This document is scheduled to be published in the Federal Register on 10/20/2020 and available online at **federalregister.gov/d/2020-23154**, and on **govinfo.gov**

6560-50-P

ENVIRONMENTAL PROTECTION AGENCY

[EPA-HQ-OAR-2020-0442; FRL–10014-36-OAR]

Approval of the Request for Other Use of Phosphogypsum by The Fertilizer Institute

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice.

SUMMARY: The Environmental Protection Agency (EPA) is approving, subject to certain conditions, a request by The Fertilizer Institute for use of phosphogypsum in government road projects. This decision and supporting information is being made available to the public through this notice. Under the Clean Air Act, the EPA may approve a request for other use of phosphogypsum if it determines that the proposed use is at least as protective of human health as placement in a stack, which is the designated management method. With this approval, and in accordance with its terms and conditions, government entities may use phosphogypsum for road construction projects.

DATES: [**Insert date of publication in the Federal Register**.]

FOR FURTHER INFORMATION CONTACT: Jonathan P. Walsh, Radiation Protection Division, Office of Radiation and Indoor Air, Mail Code 6608T, Environmental Protection Agency, 1200 Pennsylvania Ave., NW, Washington, DC 20460; telephone number: (202) 343-9238; fax number: (202) 343-2304; email address: walsh.jonathan@epa.gov.

Organization of this document. The information in this notice is organized as follows:

SUPPLEMENTARY INFORMATION:

I. General Information

A. How Can I Get Copies of This Document and Other Related Information?

1. *Docket.* The EPA has established a docket for this action under Docket ID No. EPA-HQ-OAR-2020-0442. Publicly available docket materials are available either electronically through www.regulations.gov or in hard copy at the Air and Radiation Docket in the EPA Docket Center, (EPA/DC) EPA West, Room 3334, 1301 Constitution Ave., NW, Washington, DC. The EPA Docket Center Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566-1744, and the telephone number for the Air and Radiation Docket is (202) 566-1742.

2. *Electronic Access.* You may access this Federal Register document electronically from the Government Printing Office under the "*Federal Register*" listings at FDSys (http://www.gpo.gov/fdsys/browse/collection.action?collectionCode=FR).

II. Background and Overview of Decision

Phosphogypsum stacks are large piles of waste from wet acid phosphorous production. There are more than 60 stacks of phosphogypsum located in 13 different states. The majority of these stacks are located in the southeastern region of the United States. Because the phosphate ore used to produce the phosphoric acid contains relatively high concentrations of uranium and radium, phosphogypsum stacks also contain high concentrations of these elements. The presence

of radium in the stacks causes them to release radon gas into the atmosphere.

The EPA regulates the management of phosphogypsum based on its elevated levels of radium and its decay products, including radon gas, which is classified as a hazardous air pollutant under the Clean Air Act. As required by 40 CFR part 61, subpart R (hereafter "Subpart R"), phosphogypsum must be disposed of in engineered piles, called stacks, with the exception of limited use for agricultural and research purposes. In addition, applicants may request approval of other uses of phosphogypsum by following the process prescribed in 40 CFR 61.206.

A. The EPA's 1992 Risk Assessment

The EPA initially established the requirement that phosphogypsum be placed into stacks without any exceptions (54 FR 51674, December 15, 1989). In response to petitions for reconsideration, the EPA re-evaluated the risks of selected applications of phosphogypsum against the risks from stacking (57 FR 23305, June 3, 1992).[1] The EPA determined that the use of phosphogypsum in limited agricultural and indoor research activities could be as protective of human health, in the short- and long-term, as stacking. These approved uses were incorporated into Subpart R at 40 CFR 61.204-205.

The EPA also assessed the use of phosphogypsum in road construction. While the risks were found to be acceptable from most of the exposure scenarios analyzed, the potential risks to residents of dwellings constructed on an abandoned road were calculated to be unacceptably high. The EPA therefore did not approve road construction as a categorical use of phosphogypsum. The EPA did, however, define in 40 CFR 61.206 a process to request approval of other uses of phosphogypsum, including a risk assessment demonstrating that the proposed

[1] 'Potential Uses of Phosphogypsum and Associated Risks: Background Information Document," EPA 402-R92-002, May 1992.

use is at least as protective of human health, in the short- and long-term, as placement in a stack. As stated in the preamble to the final rule, the measure of protectiveness is lifetime risk of fatal cancer to individuals. In connection with the removal of phosphogypsum from stacks for authorized uses, the EPA incorporated sampling, certification, and record-keeping requirements into Subpart R at 40 CFR 61.207 through 61.209.

B. Request by The Fertilizer Institute

On October 15, 2019, The Fertilizer Institute (TFI) submitted its initial "Request for Approval of Additional Uses of Phosphogypsum Pursuant to 40 CFR 61.206," requesting that EPA approve the use of phosphogypsum in road construction. Subsequently, on April 7, 2020, TFI submitted, on behalf of its members that own or operate phosphogypsum stacks, a revised request: "Revised Request for Approval of Additional Uses of Phosphogypsum Pursuant to 40 CFR 61.206: Use in Road Construction Projects Authorized by Federal, State and Local Departments of Transportation or Public Works".

TFI requested that phosphogypsum be approved specifically for government road projects authorized by federal, state and local Departments of Transportation (DOT) or Public Works (PW), and conducted as part of a government road project using appropriate, generally accepted road construction standards and specifications such as ASTM,[2] Federal Highway Administration, federal or state DOT standards and specifications, or standards developed or approved in consultation with the appropriate regulatory DOT or PW authorities. Notably, as envisioned by the request, the submitter of the request (TFI) would not be the entity using the phosphogypsum, although its members may supply the phosphogypsum to the end user (i.e., the government agency responsible for the road construction project). To address this situation, the

[2] Formerly the American Society for Testing and Materials, now ASTM International.

terms and conditions of the approval require that the phosphogypsum supplier (stack owner or operator) and the end user each provide information to the EPA, as appropriate, prior to removal of phosphogypsum from the stack.

TFI estimates that the cost of transportation would make the use of phosphogypsum uneconomical at distances greater than about 200 miles from a stack.[3] In that case, the regional distribution of phosphogypsum stacks suggests that its use for road construction would likely be concentrated in the southeastern part of the country but could also occur in western states such as Idaho and Wyoming.

C. TFI's Risk Assessment

As required by Subpart R, TFI submitted a risk assessment as part of its request.[4] The risk assessment assessed potential exposures to individuals in various scenarios involving road users, nearby residents, and road construction workers. TFI's exposure scenarios and modeling approaches were largely consistent with the EPA's 1992 analysis, as were the overall results.

The EPA finds TFI's risk assessment to adequately demonstrate that the use of phosphogypsum in road construction will be at least as protective of human health, in the short- and long-term, as stacking.[5] However, as in 1992, the EPA remains concerned about potential exposures should the road become abandoned, particularly for a residence built on road material containing phosphogypsum. The EPA does not agree that TFI's assumptions in its analysis of this scenario, such as the use of radon resistant home construction techniques, could be relied upon to limit the potential risks to a future residential individual from such an occurrence. In this

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[3] "Economic Analysis of Phosphogypsum Reuse," prepared for TFI by Policy Navigation Group, submitted as Appendix 6 to TFI's Revised Request, December 2019, page 19.
[4] "Radiological Risk Assessment in Support of Petition for Beneficial Use of Phosphogypsum," prepared for TFI by Arcadis Canada Inc., submitted as Appendix 2 to TFI's Revised Request, October 2019.
[5] "Review of the Radiological Risk Assessment Submitted in Support of Request for Approval of Other Use of Phosphogypsum," October 2019, The Fertilizer Institute.

case, however, the EPA believes that this risk can be acceptably mitigated by including appropriate terms and conditions in the approval.

In defining its request and exposure scenarios, TFI's risk assessment assumes certain limitations involving the construction and placement of roads. For example, phosphogypsum incorporated into the road base and the road surface is limited in its radium-226 concentration and is assumed to be mixed with other materials in limited proportions. The terms and conditions of the approval reflect these assumptions and limitations.

D. Terms and Conditions of the Approval

The EPA has determined that, subject to the terms and conditions summarized below, phosphogypsum may be removed from stacks and used in government road projects, as requested by TFI. This approval to use phosphogypsum in road construction does not authorize the removal of any phosphogypsum from any stacks or the use of any phosphogypsum for road construction unless and until the information required by the "Initial Conditions," below, is provided to EPA. Only after such information is provided to EPA, may phosphogypsum be removed from stacks and used in road construction, further provided that the conditions expressed in "Other Conditions," below, continue to be met. A complete listing of the terms and conditions applicable to this approval may be found in the approval letter.[6] Additional supporting documentation, such as the complete TFI request and risk assessment, are also in the docket.

1. Initial Conditions

Prior to the distribution and/or use of phosphogypsum for any government road project, the owner or operator of the stack from which phosphogypsum is to be distributed or the

[6] Letter from Andrew Wheeler, Administrator, Environmental Protection Agency, to Corey Rosenbusch, President and CEO, The Fertilizer Institute, Docket No. EPA-HQ-OAR-2020-0442.

governmental entity responsible for building and maintaining the road, as appropriate, must submit to the Agency all information required by 40 CFR 61.206(b), as more specifically described in the approval letter.

2. Other Conditions[7]

Subsequent to the provision of the initial required information to EPA, phosphogypsum may be used in government road projects in accordance with additional conditions, as stated in the approval letter, including, for example, conditions related to:

- Continued control, maintenance, and use of the road;
- Sampling, certification, and record-keeping requirements in 40 CFR 61.206(d) and 61.207 through 61.209;
- Construction of the road consistent with the assumptions, scenarios, limitations, and parameters analyzed in TFI's risk assessment, including an average radium content of no more than 35 pCi/g, no more than 2.25% PG by weight in surface pavement and no more than 50% PG by weight in the road base; and
- Notification and availability of information for the public and road construction workers on the use of phosphogypsum in the road project.

Any use of phosphogypsum not consistent with the terms and conditions and any other limitations set forth in this approval shall be construed as unauthorized distribution of

[7] In addition to the information required by 40 CFR 61.206(b), as noted in connection with the "Initial Conditions," the "Other Conditions" include conditions associated with the requirements of 40 CFR 61.206(d) and 61.207-61.209; conditions inherent in the nature of or limitations or assumptions associated with TFI's request; and conditions imposed under the EPA's authority and discretion under 40 CFR 61.206(e). The EPA believes that these conditions are either required by 40 CFR part 61, subpart R or are reasonably appropriate to help provide continued assurance that the use is at least as protective as disposal of phosphogypsum in stacks and will ensure that the removal of phosphogypsum from stacks and use in government road projects will be consistent with TFI's request and will occur with public notice and appropriate information availability.

phosphogypsum and may constitute a violation of or noncompliance with 40 CFR part 61, subpart R. This approval is pursuant to Subpart R promulgated under the authority of the Clean Air Act. This approval does not relieve TFI, phosphogypsum stack owners or operators or resellers, retailers, distributors, or end users or other entities handling, processing or using phosphogypsum of responsibility to comply with other applicable laws and regulations.

Andrew Wheeler,
Administrator.

[FR Doc. 2020-23154 Filed: 10/19/2020 8:45 am; Publication Date: 10/20/2020]