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June 21, 2005

Sam Nunn Atlanta Federal Center
U.S. Nuclear Regulatory Commission, Region II
61 Forsyth Street, S.W. Suite 23T85
Atlanta, GA 30303-8931

55-23507-01
03022286

RE: Renewal of Nuclear Material License

Dear Sirs:

This document is to revise Antillean Engineers Incorporated application, to renew its Nuclear Material License for one CPN MC-1 Porta Probe soil moisture/density testing gauge which we have operated since 1985.

No additions, deletions or other changes have been made to the equipment or its use since our last renewal.

We have filled out the appropriate sections of APPENDIX B, Items 5 and 6, and 7 through 11 and APPENDIX H, which are attached.

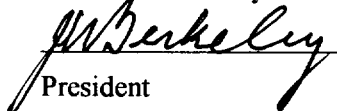
Thanks for your assistance and advice in helping us to complete the application and for providing us with a new copy of NUREG-1556.

Please contact us at the above address if you have any questions concerning this application.

Sincerely,

ANTILLEAN ENGINEERS INC.

Justin W. Berkeley



President

137022

NMSS/RONI MATERIALS-002

REC'D IN LAT 6/30/2005

ITEMS 5 AND 6: MATERIALS TO BE POSSESSED AND PROPOSED USES

| Yes | No | Radioisotope | Manufacturer or Distributor Model No. | Quantity | Use As Listed on SSD Certificate | Specify Other Uses Not Listed on SSD Certificate |
|-----|----|---------------|--|---|--|--|
| | | Cesium-137 | Sealed source manufacturer or distributor and model number: Device manufacturer or distributor and model number: CPN MC-1 | Not to exceed either the maximum activity per source or maximum activity per device as specified in Sealed Source and Device Registration Certificate | Yes <input checked="" type="checkbox"/> Specific description of the gauge use: _____ _____ _____ _____ _____ | <input checked="" type="checkbox"/> Not applicable <input type="checkbox"/> Uses are: _____ _____ (Submit safety analysis supporting safe use) |
| | | Americium-241 | Sealed source manufacturer or distributor and model number: Device manufacturer or distributor and model number: CPN MC-1 | Not to exceed either the maximum activity per source or maximum activity per device as specified in Sealed Source and Device Registration Certificate | Yes <input checked="" type="checkbox"/> Specific description of the gauge use: _____ _____ _____ _____ _____ | <input checked="" type="checkbox"/> Not applicable <input type="checkbox"/> Uses are: _____ _____ (Submit safety analysis supporting safe use) |

ITEMS 7 THROUGH 11: TRAINING AND EXPERIENCE, FACILITIES AND EQUIPMENT, RADIATION SAFETY PROGRAM, AND WASTE DISPOSAL

| Item No. And Title | Suggested Response | Yes | Alternative Procedures Attached |
|--|--|--|---------------------------------|
| 7. INDIVIDUAL(S) RESPONSIBLE FOR RADIATION SAFETY PROGRAM AND THEIR TRAINING AND EXPERIENCE – RADIATION SAFETY OFFICER Name: <u>JUSTIN W. BERKELEY</u> | Before obtaining licensed materials, the proposed RSO will have successfully completed one of the training courses described in Criteria in the section entitled "Individual(s) Responsible for Radiation Safety Program and Their Training and Experience – Radiation Safety Officer" in NUREG-1556, Vol. 1, Rev. 1, dated November 2001. | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 8. TRAINING FOR INDIVIDUALS WORKING IN OR FREQUENTING RESTRICTED AREAS | Before using licensed materials, authorized users will have successfully completed one of the training course described in Criteria in the section entitled "Training for Individuals Working In or Frequenting Restricted Areas" in NUREG-1556, Vol. 1, Rev 1, dated November 2001. | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 9. FACILITIES AND EQUIPMENT | No information needs to be submitted in response to this item; key issues are addressed under "Radiation Safety Program – Public Dose" and "Radiation Safety Program – Operating and Emergency Procedures." | Separate Item 9 Response Need Not Be Submitted With Application | |
| 10. RADIATION SAFETY PROGRAM – AUDIT PROGRAM | The applicant is <i>not</i> required to, and should not, submit its audit program to NRC for review during the licensing phase. | Need Not Be Submitted With Application | |
| 10. RADIATION SAFETY PROGRAM – TERMINATION OF ACTIVITIES | The applicant is <i>not</i> required to submit a response to the termination of activities section during the initial application. However, when the license expires when the licensee ceases operation, NRC Form 314 must be submitted. | Need Not Be Submitted With Application | |
| 10. RADIATION SAFETY PROGRAM – SURVEY INSTRUMENTS | We will either possess and use, or have access to and use, a radiation survey meter that meets the Criteria in the section entitled "Radiation Safety Program – Instruments" in NUREG-1556, Vol. 1, Rev. 1, dated November 2001. | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

APPENDIX B

| Item No. And Title | Suggested Response | Yes | Alternative Procedures Attached |
|--|---|---|--|
| 10. RADIATION SAFETY PROGRAM – MATERIAL RECEIPT AND ACCOUNTABILITY | Physical inventories will be conducted at intervals not to exceed 6 months, to account for all sealed sources and devices received and possessed under the license. | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 10. RADIATION SAFETY PROGRAM – OCCUPATIONAL DOSIMETRY | Either we will maintain, for inspection by NRC, documentation demonstrating that unmonitored individuals are not likely to receive a radiation dose in excess of 10 percent of the allowable limits in 10 CFR Part 20, or we will provide dosimetry processed and evaluated by an NVLAP-approved processor that is exchanged at a frequency recommended by the processor. | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 10. RADIATION SAFETY PROGRAM – PUBLIC DOSE | The applicant is <i>not</i> required to submit a response to the public dose section during the licensing phase. This matter will be examined during an inspection. | Need Not Be Submitted With Application | |
| 10. RADIATION SAFETY PROGRAM – OPERATING AND EMERGENCY PROCEDURES | We will implement and maintain the operating and emergency procedures in Appendix H of NUREG-1556, Vol. 1, Rev. 1, dated November 2001, and provide copies of these procedures to all gauge users and at each job site. OR Operating and emergency procedures will be developed, implemented, and maintained and will meet the criteria in the section entitled "Radiation Safety Program – Operating and Emergency Procedures" in NUREG-1556, Vol. 1, Rev. 1, dated November 2001. | <input checked="" type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> |
| 10. RADIATION SAFETY PROGRAM – LEAK TEST | Leak tests will be performed at intervals approved by NRC or an Agreement State and specified in the Sealed Source and Device Registration Sheet. Leak tests will be performed by an organization authorized by NRC or an Agreement State to provide leak testing services for other licensees or using a leak test kit supplied by an organization authorized by NRC or an Agreement State to provide leak test kits to other licensees and according to the kit supplier's instructions. | <input checked="" type="checkbox"/> | <input type="checkbox"/> The information in Appendix J supporting a request to perform leak testing and sample analysis is attached. |

| Item No. And Title | Suggested Response | Yes | Alternative Procedures Attached |
|---|---|---|---|
| 10. RADIATION SAFETY PROGRAM – MAINTENANCE | <p><i>Routine Cleaning and Lubrication</i></p> <p>We will implement and maintain procedures for routine maintenance of our gauges according to each manufacturer's recommendations and instructions.</p> <p><i>Non-Routine Maintenance</i></p> <p>We will send the gauge to the manufacturer or other person authorized by NRC or an Agreement State to perform non-routine maintenance or repair operations that require the removal of the source or source rod from the gauge.</p> | <p><input checked="" type="checkbox"/></p> <p><input checked="" type="checkbox"/></p> | <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p>The information listed in Appendix G supporting a request to perform non-routine maintenance in-house is attached.</p> |
| 10. RADIATION SAFETY PROGRAM – TRANSPORTATION | <p>The applicant is <i>not</i> required to submit its response to transportation during the licensing process. However, this issue will be reviewed during inspection.</p> | | <p>Need Not Be Submitted With Application</p> |
| 11. WASTE MANAGEMENT – GAUGE DISPOSAL AND TRANSFER | <p>The applicant is <i>not</i> required to submit a response to waste management during the licensing process. However, the licensee should develop, implement, and maintain gauge transfer and disposal procedures in its radiation protection program.</p> | | <p>Need Not Be Submitted With Application</p> |

Operating Procedures

- If personnel dosimetry is provided:
 - ✓ Always wear your assigned thermoluminescent dosimeter (TLD) or film badge when using the gauge;
 - ✓ Never wear another person's TLD or film badge;
 - ✓ Never store your TLD or film badge near the gauge.
- Before removing the gauge from its place of storage, ensure that, where applicable, each gauge source is in the fully shielded position and that in gauges with a movable rod containing a sealed source, the source rod is locked (e.g., keyed lock, padlock, mechanical control) in the shielded position. Place the gauge in the transport case and lock the case.
- Sign out the gauge in a log book (that remains at the storage location) including the date(s) of use, name(s) of the authorized users who will be responsible for the gauge, and the temporary job site(s) where the gauge will be used.
- Block and brace the gauge to prevent movement during transport and lock the gauge in or to the vehicle. Follow all applicable Department of Transportation (DOT) requirements when transporting the gauge.
- Use the gauge according to the manufacturer's instructions and recommendations.
- Do not touch the unshielded source rod with your fingers, hands, or any part of your body.
- Do not place hands, fingers, feet, or other body parts in the radiation field from an unshielded source.
- Unless absolutely necessary, do not look under the gauge when the source rod is being lowered into the ground. If you must look under the gauge to align the source rod with the hole, follow the manufacturer's procedures to minimize radiation exposure.
- After completing each measurement in which the source is unshielded, immediately return the source to the shielded position.
- Always maintain constant surveillance and immediate control of the gauge when it is not in storage. At job sites, do not walk away from the gauge when it is left on the ground. Take action necessary to protect the gauge and yourself from danger of moving heavy equipment.
- Always keep unauthorized persons away from the gauge.
- Perform routine cleaning and maintenance according to the manufacturer's instructions and recommendations.
- When the gauge is not in use at a temporary job site, place the gauge in a secured storage location (e.g., locked in the trunk of a car or locked in a storage shed).

APPENDIX H

- Before transporting the gauge, ensure that, where applicable, each gauge source is in the fully shielded position. Ensure that in gauges with a movable source rod, the source rod is locked in the shielded position (e.g., keyed lock, padlock, mechanical control). Place the gauge in the transport case and lock the case. Block and brace the case to prevent movement during transportation. Lock the case in or to the vehicle, preferably in a closed compartment.
- Return the gauge to its proper locked storage location at the end of the work shift.
- Log the gauge into the daily use log when it is returned to storage.
- If gauges are used for measurements with the unshielded source extended more than 3 feet beneath the surface, use piping, tubing, or other casing material to line the hole from the lowest depth to 12 inches above the surface. If the piping, tubing, or other casing material cannot extend 12 inches above the surface, cap the hole liner or take other steps to ensure that the hole is free of debris (and it is unlikely that debris will re-enter the cased hole) so that the unshielded source can move freely (e.g., use a dummy probe to verify that the hole is free of obstructions).
- After making changes affecting the gauge storage area (e.g., changing the location of gauges within the storage area, removing shielding, adding gauges, changing the occupancy of adjacent areas, moving the storage area to a new location), reevaluate compliance with public dose limits and ensure proper security of gauges.

Emergency Procedures

If the source fails to return to the shielded position (e.g., as a result of being damaged, source becomes stuck below the surface), or if any other emergency or unusual situation arises (e.g., the gauge is struck by a moving vehicle, is dropped, is in a vehicle involved in an accident):

- Immediately secure the area and keep people at least 15 feet away from the gauge until the situation is assessed and radiation levels are known. However, perform first aid for any injured individuals and remove them from the area only when medically safe to do so.
- If any heavy equipment is involved, detain the equipment and operator until it is determined there is no contamination present.
- Gauge users and other potentially contaminated individuals should not leave the scene until emergency assistance arrives.
- Notify the following persons, in the order listed below, of the situation:

| NAME ² | WORK PHONE NUMBER ² | HOME PHONE NUMBER ² |
|-------------------|--------------------------------|--------------------------------|
|-------------------|--------------------------------|--------------------------------|

| | | |
|------------------------|---------------------|---|
| <u>JUSTIN BERKELEY</u> | <u>340-776-8828</u> |  |
|------------------------|---------------------|---|

| | | |
|-------------------------|---------------------|---|
| <u>RAYMOND BERKELEY</u> | <u>340-776-8828</u> |  |
|-------------------------|---------------------|---|

Follow the directions provided by the person contacted above.

RSO and Licensee Management

- Arrange for a radiation survey to be conducted as soon as possible by a knowledgeable person using appropriate radiation detection instrumentation. This person could be a licensee employee using a survey meter located at the job site or a consultant. To accurately assess the radiation danger, it is essential that the person performing the survey be competent in the use of the survey meter.
- If gauges are used for measurements with the unshielded source extended more than 3 feet below the surface, contact persons listed on the emergency procedures need to know the steps to be followed to retrieve a stuck source and to convey those steps to the staff on site.
- Make necessary notifications to local authorities as well as to NRC as required. (Even if it is not required, you may report *any* incident to NRC by calling NRC's Emergency Operations Center at (301) 816-5100, which is staffed 24 hours a day and accepts collect calls.) NRC notification is required when gauges containing licensed material are lost or stolen, when gauges are damaged or involved in incidents that result in doses in excess of 10 CFR 20.2203 limits, and when it becomes apparent that attempts to recover a source stuck below the surface will be unsuccessful.
- Reports to NRC must be made within the reporting time frames specified by the regulations.
- Reporting requirements are found in 10 CFR 20.2201-2203 and 10 CFR 30.50.

**PERSONAL INFORMATION WAS REMOVED
BY NRC. NO COPY OF THIS INFORMATION
WAS RETAINED BY THE NRC.**

² Fill in with (and update, as needed) the names and telephone numbers of appropriate personnel (e.g., the RSO or other knowledgeable licensee staff, licensee's consultant, gauge manufacturer) to be contacted in case of emergency.