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DOCKETED
USNRC

NUCLEAR REGULATORY COMMISSION

10 CFR Part 40

'82 NOV 23 P4:33

Docket No. PRM-40-24

Union Carbide Corporation

Receipt of Petition for Rulemaking

AGENCY: Nuclear Regulatory Commission.

DOCKET NUMBER

PETITION RULE PRM 40-24

(47 FR 53889)

ACTION: Petition for rulemaking.

SUMMARY: The Nuclear Regulatory Commission is publishing for public comment a notice of receipt of a petition for rulemaking submitted by the Union Carbide Corporation. The petitioner requests that the NRC amend portions of its regulations setting out criteria for the operation of uranium mills and the disposition of tailings or waste resulting from uranium milling activities. The petitioner supports the suggested amendments with information it says was not available to the NRC at the time the regulations were issued. The petitioner believes that its suggested changes would continue to protect adequately public health, safety, and the environment while significantly reducing the compliance costs incurred by the petitioner in the operation of its uranium milling facilities.

DATE: Submit comments by **JAN 31 1983**. Comments received after this date will be considered if it is practical to do so, but assurance of consideration cannot be given except as to comments received on or before this date.

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ADDRESSES: Submit comments to: Secretary, U.S. Nuclear Regulatory Commission, Washington, DC 20555, Attention: Docketing and Services Branch.

Hand deliver comments to: Room 1121, 1717 H Street, NW Washington, DC between 8:15 a.m. and 5:00 p.m.

For a copy of the petition write: The Division of Rules and Records, Office of Administration, U.S. Nuclear Regulatory Commission, Washington, DC 20555.

Inspect and copy comments received on the petition at: The NRC Public Document Room, 1717 H Street, NW, Washington, DC.

FOR FURTHER INFORMATION CONTACT: John Philips, Chief, Rules and Procedures Branch, Division of Rules and Records, Office of Administration, U.S. Nuclear Regulatory Commission, Washington, DC 20555, Telephone: (301) 492-7086.

SUPPLEMENTARY INFORMATION:

The Nuclear Regulatory Commission has received a petition for rulemaking from the Union Carbide Corporation. This petition has been assigned Docket No. PRM-40-24.

The Petitioner

The petitioner, Union Carbide Corporation, is a New York-based corporation engaged in uranium exploration, milling, and mining. The petitioner operates a uranium and vanadium milling facility at Uravan, Colorado and uranium milling facilities in Maybell, Colorado and Gas Hills, Wyoming.

Colorado is an Agreement State under section 274 of the Atomic Energy Act. An amendment to the agreement between the NRC and the State of Colorado on May 10, 1982, gave the Colorado Department of Health the authority to

license the possession of source and byproduct material attendant to uranium milling activities. The State of Colorado adopted standards that meet the minimum standards set out in Appendix A to Part 40 of NRC's regulations. Thus, the petitioner says, its Colorado facilities must comply, at a minimum, with the requirements set out in NRC's regulations even though the State of Colorado is the licensing authority.

Wyoming is not an Agreement State. Therefore, NRC remains the licensing and regulatory authority for source and byproduct material in Wyoming. As a result, NRC directly imposes the requirements of Appendix A to Part 40 on the petitioner's Wyoming facility.

The Suggested Amendments: Background

The petitioner requests specific amendments to Criteria 1, 5, 6, and 10 of Appendix A to Part 40. This appendix sets out the technical, financial, ownership, and long-term site surveillance criteria relating to the siting, operation, decontamination, decommissioning, and reclamation of uranium mills and the tailings or waste systems and sites at which uranium mills and systems are located. Appendix A was issued as part of the NRC's regulations implementing the Uranium Mill Tailings Radiation Control Act of 1978 (Pub. L. 95-604, 42 U.S.C. 7901, et seq.). These regulations were published in the Federal Register on October 3, 1980 (45 FR 65531).

The petitioner presents the suggested amendments to Criteria 1, 5, 6, and 10 of Appendix A to Part 40 on the basis of information which it says was not available to the NRC at the time the original regulations were issued. This supporting material, which is technical in nature, and comprises almost 400 pages, has been included by the petitioner in the petition for rulemaking.

The petitioner believes that the suggested amendments will continue to protect adequately the public health, safety, and the environment from radiation hazards associated with uranium milling. In addition, the petitioner asserts that its suggested amendments are more cost effective, in that they would significantly reduce the costs of compliance at the facilities covered by the regulations.

The Suggested Amendments: Criterion 1

Criterion 1 covers the selection of new tailings disposal sites or the adequacy of existing tailings disposal sites. The petitioner suggests that the long-term isolation of tailings and associated contaminants be defined as a 100-200 year period rather than the current "thousands of years" period. To accomplish this change, the petitioner would revise the introductory text of Criterion 1 to read as follows:

In selecting among alternative tailings disposal sites or judging the adequacy of existing tailings sites, the following site features, which will determine the extent to which a program meets the broad objective of isolating the tailings and associated contaminants from man and the environment during operations and for 100-200 years thereafter without ongoing active maintenance, shall be evaluated...

The petitioner bases this suggestion on testimony before the NRC, the states of Colorado and New Mexico, the Environmental Protection Agency, and the Military Nuclear Systems Subcommittee of the Committee on the Armed Services. The petitioner contends that this testimony indicates that:

1. The thousands of years period is unreasonable.
2. Technology does not exist to assure the isolation of tailings for thousands of years.

3. The present requirement is costly and speculative.
4. It is difficult, if not impossible, to design a reclamation plan for a tailings pile that will withstand erosion over a period of thousands of years.
5. Tailings disposal should be based on a realistic period of time, such as 100-200 years.
6. The thousands of years requirement tends to relieve the government of any responsibility for ultimate control (Criterion 11).
7. The funds for long-term surveillance and control will be available to pay for any repair necessitated by damages resulting from any unexpected event (Criterion 10).

The Suggested Amendments: Criterion 5

Criterion 5 covers the seepage of toxic materials into the groundwater. The petitioner requests that this criterion be amended by removing the following sentences:

Where groundwater impacts are occurring at an existing site due to seepage, action shall be taken to alleviate conditions that lead to excessive seepage impacts and restore groundwater quality to its potential use before milling operations began to the maximum extent practicable. The specific seepage control and groundwater protection method, or combination of methods, to be used must be worked out on a site-specific basis.

In their place the petitioner would substitute the following language:

Where excessive groundwater contamination that may cause present and future harm due to human health and the environment is occurring at an existing site due to seepage of radioisotopes and other toxic materials into groundwater, corrective action shall be taken to clean up groundwater

and alleviate conditions that may lead to such contamination to the maximum extent practicable. The specific seepage control and groundwater protection method or combination of methods to be used shall be worked out on a site-specific basis. In evaluating the method(s) to be used, consideration should be given to the current use of the groundwater, naturally-occurring characteristics of the groundwater, potential use of the groundwater based on needs of the community, size of the aquifer, and availability of other drinking water sources, and the practicability of restoration. In determining potential use of groundwater, any applicable state aquifer designation, water quality standard or water quality criteria shall be considered.

The petitioner contends that Criterion 5, as written, distinguishes new from existing sites. For new sites, the petitioner states that seepage may not result in deterioration of groundwater supplies, and technical alternatives are provided to assure that deterioration does not occur. The petitioner states that Criterion 5 currently requires that for existing sites, if groundwater quality is affected, groundwater quality must be restored. The petitioner asserts that no guidance is given concerning the standards to be used in developing the required site-specific seepage control and groundwater protection methods. The petitioner's proposed language is intended to provide guidance it believes is missing for existing sites.

The Suggested Amendments: Criterion 6

Criterion 6 concerns the earth cover to be placed over tailings or wastes to prevent the surface exhalation of radon. This criterion currently requires a three-meter cover over tailings or wastes to result in a calculated reduction in surface exhalation of radon emanating from the

tailings or wastes to less than two picocuries per square meter per second.

Criterion 6 currently reads as follows:

Criterion 6 - Sufficient earth cover, but not less than three meters, shall be placed over tailings or wastes at the end of milling operations to result in a calculated reduction in the surface exhalation of radon emanating from the tailings or wastes to less than two picocuries per square meter per second. In computing required tailings cover thicknesses, moisture in soils in excess of amounts normally found in similar soils in similar circumstances shall not be considered. Direct gamma exposure from the tailings or wastes should be reduced to background levels. The effects of any thin synthetic layer shall not be taken into account in determining the calculated radon exhalation level. If non-soiled materials are proposed to reduce tailings covers to less than three meters, it must be demonstrated that such materials will not crack or degrade by differential settlement, weathering, or other mechanism, over long-term time intervals. Near surface cover materials (i.e., within the top three meters) shall not include mine waste or rock that contains elevated levels of radium; soils used for near surface cover must be essentially the same, as far as radioactivity is concerned, as that of surrounding surface soils. This is to ensure that surface radon exhalation is not significantly above background because of the cover material itself.

The petitioner requests that Criterion 6 be revised so that remedial actions are cost-effective and based on a realistic assessment of the health hazard to the public that uranium mill tailings may pose. The petitioner believes that its proposal will ensure that mill tailings are controlled in a safe manner and that people and the environment will be protected from radiation hazards associated with tailings disposal. The petitioner's suggested revision of Criterion 6 reads as follows:

This criterion addresses tailings cover requirements and radiation control. Earth cover shall be placed over tailings or waste at the end of milling operations to prevent erosion over 100-200 years. A site-specific geo-technical evaluation shall be made to determine cover design requirements. The evaluation shall take into consideration climatic conditions and surface hydrology. The cover shall be designed to result in a calculated reduction in radon emanation from the covered tailings or waste areas to assure that concentrations of radon and other radioactive material concentrations beyond a small buffer zone of approximately 500 feet established around covered areas do not exceed limits specified in Appendix B, Table II of 10 CFR Part 20, excluding background. Habitable structures within the buffer zone shall be prohibited. If non-soil materials are proposed to be used for cover material, it must be demonstrated that such materials will not crack or degrade by differential settlement, weathering or other mechanism over 100-200 years.

The petitioner says the suggested revision to Criterion 6 contains the following specific changes:

1. The radon flux standard is deleted. The petitioner claims that radon flux from tailing piles has no direct health-related significance, and that the primary health concern is radon daughter concentrations in inhabited buildings near tailings-sites. The petitioner contends that a cover designed according to the requirements in its proposal will reduce the radon emanation rate and, as a result, the potential for radon daughter build-up. The petitioner also claims that the added buffer zone would provide additional protection.

2. Beyond the buffer zone, the concentration limits for radon and other radioactive materials would be as specified in Table II of Appendix B to 10 CFR Part 20. The petitioner contends that these limits should be the standards that a site-specific cover design must meet as they have been recognized by the NRC as the standards which protect against potential radiation hazards resulting from licensed activities.

3. The requirement that direct gamma exposure from tailings or wastes be reduced to background levels is deleted. The petitioner asserts that external gamma radiation originates almost entirely from the outer one foot of tailings and will be easily shielded by an earth cover designed in accordance with its proposal.

4. The prohibition on the use of mine waste or rock that contains elevated levels of radium in the earth cover is also excluded. The petitioner claims that, if the suggested changes are accepted, the material to be used as cover will be among the many considerations evaluated in determining cover design requirements.

In support of the suggested amendments, the petitioner contends that the current Criterion 6 is based on perceived risks to the public from exposure to mill tailings. The petitioner points to the DOE Commingled Tailings Study, testimony before Congress, and comments to the EPA indicating that health risks to the public from exposure to radium and radon from uranium mill tailings should be compared with risks from exposure to other natural sources of radium, radon, and their daughters as well as to other risks

commonly accepted by the public. The petitioner contends that, if such comparisons are made, it is clear that the health risks to the public associated with uranium mill tailings have been greatly overestimated.

The Suggested Amendments: Criterion 10

This criterion imposes a charge on each mill operator to cover the cost of long-term surveillance. The total charge must be such that, "with an assumed 1 percent annual real interest rate, the collected funds will yield interest in an amount sufficient to cover the annual costs of site surveillance." The petitioner proposes the use of a 2 percent interest rate rather than the current 1 percent interest rate. The petitioner requests that this rate, which it considers to be a more accurate percentage spread between inflation and interest rates, be used.

The Suggested Amendments: Additional Supporting Information

The petitioner cites information it says was not available to the NRC at the time the regulations were issued to support its suggested changes. This information includes public comment solicited as part of the rulemaking procedures used by the states of Colorado and New Mexico so that they could adopt regulations compatible with NRC's requirements. Additionally, it says more recent comments on mill tailings regulations have been presented to the EPA in response to its proposed standard for inactive uranium processing sites. A House Subcommittee focused on testimony on NRC's mill tailings regulations in 1981 and most recently in August 1982 after completion by DOE of its report on the clean-up and cost of commingled tailings sites.

The petitioner believes that the Final Generic Environmental Impact Statement on Uranium Milling (Final GEIS), NUREG-0706, is flawed. The petitioner claims that estimates on the number of uranium mills and the amount of mill tailings generated through the year 2000 are inaccurate. DOE projections on the increased nuclear generating capacity by the year 2000 have been revised downward from the mid-range of 180 gigawatts used in the Final GEIS to a low range of 145 and a high range of 185 estimated in March 1982. The petitioner believes that the low range projection by DOE is more accurate than the mid-range used by NRC in its Final GEIS. As a result, the petitioner claims that the estimated amount of uranium needed that was presented in the Final GEIS is almost 1.8 times greater than present assessments indicate. Thus, the petitioner reasons that the amount of mill tailings and the health affects attributable to those mill tailings are also overestimated.

The petitioner claims that the Final GEIS fails to use the best available information on dose-response models, risk estimates, and carcinogenic co-factors to calculate the benefits of radon emission controls, and ignores the observed distribution of radon. The petitioner also states that the cost estimates used in the Final GEIS are inaccurate.

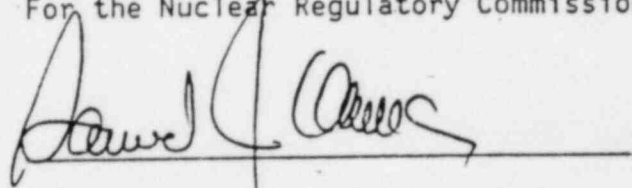
Finally, the petitioner claims that the language of the criteria in Appendix A to Part 40 does not provide the site-specific flexibility promised in the introductory paragraph of the Appendix.

Invitation to Comment

The Commission would like to receive public comment on the specific items addressed in PRM-40-24. Because of the complexity of the issues raised and the large amount of supporting material (approximately 400 pages) submitted by the petitioner, the Commission urges prospective commenters to obtain a complete copy of the petition. While copies of the petition last, they may be obtained without charge by writing the Division of Rules and Records, Office of Administration, U.S. Nuclear Regulatory Commission, Washington, DC 20555. Thereafter, they may be inspected or copied at a cost of five cents per page at the NRC Public Document Room at the location listed above.

Dated at Washington, DC, this 23RD day of NOVEMBER, 1982.

For the Nuclear Regulatory Commission.

A handwritten signature in cursive script, appearing to read "Samuel J. Chilk", written over a horizontal line.

Samuel J. Chilk,
Secretary of the Commission.