**Section 622.40 Worker Protection and Disposal Requirements for Water Treatment Residuals Greater than 200 pCi/g**

a) This Section only applies to persons producing or possessing water treatment residuals with concentrations of combined radium greater than 200 pCi/g (dry weight basis).

b) Persons producing or in possession of water treatment residuals identified in subsection (a) shall:

1) Register with the Agency within 60 days of becoming subject to subsection (a) in a format specified by the Agency;

2) Limit Dose to Workers and Members of the Public. Registrants shall conduct operations so that:

A) The dose in any unrestricted area from external sources, exclusive of the dose contributions from patients administered radioactive material and released in accordance with 32 Ill. Adm. Code 335, does not exceed 0.02 millisievert (0.002 rem) in any single hour.

B) Before allowing a worker or a member of the public to enter a restricted area, instructions are given on radiation hazards and protective measures to that individual. These instructions must comply with subsection (b)(11).

C) Persons entering restricted areas or performing work in contact with water treatment residuals identified in subsection (a) are supplied with appropriate personal protective equipment (PPE). PPE shall include, at a minimum, protective barriers to prevent inadvertent ingestion or inhalation of airborne particles of radioactive material as well as to limit the spread of contamination from the work area.

D) Procedures are in place to ensure doses to workers are kept as low as reasonably achievable and in compliance with this Part. Emergency work that results in work duties or exposures outside the scope of TENORM awareness training provided for workers as outlined in Section 622.50(a) shall be reported to the Agency within 45 days. The report shall include proposed revisions to the registrant’s training agenda or operating procedures necessary to maintain compliance with this Part.

AGENCY NOTE: Calculation of doses for compliance with this subsection may be based upon calibrated radiation meter survey data and worker occupancy times, or work area monitoring, rather than an individual worker dosimetry program.

3) Employ institutional and engineered controls to limit exposure of water treatment residuals to personnel and the environment.

A) If, during the course of operation, noncompliance with the limits specified in subsection (b)(2) is discovered, the registrant shall submit alternative procedures to the Agency within 45 days after discovery.

B) Continued inability to comply with the protective limits specified in subsection (b)(2) may result in the Agency requiring the registrant to comply with the specific license requirements in 32 Ill. Adm. Code 330 and additional training required for workers.

4) Afford the Agency, at all reasonable times, the opportunity to inspect sources of radiation and the premises and facilities in which those sources of radiation are used or stored, and records maintained under this Section.

5) Perform radiation surveys to demonstrate compliance with this Section. Surveys shall be done to evaluate:

A) Gamma radiation exposure rate in all occupied areas, at a minimum, of once per year;

B) Gamma radiation exposure rate in restricted areas before, during, and after work requiring entry; and

C) Potential contamination of workers and the work area immediately following work in restricted areas.

6) Ensure use of calibrated radiation detection instruments. Instruments and equipment used for quantitative radiation measurements (e.g., exposure rate and contamination monitoring) shall be calibrated at intervals not to exceed 12 months for the radiation measured. To satisfy this requirement, the registrant shall:

A) Post a legible note on the instrument showing the date of calibration; and

B) Ensure that instrument calibrations are performed by persons specifically licensed by the Agency, the U.S. Nuclear Regulatory Commission, an Agreement State, or a Licensing State to perform such calibrations.

7) Provide notices and instructions to workers.

A) Each registrant shall post, in conspicuous places easily visible to workers, current copies of the following documents:

i) This Part;

ii) Agency Form KLA.001 “Notice to Employees”;

iii) The operating procedures applicable to activities under the registration;

iv) Any notice of violation or administrative order involving radiological working conditions and any response from the registrant; and

v) All radiological surveys, analytical media analysis results, and radon testing results.

B) If the posting of a document specified in subsection (b)(7)(A) is not practicable, the registrant may post a notice summarizing the documents and the location where the documents may be examined.

C) The registrant shall post Agency notices of violation or administrative orders involving radiological working conditions, along with any responses from the registrant, within 5 working days after receipt of the notice or order. The registrant's response, if any, shall be posted within 5 working days after the registrant sends it to the Agency. The documents shall remain posted for a at least 5 working days or until action correcting the violation has been completed, whichever is later.

D) All individuals whose job duties do not require entry into restricted areas or contact with material identified in subsection (a) shall be provided instruction which includes, at a minimum, the material identified in Section 622.50(a), (b), and (c). The initial instruction and annual refreshers must last at least one hour.

E) All individuals working in, or the performance of whose duties requires access to any portion of a restricted area or who frequent areas where radioactive material is used or stored shall be instructed, at a minimum, in all content described in Section 622.50.

F) The registrant shall maintain records of initial and annual employee training for five years after the date of the training.

8) Shall identify a responsible individual with sufficient knowledge and authority to prevent unsafe practices, approve radiation safety-related issues and communicate promptly to an appropriate level of management. The designated official shall be responsible for ensuring the requirements specified in this Part are adequately implemented.

c) Any person who receives, possesses, uses, or transfers water treatment residuals with concentrations of combined radium greater than 200 pCi/g (dry weight basis), and is not otherwise a registrant under Section 622.30 (including, but not limited to, vendors, contractors, service providers, consultants, low-level radioactive waste brokers, or persons performing decommissioning work) shall obtain a radioactive material license 32 Ill. Adm. Code 330.

AGENCY NOTE: The requirement to obtain a license does not apply to the transportation of water treatment residuals. However, persons transporting water treatment residuals must comply with all other applicable federal, State and local government regulations.

d) The registrant shall notify the Agency before removing material identified in subsection (a) from the facility for disposal, treatment, or transport. Such notification shall include the location, quantity, proposed dates, and proposed method for disposal.

AGENCY NOTE: For the purposes of this subsection, "disposal, treatment, or transport" does not apply to discharge to a sanitary sewer.

1) Unless specifically authorized by a radioactive material license or elsewhere in this Section, registrants are not authorized to transport material identified in subsection (a) outside the site where the registrant is authorized to produce and possess the material.

2) Before releasing, repurposing, or repair of equipment (piping, pumps, tanks, etc.) that has been contaminated with material identified in subsection (a), the registrant shall remove or provide for the removal of such contaminants and ensure that:

A) The equipment is decontaminated to the lowest practicable level before release. Unless the Agency specifies another value, the values specified in Appendix A of 32 Ill. Adm. Code 340 shall serve as guidelines for this purpose.

B) The total amount of contamination does not exceed the quantities listed in Appendix C to 10 CFR 20.

AGENCY NOTE: Notification to the Agency is not required when transport is incidental to shipment for analytical services.

e) Registrants may dispose of material by:

1) Disposal by Release into Sanitary Sewerage. A registrant may discharge material into the sanitary sewer if each of the following conditions is satisfied:

A) The registrant provides information on the nature of the discharge to the water treatment facility and receives written authorization from that facility before discharge;

B) Wastewater treatment facilities receiving discharges authorized this subsection are registered and in compliance with the provisions of Section 622.30; and

AGENCY NOTE: Discharges of material identified in subsection (a) to a wastewater treatment facility will require that facility to register under Section 622.30 due to the unquantified impact the material will have on the facility's water treatment residuals. Receiving wastewater treatment plants may have local pretreatment standards restricting such discharges.

C) The total quantity of material identified in subsection (a) that the registrant releases into the sanitary sewer in a year does not exceed 1.0 Ci.

2) An alternative disposal method may be used if the Agency reviews and approves it beforehand under 32 Ill. Adm. Code 340.1020; or

3) The material may be disposed of at a facility authorized to dispose of such material in accordance with any federal or State solid or hazardous waste laws as long as the following conditions are satisfied:

A) Packaging, decommissioning, preparation of manifests, and shipment of material is performed by persons with a specific radioactive material license from the Agency, authorized Agreement State or the NRC to perform such work; and

B) The registrant ensures compliance with 32 Ill. Adm. Code 340.1060, as applicable.

f) Persons producing or possessing water treatment residuals shall not cause contamination of any area exceeding the values specified in Appendix A of 32 Ill. Adm. Code 340.