



NUCLEAR REGULATORY COMMISSION

[Docket No. 30-30429; NRC-2023-0115]

ProTechnics, a Division of Core Laboratories LP; Alternate Abandonment of an Irretrievable Sealed Source

AGENCY: Nuclear Regulatory Commission.

ACTION: Environmental assessment and finding of no significant impact; issuance.

SUMMARY: The U.S. Nuclear Regulatory Commission (NRC) is issuing a finding of no significant impact (FONSI) and accompanying environmental assessment (EA) for an exemption request from ProTechnics, a division of Core Laboratories LP (ProTechnics), byproduct material license no. 42-26928-01, for alternate abandonment of an irretrievable sealed source in a Gulf of Mexico oil and gas well. Based on the analysis in the EA, the NRC staff has concluded that there would be no significant impacts on the quality of the human environment from ProTechnics' proposed exemption request and therefore, a FONSI is appropriate.

DATES: The EA and FONSI referenced in this document are available on **[INSERT DATE OF PUBLICATION IN THE *FEDERAL REGISTER*]**.

ADDRESSES: Please refer to Docket ID **NRC-2023-0115** when contacting the NRC about the availability of information regarding this document. You may obtain publicly available information related to this document using any of the following methods:

- **Federal Rulemaking Website:** Go to <https://www.regulations.gov> and search for Docket ID **NRC-2023-0115**. Address questions about Docket IDs in Regulations.gov to Stacy Schumann; telephone: 301-415-0624; email: Stacy.Schumann@nrc.gov. For technical questions, contact the individual listed in the "For Further Information Contact" section of this document.

- **NRC's Agencywide Documents Access and Management System**

(ADAMS): You may obtain publicly available documents online in the ADAMS Public Documents collection at <https://www.nrc.gov/reading-rm/adams.html>. To begin the

search, select "Begin Web-based ADAMS Search." For problems with ADAMS, please contact the NRC's Public Document Room (PDR) reference staff at 1-800-397-4209, at 301-415-4737, or by email to PDR.Resource@nrc.gov. The ADAMS accession number for each document referenced (if it is available in ADAMS) is provided the first time that it is mentioned in this document.

- **NRC's PDR:** The PDR, where you may examine and order copies of publicly available documents, is open by appointment. To make an appointment to visit the PDR, please send an email to PDR.Resource@nrc.gov or call 1-800-397-4209 or 301-415-4737, between 8 a.m. and 4 p.m. eastern time (ET), Monday through Friday, except Federal holidays.

- **FOR FURTHER INFORMATION CONTACT:** James Park, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, telephone: 301-415-6954, email: James.Park@nrc.gov.

SUPPLEMENTARY INFORMATION:

I. Introduction

The NRC is considering an exemption request from ProTechnics for alternate abandonment of an irretrievable sealed source in a Gulf of Mexico oil and gas well. In its exemption request, ProTechnics stated that a sealed source, together with its encasing well logging tool, had become lodged in the Gulf of Mexico well despite ProTechnics' attempts to retrieve it (ADAMS Accession Nos. ML23116A328 and ML23116A323). The NRC's regulations in paragraph 39.15(a)(5) of title 10 of the *Code of Federal Regulations* (10 CFR) provide the requirements for abandonment if the sealed source is classified as irretrievable after reasonable efforts at recovery have been expended. These requirements include immobilizing and sealing the source with a cement plug; a means, if needed, to prevent inadvertent intrusion on the source; and a permanent identification plaque mounted at the surface of the well, if practical, with required wording and information. In proposing alternate abandonment methods, ProTechnics states that the location of the sealed source within the well and its orientation there make it

impossible to retrieve the sealed source and to implement its standard procedures for abandonment of the sealed source consistent with NRC's regulations. As required by 10 CFR 51.21, the NRC staff prepared an EA that documents its independent evaluation of the potential environmental impacts of abandonment of the sealed source in light of ProTechnics' exemption request. Based on the analysis in the EA, the NRC staff has concluded that there would be no significant impacts to the environment from ProTechnics' proposed alternate abandonment methods and therefore, a FONSI is appropriate.

II. Summary of Environmental Assessment

Description of the Proposed Action

ProTechnics is seeking an exemption to allow for alternate abandonment of an irretrievable sealed source in accordance with the requirements 10 CFR 39.15(c). In its exemption request, ProTechnics stated that the sealed source had initially become lodged in the Gulf of Mexico well on June 29, 2022. The sealed source, together with its encasing well logging tool, is lodged within the well 45 degrees off vertical. Following attempts to retrieve it, ProTechnics declared the sealed source irretrievable on July 29, 2022.

In place of the abandonment requirements in 10 CFR 39.15(a)(5), ProTechnics proposes an alternate abandonment method for the sealed source that includes mechanical/technology, geographic, and administrative barriers. ProTechnics believes that these barriers would provide as much protection as that provided by ProTechnics' NRC-approved source abandonment procedures.

Need for the Proposed Action

ProTechnics submitted its exemption request to seek NRC approval of alternate abandonment procedures for an irretrievable sealed source, pursuant to the requirements in 10 CFR 39.15(c). ProTechnics stated that between June 30 and July 28, 2022, multiple unsuccessful attempts were made to retrieve the sealed source. ProTechnics states that the wellbore's orientation off vertical and the location of the

sealed source within the wellbore make it impossible to implement its standard procedures for abandonment of the sealed source.

Environmental Impacts of the Proposed Action

The NRC staff has assessed the potential environmental impacts from ProTechnics' alternate abandonment methods for its irretrievable sealed source within a Gulf of Mexico well. Given the location of the irretrievable sealed source within the Gulf of Mexico well and ProTechnics' proposal to abandon the sealed source there, the NRC staff does not expect potential environmental impacts to the following resource areas: land use, transportation, geology and soils, surface water and ground water, ecology, air quality, noise, historic and cultural resources, socioeconomics, visual and scenic resources, and waste management. As a result, the NRC staff's analysis focused on the potential radiological impacts to the public and occupational health. With respect to ecological resources, the NRC staff determined that the proposed action would have no effect on threatened or endangered species or their critical habitat. The NRC staff also determined that the proposed action is not the type of activity that has the potential to cause effects on historic properties.

As discussed in a 1981 NRC staff risk analysis of potential radiological exposures to workers and members of the public, the NRC staff considered the primary pathway for an irretrievable sealed source to reach the surface would be in the drilling mud associated with drilling operations that struck the source (ADAMS Accession No. ML23158A257). In the 1981 analysis, the NRC staff assumed a conservative probability of 50 percent for striking an abandoned source but recognized that the actual probability was likely much lower. ProTechnics identified three barriers and items that would reduce the potential for its sealed source to be struck, (1) mechanical hardware within the well, (2) the orientation and location of the sealed source, and (3) administrative items (e.g., a permanent identification placard at the wellhead, an annual contact with the well owner, and involvement in the final well abandonment planning stages). The NRC staff

agrees that these barriers and items would tend to reduce the probability of striking ProTechnics' irretrievable sealed source to be substantially below 50 percent.

Despite this expected low probability of actually striking ProTechnics' irretrievable sealed source, the NRC staff considered the radiation exposure to operators and members of the public on the drilling rig should the source be struck and the source contents brought to the surface. In the 1981 risk analysis, the NRC staff considered the potential dose rates on the drill rig from a variety of sources (e.g., Cesium-137, Americium-241, Cobalt-60, Iridium-192) and determined that the worst-case scenario would result in a total population dose of 1.3 person-rem. The NRC staff stated that this radiological impact would be comparable with the exposure allowed for a low probability release of radioactive material from products containing exempt quantities. The NRC staff further noted that its risk analysis did not reflect intervening shielding on the drill rig or any shielding that would be provided by the aqueous nature of the drilling mud, both of which would further reduce any exposure.

For these reasons, the NRC staff considers the potential radiological impacts of ProTechnics' proposed exemption request to abandon its irretrievable sealed source in the Gulf of Mexico well to be minimal and not significant.

Environmental Impacts of the Alternatives to the Proposed Action

An alternative to the proposed action is the no-action alternative. Under the no-action alternative, the NRC would not grant ProTechnics' alternate abandonment procedures for the irretrievable sealed source in the Gulf of Mexico well. With the no-action alternative, ProTechnics would be required to follow the procedures in 10 CFR 39.15(a)(5) for abandonment of the sealed source. The procedures in 10 CFR 39.15(a)(5) were previously analyzed by the NRC staff and determined to result in no significant environmental impacts (ADAMS Accession No. ML003690504).

Agencies and Persons Consulted

Given the expectation that the irretrievable source would remain within the well and the unlikelihood that the source would be struck by future drilling activities, the NRC

staff has determined that the proposed action would have no effect on threatened or endangered species or their critical habitat. Therefore, no consultation is required under Section 7 of the Endangered Species Act. Likewise, NRC staff has determined that the proposed action is not the type of activity that has the potential to cause effects on historic properties. Therefore, consistent with 36 CFR 800.3(a)(1), no consultation is required under Section 106 of the National Historic Preservation Act.

III. Finding of No Significant Impact

The NRC staff has concluded that, given the orientation and location of the sealed source, the mechanical barriers in the Gulf of Mexico well, and ProTechnics' identified administrative items, there would be no impacts to land use, transportation, geology and soils, surface water and ground water, ecology, air quality, noise, historic and cultural resources, socioeconomics, visual and scenic resources, and waste management. Additionally, the NRC staff evaluated the potential radiological impacts and found those to be minimal and not significant.

The NRC staff has prepared this EA to evaluate the potential environmental impacts of the proposed action to approve ProTechnic's alternate abandonment procedures for an irretrievable sealed source in a Gulf of Mexico well. Based on this EA, NRC has concluded that there are no significant environmental impacts and the exemption request does not warrant the preparation of an Environmental Impact Statement. Accordingly, the NRC has determined that a FONSI is appropriate. In accordance with 10 CFR 51.32(a)(4), this FONSI incorporates the EA set forth in this notice by reference.

The final EA is available in ADAMS under Accession No. ML23195A051.

Dated: July 20, 2023.

For the Nuclear Regulatory Commission.

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and Financial Support,
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