GUIDE FOR PREPARATION OF RADIOACTIVE MATERIAL APPLICATIONS FOR LICENSES TO USE SEALED SOURCES IN NONPORTABLE GAUGING DEVICES IN KENTUCKY

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I. INTRODUCTION

A. Purpose of Guide

This guide describes the information needed to evaluate an application for a specific license for receipt, possession, use and transfer of radioactive material in the form of sealed sources as contained in nonportable gauging devices (i.e., gauges mounted in "fixed" locations, for measurement and/or control of material density, flow, level, thickness, weight, etc.). This guide also provides assistance to applicants and licensees in preparing applications for license amendments, license renewals and license terminations.

There is no single portion of the Kentucky Radioactive Material Regulations which specifically addresses nonportable gauging devices. Therefore, this guide is intended to provide you with information that will clarify more general regulatory requirements and licensing policies as they apply to nonportable gauging devices. Licensing guides are issued to describe the methods acceptable to the Radiation Health Branch for implementing the Cabinet for Health and Family Service's regulations, to outline techniques used by the staff in evaluating specific problems, and to provide guidance to applicants. The information in this guide is not a substitute for training in radiation safety or for developing and implementing an effective radiation safety program. However, you should be aware that if your application references procedures in this guide, those procedures become a part of your licensing conditions and regulatory requirements.

After you are issued a license, you must conduct your program in accordance with (1) the statements, representations, and procedures contained in your application and other correspondence with the Radiation Health Branch, (2) the terms and conditions of the license, and (3) applicable regulations as discussed below. Therefore, all information you provide in your application must be clear, specific and accurate.

B. Applicable Regulations

In addition to the contents of this guide, applicants should refer to the requirements in the Cabinet's regulations listed below. The applicant should carefully read the regulations. This guide does not substitute for an understanding of the regulations. It is your responsibility as an applicant and licensee to have copies, read and abide by each regulation. For a copy of all Kentucky regulations mentioned below see http://chfs.ky.gov/dph/radioactive.htm or http://www.lrc.ky.gov/kar/TITLE902.HTM

1. 902 KAR 100:010, "Definitions."
2. 902 KAR 100:012, "Fees."
3. 902 KAR 100:015, "General Requirements."
4. 902 KAR 100:019, "Standards for Protection Against Radiation."
5. 902 KAR 100:040, "General Provisions for Specific Licensees."
6. 902 KAR 100:060, "Leak Testing."
7. 902 KAR 100:165, "Notices, Reports and Instructions to Employees."

C. As Low As Reasonably Achievable (ALARA) Philosophy

Section 2 of 902 KAR 100:019 states that each licensee shall develop, document and implement a radiation protection program commensurate with the scope and extent of their activities and sufficient to ensure compliance with the provisions of 902 KAR 100:019. This must include the use, to the extent practicable, of procedures and engineering controls based on sound radiation protection principles to achieve occupational doses and doses to members of the public that are ALARA. This radiation protection program must be reviewed at least annually (see Appendix C) for the effectiveness of its implementation. Section 30 of 902 KAR 100:019 requires licensees to maintain records of the provisions of their radiation protection program until the license is terminated by the Cabinet. Records of audits and other reviews of program content and implementation must be retained for three (3) years after the record is made.

II. FEES

A fee is required for a radioactive material license, renewals and amendments. The applicant should refer to 902 KAR 100:012, "Fees", to determine the amount of fee that must accompany the application. No action will be taken on applications submitted without the proper fee. Checks should be made payable to the Kentucky State Treasurer, but should be mailed to this office with the application. Once the license has been granted, licensees have the option of paying on-line with a credit card at https://apps4.chfs.ky.gov/Rad_ePay/ once an invoice for renewal has been received.

III. FILING AN APPLICATION

An application for a license should be filed on Form RPS-7, "Application for Radioactive Material License" (see page 27). Since the space provided on the form is limited, additional sheets should be attached as necessary to provide complete information. Each separate sheet submitted with the application should be identified and keyed to the item number on the application to which it refers. The information submitted must be of sufficient detail to enable the Cabinet for Health and Family Services to determine that the proposed equipment, facilities, procedures and controls are adequate to protect health and minimize danger to life and property. Submittal of insufficient information will result in delays in issuance of the license.

Two (2) copies of the application should be completed. The original application should be mailed to:

Radiation Health Branch
275 East Main Street
Mailstop HS1C-A
Frankfort, Kentucky 40621

One copy of the application with all information submitted must be retained by the applicant, since licensees are required to possess and use licensed material in accordance with the statements and representations in the application, license conditions and Cabinet rules and regulations.

IV. CONTENTS OF AN APPLICATION

Item 1 - Applicant and Mailing Address: The applicant corporation or other legal entity should be specified by name and mailing address in Item 1. Individuals should be designated as the applicant only if they are acting in a private capacity and the use of radioactive material is not connected with their employment with a corporation or other legal entity.

The Cabinet shall issue a license only to an applicant who maintains an office in Kentucky at which copies of records are kept and from which licensed activities are directed. However, the applicant may maintain an out-of-state office for corporate radiation safety direction as a contact mailing address. In addition, all entities (corporations, LLCs, LLPs, etc.) and professional service organizations conducting business in the Commonwealth of Kentucky are required by law to file with the Kentucky Secretary of State's office (http://www.sos.ky.gov/business/filings/):

Item 2 - Street Address(es) Where Radioactive Material Will be Used & Records Kept: Specify each location of storage or use by the street address and city or other descriptive address (such as 5 miles east on Highway 10, Town, State) to allow easy locating of the facility. These sites may be different from the mailing address specified in Item 1. A post office box address or personal mail box is not acceptable. Specify the location where all records required by the conditions of the license and by Kentucky Administrative Regulations 902 KAR 100 will be kept for review by the Cabinet.

Item 3 - Telephone Number: Indicate the telephone number of the applicant.

Item 4 - Person to be Contacted: This individual should know your proposed program and be able to answer questions regarding the application. A change in the contact person requires notification to the Cabinet but is not considered an application for amendment; therefore no fee is required.

Item 5 - Individual Users: The name of the individual(s) and title(s) who will use (operate) and/or supervise the use of the devices listed in the application must be listed in Item 5. An adequate number of trained users should be listed to provide for continuity of operations. An individual user should be physically present when the devices are in use. The training and experience of each listed user must be submitted. Refer Item 13.

Item 6 - Radiation Safety Officer (RSO): This individual is responsible for your radiation safety program, and as a minimum, should have completed the device manufacturer's training program or have received equivalent training. The RSO is expected to coordinate the safe use of the gauging devices and ensure compliance with the Kentucky Administrative Regulations 902 KAR 100. The radiation safety officer (RSO) shall ensure that radiation safety is being performed in the daily operation of the licensee's program, in accordance with approved procedures and regulatory requirements.

The RSO needs independent authority to stop operations that he or she considers unsafe. The RSO also needs sufficient time and commitment from management to fulfill certain duties and responsibilities to ensure that radioactive materials are used in a safe manner by authorized individuals. Provide management's commitment that the RSO has independent authority to stop unsafe operations and will

be given sufficient time to fulfill his/her radiation safety duties and responsibilities, including oversight of radiation safety at all use/storage locations (see “Model Delegation of RSO Authority Letter” on page 28.

Provide a description of the methods and checks management will use to assure that the RSO has current copies of the regulations, reviews all new and revised regulations, and makes changes, as needed, in licensee procedures to comply with the regulations.

Provide a copy of an organizational chart that shows the RSO position to demonstrate that the RSO has sufficient independence and direct communication with responsible management officials (see page 26). Typical duties should include those areas listed in Appendix A, and should be described under Item 12(a).

Item 7 - Licensed Material and Use of Radioactive Material:

(a) Identify each radioisotope that will be used in the gauge (for example, cesium-137, americium-241, etc).

(b) Identify the manufacturer and model number of each sealed source.

(c) Specify the activity in millicuries (mCi) or Curies (Ci) of radioactive material that will be in each sealed source.

(d) Identify the manufacturer and model number of the gauge, source holder or device in which the sealed sources will be used. Describe the purpose for which the device will be used.

(e) Provide a commitment to limit the number of source/device combinations such that you do not exceed the quantities of radioactive material that would require financial assurance for decommissioning. These limits are defined in 902 KAR 100:042, Section 11. With this commitment, you do not need to specify, in advance, a particular number of identical source/device combinations that you may wish to possess. Alternatively, specify the maximum number of identical sealed source/device combinations you will possess at one time. Refer to Appendix D for further discussion on financial assurance and for recordkeeping requirements important for decommissioning.

(f) A facility in possession of "generally licensed" gauges may elect to include these devices as a part of its specific radioactive material license. To do so, simply include required information in the appropriate sections of the application (or in an amendment request), and request termination of the general license. The advantages of "combining" the general and specific licenses include the elimination of the annual general license fee, and consistency of regulatory requirements for all gauges.

Note - in order to terminate the general license, all generally licensed devices must be included on the specific license.

Item 8 & 9 - Radiation Detection Instruments: For routine use of devices, radiation survey and measuring instruments are not required. Applicants who want to perform non-routine activities such as installation, relocation, removal or maintenance of gauges will need to address the items listed in Appendix B, which includes the possession and use of radiation detection instrumentation.

Item 10 - Personnel Monitoring Devices: For routine use of devices, the use of personnel monitoring devices (film badges or thermoluminescent dosimeters) are not required. Applicants who want to perform non-routine activities which will require the use of personnel monitoring devices will need to address items in Appendix B, which includes the use of personnel monitoring devices.

Item 11 - Facilities and Equipment: The applicant should provide a description of the equipment and facilities to utilize the devices containing the radioactive material to show adequacy for protecting health and minimizing danger to life or property. The application should address the following items:

1. A sketch or description of the proposed location of each gauge within your facility, including work areas or aisles employees will occupy.

2. The environmental conditions to which gauges will be exposed, e.g., elevated temperature, corrosive atmosphere, vibration. If a cooling system is used to maintain the temperature below the maximum operating temperature specified by the manufacturer, describe the system and procedures for detecting and responding to a cooling system failure.

3. Information on the maintenance of gauges, including (but not limited to) frequency, checks for proper shutter operation, checks that labels are legible and visible, and checks that gauges are protected against corrosive materials or materials at high temperatures.

902 KAR 100:165, Section 2 requires the posting of certain documents, notices and forms, in order to be readily observable by employees. These postings are to include the regulations referenced in Section 2, the license and operating procedures. Refer to the regulation for other posting requirements.

Item 12 - Radiation Protection Program: Procedures should be established to ensure compliance with the provisions of 902 KAR 100:019, "Standards for Protection Against Radiation," and 902 KAR 100:165, "Notices, Reports and Instructions for Employees." The applicant should submit a copy of his written radiation safety and emergency procedures in the form of written instructions to users, covering the following items:

12.1 Duties and Responsibilities of Radiation Safety Officer (RSO)

See Appendix A for duties and responsibilities of the Radiation Safety Officer.

12.2 Servicing Operations

Submit the name of the company or person who will conduct servicing operations involving installations, relocations, removals, initial radiation surveys, maintenance, repairs, and removal of the devices containing licensed material and installation, replacement, and disposal of sealed sources containing licensed material used in the devices. If any of these operations will be performed by someone other than the supplier of the device, the applicant should provide the name and the number of the NRC or Agreement State license which authorizes performance of these operations. If the applicant proposes to conduct certain servicing operations, all items in Appendix B must be addressed.

12.3 Control of Access to Devices

A description of how access to the devices containing radioactive material will be controlled (i.e., barriers, warning signs, remote or inaccessible locations, control by individual users, etc.) should be submitted.

12.4 Lock-Out Procedures

For use of a device where it is possible for a major portion of an individual's body to receive exposure to the radiation beam from the device, a description of "lock-out" procedures, (i.e., procedures for preventing employees from entering the radiation beam during maintenance, repairs, or other work on or around the bin, tank, hopper, pipe, etc., on which the device is mounted) should be submitted. If the device shutter or switch is locked, bolted, "tagged-off", etc., until the work is completed, the applicant should describe this and provide the name of the individual(s) responsible for enforcing this procedure. Verify that procedures will be provided to personnel, and posted at appropriate areas.

12.5 Leak Testing

Submit the procedures for leak testing of the sealed sources. If the supplier of the devices containing the sealed sources will perform leak tests of the sealed source in the applicant's facility, it is only necessary for the applicant to state this and to specify the frequency of the leak tests. If a consultant or commercial facility will take samples, evaluate them and report results to the licensee, specify the name, address and license number of the consultant or commercial facility. If the applicant plans to use a leak test kit, the name of the supplier, license number and the model number of the kit should be specified. Verify that a copy of the leak test instructions will be available, and state who will collect samples. The required frequencies for leak testing of sealed sources in nonportable devices range from three months for alpha emitting radioactive material to six months for beta-gamma emitters. Some sealed source/device combinations containing beta-gamma emitters have leak test frequencies not to exceed three years. Information concerning sealed sources and devices which have three year leak test frequencies may be obtained from suppliers and/or manufacturers. Unless a specific request for the three year leak test frequency is included in the application, a six-month frequency will be specified in the license.

12.6 Emergency Procedures

Describe emergency procedures to be followed in the event of accidents involving damage to the gauge, stuck shutter, etc. These procedures should include names and telephone numbers of the individual(s) within the applicant's organization who should be notified and who would, in turn notify the Kentucky Radiation Health Branch office. Telephone numbers should also be included for the manufacturer and the Kentucky Radiation Health Branch office:

(502) 564-3700 normal working hours; Duty Officer 800-255-2587 after hours.

REMINDER TO LICENSEE MANAGEMENT:

(a) In the event of an emergency involving the gauge(s), arrange for a 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 or a consultant.)
(b) Make necessary notifications to local authorities as well as to the Radiation Health Branch/CHFS as required. Radiation Health Branch notification is required when gauges containing radioactive material are lost or stolen, or when gauges are damaged or involved in incidents that result in doses in excess of 902 KAR 100:019 limits.
(c) Timelines of reports to the Radiation Health Branch/CHFS need to be considered.
(d) Reporting requirements are found in 902 KAR 100:019, Sections 38, 39 and 40 (http://www.lrc.state.ky.us/kar/902/100/019.htm) and 902 KAR 100:040, Section 15 (http://www.lrc.state.ky.us/kar/902/100/040.htm)

12.7 Inventories

902 KAR 100:015, Section 8 provides that the Radiation Health Branch/CHFS may incorporate, in any license, such additional requirements and conditions with respect to the licensee's receipt, possession, use and transfer of radioactive material as it deems appropriate or necessary in order to, among other things, protect health or to minimize danger to life or property. The Radiation Health Branch/CHFS requires that, periodically, licensees must account for all sealed sources and devices received and possessed under their licenses.

State that you will conduct physical inventories, at intervals not to exceed 6 months, to account for all sealed sources and devices received and possessed under the license. You should maintain records of the inventories for at least 3 years from the date of the inventory. Your inventory records should include: 1) the radionuclide and amount (in units of curies) of radioactive material in each sealed source; 2) the manufacturer's name, model number, and serial number of each device containing radioactive material; 3) the location of each sealed source and device; 4) and the date of the inventory. See attached Model Physical Inventory located on page 34 of this guide as an example. Physical inventories can are also a good place to document required 6 month checks of the shutter on-off control mechanisms and the conditions of device and labels.

12.8 Annual Audit of Radiation Protection Program

Section 2 of 902 KAR 100:019 requires licensees: (1) to develop, document, and implement a radiation program commensurate with the scope and extent of licensed activities and sufficient to ensure compliance with the regulations; (2) to use procedures and engineering controls to achieve occupational doses and doses to members of the public that are ALARA; and (3) to review, at least annually, the content and implementation of their radiation programs. Section 30 of 902 KAR 100:019 requires licensees to maintain records of the provisions of their radiation protection program until the Radiation Health Branch/CHFS terminates the license. Licensees must also maintain records of audits and other reviews of program content and implementation for 3 years after the record is made.

The RSO needs to ensure that annual audits are conducted, but does not necessarily need to do it himself/herself. In fact, if the RSO is one of the authorized gauge users, it may be beneficial for a qualified individual (e.g., radiation safety consultant or the corporate radiation safety officer) who is not associated with day-to-day operations to conduct the audit. The audit should be sufficiently detailed to ensure that (1) the licensee is abiding by Radiation Health Branch/CHFS regulations and the terms and conditions of the license (e.g., periodic leak tests, inventories, etc.), (2) the licensee's radiation protection program content and implementation achieve occupational doses and doses to members of the public that are ALARA; and (3) the licensee maintains all appropriate records with all appropriate information (e.g., records of personnel exposure, leak tests, inventory, training of gauge users) sufficient to comply with Radiation Health Branch/CHFS requirements.

Appendix C describes an audit program that is acceptable to the Radiation Health Branch/CHFS.

(a) Submit (1) the name and radiation safety qualifications of the individual who will conduct audits; (2) a description of the scope and extent of the audits; (3) a commitment to conduct audits at intervals not to exceed 12 months and to maintain records of the audits for at least 3 years after the record is made; (4) management's commitment to review the documented results of the audit promptly after the audit's completion; and (5) a commitment to take prompt action to correct deficiencies identified during audits, to inform all personnel (including those at other locations and those working under other licenses) of the deficiencies and the actions management expects its personnel to take to avoid similar deficiencies.

(b) In lieu of describing the scope and extent of the audits, you may state, "We will conduct audits as described in Appendix C of "Guide for Preparation of Radioactive Material Applications for the use of Sealed Sources in Nonportable Gauging Devices", Revised 7/96.

12.9 Records

(a) Records required to be maintained in accordance with 902 KAR 100 or license conditions are to be maintained at one (1) central location. Usually this is the address specified in item 1 of the application. If records will be maintained at a different location, the location must be specified. If more than one use/storage location is authorized by the license, records or copies of records from these other locations must be forwarded, at least quarterly, to the central location for review by the Radiation Health Branch/CHFS.

(b) Verify that copies of original radiation surveys, conducted at the time of installation (or reinstallation) of a gauge, will be maintained for inspection.

Item 13 - Training and Experience of Users:

(a) The training and/or experience of each individual named in Item 5 of the application must be commensurate with the requested use and should be described. For routine use of devices containing sealed sources, the training provided by the manufacturers at the time of installation is sufficient to qualify individual users. Training can be provided by someone other than the device manufacturer. At minimum, the following must be submitted as an attachment to the application:

(1) The names and qualifications of the instructors. Qualifications include:

- Bachelor's degree in a physical or life science or engineering (include certificate)
- Proof of successful completion of a fixed gauge manufacturer's or distributor's course for users (or equivalent)
- Proof of successful completion of an 8 hour radiation safety course; and
- Documentation of 8 hours hands-on experience with fixed gauges

OR

- Proof of successful completion of a fixed gauge manufacturer's or distributor's course for users (or equivalent)
- Proof of successful completion of 40 hour radiation safety course; and
- Documentation of 30 hours of hands-on experience with fixed gauges.

OR

- The applicant may submit a description of alternative training and experience for the course instructor.

(2) An outline of the training program.

Classroom training may be in the form of lecture, videotape, or self-study emphasizing practical subjects important to safe use of the gauge. Course content shall include:

Radiation Safety:

- Radiation vs. contamination
- Internal vs. external exposure
- Biological effects of radiation
- Types and relative hazards of radioactive material possessed
- ALARA concept
- Use of time, distance, and shielding to minimize exposure
- Location of sealed source within the gauge

Regulatory Requirements:

- Applicable regulations
- License conditions, amendments, renewals
- Locations of use and storage of radioactive materials
- Material control and accountability
- Annual audit of radiation safety program
- Transfer and disposal
- Recordkeeping
- Prior events involving fixed gauges
- Handling incidents
- Recognizing and ensuring that radiation warning signs are visible and legible
- Licensing and inspection by regulatory agency
- Need for complete and accurate information
- Employee protection
- Deliberate misconduct

Practical Explanation of the Theory and Operation for Each Gauge Possessed by the Licensee:

- Operating and emergency procedures
- Routine vs. non-routine maintenance
- Lock-out procedures

On-the-job training must be done under the supervision of an AU or RSO:

- Supervised Hands-On Experience Performing
    - Operating procedures
    - Test runs of emergency procedures
    - Routine maintenance
    - Lock-out procedures

(3) The duration of the training program.

(4) The method for determining trainee competency.

Training Assessment

Management will ensure that proposed AUs are qualified to work independently with each type of gauge with which they may work. Management will ensure that proposed RSOs are qualified to work independently with and are knowledgeable of the radiation safety aspects of all types of gauges to be possessed by the applicant. This may be demonstrated by written or oral examination or by observation.

(b) Applicants who want to perform nonroutine activities such as installation, relocation, removal or maintenance of gauges will need to address the items listed in Appendix B, which includes training and experience requirements for individuals who will perform these tasks.

Item 14 - Waste Disposal: The applicant should describe the disposal method for sealed sources containing radioactive material when use of the devices containing the radioactive material is discontinued. If the supplier will remove the devices and sealed sources from the applicant's facility for disposal, this should be so stated in the application (i.e., return to manufacturer). If a person or company other than the supplier will remove the devices and sealed sources from the applicant's facility for return to the supplier or transfer to an authorized recipient, the number of the NRC or Agreement State license which authorizes removal and disposal of the applicant's sealed sources and devices should be provided.

Item 15 - Certification: If you are an individual applicant acting in a private capacity, you are required to sign the form. Otherwise, your application should be dated and signed by a representative of the corporation or legal entity who is authorized to sign official documents and to certify that the application contains information that is true and correct to the best of your knowledge and belief. Unsigned applications will be returned for proper signature.

You should also submit the names of any additional individuals authorized to sign on behalf of the licensee. This permits these individuals to sign correspondence sent to this office requesting license amendment or for responses submitted in regards to Inspection Letters. These individuals should be officers of the company or others with administrative authority in regards to matters of radiation safety (see attached “Model Signature Authorization Form”).

V. AMENDMENTS TO A LICENSE

After you are issued a license, you must conduct your program in accordance with (1) the statements, representations, and procedures contained in your application; (2) the terms and conditions of the license; and (3) the Radiation Health Branch/CFHS's regulations as specified in 902 KAR 100.

It is your obligation to keep your license current. You should anticipate the needs for a license amendment insofar as possible. If any of the information provided in your

application is to be modified or changed, including a change in RSO or authorized users, submit an application for a license amendment (RPS-7). In the meantime, you must comply with the terms and conditions of your license until it is actually amended. Radiation Health Branch/CHFS regulations do not allow you to implement changes on the basis of a submission requesting an amendment to your license.

An application for a license amendment may be prepared either on the application form (RPS-7) or in letter form and should be submitted to the address specified in Section III of this guide. Your application should identify your license by number and should clearly describe the exact nature of the changes, additions, or deletions. References to previously submitted information and documents should be clear and specific and should identify the pertinent information by date, page, and paragraph. For example, if you wish to change the Radiation Safety Officer specified in Item 6, your application for a license amendment should specify the new RSO's name, training, and experience. The qualifications of the new RSO individual should be equivalent to those specified in Item 6 of this guide. The amendment request should be signed and dated by a member of senior management of someone granted Signature Authorization by management.

You must send the appropriate $75.00 fee for license amendment with your application in the form of a check or money order made payable to the Kentucky State Treasurer. The Cabinet will not accept an application for filing or processing before the proper fee is paid in accordance with 902 KAR 100:012.

VI. RENEWAL OF LICENSE

An application for renewal of a license should be filed at least 30 days prior to the expiration date. License renewals can be paid on-line with a credit card at https://apps4.chfs.ky.gov/Rad_ePay/ as long as you have the Invoice Number.

Renewal applications may be filed by completing the RPS-7 form sent by the Radiation Health Branch/CHFS or in letter form. The renewal application should be signed and dated by a representative of the licensee's administrative management and should include the Kentucky Radioactive Material License Number. You must send the appropriate fee for license renewal with your application.

VII. TERMINATION OF A LICENSE

If you do not wish to renew your license, you must dispose of all licensed radioactive material you possess in a manner authorized by 902 KAR 100:021. Submit Form RPS-10 "Disposition of Radioactive Material," (see http://chfs.ky.gov/dph/radioactive.htm) along with a signed and dated letter indicating the manner in which you disposed of the radioactive material and send to the Kentucky Radiation Health Branch office before the expiration date of your license with a request that the license be terminated. Include your Kentucky Radioactive Material License Number in the request. There is no fee assessed for terminating a license.

If you cannot dispose of all the licensed radioactive material in your possession before the expiration date, you must submit a request for license renewal, along with the renewal fee, for storage only of the radioactive material. The renewal is necessary to avoid violating Kentucky Administrative Radiation Regulations that do not allow you to possess radioactive material without a valid license.

APPENDIX A

Typical Duties and Responsibilities of the Radiation Safety Officer

For license number_____

The duties and responsibilities of the Radiation Safety Officer (RSO) include ensuring radiological safety and compliance with the Kentucky Radiation Health Branch, Cabinet for Health and Family Services regulations, U.S. Dept. of Transportation regulations and the terms and conditions of the license. Model procedures for describing the RSO's duties and responsibilities appear below. The RSO is responsible for ensuring the safe use of radiation. Responsibilities include managing the Radiation Protection Program; identifying radiation protection problems; initiating, recommending, or providing corrective actions; verifying implementation of corrective actions; stopping unsafe activities; and ensuring compliance with regulations. Applicants may either adopt these model procedures or develop alternative procedures to meet the requirements of 902 KAR 100:072 Section 10. Typically, these duties and responsibilities include ensuring the following:

- Activities involving licensed material that the RSO considers unsafe are stopped.
- Radiation exposures are ALARA.
- Development, maintenance, distribution, and implementation of up-to-date operating and emergency procedures.
- Individuals that use fixed gauges are properly trained.
- Possession, installation, relocation, use, storage, routine maintenance and non-routine operations of fixed gauges are consistent with the limitations in the license, the SSD Registration Certificate(s), manufacturer's or distributors recommendations and instructions.
- Safety consequences of non-routine operations are analyzed before conducting any such activities that have not been previously analyzed.
- Non-routine operations are performed by the manufacturer, distributor or person specifically authorized by the cabinet, Nuclear Regulatory Commission, or another Agreement State.
- Prospective evaluations are performed demonstrating that unmonitored individuals are not likely to receive, in one year, a radiation dose in excess of 10% of the allowable limits or personnel monitoring devices are provided.
- Documentation is maintained to demonstrate, by measurement or calculation, that the total effective dose equivalent to the individual likely to receive the

highest dose from the licensed operation does not exceed the annual limit for members of the public.

- Fixed gauges are properly secured.

- Notification of proper authorities of incidents such as damage to or malfunction of fixed gauges, fire, loss, or theft.

- Investigation of unusual occurrences involving the fixed gauge (e.g., malfunctions or damage), identification of cause(s), implement of appropriate and timely corrective action(s).

- When the licensee identifies violations of regulations or license conditions or program weaknesses, corrective actions are developed, implemented, and documented

- Licensed material is transported according to all applicable DOT requirements.

- Appropriate records are maintained.

- Radioactive materials possessed under the license conform to the materials listed on the license.

- Use or supervision of use of the devices is only by individuals authorized by the license.

- The established "lock-out" procedures are followed during maintenance or repairs on or around the pipes, tanks, vessels, conveyors, etc., to prevent individuals from entering the radiation beams. (As shown in Item 12 of this guide, "lock-out" procedures must be described in the application for certain types of devices.)

- Periodic leak tests of the sealed sources are conducted as required by the license.

- The Radiation Health Branch is notified promptly in case of accident or damage to gauges, fire or theft.

- Audits are performed <u>at least annually</u> to ensure that (a) the licensee is abiding by the Radiation Health Branch/CHFS regulations and the terms and conditions of the license (e.g., periodic leak tests, inventories, etc.); (b) the licensee's radiation protection program content and implementation achieve occupational doses and doses to members of the public that are ALARA (see 902 KAR 100:019, Section 2); and (c) the licensee maintains required records with all required information (e.g., receipt, transfer, and disposal of radioactive material;

gauge user training) sufficient to comply with Radiation Health Branch/CHFS requirements.

- Results of audits, identification of deficiencies, and recommendations for change are documented (and maintained for at least 3 years), provided to management for review, and prompt action is taken to correct deficiencies.

- Audit results and corrective actions are communicated to all personnel who use radioactive material (regardless of their location or the license under which they normally work).

- All incidents, accidents, and personnel exposure to radiation in excess of ALARA or 902 KAR 100:019 limits are investigated and reported to the Radiation Health Branch/CHFS and other authorities, as appropriate, within required time limits.

- If required, users wear personnel monitoring equipment, such as film badges or thermoluminescence dosimeters (TLD), optically stimulated luminescence dosimeters (OSLD) and reports of personnel monitoring are reviewed in a timely manner.

- Radioactive material is disposed of properly.

- He/she has up-to-date copies of regulations 902 KAR 100, reviews new or amended regulations, and revises license procedures, as needed to comply with Radiation Health Branch/CHFS regulations.

- The license is amended whenever there are changes in: (1) licensed activities, (2) responsible individuals, or (3) information or commitments provided to the Radiation Health Branch/CHFS in the licensing process.

_____ _____

Signature of Management Representative Date

I accept the above duties and responsibilities.

_____ _____

Signature of Radiation Safety Officer Date

Modeled on the US Nuclear Regulation Commission Appendix F of NUREG 1556 Vol. 4., Program-Specific Guidance About Fixed Gauge Licenses. See http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1556/v4/

APPENDIX B

NONROUTINE SERVICING OPERATIONS

Applicants who wish to perform nonroutine activities such as installation, relocation, removal or maintenance of gauges containing radioactive material must demonstrate that individuals who will perform such operations have adequate training and experience, and that proper radiation safety procedures will be followed.

Accordingly, the following information must be provided:

1. Type of Work to be Performed

Describe the types of servicing activities proposed. Typical activities which are considered nonroutine servicing activities include installation, removal or relocation of gauges, or any maintenance involving the source housing, shutter mechanism, etc.

2. Training and Experience

List names of individuals who will perform servicing operations described above. For each person, describe training and experience in performing these operations. List all radiation safety courses attended, course sponsors, and include copies of certificates or test scores to verify the individual successfully completed the training. Describe the amount of hands-on experience the individual has had involving requested servicing activities, and why you consider the individual qualified to perform these activities. Submitted documentation of training and experience will be considered on an individual basis.

3. Procedures

Submit step-by-step instructions to be provided to individuals who will be performing servicing operations. Procedures should include (but not be limited to): instructions concerning use of personnel monitoring and operable, calibrated survey meter; closing, locking out of shutter mechanism; restricting access to area; provisions for temporary storage of device(s) in a designated, secured and posted storage area; surveys to be conducted.

4. Personnel Monitoring

Complete information required in item 10 of the application concerning personnel monitoring. Specify the type of device, that is, film badges or thermoluminescence dosimeters (TLD), or optically stimulated luminescence dosimeters (OSLD) the frequency of exchange and the name and address of the supplier of the film badge, TLD or OSL service. In general, a monthly exchange is required for film badges. TLDs may be exchanged every three (3) months.

Also verify that each individual authorized to perform servicing operations will be provided an individually assigned personnel monitoring device, and will be required to wear such device when performing servicing activities. Submit instructions which include location on body where badges are to be worn, where badges are to be stored when not in use, and clear instructions against "sharing" of badges. Clearly indicate categories of employees who will be required to wear personnel monitoring devices (e.g., persons named as authorized users in item 5 of the application, who do not also perform servicing operations discussed in this appendix, would not normally be required to be badged).

5. Survey Instrumentation

If you have already provided detailed information on survey instruments in response to Items 8 and 9, state, "See response to Items 8 and 9." Otherwise, list the type and ranges of survey instruments you will have available, state the frequency of calibration, and who will perform the calibration. Also include how you will ensure that the survey instrument is working properly.

For example, you can state that a survey instrument capable of measuring between 0.1 millirem per hour and 100 millirems per hour will be used to perform the surveys and that the survey instrument will be calibrated annually by the manufacturer. Alternatively, you can identify by name, address, and license number an organization that is specifically licensed by NRC or an Agreement State to calibrate survey instruments for other licensees. In addition, you can state that, before each use of the instrument, you will check the response of the instrument with a dedicated check source that was supplied with the instrument and commit that, if the instrument does not respond properly, then you will not perform servicing operations on the gauges until the survey instrument is repaired and operable or until you obtain an operable instrument.

6. Surveys

Describe how you will ensure that radiation levels in areas where servicing operations will take place do not exceed 902 KAR 100:019 limits. For example, you can (1) commit to performing surveys with a survey instrument (as described above); (2) specify where and when surveys will be conducted during servicing operations, and radiation levels considered acceptable; and (3) 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 902 KAR 100:019. Upon completion of servicing operations, surveys should be conducted around the gauge to verify radiation levels with the shutter closed, and with the shutter open. The applicant should refer to the manufacturer's "original installation surveys" and conduct these surveys in the same manner.

APPENDIX C

SAMPLE AUDIT PROGRAM

An audit is conducted, in part, to fulfill the requirements of 902 KAR 100:019, Section 2 for an annual review of the content and implementation of the licensee's radiation protection program. It should also identify program weaknesses and allow licensees to take early corrective actions (before Radiation Health Branch/CHFS inspection). During an audit, the auditor needs to keep in mind not only the requirements of the Radiation Health Branch/CHFS regulations, but also the licensee's commitments in its applications and other correspondence with the Radiation Health Branch/CHFS. The auditor should also evaluate whether the licensee is maintaining exposures to workers and the general public as low as is reasonably achievable (ALARA) and, if not, make suggestions for improvement.

The form in this Appendix can be used to document the annual audit of the radiation protection program. Guidance follows on completing each section of the form. Note any deficiencies that were identified and the corrective actions taken (or to be taken) in Section15.

Section 1. Audit History. Enter the date of the last audit, whether any deficiencies were identified, and whether actions were taken to correct the deficiencies.

Section 2. Organization and Scope of Program. Give a brief description of the organizational structure, noting any changes in personnel. Describe the scope of licensed activities at the audited location. Check whether the Radiation Safety Officer (RSO) is the person identified in license and fulfills the duties specified in the license. Evaluate management's involvement with the radiation safety program, whether the RSO has sufficient time to perform his/her duties and whether the licensee has sufficient staff to handle the workload and maintain compliance with regulatory requirements. Verify that only persons authorized by the license use/supervise use of gauges, or perform servicing operations (if applicable).

Section 3. Training and Instructions to Workers. Ensure that workers have received the training required by 902 KAR 100:165, Section 3. Be sure that, before being permitted to use or supervise the use of a gauge, the authorized user has received training (from the manufacturer or in an alternative course approved by the Radiation Health Branch/CHFS) and has a copy of, and training in, the licensee's operating and emergency (O/E) procedures; records should be maintained. By interview and/or observation of selected workers, ensure that each has a copy of the licensee's O/E procedures and can implement them properly.

Section 4. Audits. Verify that audits fulfill the requirements of 902 KAR 100:019, Section 2, are conducted in accordance with licensee commitments, and are properly documented.

5. Facilities. Verify that the licensee's facilities are as described in the license documents.

Section 6. Materials. Verify that the license authorizes the sealed source-device combinations that the licensee possesses. Verify that the licensee uses the source-device combinations in accordance with license provisions. Ensure that gauges are maintained in accordance with licensee commitments.

Section 7. Leak Tests. Verify that all sealed sources are tested for leakage at the prescribed frequency and in accordance with licensee commitments. Records of results should be maintained.

Section 8. Inventories. Verify that inventories are conducted at least once every 6 months to account for all sealed sources; inventory records should be maintained.

Section 9. Radiation Surveys. Verify that the licensee has at least one operable, calibrated survey instrument, if required, and that the instruments are calibrated in accordance with licensee commitments. Calibration records must be retained for 3 years after the record is made. Check that radiation levels in the vicinity of gauge use and immediately outside areas used for gauge storage are within regulatory limits. Verify that installation surveys are conducted, and records maintained.

Section 10. Receipt and Transfer of Radioactive Material (Includes Disposal). Verify that gauges received from others (e.g., new gauges) are in accordance with 902 KAR 100:019, Section 28. Ensure that gauge transfers are performed in accordance with 902 KAR 100:040, Section 12. Records of surveys, receipt, and transfer must be maintained in accordance with 902 KAR 100:040, Section 14.

Section 11. Personnel Radiation Protection. If required by the license, verify personnel dosimetry complies with 902 KAR 100:019, Section 12 and licensee commitments. Review personnel monitoring records; compare exposures of individuals doing similar work; determine reasons for significant differences in exposures. If any worker declared her pregnancy in writing, evaluate the licensee's compliance with 902 KAR 100:019, Sections 9, 13 (1)(b) and (2)(b), and 34 (6)(a) and (b).

Section 12. Notification and Reports. Check on the licensee's compliance with the notification and reporting requirements in 902 KAR 100:019, Sections 38-40 and 040, Section 15.

Section 13. Posting. Check for compliance with the posting requirements of 902 KAR 100:165, Section 2.

Section 14. Recordkeeping for Decommissioning. Check to determine compliance with 902 KAR 100:42, Section 11.

Section 15. Problems or Deficiencies Noted; Recommendations. This section is self-explanatory.

AUDIT OF NONPORTABLE GAUGE LICENSEE'S OPERATIONS

Note: All areas indicated in audit notes may not be applicable to every license and may not need to be addressed during each audit.

Audit Report No. _____ License No. _____

Licensee's name and mailing address:

_____

_____

_____

_____

Audit of activities at (Address):

_____

_____

_____

Contact at Audit Location _____

Telephone No. _____

Date of Last Audit of this Location _____

Date of This Audit _____

Summary of Findings and Action:

( ) No deficiencies

( ) Deficiencies

( ) Action on previous deficiencies

Recommendations: _____

_____

Auditor: _____ Date _____

(Signature)

ANNUAL AUDIT OF NONPORTABLE GAUGE LICENSEE'S OPERATIONS

1. AUDIT HISTORY

A. Last audit of this location conducted _____

B. Problems/deficiencies identified during last two audits or two years, whichever is longer ( )yes ( )no

C. Any previous problem/deficiency repeated or not corrected ( )yes ( )no

Explain: _____

2. ORGANIZATION AND SCOPE OF PROGRAM

A. Briefly describe organizational structure

(1) Structure is as described in license ( )yes ( )no

(2) Multiple authorized locations of use ( )yes ( )no

(3) Briefly describe scope of activities involving radioactive material, frequency of use, staff size, etc. _____

_____

(4) Senior licensee management appropriately involved with radiation safety program and/or RSO oversight ( )yes ( )no

B. Radiation Safety Officer

(1) Authorized on license ( )yes ( )no

(2) Fulfills duties as RSO (Appendix A of guide) ( )yes ( )no

C. Use or supervision of use only by authorized individuals ( )yes ( )no

D. Service operations by authorized individuals ( )yes ( )no

3. TRAINING AND INSTRUCTIONS TO WORKERS

A. Instructions to workers (902 KAR 100:165, Section 3) ( )yes ( )no

B. Authorized user training program - Before using gauge:

(1) User received manufacturer's course or ( )yes ( )no

(2) User received course as described in license application ( )yes ( )no

C. Evaluation of authorized users' understanding of procedures and regulations based on interviews, observation of selected workers:

(1) Each has copy of operating and emergency procedures ( )yes ( )no

(2) Adequate understanding of procedures ( )yes ( )no

4. INTERNAL AUDITS, REVIEWS OR INSPECTIONS

A. Audits conducted ( )yes ( )no

(1) Conducted by _____

(2) Frequency _____

B. Radiation Protection Program reviewed annually (902 KAR 100:019, Section 2) ( )yes ( )no

C. Records maintained (902 KAR 100:019, Section 30) ( )yes ( )no

5. FACILITIES - as described in license application ( )yes ( )no

A. Checks performed for shutter operation, labels, and protection against adverse environments ( )yes ( )no

6. MATERIALS

A. Isotopes, quantities, mfg's name and model no. of sources and devices; use as authorized on license ( )yes ( )no

B. Gauge maintenance, servicing operations ( )yes ( )no

(1) By licensee ( )yes ( )no

(2) Manufacturer or other licensed company ( )yes ( )no

(3) Work by licensee in accordance with licensed procedures ( )yes ( )no

(4) Proper security of gauges when in storage ( )yes ( )no

7. LEAK TESTS (902 KAR 100:060 and license condition)

A. Leak tests performed as authorized by license (consultants, leak test kit, person performing) ( )yes ( )no

B. Every 6 months or as authorized by license ( )yes ( )no

C. Records with appropriate information maintained ( )yes ( )no

8. INVENTORIES

A. Conducted at 6-month intervals ( )yes ( )no

B. Records with appropriate information maintained ( )yes ( )no

9. RADIATION SURVEYS

A. Calibrated and operable survey meter available, if required by license ( )yes ( )no

B. Radiation levels within regulatory limits ( )yes ( )no

C. Unrestricted area radiation levels do not exceed 2 mrem in any one hour (902 KAR 100:019, Section 10) ( )yes ( )no

D. Exposure to members of the public within regulatory limits (902 KAR 100:019, Section 10) ( )yes ( )no

E. Installation surveys conducted, records maintained ( )yes ( )no

10. RECEIPT AND TRANSFER OF RADIOACTIVE MATERIAL (Includes Disposal)

A. Describe how new gauges are received and by whom: _____

_____

B. Transfer(s) between licensees (including disposal of unneeded gauges performed per 902 KAR 100:040, Section 12 ( )yes ( )no

C. Records of receipt/transfer maintained (902 KAR 100:040, Section 14) ( )yes ( )no

11. PERSONNEL RADIATION PROTECTION (if required)

A. ALARA incorporated into Radiation Protection Program (902 KAR 100:019, Section 2) ( )yes ( )no

B. External dosimetry provided and used ( )yes ( )no

(1) Supplier _____ Frequency _____
(2) Supplier NVLAP-approved ( )yes ( )no
(3) Dosimeters exchanged at required frequency ( )yes ( )no

C. Reports

(1) Reviewed by _____ Frequency _____
(2) Auditor reviewed records for period _____ to _____
(3) Prior dose determined for new employees ( )yes ( )no
(4) Maximum exposures _____
(5) Worker declared her pregnancy in writing ( )yes ( )no
during audit period (review records)
If yes, determine compliance with 902 KAR 100:019, Sections 9, 13 (1)(b) and (2)(b), and 34 (6)(a) and(b).
(6) All records maintained of exposures, surveys, etc. ( )yes ( )no

12. NOTIFICATION AND REPORTS (902 KAR 100:019, Section 38-40; 902 KAR 100:040, Section 15)

A. License in compliance with notification/reports for:

(1) Theft or loss ( )yes ( )no
Describe:_____
(2) Incidents ( )yes ( )no
Describe:_____
(3) Overexposures, high radiation levels ( )yes ( )no
Describe:_____

13. POSTING (902 KAR 100:165, Section 2)

A. Notice To Employees ( )yes ( )no
B. Regulations or appropriate notice ( )yes ( )no
C. License or appropriate notice ( )yes ( )no
D. Operating/emergency procedures ( )yes ( )no

14. RECORDKEEPING FOR DECOMMISSIONING (if required) ( )yes ( )no
(902 KAR 100:042, Section 11)

15. PROBLEMS OR DEFICIENCIES NOTED; RECOMMENDATIONS

Note: Briefly state (1) the requirements and (2) how and when violated. Provide recommendations for improvement.

_____

_____

Additional Remarks:_____

_____

_____

APPENDIX D

FINANCIAL ASSURANCE AND RECORDKEEPING FOR DECOMMISSIONING

Kentucky Administrative Regulation 902 KAR 100:042, Section 11 (http://www.lrc.state.ky.us/kar/902/100/040.htm) provides requirements for all licensees who must maintain records important to decommissioning and for certain licensees who must provide financial assurance for decommissioning.

Financial Assurance

The requirements for financial assurance are keyed to the types and quantities of radioactive material authorized on a license. Only a few nonportable gauge licensees need to comply with the financial assurance provisions. In general, these licensees are large companies that possess a large number of gauges. Most nonportable gauge licenses do not specify the maximum number of gauges that the licensee may possess (in order to allow the licensee flexibility in obtaining gauges as needed without amending its license). As a result, these licenses contain a condition requiring the licensee to limit its possession of gauges to quantities not requiring financial assurance for decommissioning.

Applicants for specific licenses authorizing possession and use of certain types and quantities of radioactive material must submit either a decommissioning funding plan or a certification that financial assurance for decommissioning has been provided in accordance with the requirements of 902 KAR 100:042, Section 15. Typically, a nonportable gauge contains Cesium-137 or Americium -241 in the form of sealed sources. For sealed sources, 902 KAR 100:042 establishes a threshold of 10^{10} times the applicable quantities in 902 KAR 100:030, Section 1 and specifies the use of the "sum of the ratios" method to determine the thresholds if the applicant requests more than one radionuclide. The thresholds for sealed sources are 100,000 curies of Cesium-137 or 100 curies of Americium-241.

If a commitment to restrict the possession of radioactive material to quantities below the minimum level specified in 902 KAR 100:042 for establishing financial assurance for decommissioning is not provided, you must submit one of the following:

(1) certification that financial assurance for decommissioning has been provided in the amount of $75,000, or

(2) a decommissioning funding plan that contains a cost estimate for decommissioning (generally to justify a cost less than $75,000) plus a certification that financial assurance has been provided in an amount equal to the cost estimate.

Recordkeeping Requirements

Licensees are required by 902 KAR 100:042 to maintain records important for decommissioning. These records must include information related to spills, leaking sources, or other unusual incidents that involve the spread of contamination. The records must be maintained in the location identified in Item 2 until the license is terminated. If a licensee has not had events involving spills, leaking sources, or spread of contamination, there are no such records to maintain for decommissioning.

APPENDIX E

COMMONLY CITED AND/OR POTENTIALLY SERIOUS VIOLATIONS

1. Gauges not labeled as required. Labels rusted or painted over.
2. Unauthorized removal or relocation of gauges by licensee personnel.
3. RSO or authorized users not as stated in the license.
4. Failure to perform leak tests within required intervals. Even though some manufacturers recommend a three (3) year interval, devices must be leak tested at intervals not to exceed six (6) months unless otherwise authorized by license condition.
5. Failure to perform physical inventories at six (6) month intervals for all sealed sources. Also, failure to include required information on inventory documents.
6. Failure to post/utilize lock-out procedures.
7. Loss of gauge(s) containing licensed material.
8. Inadequate or incomplete documents.
9. Failure to post "Notice to Employees (KR-441), License, Regulations and/or Operating/Emergency Procedures".

MODEL DELEGATION OF AUTHORITY TO THE RSO

(to be printed on company letter head)

Date: _____(required)

Memo To: (*write in name & title of person being granted RSO authority*)

From: (*write in name & title of Senior Management official granting RSO authority*).

(e.g. President, Chief Executive Officer)

Subject: Delegation of Authority to the Radiation Safety Officer

You have been appointed Radiation Safety Officer for license number _____. Your are responsible for ensuring the safe use of radiation. You are responsible for managing the radiation safety program; identifying radiation safety problems; initiating, recommending, or providing corrective actions; verifying implementation of corrective actions; stopping unsafe activities; and ensuring compliance with the regulations 902 KAR 100 and compliance with the terms and conditions of the license and commitments contained therein. You are hereby delegated the authority necessary to meet those responsibilities, including prohibiting the use of radioactive material by employees who do not meet the necessary requirements and shutting down operations where justified by radiation safety. You are required to notify management of situations where staff are not cooperating and not addressing radiation safety issues. In addition, you are free to raise issues with the Radiation Health Branch, Frankfort, KY at anytime.

_____

Signature and Title of Management

I, _____ hereby I accept the above delegated authority.
(*print name*)

_____

Signature of the Radiation Safety Officer

MODEL SIGNATURE AUTHORIZATION FORM

(To be submitted on company letter head)

Date: _____ (required)

Memo To: (*write in name & title of person being granted license Signature Authority*) .

(e.g., RSO, EH&S Supervisor, etc.)

From: (*write in name & title of Senior Management official granting authority*)

(e.g. Chief Executive Officer, President, etc.)

Subject: Delegation of Signature Authority for License Number _____

I hereby delegate authority to you for making commitments and signing amendment requests to the Kentucky radioactive materials license for *(write in name and address of license)* on behalf of senior management. As a member of management, I recognize the radioactive materials license is a legal document that includes the application and all approved amendments. Furthermore, only management can obligate the institution and management is held accountable for the commitments in the license. In addition, I acknowledge that only a member of management has authority to provide necessary resources to achieve regulatory compliance. Necessary resources include finance, personnel, and physical plant.

_____

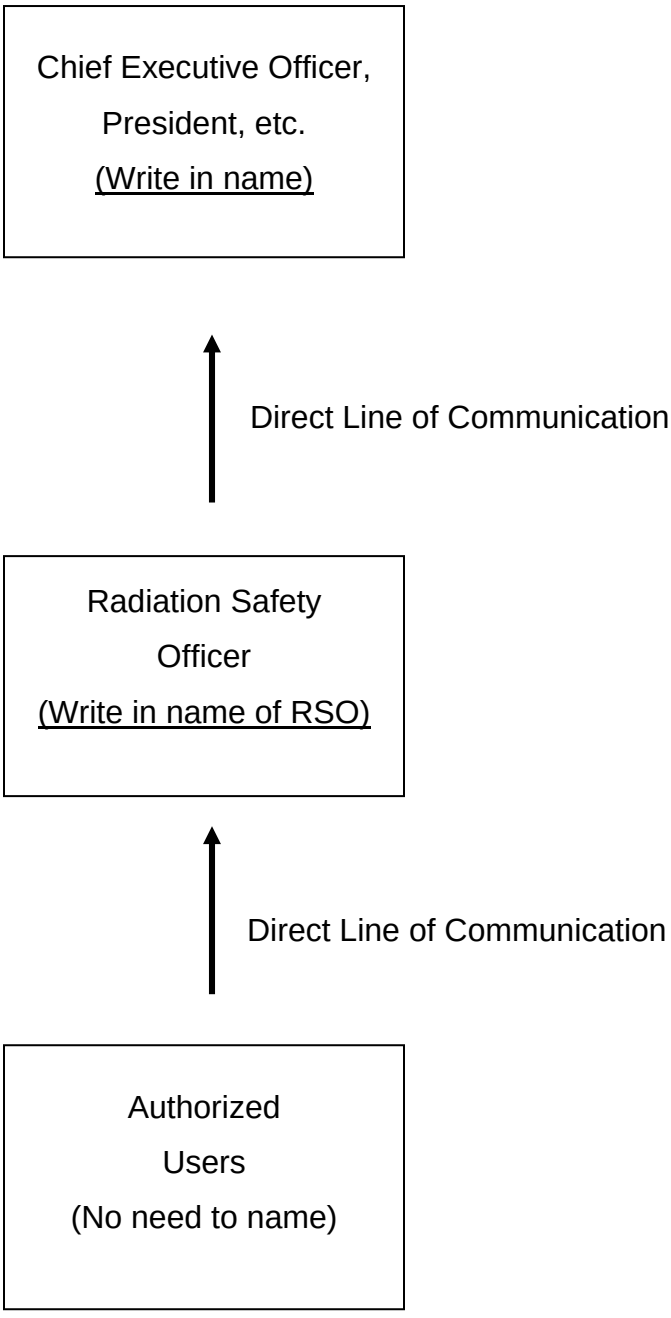
Signature and Title of Management

I, _____ hereby I accept the above delegated authority.
(print name)

_____

Signature of the authorized individual

MODEL ORGANIZATIONAL CHART WITH RESPECT TO THE RSO



Application for a Kentucky Radioactive Materials License
Radiation Health Branch, Department for Public Health
Cabinet for Health and Family Services

RPS-7
6/2011

Completed applications must be filed with Radiation Health Branch, Cabinet for Health and Family Services, 275 East Main Street, Mailstop HS1C-A, Frankfort, KY 40621, Tel: 502-564-3700, Fax: 502-564-1492
Application is for one of the following:

New License[1] Check._____	Amendment in Entirety[1] of License No._____	Amendment to[2, 3] License No._____	Renewal of [2, 3] License No._____

(1) All sections must be completed **(2)** Complete all applicable sections & section 15 **(3)** Amendments & renewals cannot be combined

1. Applicant's Name and Mailing Address	**2. Street address where radioactive material will be used and records maintained (no P.O. Boxes)**
3. Telephone Number	**4. Person to be contacted and listed as contact person**

5. Individual(s) and Title(s) who will use or directly supervise use of radioactive material

6. Radiation Safety Officer (one person)	Training and experience required for each user named in Item 5 and for the RSO in Item 6. For the RSO, duties and responsibilities of the RSO and updated organizational chart are required and if necessary, a Signature Authorization Form.

7. Licensed Material

Element & Mass Number **A**	**Chemical and/or Physical Form** **B**	**Manufacturer Name & Model Number (if sealed source)** **C**	**Maximum activity (millicuries) per sealed source OR maximum activity possessed at any one time** **D**	**Maximum number of sealed source/device combinations possessed at any one time** **E**

Describe use of radioactive material (Should be keyed to material in Subitem A above. For specific make & model of sealed source/device combinations in Subitem E above, state maximum number possessed at any one time)

8. Radiation Detection Instruments

Manufacturer	Model	Number Available	Radiation Detected (alpha, beta, gamma, neutron)	Sensitivity Range

9. a) Calibrated by Service Company (Name, Address, and Frequency)	**b) Calibrated by Applicant** (Attach procedures describing method and standards used)

10. Personal Monitoring Devices

Type	Supplier	Exchange Frequency
☐ (1) Film Badge ☐ (2) TLD ☐ (3) OSLD ☐ (4) Other (specify)		☐ Monthly ☐ Bi-monthly ☐ Quarterly ☐ Other (specify)

11. Facilities and Equipment. Describe the facilities, remote handling equipment, shielding, fume hoods, etc. Attach a sketch of the facility indicating the location of any radioactive materials (i.e. gauges, storage areas, etc).

12. Radiation Protection Program. Describe the radiation protection program as appropriate for the material to be used including the duties and responsibilities of the RSO, control measures, bioassay procedures, day-to-day general safety instruction to be followed, etc. If sealed sources are to be possessed, describe leak test procedures or if kit is used specify the manufacturer, model number of kit and person performing test. If radiation detection instruments are to be calibrated in-house or leak test swipes analyzed, submit detailed procedures and methods.

13. Training and Experience of Users. Submit the formal training of each individual named in Item 5 and 6 indicating the name of persons or institutions providing the training, duration of training, and when training received in the areas of:

A) Principles and practices of radiation protection.
B) Radioactivity measurement standardization and monitoring techniques and instruments.
C) Mathematics and calculations basic to the use and measurement of radioactivity.
D) Biological effects of radiation.

14. Waste Disposal. Describe the methods which will be used for disposing of radioactive waste.

15. Certification. The applicant understands that all statements and representations made in the application are binding upon the applicant.

The applicant and any official executing this certification on behalf of the applicant, named in Item 1, certify that this application is prepared in conformity with Kentucky Cabinet for Health and Family Services Administrative Regulations 902 KAR 100, and that all information contained herein, is true and correct to the best of their knowledge and belief.

Signature of Certifying Management Official	**Type/Printed Name**	**Title**	**Date**

PHYSICAL INVENTORY OF RADIOACTIVE SEALED SUORCES & DEVICES

Facility:_____ **License No.:**_____

Date of Inventory:_____ **RSO (or designee) Signature:**_____

DEVICE MANUFAC-TURER	DEVICE MODEL NO.	DEVICE SERIAL NO.	SOURCE MANUFAC-TURER	SOURCE MODEL NO.	SOURCE SERIAL NO.	SOURCE RADIO-ISOTOPE	SOURCE ACTIVITY (mCi/Ci)	LOCATION OF DEVICE	CONDI-TION OF DEVICE	SHUTTER CHECK (YES / NO)

Note: Listing a device as "In Storage" under condition column identifies a source held in <u>secured</u> storage with no use anticipated prior to transfer/disposal. Devices held in storage beyond the leak test interval must be tested for leakage prior to transfer or transportation.