The *NORM* Report

Naturally Occurring Radioactive Material Contamination
Winter 1994

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Regulations for the Control of NORM - Update

The status of regulations for the control of NORM is summarized below for 14 states, including the five states that have enacted NORM regulations and several others who are currently drafting regulations. Also summarized is the status of regulations in the federal government, especially the Environmental Protection Agency. Each regulatory agency was contacted during the first two weeks of March, 1994. An extensive summary of NORM regulations in about 35 states, the federal government and Canada will be included in the Spring 1994 issue of **The NORM Report.**

Georgia is the latest state to enact regulations for the control of NORM. Georgia's regulations became effective March 16, 1994.

ARKANSAS

The status quo is being maintained on the Regulations for the Control of Radiation, which although not necessarily specific to NORM, do address some NORM issues. Arkansas is expected to address more NORM-specific issues, e.g., contaminated scale in a future revision, but there is nothing new or planned at present.

CALIFORNIA

There has been essentially no progress in drafting NORM regulations in California.The NORM survey of California oil and gas facilities to be made by the Divisions of Oil and Gas and the California Department of Health Services hasn't been made yet. Two planning meetings have been held and it is hoped that the next meeting will finalize procedures to be used, including where and what facilities will be surveyed for NORM contamination.

COLORADO

The committment to have NORM regulations by the end of 1993 appears to have gone by the boards. There is legislation before the Colorado House which would put off writing NORM disposal rules until the Environmental Protection Agency publishes NORM rules. Therefore the Department of Health is doing nothing at present while awaiting to see if the pending legislation is passed and the governor signs it.

GEORGIA

The draft of proposed regulations for the control of NORM was adopted by the Board late in February and became effective on March 16, 1994. Georgia becomes the fifth state to have enacted NORM regulations. The final regulations contain some minor changes from the last proposed draft.

ILLINOIS

The draft of proposed NORM regulations is still being circulated to a few selected people within the Illinois Department of Nuclear Safety for their comments prior to making "final" changes before releasing the draft to industry and the public for comments. The Department is busy working on a priority project which is delaying the finalization of the NORM

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ILLINOIS (Continued)

draft. They are working with a "big company" in West Chicago trying to dispose of 13 million cubic feet of thorium mill tailings as soon as possible. Realistically, it looks like it will be sometime in the second quarter of 1994 before the final draft is ready -- the other priority projects are slowing down the process.

KENTUCKY

NORM regulations in Kentucky are still sitting on idle awaiting screening of the Martha oilfield for background radiation levels, etc. The Martha field has been identified by an oil company as having NORM contamination problems. The survey was to be made March 16th but was cancelled due to a budget meeting with the legislature. There will be a public meeting with residents in the area of the Martha oilfield and other concerned parties to talk about NORM in general and how the area will be screened for what is being looked for in the survey, i.e., areas with radiation readings greater than background plus 20 microrems per hour. That is the level that will determine whether further analyses are indicated. The public is being involved in the process because there is considerable concern about the public's understanding about NORM. It is hoped that providing good information will displace much of the misinformation and misunderstanding the public has at present. Once the public has a good understanding, the Cabinet for Human Resources should be able to work with all concerned to move the regulations ahead.

LOUISIANA

Revisions are again being considered for the Louisiana NORM regulations -- some of the revisions may be major. The revisions are not generally available for public comment, but should be available later in April or in May. The expected revisions are discussed below.

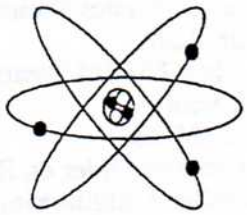
Other NORM-related issues in Louisiana include the following. (1) The DEQ is being contacted daily by industry with questions and NORM concerns. (2) A guide for use in applying for a specific NORM license was recently issued by the DEQ. (3) Disposal options are under study, particularly down hole injections of NORM-contaminated materials.

The expected revisions to the Louisiana NORM regulations include: (Only the sections expected to be revised are included)

§1402. Scope.
Recycling operations will be included as an area to which the regulations will apply.

§1403. Definitions.
Definitions for Confirmatory Surveys, NORM Supervisor, On-Site Maintenance, Recycling, Temporary Jobsite, and Unrestricted Use have been added. Definitions for Barrier, Commercial Storage Facility, and Decontamination Facility have been deleted. Definitions for Container, Equipment, NORM Waste, Site, and Tank have been modified.

§1404. Exemptions.
The NORM exempt from the regulations has been modified to: (1) NORM are exempt from the requirements of these regulations if the materials contain, or are contaminated at, concentrations of: (a) 5 picocuries per gram or less of radium-226 or radium-228, above background; or, concentrations less than 30 picocuries per gram of technologically enhanced radium-226 or radium-228 in soil, averaged over any 100 square meters with no single sample to exceed 60 pCi/gm, provided the radon emanation rate is less than 20 picocuries per square meter per second,
(b) 30 picocuries per gram or less of technologically enhanced radium-226 or radium-228 in media other than soil, provided the radon emanation rate is less than 20 picocuries per square meter per second, the material is classified as Non-hazardous Oilfield Waste, and the material is transferred to a



Nonhazardous Oilfield Waste facility in accordance with LAC 33:XV.1412.A.5, or
(c) 150 picocuries per gram of any other NORM radionuclide, provided that these concentrations are not exceeded at any time.
2. Equipment, which contains NORM, is exempt from the requirements of these regulations if the maximum radiation exposure level does not exceed 50 microroentgens per hour at any accessible point.

§1406. Radiation Survey Instruments and Surveys
A. Instrumentation utilized to determine exposure rates pursuant to this Chapter shall be capable of measuring 1 microroentgen per hour through at least 500 microroentgens per hour.
C. Upon completion of survey(s) of equipment and facilities that verify that NORM regulated by this Chapter is not present, an individual may submit documentation to the division indicating that the equipment and facilities are exempt from the requirements of LAC 33:XV.1410. The documentation must include

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LOUISIANA (Continued)
the qualifications of the individual performing the survey. Individuals performing and documenting the surveys shall demonstrate understanding of the subjects outlined in Appendix A of this Chapter.

§1408. General License (formerly §1410)
B. This general license does not authorize the manufacturing or distribution of products containing NORM, or the landfarming of NORM, or the transfer from one general licensee to another of NORM for purposes of treatment or disposal with levels or concentrations greater than those specified in LAC 33:XV.1404.A.
D. The melting of scrap metal is authorized by the general license if the dilution of the NORM in the end-products or melt byproducts is sufficient to reduce any expected average concentration of NORM to levels not to exceed the concentration specified in 1404.A.a, after receiving specific approval from the Department.
E. (Formerly B). Facilities, equipment, and sites contaminated with NORM in excess of the levels set forth in LAC 33:XV.1404.A shall not be released for unrestricted use. The decontamination of such facilities, sites, and/or equipment shall only be performed by persons specifically licensed by the Division, the U.S. Nuclear Regulatory Commission, another agreement state, or another licensing state to conduct such work. The decontamination of soil shall be to 5 picocuries per gram above background, of radium-226 or radium-228.
D. (Formerly E) Persons subject to the general license established by LAC 33:XV.1404.A shall notify the Division by filing the Notification of NORM Form (Form RPD-36). A confirmatory survey for each potentially contaminated site shall be performed and the results submitted to the Division within 90 days of the effective date of these regulations.
E. The handling or processing by a general licensee of NORM-contaminated materials not otherwise exempted from these rules for the purpose of recycling is authorized if the radiation level 18 inches from the NORM-contaminated material does not exceed 2 millirem per hour.

§1409. Transfer of NORM-Contaminated Land
Section D has been renamed Section A.
B. General or specific licensee's that have an area of soil with contamination above the limits of LAC 33:XV.1404 and soil decontamination must be performed, the decontamination of soil shall be to 5 picocuries per gram above background, of radium-226 or radium-228.

§1410. General Licenses: Pipe Yards or Production Facilities Receiving Exempt Items
A general license is hereby issued for pipe yards or production facilities to receive, possess, process, and clean tubular goods or equipment which are contaminated with scale or residue but do not exceed 50 microroentgens per hour, provided the following requirements are followed:
A. The Department is notified within 90 days of the effective date of these regulations, of the intention of the facility to receive tubular goods.
B. A program shall be developed and used to screen incoming shipments top insure that the 50 microroentgens per hour limit is not exceeded.
C. Worker protection, as outlined in Appendix B of this chapter.
D. Ground cover or other appropriate precautions are taken to prevent soil contamination.
E. Procedures to prevent release of NORM contamination beyond the site boundary.
F. A program for surveying and decontamination is developed to insure that soil contamination is not allowed to exceed 200 pCi/gm at any time, and that NORM contamination does not go beyond the site boundary.
G. Existing facilities that have NORM contaminated soil in excess of the limit in LAC 33:XV.1410.F. must submit a plan for clean up within 180 days of the effective date of these regulations. The plan shall include a schedule for clean up that is to be approved by the Division. The general licensee may include in this plan an application to the Division for a one time authorization to perform this clean up or use a specific licensee.
H. Before releasing the property for unrestricted use, the soil shall be decontaminated to a level not to exceed 5 picocuries per gram above background unless other limits are approved by the department.
I. A specific license pursuant to LAC 33:XV Chapter 3 is required for tubular goods or equipment that exceed the 50 microroentgens per hour limit.

§1412. Disposal and Transfer of Waste for Disposal
A-5. Non-Hazardous Oilfield Waste containing concentrations of NORM in excess of the limits in LAC 33:XV.1404.A.1., but not to exceed 200 pCi/gm may be treated at 29.B facilities specifically licensed by the Division for such purposes. Regulation of such sites is set forth in a memorandum of understanding between DEQ and DNR and contained in Appendix C of this Chapter.
D. Each person subject to the general license requirements in LAC 33:XV.1410 may store NORM waste if the generator submits to the division a viable written plan for NORM waste management pursuant to LAC 33:XV.1412.A.4 and E. If the generator fails to submit a plan or if the plan submitted is not

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Louisiana (Continued)

approved, all NORM waste must be transferred to an authorized facility within 90 days. The generator shall initiate implementation of the plan within 30 days of approval by the division.

E. The initial NORM waste management plan shall be submitted to the Division, in writing, within 69 days following completion of the confirmatory survey. This plan shall include, but is not limited to, the following: (no change from present regulations)

7. Surface equipment that has been removed from service and not employed for its designated function, excluding wellheads, shall be decontaminated to the limits specified in LAC 33:XV.1404, or disposed of in accordance with the written plan submitted pursuant to LAC 33:XV.1412.D, within one year from the date the equipment was removed from service. The NORM waste shall be managed pursuant to and in accordance with the disposal plan required by LAC 33:XV.1412.D or shall be transferred to an authorized facility within 60 days. This requirement does not apply to equipment that remains subsurface and is associated with production wells or injection wells classified as having future utility.

§1413. Certification
This entire chapter has been deleted.

§1417. Closure Requirements
B. If closure activities involve construction, prior approval by the Groundwater Protection Division must be attached as part of the application addressing the certification of the ground water quality. All pits, ponds, and lagoons must comply with departmental regulations and/or policies dealing with ground water quality.

F. The licensee shall monitor the NORM site, and perform necessary maintenance and repairs at the NORM site until the site closure is complete.

§1418. Transporter Manifests
A. Each shipment of NORM waste to a facility specifically licensed for storage or disposal and that contains Ra-226 or Ra-228 in concentrations greater than 30 pci.gm or exposure rates greater than 50 microroentgens per hour, shall be accompanied by a shipment manifest.

Appendix A. Subjects to Be Included in Training Courses for Individuals Performing NORM Surveys
The last three paragraphs of Appendix A dealing with documentation of qualifications and training of surveyors have been deleted.

Appendix B
This is a new appendix detailing what must be included in required worker protection plans and the additional precautions that must be taken for operations that have the potential to produce NORM contaminated dusts (i.e., cutting, grinding, sand-blasting, welding, drilling, polishing, or handling soil) or when loose contamination is expected.

Appendix C
This is a new appendix detailing a Memorandum of Understanding between Louisiana Department of Natural Resources Office of Conservation and Louisiana Department of Environmental Quality Regarding the Regulation of Naturally Occurring Radioactive Material at Commercial Oilfield Waste Disposal Facilities.

MICHIGAN

There have been no new developments in the control of NORM in Michigan. Michigan has standards and guidelines for NORM control in draft form. There has been interest for further discussions as to what the state should do, but no decisions have been made. A survey by the state of oil and gas sites in Michigan was made in 1990 and indicated significant NORM contamination in the state.

MISSISSIPPI

No amendments or revisions to the NORM regulations are planned for anytime soon. In the meantime there is plenty of NORM-related work to keep the staff busy Mississippi has a significan.. number of NORM litigations pending.

NEW JERSEY

There has been no change in the status of NORM regulations since the last summary in the Fall 1993 newsletter. The draft of the NORM regulations is still undergoing revision. Plans are being made for the next interested party draft sometime this summer.

NEW MEXICO

New Mexico is in the final process of drafting the NORM regulations with their other amended radiation protection regulations. The NORM regulations are currently undergoing legal review. After the legal review and assuming no major changes will be required, the draft will be put on the docket of the Environmental Improvement Board during the second quarter of 1994. The Department of Environment is looking for a promulgation date of June or July, 1994.

OKLAHOMA

The Radiation Management Advisory Council of the Department of Environmental Quality met on March 3 in Oklahoma City to discuss the 1993 proposed NORM regulations drafted by the previous Radiation

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Oklahoma (Continued)
Council. At the March 3rd meeting the new members of the Council became acquainted with the NORM draft. Nothing was adopted at the meeting; just discussions. Approximately 20 people from the public attended, primarily consultants and others from the petroleum industry. The next meeting of the Council will be June 2 in Tulsa. They are anticipating that significant progress will be made at this meeting because the Council members will be more familiar with the NORM draft. Oklahoma's regulations for the control of NORM may be adopted by the end of 1994.

SOUTH CAROLINA

The Radiation Waste Management Division took a proposed draft of NORM regulations to the Board of Health and Environmental Control on March 10. The Board approved the request to put the proposed regulation out for public comment. The draft will also be reviewed by the Technical Advisory Radiation and Control Council on March 24. The Council is an advisory group to the Board. Following public comment, the Board will reconsider the regulation. If approved by the Board, it has to be submitted to the General Assembly, and because of the legislative schedule, cannot become effective before next spring.

TEXAS

The Bureau of Radiation Control is considering some revisions in the NORM regulations which became effective July 1, 1993. One area under consideration for revision is the 30 pCi/gm exempt level for radium. The present 30 pCi/gm concentration is coupled to the radon emanation rate from the material. Only material that has an emanation rate less than 20 pCi/liter per second per square meter is exempt at the 30 level. Since the radon emanation rate is difficult to measure and very dependent upon soil and atmospheric conditions, the Bureau is considering replacing the requirement to measure the emanation rate with specific limits or concentrations of radium in the material based upon what is known about radon emanation rates. The Bureau would also like to incorporate rules requiring specific licensing of NORM processing facilities that will be doing processing and storage of NORM wastes on a commercial level.

A training manual for Parts 11 and 21 Texas Regulations for Control of Radiation (TRCR) has been developed as a training aid for use in training seminars. It may also be used as a reference document for licensees, registrants, and others in the transition from the current radiation protection standards to the revised radiation protection standards contained in TCRC Parts 11 and 21. The manual was compiled by the Bureau of Radiation Control, Texas Department of Health.

The Texas Railroad Commission is making very good progress on options for the disposal of oil and gas industry NORM wastes. The Commission hopes to have a draft ready for review in April. By legislative directive, the disposal rules must be finalized by January 1, 1995.

CRCPD (Conference of Radiation Control Program Directors, Inc.)
The SR-5 Committee responsible for the NORM guidelines met in January for three days to discuss finalizing the draft. It is planned to submit the revised Part N NORM guidelines in May to the Board of Directors for final approval.

CRCPD's E-4 Committee on Naturally Occurring Radioactive Material/Decontamination and Decommissioning has prepared a draft report. The report is a continuation of the work of the Committee to provide informatio to state radiation control progran and to Federal agencies charged with responsibility for establishir policy for the management and disposal of naturally occurring radioactive materials. Report 1 and 2 of this series described various observed instances of NORM contamination or of NORM incorporated into product and materials resulting in unintended radiation exposure to the general public. The present report, Number 3, concentrates on diffuse NORM sources, rather tha discrete sources such as radium needles, and describes both the mechanisms by which diffuse NORM is made available for human exposure and the risk assessment which must precede any decisions concerning final disposition of diffuse NORM. It attempts to point out the possibilit of "orphan" diffuse NORM sites resulting from past and present industrial activities which have no been explicitly associated with radioactive material use and management.

The SR-5 "Part N" Committee on suggested State Regulations regarding NORM contamination met with the E-4 Committee on Natural Radioactivity Contamination in January, 1994. The two groups met jointly to discuss the final recommendations for disposal of NORM-contaminated pipe scale for inclusion in the NORM-3 report. The E-4 Committee made several changes to the recommendations which have been incorporated into the final report. The NORM-3 report will be submitted to the Board of Directors for approval for

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