

The NORM Report

Naturally Occurring Radioactive Material Contamination
SPRING 1995

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Comments on the EPA's Proposed Radiation Protection Guidance for Exposure to the General Public

Comments of the American Petroleum Institute on EPA's Proposed Radiation Protection Guidelines for Exposure of the General Public are attached to this issue of **The NORM Report**. As the Introduction to the Report states: "These comments are in response to the EPA's proposed revised Federal Radiation Protection Guidance for Exposure of the General Public, 59 Fed. Reg. 66414 (December 23, 1994) ("Proposed Guidance"). API is interested in this matter because the Proposed Guidance covers "most terrestrial sources of exposure arising from human activities" for the first time. These terrestrial sources include technologically-enhanced exposure to natural radiation such as "scale in oil- and gas-field piping" and "wastes and/or emissions from the burning of coal oil and natural gas. The proposed Radiation Protection Guides would reduce the limit for the effective dose equivalent for radiation exposure to the public from 500 millirem per year to 100 millirem per year $= 1 \text{ mSv}$."

API believes that based on legal, policy and scientific grounds, EPA should reconsider the efforts to make sweeping changes to the current provisions of the Federal Radiation Council, Radiation Protection Guidance for Federal Agencies, promulgated in 1960 and 1961, including the proposed increase in the stringency of the Radiation Protection Guides. Moreover, because of the general applicability to and substantive impact on industry, the Proposed Guidance constitutes a rule."

If the EPA "Guidance" becomes effective, it could have a significant impact on industries with NORM contamination problems.

One of the authors of the report, Dr. David Gooden, is a nationally recognized authority on radiological physics. Dr. Gooden is the Chairman of the Radiation Management Advisory Council for Oklahoma. This council provides guidance and recommendations to the Department of Environmental Quality in matters regarding radiation safety in Oklahoma. The Council is currently developing NORM regulations for the State of Oklahoma.

I particularly thank Mike Loudermilk of API's Dallas office for making the report available for distribution with **The NORM Report**.

HELP!

Do you have an idea for an article? Do you have a news release? Do you have a case history of interest? Any suggestions, comments, or complaints? Call or fax me.

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Regulations for the Control of NORM - Update

The status of regulations for the control of NORM is summarized on the following pages for 14 states, the EPA, and Canada. These 14 states are those that have regulations in effect, are proposing regulations, or are expected to have regulations within one to two years. The status of NORM regulations in all 50 states will be summarized in the Summer 95 issue of *The NORM Report*. Each regulatory agency in the states summarized below was contacted during the first half of May, 1995.

The last state to enact NORM regulations was Georgia. The Georgia regulations became effective in March, 1994. Louisiana, Mississippi, Arkansas and Texas also have specific regulations for the control of NORM. New Mexico, Connecticut, South Carolina and Illinois will probably have NORM regulations before the end of 1995. Other states are in various stages of drafting NORM regulations or guidelines.

A summary of the status of NORM regulations in 14 states, the Federal government and Canada follows:

ARKANSAS

There have been no changes in the Arkansas NORM rules and regulations. However, one change under consideration is to change the NORM exemption from 25 microR/hr above background to 50 microR/hr including background. This will make the Arkansas regulations similar to the Texas and Louisiana NORM regulations in this respect.

CALIFORNIA

As a preliminary to drafting NORM regulations, California has made surveys of petroleum facilities for NORM contamination and collected samples for laboratory analyses. Water, brine, soil and other appropriate samples have been collected. A draft report of the surveys has been prepared but is still under review and not ready to be released. Meetings are being held which include representatives from the petroleum companies to review the report and make comments and suggestions. There is no timetable for the report's release, but hopefully, it will be sometime this summer.

CONNECTICUT

The Connecticut Department of Environmental Protection is currently reviewing a prepared draft of NORM regulations. It is slowly working its way through the approval process. After the DEP

has approved the draft, the proposed regulations will be sent to Legal and then to the State Legislature for enactment. There is no timetable for final enactment of the NORM regulations.

GEORGIA

Georgia's regulations for the control of NORM became effective in October, 1994. Since then only very minor changes have been made, e.g., correction of typos, etc. No revisions of the regulations are planned in the near future.

ILLINOIS

The Division of Radioactive Materials in the Illinois Department of Nuclear Safety is preparing a draft of proposed NORM regulations. It had earlier been thought that a final proposal might be ready by March or April of this year, but now it appears it will be delayed. The delay is due to a review of the voluminous comments made to the latest draft of CRCPD's Part N. A review of the Part N comments indicated that many might be applicable to the Illinois proposed regulations. There is no timetable for final approval of the proposed Illinois regulations.

KENTUCKY

Kentucky is sampling and verifying the Martha Oil Field contamination, especially the areas

that have been reported as not being contaminated. The cleanup of the contaminated areas has begun.

As far as the NORM regulations are concerned, they will not be promulgated until the Martha Oil Field agreements are complete. Kentucky had the option of promulgating the regulations now which could confuse the Martha Oil Field negotiations but would have the benefit of having regulations for other NORM contaminated sites, or waiting for the Martha Oil Field agreements to be completed. Kentucky has chosen the latter option at this time. There is no timetable for NORM regulations.

LOUISIANA

The latest revisions to the Louisiana NORM regulations became effective January 20, 1995 when they were published in the Louisiana Register. Many of the revisions were significant. Details were given in the Spring, 1994 issue of *The NORM Report*. Although it is expected there will be further revisions at some time in the future, nothing is being planned at present.

MICHIGAN

The status quo is being maintained in Michigan as far as the draft of

(Continued on page 3)

MICHIGAN (Continued)

NORM standards and guidelines is concerned. A decision is still being awaited as to whether to proceed with regulations.

Michigan's Department of Public Health has been very busy of late dealing with radium from other kinds of environmental sources, mainly military aircraft gauges containing radium. There are some very significant environmental problems in this area in Michigan at present. The extent of the problem is greater than previously thought. These are primarily gauges from World War II aircraft and continuing in use in aircraft through the 1950s and 60s. The so-called gauges have been setting off radiation gate monitors at smelters and scrap yards.

MISSISSIPPI

The Mississippi Legislature recently passed legislation giving the state Oil and Gas Board authority for NORM at the wellsite effective July 1, 1995. Once the petroleum leaves the wellsite, the Mississippi Department of Health has continued authority for NORM contamination.

Richard Lewis of the Mississippi State Oil and Gas Board says the Board will probably be writing new regulations at some point in the future. At the present time all that they have is Rule 68 - Disposal of NORM Associated with the Exploration and Production of Oil and Gas. Since this is a very new assignment, the Board has no guidelines or what is expected in regulations. The Board will get together with the Department of Health to determine the best approach to regulations. Field surveys, etc. will probably be contracted out to the Department of Health as the Board does not have qualified people to make these radiation surveys. A memorandum of agreement and some guidelines for action are the

next step necessary for the Board to take authority for NORM contamination at the wellsite. Rule 68 referred to above, was summarized in the Winter 95 issue of The NORM Report.

NEW MEXICO

Subpart 14: Naturally Occurring Radioactive Materials (NORM) in the Oil and Gas Industry continues to work its way through the approval process. After the December, 1994 hearing before the New Mexico Environmental Board the revised Subpart 14 was sent back to the Radiation Advisory Council and then in the beginning of May the proposed regulations were sent to the Environmental Improvement Board who approved them as amended. The Board had requested that "if diking was done under any contaminated soil that permission had to be obtained from the land owner". The Council did not go along with this because the Oil Conservation Division said it would give members of the public regulatory authority over the state. So the Board's request was changed from having to get the land owner's permission to only notifying the land owner. The Board approved this and these revised proposed regulations went before the Council May 24. It was expected that the Council would concur with the Board's approval. Then the regulations will be filed with the State Records Center and the regulations will become effective 30 days later, probably in late June or July. The proposed regulations discussed at the December meeting are essentially the same as the final proposed regulations.

Subpart 14 establishes radiation protection standards for the possession, use, transfer, transport, storage and disposal of NORM associated with the oil and gas industry, and which are not subject to regulation under the Atomic Energy Act of 1954, as amended. The provisions of Subpart 14 were

discussed in the Winter 95 issue of The NORM Report. One of the more important changes in the proposed New Mexico regulations when compared with other states with NORM regulations is that the radium exempt level in soil is 30 pCi/g.

OKLAHOMA

The Oklahoma Radiation Management Advisory Council continues to revise the May 1993 draft of proposed NORM regulations. The regulations will be Subchapter 19, Licensing of Naturally Occurring Radioactive Materials (NORM). Subchapter 19 will be part of the Title 252, Oklahoma Administrative Code, Chapter 400. Radiation Management. The last revision to Chapter 400 became effective May 26, 1994.

There is still some controversy as to who should have jurisdiction over NORM -- The Department of Environmental Quality or the Oklahoma Corporation Commission. Currently, the Corporation Commission has declined jurisdiction, but the independent petroleum producers want the Commission to have the jurisdiction. The cost of enforcing the regulations is a major factor.

The Radiation Management Advisory Council is preparing a "polished draft" which will be used to address specific items within the draft. Essentially this draft will be a working draft for future discussions. The next meeting of the Council will be June 22, 1995 at which the main topic will be the proposed NORM regulations.

SOUTH CAROLINA

The proposed NORM regulations continues to work through the administrative/legislative approval process in South Carolina. Enactment of the regulations by the

(Continued on page 4)

SOUTH CAROLINA (Cont'd)
end of June, 1995 continues to be a possibility. NORM is not a major issue in South Carolina as it is in some of the other states, particularly the petroleum states.

TEXAS

The Texas Department of Health is planning draft changes to their current NORM regulations. The revisions may be proposed in late 1995. The Department of Health has licensed a NORM processing facility in Port Arthur (Soloco). The license is now in a hearing mode.

The status quo is being maintained by the Texas Railroad Commission. Statewide Rule 94-*Disposal of Oil and Gas NORM Waste* was adopted by the Railroad Commission on December 12, 1994 and took effect February 1, 1995. There are no plans to revise Rule 94 at the present time.

Rule 94 sets forth requirements for the safe disposal of NORM that constitutes, is contained in, or has contaminated oil and gas waste. The rule was developed in consultation with the Texas Department of Health and the Texas Natural Resource Conservation Commission regarding protection of public health and the environment. Rule 94 was summarized in the Winter 95 issue of *The NORM Report*.

WASHINGTON

New regulations have been proposed which will put a ceiling on how much NORM can be brought into Washington for disposal. It has been proposed that an annual limit of NORM wastes be 8,600 cubic feet with 1,000 cubic feet as an annual limit from any one generator. When the annual limit is reached, according to the proposed regulation, no additional NORM wastes could come into the State, either in-

region or out-of-region. The site would be closed for any more NORM disposal that year. Public hearings were held on the proposal in March, 1995 and written comments were accepted before March 8.

No decision on the proposed regulation have been made. The Department of Health is still trying to answer the many comments that were received. Most of the comments were in opposition to the proposed regulation. Because of the dearth of NORM disposal options available, people want the site to remain open for the disposal of NORM wastes. When all the comments have been reviewed, the comments will be given to the Secretary of the Department of Health and he will either rethink the proposed regulation or decide to enact the regulation. A final decision is expected in July.

During 1994, the volume of diffuse NORM accepted at the site was 51,000 cubic feet, six times the proposed limit. According to the site manager, the associated loss of revenue would require a compensating increase in the fee for burial of waste, both LLRW and NARM.

The Richland LLRW facility has been the only burial site that accepts radium sources since the Beatty site closed. Currently, hundreds of discrete radium sources from the entire United States are disposed of annually.

U.S. ENVIRONMENTAL PROTECTION AGENCY

The EPA is considering how to handle the cleanup rule. In theory, the site cleanup is generally applicable to federal facilities and NRC licensees. EPA hopes to reach an agreement with the NRC so that the cleanup rules will be suspended as far as its applicability to the NRC licensees is concerned. In this case the NRC

decommissioning rule would pertain to the NRC licensees assuming EPA makes the determination that the decommissioning rule is sufficiently protective. In this case the primary application of the site cleanup rules will pertain only to federal facilities. NORM is involved only to the extent that it is comingled with Atomic Energy Act type wastes.

Although it is not planned at present to extend the cleanup regulations to private facilities, it is always possible that EPA's Office of Solid Waste and Emergency Response would use the regulation at a superfund site. In which case, if a site were a superfund site, the site cleanup provisions might apply.

Very little has been done on the *Draft Document on Diffuse Naturally Occurring Radioactive Material (NORM): Waste Characterization and Preliminary Risk Assessment* since the Science Advisory Board issued its report in May, 1994. The basic intent of the NORM draft report was to summarize the issue, in part to satisfy the Science Advisory Board's interest. The EPA had never had a program to develop regulations from the NORM draft report. The EPA is much more preoccupied with the site cleanup rule and deciding what to do about low level waste. The EPA has literally not focused on any followup to the NORM draft report.

A Science Advisory Board report: *Review of Draft Document on Radionuclide Cleanup Levels for Soil* was issued on April 26, 1995. A review meeting for closure on the technical aspects of the cleanup standards was held on May 23 and 24, 1995. This draft SAB report in review of the technical basis of EPA's Office of Radiation and

(Continued on page 5)

U.S. ENVIRONMENTAL PROTECTION AGENCY

(Continued)

Indoor Air's technical support document for the development of radionuclide cleanup levels for soil is a draft report which has not received concurrence of the SAB's Radionuclide Cleanup Standards Subcommittee (RCSS) or its parent committee, the Radiation Advisory Committee (RAC). Once approved by the RCSS and the RAC, the revised review draft will be forwarded to the SAB's Executive Committee (EC) and their vettors for final review and approval. If all the SAB's reviewers approve the report, it will become final and transmitted to the EPA Administrator. Following transmission of the final approved report to the Administrator, the SAB will release copies to the Agency and the interested public.

In January, 1995, EPA's Science Advisory Board released *Beyond the Horizon: Using Foresight to Protect the Environmental Future*. This report, produced at the request of EPA Administrator Carol Browner, addresses three principal questions:

1. Can the Agency and the country do a better job of anticipating environmental problems, rather than reacting to them?
2. If so, what methodologies are available that would help us better anticipate such problems?
3. If those methodologies are used, what potential problems does the SAB see "beyond the horizon"?

This overview report (EPA-SAB-EC-95-007) is supported by reports for various SAB committees, including the Radiation Advisory Committee. The RAC's report

(EPA-SAB-RAC-95-006) entitled *Future Issues in Environmental Radiation* is a report on future issues and challenges in the study of environmental radiation with a focus toward future institutional readiness by the Environmental Protection Agency.

The report analyzes the present-day situation on many significant technical issues in environmental radiation, and defines those which the Subcommittee felt would be most likely to require the attention of the Agency to plan, prepare and manage for the future. Among the issues related to NORM are Low-Level Radioactive Waste, including those "not currently managed" by EPA (e.g., NORM); Cleanup of Contaminated Sites; Mixed Hazardous/Radioactive Waste; Radon in Indoor Air; Terrestrial Radiation: Occupational Exposures, etc.

EPA has developed a plan to address Congressional criticism that the existing radiation protection program is inconsistent, duplicative and incomplete. In a January 27 memo to Senator Glenn (D-OH), the assistant administrator for Air and Radiation recognized the need for "more coherent, complete and consistent radiation standards" and outlined a plan to achieve that purpose. EPA will continue the effort to build an interagency consensus on Federal Radiation Protection Guidance and on development of acceptable radiation risk standards and dose limits.

NUCLEAR REGULATORY COMMISSION

On January 8, 1994 a petition was filed with the NRC requesting that the NRC reduce the limit for radiation dose to members of the public from the current 100 mrem per year to 1 mrem per year. The NRC has denied the petition for rulemaking on the basis that the

proposed action is not necessary because current public dose limits adequately protect the health and safety of the public; the requirement that doses are as low as is reasonably achievable (ALARA) provides an ample margin of safety and the proposed 1 mrem per year limit is not supported by the recommendations of ICRP, NCRP or Presidential guidance.

On January 13, 1995 NRC issued a draft of proposed Revision 1 to Regulatory Guide 8.29, "Instruction Concerning Risks from Occupational Radiation Exposure." The guide is being revised to provide guidance on the instructions and information that should be provided to workers by licensees. Comments were due March 15, 1995.

CANADA: ALBERTA, BRITISH COLUMBIA AND SASKATCHEWAN

These three western provinces of Canada have jointly formed a committee of government and industrial representatives to develop guidelines for the control of NORM. The committee has representatives from the petroleum and fertilizer industries. The first two parts of the three-part proposed guidelines are generic and Part 3 will be industry specific. The proposed guidelines are undergoing final review and should be available this summer, for distribution. ■

FINAL CUT

The most discouraging of business news,
It should hardly be surprising,
Is having a one-man consulting firm ---
And finding that it needs downsizing.

Ed. Dempsey, The Wall St. J. ■

CONFERENCE OF RADIATION CONTROL PROGRAM DIRECTORS (CRCPD)

The CRCPD has set up a new NORM Commission which will take over the responsibilities of the Part N and E-4 Committees. E-4 is the Committee on Natural Radioactivity Contamination. Greta Dicus of Arkansas has been appointed Chair of the new Commission and Ray Paris of Oregon is Vice-chair. Edd Kray, the present Chair of the Part N Committee will remain as Chair of Part N and will be a member of the Commission.

In addition to the new Commission, an Advisory Committee is being established to give advice to the Commission. The Advisory Committee will be composed of a variety of people interested in NORM, including representatives from industry. The gas and oil industry as well as other industries impacted by NORM will be asked to have a representative on the Advisory Committee. It is anticipated that the Advisory Committee will meet with the NORM Commission at least once or twice a year.

The Commission will ultimately develop NORM regulations to be used by the separate states in enacting their own regulations. The belief is that it will be necessary to have more than one NORM standard. The standards may have to be related to a specific region of the country or for different industries.

If the CRCPD Board of Directors (Ruth McBurney of Texas is the current Chairperson) accepts and approves the Part N suggested NORM regulations being drafted by the Part N Committee chaired by Edd Kray, the "regulation" will be put out as a suggested regulation. However, some members of the Board are concerned as to whether or not the current NORM draft has the total support of industry. If that total support isn't there the Board may feel they don't want to go with something that is not going to be applicable, accessible and workable. So it is possible that the Board will not approve the current draft of Part N, but wait for more input from industry and possibly develop separate standards as described above.

Other groups with interest in developing NORM regulations will be encouraged to work with the Commission. Organizations with active NORM groups include the Health Physics Society, the Interstate Oil and Gas Compact Commission, the API and a NCRP Committee that is evaluating NORM.

The CRCPD and Part N have been important components in the development of regulations for the control of NORM for many years, long before Louisiana became the first state to have NORM regulations. The following is a brief history of Part N as prepared by Edd Kray, Colorado Department of Health, and present Chair of CRCPD SR-5 Committee, the Committee responsible for the development of Part N.

The CRCPD has been involved in the preparation of a suggested regulation for the control of radiation hazards associated with NORM since the early 1980s. This suggested regulation is designated "Part N" and designed to become part of the Conferences' Suggested State Regulations for the Control of Radiation (SSRCR). The SSRCR are model regulations designed as guidance for the development and amendment of state radiation control regulations. The SSRCR exists to encourage more

uniform regulations among the states, to complement Federal regulations, and to help states maintain regulations compatible with, identical with, or as effective as Federal regulations.

The SSRCR were initially published in 1962 by the Council of State Governments with the advice and assistance of the U.S. Atomic Energy Commission and the U.S. Public Health Service. In November, 1990 the CRCPD assumed responsibility for coordination and publication of the SSRCR. Much of the SSRCR is composed of regulations compatible with, if not identical, to regulations of the Nuclear Regulatory Commission (NRC) as written in Volume 10 of the Code of Federal Regulations (CFR) and pursuant to the Atomic Energy Act (AEA). The AEA does not address NORM or its associated hazards. The need for regulations to cover the hazards associated with NORM was realized in the early 1980's. This came about through numerous requests to State Radiation Control Programs for authorization to use NORM contaminated materials. Speculation that other large-scale projects utilizing NORM materials would develop, coupled with inadequate coverage of these situations by the SSRCR prompted several state and Federal regulatory personnel to meet and discuss this issue.

This led to the formation of the CRCPD "Part N Committee" (now the SR-5 Committee). This CRCPD Committee released the first draft of Part N in July of 1984.

From 1984 to 1991 Part N went through 6 drafts leading to a "Proposed Part N" submitted to the CRCPD in April, 1991. These

(Continued on page 7)

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CONFERENCE OF RADIATION CONTROL PROGRAM DIRECTORS (Continued)

variable drafts were subject to comment by the regulatory community, the public and industry, resulting in numerous improvements as time progressed.

In 1992 it was determined that the proposed Part N was in need of further refinement prior to adoption. In April of 1993 The Proposed Part N was mailed to all the states and appropriate regulatory agencies (NRC and EPA) for an additional round of comment. These comments were addressed and incorporated into a June 1994 revision of Part N which was submitted to the CRCPD.

This submission was concurrent with a CRCPD revision to the policies and procedures for preparation and publication of the SSRCR and prompted a look at the overall historical process for development of Part N. The Part N Committee and the CRCPD agreed that although the public and industry had provided comment which was incorporated into the various drafts of Part N, this public and industry review was not sufficiently current. Significant practical experience has been gained on NORM regulation

during the past few years, particularly within the oil and gas producing states which have adopted their own regulations based on earlier drafts of Part N.

For this reason the Part N Committee is, at this time, reviewing comments received from representatives of the public, industry and environmental groups. The Committee believes they will be able to present a draft for review which had been through comprehensive review earlier by the regulatory community. ■

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CHALLENGES IN RADIATION SAFETY

In a recent issue of the Newsbrief, Roland Fletcher of Maryland and the past Chairperson of CRCPD's Board of Directors, pointed out some of the challenges in radiation safety as he sees them.

There is still so much to do in radiation safety, and yet too frequently our major efforts are spent on perceived rather than actual problems. "Fact is fact, but perception is reality." Some of the continuing challenges I see are:

- Lack of positive press on radiation accomplishments (e.g., how many lives are saved, made longer, made better, etc., due to radiation?)
- **WHY IS THERE STILL NO NATIONAL, CONSISTENTLY APPLIED REGULATION OF NORM?**
- Licensing state certification: is this an idea whose time has come -- and gone?
- What do we do about disparity between x-ray and radioactive material regulatory programs? How do you spell relief?
A-F-F-O-R-D-A-B-L-E T-R-A-I-N-I-N-G
- Status of radon programs -- there is a growing list of nay sayers

I am sure there are many others, but these came to mind. ■

LNT MODEL IMPACTS NORM (Continued from page 8)

commercial or industrial use, well within the normal background range of 1-5 pCi per gram in soil. The HPS should lead public understanding and acceptance of low-level radiation as part of life. Regulators should propose radiation regulations that are easily distinguished from background levels to alleviate public fear and misunderstanding of radiation. HPS can help EPA to avoid betrayal of public trust and backlash at over-regulation which is costly to society without benefit to public health.

References

All the references referred to in this article are not reproduced here. See the June, 1995 issue of the Health Physics Society Newsletter page 10 for the original article including the references. The UNSCEAR report is the United Nations Scientific Committee on the Effects of Atomic Radiation. Adaptive responses to radiation in cells and organisms. Document A/AC.82/R.542; 1994. ■

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