ARGOS

May 20, 2019

Mr. Dennis Lawyer
U.S. Nuclear Regulatory Commission
Nuclear Materials Safety Region I
2100 Renaissance Boulevard
King of Prussia, PA 19406-2713

Br. 2
03006692

REC RG1 05 29 '19 AM 06:51

RE: Radioactive Materials License Number 47-11451-01
Supplemental response to Notice of Violation
(USNRC Inspection No.: 03006692/2018001)

Dear Mr. Lawyer:

This a request to amend the above referenced radioactive materials license. During your agency's most recent inspection, we responded to the inspection items to correct the deficiencies. One area we noticed was the need to change the Radiation Protection Manual in its entirety.

The revised Radiation Protection Manual is enclosed for your review. If you have questions, please contact our consultant, Ben Warren of AEC at 352-215-1231 or you can contact me at 304-260-1827.

Thank you for your review of our request.

Sincerely,

Andrew A Frye
Environmental Manager- RSO

Enc. Radiation Protection Manual

C: Mr. Arthur Burritt – Chief – Commercial Industrial & Academic Branch, USNRC
Mr. Harri Mootoor – VP Operations North Argos
Mr. Ben Warren, AEC

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RADIATION PROTECTION MANUAL

Date: 5/20/19

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Radiation Safety Officer

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1.0 INTRODUCTION

This Manual provides the Radiation Safety Program in support of the use and handling of source holders containing radioactive materials used in density, level and weight measurements. This Radiation Protection Manual provides the in-house procedures for protecting the health of personnel working in the licensed area and the public. In no case should any statement in this manual be construed to be less restrictive than the Agency regulations.

2.0 SCOPE and APPLICABILITY

2.1 Scope and Applicability

This Manual provides procedures to effectively manage radioactive materials contained in source holders to assure compliance with regulatory requirements.

2.2. Radiation Protection Policy

2.2.1 It is the Company's policy to keep radiation exposure to personnel AS LOW AS REASONABLY ACHIEVABLE and within regulatory limits. It is the responsibility of the RSO and each individual to insure that all personnel are cognizant of, and practice, the controls established.

2.2.2 The primary responsibility for radiation safety rests with each individual. Their attitude toward practicing radiation safety affects not only themselves but their fellow workers.

2.2.3 The RSO is responsible for seeing that personnel working under his control are aware of and comply with radiation safety standards and procedures, and that work is performed in a safe manner. The RSO shall be immediately notified of any unusual incidents involving radiation or radioactive materials, or of a possible excessive exposure which may require notification.

2.2.4 Personnel entering or working in the plant will receive orientation and/or training commensurate with their responsibilities or duties.

2.2.5 Personnel supervising the handling of radioactive materials are to be properly trained by the RSO or a qualified expert with records kept of satisfactory completion of this training.

2.3. <u>As Low As Reasonably Achievable (ALARA) Program Commitment</u>

The purpose of the ALARA Program is to maintain radiation exposures to a minimum, as mandated by the Agency.

As part of the Company Radiation Safety Program, employees who use fixed gauges are instructed in the procedures and precautions to be used to keep their radiation exposure as low as reasonably achievable.

The Company maintains procedures, equipment, and facilities to reduce exposures. Procedures, including updates, are reviewed by applicable personnel.

The Company's management is committed to the ALARA philosophy and to maintaining a safe working environment. The ALARA philosophy is presented to all gauge users.

The Company conducts a Radioactive Materials audit annually. It focuses on the regulatory requirements and it is used to determine if radiation exposures are being kept to a minimum. The review determines if modifications to the Company Radiation Safety Program are needed and provides recommendations.

The RSO discusses activities with facility personnel, review of documentation required by the license or regulations, and a walkthrough. A final report is filed noting if any deficiencies were found and any corrective actions taken. This report is available to be reviewed by the Agency.

RSO:_____

Management Representative:_____

3.0 DEFINITIONS

ACTIVITY is the rate of disintegration (transformation) or decay of radioactive material. The units of activity are the curie (Ci) and the becquerel (Bq).

ADVANCED AUTHORIZED USER (AAU) is an employee who can do all the duties of the AU as defined below, plus issue the Radiation Work Permit (RWP) and directly supervise (in the physical presence of) the installation, relocation (removal from the pipe or tank), maintenance and repair of devices.

(NOTE: No person can remove the source from the source holder)

AGENCY is the U.S. Nuclear Regulatory Commission having the authority to license and inspect the Company in the use and handling of radioactive materials.

ALARA (acronym for "as low as reasonably achievable") means making every reasonable effort to maintain exposures to radiation as far below the dose limits as is practical, consistent with the purpose for which the licensed activity is undertaken, taking into account the state of technology, the economics of improvements in relation to the state of technology, the economics of improvements in relation to benefits to the public health and safety, and other social and socioeconomic considerations, and in relation to utilization of nuclear energy and license materials in the public interest. Annually, the Company is required to perform a review of the program to assure that the procedures and tasks are keeping doses to the

workers and public ALARA. This report can be performed by the RSO or a qualified expert who is assisting the radiation protection program. After completion of the report, it is to be reviewed and signed by the RSO.

ANCILLARY WORKER is a non-occupational worker but able to assist with the permitted activity outside the radiation area boundary (e.g., crane or hoisting operator, welder or helper), shall be authorized by the AAU and be given an orientation as the radiation hazards commensurate with the job. The anciillary personnel cannot use a survey meter or make any decisions regarding dose levels. This worker's exposure rate is limited to 2 mR/hour and an annual whole body dose of 100 mrem.
NOTE: Central Shipping & Receiving personnel are typically ancillary workers. However, they cannot sign shipping documents (incoming or outgoing) of hazardous materials unless they are trained in the hazard according to 49 CFR Subpart H. These personnel must be AUs to be qualified to sign shipping documents involving radioactive materials.

AUTHORIZED USER (AU) is able to perform all the basic activities regarding the handling of the source holders except be the supervision of installing, relocating, maintenance and repair of a gauge. The AU can do the following: Perform an inventory, perform a leak test using an approved leak test kit, use a survey meter, perform basic repair and maintenance without removing the gauge from the pipe or tank, open and close the shutter, lock out a shutter, follow an RWP, sign as a shipper of radioactive materials (USDOT HAZMAT training every 3 years) and secure the source holder in storage.

BACKGROUND RADIATION means radiation from cosmic sources, naturally occurring radioactive material, and fallout from previous nuclear tests

DECLARED PREGNANT WOMAN means a woman who has voluntarily informed the Company, in writing, of her pregnancy and the estimated date of conception. The declaration remains in effect until the declared pregnant woman withdraws the declaration in writing or is no longer pregnant. A person who is an AU or an AAU is required to notify the RSO in writing as to her pregnancy status.

DOSE is a generic term that means absorbed dose, dose equivalent, effect dose equivalent, committed dose equivalent, committed effective dose equivalent, or total effective dose equivalent (TEDE). For the Company, it means the TEDE on the dosimetry forms.

EXPOSURE means being exposed to ionizing radiation which includes radiation from radioactive materials and radiation producing machines, such as x-ray machines.

INDIVIDUAL MONITORING DEVICE means devices designed to be worn by a single individual for the assessment of dose equivalent such as film badges or Optically Stimulated Luminescent Dosimeters (OSLDs). These devices are used only as directed by the RSO for the AUs or the AAUs during tasks involving the working around or relocation of devices and in which the potential annual doses may exceed 10% of the allowable annual radiation dose to an occupation worker. If individual monitoring devices are not used, the radiation levels of the activity are to be recorded on the RWP prior to commencing the task and the individual's

dose indicated on the completed RWP. The radiation dose is recorded by the RSO on a separate spreadsheet for the total accumulation of dose for each worker.

INDUSTRIAL RADIOGRAPHY is the examination of the structure of materials by nondestructive testing (NDT) methods using sources of ionizing radiation to produce radiographic images. A typical example is use of radiography to check the quality of pipe or tank welds. The exposure rates from NDT activities are high and require stringent training of the operator and extensive procedures. (See checklist Appendix D)

INSTALLATION is the placement of a source holder containing radioactive material onto a pipe, tank or other industrial machinery specifically compatible with the intended use as recommended by the manufacturer of the device.

MEMBER OF THE PUBLIC (MOP) is any individual except when that individual is receiving an occupational dose of ionizing radiation. This includes visitors or other employees who are not radiation workers. The annual dose limit for the MOP is 100 mrem and does not include background radiation or doses from any medical procedure or from exposure to individuals administered radioactive materials and released from a medical facility.

OCCUPATIONAL DOSE is the dose received by an individual in the course of employment in which the individual's assigned duties require receiving radiation protection training and involve potential exposure to radiation or to radioactive materials from licensed sources. The annual occupational dose limit is 5,000 mrem. Occupational dose does not include doses received from background radiation, from any medical procedure, from exposure to individuals administered radioactive materials and released from a medical facility, or as a member of the public (MOP).

RADIATION CONTROLLED AREA (RCA) is that area which may have radiation levels to which an individual may be exposed to 5 mrem in any one hour at 30 cm from the source. Access to any "Radiation Controlled Area" is controlled by the Company for the purpose of protecting the individual. A typical example of a RCA is potentially during RELOCATION of a source holder.

RADIATION SAFETY OFFICER (RSO) is designated on the Company radioactive materials license as being responsible for managing nuclear sources and ensuring that those devices are used at the facility in compliance with applicable governmental regulations. The Radiation Safety Officer (RSO) must have received training to meet the U.S. Nuclear Regulatory Commission licensing requirements.

RADIATION WORK PERMIT (RWP) is a form which, when approved by the RSO or AAU, authorizes specific personnel to do specified work, to enter an area that requires special conditions and precautions and to minimize a radiological hazard. The RWP normally specifies authorized personnel, description of task to be performed and protective measures. The RWP is normally used only under special conditions, such as relocating devices and must be directly supervised by an Advanced Authorized User or RSO. However, it can be used if personnel are working for extended periods in the immediate "proximity" of a device that has been locked out. In this case, the AAU performs the calculation on the RWP and

assigns the appropriate dose for the workers on that project. The RWP will be marked as a "PROXIMITY" RWP. (See RWP form Appendix A)

"RADIOACTIVE MATERIALS" Posting pertains to a source or sources of licensed radioactive materials requiring posting. Typically, this would apply to posting on source holders containing sealed sources and storage room doors containing any source holders.

REPAIR is the repair of the detector mechanism electronics or any other repair that typically cannot be accomplished in place. Some repair activities may require the removal of the source holder and the subsequent reinstallation.

SEALED SOURCE is a radioactive material that is permanently bonded or fixed in a capsule or matrix designed to prevent release of the radioactive material under the most severe conditions which are likely to occur in normal use and handling. These sealed sources are used in level gauges, density measurement devices, neutron activation sources and moisture gauges.

SOURCE HOLDER is a gauge or device which holds a sealed source containing radioactive materials.

SURVEY means an evaluation of the radiological conditions and potential hazards incident to the use, transfer, relocation, or transporting of radioactive materials.

4.0 RESPONSIBILITIES

4.1 All Employees

Employees are aware that there are nuclear devices containing radiation sources at the facility and that there are rules governing their lawful and safe management. Employees that have concerns, questions or problems regarding Radiation Postings or radiation sources are to contact the RSO to resolve these concerns.

4.2 Radiation Safety Officer

4.2.1. Ensure that licensed material possessed by the licensee is limited to the kinds and quantities of radioactive material listed on the license.

4.2.2. Ensure that the source holders are used only by individuals authorized by the license.

4.2.3. Ensure that individuals using source holders are properly trained in accordance with section 6 of this Manual; are designated by the RSO and receive refresher training.

4.2.4. If used, ensure that personnel monitoring devices are used correctly and reports of personnel exposure are reviewed in a timely manner and to alert the radiation worker in the event of a high or unusual exposure, to

notify the Agency as required of the high or unusual exposure, and to investigate all such unusual exposures and take any necessary corrective action to prevent these incidents from occurring again.

4.2.5. Ensure that the source holders are properly secured against unauthorized removal when not in use.

4.2.6. Ensure that proper authorities are notified in case of accident, damage to source holders, fire or theft.

4.2.7. Ensure that audits are performed at least annually to ensure that (a) the licensee is abiding by the Agency's regulations and the terms and conditions of the license (e.g. periodic leak tests, inventories, use limited to trained, approved users), (b) the licensee's radiation protection program content and implementation achieve occupational doses and doses to members of the public that are ALARA, and (c) the licensee maintains required records with all required information (e.g. records of personnel exposure; receipt, transfer and disposal of licensed material, leak testing, inventories and training) sufficient to comply with the Agency's requirements. (See Appendix B)

4.2.8. Ensure that all incidents, accidents and personnel exposure to radiation in excess of U.S. NRC regulations are investigated and reported to the Agency and other authorities, as appropriate, within the required time limits.

4.2.9. Ensure that licensed material is transported in accordance with all applicable USDOT requirements.

4.2.10. Ensure that licensed material is disposed of properly.

4.2.11. Ensure that the licensee has up-to-date copies of the Agency regulations, reviews new or amended Agency regulations and revises licensee procedures, as needed, to comply with Agency regulations.

4.2.12. Ensure that the license is amended whenever there are changes in licensed activities, responsible individuals, or information or commitments provided to the Agency in the licensing process.

4.2.13. Ensure that Authorized Users who have received greater than 100 mrem in a calendar year receive written notice of that dose. The RSO is to maintain a record that the employee received the notice.

4.2.14. Identify an Alternate RSO that has been trained and authorized to fulfill the responsibilities in the RSO's absence

4.3. PRECAUTIONS

4.3.1. Each AU who has declared pregnancy shall inform the RSO

4.3.2. Any Company person engaging in the use of radioactive materials must not be individuals under eighteen (18) years of age and/or persons pregnant do not handle radioactive materials which are not exposed to radiation in excess of 100 mrem/year.

4.3.3. The facility personnel should determine if new employees that are considered as AUs have been previously exposed to radiation and obtain documentation of the exposure. This documentation can be obtained from the employee's previous employer, ATTN: RSO. A letter of the accumulative dose should be forwarded to the Company RSO by the previous employer, if available. Duties of the new employee should not be limited during the waiting for the previous employer's dosimetry report.

4.3.4. Industrial radiography is performed at the Company facility by contractors. Compliance with proper operation of the radioactive device is under the jurisdiction of the contractor's radioactive materials license and the USNRC. As a precautionary measure, the Company has a procedure to minimize non-destructive testing ("x-ray") exposure to plant personnel when outside contractors are operating in the facility. The RSO is to assure proper completion of the attached Appendix D for a Radiography Check Sheet This report is to be maintained by the RSO upon completion of the activity. (Since this is not a mandatory requirement to be performed by the Company, this is not an inspectable item for the Agency to review.)

5.0. Operating and Emergency Procedures

AUs shall be instructed in and have access to the Operating and Emergency Procedure involving radioactive materials. No individual is permitted to operate equipment other than as specified in the procedures and the radioactive materials license. No individual shall bypass a safety device or interlock. The attached Radiation Work Permit will be issued for the handling of fixed gauges requiring advanced activities (Appendix A).

5.1. General Rules of Use

5.1.1 All gauge-related operations, including routine cleaning and maintenance, must be in accordance with the gauge manufacturer's instructions and recommendations.

5.1.2. The ALARA philosophy is to be maintained. All personnel working with fixed gauges must follow the ALARA philosophy by keeping radiation exposures as low as reasonably achievable. The objective is to reduce occupational and public exposures as far below regulatory limits as reasonably achievable by means of good work practices. The following

methods are used to minimize radiation exposures;

5.1.2.1. Minimize the TIME spent in close proximity to the gauge (the shorter the time, the lower the dose);

5.1.2.2. Maximize the DISTANCE from the gauge (doubling the distance reduces radiation intensity by one quarter); and

5.1.2.3. Make use of available SHIELDING to block radiation.

5.1.3. If damage to a gauge is suspected, immediately notify the RSO who will arrange to have a radiation survey of the gauge performed as soon as possible. Refer to the emergency procedures for further instructions.

5.1.4. Personnel are prohibited from entering any hopper, vessel, conveyor system, or other area where radiation levels exceed 2 mR/hour until the source holder has been locked out in accordance with the gauge lock-out/tag-out procedure.

5.1.5. **Opening or removing a source from its housing is prohibited**.

5.2. Advanced Services

5.2.1. Advanced activities include gauge installations, non-routine maintenance or service, relocations, and removal from service and placed in storage. Only AAUs or workers under their direct supervision and in their physical presence of the AAU are authorized to perform advanced activities. **Gauge maintenance or repair that requires removal of the source is prohibited.**

5.2.2. Prior to conducting any of the permitted activities, an AAU is to initiate a RWP. As such, the AAU will perform a survey to assure that the shutter or closing mechanisms are functioning properly and are closed, where applicable. A record of the completion of this survey shall be made on the RWP. After the removal, relocation, maintenance or repair and the device is reinstalled, a final survey shall be performed with a record of the completion of the survey kept on the RWP.

5.2.3. Gauge installations and relocations will include radiation surveys. Surveys will be taken at 1 foot around the sources and at the surface of the source holder to verify that the source is property shielded and aligned with the detector. Measurements will also be performed to establish the 5 mR/hour boundary (to determine if "Caution – Radiation Area" signs must be posted) and the 2 mR/hour boundary (to determine the restricted area perimeter).

5.2.4. A copy of the appropriate manufacturer's operation manual or Sealed Source and Device Evaluation (SSDR) must be available with applicable instructions followed.

5.2.5. The Radiation Work Permit (RWP) as described in Appendix A must be used for Advanced Services. An RWP is a written document remaining on-site until completion of the task. Completed copies shall be maintained for inspection by the Department . The RWP shall:

Authorize specific individuals to enter and work;
Establish "Lock-Out" procedures for each device;
Outline the specific job to be done;
Outline instructions on the safe and correct handling procedure prior to work commencing;
Outline survey results;
Outline a specific time period that a given worker may conduct activities based on proximity to the source; and,
Be placed in a plastic cover hanging on the Radiation Area Caution tape or as otherwise providing it being obviously displayed.

5.2.6. The RSO shall approve and document by means of a RWP the installation, relocation, or movement to storage, of devices containing radioactive materials. This documentation shall include:

Radioactive Material (element and mass number)
Manufacturer & model number of the sealed source & device
Previous location (building number, name, site in building)
New location (building no., location in bldg) - facility address
Survey of the source holder to assure the shutter is closed. Indicate maximum survey readings taken at directional points of the device (top, bottom, etc.) both at the surface and at a distance of one foot.
The model and serial number and calibration date of the survey instrument used.
During the survey, a reading of greater than 5 mR/hour at 30 cm from the source shall required posting as a radiation area.
For movement to storage, the device is to be surveyed collectively with the other sources in storage to assure that the radiation levels are within a Radiation Area level.
Serial number of the source holder
Date performed
Transportation documentation, if necessary
Persons involved in the transfer

5.2.7. The AAU shall inspect the site of the gauge to be removed and any area for storage of the removed gauge before the permit is issued to determine which gauge is to be handled, that the sites are safe, that safety equipment is in place, and that established safety precautions have been taken. The AAU shall assure that access to the Radiation Areas are restricted using physical barriers or having personnel immediately present to monitor ingress and egress of other personnel.

5.2.8. Calculated exposure shall be conducted as part of the RWP. The AAU

shall utilize the calculated exposure as the assigned dose for the workers for that task. The AAU shall inspect the site before the permit is issued to close or have closed and locked the source shutter, where applicable, and survey the area with a calibrated survey meter. Based on the survey result, time restrictions must be calculated to establish time limits for work tasks based on proximity of a radiation worker to the source, thereby limiting individual exposure to no more than 2 mR/hr or 125 mrem/quarter dose. This is the administrative control to assure that radiation workers will not exceed 10% of the allowable annual dose for an occupational worker.

5.2.9. Ancilliary personnel who help with the permitted activity beyond the radiation area boundary (e.g., crane or hoisting operator, welder or helper) shall be authorized by the AAU and be given an orientation as the radiation hazards commensurate with the job. The ancillary personnel cannot use a survey meter or make any decisions regarding dose levels. Based on the survey result, time restrictions must be calculated to establish time limits for work tasks based on proximity of a ancillary worker to the source, thereby limiting individual exposure to no more than 2 mR/hr and 100 mrem/year dose. This is the regulatory limit for members of the public.

5.2.10. A barrier, rope, sign, or other indicator of a permit work area may be around the work area, as necessary, to advise other personnel of the restricted access area. The barrier shall be posted, "RADIATION AREA."

5.2.11. Following completion of all work and the return-to-service of the gauge, the RWP must be signed by the RSO. The completed permit then will be forwarded to the RSO's office to be filed.

5.2.12. Work conducted in an area where the exposure rates are less than defined as a "Radiation Area" does not require personnel monitoring. This provision of the procedures is conditional that the calculated quarterly dose for a Radiation Worker does not exceed 125 mrem per quarter; or, 10% of the quarterly dose for an occupational worker. The exception would be in the event of an emergency as described in the emergency procedures below.

5.3. "Lock-out" procedures specific to radioactive materials as addressed in these procedures shall be observed for each device to prevent inadvertent opening by the shutter and unwanted exposure to the employees. As a minimum, these procedures shall include:

5.3.1. Review of the shutter operation to understand the shutter mechanism fully, if applicable;

5.3.2. Means to ensure the source holder is locked in the "OFF" position

during maintenance, repair, relocation or other work in, on, or around the bin, tank, hopper, belt or pipe on which the device is mounted.

5,3,3, These lock-out procedures are not applicable for Low Activity Sources (LASs) with microcurie sources that do not have shutter mechanisms (per Sealed Source and Device Registry documentation). Manufacturer-supplied shipping cover will be put into shipping position for storage or transfer of these units.

5.3.4. Lockout procedures shall be posted as part of the radiation work permit.

5.3.5. Prior to return-to-service following movement of any gauge, appropriate radiation signs shall have been installed and the gauge secured in its installed location. A survey is required following installation or relocation activities. If necessary, a leak test will be performed to be in accordance with procedures outlined in the leak test procedures.

5.3.6. Conditions requiring Lock-Out

5.3.6.1. Prior to any work being performed in the immediate vicinity of a gauge radiation beam when a distance or gap exists between a gauge's radioactive source and the radiation detector that permits entry of all or a portion of a person's body into the primary radiation beam;

5.3.6.2. During any manipulation of a gauge, including the source holder or the detector, which involves physical movement of the device or separation from a pipe, vessel, etc. including installation, relocation or storage;

5.3.6.3. When individuals are working on or adjacent to a gauge during periods of shutdown;

5.3.6.4. Whenever an individual enters a vessel in which such a gauge is located; and,

5.3.6.5. Whenever a vessel with such a gauge is empty and an individual is working around the exterior of the device.

5.3.7. Lock-out/Tag-out specifications

5.3.7.1. Lock-out devices will consist of either a key or combination lock capable of holding the gauge in the safe (closed) position such that the gauge cannot operate until the lock-out device is removed. Lock-out devices will be substantial enough to prevent removal without the use of excessive force or unusual techniques.

5.3.7.2. Tag-out devices will consist of a durable tag and a means of attachment that can be securely fastened to the gauge to indicate that the gauge may not be

operated until the tag-out device is removed. Tag-out devices will be substantial enough to prevent inadvertent or accidental removal, and able to withstand the ambient environment for the maximum period of time that exposure is expected. Tag-out device attachments will be of the non-reusable type, attachable by hand, self-locking, and non-releasable with a minimum unlocking strength of no less than 50 pounds, with the general design and basic characteristics at least equivalent to a one-piece, all-environment-tolerant nylon cable tie. Tag-out devices will warn against hazardous conditions if the gauge is operated and must include a legend such as Do Not Open or Do Not Operate. Tags shall be legible and understandable to all personnel who may be in the area.

5.3.7.3. Lock-out and/or tag-out devices will indicate the identity of the individual applying the device(s). Lock-out and/or tag-out devices will be standardized in at least one of the following criteria: color; shape; or size, and the print and format of tag-out devices will be standardized.

5.4. Instrumentation Usage.

The RSO has the responsibility to ensure that proper instrumentation is on site for performing surveys of the gauges. The instruments shall be calibrated yearly. Training in proper usage is required prior to usage. The manufacturer's manual will be the guide for proper usage. Care and maintenance of the instrument will be in accordance with the manufacturer's instructions. Prior to usage, the instrument will be turned on, allowed to warm up, battery checked, calibration checked, response checked, then used and stored. If not usable or out of calibration, the instrument will be tagged out of service.

5.5. Postings

The Agency requires labels, signs, symbols, and procedures to protect individuals and to assure that exposures are as low as reasonably achievable.

5.5.1. Radiation Areas

Radiation areas, such as hoppers, are required to have the following posting:

CAUTION - RADIATION AREA
or RADIATION HAZARD

5.5.2. Storage Areas

Each area or room where radioactive materials are used or stored shall be conspicuously posted with a sign bearing the radiation caution symbol and the words:

CAUTION - RADIOACTIVE MATERIAL

These areas shall be secured with the key under jurisdiction of the RSO, AAUs, and/or AUs.

5.5.3. Containers

Containers/packages of radioactive materials are required to bear durable, clearly visible labels identifying the radioactive contents. It must also bear the radiation caution symbol and the words:

CAUTION – RADIOACTIVE MATERIAL

Please note that packages carrying portable gauges that are labeled in accordance with regulations of the U.S. Department of Transportation are not required to have additional postings.

5.5.4. Emergency Procedures

Procedures as outlined in procedure 5.6 are to be posted

5.5.5. Notice to Employees

The "Notice to Employees" form is to be posted for review by the workers. This notice describes radiation control regulations, employer and worker responsibilities, radiation exposure reporting requirements and inspection requirements.

5.5.6. Lockout Procedures

Lockout Procedures describing instructions for locking out fixed gauges will be conspicuously posted for quick reference in order to prevent workers from entering a gauge's radiation bean during work in, on or around installed gauges. These procedures are described in this procedure.

5.6. Fixed Gauges Activities

Routine, in-place activities supporting the proper care and functioning of the device, such as, cleaning, servicing shutter mechanisms, changing bolts or connecting devices (not relocating the device), replacing ancillary outer parts (such as labels) that have deteriorated, detector electronics, postings, performing inventory, leak testing and lock-out/tag-out activities. These are preventative maintenance activities that do not require a RWP. Routine maintenance is considered "use" and can be performed by an AU or AAU.

5.6.1 Inventory

5.6.1.1. The Company will conduct a physical inventory and inspection of all nuclear devices at least every six months. See revised INVENTORY FORM (Appendix D)

5.6.1.2. Update the inventory and be signed by the RSO semi-annually.

5.6.1.3. The physical inventory records are maintained for three years from the date of the last inspection.

5.6.1.4. The following are the minimum items to be recorded on the inventory form

5.6.1.4.1 The manufacturer's model number and serial number of each source holder.

5.6.1,4.2.. The identity of each radionuclide and its estimated or original activity.

5.6.1.4.3.. The type and location of each source holder.

5.6.1.4.4. The date of the inventory.

5.6.1.4.5.. The date of the last leak test.

5.6.1.4.6. Confirmation that warning signs are posted and clearly visible at each source holder. By using a portable survey meter, confirm that the warning signs are posted at the 2 mR/hour level. If not, it is to be brought to the attention of the RSO.

5.6.1.4.7. Confirmation that the shutter is operational, if applicable.

5.6.1.4.8. CONDITION of the source holder by the AU including environmental conditions in the area are to be noted. The RSO with the assistance of the AUs may change the classifications at any time to standardize this inventory report. The AU will determine the adequacy of posting, precautions to prevent damage and expeditious modifications needing to be made, if appropriate. The following are potential classifications of the condition of the gauge to be considered by the RSO

GOOD means no further comment is necessary.

FAIR means that the gauge is functioning; however, there are concertns, such as, some apparent exterior rust, the shutter is sticking, the metal label is becoming unreadable or potentially compromised. In this case, the person

performing the inventory will provide written comments. When received by the RSO, this necessitates action to remedy the condition before the next inventory period; or,
POOR which means that the functional condition of the gauge is becoming compromised by having excessive rust, extremely problematic shutter, or the metal label is unreadable, for example. When the report is received by the RSO this necessitates action to remedy the condition within 90 days.

5.6.2 Shutter checks

5.6.2.1. Shutter checks are performed every 6 months.

5.6.2.2. Shutter checks are performed by the RSO, AUs, AAUs or persons specifically authorized to do so.

5.6.2.3. Shutter checks are performed by using a portable survey meter to confirm that the shutter closed and attenuated the beam. An alternative method is to use the fixed detector opposite the gauge and confirm the shutter has been closed by communicating with the control room that the beam has been attenuated.

5.6.3. Leak Tests

5.6.3.1. Fixed cesium-137 gauges require leak testing not to exceed thirty-six (36) months.

5.6.3.2. Other sources, such as cobalt-60, may require leak testing at a different frequency. The Conditions of the radioactive materials license and the guidance on the Sealed Source and Device Registry will be followed.

5.6.3.3. Only AUs of the Company or personnel specifically licensed to do so using an approved leak test kit may take leak test samples. Samples shall be taken by following the directions described on the approved leak test kit. Analysis of the test sample for leakage and contamination must be performed by the manufacturer or by other persons specifically authorized by the Nuclear Regulatory Commission, or an agreement state to perform such services. Prior to mailing the leak test sample shall be surveyed to assure that it does not exceed 0.5 mR/hour at the surface of the envelope (USPS regulations).

5.6.3.4. If a test reveals the presence of 0.005 microcuries or more of removable contamination, the Company needs to immediately remove the sealed source from use, notify the Agency and have it packaged for shipment to the manufacturer. A report is to be filed with the Agency within five (5) days of receiving the test results.

5.6.3.5 The records will include the following information:

Source manufacturer's name, model and serial number;
Identity of each sealed source radionuclide and its estimated activity, expressed in millicuries.
Measured activity of each leak test sample, in microcuries.
Date the sample was collected; and,
Signature of the RSO or designee.

5.6.3.6. The AU taking the sample will use all precautions appropriate to make sure that he/she is not in the beam path. Leak tests shall be taken while the shutter is in the closed position.

5.6.3.7. Leak tests are the analyzed by vendors licensed by the USNRC or an Agreement State to perform leak test services. Results of these tests are kept in units of microcuries.

5.6.3.8. Leak test records has be maintained for at least three years. The records shall contain the manufacturer's name, the model number, serial number of the source holder, the radionuclide, estimated radioactivity, the date of the test and signature of the RSO

5.7 Emergency Procedures (for incidents that may involve or affect nuclear devices)

5.7.1. In the event of a stolen, lost or missing gauge, immediately notify the facility Radiation Safety Officer. The following procedure is to be implemented in the event of physical damage to a gauge:

5.7.1.1. Evaluate the situation to determine if any individuals may have been exposed to radiation. If individuals are suspected to be contaminated, care for life threatening injuries first, then, notify emergency personnel and the hospital staff about possible radioactive materials contamination.

5.7.1.2. Secure the area around the gauge using a radius of at least 15 feet from its location. Maintain direct surveillance to prevent unauthorized entries;

5.7.1.3. As soon as possible, notify the RSO, who will notify the Agency and perform notification and reporting procedures

5.7.1.4. If proper instrumentation is not available, wait for technical assistance prior to approaching or moving the gauge so that the extent of damage to the source holder can be determined. A survey meter is used to determine the presence of higher than expected radiation levels

in the area; and appropriate precautions and equipment may be required to perform any response activities under the supervision of the RSO. If any equipment is involved in the emergency, isolate the equipment until it can be surveyed for possible contamination.

5.7.1.5. Arrange for a radiation survey to be conducted as soon as possible by a qualified person using appropriate radiation detection instrumentation. To accurately assess the radiation danger, it is essential that the person performing the survey be competent in the use of the survey meter.

5.7.1.6.. If radiation levels permit it, perform a leak test on the source holder to determine if the sealed source is leaking. If a leak test kit is unavailable, use Q-tip or other similar materials to perform the test, and place the Q-tip or other wiping materials in a zip-loc bag and survey before sending it for expedited analysis.

5.7.1.7. In the event of a fire or explosion emergency, local authorities are to be contacted by the facility's first responder. Notification to the Agency and the local authorities is to be performed by the RSO.

5.7.1.8 Employees, contractors, or visitors who discover or suspect a damaged source holder, must immediately do the following:

1. Call Security with the following information:
    a. Employee's name
    b. Plant location
    c. Type of emergency
    d. Phone number

2. If area is safe to remain, ensure that no one enters within a 45 feet minimum radius of the damaged source holder.

Site Personnel will do the following:

1. Gather information
2. Determine if emergency action is required
3. Contact:
    a. Radiation Safety Officer – Andrew Frye
    b. Alternate RSO
4. Keep an accurate chronological record of times and actions taken.
5. If there appears to be any damage to the source holder, then contact the RSO is to contact the manufacturer of the device for assistance.
6. Inform the Radiation Safety Officer of any incidents related to the possible damage and/or control of radiation sources.

Contact Information:

	Argos LLC, Martinsburg, WV: RSO: Andrew Frye Business: Cell: (304) 261-8746	
Local Authority: 911	To Report a Radiological Emergency or Request Emergency Radiological Assistance, Call the: US Nuclear Regulatory (301) 415-7000	**Manufacturer:** Of the respective device

5.8 Reportable Event Notifications

Notification and reporting requirements are found in multiple parts of the Agency regulations. Additional notifications and reports may be described or repeated in other procedures (i.e., emergency procedures). Also, some notification/reporting requirements overlap. The RSO has the primary responsibility for completing all required notifications and reports. (Refer to duties of the RSO). Events necessitating notifications:

5.8.1. Change in RSO. This is to be performed within 30 days of a change in RSO. The new RSO must have the sufficient training to comply with the Agency Regulations.

5.8.2. Vacating premises. This is to be performed with 30 days before vacating or relinquishing possession or control of the permanent storage facility listed in the license.

5.8.3. Change in Ownership. Should a change of ownership or a change in majority of controlling interest occur, a new license application is to be submitted to the Agency. This application will be signed by a certifying official of company representing the new license. In addition, a request for termination of the old license will be submitted by the certifying official representing the original license.

5.8.4. Bankruptcy. Upon intent to declare bankruptcy, the Agency will be immediately notified.

5.8.5. License termination. Upon termination of the licensed activities the Agency shall be notified. In addition, the disposition of all the licensed must be documented and submitted to the Agency.

5.8.6. Immediate notification required when it is suspected that an individual

has received a dose of 25 rem or more.

5.8.7. 24-hour notification needs to be made to the Agency in the case of stolen or lost radioactive materials.

5.8.8. 24-hour notification is required with the discovery of an event involving loss of control of a radiation source and/or cause of a dose in excess of 5 rem.

5.8.9. 24-hour notification required for: An event in which equipment is disabled or fails to function as designed and is required to prevent exposures; and unplanned fire or explosion damaging radioactive material or the device container of equipment containing radioactive materials.

5.8.10. Information required for immediate / 24-hour notification includes:

The caller's name and call back phone number
A description of the event, including date and time;
The exact location of the event;
The radioisotopes involved with the activities and chemical/physical forms; and
Any personnel radiation exposure data available.

5.9 Receiving and Opening Packages

5.9.1. The RSO will approve or place all orders for radioactive material and ensure that the requested materials and quantities, manufacturer and models are authorized by the license.

5.9.2. Only AUs will open packages containing nuclear gauges. Receipt records will be maintained on file for inspection.

5.9.3. Each package will be visually inspected for any sign of damage. The package will be surveyed as soon as possible to verify that radiation levels are as anticipated. If any damage is noted, the RSO will be notified.

5.9.4. If no damage is evident, the gauge will be stored and locked in the designated storage area until it can be installed by qualified personnel.

5.9.5. Only AUs, AAUs, or the RSO who have the USDOT HAZMAT certification are authorized and trained to be able to sign shipping papers involving the shipment or receiving of radioactive materials.

5.9.6. USDOT HAZMAT certification must be received every three years.

5.10 Special precautions regarding Cf-252 sources

The building assembly housing the cross-belt analyzer (area of use) has NOT been altered in any way from the original design. The configuration of this design allows air circulation that will maintain the proper temperature. As part of our commitment to maintain the temperature below 130 degrees F, there will be no alterations to the equipment or building assembly without proper engineering in respect to the temperature.

5.10.1 Shipping of Radioactive Materials for reuse

Californium 252 Source

5.10.1.1. Source is considered to be under transport during loading of the vehicle, movement of the vehicle on public roads, unloading of the vehicle, and during temporary storage of the gauge away from the storage area.

5.10.1.2. When shipping the source to the manufacturer, verify with the recipient as to their facility manning the Emergency Contact phone number.

5.10.1.3. Regulations Controlling the Transfer of Radioactive Material are defined in the USNRC regulations.

5.10.1.4. When returning gauges to the manufacturer, the manufacturer, or their company designee, shall identify the only locations that these sources will be shipped.

5.10.1.5. When the Company offers radioactive material for shipment, it must ensure that the material is properly packaged, labeled, and that the requirements for transportation for the material are met. This can be coordinated with the manufacturer, but is ultimately the responsibility of the shipper (the Company).

5.10.1.6. When confirming the Transport Index (TI) of the incoming package, the user needs to take into consideration that the Cf-252 source is a neutron and gamma emitter. With a survey meter measuring gamma only, the ratio is approximately 3:1 neutron to gamma emissions. For example, if the gamma radiation is 2 mR/hour, the neutron dose rate is 6 mrem/hour for a combined radiation level of 8 mrem/hour. Thus, the TI would be 8.0. *(Comment: To confirm this ratio, the RSO is to obtain actual data from the manufacturer and adjust the calculation accordingly).*

5.10.2. Installed Analyzer

5.10.2.1. The Company possesses Californium 252 sources. The license authorizes sources for use and additional sources

for temporary storage for exchange. This allows for the receipt to be installed gauges to be possessed by the Company prior to the manufacturer arriving to remove the older sources and replacing with the newly received sources.

5.10.2.2. Company personnel are not authorized to supervise the source replacement. This shall be performed by the manufacturer.

5.10.2.3. Only the manufacturer shall package the source for shipment.

5.10.3. Leak Testing

The manufacturer performs tests every six months to ensure source integrity and to verify all safety parameters are functioning properly

5.10.3.1. Californium 252 sources require leak testing at 6 month intervals. Results of these tests are kept in units of microcuries.

5.10.3.2. Only the manufacturer may take leak test samples. Analysis of the test sample for leakage and contamination must be performed by the manufacturer or by other persons specifically authorized by the Nuclear Regulatory Commission, a licensing state, or an agreement state to perform such services. Prior to mailing the leak test sample shall be surveyed to assure that it does not exceed 0.5 mR/hour at the surface of the envelope (USPS regulations).

5.10.3.3. If a test reveals the presence of 0.005 microcuries or more of removable contamination, the Company is to immediately contact the manufacturer to remove the sealed source from use and have it packaged for shipment back to the manufacturer. A report needs to be filed with the State of Alabama within five (5) days of receiving the test results if leaking.

5.10.4. Maintenance Requiring Source Removal Procedure

If maintenance is needed at critical areas in or around the instrument requiring source removal, then the following procedure will be followed:

5.10.4.1. Radiation Safety Officer will be notified and he or his designee will contact Gamma-metrics to remove sources for storage in the climate controlled storage area. This removal and storage will ONLY be performed by Gamma-metrics personnel.

5.10.4.2. All work performed in this area will have oversight by the

RSO or his designee.

5.10.4.3. The manufacturer personnel will install sources and perform required radiation safety procedures after ALL work is completed.

5.10.4.4. All engineered guards are inspected for proper installation by the RSO after maintenance is complete.

5.10.5. Security

The CrossBelt analyzer is set up with safety features that prevent people working around the equipment from accidentally coming in contact with the radioactive sources. The sources are locked into the analyzer with key access controlled by the RSO. Engineered guards are placed along the sides and under the bottom restricting access to no closer than 1 meter.

5.10.6. Lockout

Sources are installed, serviced and removed by the manufacturer customer support engineers. Therefore, additional lock-out devices are not required.

5.10.7. Source Control

The unit is set up with safety features which prevent people working around the equipment from accidentally coming in contact with the radioactive sources:

5.10.7.1. Access Control - Entrance to the housing is controlled by a locked door. The only way to access the radioactive sources during operation is through this door.

5.10.7.2. Assembly – The source handling assembly returns the neutron sources to a shielded location when the sources are not in use, during maintenance activities, or in the event of system malfunction.

5.10.7.3. Power Loss – During a power loss, the source handling assembly automatically moves the neutron sources to the storage location within the assembly.

5.10.7.4. The source materials is doubly encapsulated in stainless steel to prevent accidental leakage of radioactive materials.

5.10.7.5. Fire – In the event that fire destroys the shielding, the sources will maintain their integrity. The sources are rated for 2,500 degrees F.

6.0 TRAINING PROGRAM

Radiological Protection Training

6.1. 40-Hour Advanced Authorized User (AAU) Training

Advanced Authorized User training authorizes a user to conduct installation, relocation, removal of the source holder, not involving the installation, replacement or disposal of the sealed sources containing radioactive materials used in the devices. The persons performing these functions will complete a 40–hour training course authorized by the Agency. Successful completion of the course requires obtaining a score of at least 70 percent on a closed-book test consisting of at least 50 questions that have not been provided to the students before the test. Documentation of compliance with this part of the regulation will be maintained for inspection by the Agency.

6.2. 8-Hour Authorized User (AU) Training

Basic Authorized User Training: A fixed gauge Authorized User (AU) is an individual qualified to perform (and supervise the performance of) general tasks involving a gauge that presents minimal health and safety risks (lock-outs, inspections, surveys, shutter checks, leak tests, security, care & cleaning, minor repairs not involving removal of source holder). This includes the performance of repair of the electronic detector (not the source holder), cleaning the unit, replacing a radiation symbol metal plate, or other minor repairs performed in place. AUs may participate in "advanced" activities (gauge installations, relocations, maintenance, and repair of the gauge off the pipe) only in the direct supervision of and in the physical presence of an Advanced Authorized User (AAU). These advanced activities present an increased risk of radiation exposure requiring the presence of more highly trained individuals, such as the manufacturer's representative or a 40-hour trained person.

A minimum of 8 hours of formal training provided by a training program covering the subjects listed in Agency regulations is required to qualify as a fixed gauge AU. Training will be performed by a third party, approved by the Agency or an Agreement State. In addition, instructions will include Operating and Emergency procedures and supervised hands-on training. Documentation of compliance with this part of the regulation will be maintained for inspection by the Agency. Successful completion of the course requires obtaining a score of at least 70 percent on a closed-book test consisting of at least 20 questions that have not been provided to the students before the test.

6.3. Refresher Training

Refresher training will be provided by the RSO, AAU or radiation consultant biennially. The refresher training will include participating in "dry runs" of the emergency procedures and reviewing (1) operating and emergency procedures, including lock-out/tag-out procedures as appropriate, (2) changes in applicable regulations or license conditions, and (3) deficiencies identified during the performance of annual audits or Agency inspections of the radiation protection program. Refresher training may also include review of applicable Agency's Information Notices and Bulletins and update of HAZMAT Transportation of industrial gauges for the Authorized Users assisting with incoming or outgoing shipments. Typical refresher training will last 2-4 hours.

Records will be kept of employees satisfactory completion of refresher training.

6.4. Ancillary Workers

Ancillary personnel who help with the permitted activity (e.g., crane or hoisting operator, welder or helper) shall be authorized by the AAU and be given an orientation as the radiation hazards commensurate with the job. The ancillary worker cannot use a survey meter or make any decisions regarding dose levels. When evaluating the exposure rate from the locked out gauge, the AAU will calculate the amount of time to limit the worker so as to prevent the worker from exceeding 2 mrem/hour dose. (See the RWP checklist for details)

6.5. Availability

Availability of the AU or AAU means that the worker is capable of being on-site to respond to an incident involving a fixed gauge within a reasonable time, such as one hour. A fixed gauge is considered to be in use when it is mounted in place, even if it shutter is closed and is locked out.

7.0 ASSESSMENT REQUIREMENTS

Annually the RSO will conduct or have performed by a qualified expert a review of the radiation protection program to identify the that the activities are personnel doses are as low as reasonably achievable (ALARA). Appendix B attached provides the checklist to be performed.

APPENDIX A

RADIATION WORK PERMIT FOR FIXED GAUGES

RADIATION WORK PERMIT

For Fixed Gauges

Date: _____ Time: _____ Permit Expires: _____

Work to Be Done: _____

Old gauge location: _____ Serial Number: _____

New gauge location: _____ Element/mass #: _____

Radioactivity: _____ mCi / Gauge manufacturer/model no._____

Names of those involved in work: _____

Leader: _____

PRECAUTIONS:

YES	N/A		
☐	☐	1.	Shutter shall be closed and locked by RSO or designated Authorized User whenever: a. the device is physically moved; b. working on or within 12" of gauge c. entrance into a vessel in which a gauge is located

IF FIXED GAUGE IS TO BE MOVED:

☐	☐	2.	An Advanced Authorized User shall supervise physical movement of fixed gauge.
☐	☐	3.	Area surveyed with a calibrated meter. Meter# _____ Cal. Date _____ Maximum Radiation Measured Gauge Surface _____ mR/HR at: 1 Ft. Distance _____ mR/HR
☐	☐	4.	Survey results must be used to calculate exposure limits. Based on a maximum allowable exposure of 2 mR/HR, stay time restriction required for: Contact with gauge: _____ Min/Hr 1 Foot from gauge: _____ Min/Hr (example: if a gauge measures 12 mR/HR at surface and 1 mR/HR at 1 ft. distance, contact with the gauge must be limited to 10 min/hr. There would be no limit for work 1 foot or greater from the gauge.)
☐	☐	5.	Safe job procedures and exposure limits have been discussed with all personnel involved with the work. Personnel advised that gauges are very heavy. Refer to manufacture for specific weight.
☐	☐	6.	Any gauge removed from its installed location must be stored in a secure location pending reinstallation.
☐	☐	7.	Gauges in storage shall be identified with radiation hazard signs.
☐	☐	8.	Gauges in storage shall have shutters closed and locked.

SIGNATURES:

Facility RSO or Advanced Authorized User_____ Date:_____

FINAL CHECK:

YES	N/A	
☐		Unlock the shutter and return the gauge to service.
☐		New or relocated gauge is surveyed upon installation: Max. field measured @ gauge surface (_____) mR/hour Max. field measured @ gauge 1 foot (_____)mR/hour
☐	☐	New or re-installed gauges must be wipe-tested within 6 months and surveyed immediately upon installation
☐		Radiation signs are installed at the 2 mR/hour level and clearly visible.
☐		The gauge is ready for service.

☐ Forward completed form to facility RSO to record employee doses in site log.

Advanced Authorized User:_____ Date:_____

RSO Signature:_____Date Reviewed: _____

DOSE REPORT (To Be Calculated By RSO only)

	Personnel		Task	Fraction of hour in 6 minute increments for each task	X	Exposure rate in mR/hr at surface	PLUS	Fraction of hour in 6 minute increments for each task	X	Exposure rate in mR/hr at one foot		EQUALS	Total dose (in mrem) for RWP

APPENDIX B

RADIOACTIVE MATERIALS MANAGEMENT AUDIT CHECKLIST ALARA PROGRAM

APPENDIX B

RADIOACTIVE MATERIALS MANAGEMENT AUDIT CHECKLIST
ALARA PROGRAM

FACILITY: _____ **DATE:** _____
COMPLETED BY: _____ **SIGNATURE:** _____

PLEASE CHECK CORRECT ANSWER

				On Hand?
1.	Facility Radioactive Materials License Number & amendments	Yes ☐	No ☐	GL ☐
2.	Is the license correspondence available?	Yes ☐	No ☐	GL ☐
3.	Are copies of the following available at the facility?	Yes ☐	No ☐	
	• USNRC Regulations.?	Yes ☐	No ☐	
	• Operating & emergency procedures for all sources?	Yes ☐	No ☐	
4.	Has the facility received any radioactive sources in the last year? If yes, attach receipt.	Yes ☐	No ☐	GL ☐
5.	Has each Cs-137, Co-60 and Cf-252 source been tested for leakage and/or contamination at intervals not to exceed 6 to 36 months, depending on the radioisotope? If not, state discrepancy.	Yes ☐	No ☐	N/A ☐
	_____			
	_____			
	a. Has the RSO signed the leak test results page?	Yes ☐	No ☐	N/A ☐
	b. Do any of the tests reveal contamination of 0.005 microcuries or more?	Yes ☐	No ☐	N/A ☐
6.	Leak Test kit supplier _____			
7.	Fixed gauge installation, relocation, maintenance, repair or initial radiation survey was performed in last 12 months?	Yes ☐	No ☐	N/A ☐
	If yes, RWP completed for each?	Yes ☐	No ☐	N/A ☐
8.	Is an inventory of all sources located at the facility performed within six (6) months interval?	Yes ☐	No ☐	N/A ☐

Dates of inventories: ----------

9.	Any other inventories performed?	Yes ☐	No ☐	N/A ☐

---

10. Are any sources received/ shipped this year? If so, provide details.

_____
_____
_____

WALK THROUGH

11. Are the following forms posted?
    - Notices of violation? Yes ☐ No ☐ N/A ☐
    - Orders issued and responses to violations? Yes ☐ No ☐ N/A ☐
    - Notice to Employees posted? Yes ☐ No ☐
    - Does Form include a location where the operation documents can be examined? Yes ☐ No ☐
    - Yellow emergency sheet? Yes ☐ No ☐
    - Emergency Response document? Yes ☐ No ☐
    - Facility Lock Out Procedures for fixed gauges? Yes ☐ No ☐ N/A ☐

12. Are the following documents/labels attached to the incoming packages?
    - Proper labels? Yes ☐ No ☐
    - Bill of Lading? Yes ☐ No ☐
    - Other transmittal documents? Yes ☐ No ☐

13. Does the package have the correct marking and labels? Yes ☐ No ☐

14. Are the fixed source holders marked with legible "Caution Radiation" signs? Yes ☐ No ☐

15. Are the facility lock-out procedures available for fixed gauges? Yes ☐ No ☐

Comments: _____

_____

_____

_____

RSO: _____

_____

APPENDIX C

RADIOACTIVE MATERIALS INVENTORY FORM

ARGOS USA, LLC MARTINSBURG, WVA

Physical Inventory of Sealed Sources - Re

Specifically Licensed Sources

Number	Source	SN	Source Holder Serial Number	Location	Leak Test Date	Leak Test Next Due	Gauge Maintenance Action Items
1	Quarry Cross Belt Analyzer (CB-Omni)	822316				4/11/2019	
2	Raw Mill (Additives) Cross Belt Analyzer	821112				4/11/2019	
3	Stage 3 CO-60	1899-12-10			1/28/2019	7/27/2019	
4	Stage 4 CO-60	1901-12-10			1/28/2019	7/27/2019	
5	Stage 5 CO-60	1900-12-10			1/28/2019	7/27/2019	
6	Lime Slurry Area	7285CP			5/1/2019	10/28/2019	
7	Cooler Cyclone	7476CO			5/1/2019	10/28/2019	
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

Generally Licensed Sources

21							
22							
23							
24							
25							

Comments

RSO Signature _____

APPENDIX D

INDUSTRIAL RADIOGRAPHY CHECKLIST

(352) 215-1231 • Fax (904) 461-1327 • aec2000@earthlink.net • www.aec-radiation.com

ARGOS CORPORATION
INDUSTRIAL RADIOGRAPHY INFORMATION CHECK SHEET

To Be Completed By Argos Supervisory Personnel In Charge Of This Activity:

Date of Radiography: _____

Location of Planned Radiography: _____

Anticipated Radiography Start Time: _____

Anticipated Duration of Radiography:

Rayonier Supervisor on Duty at Time of Radiography: _____

Radiography Contractor:

Argos Person In Charge Of Tracking This Activity: _____

Plant Notification List:	To Be Completed Prior To Announcement Of X-Ray Activities	
ANTICIPATED PLANT COVERAGE DURING RADIOGRAPHY:	NAME	NOTIFIED
Mechanical Maintenance Supervisor(s) or Working Foreman:		
RSO (Voicemail Adequate):		
Supervisor(s) or Lead Craftsmen:		
Electric Shop Supervisor:		
Engineering Supervisor:		
Maintenance Planning Staff:		
Plant Construction Supervisor:		

The Radiography Contractor Shall:

1. Notify RSO upon arrival on site.
2. Document number of radioactive sources responsible for on-site. # of sources _____ Signature: _____
3. Rope off the area with magenta and yellow warning tape.
4. Post signs indicating x-ray activities are in progress. Signs should be sufficient to keep everyone out and visible from all area entry points.
5. Notify the site RSO when you are prepared to commence with testing. The RSO shall, upon notification, announce or have announced the impending "x-ray" activity warning everyone to stay clear of the area.
6. Prior to leaving site, document that all radioactive sources are accounted for: # of sources _____ Signature: _____

UPON COMPLETION, RETURN COMPLETED FORM TO LOCATION RADIATION SAFETY OFFICER.

RADIATION SAFETY OFFICER: _____

DATE REVIEWED: _____

NRC FORM 532
(05-2016)

U.S. NUCLEAR REGULATORY COMMISSION

ACKNOWLEDGEMENT - RECEIPT OF CORRESPONDENCE

Name and Address of Applicant and/or Licensee

Argos USA Corporation
Attn: Andrew A. Frye
Environmental Manager - RSO
1826 South Queen Street
Martinsburg, WV 25401

Date
07/02/2019

License Number(s)
47-11451-01

Mail Control Number(s)
612632

Licensing and/or Technical Reviewer or Branch
Commercial, Industrial, R&D, and Academic Branch

This is to acknowledge receipt of your: ☑ **Letter and/or** ☐ **Application** **Dated:** 05/20/2019

The initial processing, which included an administrative review, has been performed.

☑ **Amendment** ☐ **Termination** ☐ **New License** ☐ **Renewal**

☑ **There were no administrative omissions identified during our initial review.**

☐ **This is to acknowledge receipt of your application for renewal of the material(s) license identified above. Your application is deemed timely filed, and accordingly, the license will not expire until final action has been taken by this office.**

☐ **Your application for a new NRC license did not include your taxpayer identification number. Please complete and submit NRC Form 531, Request for Taxpayer Identification Number, located at the following link: http://www.nrc.gov/reading-rm/doc-collections/forms/nrc531.pdf**

Follow the instructions on the form for submission.

☐ **The following administrative omissions have been identified:**

Your application has been assigned the above listed MAIL CONTROL NUMBER. When calling to inquire about this action, please refer to this control number. Your application has been forwarded to a technical reviewer. Please note that the technical review, which is normally completed within 180 days for a renewal application (90 days for all other requests), may identify additional omissions or require additional information. If you have any questions concerning the processing of your application, our contact information is listed below:

Region I
U. S. Nuclear Regulatory Commission
Division of Nuclear Materials Safety
2100 Renaissance Boulevard, Suite 100
King of Prussia, PA 19406-2713
(610) 337-5260, (610) 337-5313,
(610) 337-5398, (610) 337-5513 or (610) 337-5239