

SERVICE PROVIDER APPLICATION REVIEW CHECKLIST

Date: _____

CONTENTS OF APPLICATION**ITEM 8.1 TYPE OF APPLICANT/LICENSEE**

| Type of Action | License No. |
|---|----------------|
| <input type="checkbox"/> A. New License | Not Applicable |
| <input type="checkbox"/> B. Amendment | |
| <input type="checkbox"/> C. Renewal | |

ITEM 8.2 NAME OF APPLICANT/LICENSEE

LEGAL NAME: _____

MAILING ADDRESS: _____

ITEM 8.3 LOCATION OF USE Address listed above. Facilities that must be specifically identified on the license (Street Address, City, State, and Zip Code):

F _____

F _____

F _____

 Temporary Job Sites.**ITEM 8.4 CONTACT PERSON**

NAME: _____

TELEPHONE NUMBER: _____

ITEMS 8.5 - 8.6 RADIOACTIVE MATERIAL TO BE POSSESSED/*REQUESTED USE OF MATERIALS

BROAD SCOPE LICENSE AUTHORIZATION

- Type A
- Type B
- Type C

SEALED SOURCES AND DEVICES

- Identify each radionuclide (element name and mass number) that will be used in each sealed source.
- Provide the manufacturer's (distributor's) name and model number for each sealed source and, if applicable, device requested.
- Confirm that the activity per source and maximum activity in each device will not exceed the maximum activity listed on the approved certificate of registration issued by NRC or by an Agreement State.
- Confirm that each sealed source, device, and source/device combination is registered as an approved sealed source or device by NRC or an Agreement State.

UNSEALED MATERIALS (Volatile and Nonvolatile)

- Provide element name with mass number, chemical and/or physical form, and maximum requested possession limit.
- Provide information for *volatile materials*, if known, on the anticipated rate of volatility or dispersion. This information may be obtained from the material vendor, supplier, or manufacturer.

| SEALED SOURCES | | | |
|-----------------------|---|--------------------------------------|------------|
| Radioisotope | Mfg./Model No. SSD Certificate No. | Quantity (Curies/MBq/GBq) | Use |
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UNSEALED MATERIALS

| Radioisotope | Chemical/Physical Form | Quantity (Curies/MBq/GBq) | Use | Volatility/Dispersion |
|--------------|------------------------|------------------------------|-----|-----------------------|
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SOURCE MATERIALS

| Radioisotope | Chemical/Physical Form | Quantity (Curies/MBq/GBq) Kilograms | Use |
|--------------|------------------------|---|-----|
| | | | |
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SPECIAL NUCLEAR MATERIALS (LESS THAN CRITICAL MASS)

| Radioisotope | Chemical/Physical Form | Quantity (Curies/MBq/GBq) | Use |
|--------------|------------------------|------------------------------|-----|
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| | | | |
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MATERIAL USE LEGEND

| | | | |
|---|---------------------------------|---|--|
| L=Leak Test Analysis | E=Environmental Sample Analysis | C=Calibration of radiation protection equipment | NL=Nuclear Laundry |
| CC=Commercial Calibration of radiation protection equipment | CNL=Commercial Nuclear Laundry | CL=Commercial Leak Test Analysis | E=Commercial Environmental Sample Analysis |

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MATERIAL USE LEGEND

Incineration

Compaction/Super
Compaction

Decontamination

Site Characterization

O=Other Services Not Included Excluding Critical Mass Quantities of SNM

PSI=Possession of Sealed Sources Incident to Performing Services

- Installation into devices or equipment
- Radiation Surveys
- Removal
- Relocation
- Repair
- Source Exchange
- Routine Maintenance
- Preventive Maintenance
- Non-routine Maintenance
- Source Retrieval
- Transportation
- Packaging
- Leak Test Same Acquisition
- Customer Training
- Other Services not included,

Other Services Explanation:

CW=Commercial Waste Management Services

- Incineration
- Compaction/Super Compaction
- Solidification/Vitrification
- Packaging, Repackaging, and Transportation
- Decontamination
- Decommissioning
- Site Characterization
- Other Services not included, excluding critical mass quantities of SNM

Other Commercial Services Explanation:

FINANCIAL ASSURANCE

- Financial Assurance not required.
- Financial Assurance required and Financial Assurance Documents submitted for review.
- Decommissioning Records File established.

ITEM 8.7 RESPONSIBLE INDIVIDUALS

Corporate Organization Chart Submitted.

Radiation Safety Organizational Chart Submitted.

Name(s) of responsible individual(s):

- Title(s) of individual(s)
- Training of individual(s)
- Experience.

Radiation Safety Officer Information:

| | | | |
|--|-------------------------------------|--|--|
| <input type="checkbox"/> Name | <input type="checkbox"/> Experience | <input type="checkbox"/> Training – Include specific dates | <input type="checkbox"/> Independent Authority to stop unsafe operations |
| <input type="checkbox"/> Organizational Chart (Day-to-Day Radiation Safety Positions) provided | | | |
| <input type="checkbox"/> See Item 8.7.1 for a list of typical RSO duties and responsibilities | | | |

AUTHORIZED USERS/ANCILLARY PERSONNEL

- Classroom training:
 - Lecture
 - Videotape
 - Self-study that emphasizes practical subject matter important to the safe handling of licensed materials
 - All types of training commensurate with the expected hazards encountered during routine and emergency conditions.
- Frequency of Training:
 - Before assuming duties with, or in the vicinity of, radioactive materials
 - Whenever there is a significant change in duties, regulations, or the terms and conditions of the license
 - Annually for refresher training.

- Suggested Radiation Safety Topics:
 - Fundamentals of Radiation Safety:
 - Characteristics of radiation
 - Units of radiation dose and quantity of radioactivity
 - Hazards of exposure to radiation
 - Levels of radiation from licensed material
 - Methods of controlling radiation dose (time, distance, and shielding)
 - ALARA concept.
 - Radiation Detection Instruments:
 - Operation
 - Calibration
 - Limitations of radiation survey instruments
 - Radiation survey techniques for measuring radiation field
 - Radiation survey techniques for measuring removable/fixed contamination
 - Handling and proper use of personnel monitoring equipment.
 - Radiation Protection Equipment and Use:
 - Proper use of protective equipment
 - Decontamination of contaminated protection equipment.
 - Applicable NRC regulations (10 CFR 19, 20, 21, 31, 32, 34, 35, 36, 39, 40, 70, and 71) as applicable
 - Case histories relevant to operations
 - Course Examination (Didactic):
 - Successful completion of closed-book written/oral examination depending on the complexity and hazards of authorized activities
 - Review of incorrect answers with student.
 - On-the Job Training and Examination (Practical):
 - On-the-job training done under the supervision of a qualified individual (AU, RSO, or manufacturer's representative authorized by NRC or an Agreement State) that includes supervised hands-on experience

performing the task authorized on the license that are commensurate with the expected hazards during routine and emergency conditions.

- Practical examination consisting of an assessment by the RSO to ensure that each proposed AU is qualified to work independently and that each individual is knowledgeable of the radiation safety aspects of licensed activities. This may be demonstrated by observing the proposed AU perform licensed activities.
- Discussion and/or drill on emergency procedures
- Retraining on areas found to be deficient in both the practical and didactic areas.
- Classroom Course Instructor Qualifications:
 - Qualified individual (e.g., a person who meets the qualifications for RSO or authorized user on the license and is familiar with the licensee's program).
 - Instructors who provide classroom training to individuals in the principles of radiation and radiation safety should have knowledge and understanding of these principles beyond those obtainable in a course similar to the one given to prospective authorized users.
 - Individuals who provide instruction in the hands-on use of licensed materials should have training and experience that would qualify them to be authorized users, or should possess a thorough understanding of the licensee operations.

ITEM 8.8 TRAINING FOR INDIVIDUALS WORKING IN OR FREQUENTING RESTRICTED AREAS

- See Item 8.7 for suggested topics, frequency of training, etc.
- Elements of training program identified.

ITEM 8.9 FACILITIES AND EQUIPMENT

Commercial Leak Test or Environmental Sample Analysis. (*No response required*)

Commercial Instrument Calibration. (*No response required*)

Services Involving Handling of Sealed Sources Inside Shielded Containers. (*No response required*)

Services Involving Handling of Sealed Sources Outside Shielded Containers

- Sketch/drawing *to scale* of the facility and all work areas where materials will be used or stored.
- Identify the following, where applicable:
 - Areas where explosive, flammable or other hazardous materials stored
 - Buildings
 - Boundary lines
 - Security fences
 - Local storage areas
 - Drawn to specified scale
 - Sketch/drawing of:
 - locked storage container
 - security of licensed materials.

Other services that involve handling of unsealed radioactive material:

- Describe the permanent facilities and equipment to be made available at each location.
- Include a description of the area(s) assigned for the receipt, storage, security, preparation, handling, waste storage and measurement of radioactive materials.
- Submit a facility diagram showing the proximity of licensed materials to unrestricted areas.
- Drawings, sketches, diagrams, etc. should indicate the scale, or include dimensions on each drawing or sketch.
- Submit a diagram, sketch, or drawing, when applicable, that identifies areas where radioactive materials may become airborne. The diagram should contain descriptions of the ventilation systems, with pertinent airflow rates, filtration equipment, sample collection points, and monitoring systems.
- Submit a diagram of radioactive waste handling equipment that includes incinerators.
- Describe proposed laundry facilities, if applicable, used for contaminated protective equipment and clothing. Specify how the contaminated waste water from the laundry machines or sinks is disposed. Operating and emergency procedures should address decontamination of the laundry area and equipment.

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- Describe protective clothing (such as rubber gloves, coveralls, respirators, and face shields), auxiliary shielding, absorbent materials, secondary containers for waste water storage for decontamination purposes, plastic bags for storing contaminated items, etc., that will be available.
- Identify specialized handling tools, facility safety interlocks designed to prevent operation of radiological safety systems in the event that operation of a system could result in accidental exposure or release of material (e.g., HEPA filters, ventilation system, safety door interlocks, etc.) or equipment.

Facility: For Authorization for Unsealed Materials Other than Leak Test or Environmental Sample Analysis, Provide:

- Describe, if applicable:
 - Hoods
 - Hood filters
 - Sinks
 - Trays with absorbent materials
 - Remote handling tools
 - Rubber gloves.
- Storage provisions:
 - Describe and provide a drawing of storage facilities
 - Storage of waste materials included
 - Security provisions
 - Adequate shielding.
- Noncommercial Laundry Facility for contaminated clothing, etc.
- Noncommercial Decontamination Facilities.

Temporary Job Site Facility:

- Sealed Sources General:
 - No facility description is required
 - Specialized handling tools or equipment.

- Unsealed Material:
 - Describe protective clothing (such as rubber gloves, coveralls, respirators, and face shields), auxiliary shielding, absorbent materials, secondary containers for waste water storage for decontamination purposes, plastic bags for storing contaminated items, etc., that will be available.
 - Describe available radiation safety equipment.

ITEM 8.10 RADIATION SAFETY PROGRAM

ITEM 8.10.1 AUDIT PROGRAM

- Reviewed on an annual basis:
 - ALARA
 - NRC/DOT regulations and License
 - Occupational/Public Doses.
- Audit program *not submitted*, but available for inspection by NRC.
- Appendix I reviewed.

ITEM 8.10.2 RADIATION MONITORING INSTRUMENTS

- Type of instruments (GM, Ion chamber, scintillation).
- Type of radiation detected (a, β , γ , neutron).
- Availability of survey instruments.

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| | | | |
|--|--|---|--|
| <p>Survey Instrument</p> <ul style="list-style-type: none"> • Manufacturer • Model No. • # Available • Type <ul style="list-style-type: none"> – GMI on-chamber – Scintillation | <p>Instrument Probes</p> <ul style="list-style-type: none"> • Model No. | <p>Range</p> <ul style="list-style-type: none"> • CPM • DPM • mR/hr • mr/hr | <p>Radiation Detected</p> <ul style="list-style-type: none"> • a • β • ? • neutron |
| <p>Counting Equipment For:</p> <ul style="list-style-type: none"> • Analysis of Contamination Swipes • Analysis of Bioassay Samples | | <p>Calibration Standards</p> | <p>Minimum Detectable Activity</p> |
| <p>Special Equipment</p> <ul style="list-style-type: none"> • Air Samplers • Direct Reading Dosimeters • Condenser R meter | | <p># Available</p> | <p>Description</p> |

CALIBRATION OF RADIATION DETECTION INSTRUMENTS

Calibration frequency specified.

In-house.

By manufacturer.

By outside firm:

Name _____

License No. _____

Calibration procedures in Appendix J adopted.

Alternative calibration procedures for radiation detection instruments provided for NRC review.

ITEM 8.10.3 MATERIAL RECEIPT AND ACCOUNTABILITY PHYSICAL INVENTORY

- Semiannual frequency.
- Maintain records or receipt, transfer, and disposal.
- Information:
 - Quantity and kind of licensed material (Sealed Sources)
 - Location of licensed material
 - Date of inventory
 - Name of individual conducting inventory
 - Inventory records for sealed sources may be combined with leak test records.
- Appendix K - Ordering/Receiving Materials Reviewed.

ITEM 8.10.4 OCCUPATIONAL DOSE

- Evaluation Completed for occupationally exposed individuals.
- Dosimetry:
 - TLD
 - Film
 - OSL
 - Neutron capability
 - NVLAP-approved
 - Exchange frequency:
 - ◇ Monthly
 - ◇ Quarterly
 - ◇ Other _____

BIOASSAYS

- Procedures in RG 8.20, Rev. 1, adopted for conducting bioassays.
- Alternate Procedure to RG 8.20, Rev. 1, provided for conducting bioassays.

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- Commercial Service:
 - Name _____
 - License No. _____

ITEM 8.10.5 PUBLIC DOSE

- No response required.
- Dose evaluation maintained for inspection.
- Appendix M reviewed.

ITEM 8.10.6 SAFE USE OF RADIONUCLIDES AND EMERGENCY PROCEDURES

- 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.
- 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 personnel monitoring, including bioassays, and the use of personnel monitoring equipment.

- Procedures for transporting licensed materials to temporary job sites, packaging of licensed materials for transport in vehicles (private or common carrier), 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.
- 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 that describes the typical incident notifications required by NRC regulations.
- Procedures for the implementation and adherence to good health physics practices while performing service operations:
 - 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.
- Service Provider Requesting Authorization to Perform Major Decontamination Activities:

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- Instructions to personnel how to determine presence through survey
- Levels of contamination
- Decontamination procedures
- Decontamination equipment
- Prevention of contamination of personnel during decontamination
- How to handle contaminated waste materials
- Re-survey of contaminated area to determine effectiveness
- Records of survey:
 - Before
 - After
- Contact person.
- Decontamination activities will only be conducted by outside sources licensed by NRC or an Agreement State to conduct these activities.

ITEM 8.10.7 SURVEYS

- Facilities.
- Equipment.
- Personnel.
- Restricted Areas.
- Unrestricted Areas.
- Types of Surveys:
 - Surveys for radioactive contamination that could be present on surfaces of floors, walls, laboratory furniture, and equipment.
 - Measurements of radioactive material concentrations in air for areas where radioactive materials are handled or processed in unsealed form and where operations could expose workers to the inhalation of radioactive material or where licensed material is or could be released to unrestricted area.
 - Measurements of radioactive material concentrations in water that is released to the environment or to the sanitary sewer.
 - Bioassays to determine the kinds, quantities or concentration, and in some cases, the location of radioactive material in the human body. A bioassay

can be made by direct measurement (in vivo counting) or by analysis and evaluation of material excreted or removed from the human body.

- Surveys of external radiation exposure levels in both restricted and unrestricted areas.
- Contamination Survey Frequency:
 - Table 8.5 adopted
 - Alternate contamination survey frequencies provided.
- Contamination in Unrestricted Area:
 - Table 8.6 adopted
 - Alternate contamination survey frequencies provided.
- Survey Record Requirements:
 - A diagram of the area surveyed
 - A list of items and equipment surveyed
 - Specific locations on the survey diagram where wipe test was taken
 - Ambient radiation levels with appropriate units
 - Contamination levels with appropriate units
 - Make and model number of instruments used
 - Background levels
 - Name of the person making the evaluation and recording the results and date.
- Air Monitoring:
 - Determine whether the confinement of radioactive materials is effective
 - Measure airborne radioactive material concentrations in the workplace
 - Estimate worker intakes of radioactive material
 - Determine posting requirements
 - Determine what protective equipment and measures are appropriate
 - Warn of significantly elevated levels of airborne radioactive materials.
- Effluent Release Monitoring:
 - Airborne
 - Liquid (See Appendix N).

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ITEM 8.10.8 LEAK TESTING

Vendor(s) Name: _____

Address: _____

Agreement State/NRC License No.: _____

- Leak test kit.
- Leak testing conducted in-house using Appendix O procedures.
- Alternative leak testing procedures submitted for NRC review.

ITEM 8.10.9 MAINTENANCE

- Are specifically authorized by your license to perform the specific activity.
- Follow the manufacturer's procedures describing the activity.
- Have individuals qualified by their training and experience to perform the activity.
- Use approved parts and components.
- Have specialized equipment to perform these activities.
- Test the device before it is returned to routine use to ensure that it functions as designed.
- Test the device before it is returned to routine use to ensure that it functions as designed.
- See Appendix P.

REMOVAL OR MAINTENANCE ON A SEALED SOURCE OR HOLDER

- Services performed by manufacturer.
- Performed by individual licensed by Agreement State or NRC.
- Performed by licensee.
- Detailed procedures for each task provided for NRC review. Radiation safety precautions outlined in O&E procedures.

SEALED SOURCES STUCK IN A SOURCE HOLDER

- Performed by licensed equipment manufacturer.

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- Performed by individual licensed by Agreement State or NRC.

- Performed by licensee:
 - Detailed procedures for each task provided for NRC review
 - Radiation safety precautions outlined in O&E procedures.

OPENING, REPAIR, OR MODIFICATION OF SEALED SOURCES

- Performed by Agreement State/NRC licensed firm.
- Performed by licensee:
 - Detailed procedures for each task provided for NRC review
 - Radiation safety precautions outlined in O&E procedures.

ITEM 8.10.10 MINIMIZATION OF CONTAMINATION

- Implementation of and adherence to good health physics practices in operations.
- Minimization of areas, to the extent practicable, where licensed materials are used and stored.
- Maximization of the frequency of surveys, within reason, to minimize spread of contamination.
- Appropriate filtration of effluent streams.
- Use of non-porous materials for laboratory bench tops, flooring, etc.
- Ventilation stacks and duct work with minimal lengths and minimal abrupt changes in direction.
- Use of appropriate plumbing materials with minimal pipe lengths and traps.
- Minimization of the number of disposal sites (sinks) where liquid waste is disposed.

ITEM 8.10.11 TRANSPORTATION

- No response required, DOT regulations will be followed.
- Appendix Q reviewed.

ITEM 8.11 WASTE MANAGEMENT [10 CFR Part 20, Subpart K]

- Decay-in-storage disposal for radioactive materials with half-lives less than or equal to 120 days:
 - When a container is transferred to the waste storage area, mark the container with an identification label that includes the date sealed, the isotope in the container, and the initials of the person sealing the container
 - <120 day T_{1/2} material
 - Held for decay a minimum of 10 T_{1/2}
 - Confirm that prior to disposal as in-house waste, you will monitor each container, as follows:
 - Check radiation detection survey meter for proper operation
 - Monitor container in a low-level area (less than 0.05mrem/hr)
 - Remove any shielding from container
 - Monitor all surfaces
 - Discard only those containers that cannot be distinguished from background
 - Container that can be distinguished from background must be returned to storage area for further decay or transferred to person licensed to receive such waste.
- Return to manufacturer.
- Extended Interim Storage of materials pending disposal or transfer to authorized recipient.
- Licensed company.
- Disposal by release into sanitary sewerage (10 CFR 20.2003).
- Appendix N reviewed.

ITEM 8.12 FEES

- Fee, if any required, attached.

ITEM 8.13 CERTIFICATION

- Individual signing an application authorized to make binding commitments and to sign official documents on behalf of the legal entity or applicant.