  
Division of Nuclear Materials Safety  
U.S. Nuclear Regulatory Commission, Region I  
2100 Renaissance Boulevard, Suite 100  
King of Prussia, PA 19406-2713

RE: Mail Control No. 582661

Dear Mr. Lawyer,

03038671

Universal Well Services, Inc. (UWS) has submitted an addendum application requesting certain changes/additions to its NRC license 37-35092-01 for our operations in West Virginia.

On December 24, 2013, I received an email from you requesting additional information in order to continue your review. Enclosed, please find the following documents we have prepared to address your questions:

1. Email from Dennis Lawyer to Meghan Yingling dated December 24, 2013
2. Attachment B – Updated, Increased Activity Request
3. Attachment C – Updated, Removal and Remounting Procedures
4. Attachment D – UWS RPP ALARA
5. Attachment E – Storage of Nuclear Density Gauges
6. Attachment F – Signs and Postings

If you should have any questions do not hesitate to call me at 814-573-0640.

Sincerely,

Meghan Yingling  
Environmental Compliance Manager, RSO  
Universal Well Services, Inc.

Cc: Robert Slack, Director EHS, UWS  
Timothy Waugh, Buckhannon District Manager, UWS

582661  
NMSS/RGN1 MATERIALS-002

18360 Technology Drive, Box 4 ♦ Meadville, PA ♦ 16335

Business 814-373-3200 ♦ Fax 814-373-3299 ♦ universalwellservices.com

## Meghan Yingling

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**From:** Lawyer, Dennis [Dennis.Lawyer@nrc.gov]  
**Sent:** Tuesday, December 24, 2013 8:21 AM  
**To:** Meghan Yingling  
**Subject:** Universal Well Services, Inc., Request for Additional Information Concerning Application for a License Amendment, Control 582661

Dear Meghan Yingling,

This is in reference to your application dated November 27, 2013, requesting for amendment to Nuclear Regulatory Commission License No. 37-35092-01, Docket No. 03038671. In order to continue our review, we need the following additional information:

1. You have submitted two additional line items for cesium 137 sources in Attachment B of your application. In a telephone call on December 23, 2013, you stated that these sources were to possess Berthold Technologies U.S.A. Inc. Model LB7400 series fixed gauges. As this series is combined in the Sealed Source and Device Registry, it may appear as one line item. Please confirm that you are requesting for a maximum of 60 mCi, cesium 137 for the purpose of possessing Berthold Technologies U.S.A. Inc. Model LB7400 series fixed gauges for controlling industrial processes using QSA Global, Incl Model CDC.P4 or BEBIG Model Cs7.PO2 sources.
2. You have requested to install, remove, and remount your fixed gauges and have submitted information to support this activity. NUREG-1556, Volume 4 (<http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1556/v4/>), "Consolidated Guidance About Materials Licenses Program-Specific Guidance About Fixed Gauge Licenses," Appendix N, Information Needed to Support Applicant's Request to Perform Non-Routine Operations, provides the details of the information needed to support this request. In Attachment C of your application, you submitted much of this information but the following items were not submitted or needs more detail:
  - a. Identify who will perform non-routine operations and their training and experience. Acceptable training would include manufacturer's or distributor's courses for non-routine operations or equivalent;
  - b. Submit how doses to personnel and members of the public are within regulatory limits and ALARA or submit the ALARA policy as described in the Universal Well Services Radiation Protection Plan (UWS RPP);
  - c. Provide how the source is secured against unauthorized removal or access or under constant surveillance or submit the UWS RPP section on Use of Nuclear Density Gauges.
  - d. Submit how appropriate labels and signs are used or submit the UWS RPP section Use of Nuclear Density Gauges – Posting Requirements;
  - e. Confirm that individuals performing non-routine operations on gauges will wear both whole body and extremity monitoring devices or perform a prospective evaluation demonstrating that unmonitored individuals performing non-routine operations are not likely to receive, in one year, a radiation dose in excess of 10% of the allowable limits; and
  - f. Commit to maintaining, for 3 years from the date of the survey, records of the survey (e.g., who performed the survey, date of the survey, instrument used, measured radiation levels correlated to location of those measurements), as required by 10 CFR 20.2103.

We will continue our review upon receipt of this information. Please reply to my attention at the Region 1 Office and refer to Mail Control No. 582661. If you have technical questions regarding this letter, please call me at (610) 337-5366.

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/regulatory/enforcement/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.

*Please note that you may not reply to this letter by return e-mail. Your reply must be in writing by letter or facsimile (610-337-5269). If we do not receive a reply from you within 30 calendar days from the date of this e-mail, we will assume that you do not wish to pursue your application.*

Dennis Lawyer  
Health Physicist  
U.S. Nuclear Regulatory Commission  
Division of Nuclear Material Safety  
610-337-5366  
610-337-5269 (F)

*This update to Attachment B confirms that the sources outlined in Line Items 2 and 3 in the table below possess Berthold Technologies U.S.A. Inc. Model LB7400 series fixed gauges. Therefore, we are requesting for a maximum of 60 mCi, cesium 137 for the purpose of possessing Berthold Technologies U.S.A. Inc. Model LB7400 series fixed gauges for controlling industrial processes using QSA Global, Incl Model CDC.P4 or BEBIG Model Cs7.PO2 sources.*

**Total Activity Increase Request**

Under PA License PA-1446 Amendment 5, Universal Well Services, Inc. (UWS) stores Berthold LB8010 density gauges at several different Districts throughout Pennsylvania and uses these gauges throughout Pennsylvania at temporary job sites. In the past, in order to transport and use these gauges in West Virginia, UWS has obtained reciprocity through the NRC. However, as of August 27, 2013, UWS has obtained an NRC license through Region 1 to store and operate gauges totaling up to 50 mCi at our Buckhannon, West Virginia District as well as temporary job sites throughout West Virginia.

Because there may be times when our crews out of our Pennsylvania Districts obtain contracts with customers to perform work in West Virginia, and UWS now has an NRC license in West Virginia, UWS requests that the maximum activity allowed for the to be possessed under our NRC license be increased as follows:

Line Item #	Byproduct, source and/or special nuclear material	Chemical and/or Physical Form	Maximum Activity
1	Cesium 137	Sealed Sources (Berthold Technologies, USA, LLC Model SSC Series, Isotope Product Laboratories, Inc./BEBIG Model Cs7.PO2, and QSA Global, Inc. Model CDC.P4)	340 mCi total and no single source to exceed the maximum activity specified in the certificate of registration issued by the U.S. Nuclear Regulatory Commission or an Agreement State.
2	Cesium 137	Sealed sources (Amersham Corp./AEA Technology/QSA, Inc. Model CDC.P4)	40 mCi total and no single source to exceed the maximum activity specified in the certificate of registration issued by the U.S. Nuclear Regulatory Commission or an Agreement State.
3	Cesium 137	Sealed sources (Isotope Product Labs, Inc. BEBIG Model Cs7.O02)	20 mCi total and no single source to exceed the maximum activity specified in the certificate of registration issued by the U.S. Nuclear Regulatory Commission or an Agreement State.

Per email from Dennis Lawyer dated 12/24/13, the following additional questions (a through f in italics) are addressed:

*a. Identify who will perform non-routine operations and their training and experience. Acceptable training would include manufacturer's or distributor's courses for non-routine operations or equivalent;*

**UWS Response:**

Only UWS Employees who have received Non-Routine /Operations training are or will be permitted to perform non-routine operations outlined in this section. The information outlined below described persons who have the training to perform non-routine maintenance:

*b. Submit how doses to personnel and members of the public are within regulatory limits and ALARA or submit the ALARA policy as described in the Universal Well Services Radiation Protection Plan (UWS RPP);*

**UWS Response:**

Please refer to Attachment D for the UWS ALARA Policy.

*c. Provide how the source is secured against unauthorized removal or access or under constant surveillance or submit the UWS RPP section on Use of Nuclear Density Gauges.*

**UWS Response:**

Please refer to Attachment E – the section from the UWS RPP that discusses storage and security of gauges.

*d. Submit how appropriate labels and signs are used or submit the UWS RPP section Use of Nuclear Density Gauges – Posting Requirements.*

**UWS Response:**

Please refer to Attachment F – the sections from the UWS RPP that discuss labeling and sign requirements.

*e. Confirm that individuals performing non-routine operations on gauges will wear both whole body and extremity monitoring devices or perform a prospective evaluation demonstrating that unmonitored individuals performing non-routine operations are not likely to receive, in one year, a radiation dose in excess of 10% of the allowable limits; and*

**UWS Response:**

Whole body and extremity dose calculations demonstrate that exposure rates to non-routine operations/maintenance personnel are below 10% of the annual limits (5,000 mrem and 50,000 mrem for whole body and extremity, respectively). If exposure rates are demonstrated to be above 10% of annual limits, a personnel monitoring badge program is required. However, regulatory guidance indicates that persons performing non-routine operations/maintenance have a greater potential for exposure. As a conservative measure, UWS has an internal ALARA investigation limit of 2,500 mrem/year and has elected to implement a personnel monitoring badge program for those individuals selected and trained to perform non-routine operations/maintenance. The badge program will consist of whole body and extremity badges. After a period of one year of personal extremity monitoring, UWS will review the data and may elect/petition to discontinue the use of extremity dosimeters.

*f. Commit to maintaining, for 3 years from the date of the survey, records of the survey (e.g., who performed the survey, date of the survey, instrument used, measured radiation levels correlated to location of those measurements), as required by 10 CFR 20.2103.*

**UWS Response:**

Universal Well Services, Inc. will maintain records as required by 10 CFR 20.2103 (results of surveys and calibrations) for three years from the date of the survey. Records would include information such as who performed the survey, the date of the survey, the instrument used, measured radiation levels correlated to location of those measurements.

### 1.0 RADIATION PROTECTION POLICY - ALARA

"Universal Well Services (UWS) will make every effort and shall use, to the extent practicable, procedures, and engineering controls based upon sound radiation protection principles to achieve occupational doses and doses to individual members of the public that are as low as reasonably achievable (ALARA)."

Several precautions are in place at UWS to minimize radiation exposure consistent with this policy:

Nuclear gauges are located away from normally occupied areas and the radiation beams are directed away from occupied positions.

Areas around nuclear gauges are posted with "Caution Radioactive Materials" or "Caution Radiation Area" signs as appropriate and are considered to be "restricted areas" for the purpose of exposure control. Trained personnel are encouraged to limit the amount of unnecessary time spent in these areas and untrained individuals (members of the public) are prohibited in these areas.

Nuclear gauges are locked out whenever there is a potential for an employee to be exposed to the radiation beam.

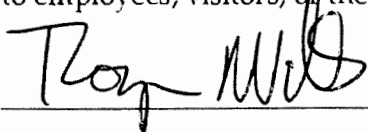
Emergency procedures have been developed to deal with unplanned events involving nuclear gauges.

Trained personnel are available to answer questions and respond to off-normal conditions.

All employees are expected to be aware of and respect those sources of radiation exposure present in this facility.

I am confident that by following these few simple precautions, radiation exposures will be maintained as low as reasonably achievable and well below those capable of causing any harm to employees, visitors, or the environment.

Signature: \_\_\_\_\_



Date: \_\_\_\_\_

10-3-13

UWS President (or designee)

## 10.2 STORAGE OF NUCLEAR DENSITY GAUGES

All gauges must be double restrained when in storage. Storage means stored at the camp while mounted to a piece of iron as well as on a pump truck when parked at a camp or anywhere else while in the field when not in use.

A. Camp storage: When gauges are not in the field, they must be stored at a UWS-owned camp in a safe and secure manner. Each camp must have an area designated for this purpose and ensure that the following are met:

1. The gauge must be locked in an unoccupied room or building with restricted access.
2. The gauge will be stored with the shielding/handle device in place when applicable. If the gauge is equipped with a shutter it will be locked in the off position.
3. The restricted access area must be posted properly (see Section 10.3 for posting requirements).
4. A survey must be conducted when a new gauge is moved into the storage configuration.

B. Field Storage

1. When a gauge has been assigned to a job, the device must be transferred from the camp storage area to an authorized user. This user will sign the gauge out on the Utilization Log (see Appendix A) and the Authorized User assumes responsibility for the gauge until it is returned.
2. "Field Storage" is effective from the moment the gauge is transferred and remains in effect until it is returned. Careful attention will be made that Department of Transportation (DOT) requirements are met (see Section 10.4 for transportation requirements).

C. Security: According to 10 CFR Part 30.34(i), whenever portable gauges are not under direct control and constant surveillance, a minimum of two independent physical controls that form tangible barrier to secure gauges from unauthorized removal will be used.

D. Safety: ALARA concepts Time, Distance and Shielding will be considered when planning storage area locations.



## **5.0 RADIOACTIVE MATERIALS EMPLOYEE NOTICES AND INSTRUCTIONS**

Federal and state regulations provide certain rules pertaining to information about radiation work which must be made available to affected employees (see Appendix E).

### **5.1 POSTING OF NOTICES TO WORKERS**

- A. Each licensed district facility shall have available current copies of the following documents and post a notice near the storage location describing the documents and stating where they may be examined.
1. The state or federal regulations it operates under.
  2. The license, conditions or documents incorporated into the license or certificate of registration by reference and amendments thereto.
  3. The operating procedures applicable to work under the license.
  4. Any notice of violation involving radiological working conditions, or order issued pursuant to said federal or state regulations, and any response from the company.
- B. A federal or state "Notice to Employees" poster shall be posted.
- C. Documents, notices or forms posted pursuant to A and B above shall appear in sufficient number of places to permit individuals engaged in work under the license to observe them on the way to or from any particular work location to which the document applies, shall be conspicuous, and shall be replaced if defaced or altered.

### **5.2 INSTRUCTIONS TO WORKERS**

- A. All individuals working in or frequenting any area where sources of radiation are used or stored shall be kept informed of the storage, transfer, or use of radioactive material or of radiation in these areas.
- B. All individuals working in or frequenting any area where sources of radiation are used or stored shall be instructed in the health protection problems associated with exposure to such radioactive material, in precautions or procedures to minimize exposure, and in the functions and purposes of protective devices employed.
- C. Applicable personnel shall be instructed in and instructed to observe to the extent within the worker's control, the applicable provision of licensing agency regulations and licenses for the protection of personnel from exposures to radiation or radioactive material occurring in such areas.

### **10.3 POSTING REQUIREMENTS**

- A. Radiation Areas: As applicable, a radiation area with a sign bearing the radiation symbol and the words "CAUTION RADIATION AREA".
1. A radiation area is defined as any area with radiation levels greater than 5 millirem per hour (mR/hr), up to but not exceeding 100 mR/hr, at 30 centimeters (cm) from the source or from any surface through which the radiation may penetrate (i.e. interior or exterior wall).
  2. Radiation doses in unrestricted areas must not exceed 2 mR/hr.
  3. Non-trained personnel may not be in a radiation area.
- B. Radiation Storage Areas: Each area or room in which a nuclear densitometer is used or stored will have:
1. A conspicuous sign or signs bearing the radiation symbol and the words "CAUTION RADIOACTIVE MATERIAL(S)".
  2. A copy of the latest survey.
  3. An updated inventory list.

### **10.4 TRANSPORTATION OF NUCLEAR DENSITY GAUGES**

A checklist located in Appendix O is available to assist the driver hauling a gauge and thus responsible for ensuring the correct transportation paper work is available and appropriate labels secured.

- A. Utilization Log: Before taking a gauge from a storage area, an Authorized User must sign the gauge out on the gauge Utilization Log (see Appendix A).
- B. DOT Requirements: The Authorized User is to assure that all of the DOT required labeling is present and legible on the gauge. Verify the following:
1. Radioactive Yellow II Labels
    - i. Description: The upper half of the label is bright yellow and the lower is white. The lettering and symbol are black. The "II" must be in the color red.
    - ii. Two labels are required on the source housing (one on each side).
    - iii. In order to use the Yellow II labels, the exposure rate must be less than or equal to 50 mR/hr on any accessible surface and must not exceed 1.0 mR/hr at a distance from one meter from the surface.
    - iv. The contents documented on the label must list the isotope (e.g. Cs-137).