5350 N. 13th Street
Terre Haute, IN 47805
(812) 466-5478

October 26, 2015

Kevin G. Null - Sr. Health Physicist
U.S. NRC Region III
2443 Warrenville Road
Suite 210
Lisle, Illinois 60532-4352

SUBJECT: Materials License 13-32049-01 Amendment Request, Docket # 030-34598, Control Number 588180.
Your letter dated September 30, 2015

Dear Mr. Null;

Here is the response to your subject letter. I have listed each of your concerns as stated and provided a response for each item. Supporting documents are provided where necessary.

IRSC, Inc. is our consultant and its personnel are authorized to discuss this application and other aspects of our radiation protection program with you on our behalf.

Should you have any questions or need further information, feel free to contact me at 812.466.5478 or send email to john.young@aisgauging.com.

Sincerely,

Industrial Maintenance Engineering, Inc.
AIS Gauging

John B. Young, Jr.
President/RSO

RECEIVED NOV 04 2015

1. Proposed Research and Development

a, Confirm that sources will not be opened or compromised in any way during handing, or while they are being used as authorized on the license.

AIS Response: AIS Gauging confirms that sources will not be opened or compromised in any way during handling or while they are being used as authorized on the license.

b. Since you will be handling sources with tools when removing them from storage, inserting them into source holders, removing them from source holders, and placing them back into storage, we recommend that you conduct a leak check at a frequency that exceeds what is recommended in the sealed source and device registry. For example, in the interest of safety, a leak test should be performed each time after the sources are placed in the source holder, and then each time after they are removed from source holders before they are placed back into storage in order to verify that their integrity has not been compromised.

AIS Response: A leak test shall be performed on the source each time after the sources are placed in the source holder, and then each time after they are removed from source holders before they are placed back into storage in order to verify that their integrity has not been compromised. Sources containing only Kr-85 need not be leak tested as prescribed herein.

c. In order to effectively assess the extremity dose to workers who will be handling the sources, please commit to assigning extremity dosimeters for both hands to all individuals who will be handling a sealed source.

AIS Response: AIS Gauging commits to assigning extremity dosimeters for both hands to all individuals who will be handling sealed sources.

d. Develop and submit detailed procedures that handlers will implement when sources are removed from shielded containers, placed in and removed from source holders, and placed back into their shielded containers. Include all radiation safety equipment that will be used during this process.

AIS Response: See instruction titled "RSI-1001 Handling Sealed Sources".

e. Develop and submit a procedure for dealing with a source that has been identified to be leaking. The procedure needs to be comprehensive in that it needs to address not only identifying the source that is leaking and provisions for securing it and preventing the spread of contamination, but also the need to evaluate facilities, equipment, and staff for contamination, etc. Include radiation safety related equipment and protective clothing that will be used by staff.

AIS Response: See instruction titled "RSI-1002 Emergency Procedures".

f. In the event that a sealed source is breached during the handling and manipulating of sources while conducting R&D activities, you must be able to assess the potential intake of a radionuclide and/or skin dose, as applicable. Therefore, please develop and submit a bioassay program.

AIS Response: See instruction titled "RSI-1003 Bioassay Procedure"

g. The use of remote handling tools is essential in utilizing distance to keep exposure ALARA. Please describe the size and length of the handling tools that will be used.

AIS Response: Stainless steel flask tongs with cork lined jaws. Fits flasks of any shape from 100-2000ml. The overall length is 30cm.

h. Please confirm that only Mr. Young and Mr. Wrightsman will be handling the sealed sources. If individuals other than these two will be handling sources, you must specify whether or not this will be done under direct supervision of Mr. Young or Mr. Wrightsman, and describe the training that these individuals will receive.

AIS Response: AIS Gauging commits that only Mr. Young and Mr. Wrightsman will be handling sealed sources. Other individuals may do so but only under direct supervision of Mr. Young or Mr. Wrightsman, and only after they have received the training prescribed in the AIS Gauging Radiation Safety Manual Appendix B.

i. References to a radiation safety manual were made in your application. Please submit a copy of the manual for our review and incorporation into the license.

AIS Response: The AIS Gauging Radiation Safety Manual is included with this response.

j. Information in Tabs H through Z of your application was missing. Please submit this information for our review.

AIS Response: There was nothing missing. We simply did not remove the tabs from the set.

k. Submit a description of the radiation safety training program, including topics covered, groups of workers, assessment of training, qualifications of instructors, and the method and frequency of training for individuals (occupational workers and ancillary staff) working in or frequenting restricted areas.

AIS Response: See the Radiation Safety Manual, Appendix B for training requirements.

l. Develop and submit procedures for material receipt and accountability. Commit to conducting a physical inventory at intervals not to exceed 6 months, to account for all sealed sources received and possessed under the license.

AIS Response: See section 9 of the Radiation Safety Manual

m. Develop and submit a program for managing radioactive waste. Reference Appendix T to NUREG-1556, volume 7 for an acceptable procedure.

AIS Response: See section 19 of the Radiation Safety Manual

n. Submit a detailed description of the practical experience/training that Mr. Young and Mr. Wrightsman received in handling sealed sources.

AIS Response:

John Young has been in the service business since 1998 and has received extensive training and experience providing all services except for handling and replacing sealed sources. John has been providing Glenn's training for servicing these devices except for handling and replacing sealed sources.

Sean Chapel and Doug Beek of IRSC provided practical, hands-on training in handling and using sealed sources at AIS facility using a dummy source. We have already submitted training and experience information in past updates to this amendment request.

See John and Glenn's training and experience documents included with this submission.

2. Non-routine maintenance of gauges

a. Provide a comprehensive list of all non-routine services that you will provide to your clients. Confirm that these services will be limited to the devices identified in your service manuals.

AIS Response:

Services listed are included in the Device Servicing manual and is specific for each device. Not all services will be provided for every device listed and the service to be provided to each device is shown in the specific device service instruction. However, the following list is inclusive of the proposed services:

- Installation and relocation
- Device inspection – proper operation of the shutter mechanism and indicators, proper labels
- Device leak testing
- Replace device windows
- Repair sticking shutters
- Replace shutter actuator (solenoid)
- Replace indicator lamps
- Replace indicator light switch inside housing
- Replace sealed source (only persons specifically authorized shall handle the sealed source)

b. Individuals authorized to performed non-routine maintenance will be listed on your license. Therefore, please provide a list of individuals who you would like to be listed on the license and for each person, describe the services that they will be performing. Also, for each service that they will perform, describe the training that they have received in performing each service.

AIS Response:

Only John Young and Glenn Wrightsman will be providing non-routine maintenance at this time. If we decide to add others in the future, we will provide the proper training and add them to the license before being allowed to do so.

Services they will be performing include:

- Installation and relocation
- Device inspection – proper operation of the shutter mechanism and indicators, proper labels

- Device leak testing
- Replace device windows
- Repair sticking shutters
- Replace shutter actuator (solenoid)
- Replace indicator lamps
- Replace indicator light switch inside housing
- Replace sealed source (only persons specifically authorized shall handle the sealed source)

John Young has been in the service business since 1998 and has received extensive training and experience providing all services except for handling and replacing sealed sources. John has been providing Glenn's training for servicing these devices excerpt for handling and replacing sealed sources.

Sean Chapel and Doug Beek of IRSC provided practical, hands-on training in handling and using sealed sources at AIS facility using a dummy source. We have already submitted training and experience information in past updates to this amendment request.

See John and Glenn's training and experience documents included with this submission.

c. Describe any services on devices that will be performed involving the electronics which could impact radiological safety of the devices such as shutter mechanisms, shutter controls, shielding, source movement mechanisms, etc.

AIS Response: The following services on the devices could impact radiological safety. However, AIS practices ALARA in all of its device activities.

- Replace shutter actuator (solenoid)
- Replace indicator light switch inside housing
- Replace sealed source (only persons specifically authorized shall handle the sealed source)

d. In your application you stated that parts or materials other than those specified by the gauge manufacturer may be used if they have been evaluated to ensure that they will not degrade the engineering safety analysis. Describe how and by whom these evaluations will be conducted, and describe how you will assess an evaluation in order to assure that it was effective and accurate.

AIS Response: Manufacture's specifications must meet or exceed the original specifications.

e. Describe the content of the initial and annual refresher training in item 8 of service manual volume 1 of your application. Confirm that this training is separate and independent of specific device training.

AIS Response: See the Radiation Safety Manual, Appendix B for training requirements. This training is separate and independent of specific device training.

f. Submit the make and model numbers, and radiation detected for all survey meters that will be available for, and used by authorized users who will be servicing gauges.

AIS Response: The following survey meters will be available and used by authorized users who will be servicing gauges:

- Bicron Model RSO 50 E. Radiation detected: Beta, gamma, x-ray
- Model 3 with 44-7 Probe. Radiation detected: Alpha, Beta, Gamma

DOCUMENT REVISION RECORD

Rev.	Description	Date	Approved by
1	Initial release	10/10/2015	John Young

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1. PURPOSE & SCOPE

The purpose of this instruction is provide guidance in the handing and transfer of a sealed source from its protective shielding, lead pig, to a gauging device and from a gauging device to the lead pig.

This instruction applies only to the devices authorized by AIS Gauging's materials licenses. AIS Gauging's personnel shall not provide any type of services to any devices not appearing in the company's NRC license. When in doubt, call AIS Gauging's Radiation Safety Officer (RSO).

Ensure you read the entire instruction before stating any related work. If you have any questions, see the RSO.

2. RELATED DOCUMENTS

AIS Gauging Radiation Safety Manual.

3. TRAINING

Only persons trained in this instruction and in handling and using sealed sources shall be authorized to handle or use sealed sources.

4. EQUIPMENT

Ensure you have the correct tools and measuring equipment on hand before stating the process.

- Tools required to disassemble or assemble the device.
- Plexiglas shield to work behind.
- Lead pig for source capsule
- Capsule handling tongs
- Personal Protective Equipment (PPE)
    - Disposable latex gloves
    - Lead gloves
    - Lead apron
    - Face shield or safety glasses
    - Long sleeve shirt or shop coat
- Dosimeters, whole body and fingers
- Survey meter
- Leak test kits

- Smears for area wipe test

5. PRECAUTIONS

1. Sealed sources shall only be removed from the lead pig or devoce in the source room.
2. Only authorized users are allowed in the source room and shall wear the proper PPE when sources are being handled.
3. Keep the device and source capsule windows pointed away from you or anyone else at all times.
4. Never look directly at the capsule window. If, for some reason, you need to examine the source capsule window, use a mirror.
5. Use the form at the end of this instruction to document survey, leak test and area wipe results.

6. LOADING THE SOURCE INTO A DEVICE

6.1 Task preparation

Before you take the lead pig containing the source from the source storage cabinet:

1. Set everything you need on the work surface.
2. Disassemble as much of the device that you need to in order to install the source capsule.
3. Place the tools you will need to transfer the source from the pig and assemble the device within easy reach.
4. Place the survey meter as close to your body as possible so you can monitor exposure.
5. Don your PPE. Remember;
   - 5.1 When you wear a lead apron, the whole body dosimeter is worn at the collar
   - 5.2 Dosimeter rings are worn under the gloves

6.2 Transfer the source to the device

1. Remove the source pig from the storage cabinet and place it as close to the work where you will be able to easily and quickly transfer the source capsule to the source holder.
2. As quickly as possible, open the source pig and, using the handling tongs, transfer the source from the pig to the device.
3. Collect a leak test from the capsule for analysis.
4. Assemble the source holder.
5. Collect a contamination wipe of the immediate work surface to ensure the work surface is not contaminated.

6. Before releasing the device for use and work surface for use, have the leak test swab and area wipes analyzed to ensure the capsule is not leaking.

If there is a positive leak test or area wipe do not release the device or work surface for use. Isolate the area, equipment and/or device and contact the RSO. Follow the instructions in the Emergency Procedures instruction.

7. LOADING THE SOURCE INTO A DEVICE

Sealed sources shall only be removed from the lead pig or source housing in the source room.

Only authorized users are allowed in the source room and shall wear the proper PPE when sources are being handled.

7.1 Task preparation

Before you take the sealed source from the device:

1. Set everything you need on the work surface including tools and lead pig.
2. Place the tools you will need to disassemble the device within easy reach.
3. Place the source handling tongs in easy reach.
4. Place the lead pig so you can quickly and easily transfer the sealed source from the device to the lead pig.
5. Remove the lead pig cover and set it next to the lead pig.
6. Place the survey meter as close to your body as possible so you can monitor exposure.
5. Don your PPE. Remember;
   - 5.1 When you wear a lead apron, the whole body dosimeter is worn at the collar
   - 5.2 Dosimeter rings are worn under the gloves

7.2 Disassemble the Device and Transfer the source to the lead pig

1. Disassemble the device to the point where you can easily open the source holder to access the capsule.
2. When ready, open the source holder and, using the handling tongs, remove the source from the holder and quickly but carefully transfer the capsule from the source holder to the lead pig.
3. Collect a leak test from the capsule for analysis and cap the pig.
4. Secure the top to the lead pig.
5. Collect a leak test from the source holder of the device.

6. Collect a contamination wipe of the immediate work surface to ensure the work surface is not contaminated.

7. Before releasing the device for use and work surface for use, have the leak test swab and area wipes analyzed to ensure the capsule is not leaking.

If there is a positive leak test or area wipe do not release the device or work surface for use. Isolate the area, equipment and/or device and contact the RSO. Follow the instructions in the Emergency Procedures instruction.

Leak Test and Area Wipe Results Form

Source/Device S/N: _____

Collected by: _____

Analyzed by: _____

Date: _____

Reason for leak test or area wipe: _____

Wipe or leak test number	Collected from	Survey results	Leak/wipe test results

AREA MAP

DOCUMENT REVISION RECORD

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1	Initial release	10/22/2015	John Young

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1. GENERAL

The name and telephone number of RSO and assistant RSO and this instruction shall be conspicuously posted, at minimum, in the R&D lab and the source storage room. A copy of this instruction shall be provided to all users of sealed sources and devices containing sealed sources.

Only the RSO or authorized users shall carryout this instruction.

The Area Wipe and Survey form located in the Radiation Safety Manual shall be used for documenting the results of surveys and leak test and area wipe analysis as they relate to this instruction.

Reports to the NRC or other relevant agencies shall be in accordance with the reporting requirements of the Radiation Safety Manual.

2. DECONTAMINATION KIT

A decontamination kit shall be maintained by the RSO and shall include:

Qty	Item
1	Steel drum, 15 gallon
1	Box of 100 large disposable gloves
2	Tyvek coveralls (1 large, 1 x-large) with hood
10	Pair Tyvek shoe covers
2	Half face Respirators
1	Step off pad
4	Quart bottles of decontamination liquid such as Decon 90
20	Large, 4 mil Polyethylene bags, 23"x10"x40"
1	Sponge mop
1	Scrub brush

1	5 Gal Plastic Pail
4	Rolls absorbent paper towels
2	Permanent marking pen
2	Box of 500 Decon cloth swipes
1	Nip-tongs, 12 inch
2	Roll of 2" masking tape
1	Roll "Radioactive Material" labeling tape or labels
20	Pre-strung "Radioactive Material" labeling tags
1	Rope, ¼ to ½ in, 100 feet
2	Instructions for "Emergency Procedures"
1	Clipboard with a copy of the Area Wipe & Survey Form from the Radiation Safety Manual
5	Pencils
2	Pads of lined paper
1*	Survey meter with GM probe including batteries (for survey meter).

* The survey meter need not be stored in the decontamination kit but must be available in the immediate area when handling sealed sources.

3. SOURCES OR DEVICES FOUND TO BE LEAKING

2.1 Identifying a Leaking Sealed Source

Through the practice of leak testing and wipe testing during handling of sealed sources and the fact that the sealed source or device containing the sealed source remains on the work surface until after the swab and wipes have been analyzed, it should be relatively easy to identify which source is leaking. Once a leak test is found to be positive, then

2.2 Contamination

Here we will use the term spill to mean contamination from a leaking source.

2.2.1 Instructions to Workers:

- Clear the area. If appropriate, survey all persons not involved in the contamination and vacate the room.
- Prevent the spread of contamination by covering the spill with absorbent paper (paper should be dampened if solids are spilled) but do not attempt to clean it up. To prevent the spread of contamination, limit the movement of all personnel who may be contaminated.
- Shield the source only if it can be done without further contamination or significant increase in radiation exposure.
- Close the room and lock or otherwise secure the area to prevent entry. Post the room with a sign to warn anyone trying to enter that contamination of radioactive material has occurred.
- Notify the RSO immediately.
- Do not allow the suspect personnel to wander about the facility. Keep such persons confined to the immediate area but not so they receive additional dose from the source or device.
- Survey all personnel who could possibly have been contaminated. Decontaminate personnel by removing contaminated clothing and flushing contaminated skin with lukewarm water and then washing with a mild soap.
- During personnel decontamination activities, ensure run off liquids are collected in buckets or tubs. Ensure contaminated clothing and towels used for decontamination are collected in buckets or tubs.
- Allow no one to return to work in the area unless approved by the RSO.
- Cooperate with RSO/RSO staff (e.g., investigation of root cause, provision of requested bioassay samples).

- Follow the instructions of the RSO/RSO staff (e.g., decontamination techniques, surveys, provision of bioassay samples, requested documentation).

2.2.2 Reminders to RSO:

- Confirm decontamination of personnel. If decontamination of personnel was not fully successful, consider inducing perspiration by covering the area with plastic. Then wash the contaminated area again to remove any contamination that was released by the perspiration.
- Have the contaminated persons sent for bioassay.
- Supervise decontamination activities of equipment and facility and document the results. Documentation should include location of surveys and decontamination results.
- Conduct a survey of the facility where contaminated persons may have traveled. Collect and analyze area wipes.
- Determine cause and needed corrective actions; consider need for bioassays if licensed material may have been ingested.
- If necessary, notify NRC.

4. MINOR FIRES

3.1 Instructions to workers:

- Immediately attempt to put out the fire by approved methods (i.e., fire extinguisher) if other fire hazards or radiation hazards are not present.
- Notify all persons present to vacate the area and have one individual immediately call the RSO and fire department.
- Once the fire is out, isolate the area to prevent the spread of possible contamination.
- Survey all persons involved in combating the fire for possible contamination.
- Decontaminate personnel by removing contaminated clothing and flushing contaminated skin with lukewarm water, then washing with a mild soap.
- In consultation with the RSO, determine a plan of decontamination and the types of protective devices and survey equipment that will be necessary to decontaminate the area.
- Allow no one to return to work in the area unless approved by the RSO.
- Cooperate with RSO/RSO staff (e.g., investigation of root cause, provision of requested bioassay samples).
- Follow the instructions of the RSO/RSO staff (e.g., decontamination techniques, surveys, provision of bioassay samples, requested documentation).

3.2 Reminders to RSO:

- Supervise decontamination activities.
- If decontamination of personnel was not fully successful, consider inducing perspiration by
- covering the area with plastic. Then wash the affected area again to remove any
- contamination that was released by the perspiration.
- Consult with fire safety officials to assure that there are no other possibilities of another fire starting.
- Determine cause and needed corrective actions; consider need for bioassays if licensed material may have been ingested.
- Document incident.
- If necessary, notify NRC.

5. FIRES, EXPLOSIONS OR MAJOR EMERGENCIES

4.1 Instructions to Workers:

- Notify all persons in the area to leave immediately.
- Notify the fire department.
- Notify the RSO and other facility safety personnel.
- Upon arrival of firefighters, inform them where radioactive materials are stored or where radioisotopes were being used; inform them of the present location of the licensed material and the best possible entrance route to the radiation area, as well as any precautions to avoid exposure or risk of creating radioactive contamination by use of high pressure water, etc.
- Cooperate with RSO/RSO staff (e.g., investigation of root cause, provision of requested bioassay samples).
- Allow no one to return to work in the area unless approved by the RSO.
- Follow the instructions of the RSO/RSO staff (e.g., decontamination techniques, surveys, provision of bioassay samples, requested documentation).

4.2 Reminders to RSO:

- Coordinate activities with facility's industrial hygienist or environmental health & safety office, and with local fire department.
- Consult with the firefighting personnel and set up a controlled area where the firefighters can be surveyed for contamination of their protective clothing and equipment after the fire is extinguished.
- Once the fire is extinguished, do not allow the firefighters to enter the radiation area until a thorough evaluation and survey are performed to determine the extent of the damage to the licensed material use and storage areas.
- Perform thorough contamination surveys of the firefighters and their equipment before they leave the controlled area and decontaminate, if necessary.
- Supervise decontamination activities.
- Consider bioassays if licensed material may have been ingested. Document incident.
- If necessary, notify NRC.

DOCUMENT REVISION RECORD

Rev.	Description	Date	Approved by
1	Initial release	10/21/2015	John Young

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1. GENERAL

Authorized users are required to complete a baseline bioassay before they can handle and use sealed sources. This is to identify any long lived radioactive isotopes that may be present in the body that would interfere with results of any post contamination assay that would be required should that person be contaminated in the unlikely event of a sealed source breach.

2. RELATED DOCUMENTS

AIS Gauging Radiation Safety Manual

3. EQUIPMENT

The following equipment is required to collect and ship the bioassay sample:

Qty	Item
1	Glass or plastic vial, minimum 22 ml
1	Rubber gloves, pair
1	Security tape
1	Permanent marker
1	Zip lock bag large enough to seal the vial
1	Shipping box
1	Absorbent packing material
1	Zip lock bag large enough to contain the absorbent material and vial
1	Sample identification form
1	Analysis lab shipping label
1	Biohazard label

4. PROCEDURE

The bioassay urine sample shall be collected as soon as practical after the suspected internal contamination but no longer than 24 hours after the incident.

- Instruct the worker to fill the sample vial.
- Using gloves, CAP the vial
- Place security tape over the cap and extend it down two sides of the vile.
- Have the worker initial the security tape.
- LABEL the sample with the employee's name and a sequential sample number.
- Place the sample vial in the zip lock bag and seal the bag
- Put the absorbent material in the vial in the larger zip lock bag ensuring the absorbent material surrounds the sample vial bag.
- Place this package inside the shipping box and add additional packing material if needed to keep the contents from moving around.
- COMPLETE the bioassay sample form and make a copy for record.
- Put a copy of the bioassay form in the box.
- LABEL AND SHIP the package to a licensed lab according to US DOT Requirements.
- The RSO shall ensure the results of the bioassay are recorded on the sample form

IMPORTANT NOTE

For bioassay samples associated with a suspected dose incident, SEND the package overnight delivery and inform the lab that it is on the way.

5. BIOASSAY LAB

Send the bioassay sample to:

Mitchell S. Galanek
Massachusetts Institute of Technology
EHS Office, Bldg. N52-496
265 Massachusetts Avenue
Cambridge, MA 02139-4307
Telephone: (617) 452-3477

Baseline Bioassay Sample Form

John B. Young Jr. – President/RSO
Industrial Maintenance Engineering, Inc.
d/b/a AIS Gauging
5350 N. 13th St.
Terre Haute, IN 47805-1615

Phone: (812) 466-5478
FAX: (812) 236-1717

Employee name: _____

Employee ID number: _____

Date collected: _____

Please return the results to the address above.

COMMENTS

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Post-dose Incident Bioassay Sample Form

John B. Young Jr. – President/RSO
Industrial Maintenance Engineering, Inc.
d/b/a AIS Gauging
5350 N. 13th St.
Terre Haute, IN 47805-1615

Phone: (812) 466-5478
FAX: (812) 236-1717

Employee name: _____

Employee ID number: _____

Date baseline test performed: _____

Activity: _____

Date post-dose incident test performed: _____

Activity: _____

Please return the results to the address above.

COMMENTS

_____
_____
_____
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_____

Industrial Maintenance Engineering

RADIATION SAFETY MANUAL

October 5, 2015

Approvals:

John B. Young, Jr.	President / RSO	10-26-15 Date

Document Change Record

Rev	Description of Changes	Release Date
1	Initial release	9/17/2014
2	Section 6.13. Add reference to Device Movement Log. Add Appendix D – Device Movement Log	5/12/2015
3	Added training detail, NRC reporting requirements and references to emergency and bioassay program instructions. Added radioactive waste management and material control and accountability. Added table of contents.	10/05/2015

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1.0 PURPOSE AND SCOPE

1.1 The purpose of this document is to outline the methods used to control the use of sealed sources and devices containing sealed sources at AIS Gauging. It also outlines the methods used to protect employees and members of the public against the potential dangers of using licensed material and devices containing licensed material.

1.2 Changes to this document may require notification U.S. Nuclear Regulatory Commission (USNRC or NRC). The Radiation Safety Officer (RSO) must approve all changes and be kept informed of all correspondence with the NRC.

1.3 This document must be reviewed on an annual basis and records of the review must be kept on file as evidence in the event of an inspection from the NRC or other regulatory body.

2.0 DEFINITIONS

ALARA - As Low As Reasonably Achievable. A radiation protection philosophy which uses techniques, evaluations and new advances in technology to continually look for ways to reduce radiation dose potential to workers. The principles of ALARA are Time, Distance and Shielding.

Authorized user - an employee who is authorized by the RSO to use devices containing licensed material and who has been trained in the hazards of handling such material. In the context of this manual, Authorized User and Radiation Worker are synonymous.

Device(s) - means any machine containing radioactive material or capable of producing ionizing radiation

Dose - the amount of radiation received in an instance of time.

Dose Rate - The amount of radiation received per unit of time.

Exposure - Used to mean the total radiation dose received during an event or length of time; also the ionization of air.

High Radiation Area - an area, accessible to individuals, in which radiation levels could result in an individual receiving a dose equivalent in excess of 0.1 rem in one hour at 30 centimeters from any source of radiation or from any surface that the radiation penetrates.

IATA - International Air Transportation Association.

Leak Test - a test performed to ensure that removable contamination limits are below 0.005μCi.

Licensed Material - In the context of this manual, licensed material is the source material used in the company and appears on the company radioactive materials

license. Licensed material may also be referred to as **RAM, material, source or source material** in this manual and subordinate procedures and instructions.

Licensee – The company, organization or person who's name appears on the radioactive materials license, radiation producing device permit or registration.

Member(s) of the Public - In the context of this manual, members of the public are any company employee who is not a radiation worker as well as non-company individuals visiting the company's facility.

NRC - United States Nuclear Regulatory Commission.

Occupational Dose - The maximum annual radiation dose limit for a radiation worker. Whole body annual dose limit is 5 rem (5,000 millirem).

Public Dose - The maximum annual radiation limit to a member of the public. The annual dose limit for members of the public is 100 millirem and 2.0 millirem in any one hour.

Radiation Area - Any area, accessible to individuals, in which radiation levels could result in an individual receiving a dose equivalent in excess of 0.005 rem in one hour at 30 centimeters from the source of radiation or from any surface that the radiation penetrates.

Radiation Machine - A device that emits ionizing radiation without the use of a radioactive source

Radiation worker - an individual approved by management to work with licensed material and devices containing licensed and who have received proper instruction and whose radiation dose may be in excess of 100 millirem per year. In the context of this manual, Radiation Worker and Authorized User are synonymous.

Restricted Area - An area set aside for the use of radioactive materials where access is restricted only to individuals who require access to perform work duties.

RSO - Radiation Safety Officer. The person designated by top management for having the responsibility for the daily enforcement of the Radiation Safety Program and who has the authority to stop any activity that may be in violation of the program and relevant regulations. This person is also responsible for maintaining the safety of employees and visitors with regard to the dangers of ionizing radiation.

Service and Work area - With respect to this manual, the terms "service area" and "work area" are synonymous.

US DOT - United States Department of Transportation.

Very High Radiation Area - an area, accessible to individuals, in which radiation levels from radiation sources external to the body could result in an individual receiving an absorbed dose in excess of 500 rad in one hour at one meter from a source of radiation or one meter from any surface that the radiation penetrates [*Note*: At very high doses

rates, units of adsorbed dose, gray and rad, are appropriate, rather than units of dose equivalent, sievert and rem].

3.0 RECORDS

3.5 Appendix A contains a list of records to be held along with the required retention period. Each record required must be legible throughout the specified retention period. The record may be the original or a reproduced copy or a microform provided that the copy or microform is authenticated by authorized personnel and that the microform is capable of producing a clear copy throughout the required retention period.

3.6 The record may also be stored in electronic media with the capability for producing legible, accurate and complete records during the required retention period. Records, such as letters, drawings and specifications, must include all pertinent information, such as stamps, initials and signatures. The licensee shall maintain adequate safeguards against tampering with and loss of these records.

3.7 Record retention periods vary by requirement. IRSC recommends that records be retained for a minimum of 5 years with the exception of employee dosimetry records. If using dosimetry, dose/exposure records shall be retained for the length of employment plus 30 years.

4.0 RESPONSIBILITY

4.1 RADIATION SAFETY OFFICER – CONTACT INFORMATION

4.1.1 The Radiation Safety Officer for **AIS Gauging** is **John Young**

Office phone: **812-466-5478**

Mobile phone: **812-236-1717**

4.2 DUTIES OF THE RSO

4.2.1 Ensure that licensed material and devices containing licensed material possessed by the AIS Gauging are limited to the types and quantities of licensed material authorized by the materials;

4.2.2 Maintain documentation that demonstrates that the dose to individual members of the public does not exceed the limit specified in 10 CFR 20.1301;

4.2.3 Ensure security of licensed material;

4.2.4 Post documents as required by NRC regulations;

4.2.5 Ensure that licensed material is transported in accordance with applicable NRC and DOT requirements;

4.2.6 Ensure that radiation exposures are ALARA;

4.2.7 Oversee all activities involving licensed material including monitoring and surveys of all areas in which licensed material is used;

4.2.8 Act as liaison between the NRC and other regulatory agencies;

4.2.9 Provide necessary information on all aspects of radiation protection to personnel at all levels of responsibility, pursuant to 10 CFR Parts 19 and 20, and any other applicable regulations;

4.2.10 Oversee proper delivery, receipt and conduct of radiation surveys for all shipments of radioactive material arriving at or leaving from the company, as well as packaging and labeling all radioactive material leaving the company;

4.2.11 Distribute and process personnel radiation monitoring equipment, determine the need for and evaluate bioassays, monitor personnel radiation exposure and bioassay records for trends and high exposures, notify individuals and their supervisors of radiation exposures approaching established limits, and recommend appropriate remedial action;

4.2.12 Conduct training programs and otherwise instruct personnel in the proper procedures for handling radioactive material prior to possession or possession and use, both at periodic intervals (refresher training), and as required by changes in procedures, equipment, regulations, etc.;

4.2.13 Supervise and coordinate the radioactive waste disposal program, including effluent monitoring and recordkeeping on waste storage and disposal records;

4.2.14 Oversee the storage of radioactive material not in current use, including waste;

4.2.15 Perform or arrange for leak tests on all sealed sources and calibration of radiation survey instruments;

4.2.16 Maintain an inventory of all radioisotopes possessed under the license and limit the quantity to the amounts authorized by the license;

4.2.17 Immediately terminate any unsafe condition or activity that is found to be a threat to public health and safety or property;

4.2.18 Supervise decontamination and recovery operations;

4.2.19 Maintain other records not specifically designated above (e.g., records of receipts, transfers, and surveys as required by 10 CFR 30.51 and 10 CFR 20, Subpart L, "Records");

4.2.20 Hold periodic meetings with, and provide reports to, licensee management;

4.2.21 Ensure that all device users are properly trained;

4.2.22 Perform periodic audits of the Radiation Safety Program to ensure that the licensee is complying with: all applicable NRC regulations, the terms and conditions of the license (e.g., leak tests, inventories, possession or possession and use limited to trained, approved users, etc.), the content and implementation of the Radiation Safety Program to achieve occupational doses and doses to members of the public that are ALARA in accordance with 10 CFR 20.1101, and the requirement that all records be properly maintained;

4.2.23 Ensure that the results of audits, identification of deficiencies, and recommendations for change are documented (and maintained for at least 3 years) and provided to management for review and ensure that prompt action is taken to correct deficiencies;

4.2.24 Ensure that the audit results and corrective actions are communicated to all personnel who possess or possess and use licensed material;

4.2.25 Ensure that all incidents, accidents, and personnel exposure to radiation in excess of ALARA or Part 20 limits are investigated and reported to NRC and other appropriate authorities, if required, within the required time limits;

4.2.26 Maintain an understanding of, and up-to-date copies of, relevant NRC and agreement state regulations, the license, and revised licensee procedures, and ensure that the license is amended whenever there are changes in licensed activities, responsible individuals, or information or commitments provided to the NRC during the licensing process.

4.3 AUTHORIZED USERS:

4.3.1 Authorized users are those persons who have completed the required training prescribed in Appendix B as well as annual refresher training also prescribed in this appendix and who uses or directly supervises the use of licensed material.

4.3.2 Responsibilities of authorized users

4.3.2.1 The authorized user's primary responsibility is to ensure that radioactive materials are used safely and according to regulatory requirements.

4.3.2.2 The authorized users is also responsible to ensure that procedures and engineering controls are used to keep occupational doses and doses to members of the public are ALARA.

4.4 RADIATION WORKERS:

4.4.1 The RSO will maintain a current listing of all radiation workers and ensure that radiation workers are properly trained as prescribed in Appendix B of this manual before they are permitted to use any devices containing licensed material or otherwise produce radiation as well as annual refresher training also prescribed in this appendix.

4.4.2 Responsibilities of radiation workers

4.4.2.1 Radiation workers are to follow safe working practices, assure that devices are protected against unauthorized removal and report any events involving licensed material and devices to the RSO.

4.5 OTHER WORKERS & MEMBERS OF THE PUBLIC:

4.5.1 Other workers and members of the public who will be working at AIS Gauging, such as contractors, clients or service organizations shall undergo the training prescribed in Appendix B of this manual as well as annual refresher training also prescribed in this appendix.

5.0 AUDITS & INSPECTIONS

5.1 AUDITS

5.1.1 The RSO must ensure that the content and implementation of the Radiation Protection Program be reviewed at least annually. Audits may be performed by AIS Gauging or a consultant such as IRSC. At minimum, the program audit shall ensure:

5.1.1.1 Compliance with NRC, MRCP, DOT and IATA regulations and the terms and conditions of the license

5.1.1.2 Occupational doses and doses to members of the public are ALARA

5.1.1.3 Dose reduction efforts have been considered

5.1.1.4 Operating procedures are in place for activities which could potentially affect licensed material or occupational dose

5.1.2 Auditors should have training and experience similar to that of an authorized user for the types, forms, uses and quantities of radioactive material and radiation producing devices used in the areas audited.

5.1.3 Auditors should not be selected from the staff of areas to be audited nor their management. Ideally, auditors are third parties, from independent organizations such as IRSC, Inc.

5.1.4 Corrective actions shall be initiated for potential violations and other deficiencies identified during the audit. Corrective actions shall be followed up for effectiveness. The form in Appendix C of this manual can be used for the Corrective Action process.

5.1.5 In addition to the items above, the details of the audit shall contain the date of audit, name of person(s) who conducted the audit, persons contacted by the auditor(s) and the areas audited.

5.1.6 Results of the audit, the corrective actions and follow-up of the corrective actions shall be maintained in accordance with the record retention period prescribed in Appendix A of this manual and discussed during annual radiation worker refresher training.

5.2 AGENCY INSPECTIONS

5.2.1 AIS Gauging's facility may be inspected for compliance with applicable regulations from the NRC and other regulatory agencies without prior notice.

5.2.2 Violations and other deficiencies identified during an inspection shall be posted for a minimum of five (5) working days or until the violation or deficiencies are resolved, whichever is greater.

5.2.3 Corrective actions shall be initiated for violations and other deficiencies identified during the audit. Corrective actions shall be followed up for effectiveness.

5.2.4 Corrective actions shall be posted for a minimum of five (5) working days.

5.2.5 Results of the inspection shall be maintained in accordance with the record retention period prescribed in Appendix A of this manual and discussed during annual radiation worker refresher training.

6.0 RADIATION MONITORING

6.1 SURVEY METERS & SCALERS

6.1.1 AIS Gauging possess radiation monitoring instruments to evaluate possible radiation hazards that may be present. One survey meter for each type of radiation hazard shall be kept at the facility at all times. A second survey meter may be purchased or rented for times when the primary meter is sent out for calibration.

6.1.2 A scaler is used for examining source leak tests and area wipes.

6.1.3 Survey meters and scalers must be kept in good repair and working order.

6.1.4 Any instrument damage or malfunction shall be reported to the RSO as soon as possible.

6.1.5 One survey meter should be kept at the facility at all times.

6.1.6 A second survey meter may be purchased or rented for times when the primary meter is sent out for calibration.

6.1.7 Instruments used for quantitative radiation measurements shall be calibrated:

6.1.7.1 At least annually.

6.1.7.2 Any time it is suspected there has been a change to the instrument affecting the reading.

6.1.7.3 After every instrument service.

6.1.8 Calibration shall only be performed by a licensed calibration lab.

6.1.9 Records of instrument calibrations shall be held in accordance with the record retention period prescribed in Appendix A of this manual.

6.1.10 Prior to performing a survey do the following:

6.1.10.1 Read the survey meter manual if you have not already done so.

6.1.10.2 Perform a battery test.

6.1.10.3 Check the instrument with a check source if one is available.

6.1.10.4 Observe performance of the meter outside the restricted area and take a background reading.

6.2 DOSE/EXPOSURE

6.2.1 The use of individual monitoring devices for external dose is required for:

6.2.1.1 Adults who are likely to receive an annual dose in excess of any of the following (each evaluated separately):

- 5 mSv (0.5 rem) deep-dose equivalent;
- 15 mSv (1.5 rem) eye dose equivalent;
- 50 mSv (5 rem) shallow-dose equivalent to the skin;
- 50 mSv (5 rem) shallow-dose equivalent to any extremity.

6.2.1.2 Minors who are likely to receive an annual dose in excess of any of the following (each evaluated separately):

- 1 mSv (0.1 rem) deep-dose equivalent;
- 1.5 mSv (0.15 rem) eye dose equivalent;
- 5 mSv (0.5 rem) shallow-dose equivalent to the skin;
- 5 mSv (0.5 rem) shallow-dose equivalent to any extremity.

6.2.1.3 Declared pregnant women who are likely to receive, during the entire pregnancy, a deep-dose equivalent in excess of 1 mSv (0.1 rem).

6.2.1.4 Members of the public. AIS Gauging shall ensure that licensed material will be used, transported, stored, and disposed of in such a way that members of the public will not receive more than 100 millirem in one year and the dose in any unrestricted area will not exceed 2 millirem in any one hour from licensed operations

6.3 INDIVIDUAL MONITORING

6.3.1 Whole body and extremity dosimeters are assigned to individuals and may not be shared. When not in use they will be stored so as to not receive radiation when not being worn. A metal cabinet may be used.

6.3.2 Dosimeters shall not be taken home.

6.3.3 Dosimeters shall not be intentionally exposed to a radiation field.

6.3.4 Dosimeters will be exchanged monthly.

6.3.5 Whole body dosimeters shall be worn in the middle of the torso.

6.3.6 Extremity dosimeters shall be worn on the hand designated on the dosimeter label.

6.3.7 Dosimeters shall be analyzed by a NVLAP accredited lab.

6.3.8 Results of individual dosimetry reports shall be provided to employees:

6.3.8.1 On an annual basis.

6.3.8.2 Upon a suspected dose incident.

6.3.8.3 Upon request.

6.3.8.4 At the end of employment.

6.3.9 Previous dosimetry records shall be requested for new employees.

7.0 AS LOW AS REASONABLY ACHIEVABLE (ALARA)

7.1 ALARA PRINCIPAL

7.1.1 AIS Gauging embraces the ALARA principal and will continuously look for any improvements in work methods that will reduce potential doses to employees.

7.1.2 AIS Gauging has established an ALARA limit of 10% of annual occupational dose limits. Radiation doses above this level shall be investigated by the RSO and the results of the investigation documented. Corrective actions shall be taken to limit the chance of recurrence and effectiveness of the corrective action shall also be documented. The form in Appendix C of this manual can be used for the Corrective Action process.

8.0 TRAINING

8.1 TRAINING FOR RADIATION WORKERS

8.1.1 The RSO is responsible for assuring that training is provided to affected employees. Initial and annual refresher training will be provided to radiation workers. Training shall be provided to workers prior to them working with radiation producing devices, whenever these is a significate change in duties, regulations or terms of the license or registration and annually.

8.1.1.1 All personnel who work with radiation producing devices must have radiation safety training that outlines the hazards of radiation and safe operating procedures. An outline of the training requirements is included in Appendix B of this document.

8.1.2 A record of the date training took place, who attended training and a syllabus of the topics covered shall be maintained.

8.1.3 At minimum, refresher training shall cover ALARA principles, Pregnant Worker Declarations, radiation worker rights and responsibilities and any relevant federal, state or local regulatory changes.

8.2 TRAINING FOR SHIPPERS AND RECEIVERS OF PACKAGES CONTAINING LICENSED MATERIAL

8.2.1 Persons receiving and/or opening packages containing licensed material shall be trained in accordance with US DOT Hazardous Materials regulations 49 CFR.

8.2.2 Persons packaging for shipment or offering packages for shipment over the road packages containing licensed material shall be trained in accordance with US DOT Hazardous Materials regulations 49 CFR.

8.2.3 Persons packaging for shipment or offering packages for shipment via air carrier packages containing licensed material shall be trained in accordance with US DOT Hazardous Materials regulations 49 CFR and IATA Dangerous Goods regulations.

8.2.4 An outline of the training requirements is included in Appendix B of this document. DOT refresher training is required every three years while IATA training is required every 2 years.

8.3 TRAINING FOR THOSE WHO ARE NOT RADIATION WORKERS

9.1.1 All employees working from and/or AIS Gauging must be trained on radiation awareness. This may be part of Hazard Communications training and is to be performed annually. An outline of the training requirements is included in Appendix B of this document.

9.0 MATERIAL RECEIPT AND ACCOUNTABILITY

9.1 TRAINING

9.1.2 Before allowing an individual to receive and/or open radioactive packages, the RSO will ensure that this individual has sufficient classroom and on-the-job training to show competency in performing the following tasks.

9.1.3 Classroom training may be provided in the form of lecture, videotape or self-study. This classroom training should cover the following subject areas:

9.1.3.1 Principles and practices of radiation protection

9.1.3.2 Radioactivity measurements

9.1.3.3 Monitoring techniques

9.1.3.4 Using instruments

9.1.3.5 Mathematics and calculations based to using and measuring radioactivity

9.1.3.6 Biological effects of radiation

9.1.4 Appropriate on-the-job training consists of:

9.1.4.1 Observing authorized personnel collecting and analyzing the test samples

9.1.4.2 Collecting and analyzing leak test samples under the supervision and in the physical presence of an individual authorized to perform leak tests and leak test analysis

9.1.5 Persons receiving and/or opening packages containing licensed material shall be trained in accordance with US DOT Hazardous Materials regulations 49 CFR

9.2 Ordering and Receiving Radioactive Material

9.2.1 The RSO shall approve all orders for radioactive material and ensure that the requested material, quantities, manufacturer and model are authorized by the license and that the possession limits are not exceeded.

9.2.2 During normal working hours, carriers shall be instructed to deliver radioactive packages directly to the receiving area and only during normal working hours.

9.2.3 Deliveries of radioactive packages shall not be made outside of normal working hours.

9.3 Instructions to Personnel Involved in Material Receipt

9.3.1 Only persons properly trained in accordance with US DOT HAZMAT (49 CFR) regulations are authorized to receive and open packages containing licensed material.

9.3.2 Sources and devices arriving at AIS Gauging shall undergo receipt and package inspection within three (3) hours of arriving or first thing the next business day if arriving at the end of the day so as not to meet the three hour window.

9.3.3 Packages that do not undergo immediate receiving procedures shall be secured so as not to allow unauthorized removal

9.3.4 Immediately upon receipt of any package of licensed material, each package must be visually inspected for any signs of shipping damage such as crushed or punctured containers or signs of dampness. Any obvious damage must be reported to the RSO immediately. Do not touch any package suspected of leaking. Request the person delivering the package to remain until monitored by the RSO.

9.3.5 The package will be surveyed and checked for contamination. Once it has been determined that the package surface is not contaminated and that surface radiation levels are within acceptable limits, the package will be removed to the source storage room where it will be opened, the internal surfaces and contents checked for contamination and inventoried.

9.3.6 Should there be any issues identified throughout this process, the RSO shall be notified before the process continues to the next step.

9.4 Opening Packages Containing Licensed Materials

9.4.1 Authorized individuals opening packages shall:

9.4.1.1 Wear gloves to prevent hand contamination.

9.4.1.2 Visually inspect the package for any sign of damage (e.g. crushed, punctured). If damage is noted, stop and notify the RSO.

9.4.1.3 Check DOT White I, Yellow II, or Yellow III label or packing slip for activity of contents, so shipment does not exceed license possession limits.

9.4.1.4 Monitor the external surfaces of a labeled

9.4.1.5 Open the outer package (following supplier's directions if provided) and remove packing slip.

9.4.1.6 Open inner package to verify contents (compare requisition, packing slip and label on the device).

9.4.1.7 Check integrity of the final source container (e.g., inspecting for breakage of seals or vials, loss of liquid, discoloration of packaging material, high count rate on smear).

9.4.1.8 Again check that the shipment does not exceed license possession limits.

9.4.2 If you find anything other than expected, stop and notify the RSO before continuing on to the next step.

9.5 Discarding Shipping Containers

9.5.1 Before discarding any radioactive shipping containers, survey the packing material and packages for contamination. If contamination is found, treat the container as radioactive waste. If no contamination is found, obliterate the radiation labels prior to discarding in the regular trash.

9.6 Notifications

9.6.1 Notify the final carrier and by telephone, telegram, mailgram, or facsimile, the Administrator of the appropriate NRC Regional Office when removable radioactive surface contamination exceeds the limits of 10 CFR 71.87(I); or external radiation levels exceed the limits of 10 CFR 71.47.

9.7 Transfer Policy

9.7.1 Internal Transfers

9.7.1.1 Sealed sources and devices containing sealed sources may be moved from one location to another by an Authorized User. Such movement shall be logged and must be entered in the device movement log. See Appendix D. All transfers shall be done in a way that minimizes the probability of exposure or contamination. Transfers shall only be done with a source in a device or lead pig.

9.7.2 External Transfers

9.7.2.1 Sealed sources and devices containing sealed sources shall only be transferred or shipped from AIS Gauging unless packaged and labeled in accordance with DOT, NRC or IATA Regulations, whichever is applicable. Only authorized persons may package and ship sealed sources, devices containing sealed sources.

9.7.3 Records

9.7.3.1 All records of receipt and shipping of radioactive sources and devices containing radioactive sources shall be maintained in accordance with Appendix A of the Radiation Safety Manual. Records include shipping and receiving documents, package surveys and wipe test results.

9.8 SEALED SOURCE AND DEVICE INVENTORY

9.8.1 Sealed sources and devices containing sealed sources shall be inventoried every six months. Records of these inventories shall be held in accordance with Appendix A.

10.0 POSTINGS

10.1 NOTICE TO EMPLOYEES

10.1.1 The most recent revision of the NRC Notice to Employees must be posted so that it can be seen by anyone going into or out of the radiation work area. See the example in Appendix E. This form is available on-line through the NRC website.

10.2 LICENSES, REGISTRATIONS, OPERATING PROCEDURES AND REGULATIONS

10.2.1 Licenses, registrations, operating procedures and relevant NRC regulations are required to be posted where the radiation worker can see them going into or out of the radiation work area. However, in lieu of posting all of these documents, the following statement may be placed on the Notice to Employees:

Copies of the following documents are held in the Radiation

Safety Office:
- *State and Federal regulations*
- *State and Federal Regulatory Guides*
- *State, Federal and International Materials Licenses*
- *Operating procedures*
- *Records relating to the Radiation Safety Program*

Also see your supervisor for operating procedures.

10.3 NOTICE OF VIOLATION

10.3.1 Any notice of violation received from the NRC or other regulatory agency must be posted for employees to view for a minimum of five (5) days from receipt of notice or until the violation has been deemed closed by the respective agency – whichever is greater.

10.3.2 Corrective actions relevant to an agency notice of violation must be posted for radiation workers to view for a minimum of (5) days after the corrective action is implemented.

11.0 RESEARCH & DEVELOPMENT

11.1 R&D projects involving radiation, radiation emitting devices, radioactive sources, radioactive material or any combination thereof must be brought to the attention of the RSO for review. The RSO is responsible for the safety of the employees working on the project and will provide the guidance for security of the sources and devices containing licensed material as well as area and device posting.

11.2 Only John Young or Glenn Wrightsman shall conduct such activity and one shall be present whenever a sealed source or device containing a sealed source is not secured in the source room or a larger assembly.

11.3 Sources and devices not affixed to a mount may not be left unattended. Rooms containing un-mounted or otherwise unsecured sources or devices shall be locked when there are no authorized users present.

11.4 Any employee involved in special projects involving radiation, radiation emitting devices, radioactive sources, radioactive material or any combination thereof must be trained in the safety practices of the project before proceeding with the hands-on portion of the project.

11.5 While sealed sources are present in the lab, the area shall be posted as shown in Figure 2.

11.6 See instruction RSI-xxxx, Handling Sealed Sources, for instructions on transferring sealed sources to and from device source holders and shielded containers and lead pigs.

12.0 SOURCES AND DEVICES CONTAINING SOURCES

12.1 SIGNS AND WARNINGS FOR LICENSED MATERIAL

12.1.1 The source storage area shall be posted as shown in Figure 1.

Figure 1 – Caution Radioactive Materials Sign

12.1.2 Areas where devices containing sources are used shall be posted as shown in Figure 2.

Figure 2 – Caution Radiation Area

12.2 USING SOURCES AND DEVICES CONTAINING SOURCES

12.2.1 Only persons properly trained an authorized may use and handle licensed material and devices containing licensed material. These persons shall be trained in each task and records of such training shall be held in accordance with the Appendix A of this manual.

12.2.2 Do not eat, drink, smoke or apply cosmetics in the source room or R&D area.

12.2.3 Do not store food, drink or personal effects in the source room or R&D area.

12.2.4 Wear personnel monitoring devices at all times while in these areas.

12.2.5 While using sources and devices containing sources, a survey meter shall be used to assure that levels of radiation are below the permissible exposure limit and that the area is free of removable contamination.

12.2.6 Safety glasses or a face shield shall be worn when using and handling sources.

12.2.7 A lead apron shall be worn when handling sources.

12.2.8 Lead gloves and rubber gloves shall be worn when handling sources.

12.2.9 When finished handling sources, rubber gloves shall be disposed of in the proper container and lead gloves shall be check for contamination.

12.2.10 Before leaving the source handling work area, you must survey your hands, clothes and shoes for contamination.

12.2.11 Wipes of the work area shall be performed after handling source capsules and on a monthly basis to verify that removable contamination that is not detectable by a survey meter is not present.

12.2.12 If the wipes show any contamination above 0.005 microcurie then, secure the area and notify the RSO. The RSO shall direct activities to remediate the area and provide necessary reporting to the relevant agencies.

12.2.13 Dispose of radioactive waste only in designated, labeled and properly shielded receptacles.

12.2.14 Store radioactive sources in clearly labeled containers.

12.2.15 Secure all sources when it is not under the constant surveillance and immediate control of the user(s).

12.2.16 See instruction RIS-xxxx, Handling Sealed Sources, for instructions on transferring sealed sources to and from device source holders and shielded containers and lead pigs.

12.3 Leak Testing Sealed Sources

12.3.1 Sealed sources shall be leak tested every six months unless they are identified as being in permanent storage and not being used.

12.3.2 Sealed sources in storage and not being used shall be labeled as not being used and need not be leak tested at six month intervals. However, any sealed source returned to service shall be leak tested before use if the last test is beyond the six month leak test requirement. Sealed sources in storage shall be leak tested at least every 10 years.

12.3.3 In the absence of a leak test certificate from a transferor showing that a leak test has been performed within the 6 months before the transfer, the sealed source may not be used until leak tested. Leak test shall be capable of ensuring that removable contamination is less than 0.005 microcurie.

12.3.4 Completed assembled devices shall be leak tested according to the relevant AIS Gauging procedure to ensure that removable contamination is less than 0.005 microcurie.

12.3.5 Leak tests shall either be performed in-house or by a licensed leak test lab.

12.3.6 Sources and devices for shipment shall be isolated and tagged pending leak test results.

12.4 SOURCES OR DEVICES FOUND TO BE LEAKING

12.4.1 If a sealed source or a device containing a sealed source is found to be leaking or upon receiving a positive leak test result, the following steps shall be taken:

12.4.1.1 The RSO will be notified and will notify the NRC according to procedures outlined in this document.

12.4.1.2 The leaking device and the area where the device was found to be leaking shall be secured.

12.4.1.3 A source capsule that shows a positive leak test will be secured in a lead pig.

12.4.1.4 Personnel associated with the handling of the device shall be checked for contamination. If found to be contaminated, the process prescribed in instructions RSI-1002 Emergency Procedures shall be carried out and a bioassay shall performed in accordance with instruction RSI-1003 Bioassay Procedure.

12.4.1.5 The area shall be checked for contamination and remediated if necessary.

12.4.1.6 The RSO will initiate an investigation to determine the cause of the positive leak test result and will file a written report with the NRC according to the procedures outlined in this document.

12.4.1.7 The contaminated area and device will be decontaminated using a decontamination solution such as DECON 90.

12.4.1.8 The device will be leak tested again.

12.4.1.9 Upon an acceptable leak test, the device will be declared ready for release to the work process.

12.4.1.10 If the test is again positive the process will be repeated.

12.4.2 Contaminated materials shall be stored in the radioactive waste container located in the source room. Appropriate entries to the Waste Recording Form, Appendix F, shall be made to account for the container's contents.

12.5 SOURCE STORAGE

12.5.1 Sealed sources not installed in a device shall be kept in a locked cabinet to prevent unauthorized removal.

12.5.2 Source housings not installed on a scanning platform shall be locked in the source storage room to prevent unauthorized removal.

12.6 SOURCE INVENTORY

12.6.1 An inventory of sources and devices containing sources shall be conducted every 6 months in accordance with AIS Gauging's Materials License. Records of the inventory shall be held in accordance with Appendix A of this manual.

12.6.2 The quantity of source activity shall not exceed that stated in AIS Gauging's Materials License.

12.7 RECEIVING SOURCES AND DEVICES CONTAINING SOURCES

12.7.1 Only persons properly trained in accordance with US DOT HAZMAT regulations are authorized to receive and open packages containing licensed material.

12.7.2 Sources and devices arriving at AIS Gauging shall undergo receipt and package inspection within three (3) hours of arriving or first thing the next business day if arriving at the end of the day so as not to meet the three hour window.

12.7.3 Packages that do not undergo immediate receiving procedures shall be secured so as not to allow for unauthorized removal.

12.7.4 Package receiving and opening shall be in accordance with the AIS Gauging procedure.

12.8 SHIPPING SOURCES AND DEVICES CONTAINING SOURCES

12.8.1 Only persons properly trained in accordance with one or more of the provisions in this section below may pack and offer for shipment sources or devices containing licensed material.

12.8.1.1 Persons preparing and offering packages for shipment containing sources and devices containing licensed material via ground transportation need only be trained in accordance with 49 CFR.

12.8.1.2 Persons preparing and offering packages for shipment containing sources and devices containing licensed material via air transportation are required to be trained in both 49 CFR and IATA regulations since the package must be transported via ground to the air terminal.

12.8.1.3 Training shall include, specifically, Class 7 Radioactive Material and any exemptions under which AIS Gauging devices may fall.

12.8.2 Source and device shipments must be in accordance with applicable USNRC, USDOT and IATA regulations.

12.9 AREA SURVEYS AND CONTAMINATION CHECKS

12.9.1 Area surveys and contamination checks shall be performed after source handling procedures and once per month to ensure the area is free of unwanted radioactive material. See Appendix G for area survey and wipe test forms.

13.0 DECLARED PREGNANT WORKER

13.1 Female Employees have the right to declare their pregnancy to their employer but are not required to do so.

13.2 Once notified AIS Gauging is obligated to ensure that the Total Effective Dose Equivalent (TEDE) to mother and fetus is less than 500 millirem for the duration of pregnancy.

13.3 Pregnancy Declaration shall be in writing using the form in Appendix H of this manual.

13.4 Once the RSO receives a declaration, the RSO shall:

13.4.1 Provided the pregnant worker with copies of NRC regulatory guide 8.13 Instruction Concerning Prenatal Radiation Exposure and NRC regulatory Guide 8.29 Instruction Concerning Risks from Occupational Exposure.

13.4.2 If not already wearing dosimetry, issue a dosimeter to the worker during the term of pregnancy.

13.5 A pregnant worker may request to be assigned to a different job not involving the use of ionizing radiation during the term of her pregnancy. However, the employer is not mandated to offer another position but the employee can often be accommodated through negotiation.

13.6 The declaration shall be in effect until withdrawn in writing.

14.0 AGENCY NOTIFICATIONS AND REPORTS

14.1 NRC notification and reporting requirements are provided in Appendix I of this manual.

14.1.1 In the event an employee or member of the public is exposed to undue radiation or radioactive material, the RSO must be notified. The RSO will then make the determination of reporting requirements to the NRC.

14.1.2 In the event that a leak test returns results above 0.005μCi, the RSO must notify the NRC in accordance with 10 CFR 35.

14.1.3 If a device is lost or stolen, the RSO must notify the NRC in accordance with 10 CFR 20.2201

14.1.4 In the event a radioactive source is involved in a fire, the RSO must notify the NRC within **48 hours** of the event as stipulated in NRC regulation.

14.1.5 AIS Gauging's possession license does not authorize commercial distribution. If this changes at a future date, annual distribution reports must be filed with the NRC in accordance with 10 CFR 31.5 and 32.16.

14.1.6 The RSO must be notified of any other significant events that involve radiation or radioactive material, to determine the course of action to be taken and to determine any notification requirements.

15.0 NOTIFICATIONS AND REPORTS TO INDIVIDUALS – 10 CFR 19.13

15.1 Radiation exposure data for individuals and the results of any measurements, analyses and calculations of radioactive material deposited or retained in the body of an individual, shall be reported to the individual.

15.2 The information reported shall include data and results obtained pursuant to NRC regulations, orders or license conditions, as shown in records maintained by AIS Gauging.

15.3 Each notification and report shall: be in writing; include appropriate identifying data such as the name of the licensee, the name of the individual, unique employee identification number; include the individual's exposure information and contain the following statement:

"This report is furnished to you under the provisions of the Nuclear Regulatory Commission regulation 10 CFR part 19. You should preserve this report for further reference."

15.4 AIS Gauging shall make dose information available to workers as shown in records maintained under the provisions of 10 CFR 20.2106.

15.5 For each individual required to wear a dosimeter, AIS Gauging shall provide an annual report of the dose received in that monitoring year if:

15.1.1 The individual's occupational dose exceeds 1 mSv (100 mrem) TEDE or 1 mSv (100 mrem) to any individual organ or tissue; or

15.1.2 The individual requests his or her annual dose report.

15.6 At the request of a worker formerly engaged in licensed activities AIS Gauging shall furnish to the worker a report of the worker's exposure to radiation and/or to radioactive material for each year the worker was required to be monitored.

15.7 This report must be furnished within 30 days from the time the request is made or within 30 days after the exposure of the individual has been determined, whichever is later.

15.8 This report must cover the period of time that the worker's activities involved exposure to radiation from radioactive licensed material and must include the dates and locations of licensed activities in which the worker participated during this period.

15.9 When a report is required by 10 CFR 20.2202, 20.2203 or 20.2204 of this chapter to the NRC of any exposure to an individual from radiation or radioactive material, AIS Gauging shall also provide the individual a report on his or her exposure data included in the report to the NRC. This report must be sent no later than the transmittal to the NRC.

15.10 At the request of a worker who is terminating employment that involved exposure to radiation or radioactive materials, during the current calendar quarter or the current year, AIS Gauging shall provide at termination to each worker, or to the worker's designee, a written report regarding the radiation dose received by that worker from operations during the current year or fraction thereof. If the most recent individual monitoring results are not available at that time, a written estimate of the dose must be provided together with a clear indication that this is an estimate.

16.0 PROGRAM CHANGES

16.1 AMENDMENTS TO LICENSES AND REGISTRATIONS

16.1.1 The RSO shall review and submit all amendments to licenses and/or registrations.

16.1.2 An Executive Officer of AIS Gauging or the RSO if authorized by top management must sign an amendment request for radioactive material licenses. If such an "officer" or the RSO is not available, an authorized legal representative may sign the amendment request.

16.1.3 The RSO may be authorized by a company officer via letter to sign future registration and license amendments.

16.2 CHANGES TO RADIATION AREAS

16.2.1 Any changes proposed to the manufacturing, storage, service or shipping/receiving area(s) must be approved by the RSO prior to implementation.

16.2.2 After changes to the area(s) have been made, swipes must be taken in the previous area to ensure that no radioactive contamination remains. Such change by require notification to the licensing agency for decommissioning actions.

16.2.3 If contamination is present, the area(s) must be decontaminated. The RSO will determine the proper method of decontaminating the area.

16.2.4 The NRC must approve changes to radiation work areas.

16.2.5 Records of these activities must be held in accordance with Appendix A of this manual until the site is released for unrestricted use.

17.0 NEW AND CHANGED DEVICES

17.1 NEW DEVICES

17.1.1 All new device designs containing a radioactive source or licensed material must be registered with the NRC before they can be commercially distributed. A distribution license may also be required.

17.1.2 The RSO will assure that an application for a device registration is filed in accordance with applicable NRC regulations.

17.1.3 The RSO or radiation safety consultant may recommend changes to the device if he/she sees that the device is not in compliance.

17.1.4 New devices in development may be sent to a holder of a specific radioactive materials license for testing and evaluation purposes, provided the license allows such use.

17.1.5 The RSO shall obtain a copy of the recipient's license before the device is shipped and shall be retain a copy of the license until the agency authorizes disposition.

17.1.6 The RSO should be allowed ample lead time on the development of new devices or major modifications potentially affecting radiation safety to assure proper approval time.

17.2 ENGINEERING CHANGES TO DEVICES OR COMPONENTS

17.2.1 Major device design changes must be approved by the RSO to ensure that there is no violation of the device registration.

17.2.2 Changes to any component that may affect the device registration must be approved by the RSO.

17.3 SPECIAL PROJECTS

17.3.1 New special projects involving radiation emitting devices must be brought to the attention of the RSO for review. The RSO is responsible for the safety of the employees working on the project.

17.3.2 Any employee involved in special projects involving radiation must be trained in the safety practices of the project before proceeding with the hands-on portion of the project.

18.0 HANDLING EMERGENCIES

18.1 Reference the instruction titled RSI-1002 Emergency Procedures.

18.2 The name and telephone number of RSO and assistant RSO shall be conspicuously posted, at minimum, in the R&D lab and the source storage room.

18.3 Copies of RSI-1002 Emergency Procedures shall be provided to all authorized users with a current copy posted, at minimum, in the R&D lab and the source storage room.

18.4 The RSO shall maintain a decontamination kit containing the items listing in RSI-1002 Emergency Procedures.

18.5 See the instruction titled RSI-1002 Emergency Procedures for guidance in handling the following emergencies:

18.5.1 Sources or devices found to be leaking

18.5.2 Minor Fires

18.5.3 Fires, Explosions, or Major Emergencies

19.0 RADIOACTIVE WASTE MANAGEMENT

19.1 GENERAL GUIDELINES

(Reference NUREG 1556, Vol. 7)

19.1.1 All radioactivity labels must be defaced or removed from containers and packages prior to disposal in in-house waste. If waste is compacted, all labels that are visible in the compacted mass must be defaced or removed.

19.1.2 Non-radioactive waste such as boxes and packaging material should not be mixed with radioactive waste.

19.1.3 Radioactive waste is that which has come in contact with radioactive material and/or has the potential of being contaminated. This includes wipes that may have contamination and devices which have been significantly damaged.

19.1.4 Radioactive waste containers must be marked as radioactive waste with the trefoil prominently displayed. Mark dry waste containers as "DRY RADIOACTIVE WASTE" and mark liquid radioactive waste containers as "LIQUID RADIOACTIVE WASTE".

19.1.5 Radioactive waste shall be collected and stored in the source room using a container which is separate from the normal trash. The contents of the container shall be entered on the Radioactive Waste Recording Form, Appendix F. At minimum, enter the Date the material was added to the container, RAM Type, Quantity in millicuries and the name of the person adding the material. Provide comments to further identify the process causing the generation of this radioactive waste.

19.1.6 When the container is full, it shall be sealed. The sealed container shall be identified with a label affixed or attached to it and the label shall include the date when the container was sealed and the name of the individual who sealed the container

19.1.7 Occasionally monitor all procedures to ensure that radioactive waste is not created unnecessarily.

19.1.8 Review all new procedures to ensure that waste is handled in a manner consistent with established procedures.

19.1.9 Housekeeping staff shall be provided adequate training to avoid the possibility of unauthorized disposal or exposure of these individuals to radioactive materials or to radiation.

19.1.10 Only persons or companies properly licensed may dispose of LLRW.

19.1.11 The RSO must review and approve all radioactive waste manifests.

19.1.12 A Radioactive Waste Recording Form is provided in Appendix F.

20.0 RECIPROCITY

20.1 Under the Agreement State program some states have assumed responsibility for control over certain parts of their Radiation Protection Program as defined by the NRC. Each person who provides any device services to AIS Gauging's customers within these states shall comply with the rules of that state.

20.2 Each Agreement State has their own rules governing their Radiation Control Program but usually follow the same guidelines when it comes to reciprocity. Below are some general rules. For more specific Agreement State rules, contact the RSO.

20.2.1 Most states require three (3) day notice before anyone performs device services. However, some states require more notice such as New York who requires seven (7) day notice.

20.2.2 Some agreement state regulatory offices understand that there are occasions when a customer will need immediate, emergency service and the required notification period will cause undue hardship to the customer or AIS Gauging. In these instances, they require notification as soon as practical by phone with follow-up, documented notification.

20.2.3 Many Agreement States have their own forms for reporting radiation device work. For those that do not, the form in Appendix J may be used.

20.3 The RSO shall maintain a current listing of all Agreement state regulatory agencies with contact information, advance reporting period and other information needed to ensure compliance.

APPENDIX A - Radiation Protection Program Records

The RSO shall ensure the following records are held for the required period. Each record required must be legible throughout the specified retention period. The record may be the original or a reproduced copy or a microform provided that the copy or microform is authenticated by authorized personnel and that the microform is capable of producing a clear copy throughout the required retention period. The record may also be stored in electronic media with the capability for producing legible, accurate and complete records during the required retention period. Records, such as letters, drawings, and specifications, must include all pertinent information such as stamps, initials, and signatures. The licensee shall maintain adequate safeguards against tampering with and loss of records.

Record Description	Retention Period
Air sampling records	Until the Agency terminates the related license.
Assessment of individual including training records	Three years after record is made
Audit records and document reviews	Until the Agency terminates the related license.
Building surveys	Five years from the date the record is made
Calibration records	Three years after the record is made.
Changes to the program	Three years after record is made
Dose to an embryo/fetus	Until the Agency terminates the related license.
Exposure records	Life of employment plus 30 years
GL device transfer reports	Until the Agency terminates the related license.
Individual Exposure Records	For the life of employment plus 30 years.
Inventory records	Five years from the date of the inventory.
Leak testing of sealed sources	3 years after the leak test is performed
Provisions of the program	Until the Agency terminates the related license.

Records of planned special exposures	Until the Agency terminates the related license.
Records sufficient to demonstrate compliance with the dose limit for individual members of the public	Until the Agency terminates the related license.
Results of measurements and calculations used to evaluate the release of radioactive effluents to the environment	Until the Agency terminates the related license.
Source shipping papers and manifests including package surveys and wipes	Until the Agency terminates the related license.
Source survey / leak test report	Three years after the next required leak test and inspection is performed or until the sealed source is transferred or disposed of
Surveys to determine dose including area surveys and wipes	Until the Agency terminates the related license.
Waste disposal records	Until the Agency terminates the related license.
Important to decommissioning	Until the site is released for unrestricted use.

APPENDIX B1 - Radiation Protection Program Training Requirements

Training frequency

Training shall be provided:

1. Before assuming any duties with or in the vicinity of radioactive materials.
2. Whenever these is a significant change in duties, procedures or instructions, equipment, regulations or the terms of the license or registration.
3, Annually, before the end of the 12 months following the last training.

Radiation worker training shall include:

- Basic overview
- Regulatory agencies
- Definitions
- Licensing & license conditions
- Dose units
- Quantity of radiation
- Radiation characteristics
- Radiation vs. contamination
- Biological effects
- Internal vs. external exposure
- Personnel Dosimetry
    - Whole body
    - Extremities
    - Lost or replacement badges
    - Dose assessment
    - Bioassay program
    - Records
- X-Ray equipment & hazards
- Access control
- Training
- Inventory
- Radiation safety program audits
- Agency inspections
- Function specific training
- NRC and agreement state regulations
- Reciprocity
- Radiation safety officer responsibilities
- Employee protection
- Radiation worker responsibilities
- Authorized users and supervised users
- Material control and accountability
- Ordering radioisotopes
- Receiving packages containing license material
    - Normal
    - Off duty or after hours
    - Notification of use and RSO
    - Security
    - Exposure levels
    - Possession limit
    - Receipt of damaged packages
- Opening packages containing license material
    - PPE
    - Leakage and contamination
    - Monitoring packages

  - Monitoring packing materials
  - Transferring material to users
- RAM transfer and disposal
- Dose/exposure report
- Radiation worker rights
- Pregnant worker declaration
- Notifications to workers
- Operating procedures and instructions
- Reporting unsafe conditions to the RSO
- Handling and reporting Incidents and events
- Equipment operation – including emergency stops and lock out tag out
- Surveys and contamination monitoring
  - Survey instrument and accessibility
  - Who is responsible
  - Types, contamination and area
  - Collecting and analyzing area wipes
  - Frequency
  - Levels of contamination
  - Personnel hands and shoes
  - Records
- Sealed sources
  - Leak test requirements
  - Inventory requirements
  - Exempt quantities
  - Records
- Survey meters
  - Type
  - Purpose
  - Use
  - Calibration frequency
  - Check sources
- Analytical instruments
  - Gas chromatographs
  - Liquid scintillation counters
  - Scalers
  - Scaler performance testing
  - Purpose
  - Use
  - Calibration frequency
  - Check sources
- Changes in regulations
- Results of the last independent audit
- Results of the last agency inspection
- Postings
- Container labeling
- ALARA
- Time, distance and shielding
- Safe working practices
- Areas where licensed material is used and stored
- RAM hazards in work areas
- Emergency procedures & instructions
  - RSO Name and telephone
  - Immediate steps to prevent or control spread of contamination
  - Clean-up instructions, decontamination
- Need for Complete and accurate information
- Deliberate misconduct
- Radioactive waste
  - Liquid
  - Solids
  - Sanitary sewer
  - Burial (transfer to low level waste repository)
  - Storage
  - Decay in storage
  - Waste storage surveys

  - Incineration
  - Records
- Records of the radiation protection program
- Course examination

Authorized users of sealed sources:

Persons authorized to use and handle sealed sources shall receive the following training in addition to the above listed training:

- Bioassay procedure
- Procedures for safe use and handling sealed sources. Includes hands-on exercises.
- Collecting and analyzing leak test samples. Includes hands-on exercises.
- Procedures for dealing with sources and devices found to be leaking. Includes hands-on exercises.

Non-radiation worker training shall include:

- Basic overview
- Radiation safety officer responsibilities
- Regulatory agencies
- Definitions
- Licensing & license conditions
- Dose units
- Biological effects
- Personnel Dosimetry
- Access control
- Training
- Radiation safety program audits
- Agency inspections
- Employee protection
- Authorized users
- Reporting unsafe conditions to the RSO
- Results of the last independent audit
- Results of the last agency inspection
- Postings
- Caution and warning signs and indicators location and mening
- Container labeling
- Safe working practices
- Areas where licensed material is used and stored
- Deliberate misconduct
- Course examination

APPENDIX B2 - Transportation Training Requirements

DOT 49 CFR Training:

This training shall be provided to:

1. Persons receiving and/or opening packages containing licensed material.
2. Person who prepare for shipment over the road packages containing licensed material.
3. Persons who prepare shipping papers for packages containing licensed material for shipment over the road.
4. Persons who offer for shipment over the road packages containing licensed material.
5. Persons who offer for shipment via air transportation packages containing licensed material since the package must go over the road to get to the air terminal.

Training shall include:

- General awareness/familiarization of the DOT regulations
- Function-specific training
- Safety training
- Security awareness training
- In-depth security training
- Emergency response information required by 49 CFR Part 172, Subpart G Emergency Response Information
- Measures to protect the individual employee from the hazards associated with hazardous materials to which he or she may be exposed in the work place.
- Specific measures the hazmat employer has implemented to protect employees from exposure.
- Methods and procedures for avoiding accidents, such as the proper procedures for handling packages containing hazardous materials.
- Testing

Note 1: This training must focus on Class 7, Radioactive Material.

Note 2: This training is required every three years.

IATA Training:

This training shall be provided to:

1. Person who prepare for shipment via air transportation packages containing licensed material.
3. Persons who prepare shipping papers for packages containing licensed material for shipment via air transportation.
4. Persons who offer for shipment via air transportation packages containing licensed material.

Training shall include:

- Familiarization of the Regulations, including the criteria of the hazard classes and the identification of dangerous goods presented as general cargo
- Specific training in the requirements applicable to the function for which the trainee is responsible
- Safety training on the hazards presented by dangerous goods
- Safe handling procedures.
- Emergency procedures.

Note 1: This training must focus on Class 7, Radioactive Material.

Note 2: This training is required every two years.

APPENDIX C - Corrective Action Request

Department			Corrective Action No.
Date		Regulation & Part	Auditor
Major	Minor	Documentation Reference	Auditee
Nonconformance Statement			

Corrective Action Response (to be completed by auditee)

Proposed Completion Date	Actual Completion Date	Auditee Representative
Corrective Action Taken		

Clearance Action (to be completed by Registrar representative)

Accepted	Y	N	Downgraded	Y	N
Auditor				Date	
Follow-up comments					
RSO Approval				Date	

APPENDIX D - Device Movement Log

Device Movement Log

Date Out	Date In	Serial Number	Description	To/Fm Location	Name

APPENDIX E - NRC Notice to Employees

The most recent revisions of the NRC Notice to Employees must be posted so that it may be seen by anyone going into the radiation work area. The form is available on-line at

http://www.nrc.gov/reading-rm/doc-collections/forms/nrc3.pdf

NRC FORM 3
(5-2012)

UNITED STATES NUCLEAR REGULATORY COMMISSION
Washington, DC 20555-0001

NOTICE TO EMPLOYEES

STANDARDS FOR PROTECTION AGAINST RADIATION (PART 20); NOTICES, INSTRUCTIONS AND REPORTS TO WORKERS; INSPECTIONS (PART 19); EMPLOYEE PROTECTION

WHAT IS THE NUCLEAR REGULATORY COMMISSION?

The Nuclear Regulatory Commission is an independent Federal regulatory agency responsible for licensing and inspecting nuclear power plants and other commercial uses of radioactive materials.

WHAT DOES THE NRC DO?

The NRC's primary responsibility is to ensure that workers and the public are protected from unnecessary or excessive exposure to radiation and that nuclear facilities, including power plants, are constructed to high quality standards and operated in a safe and secure manner. The NRC does this by establishing requirements in Title 10 of the Code of Federal Regulations (10 CFR) and in licenses issued to nuclear users.

WHAT RESPONSIBILITY DOES MY EMPLOYER HAVE?

Any company that conducts activities licensed by the NRC must comply with the NRC's requirements. If a company violates NRC requirements, it can be fined or have its license modified, suspended or revoked.

Your employer must tell you which NRC radiation requirements apply to your work and must post NRC Notices of Violation involving radiological working conditions.

WHAT IS MY RESPONSIBILITY?

For your own protection and the protection of your co-workers, you should know how NRC requirements relate to your work and should follow them. If you observe violations of the requirements or have a safety concern, you should report them.

WHAT IF I CAUSE A VIOLATION?

If you engaged in deliberate misconduct that may cause a violation of the NRC requirements, or would have caused a violation if it had not been detected, or deliberately provided inaccurate or incomplete information to either the NRC or to your employer, you may be subject to enforcement action. If you report such a violation, the NRC will consider the circumstances surrounding your reporting in determining the appropriate enforcement action, if any.

HOW DO I REPORT VIOLATIONS AND SAFETY CONCERNS?

If you believe that violations of NRC rules or the terms of the license have occurred, or if you have a safety concern, you should report them immediately to your supervisor. You may report violations or safety concerns directly to the NRC. However, the NRC encourages you to raise your concerns with the licensee since the licensee has the primary responsibility for, and is most able to ensure, safe operation of nuclear facilities. If you choose to report your concern directly to the NRC, you may report it to an NRC inspector or call or write to the NRC Regional Office serving your area. If you send your concern in writing, it will assist the NRC in protecting your identity if you clearly indicate that you would like your concern to be considered by the NRC Allegation Program. The NRC's toll-free SAFETY HOTLINE for reporting safety concerns is listed below. The addresses for the NRC Regional Offices and the toll-free telephone numbers are also listed below. You can also e-mail safety concerns to NRC.Allegation@nrc.gov.

WHAT IF I WORK WITH RADIOACTIVE MATERIAL OR IN THE VICINITY OF A RADIOACTIVE SOURCE?

If you work with radioactive materials or near a radiation source, the amount of radiation exposure that you are permitted to receive may be limited by NRC regulations. The limits on exposure for workers at NRC licensed facilities whose duties involve exposure to radiation are contained in sections 20.1201, 20.1207, and 20.1208 of Title 10 of the Code of Federal Regulations (10 CFR 20) depending on the part of the regulations to which your employer is subject. While these are the maximum allowable limits, your employer should also keep your radiation exposure as far below those limits as is "reasonably achievable."

MAY I GET A RECORD OF MY RADIATION EXPOSURE?

Yes. Your employer is required to make available to you the information in your dose records (as maintained under the provisions of 10 CFR 20.2106). In addition your employer is required to provide you with an annual report of the dose you received in that monitoring year if the dose exceeds 100 millirem, or if you request an annual report.

HOW ARE VIOLATIONS OF NRC REQUIREMENTS IDENTIFIED?

NRC conducts regular inspections at licensed facilities to assure compliance with NRC requirements. In addition, your employer and site contractors may conduct their own inspections to assure compliance. All inspectors are protected by Federal law. Interference with them may result in criminal prosecution for a Federal offense.

MAY I TALK WITH AN NRC INSPECTOR?

Yes. NRC inspectors want to talk to you if you are worried about radiation safety or have other safety concerns about licensed activities, such as the quality of construction or operations at your facility. Your employer may not prevent you from talking with an inspector. The NRC will make all reasonable efforts to protect your identity where appropriate and possible.

MAY I REQUEST AN INSPECTION?

Yes. If you believe that your employer has not corrected violations involving radiological working conditions, you may request an inspection. Your request should be addressed to the nearest NRC Regional Office and must describe the alleged violation in detail. It must be signed by you or your representative.

HOW DO I CONTACT THE NRC?

Talk to an NRC inspector on-site or call or write to the nearest NRC Regional Office in your geographical area (see map below). If you call the NRC's toll-free SAFETY HOTLINE during normal business hours, your call will automatically be directed to the NRC Regional Office for your geographical area. If you call after normal business hours, your call will be directed to the NRC's Headquarters Operations Center, which is manned 24 hours a day. You can also e-mail safety concerns to NRC.Allegation@nrc.gov.

CAN I BE FIRED FOR RAISING A SAFETY CONCERN?

Federal law prohibits an employer from firing or otherwise discriminating against you for bringing safety concerns to the attention of your employer or the NRC. You may not be fired or discriminated against because you engage in certain protected activities, including but not limited to,

- asking the NRC to enforce its rules against your employer;
- refusing to engage in activities which violate NRC requirements;
- providing information or preparing to provide information to the NRC or your employer about violations of requirements or safety concerns; or
- asking for or testifying, helping, or taking part in an NRC, Congressional, or any Federal or State proceeding.

WHAT FORMS OF DISCRIMINATION ARE PROHIBITED?

It is unlawful for an employer to fire you or discriminate against you with respect to pay, benefits, or working conditions because you help the NRC or raise a safety issue or otherwise engage in protected activities. Violations of Section 211 of the Energy Reorganization Act (ERA) of 1974 (42 U.S.C. 5851) include actions such as harassment, blacklisting, and intimidation by employers of (i) employees who bring safety concerns directly to their employers or to the NRC, (ii) employees who have refused to engage in an unlawful practice, provided that the employee has identified the illegality to the employer; (iii) employees who have testified or are about to testify before Congress or in any Federal or State proceeding regarding any provision (or proposed provision) of the ERA or the Atomic Energy Act (AEA) of 1954; or (iv) employees who have commenced or caused to be commenced a proceeding for the administration or enforcement of any requirement imposed under the ERA or AEA or who have, or are about to, testify, assist, or participate in such a proceeding.

HOW DO I FILE A DISCRIMINATION COMPLAINT?

If you believe that you have been discriminated against for bringing violations or safety concerns to the NRC or your employer, you may file a complaint with the NRC, the U.S. Department of Labor (DOL), or appropriate state entities. If you desire a personal remedy, a complaint may be filed with the DOL pursuant to Section 211 of the ERA or with appropriate state entities. Your complaint to the DOL must describe in detail the basis for your belief that the employer discriminated against you on the basis of your protected activity, and it must be filed in writing either in person or by mail within 180 days of the date of the alleged discriminatory action or the date you received any notice, in writing or otherwise, of an adverse personnel action, whichever occurred first. Additional information is available at the DOL web site at www.osha.gov. Filing an allegation, complaint, or request for action with the NRC does not extend the requirement to file a complaint with the DOL within 180 days. To do so, you may contact the Allegation Coordinator in the appropriate NRC Region, as listed below, who will provide you with the address and telephone number of the correct OSHA Regional office to receive your complaint. You may also check your local telephone directory under the U.S. Government listings for the address and telephone number of the appropriate OSHA Regional office.

WHAT CAN THE DEPARTMENT OF LABOR DO?

If your complaint involves a violation of Section 211 of the ERA by your employer, the DOL provides a process for obtaining a personal remedy. The DOL will notify your employer that a complaint has been filed and will investigate your complaint.

If the DOL finds that your employer has unlawfully discriminated against you, it may order that you be reinstated, receive back pay, or be compensated for any injury suffered as a result of the discrimination and be paid attorney's fees and costs.

Relief will not be awarded to employees who engage in deliberate violations of the Energy Reorganization Act or the Atomic Energy Act.

WHAT WILL THE NRC DO?

The NRC will evaluate each allegation of harassment, intimidation, or discrimination to determine whether sufficient information is provided to initiate NRC involvement. To assist in this evaluation, an investigator from the NRC's Office of Investigations (OI) may interview you and gather any applicable documentation in your possession. If the NRC determines that the allegation falls within its purview, NRC's OI will initiate an investigation of your allegation of discrimination unless, prior to the initiation of such investigation, you choose to engage in mediation with your employer in an attempt to settle your allegation of discrimination. If a settlement is reached and the NRC is provided such agreement for review and finds it acceptable, the NRC will close your allegation of discrimination and will not perform an investigation. However, any settlement agreement between you and your employer on your discrimination claim will not impact, in any way, the resolution of the underlying technical issues or any other allegation you may have filed or will file with the NRC. Alternatively, if an acceptable settlement is not reached, NRC's OI will initiate an investigation.

If the NRC or the DOL finds that unlawful discrimination has occurred, the NRC may issue a Notice of Violation to your employer, impose a fine, or suspend, modify, or revoke your employer's NRC license.

▲ Callaway Plant Site in Missouri and Grand Gulf Plant Site in Mississippi are under the purview of Region IV. The Portsmouth Gaseous Diffusion Plant in Ohio is under the purview of Region II.

UNITED STATES NUCLEAR REGULATORY COMMISSION REGIONAL OFFICE LOCATIONS

A representative of the Nuclear Regulatory Commission can be contacted by employees who wish to register complaints or concerns about radiological working conditions or other matters regarding compliance with Commission rules and regulations at the following addresses and telephone numbers.

REGIONAL OFFICES

REGION	ADDRESS	TELEPHONE
I	U.S. Nuclear Regulatory Commission, Region I 2100 Renaissance Boulevard, Suite 100 King of Prussia, PA 19406-2713	(800) 432-1156
II	U.S. Nuclear Regulatory Commission, Region II 245 Peachtree Center Avenue, NE., Suite 1200 Atlanta, GA 30303-1257	(800) 577-8510
III	U.S. Nuclear Regulatory Commission, Region III 2443 Warrenville Road, Suite 210 Lisle, IL 60532-4352	(800) 522-3025
IV	U.S. Nuclear Regulatory Commission Region, IV 1600 East Lamar Boulevard Arlington, Texas 76011-4511	(800) 952-9677

To report safety concerns or violations of NRC requirements by your employer,

telephone:

NRC SAFETY HOTLINE

1-800-695-7403

To report incidents involving fraud, waste, or abuse by an NRC employee or NRC contractor,

telephone:

OFFICE OF THE INSPECTOR GENERAL HOTLINE

1-800-233-3497

APPENDIX F - Radioactive Waste Recording Form

Date Added	Material	Quantity mCi	Name	Comments

APPENDIX G - Area Wipe & Survey Form

Performed by: _____ Date: _____

Survey Meter:

	Manufacturer	Model	Serial Number	Calibration Date
Survey Meter:				
Probe:				

Scaler:

	Manufacturer	Model	Serial Number	Calibration Date
Scaler:				
Probe:				

Inspection

Item	Criteria	Yes	No	Comments
1	Radiation areas posted as required.			
2	Radiation workers wearing dosimeters as required.			
3				
4				
5				

Survey & Wipe Results

1. Label each wipe on the sleeve prior to using. Do not label the wipe itself.
2. Perform wipes over an area of 100cm2. Wipe in a back and forth motion. Do not use a solvent.
3. Indicate locations of surveys on an area map.
4. Conduct surveys in areas where sources are not used to demonstrate exposure to members of the public.

No	Area Wiped	Survey Reading	Wipe Activity	Comments
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

APPENDIX H - Pregnancy Declaration Form

This form letter is provided for your convenience. To make your written declaration of pregnancy, you may fill in the blanks in this form letter, you may use a form letter the licensee has provided to you or you may write your own letter.

DECLARATION OF PREGNANCY

To: _____

In accordance with the NRC10 CFR 20.1208 Dose equivalent to an embryo/fetus I am declaring that I am pregnant. I believe I became pregnant in_____ (only the month and year need be provided).

I have been provided with and read a copy of:

- NRC Regulatory Guide 8.13 "Instruction Concerning Prenatal Radiation Exposure"
- NRC Regulatory Guide 8.29 "Instruction Concerning Risks from Occupational Exposure."

I understand the radiation dose to my embryo/fetus during my entire pregnancy will not be allowed to exceed 0.5 rem (5 millisievert) (unless that dose has already been exceeded between the time of conception and submitting this letter). I also understand that meeting the lower dose limit may require a change in job or job responsibilities during my pregnancy.

_____
(Your Signature)

_____
(Your Name Printed)

_____
(Date)

_____
(RSO Acknowledgement)

_____
(Date)

End of Declaration of Pregnancy

I hereby confirm that I am no longer pregnant.

_____
(Your Signature)

_____
(Your Name Printed)

_____
(Date)

_____
(RSO Acknowledgement)

_____
(Date)

APPENDIX I - NRC Reporting Requirements

Reports of theft or loss of licensed material – 10 CFR 20.2201

(a) Telephone reports.

(1) Each licensee shall report by telephone as follows:

(i) Immediately after its occurrence becomes known to the licensee, any lost, stolen, or missing licensed material in an aggregate quantity equal to or greater than 1,000 times the quantity specified in appendix C to part 20 under such circumstances that it appears to the licensee that an exposure could result to persons in unrestricted areas; or

(ii) Within 30 days after the occurrence of any lost, stolen, or missing licensed material becomes known to the licensee, all licensed material in a quantity greater than 10 times the quantity specified in appendix C to part 20 that is still missing at this time.

(2) Reports must be made as follows:

(i) Licensees having an installed Emergency Notification System shall make the reports to the NRC Operations Center in accordance with § 50.72 of this chapter, and

(ii) All other licensees shall make reports by telephone to the NRC Operations Center (301)-816-5100.

(b) Written reports.

(1) Each licensee required to make a report under paragraph (a) of this section shall, within 30 days after making the telephone report, make a written report setting forth the following information:

(i) A description of the licensed material involved, including kind, quantity, and chemical and physical form; and

(ii) A description of the circumstances under which the loss or theft occurred; and

(iii) A statement of disposition, or probable disposition, of the licensed material involved; and

(iv) Exposures of individuals to radiation, circumstances under which the exposures occurred, and the possible total effective dose equivalent to persons in unrestricted areas; and

(v) Actions that have been taken, or will be taken, to recover the material; and

(vi) Procedures or measures that have been, or will be, adopted to ensure against a recurrence of the loss or theft of licensed material.

(2) Reports must be made as follows:

(i) For holders of an operating license for a nuclear power plant, the events included in paragraph (b) of this section must be reported in accordance with the procedures described in § 50.73(b), (c), (d), (e), and (g) of this chapter and must include the information required in paragraph (b)(1) of this section, and

(ii) All other licensees shall make reports to the Administrator of the appropriate NRC Regional Office listed in appendix D to part 20.

(c) A duplicate report is not required under paragraph (b) of this section if the licensee is also required to submit a report pursuant to §§ 30.55(c), 37.57, 37.81, 40.64(c), 50.72, 50.73, 70.52, 73.27(b), 73.67(e)(3)(vii), 73.67(g)(3)(iii), 73.71, or 150.19(c) of this chapter.

(d) Subsequent to filing the written report, the licensee shall also report any additional substantive information on the loss or theft within 30 days after the licensee learns of such information.

(e) The licensee shall prepare any report filed with the Commission pursuant to this section so that names of individuals who may have received exposure to radiation are stated in a separate and detachable part of the report.

Notification of incidents – 10 CFR 20.2202

(a) **Immediate notification**. Notwithstanding any other requirements for notification, each licensee shall immediately report any event involving byproduct, source, or special nuclear material possessed by the licensee that may have caused or threatens to cause any of the following conditions--

(1) An individual to receive--

(i) A total effective dose equivalent of 25 rems (0.25 Sv) or more; or

(ii) A lens dose equivalent of 75 rems (0.75 Sv) or more; or

(iii) A shallow-dose equivalent to the skin or extremities of 250 rads (2.5 Gy) or more; or

(2) The release of radioactive material, inside or outside of a restricted area, so that, had an individual been present for 24 hours, the individual could have received an intake five times the annual limit on intake (the provisions of this paragraph do not apply to locations where personnel are not normally stationed during routine operations, such as hot-cells or process enclosures).

(b) **Twenty-four hour notification**. Each licensee shall, within 24 hours of discovery of the event, report any event involving loss of control of licensed material possessed by the licensee that may have caused, or threatens to cause, any of the following conditions:

(1) An individual to receive, in a period of 24 hours--

(i) A total effective dose equivalent exceeding 5 rems (0.05 Sv); or

(ii) A lens dose equivalent exceeding 15 rems (0.15 Sv); or

(iii) A shallow-dose equivalent to the skin or extremities exceeding 50 rems (0.5 Sv); or

(2) The release of radioactive material, inside or outside of a restricted area, so that, had an individual been present for 24 hours, the individual could have received an intake in excess of one occupational annual limit on intake (the provisions of this paragraph do not apply to locations where personnel are not normally stationed during routine operations, such as hot-cells or process enclosures).

(c) The licensee shall prepare any report filed with the Commission pursuant to this section so that names of individuals who have received exposure to radiation or radioactive material are stated in a separate and detachable part of the report.

(d) Reports made by licensees in response to the requirements of this section must be made as follows:

(1) Licensees having an installed Emergency Notification System shall make the reports required by paragraphs (a) and (b) of this section to the NRC Operations Center in accordance with 10 CFR 50.72; and

(2) All other licensees shall make the reports required by paragraphs (a) and (b) of this section by telephone to the NRC Operations Center (301) 816-5100.

(e) The provisions of this section do not include doses that result from planned special exposures, that are within the limits for planned special exposures, and that are reported under § 20.2204.

Reports of exposures, radiation levels, and concentrations of radioactive material exceeding the constraints or limits – 10 CFR 20.2203

(a) ***Reportable events***. In addition to the notification required by § 20.2202, each licensee shall submit a written report within 30 days after learning of any of the following occurrences:

(1) Any incident for which notification is required by § 20.2202; or

(2) Doses in excess of any of the following:

(i) The occupational dose limits for adults in § 20.1201; or

(ii) The occupational dose limits for a minor in § 20.1207; or

(iii) The limits for an embryo/fetus of a declared pregnant woman in § 20.1208; or

(iv) The limits for an individual member of the public in § 20.1301; or

(v) Any applicable limit in the license; or

(vi) The ALARA constraints for air emissions established under § 20.1101(d); or

(3) Levels of radiation or concentrations of radioactive material in—

(i) A restricted area in excess of any applicable limit in the license; or

(ii) An unrestricted area in excess of 10 times any applicable limit set forth in this part or in the license (whether or not involving exposure of any individual in excess of the limits in § 20.1301); or

(4) For licensees subject to the provisions of EPA's generally applicable environmental radiation standards in 40 CFR part 190, levels of radiation or releases of radioactive material in excess of those standards, or of license conditions related to those standards.

(b) ***Contents of reports***.

(1) Each report required by paragraph (a) of this section must describe the extent of exposure of individuals to radiation and radioactive material, including, as appropriate:

(i) Estimates of each individual's dose; and

(ii) The levels of radiation and concentrations of radioactive material involved; and

(iii) The cause of the elevated exposures, dose rates, or concentrations; and

(iv) Corrective steps taken or planned to ensure against a recurrence, including the schedule for achieving conformance with applicable limits, ALARA constraints, generally applicable environmental standards, and associated license conditions.

(2) Each report filed pursuant to paragraph (a) of this section must include for each occupationally overexposed[1] individual: the name, Social Security account number, and date of birth. The report must be prepared so that this information is stated in a separate and detachable part of the report and must be clearly labeled "Privacy Act Information: Not for Public Disclosure."

(c) For holders of an operating license or a combined license for a nuclear power plant, the occurrences included in paragraph (a) of this section must be reported in accordance with the procedures described in §§ 50.73(b), (c), (d), (e), and (g) of this chapter, and must include the information required by paragraph (b) of this section. Occurrences reported in accordance with § 50.73 of this chapter need not be reported by a duplicate report under paragraph (a) of this section.

(d) All licensees, other than those holding an operating license or a combined license for a nuclear power plant, who make reports under paragraph (a) of this section shall submit the report in writing either by mail addressed to the U.S. Nuclear Regulatory Commission, ATTN: Document Control

Desk, Washington, DC 20555–0001, by hand delivery to the NRC's offices at 11555 Rockville Pike, Rockville, Maryland; or, where practicable, by electronic submission, for example, Electronic Information Exchange, or CD–ROM. Electronic submissions must be made in a manner that enables the NRC to receive, read, authenticate, distribute, and archive the submission, and process and retrieve it a single page at a time. Detailed guidance on making electronic submissions can be obtained by visiting the NRC's Web site at *http://www.nrc.gov/site-help/e-submittals.html;* by e-mail to*MSHD.Resource@nrc.gov;* or by writing the Office of Information Services, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001. A copy should be sent to the appropriate NRC Regional Office listed in appendix D to this part.

[1] With respect to the limit for the embryo-fetus (§ 20.1208), the identifiers should be those of the declared pregnant woman.

Reports of planned special exposures – 10 CFR 20.2204

The licensee shall submit a written report to the Administrator of the appropriate NRC Regional Office listed in appendix D to part 20 within 30 days following any planned special exposure conducted in accordance with § 20.1206, informing the Commission that a planned special exposure was conducted and indicating the date the planned special exposure occurred and the information required by § 20.2105.

Reports to individuals of exceeding dose limits – 10 CFR 20.2205

When a licensee is required by §§ 20.2203 or 20.2204 to report to the Commission any exposure of an identified occupationally exposed individual, or an identified member of the public, to radiation or radioactive material, the licensee shall also provide the individual a report on his or her exposure data included in the report to Commission. This report must be transmitted no later than the transmittal to the Commission.

Reports of individual monitoring – 10 CFR 20.2206

(a) This section applies to each person licensed by the Commission to--

(1) Operate a nuclear reactor designed to produce electrical or heat energy pursuant to § 50.21(b) or § 50.22 of this chapter or a testing facility as defined in § 50.2 of this chapter; or

(2) Possess or use byproduct material for purposes of radiography pursuant to Parts 30 and 34 of this chapter; or

(3) Possess or use at any one time, for purposes of fuel processing, fabricating, or reprocessing, special nuclear material in a quantity exceeding 5,000 grams of contained uranium-235, uranium-233, or plutonium, or any combination thereof pursuant to part 70 of this chapter; or

(4) Possess high-level radioactive waste at a geologic repository operations area pursuant to part 60 or 63 of this chapter; or

(5) Possess spent fuel in an independent spent fuel storage installation (ISFSI) pursuant to part 72 of this chapter; or

(6) Receive radioactive waste from other persons for disposal under part 61 of this chapter; or

(7) Possess or use at any time, for processing or manufacturing for distribution pursuant to parts 30, 32, 33 or 35 of this chapter, byproduct material in quantities exceeding any one of the following quantities:

Radionuclide	Quantity of radionuclide[1] in curies
Cesium-137	1
Cobalt-60	1
Gold-198	100
Iodine-131	1
Iridium-192	10
Krypton-85	1,000
Promethium-147	10
Technetium-99m	1,000

[1] The Commission may require as a license condition, or by rule, regulation, or order pursuant to § 20.2302, reports from licensees who are licensed to use radionuclides not on this list, in quantities sufficient to cause comparable radiation levels.

(b) Each licensee in a category listed in paragraph (a) of this section shall submit an annual report of the results of individual monitoring carried out by the licensee for each individual for whom monitoring was required by § 20.1502 during that year. The licensee may include additional data for individuals for whom monitoring was provided but not required. The licensee shall use Form NRC 5 or electronic media containing all the information required by Form NRC 5.

(c) The licensee shall file the report required by § 20.2206(b), covering the preceding year, on or before April 30 of each year. The licensee shall submit the report to the REIRS Project Manager by an appropriate method listed in § 20.1007 or via the REIRS Web site at *http://www.reirs.com*

Reports of transactions involving nationally tracked sources – 10 CFR 20.2207

Each licensee who manufactures, transfers, receives, disassembles, or disposes of a nationally tracked source shall complete and submit a National Source Tracking Transaction Report as specified in paragraphs (a) through (e) of this section for each type of transaction.

(a) Each licensee who manufactures a nationally tracked source shall complete and submit a National Source Tracking Transaction Report. The report must include the following information:

(1) The name, address, and license number of the reporting licensee;

(2) The name of the individual preparing the report;

(3) The manufacturer, model, and serial number of the source;

(4) The radioactive material in the source;

(5) The initial source strength in becquerels (curies) at the time of manufacture; and

(6) The manufacture date of the source.

(b) Each licensee that transfers a nationally tracked source to another person shall complete and submit a National Source Tracking Transaction Report. The report must include the following information:

(1) The name, address, and license number of the reporting licensee;

(2) The name of the individual preparing the report;

(3) The name and license number of the recipient facility and the shipping address;

(4) The manufacturer, model, and serial number of the source or, if not available, other information to uniquely identify the source;

(5) The radioactive material in the source;

(6) The initial or current source strength in becquerels (curies);

(7) The date for which the source strength is reported;

(8) The shipping date;

(9) The estimated arrival date; and

(10) For nationally tracked sources transferred as waste under a Uniform Low-Level Radioactive Waste Manifest, the waste manifest number and the container identification of the container with the nationally tracked source.

(c) Each licensee that receives a nationally tracked source shall complete and submit a National Source Tracking Transaction Report. The report must include the following information:

(1) The name, address, and license number of the reporting licensee;

(2) The name of the individual preparing the report;

(3) The name, address, and license number of the person that provided the source;

(4) The manufacturer, model, and serial number of the source or, if not available, other information to uniquely identify the source;

(5) The radioactive material in the source;

(6) The initial or current source strength in becquerels (curies);

(7) The date for which the source strength is reported;

(8) The date of receipt; and

(9) For material received under a Uniform Low-Level Radioactive Waste Manifest, the waste manifest number and the container identification with the nationally tracked source.

(d) Each licensee that disassembles a nationally tracked source shall complete and submit a National Source Tracking Transaction Report. The report must include the following information:

(1) The name, address, and license number of the reporting licensee;

(2) The name of the individual preparing the report;

(3) The manufacturer, model, and serial number of the source or, if not available, other information to uniquely identify the source;

(4) The radioactive material in the source;

(5) The initial or current source strength in becquerels (curies);

(6) The date for which the source strength is reported;

(7) The disassemble date of the source.

(e) Each licensee who disposes of a nationally tracked source shall complete and submit a National Source Tracking Transaction Report. The report must include the following information:

(1) The name, address, and license number of the reporting licensee;

(2) The name of the individual preparing the report;

(3) The waste manifest number;

(4) The container identification with the nationally tracked source.

(5) The date of disposal; and

(6) The method of disposal.

(f) The reports discussed in paragraphs (a) through (e) of this section must be submitted by the close of the next business day after the transaction. A single report may be submitted for multiple sources and transactions. The reports must be submitted to the National Source Tracking System by using:

(1) The on-line National Source Tracking System;

(2) Electronically using a computer readable format;

(3) By facsimile;

(4) By mail to the address on the National Source Tracking Transaction Report Form (NRC Form 748); or

(5) By telephone with follow-up by facsimile or mail.

(g) Each licensee shall correct any error in previously filed reports or file a new report for any missed transaction within 5 business days of the discovery of the error or missed transaction. Such errors may be detected by a variety of methods such as administrative reviews or by physical inventories required by regulation. In addition, each licensee shall reconcile the inventory of nationally tracked sources possessed by the licensee against that licensee's data in the National Source Tracking System. The reconciliation must be conducted during the month of January in each year. The reconciliation process must include resolving any discrepancies between the National Source Tracking System and the actual inventory by filing the reports identified by paragraphs (a) through (e) of this section. By January 31 of each year, each licensee must submit to the National Source Tracking System confirmation that the data in the National Source Tracking System is correct.

(h) Each licensee that possesses Category 1 nationally tracked sources shall report its initial inventory of Category 1 nationally tracked sources to the National Source Tracking System by January 31, 2009. Each licensee that possesses Category 2 nationally tracked sources shall report its initial inventory of Category 2 nationally tracked sources to the National Source Tracking System by January 31, 2009. The information may be submitted by using any of the methods identified by paragraph (f)(1) through (f)(4) of this section. The initial inventory report must include the following information:

(1) The name, address, and license number of the reporting licensee;

(2) The name of the individual preparing the report;

(3) The manufacturer, model, and serial number of each nationally tracked source or, if not available, other information to uniquely identify the source;

(4) The radioactive material in the sealed source;

(5) The initial or current source strength in becquerels (curies); and

(6) The date for which the source strength is reported.

Report of a leaking source – 10 CFR 35.3067

A licensee shall file a report within 5 days if a leak test required by § 35.67 reveals the presence of 185 Bq (0.005 μCi) or more of removable contamination. The report must be filed with the appropriate NRC Regional Office listed in § 30.6 of this chapter, by an appropriate method listed in § 30.6(a) of this chapter, with a copy to the Director, Office of Federal and State Materials and Environmental Management Programs. The written report must include the model number and serial number, if assigned, of the leaking source; the radionuclide and its estimated activity; the results of the test; the date of the test; and the action taken.

APPENDIX J - Notice of intent to Perform Work Under Reciprocity

This form is to be used for those Agreement States that do not have their own form. Mail or Telefax to the relevant state agency before service starts. Send one copy to the customer file and one copy to the Radiation Safety Officer. Any questions shall be directed to the Radiation Safety Office.

Reciprocity Identification / License Number:_____

Agency	Licensee
	Industrial Maintenance Engineering d/b/a AIS Gauging 5350 N. 13th Street Terre Haute, IN 47805
Telephone:	**Telephone:**
Facsimile:	**Facsimile:**

1. Service Information

Duration of Service From _____ To _____ Total Work Days _____

Engineer/Service Rep _____ AIS Gauging Telephone _____

Local Hotel/Motel _____ Hotel Telephone _____

2. Customer Information

Company Name _____

Location _____

Contact Name _____

Contact Telephone _____

3. Device Information

Model	Nuclide	Activity

APPENDIX K - References

IATA	Dangerous Goods Regulations
OSHA 29 CFR 1010	OSHA Occupational Safety and Health Standards
USDOT 49 CFR	Transportation
	USNRC 10 CFR 20 Standards for Protection Against Radiation
USNRC Form 3	Notice to Employees
USNRC Reg Guide 8.13	Instructions Concerning Prenatal Radiation Exposure
USNRC Reg Guide 8.29	Instruction Concerning Risks from Occupational Radiation Exposure

FRED SANDERS
(812) 466-5478
AIS GAUGING
5350 N 13TH ST
TERRE HAUTE IN 47805

4 LBS

1 OF 1

DWT: 13,11,2

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LISLE IL 60532-4532

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