



RADIATION PROTECTION SAFETY POLICY

Procedure Number
SAF-1.17

Issue Date:
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SAFETY

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Safety Manager

Date

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General Manager

Date

[Signature] 02/19/20

Radiation Safety Officer

Date

INTERPRETATION AND PERIODIC REVIEW OF THIS PROCEDURE IS THE RESPONSIBILITY OF:

The Radiation Safety Officer (RSO)

DISTRIBUTION

ALL MANAGERS
ALL TEAM LEADERS



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1.0 PURPOSE

To enable the Coosa Pines Mill to safely control the use and locations of radioactive materials and to the extent practical, use procedures and engineering controls based upon sound radiation protection principles to achieve occupational doses and doses to members of the public that are "as low as is reasonably achievable" (ALARA).

2.0 SCOPE

This policy / plan applies to all Resolute FP, Coosa Pines Mill, employees and contractors.

The Nuclear Regulatory Commission (NRC) is the federal agency responsible for ensuring the safety of persons working around radioactive materials. Alabama is an "agreement" state that has accepted responsibility for regulating radioactive material within its borders and meeting NRC guidelines. Alabama's regulatory requirements are included in the Alabama State Board of Health Administrative Code, Chapter 420-3-26, *Radiation Control*.

According to the Radioactive Material License issued to the Coosa Pines Mill, the mill is responsible for complying with the following provisions of Alabama's *Radiation Control* code:

- 420-3-26.-01, "General Provisions"
- 420-3-26.-02, "Licensing"
- 420-3-26.-03, "Standards for Protection Against Radiation"
- 420-3-26.-10, "Notices, Instructions, and Reports to Workers; Inspections"


Note: Each radioactive device used at the Coosa Pines Mill is

- Encased in steel and lead shielding to protect passers-by from potential exposure to radiation,
- Equipped with a shutter to allow shut-off of the radioactive beam as needed during maintenance or other activities,
- Located in areas not easily accessed or frequented by mill personnel, and
- Inspected on a routine basis to ensure safe operation.

3.0 DEFINITIONS

(For more definitions, see Alabama's *Radiation Control code* 420-3-26-.01(2), 420-3-26-.03(3), and NRC 10 CFR, Part 20.1003.)

- 3.1 **ALARA** (acronym for "as low as is reasonably achievable") means making every reasonable effort to maintain exposure to radiation as far below the dose limits as is practical, consistent with the purpose for which the licensed activity is undertaken.
- 3.2 **Background radiation** – radiation from cosmic sources; naturally occurring radioactive material.
- 3.3 **Controlled area** means an area, outside of a restricted area but inside the site boundary, access to which can be limited by the licensee for any reason.
- 3.4 **"Declared pregnant woman"** means a woman who has voluntarily informed the mill, in writing, of her pregnancy and estimated date of conception. The declaration

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remains in effect until the declared pregnant woman withdraws the declaration in writing or is no longer pregnant.

- 3.5 **Exposure** means being exposed to ionizing radiation or to radioactive material.
- 3.6 **Licensed material** means source material...possessed, used,...under a general or specific license issued by the Nuclear Regulatory Commission or its duly authorized representatives.
- 3.7 **Limits** (dose limits) means the permissible upper bounds of radiation doses.
- 3.8 **Monitoring** (radiation monitoring, radiation protection monitoring) means the measurement of radiation levels, concentrations, surface area concentrations or quantities of radioactive material and the use of the results of these measurements to evaluate potential exposures and doses.
- 3.9 **Occupational dose** means the dose received by an individual in the course of employment in which the individual's assigned duties involve exposure to radiation or to radioactive material from licensed and unlicensed sources of radiation, whether in the possession of the licensee or other person. Occupational dose does not include doses received from background radiation, as a patient from medical practices, from voluntary participation in medical research programs, or as a member of the public.
- 3.10 **Radiation Safety Officer (RSO)** is the individual who has the knowledge and responsibility to apply appropriate radiation protection rules.
- 3.11 **Radiation Storage Area** is the area designated at the Coosa Pines Mill for storing irradiated materials or radiation devices. The area is in the north end of the Hazardous Waste Storage building.
- 3.12 **Restricted area** means an area, access to which is limited by the licensee for the purpose of protecting individuals against undue risks from exposure to sources of radiation.
- 3.13 **Specific License** is a radioactive materials license that outlines the identification, types, uses, and locations of devices that can be used by the specified licensee; the name of the designated Radiation Safety Officer; and conditions of the license.
- 3.14 **Survey** means an evaluation of the radiological conditions and potential hazards incident to the production, use, transfer, release, disposal, or presence of radioactive material or other sources of radiation. When appropriate, such an evaluation includes, but is not limited to, tests, physical examinations, and measurements or calculations of levels of radiation or concentrations of radioactive material present.

4.0 RESPONSIBILITIES

4.1 Human Resources (HR)

- a) The HR Manager is responsible for notifying the RSO should any new-hire employee indicate that he/she has had previous work experience with nuclear devices and



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- b) In order to comply with Alabama Rule 420-3-27-.03 (13), notifying the RSO should any woman who is pregnant voluntarily inform HR (in writing) of the pregnancy and estimated date of conception.

4.2 General Manager

The General Manager is responsible for approving the Radiation Protection Safety Policy and ensuring continuing maintenance of the program.

4.3 Radiation Safety Officer, RSO (has overall responsibility for the Radiation Protection Safety program) and is accountable for the following and other activities:

- a) Authorizing the purchase of radioactive materials.
- b) Facilitating radiation device maintenance.
- c) Following up on HR notifications of new-hire employees with previous nuclear device experience or female employee "declared pregnant woman" status.
- d) Maintaining radiation material inventory.
- e) Ensuring that Coosa's radiation safety policy / plan meets Federal and State regulations.
- f) Posting or otherwise made available to employees the documents included in Alabama Rule 420-3-26-.10(2).
- g) Receiving, opening, storing, and facilitating disposal of radioactive material.
- h) Ensuring that policy / plan records are maintained per regulatory requirements.
- i) Making application to renew or amend the Coosa's Radioactive Material License within submission guidelines for license renewal or amendment.
- j) Monitoring the training program and ensuring that assignment of the Radiation Safety CBT to all employees occurs annually.

5.0 PROGRAM PROCEDURES

5.1 Contractors

- a) Contractors who work on site will receive notification if there are nuclear gauges in the area(s) where they are scheduled to work.
- b) Radiation contractors shall notify the RSO five working days prior to arriving on site and will furnish the Coosa Mill with proof of training and license. If applicable, a list of contract employees shall also be provided by the contract employer.

5.2 Emergency Information and Equipment

- a) **Emergency Response Program (ERP)** – Safety Procedure SAF-1.26, Section 10, *Radiation Event*, includes instructions for handling an emergency involving a radiation source at the Coosa Pines Mill. The RSO is the primary contact.
- b) **Equipment** – The RSO or designee shall maintain and store radiation-related safety equipment (Geiger meters, other) in a designated location in the RSO Office and one in the RSO Alternate office.



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- c) **List and Location** of Radiation Devices - The RSO shall maintain a list of the radiation devices in the mill and location of each.

5.3 Policy / Plan

- a) **Authority** – The RSO has ultimate responsibility for implementing the Radiation Safety Protection Policy and ensuring that the Policy meets State and Federal regulation.
- b) **Review** – The RSO shall facilitate Policy reviews at intervals not to exceed 12 months [Alabama Rule 420-3-26-.03 (5)(c)].

5.4 Nuclear Devices

- a) **Disposal** – A certified individual, under the direction of the RSO, shall be responsible for removing a licensed device, packaging, and labeling/shipping (per DOT regulations) to an approved disposal site. The “Letter of Transfer” for the removed device shall be maintained as radiation safety record.
- b) **Inventory** – A physical inventory (quantities and kinds of material, locations) shall be conducted by the RSO every six (6) months at a minimum (per State License) to account for all sealed sources received and possessed under the Radioactive Material License issued to the Coosa Pines Mill. Records shall include the inventory date and be maintained for five (5) years from the inventory date.
- c) **Purchase** of nuclear devices – A written authorization must be obtained from the RSO prior to ordering and purchasing any nuclear device to be brought onto the Coosa Pines Mill site.
- d) **Receiving and Opening Packages** containing nuclear devices
- i. All new devices should include a notice to contact the RSO before the device is unloaded. No Coosa Pines Mill representative shall officially accept a package for delivery onto the mill site prior to completion of inspection and testing activities by the RSO.
 - ii. Initial inspection and testing of Incoming packages shall be completed by the RSO per requirements in Alabama Rule 420-3-26-.03 (32), *Procedures for Receiving and Opening Packages*.
 - iii. The RSO or RSO Alternate shall make arrangements to receive the package when the carrier offers it or when it arrives at the carrier's terminal
 - iv. The RSO or RSO Alternate shall test all arriving nuclear devices as soon as possible and within three (3) hours after delivery (if practicable) before the device may enter the mill site
 - v. The external surface of the labeled package shall be monitored for radiation contamination.
 - vi. The RSO or RSO Alternate shall accept the device if tests indicate that the packaging and device are within acceptable limits or free of radiation contamination.
 - vii. If radioactive contamination exists per Rule 420-3-26-.03(32)(d), the RSO or designee shall immediately isolate the package; notify the final


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delivery carrier; and notify the Alabama State Board of Health, Office of Radiation Control.

- e) **Restricted Areas** – The RSO shall establish entry guidelines should, in the future, the Coosa Pines Mill require that radiation areas be designated as “restricted.” (Note: No posting is required as long as persons frequenting areas where radiation devices are located receive no more than the general public radiation dose described in Rule 420-3-26-.03(14-15), *Radiation Dose Limits for Individual Members of the Public*.)
- f) **Storage** – Storage of radiation containing materials shall be confined to the north end of the Hazardous Waste Storage Building.
- g) **Surveys and Wipe Tests** – A certified individual, under the supervision of the RSO or RSO Alternate, shall be responsible for shutter checks, surveys, and wipe tests at appropriate times (a minimum of every thirty-six (36) months per State License). The RSO shall be responsible for maintaining the corresponding records.

5.5 Personnel

- a) **Communication of Radiation Information** – Documents specified in Alabama Rule 420-3-26-.10(2), *Posting of Notices to Workers* shall be posted at all entrances used by personnel entering the mill site and/or on the Coosa Portal by the RSO or designee. If posting the actual documents at entrances is not practicable, a notice which describes the documents and states where they may be examined may be posted instead.
- b) **“Declared Pregnant Woman” Status** – Every female employee shall be provided with instructions of the mill’s policy on voluntarily declaring pregnancy through the Radiation Safety CBT. The training shall be assigned to all female employees as new hires and on an annual basis thereafter, at a minimum, via the Learning Management System (LMS). Records shall be maintained in the LMS.
- c) **“Life-Time Exposure”** – Should any new personnel inform the mill that they have worked with a nuclear device in the past, the RSO (after notification from HR) shall request a copy of the new employee’s “life time exposure” data sheet, available by law at the request of Coosa’s RSO from the new employee’s previous employer. (Reference: Alabama Rule 420-3-26-.10)
- d) **Request for Radiation Exposure Information** – Per Alabama Rule 420-3-26-.10(4), *Notifications and Reports to Individuals*, the RSO shall be responsible for responding to employee requests for their radiation exposure data during employment at the Coosa Pines Mill. Calculations to determine radiation exposure shall be retained on file by the RSO
- e) **Training**
 - i) **All employees** shall be provided with radiation safety training (i.e., Radiation Safety CBT) that includes information on the devices located on the Coosa Pines Mill site per Alabama Rule 420-3-26-.10(3), *Instructions to Workers*. The training shall be assigned to all employees as new hires and on an annual basis thereafter, at a

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minimum, via the Learning Management System (LMS). Records shall be maintained in the LMS.

ii) The RSO and RSO Alternate shall undergo formal radiation safety training in order to receive Radiation Safety Officer certification. Certification shall be Updated and maintained as required.

5.6 Lock-Out and Tag-Out Procedures

Lockout / tagout activities shall be conducted per instructions in the H.E.L.P. (hazardous energy lockout procedure) for the specific piece of equipment or area where a radiation device is located.

5.7 Licensing Conditions (shown below) – Note: See the current Radioactive Material License for a complete list of License Conditions. The RSO is responsible for ensuring that conditions are met.

- a) A physical inventory of all sealed sources shall be conducted every six (6) months at a minimum and records retained for (5) years from inventory date.
- b) Only specially trained personnel licensed by the NRC or State of Alabama shall install, perform initial radiation surveys, relocate or remove from service devices containing sealed sources.
- c) Maintenance and repair of devices containing sealed sources; installation, replacement and disposal of sealed sources shall be performed only by individual specifically approved to perform such services and under the direction of the RSO.
- d) Each sealed source containing radioactive material shall be tested for leakage and/or contamination at a minimum of every thirty-six (36) months. (Testing and reporting shall be conducted per License requirements.)

6.0 RECORDS

- 6.1 Employee training records (maintained in the LMS)
- 6.2 Radiation device inventory
- 6.3 RSO Certification training
- 6.4 Surveys and Wipe Tests
- 6.5 Other records required by Federal and State regulations



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7.0 REVISION HISTORY

Section	Revision Number	Effective Date	Description Of Changes
All	0	06/17/08	Initial issue
Various	1	02/12/15	Reviewed and updated. Added instructions for receiving and opening packages.
1 st page	2	3-10-2016	Changed RSO person
Title Page	3	6-24-2016	Changed title page for current management signatures.
All	4	9-25-2019	Periodic Review; Updated RSO Contractors' notification period; Updated ERP Safety Procedure Number; Updated location of RSO equipment; Addition of RSO Alternate.
4.2, 5.5 & 5.6	5	02/19/2020	Modified Title and corrected text formatting.