

SUBPART 14

NATURALLY OCCURRING RADIOACTIVE MATERIALS (NORM) IN THE OIL AND GAS INDUSTRY

1400. PURPOSE. This Subpart establishes radiation protection standards for the possession, use, transfer, transport, storage and disposal of naturally occurring radioactive materials (NORM) associated with the oil and gas industry, and which are not subject to regulation under the Atomic Energy Act of 1954, as amended. Nothing in these regulations relieves a licensee from abiding by the regulations of the New Mexico Water Quality Control Commission, other applicable state and federal laws and regulations including those of the New Mexico Oil Conservation Commission, or the terms and conditions of the Rocky Mountain Low Level Radioactive Waste Compact. [8-2-95]

1401. SCOPE.

A. The regulations of this Subpart and other applicable subparts of this Part apply to any person who engages in the extraction, transfer, transport, storage or disposal of NORM, or in the enhancement of NORM, in the oil and gas industry by altering the chemical properties, physical state or concentration of the NORM or its potential exposure pathways to humans. [8-2-95]

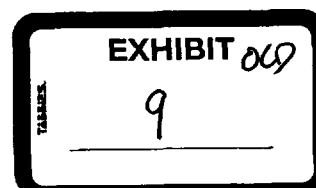
B. The regulations of this Subpart and other applicable subparts of this Part also apply to sludges and scale deposits in tubulars and equipment and to scale deposits from cleaning added to the environment. The regulations of this Subpart and other applicable Subparts of this Part also apply to NORM deposits in soil, water and the environment unless otherwise regulated. [8-2-95]

C. The regulations of this Subpart and other applicable subparts of this Part also address Regulated NORM management, transfer, storage, and disposal with regard to facilities involved in storage and-or cleaning of tubulars and equipment. [8-2-95]

1402. DEFINITIONS. As used in this Subpart:

A. "Accessible point" means any external location on a piece of equipment, or place on a facility where NORM or Regulated NORM may be present. This includes any internal location which can be reached through an opening, by removal of a plate, lid or hatch or which is made accessible as a result of structural modification; [8-2-95]

B. "Centralized facility" means a facility that is operated by one person or more than one person under an operating agreement for the purpose of disposing of Regulated NORM generated exclusively by that person or persons. This definition does not include plugged and abandoned wells and-or Underground Injection Control (UIC) wells used for disposal of Regulated NORM as provided in §1407. E. 3. and 4; [8-2-95]



C. "Commercial facility" means any facility that receives compensation to receive, store, treat and-or dispose of Regulated NORM pursuant to applicable Department and Division rules and regulations; [8-2-95]

D. "Decontamination" means the removal of media containing Regulated NORM from equipment or facilities solely for the intended purpose of reducing levels of radiation to levels below Regulated NORM levels in order to release equipment, materials, or land for unrestricted use in accordance with these regulations; [8-2-95]

E. "Department" means the New Mexico Environment Department or its designated representative(s); [8-2-95]

F. "Division" means the New Mexico Oil Conservation Division or its designated representative(s); [8-2-95]

G. "Equipment" means tubulars (i.e., pipe), wellheads, separators, tanks, condensers, or any other related apparatus that have been in contact with produced gas or fluids associated with the oil and gas industry; [8-2-95]

H. "Facility" means any land or structures, including appurtenances, and improvements on land or water used in or related to the oil and gas industry; [8-2-95]

I. "General environment" means the total terrestrial, atmospheric, and aquatic environments outside the boundary of a facility; [8-2-95]

J. "Naturally occurring radioactive material (NORM)" means any nuclide which is radioactive in its natural physical state (i.e., not manmade) but does not include byproduct, source or special nuclear material; [8-2-95]

K. "Oil and Gas Industry" means any person(s) engaged in exploring, producing, gathering, trading, servicing, supplying, refining, and transporting of crude hydrocarbons, or their by-products and waste, or facilities associated with such activities; [8-2-95]

L. "Produced water" means those waters produced in conjunction with the production of crude oil and-or natural gas and commonly collected at field storage, processing or disposal facilities, including, but not limited to: lease tanks, commingled tank batteries, burn pits, LACT units, dehydrators and community or lease salt water disposal systems, and which may be collected at gas processing plants, pipeline drips and other processing or transportation facilities; [8-2-95]

M. "Product" means something produced, made, manufactured, refined, or beneficiated; [8-2-95]

N. "Regulated NORM" means NORM contained in any oil-field soils, equipment, sludges or any other materials related to oil-field operations or processes exceeding the radiation levels specified in §1403; [8-2-95]

O. "Storage" means the collection and containment of Regulated NORM for the purpose of and prior to disposal. Storage does not include the accumulation of Regulated NORM in operating vessels; and [8-2-95]

P. "Treatment" means any commercial method, technique, or process, including neutralization, designed to change the physical, chemical form or composition of Regulated NORM. This definition does not refer to treatment as defined in the Resource Conservation Recovery Act (RCRA), nor does it refer to processing of Regulated NORM for disposal in plugged and abandoned wells. [8-2-95]

1403. EXEMPTIONS.

✧ A. For release for unrestricted use, persons who receive, possess, use, process, transfer, distribute, transport, store or dispose of NORM are exempt from the requirements of these regulations if: the NORM present is at concentrations of 30 picocuries per gram or less of radium 226, above background, or 150 picocuries per gram or less of any other NORM radionuclide, above background, in soil, in 15 cm layers, averaged over 100 square meters. Samples should be taken if gamma radiation readings ($\mu\text{R/hr}$) are equal to or exceed twice background readings when surveyed at a distance of 1 cm from the surface of the soil, in accordance with Department guidelines. [8-2-95]

B. The possession and use of natural gas and natural gas products and crude oil and crude oil products as fuels are exempt from the requirements of this Subpart. [8-2-95]

✧ C. NORM not otherwise exempted and equipment from oil, gas, and water production containing NORM are exempt from the requirements of this Subpart if the maximum radiation exposure reading at any accessible point does not exceed 50 microroentgens per hour ($\mu\text{R/hr}$) ($0.5 \mu\text{Sv/hr}$), including background radiation levels. Sludges and scales contained in oil, gas and water production equipment are exempt from the requirements of this Subpart if the maximum radiation exposure reading within 1 cm of the surface of the sludge or scale does not exceed 50 microroentgens per hour ($50 \mu\text{R/hr}$) ($0.5 \mu\text{Sv/hr}$), including background radiation levels. If the radiation readings exceed $50 \mu\text{R/hr}$ ($0.5 \mu\text{Sv/hr}$), removable sludges and scales are exempt from the requirements of these regulations if the concentration of Radium 226, in a representative sample, does not exceed 30 picocuries per gram. [8-2-95]

D. NORM not otherwise exempted and equipment from gas processing, fractionation, and dry gas distribution containing NORM are exempt from the requirements of this Subpart if the removable surface NORM contamination does not exceed $1000 \text{ dpm}/100 \text{ cm}^2$ and otherwise conforms with the requirements of §1403. A. Removable scale from gas processing fractionating,

and dry gas distribution is exempt from the requirements of this Subpart if the concentration of Lead 210, in a representative sample, does not exceed 150 picocuries per gram. [8-2-95]

E. Produced water is exempt from the requirements of these regulations if it is reinjected into a Class I or Class II Underground Injection Control (UIC) well permitted by the Division and-or stored or disposed in a double, synthetically lined surface impoundment permitted by the Division. [8-2-95]

1404. RADIATION SURVEY INSTRUMENTS.

A. Radiation survey instruments used to determine exemptions pursuant to §1403 C shall be capable of measuring from 1 microroentgen per hour through at least 500 microroentgens per hour. Laboratory analytical instrumentation used in accordance with §1406 must have a radiation detection system with an efficiency such that it is capable of measuring 1000 dpm/100 cm² on filter paper. The efficiency of portable survey instruments must be such that when cpm is equated to dpm, the 1000 dpm/100cm² limit is not exceeded. [8-2-95]

B. Radiation survey instruments used to make surveys required by this Subpart shall be calibrated to an appropriate standard and operable according to Department guidelines for operability checks on a regular basis. [8-2-95]

C. Each radiation survey instrument shall be calibrated: [8-2-95]

1. by a qualified person or by the manufacturer provided the person or the manufacturer is certified by the Department; [8-2-95]

2. at intervals not to exceed twelve (12) months and after each instrument servicing other than battery replacement; and [8-2-95]

3. to demonstrate an accuracy within plus or minus 20 percent. [8-2-95]

D. Records of required calibrations shall be maintained for Department inspection for five years after the calibration date. [8-2-95]

1405. PROTECTION OF WORKERS DURING OPERATIONS.

A. All general and specific licensees shall conduct operations: [8-2-95]

1. in compliance with the standards for radiation protection set forth in Subparts 4 and 10, except for releases of radioactivity in effluents, which shall be regulated under §1406, and disposal, which shall be regulated under §1407, and; [8-2-95]

2. pursuant to a Worker Protection Plan prepared according to applicable Department guidelines and maintained by the licensee and made available upon request of employees or representatives of the Department. The licensee shall post official notices to employees in areas where employees will have sufficient access to and notification of the Plan. [8-2-95]

B. The Department will prepare and issue worker protection guidelines and notices to employees no later than six (6) months from the effective date of these regulations. The Worker Protection Plan prepared by the licensee pursuant to §1405 A 2 shall be no less stringent than the Department's worker protection guidelines. [8-2-95]

C. Licensees shall incorporate hazard identification and training into their hazard communication programs as required by the Occupational Safety and Health Administration (OSHA) or by the Board pursuant to the Occupational Health and Safety Act, and as required under Subpart 10 for personnel working on or around equipment and materials that contain Regulated NORM. Regulated NORM material that has been removed from equipment and containerized shall be labeled as per the requirement of §430 and §431. [8-2-95]

D. Licensees operating at more than one location may prepare a single Worker Protection Plan to cover all facilities and operations in New Mexico, provided that the Plan is readily accessible to all employees. [8-2-95]

E. The total radiation dose in any one year to any General Licensee employee from Regulated NORM shall not exceed the standards for exposure to members of the public as set forth in Subpart 4. Employees engaged in an activity subject to a Specific License as required by §1411, shall not exceed the limits for radiation workers as specified in Subpart 4. Any worker engaged in an activity subject to a Specific License and who is likely to receive in one year an accumulative dose in excess of 500 mrem (5 mSv) shall be monitored. [8-2-95]

1406. PROTECTION OF THE GENERAL POPULATION FROM RELEASES OF RADIOACTIVITY.

A. All licensees shall conduct operations in compliance with the standards for radiation protection set forth in Subpart 4 and in such a manner that concentrations of radioactive materials which are released to the general environment do not result in an annual dose exceeding 100 mrem (1 mSv) in a year. The dose in any unrestricted area from external sources shall not exceed 2 mrem (20 μ Sv) in any one hour. If the licensee permits members of the public to have access to restricted areas the limits for members of the public continue to apply to those individuals. [8-2-95]

B. All licensees shall assure that any equipment released for unrestricted use shall not exceed the exposure limits specified in §1403. [8-2-95]

C. The licensee shall provide the recipient of transferred equipment, the inside of which is not accessible through any opening, plate, lid or hatch, with a notice that required surveys have

been performed, that equipment meets the standards of §1403 C or D, and that further surveys may be necessary if the equipment is structurally modified following transfer. The licensee shall retain copies of all notices of transfer. [8-2-95]

1407. DISPOSAL AND TRANSFER OF REGULATED NORM FOR DISPOSAL

A. Disposal of Regulated NORM on or near the surface of the ground shall be done pursuant to a general license issued under §1410 and Subpart 13 and pursuant to NMOC Rule 711. A general licensee may blend or disc Regulated NORM contaminated soils in place provided that: [8-2-95]

1. the soils were contaminated at that site and prior to promulgation of this Subpart; and [8-2-95]

2. the limits established in §1403 A are met. [8-2-95]

B. Disposal of Regulated NORM in nonretrieved flowlines and pipelines, in plugged and abandoned wells or by deep-well injection shall be done pursuant to a general license issued under §1410 and pursuant to applicable Division rules and regulations. [8-2-95]

C. All licensees shall store, transfer and-or dispose of Regulated NORM in accordance with the Worker Protection Plan required under §1405. All requirements of this Worker Protection Plan shall be available for inspection by the Department. [8-2-95]

D. Regulated NORM shall only be disposed by the methods enumerated below, except that the Department will consider and approve alternative methods of disposal if the applicant demonstrates that such alternative method(s) will protect the environment, public health and fresh waters, and otherwise is consistent with this Subpart, with other provisions of this Part and with applicable Division rules and regulations. [8-2-95]

1. Disposal in Nonretrieved Flowlines and Pipelines. Nonretrieved flowlines and pipelines which are buried are authorized by the Department to be left in place in accordance with Division rules and regulations. [8-2-95]

2. Disposal at Commercial and Centralized Facilities. Before a commercial or centralized facility may accept Regulated NORM for treatment and-or disposal, the operator of the facility shall obtain both a specific license issued by the Department pursuant to the requirements of this Subpart and a permit from the Division, and must be in compliance with Subpart 13. [8-2-95]

3. Disposal in Plugged and Abandoned Wells. The Department allows downhole disposal of NORM solids and NORM contaminated equipment in wells which are to be plugged and abandoned, provided such procedures are performed in a manner to protect the environment, public health, and fresh waters; are conducted in accordance with applicable Division rules and regulations;

and occur below the lowermost underground source of drinking water. The allowable form shall be media-laden fluid with a minimum density of nine (9.0) pounds per gallon and with the allowable volume for disposal dependent on the plug location required for a specific well. [8-2-95]

4. Disposal by Injection. The Department allows the injection of Regulated NORM into Underground Injection Control (UIC) Class I nonhazardous and Class II wells pursuant to NMOCD rules and regulations. All UIC Class I nonhazardous and Class II injection wells shall be permitted by the Division. [8-2-95]

5. **Other Disposal Methods.** Each person subject to general or specific license requirements shall manage and dispose of Regulated NORM: [8-2-95]

- a. in accordance with the applicable requirements of Subparts 4 and 10; [8-2-95]
- b. in accordance with the applicable requirements of the U.S. Environmental Protection Agency for disposal of such wastes; [8-2-95]
- c. by transfer of the wastes for disposal to a land disposal facility licensed by the U.S. Nuclear Regulatory Commission, an Agreement State, or a Licensing State; or [8-2-95]
- d. in accordance with alternate methods authorized in this Subpart or by the Department in writing upon application or upon the Department's initiative and in accordance with Division Regulations. [8-2-95]

1408. RADIATION SURVEY REQUIREMENTS.

A. Persons subject to the general license established in §1410 A shall conduct radiation surveys of equipment and facilities in their control or possession and maintain that information on file. Surveys would be conducted for all of the following events. [8-2-95]

1. Prior to working on facilities or equipment where potential release of regulated NORM could occur or where workers could be exposed to regulated NORM. [8-2-95]
2. Prior to any transfer of equipment to another operator, the general public, or a salvage firm. [8-2-95]
3. Prior to the movement or removal of equipment from any facility or facility reclamation. [8-2-95]
4. At facilities where pipe has been cleaned. [8-2-95]

5. At facilities where materials are known to have been spread, spilled or stockpiled. [8-2-95]

B. Surveys required by this Subpart shall be conducted using instruments that meet the requirements of §1404. [8-2-95]

C. Surveys required by this Subpart shall be performed pursuant to guidelines issued by the Department and by persons who possess the knowledge and-or training to perform such surveys pursuant to Department and Division Guidelines. [8-2-95]

1409. REQUIREMENTS FOR STORAGE OF REGULATED NORM.

A. Storage of Regulated NORM, whether under a general or specific license, will be done in such a manner as to prevent, to the extent practicable, release of NORM to unrestricted areas, and otherwise to protect human health and the environment. [8-2-95]

B. Storage of Regulated NORM will be done in such a manner as to comply with the limits set forth in §413 and §425, including those specified in Appendix B, Table II of Subpart 4, of the New Mexico Radiation Protection Regulations. [8-2-95]

C. Regulated NORM will be stored at all times: [8-2-95]

1. In accordance with the recommended practices of Section 6 of the American Petroleum Institute's Bulletin E2 (edition of April 1, 1992, or most recent edition), including practices specified for facility security, management of uncontained NORM, containerization and labeling, signage and record keeping, except that the dose limits specified in Section 6 or Bulletin E2 shall not apply; [8-2-95]

2. NORM storage facilities must be designed to minimize or prevent release of Regulated NORM to the environment; and [8-2-95]

3. In accordance with applicable Department guidelines. [8-2-95]

D. Licensing of Regulated NORM Storage Facilities: [8-2-95]

1. Effective August 2, 1995, storage of Regulated NORM for longer than one year must be under a specific license unless the Department grants an extension of a general license issued pursuant to §1410 A. Such an extension must be requested by the licensee on an annual basis and maybe granted by the Department on an annual basis, not to exceed 10 years of storage under a general license; and [8-2-95]

2. In granting an extension of a general license for storage of Regulated NORM, the Department must certify that the licensee is in compliance with Subparts A., B., and C., of §1409

and has a valid reason or reasons why the Regulated NORM under his or her ownership will not be disposed within the next year. Factors the Department should consider in determining whether the licensee has a valid reason or reasons for receiving an extension include, but are not limited to, the volume and radioactivity of the Regulated NORM, and-or the location of the storage facility and its proximity to populated areas or sensitive environments. [8-2-95]

E. Storage of Regulated NORM under a specific license will be done in accordance with the requirements of this Subpart, any other applicable requirements of this Part and any other conditions as may be imposed by the Department to ensure compliance with these regulations. [8-2-95]

* **1410. GENERAL LICENSE.**

A. A general license is hereby issued to extract, receive, possess, own, use, process and transport Regulated NORM without regard to quantity. A general license is hereby issued to store Regulated NORM in accordance with the requirements of §1409, for one year or less and to dispose of Regulated NORM in plugged and abandoned wells or Class II UIC wells pursuant to §1407 D 3 and 4. A general licensee may, as part of routine operations, perform maintenance work on equipment that contains Regulated NORM provided that work practices conform to the Worker Protection Plan and that employee exposures prescribed in §1405 and Subpart 4 are not exceeded. [8-2-95] * *

B. A general license does not authorize the manufacture or distribution of products containing Regulated NORM, does not allow the transfer for disposal of Regulated NORM between general licensees, and does not authorize the storage of Regulated NORM for compensation or other commercial purposes. [8-2-95]

C. Facilities and equipment containing Regulated NORM shall not be released for unrestricted use. [8-2-95]

D. No generally licensed facility, including plugged and abandoned wells used for NORM disposal, shall be transferred for unrestricted use where the concentration of radium-226 in soil averaged over 100 square meters exceeds 30 pCi/g above background in 15 cm layers. [8-2-95]

E. Equipment containing Regulated NORM may be released for maintenance and-or overhaul provided the recipient is specifically licensed to perform such activity. [8-2-95]

F. The transfer of Regulated NORM from one general licensee to another general licensee is authorized by the Department provided that the equipment and facilities containing Regulated NORM are to be used by the recipient for the same purpose or similar service. [8-2-95]

G. Transfers of Regulated NORM do not relieve the transferring general licensee from the responsibilities of surveying pursuant to these requirements, informing the receiving general

licensee of the results of such surveys, and maintaining records pursuant to these requirements. [8-2-95]

H. Record keeping for NORM survey data is to be maintained for inspection by the Department. [8-2-95]

* I. The landowner shall be notified prior to on-site mixing of soil pursuant to §1407.A. [8-2-95]

1411. SPECIFIC LICENSES.

A. Unless otherwise exempted under the provisions of §1403, or licensed under the provisions of Subpart 3 of the regulations, the manufacturing and distribution of any material or product containing Regulated NORM shall be specifically licensed pursuant to the requirements of this Subpart or pursuant to equivalent regulations of another state. [8-2-95]

B. The decontamination of equipment or facilities containing Regulated NORM shall be performed only by persons specifically licensed. [8-2-95]

C. Persons conducting the following activities involving equipment or facilities containing Regulated NORM must be specifically licensed to: [8-2-95]

1. dispose of or treat the resulting Regulated NORM unless exempted under this Subpart; [8-2-95]

2. transfer Regulated NORM for long-term storage, treatment and-or disposal; or [8-2-95]

3. after August 2, 1995, store Regulated NORM in accordance with the requirements of §1409 for longer than one year. [8-2-95]

1412. REQUIREMENTS FOR THE ISSUANCE OF SPECIFIC LICENSES. The licensee shall comply with the provisions of §308. [8-2-95]

1413. FILING APPLICATION FOR SPECIFIC LICENSES.

A. The licensee shall comply with the provisions of §307 A-F. [8-2-95]

B. An applicant for a specific license shall comply with the Public Notification requirements in §310. [8-2-95]

1414. CONDITIONS FOR ISSUANCE OF SPECIFIC LICENSES.

- A. The licensee shall comply with the provisions of §316 and §317 A.-C. [8-2-95]
- B. An application for a Specific License to decontaminate equipment or land not otherwise exempted under the provisions of §1403 will be approved if: [8-2-95]
1. the applicant satisfies the requirements specified in §1413; and [8-2-95]
 2. the applicant has adequately addressed the following items: [8-2-95]
 - a. procedures and equipment for monitoring and protection of workers; [8-2-95]
 - b. an evaluation of the radiation levels and concentrations of contamination expected during normal operations; [8-2-95]
 - c. operating and emergency procedures, including procedures for waste reduction and quality assurance of items released for unstricted use; and [8-2-95]
 - d. a method of managing the Regulated NORM removed from contaminated equipment and facilities. [8-2-95]
- C. Each person licensed by the Department pursuant to this Part shall have met the financial surety requirements of §311 E. [8-2-95]
- D. Each person licensed by the Department pursuant to this Part shall manage and dispose of wastes containing Regulated NORM in accordance with §1407. [8-2-95]

1415. MODIFICATION, EXPIRATION AND TERMINATION OF LICENSES. The licensee shall comply with the provisions in §322. [8-2-95]

1416. RENEWAL OF LICENSES.

- A. Applications for renewal of specific licenses shall be filed in accordance with §1413. [8-2-95]
- B. In any case in which a licensee, not less than 30 days prior to expiration of an existing license, has filed an application in proper form for renewal or for a new license authorizing the same activities, such existing license shall not expire until final action by the Department. [8-2-95]

STATE OF NEW MEXICO
OFFICE OF THE ATTORNEY GENERAL

1417. AMENDMENT OF LICENSES AT REQUEST OF SPECIFIC LICENSEE.

Applications for amendment of a specific license shall be filed in accordance with §320, and shall specify the respects in which the licensee desires the license to be amended and the grounds for such amendment. [8-2-95]

1418. ACRONYMS.

Bq/kg	Becquerels per kilogram
cm	centimeters
dpm	disintegrations per minute
LACT	Lease Automated Custody Transfer
NORM	Naturally Occurring Radioactive Material
P&A	Plugged and Abandoned
pCi/g	picocuries per gram
UIC	Underground Injection Control
μR/hr	microroentgens per hour
rem	roentgen equivalent man
mR/hr	milliroentgen per hour
RCRA	Resource Conservation Recovery Act
cpm	counts per minute
mSv	millisievert
μSv	microsievert
μSv/hr	microsievert per hour

[8-2-95]

1419. RECIPROCAL RECOGNITION OF LICENSES. Recognition of Reciprocal Licenses shall be done in accordance with §324. [8-2-95]

1420. - 1499. [RESERVED.]