

Michael W. Lairmore, M.S.
P.O. Box 296
Midland Park, New Jersey 07432
(201) 693-2277

December 24, 2010

Kathy Modes, Health Physicist
Licensing Assistance Team
Division of Nuclear Materials Safety
U.S. Nuclear Regulatory Commission, Region I
475 Allendale Road
King of Prussia, PA 19406-1415

P-3

RECEIVED
REGION I
2010 DEC 28 AM 10:11

RE: Response Letter - Michael W. Lairmore Associates
In Support of Pending Renewal Application
License Number: 29-30227-01
Control Number: 573657

03033875

Dear Ms. Modes:

Pursuant to our conversation on December 23, 2010, the following responses are submitted in support of my pending renewal of my radioactive material license. The response letter will focus on the sections discussed during our conversation (Appendix C-17, C-19 and C21 - 23). Please refer to the following paragraphs for specific details.

A completed C-17, C-19, C-21 - C23 pages has been attached for your review and approval. In addition, I have enclosed a copy of the "Policy and Procedure For the ALARA and Radiation Safety Program.

Radioactive materials used by this licensee includes: E-Vials, buttons and rod sources of Cs-137, Ba-133, Co-57, Eu-152 and Ge-68. The total activity of the sealed sources is less than 10 mCi. These radioactive materials are used for the purpose of instrument calibrations. The sealed sources are used at temporary job sites regulated by the Nuclear Regulatory Commission. When sources are used at temporary jobs site, they will be placed in the area where testing is conducted and under the constant surveillance of this consultant. If the sources cannot be monitored under constant surveillance, they will be secured in the customer's hot lab until taken to the transport vehicle.

573657
NMSS/RGN1 MATERIALS-002

On rare occasions, unsealed Tc-99m and/or Tl-201 are used for instrument calibrations on gamma cameras, dose calibrators, uptake probes and well counters. The radioactive material is routinely delivered to the licensed facility under the authorizations stipulated via their radioactive material license. In the event of transport, radioactive materials from one licensed facility to another, the shipment will be transported in compliance with NRC and DOT regulations. If the unsealed radioactive material is less than 11 mCi, it will be transported as a "Limited Quantity Shipment". The material will be transported in its leaded containment and placed in a locked safe, housed in the back of the vehicle used for transport. The safe is secured with several flexible cords.

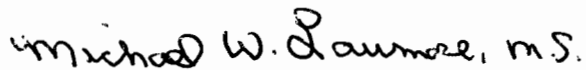
The radioactive materials taken from the temporary job site are surveyed with a G-M survey and wipe tested before leaving the facility. This procedure is performed to confirm contamination is not present on material and/or personnel before transfer to the transport vehicle. Radioactive waste generated through instrument calibrations, is placed in the customer's lead-lined waste disposal bin and allowed to decay to background radiation levels. Radioactive waste will not be transported by this licensee.

Reporting to the NRC will follow the guideline outlined within current regulations.

If you require additional information, please contact me at (201) 693-2277.

I thank you in advance for your assistance with this pending licensing action.

Sincerely,


Michael W. Lairmore, M.S.
Medical Physics Consultant

Attachments

30227
 License Number: 29-30227-01
 Michael W. Hairmore Assoc.

Item No.	Title and Criteria	Yes	No	N/A	Description Attached
10	RADIATION SAFETY PROGRAM				
	The applicant is required to establish and submit its radiation protection program. Each item listed below should be addressed in the corresponding sections of this guide.				
	• Development and implementation of an ALARA program.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	• Description of equipment and facilities adequate to protect personnel, the public and the environment.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	• Confirmation that licensed activities are conducted only by individuals qualified by training and experience.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	• Development and maintenance of written operating and emergency procedures.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	• Implementation of an audit program to ensure that, at least annually, the radiation safety program is reviewed.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	• Description of organization structure and individuals responsible for ensuring day-to-day oversight of the radiation safety program.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	• Establishment and management of a radiation safety and decommissioning records system.				
	• Methods or procedures for preventing the release of contaminated material and equipment.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	• Methods or procedures for preventing personnel contamination. Radiation safety procedures and the authorized users responsibilities unique to each type of service operation requested in the application.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	• Radiation safety procedures.				
	• Equipment, techniques, and corresponding radiation safety procedures associated with providing services involving either sealed sources or unsealed materials.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Audit Program	Need Not Be Submitted With Application				

Michael W. Laimore Associates
 License number: 29-30227-01

Item No.	Title and Criteria	Yes	No	N/A	Description Attached
10	<p>RADIATION SAFETY PROGRAM (Cont'd.)</p> <p>Radiation Monitoring Instruments (Cont'd.)</p> <p style="text-align: center;">OR</p> <ul style="list-style-type: none"> • A description of alternative equipment and/or procedures for ensuring that appropriate radiation monitoring equipment will be used during licensed activities and that proper calibration and calibration frequency of survey equipment will be performed. The statement, "We reserve the right to upgrade our survey instruments as necessary," should be added to the response. <p>Material Receipt and Accountability</p> <ul style="list-style-type: none"> • "Ordering licensed material and package receipt and opening will follow the model procedures in Appendix K of NUREG-1556, Vol. 18, 'Consolidated Guidance About Materials Licenses: Program-Specific Guidance About Service Provider Licenses,' dated November 2000." <p style="text-align: center;">OR</p> <ul style="list-style-type: none"> • Submit a description of procedure(s) for ordering licensed material and package receipt and opening. <p style="text-align: center;">AND</p> <ul style="list-style-type: none"> • For unsealed licensed material, submit a description of procedure(s) for ensuring material accountability. 	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<p style="text-align: center;"><input type="checkbox"/></p> <p style="text-align: right;"><i>Refer to Response Letter cover for additional information</i></p> <p style="text-align: center;"><input type="checkbox"/></p> <p style="text-align: center;"><input type="checkbox"/></p>

Michael W. Hammel Associates
 License number - 28-30227-01

Item No.	Title and Criteria	Yes	No	N/A	Description Attached
10	<p>RADIATION SAFETY PROGRAM (Cont'd.)</p> <p>Occupational Dosimetry (Cont'd.)</p> <p style="text-align: center;">OR</p> <ul style="list-style-type: none"> • Contract with an outside group for bioassay services. Provide a commitment that each vendor is licensed or otherwise authorized by NRC or Agreement State to provide required bioassay services. <p>Public Dose</p> <p>The applicant is not required to, and should not, submit a response to the public dose section during the licensing phase. This matter will be addressed during an inspection.</p> <p>Operating and Emergency Procedures</p> <ul style="list-style-type: none"> • Procedure for obtaining an agreement with customers outlining the responsibilities of both the customer and service provider, when performing service operations at a customer's facility • Instructions for handling and using licensed materials. • Instructions for maintaining security during storage and transportation. • Instructions to keep licensed material under control and immediate surveillance during use. • Steps to take to keep radiation exposures ALARA. • Steps to maintain accountability during use. • Steps to control access to work sites. • Steps to take and whom to contact when an emergency occurs. • Instructions for using remote handling tools when handling sealed sources, except low-activity calibration sources. • Methods and occasions for conducting radiation surveys, including surveys for detecting contamination. 			X	<input type="checkbox"/>
		Need Not Be Submitted With Application			
		X	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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		X	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Michael W. Hairmore, Associated
 License Number: 29-30227-01

APPENDIX C

Item No.	Title and Criteria	Yes	No	N/A	Description Attached
10	<p>RADIATION SAFETY PROGRAM (<i>Cont'd.</i>)</p> <p>Operating and Emergency Procedures (<i>Cont'd.</i>)</p> <ul style="list-style-type: none"> • Procedures to minimize personnel exposure during routine use and in the event of an incident, including exposures from inhalation and ingestion of licensed unsealed materials. • Methods and occasions for locking and securing stored licensed materials. • Procedures for the implementation and adherence to good health physics practices while performing service operations: <ul style="list-style-type: none"> – Minimization of distance to areas, to the extent practicable, where licensed materials are used and stored – Maximization of survey frequency, within reason, to enhance detection of contamination – Segregation of radioactive material in waste storage areas – Segregation of sealed sources and tracer materials to prevent cross-contamination – Separation of radioactive material from explosives – Separation of potentially contaminated areas from clean areas by barriers or other controls. • Personnel monitoring, including bioassays, and the use of personnel monitoring equipment. • Transportation of licensed materials to temporary job sites, packaging of licensed materials for transport in vehicles, placarding of vehicles when needed, and physically securing licensed materials in transport vehicles during transportation to prevent accidental loss, tampering, or unauthorized removal. • Procedures for picking up, receiving, and opening packages containing licensed materials, in accordance with 10 CFR 20.1906. • Instructions for maintaining records in accordance with the regulations and the license conditions. 	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

Michael W. Laimore Associates
 License Number: 29-30227-01

APPENDIX C

Item No.	Title and Criteria	Yes	No	N/A	Description Attached
10	<p>RADIATION SAFETY PROGRAM (Cont'd.)</p> <p>Operating and Emergency Procedures (Cont'd.)</p> <ul style="list-style-type: none"> • Procedures for identifying and reporting to NRC defects and noncompliance as required by 10 CFR 21.21(a) of this chapter. • Procedures and actions to be taken if a sealed source is ruptured, including actions to prevent the spread of contamination and minimize inhalation and ingestion of licensed materials and actions to obtain suitable radiation survey instruments. • Instructions for the proper storage and disposal of radioactive waste. • Procedures to be followed in the event of uncontrolled release of radioactive unsealed licensed material to the environment, including notification of the RSO, NRC, and other Federal and state agencies. • Procedures for identifying and reporting to NRC defects and noncompliance. See Table 8.4, which describes the typical incident notifications required by NRC regulations. 				
		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Michael W. Lairmore, M.S.
Policy and Procedure for Maintaining Occupational Radiation Exposure
ALARA and the Radiation Safety Program within Compliance

1. Management Commitment

- a. Michael W. Lairmore, is committed to the program described herein for keeping individual doses as low as is reasonably achievable (ALARA). In accord with this commitment, I will develop the necessary written policy, procedures, and instructions to foster the ALARA concept within my radiation safety program. The will include my involvement as the Radiation Safety Officer (RSO).
- b. I will perform a formal annual review of the radiation safety program, including ALARA considerations. This will include reviews of operating procedures and past dose records, inspections, etc., and consultations with the radiation safety staff or outside consultants.
- c. Modifications to operating and maintenance procedures and to equipment and facilities will be made if they will reduce exposures unless the cost, in my judgment, is considered to be unjustified. I will be able to demonstrate, if necessary, that improvements have been sought, that modifications have been considered, and that they have been implemented when reasonable. If modifications have been recommended but not implemented, I will be prepared to describe the reasons for not implementing them.
- d. In addition to maintaining doses to individuals as far below the limits as is reasonably achievable, the sum of the doses received by all exposed individuals will also be maintained at the lowest practicable level. It would not be desirable, for example, to hold the highest doses to individuals to some fraction of the applicable limit if this involved exposing additional people and significantly increasing the sum of radiation doses received by all involved individuals.

2. Radiation Safety Officer

- a. Review of Proposed Users and Uses
 - (1) The RSO will thoroughly review the qualifications of each applicant with respect to the types and quantities of materials and methods of use for which application has been made to ensure that the applicant will be able to take appropriate measures to maintain exposure ALARA.
 - (2) When considering a new use of byproduct material, the RSO and authorized user will review the efforts of the applicant to maintain exposure ALARA
 - (3) The RSO will ensure that the users justify their procedures and that individual and collective doses will be ALARA.

b. Delegation of Authority

(The judicious delegation of RSO authority is essential to the enforcement of an ALARA program.)

- (1) The RSO will enforcement the ALARA concept.

c. Review of ALARA Program

- (1) The RSO and authorized user (s) will encourage all users to review current procedures and develop new procedures as appropriate to implement the ALARA concept.

- (2) The RSO will perform a quarterly review of occupational radiation exposure with particular attention to instances in which the investigational levels in Table 1 are exceeded. The principal purpose of this review is to assess trends in occupational exposure as an index of the ALARA program quality and to decide if action is warranted when investigational levels are exceeded.

Table 1
Investigational Levels

		Investigational Levels (mrems per calendar quarter)	
		Level I	Level II
1.	Whole body	200	375
2.	Extremities	1250	3750
3.	Lenses of the Eyes	375	1125

*Not normally applicable to medical use operations except those using significant quantities of beta-emitting isotopes.

- (3) The RSO and authorized users will evaluate overall efforts for maintaining doses ALARA on an annual basis.

3. Radiation Safety Officer

a. Annual and Quarterly Review

- (1) Annual review of the radiation safety program. The RSO will perform an annual review of the radiation safety program for adherence to ALARA concepts. Reviews of specific methods of use may be conducted on a more frequent basis.
- (2) Quarterly review of occupational exposures. The RSO will review at least quarterly the external radiation doses of authorized users and workers to determine that their doses are ALARA in accordance with the NRC regulations and license conditions.
- (3) Quarterly review of records of radiation surveys. The RSO will review radiation surveys in unrestricted and restricted areas to determine that dose rates and amounts of contamination were at ALARA levels during the previous quarter and will prepare a summary report.

b. Education Responsibilities for ALARA and Radiation Safety Program

- (1) The RSO will schedule briefings and educational sessions to inform workers of ALARA program efforts.
- (2) The RSO will ensure that authorized users, workers, and ancillary personnel who may be exposed to radiation will be instructed in the ALARA philosophy and informed that management, and the RSO are committed to implementing the ALARA concept. This procedure will be conducted on an annual frequency.

c. Cooperative Efforts for Development of ALARA Procedures

Radiation workers will be given opportunities to participate in formulating the procedures that they will be required to follow.

- (1) The RSO will be in close contact with all users and workers in order to develop ALARA procedures for working with radioactive materials.
- (2) The RSO will establish procedures for receiving and evaluating the suggestions of individual workers for improving health physics practices and will encourage the use of those procedures.

d. Reviewing Instances of Deviation from Good ALARA Practices

The RSO will investigate all known instances of deviation from good ALARA practices and, if possible, will determine the causes. When the cause is known, the RSO will implement changes in the program to maintain doses ALARA.

4. Authorized Users

a. New Methods of Use Involving Potential Radiation Doses

- (1) The authorized user will consult with the RSO during the planning stage before using radioactive materials for new uses.
- (2) The authorized user will review each planned use of radioactive materials to ensure that doses will be kept ALARA.

b. Authorized User's Responsibility to Supervised Individuals

- (1) The authorized user will explain the ALARA concept and the need to maintain exposures ALARA to all supervised individuals.
- (2) The authorized user will ensure that supervised individuals who are subject to occupational radiation exposure are trained and educated in good health physics practices and in maintaining exposures ALARA.

5. Individuals Who Receive Occupational Radiation Doses

- a. Workers will be instructed in the ALARA concept and its relationship to work procedures and work conditions.
- b. Workers will be instructed in recourses available if they feel that ALARA is not being prompted on the job.

6. Establishment of Investigational Levels in Order to Monitor Individual Occupational External Radiation Doses

Investigational levels for occupational external radiation doses has been documented within this policy. When investigational levels are exceeded, I will initiate review and investigation. The adopted investigational levels are listed in Table 1. These levels apply to the exposure of individual workers.

The RSO will review and record on Form NRC-5, "Current Occupational External Radiation Exposures," or an equivalent form (e.g., dosimeter processor's report) results of personnel monitoring not less than once in any calendar quarter as required by regulations. The following actions will be taken at the investigational levels as stated in Table 1:

- a. Personnel dose less than Investigational Level I.

Except when deemed appropriate by the RSO, no further action will be taken in those cases where an individual's dose is less than Table 1 values for the Investigational Level I.

- b. Personnel dose equal to or greater than Investigational Level I but less than Investigational Level II.

The RSO will review the dose of each individual whose quarterly dose equals or exceeds Investigational Level I and will report the results of the review. If the dose does not equal or exceed Investigational Level II, no action related specifically to the exposure is required. The RSO/owner will, review each such dose in comparison with those of others performing similar tasks as an index of ALARA program quality and will record the review.

- c. Personnel dose equal to or greater than Investigational Level II.

The RSO will investigate in a timely manner the causes of all personnel doses equaling or exceeding Investigational Level II and, if warranted, will take action. A report of the investigation, any actions taken, and a copy of the individual's Form NRC-5 or its equivalent will be documented, following completion of the investigation.

- d. Reestablishment of investigational levels to levels above those listed in Table 1.

In cases where a worker's or a group of workers' doses need to exceed an investigational level, a new, higher investigational level may be established for that individual or group on the basis that it is consistent with good ALARA practices. Justification for new investigational levels will be documented.

The RSO will review the justification for and must approve or disapprove all revisions of investigational levels.

7. Signature of Certifying Official*

I hereby certify that this institution has implemented the ALARA Program set forth above.

Michael W. Lawrence, M.S.
Signature

Michael W. Lawrence
Name (print or type)

Owner / President
Title

*The person who is authorized to make commitments for the administration of the institution.