Brief description of amendments: The amendments revised plant Technical Specifications Table 3.7–2 and associated Table Notations, Table 3.7–4 and Table 4.1–1, reflecting the installation of the Class 1E 4160V negative sequence voltage (open phase) protective circuitry at Surry Power Station, Unit Nos. 1 and 2, to address the potential for a consequential open phase condition that could exist on one or two phases of a primary offsite power source and that would not currently be detected and mitigated by the existing station electrical protection scheme.

Date of issuance: May 3, 2018.

Effective date: As of the date of issuance and shall be implemented within 30 days of issuance.

Amendment Nos.: 292 (Unit No. 1) and 292 (Unit No. 2). A publicly-available version is in ADAMS under Accession No. ML18106A007; documents related to these amendments are listed in the Safety Evaluation enclosed with the amendments.

Renewed Facility Operating License Nos. DPR–32 and DPR–37: The amendments revised the Renewed Facility Operating Licenses and Technical Specifications.

Date of initial notice in ***Federal Register:*** October 10, 2017 (82 FR 47040). The supplemental letters dated January 16, 2018, and March 14, 2018, provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the NRC staff's original proposed no significant hazards consideration determination as published in the **Federal Register**.

The Commission's related evaluation of the amendments is contained in a Safety Evaluation dated May 3, 2018.

No significant hazards consideration comments received: No.

Dated at Rockville, Maryland, this 14th day of May, 2018.

For the Nuclear Regulatory Commission.

Tara Inverso,

Acting Deputy Director, Division of Operating Reactor Licensing, Office of Nuclear Reactor Regulation.

[FR Doc. 2018–10565 Filed 5–21–18; 8:45 am]

BILLING CODE 7590–01–P

NUCLEAR REGULATORY COMMISSION

[Docket No. 40–9083; NRC–2018–0084]

U.S. Army Installation Command

AGENCY: Nuclear Regulatory Commission.

ACTION: Director's decision under 10 CFR 2.206; issuance.

SUMMARY: The U.S. Nuclear Regulatory Commission (NRC) has issued a director's decision in response to a petition dated March 16, 2017, filed by Dr. Michael Reimer (the petitioner), requesting that the NRC take enforcement-related action with regard to the U.S. Army Installation Management Command (the licensee). The petitioner's requests and the director's decision are included in the **SUPPLEMENTARY INFORMATION** section of this document.

DATES: The director's decision was issued on May 15, 2018.

ADDRESSES: Please refer to Docket ID NRC–2018–0084 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 *http://www.regulations.gov* and search for Docket ID NRC–2018–0084. Address questions about NRC dockets to Jennifer Borges; telephone: 301–287–9127; email: *Jennifer.Borges@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 *http://www.nrc.gov/reading-rm/adams.html.* To begin the search, select ''*ADAMS Public Documents*'' and then 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, 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:* You may examine and purchase copies of public documents at the NRC's PDR, Room O1–F21, One White Flint North, 11555 Rockville Pike, Rockville, Maryland 20852.

FOR FURTHER INFORMATION CONTACT: Amy Snyder, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; telephone: 301–415–6822, email: *Amy.Snyder@nrc.gov.*

SUPPLEMENTARY INFORMATION: The text of the director's decision is attached.

Dated at Rockville, Maryland, this 16th day of May, 2018.

For the Nuclear Regulatory Commission.

Stephen Koenick,

Chief, Materials Decommissioning Branch, Division of Decommissioning, Uranium Recovery, and Waste Programs, Office of Nuclear Material Safety and Safeguards.

Attachment—Director's Decision DD–18–02

UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR MATERIAL SAFETY AND SAFEGUARDS

Marc L. Dapas, Director

In the Matter of United States Army Installation Management Command

Pohakuloa Training Area

License No. SUC–1593

Docket No. 40–9083

DIRECTOR'S DECISION UNDER 10 CFR 2.206

I. Introduction

By letter dated March 16, 2017,[1] as supplemented on April 10,[2] May 21,[3] June 25,[4] July 24,[5] August 16,[6] August 18,[7] October 11,[8] October 12,[9] October 15,[10] and November 10, 2017,[11] and January 15, 2018,[12] Dr. Michael Reimer (the petitioner) filed a petition pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR), Section 2.206, ''Requests for action under this subpart,'' with the U.S. Nuclear Regulatory Commission (NRC or the Commission).[13]

The petitioner requested that the NRC reconsider the issuance of Amendment No. 2 to Source Materials License No. SUC–1593 (license),[14] for the U.S. Army Installation Management Command's (licensee's) Pohakuloa Training Area (PTA). As the basis for the request, the petitioner asserted that the Environmental Radiation Monitoring Plan (ERMP)[15] for the licensed depleted uranium (DU) that is located in the radiation control areas (RCAs) at the PTA is inadequate

[1] Agencywide Documents Access and Management System (ADAMS) Accession No. ML17110A308.

[2] ADAMS Accession No. ML17250A248.

[3] ADAMS Accession No. ML17143A165.

[4] ADAMS Accession No. ML17177A703.

[5] ADAMS Accession No. ML17249A091.

[6] ADAMS Accession No. ML17248A524.

[7] ADAMS Accession No. ML17249A075.

[8] ADAMS Accession No. ML17297A372.

[9] ADAMS Accession No. ML17292A690 (Pkg.).

[10] ADAMS Accession No. ML18011A202 (Pkg.).

[11] ADAMS Accession No. ML17346B028.

[12] ADAMS Accession No. ML18022A567.

[13] Copies of the petition and other publicly available records are available for inspection at the Commission's Public Document Room, located at One White Flint North, 11555 Rockville Pike (first floor), Rockville, Maryland, and from the ADAMS Electronic Reading Room on the NRC's Web site at *http://ww.nrc.gov/reading-rm/adams.html.* Persons who do not have access to ADAMS should contact the reference staff in the NRC Public Document Room by telephone at 1–800–397–4209 or 301–413–4737, or by email to *PDR.Resource@nrc.gov.*

[14] ADAMS Accession No. ML16343A164.

[15] ADAMS Accession No. ML16265A231.

to detect DU leaving the RCAs. In the petition and its supplements, the petitioner stated specific concerns about the lack of air monitoring and soil sampling at the PTA; the appropriateness of the sediment sampling location at the PTA; the number of sediment samples to be collected; the frequency of sediment sampling; the appropriateness of analytical techniques, including sample analysis methods; the geologic sampling procedures for sediment collection, including the appropriateness of data evaluation methods; the applicability of a guidance document used by the NRC to evaluate the location and frequency of sediment sampling; the sufficiency of the Davy Crockett DU inventory conducted for the PTA; the lack of evaluation of DU oxides; the lack of transparency in the implementation and reporting of the licensee's environmental radiation monitoring results for the licensed DU; the lack of transparency in the NRC's licensing of Davy Crockett DU at the PTA; and the licensee's use of ranges at the PTA for high explosive fire.

In a letter to the petitioner dated April 25, 2017,[16] the NRC staff (staff) acknowledged receipt of the petition. The petition was assigned to the Office of Nuclear Material Safety and Safeguards (NMSS) for review and appropriate action pursuant to 10 CFR 2.206. A petition review board (PRB) was formed to evaluate the petitioner's concerns following the 10 CFR 2.206 process per Management Directive 8.11, ''Review Process for 10 CFR 2.206 Petitions'' (MD 8.11).[17] The petitioner was offered an opportunity to meet with the PRB before the PRB's first meeting, but declined this opportunity.[18]

The PRB recommended that the petition be partially accepted for review under the 10 CFR 2.206 process. The NRC shared its preliminary recommendation [19] with the petitioner and offered the petitioner a second opportunity to address the PRB.[20] The petitioner accepted the opportunity and requested a teleconference with the PRB.[21] The petitioner met with the PRB via teleconference on October 11, 2017, to clarify the basis for the petition. The transcript [22] of this teleconference was treated as a supplement to the petition.

The petitioner provided additional information on October 12,[23] October 15,[24] and November 10, 2017,[25] and January 15, 2018,[26] to supplement the petition. At the petitioner's request, a third party provided information on his behalf [27] to supplement the petition. The licensee provided comments and information on the petition by e-mails dated July 31 [28] and October 13, 2017,[29] and in the October 11, 2017, teleconference.

By letter dated November 9, 2017,[30] the NRC informed the petitioner that the following concerns raised in the petition were accepted for review under 10 CFR 2.206: (1) inappropriate number of sediment samples; (2) inappropriate frequency of sediment sampling; (3) inappropriate and poorly described analytical techniques (sample analysis methods); (4) inappropriate geological sampling procedures for sediment collection; and (5) inappropriate data evaluation methods (leading to dilution of samples) to determine the presence of depleted uranium outside the ranges (or RCAs) associated with the PTA. In this letter, the NRC also informed the petitioner that the other concerns raised in the petition were not accepted for review under 10 CFR 2.206 and stated the basis for this determination. The PRB used the criteria for petition evaluation found in Part III of MD 8.11 to disposition the petitioner's concerns for acceptance or rejection for review under the 10 CFR 2.206 process. On November 29, 2017,[31] the NRC provided notice that the PRB would address the petition pursuant to 10 CFR 2.206.

By letter dated November 29, 2017,[32] the NRC requested that the licensee provide a voluntary response to the petition. By letters dated December 15, 2017,[33] and January 19, 2018,[34] the licensee provided its voluntary response, and the information provided was considered by the PRB in its evaluation of the petition, as explained in the proposed director's decision.[35]

The NRC sent a copy of the proposed director's decision to the petitioner and to the licensee for comment on February 20, 2018.[36] The petitioner responded with comments on the proposed director's decision on March 13, 2018.[37] The licensee did not provide comments on the proposed director's decision. The petitioner's comments and the staff's responses to the comments are included as an attachment to this director's decision.

Based on the staff's evaluation of the petitioner's March 13, 2018, comments, and the information presented in Section II, Discussion, and Section III, Conclusions, of this director's decision, the final director's decision has not changed from the proposed director's decision.

The petition and other references related to this petition are available for inspection in the NRC's Public Document Room (PDR), located at O1F21, 11555 Rockville Pike (first floor), Rockville, Maryland 20852. Publicly available documents created or received at the NRC are accessible electronically through ADAMS in the NRC Library at *https://www.nrc.gov/reading-rm/adams.html.* Persons who do not have access to ADAMS or who encounter problems in accessing the documents located in ADAMS should contact the NRC's PDR reference staff by telephone at 1–800–397–4209, or 301-415–4737, or by e-mail to *pdr.resource@nrc.gov.*

II. Discussion

Under 10 CFR 2.206(b), the Director of the NRC office with responsibility for the subject matter shall either institute the requested proceeding to modify, suspend, or revoke a license, or take any other action as may be proper, or advise the petitioner who made the request in writing that no proceeding will be instituted, in whole or in part, with respect to the request and the reasons for the decision.

The petitioner raised concerns regarding the adequacy of the ERMP for the licensed DU that is located in the RCAs at the PTA (PTA ERMP).[38] The PRB analyzed the information provided by the petitioner in support of his concerns and the results of those analyses are discussed below. After consideration of the petition, including the supplemental information supplied by the petitioner, the NRC denies the petitioner's request to modify, suspend, or take other action with respect to Source Materials License No. SUC–1593 under 10 CFR 2.206. The decision of the NMSS Director is provided with respect to each of these concerns.

Concern 1: The PTA ERMP allows for an inappropriate number of sediment samples in that a single sediment sampling location is inadequate.

The petitioner states that the single sampling point as detailed in the PTA ERMP [39] is not sufficient. The petitioner specifies that ''multiple sampling sites should be selected adjacent to each of the four RCA boundaries and each should be in a water way that has had observed intermittent water flow sufficient to carry a sediment load that is deposited at the sample collection site.'' [40]

In the staff's safety evaluation report (SER) for Amendment No. 2,[41] the staff concluded that the site-specific ERMPs were ''consistent with the previously approved [Programmatic ERMP] approach for preparation of site-specific environmental monitoring plans,'' as well as with license conditions in Source Materials License No. SUC–1593, Amendment No. 1.[42] The approach to selecting sediment sampling locations specified in the Programmatic ERMP [43] is to sample sediment in water ways that flow from the RCAs. In sites with multiple water ways, multiple sediment sampling locations are used. The PTA has a single sampling site because the staff considers it a ''dry site'' with no perennial water ways flowing from the RCAs. The PTA ERMP states that ''[D]ue to low rainfall, porous soils, and lava

[16] ADAMS Accession No. ML17116A083.
[17] ADAMS Accession No. ML041770328.
[18] ADAMS Accession Nos. ML17159A83, ML17177A703 and ML17177A688.
[19] ADAMS Accession No. ML17279A757.
[20] ADAMS Accession No. ML17279A759.
[21] ADAMS Accession No. ML17279A761.
[22] ADAMS Accession No. ML17297A372.
[23] ADAMS Accession No. ML17292A690 (Pkg.).
[24] ADAMS Accession No. ML18011A202.
[25] ADAMS Accession No. ML17346B028.
[26] ADAMS Accession No. ML18022A567.
[27] ADAMS Accession No. ML18011A202 (Pkg.).
[28] ADAMS Accession No. ML17240A219.
[29] ADAMS Accession No. ML17290A307 (Pkg.).
[30] ADAMS Accession No. ML17279A300 (Pkg.).
[31] 82 Fed. Reg. 228 (Nov. 29, 2017), *https://www.gpo.gov/fdsys/pkg/FR–2017–11–29/pdf/2017–25830.pdf.*
[32] ADAMS Accession No. ML17297B403.
[33] ADAMS Accession No. ML18009A456.
[34] ADAMS Accession No. ML18023A991.
[35] ADAMS Accession No. ML17341A126 (Pkg.).
[36] ADAMS Accession Nos. ML17340A697 and ML17342A395, respectively.
[37] ADAMS Accession No. ML18087A134.
[38] ADAMS Accession No. ML16265A231.
[39] ADAMS Accession No. ML16265A231.
[40] ADAMS Accession No. ML17177A703.
[41] ADAMS Accession No. ML16343A163.
[42] ADAMS Accession No. ML16039A234.
[43] ADAMS Accession No. ML16265A218.

substrates, no perennial surface water bodies are located on, or immediately adjacent to, [PTA]. The closest known surface water body is located 4.5 miles upgradient of [PTA]. There are no perennial streams within 15 miles of [PTA], but there are intermittent streams located northeast of [PTA] and only one intermittent stream, Popoo Gulch, drains the northern portion of [PTA]. Despite occasional flow, water in the intermittent stream channels infiltrates rapidly once precipitation stops and the streams become dry.'' [44] In the staff's SER for Amendment No. 1,[45] the NRC approved the Programmatic ERMP. The staff found that due to the small doses anticipated from environmental transport pathways, a limited environmental monitoring program is justified.

In short, the water in the channel, where the sediment sampling point is identified in the PTA ERMP, flows only occasionally after heavy rainfall events with the water in the intermittent stream's channel infiltrating rapidly once precipitation stops, resulting in the stream channel becoming dry. The sediment sampling location was selected by the licensee based on the ''surface water hydrology and potential for DU contribution [migration].'' [46] The license requires the licensee to collect a sediment sample in a designated area in the only intermittent stream downstream from the RCAs. This location and the number of sediment samples were found to be acceptable by the staff in the SER for Amendment No. 2 [47] because the approach was consistent with the Programmatic ERMP and limited sampling for the PTA is appropriate based upon the small risk posed by the material.

Further, the staff concluded in its SER for Amendment No. 1 [48] that the dose from airborne contamination is considered to be highly unlikely to exceed a potential 1 mrem/yr dose.[49] The dose from all other environmental pathways, as bounded by a resident farmer pathways analysis using RESRAD,[50] is projected to be less than 4 mrem/yr. Furthermore, actual doses would be further limited because actual exposure durations are expected to be far less than subsistence farming residence times. In addition, in the SER for Amendment No. 1,[51] the staff independently verified the RESRAD calculations provided by the licensee and found the use of those scenarios, parameters, and assumptions to be reasonable and appropriate. The results from the RESRAD analysis supported the staff's decision [52] to require a limited amount of environmental monitoring outside of the RCA under certain conditions, as required per Section 4.3 of the Programmatic ERMP, and as required by the PTA ERMP. Sampling locations at the site are limited; however, this approach was found to be acceptable by the staff because it is consistent with the Programmatic ERMP and limited sampling is acceptable based upon the small risk posed by the material. The staff found the proposed frequencies, analyses, and actions sufficient to ensure DU migration outside of the RCA is adequately monitored while not exposing personnel to undue risk due to accessing unexploded ordnance areas. Accordingly, the staff concluded in its SER for License Amendment No. 2 that the PTA ERMP is adequate for monitoring for transport of DU from the RCAs.

For the reasons set forth above, the staff finds that the PTA ERMP does allow for an appropriate number of sediment samples in that a single sediment sampling location is adequate.

Concern 2: The PTA ERMP allows for an inappropriate frequency of sediment samples.

The petitioner states that the licensee should be required to sample more frequently than quarterly, and that ''sampling several times a year is not sufficient.'' [53] The PTA ERMP commits the licensee to performing sediment sampling on a quarterly basis. This quarterly sampling frequency exceeds the semi-annual sampling frequency for sediment sampling recommended in NUREG–1301, ''Offsite Dose Calculation Manual Guidance: Standard Radiological Effluent Controls for Pressurized Water Reactors,'' [54] April 1991. Because no guidance exists that is specific to DU in the form of spent rounds present in the environment, the staff used NUREG–1301 to inform its review of the licensee's proposed sampling methods and frequency. Although the PTA RCAs do not produce effluents, as do pressurized-water reactors, the guidance in NUREG–1301 is conservative for reviewing the licensee's proposed sampling methods and frequency because the expected risks from the presence of DU at the PTA are significantly less than those associated with radiological releases from an operating nuclear power plant. The sediment sampling frequency for the PTA is considered by the staff to be conservative, and therefore adequate because it exceeds the sampling frequency recommended for effluents from pressurized-water reactors, for a site with a much lower potential all pathway dose.

For the reasons set forth above, the staff finds that the site-specific ERMP for the PTA is adequate with respect to the frequency of samples taken at the PTA.

Concern 3: The PTA ERMP provides inappropriate and poorly described analytical techniques for the sediment sample analysis methods.

The petitioner states that for the PTA ERMP, the licensee's ''sediment monitoring program is improperly configured.'' [55] The petitioner states that there is an ''[i]ncomplete description of laboratory preparation methods for alpha spectrometry'' and explains that ''[c]hemicals used in preparation, exchange resins, internal standards, concentration methods for uranium, preparation of sample on planchet (electrodeposition or precipitation), counting times, reference standards, etc. must be identified.'' [56] Further, the petitioner states with regard to the PTA sediment monitoring program, that there is an ''[i]nadequate description of technique of alpha spectrometry'' and inquires, ''[w]hat is the sensitivity and what energies will be used for isotope determination? Can other U isotopes be detected (U–236) and transuranics (Pu, Np, Am)?'' [57]

In the context of the analytical techniques for the ''sediment sampling program for the PTA,'' the petitioner states that there are ''[i]nadequate analyses for isotopes to identify DU (U–236 and Mo, the alloy material, and transuranics would be of paramount interest)'' [58] and explains that ''[t]he samples should be analyzed also by an ICP [inductively coupled-plasma] technique that can identify other isotopes including U–236, and isotopes of Pu, Np and Am. Such would give a specific indication of reprocessed fuel rods. These are important for conclusive DU presence.'' [59] Further, the petitioner disagrees with the NRC statement that ''[t]he methods for sample analysis are commonly utilized methods . . . '' [60]

As an initial matter, the staff notes that the licensee is not required to submit information on laboratory preparation methods beyond the information presented in the Quality Assurance Plan (Annex 19 to the Programmatic ERMP). [61] However, the staff may ask to review documentation regarding the analysis of sediment samples, such as laboratory procedures and methods, during NRC inspections.

The staff disagrees with the petitioner that the proposed analytical methods are not commonly used methods. Alpha spectrometry (US DOE HASL method 300) [62] and inductively coupled-plasma mass spectrometry (ICP–MS) are commonly used methods for sample analysis to determine uranium isotopic activity or mass and have sufficient detection capability to accomplish the stated objectives of the monitoring activity.[63] [64] As described in the license at

[44] ADAMS Accession No. ML16265A231.

[45] ADAMS Accession No. ML16039A230.

[46] ADAMS Accession No. ML16265A231.

[47] ADAMS Accession No. ML16343A163.

[48] ADAMS Accession No. ML16039A230.

[49] See the SER for Amendment 2 (ADAMS Accession No. ML16343A163, pages 5 and 6 regarding the significance of 1 mrem/year as related to License Condition 19.

[50] RESRAD, or RESidual RADioactivity, is a computer code for evaluation of risk posed by radioactively contaminated sites. The NRC has approved RESRAD for dose evaluation by licensees involved in decommissioning, and for staff to assess waste disposal requests and dose evaluations.

[51] ADAMS Accession No. ML16039A230.

[52] ADAMS Accession No. ML16343A163.

[53] ADAMS Accession No. ML17110A308.

[54] ADAMS Accession No. ML091050061.

[55] ADAMS Accession No. ML17177A703.

[56] ADAMS Accession No. ML17177A703.

[57] ADAMS Accession No. ML17177A703.

[58] ADAMS Accession No. ML17177A703.

[59] ADAMS Accession No. ML17177A703.

[60] ADAMS Accession No. ML17110A308.

[61] ADAMS Accession No. ML16265A233.

[62] HASL–300 EML Procedures Manual at *https://www.orau.org/ptp/PTP%20Library/library/DOE/eml/hasl300/HASL300TOC.htm*

[63] J. Sabine Becker, International Journal of Spectrometry, ''Inductively coupled plasms mass spectrometry (ICP–MS) and laser ablation ICP–MS for isotopic analysis of long-live radionuclides,'' Volume 242, Issues 2–3, 1 April 2005, Pages 183–195, Elsevier.

[64] Carvalho, F.P. & Oliveira, J.M. ''Performance of alpha spectrometry in the analysis of uranium isotopes in environmental and nuclear materials,'' J Radioanal Nucl Chem (2009) 281: 591. *https://doi.org/10.1007/s10967-009-0046-2.*

Annex 19, the ''Programmatic Uniform Federal Policy-Quality Assurance Project Plan (UFP–QAPP)'' for the Environmental Radiation Monitoring Program,[65] ICP–MS will be used to supplement alpha spectrometry in samples in which the alpha spectrometry results indicate a U–238/U–234 ratio above 3.0.

The petitioner states that the current method of evaluation is not sensitive enough to distinguish DU from natural uranium, and that using a technique that could detect radionuclides that are present in trace quantities in DU, but are not naturally occurring, would provide better evidence of DU transport. Specifically, the petitioner states that using ICP–MS on each sample, or using it to detect radionuclides other than U–234, U–235, or U–238, is necessary. However, as indicated in Annex 19, the minimum detectable concentration (MDC) for the licensee's proposed alpha spectrometry technique is 0.1 picocuries per gram (pCi/g). That value is far below the NRC soil screening values of 13 pCi/g, 8.0 pCi/g, and 14 pCi/g, for U–234, U–235, and U–238, respectively.[66] Those screening values, given in Table H.2 in NUREG–1757, Volume 2, Rev. 1, ''Consolidated Decommissioning Guidance,''[67] are concentrations of individual radionuclides in surficial soil that staff has determined to be protective of public health and safety.[68] The staff determined in its SER for Amendment No. 2[69] that the two-step analysis method (i.e., using ICP–MS only as a confirmatory technique for samples with a U–238/U–234 ratio above 3.0) is appropriate. Based on the comparison of the MDC of the licensee's proposed method to the NRC soil screening values, the staff continues to find the licensee's proposed use of alpha spectrometry to be appropriate.

The petitioner raises a related point about the effects of the natural variation of the U–238 to U–234 ratio in the environment, on the licensee's ability to detect DU. The petitioner states that ''[t]he heterogeneity of the sample ROC [radionuclide of concern] will likely provide dilution effects for analysis and minimize threshold concentrations. This issue has not been addressed by the Army or the analytical laboratory.''[70] Also, the petitioner states that ''[g]iven the probable dilution factors of sediment sourcing and mixing multiple collected samples, any ratio of U238/234 greater than one should be considered indicative of DU. This was seen in a contractor report (Cabrerra), where soil samples often showed uranium 238/234 increased activity ratios.''[71] As discussed in further detail in the staff's disposition of Concern 5, the staff found that the natural variation in the U–238 to U–234 ratio in the environment did not affect the staff's conclusion about the adequacy of the licensee's proposed method of evaluation.

The commitments that the licensee makes in its Programmatic ERMP, which is tied to the license, require the licensee to periodically review its Programmatic ERMP and each site-specific ERMP for revisions that it believes should be made related to changes in the understanding of risk associated with exposure to DU in the environment; changes in local/regional land use; changes in environmental transport characteristics or environmental conditions that violate the conservative assumptions of the bounding RESRAD analysis of the Programmatic ERMP in such a way that the RESRAD analysis is no longer bounding; trends in sampling results indicating increased mobilization of DU, but at levels below the bounding RESRAD analysis of the Programmatic ERMP or other regulatory thresholds; and any other new information that indicates a need to adjust the site-specific ERMP. Further, the Programmatic ERMP requires that if the licensee determines that changing site conditions result in environmental transport or exposure hazards that exceed those used in the bounding RESRAD calculations, the licensee must notify the NRC license program manager within 30 days. The staff found the licensee's commitments reasonable given the expected level of risk.

The licensee's strategy for routine, as well as periodic, environmental radiation monitoring at the PTA was addressed in its applications for Amendment Nos. 1 and 2. In its SERs for Amendment Nos. 1 and 2, the staff determined that the Programmatic ERMP and PTA ERMP, respectively, would ensure adequate protection of public health and safety. The staff previously determined in the SER for License Amendment No. 2[72] that the methods described in the PTA ERMP and UFP–QAPP were sensitive enough. Through inspection, the staff may inspect the data collected from implementation of the PTA ERMP to verify that the sensitivity remains appropriate.

For the reasons set forth above, the NRC finds that the licensee's description of its analytical methods in the PTA ERMP is adequate and the licensee's analytical methods for sediment analysis are appropriate.

Concern 4: The PTA ERMP allows for inappropriate geological procedures for sediment collection.

The petitioner expresses concern about the geological procedures for sediment collection methods, stating, ''[w]hat is presented, if given to any reasonable person familiar with geologic sampling procedures, is so egregiously defective and disparate from accepted sampling procedures, it must be deemed fatally flawed.''[73] The petitioner asserts that the licensee's specific sampling techniques, method of sample collection, and training are inadequate.[74] The petitioner states ''[f]urther, there is no indication that the samplers will have had specific training in the simple and common aspects of sampling. Can they distinguish the difference between a sediment sample and a soil sample or a slump deposit?''[75] The petitioner specifically notes issues with the composite sample method employed by the licensee. The petitioner also states that ''organics and water'' should be sent for separate analysis and suggests that core sampling would be beneficial.[76]

The types of procedures for sediment collection are identified in each site-specific ERMP and in the Programmatic Quality Assurance Plan for ERMPs, which are tied to the license.[77] In the SER for Amendment No. 1,[78] the staff found that ''. . . each ERMP contains prescribed general methods for sample collection and sample analysis . . .'' Annex 19, ''Programmatic Uniform Federal Policy-Quality Assurance Project Plan (UFP–QAPP),'' for the ERMP includes worksheets stating the licensee's action levels for sample evaluation and what actions the licensee is required to take should the sample data exceed these action levels. The license requires the licensee to use the type of sampling procedures specified in the UFP–QAPP.[79] During inspections, the staff will review site-specific procedures, such as sediment sampling procedures, as determined by inspection plans.

The petitioner expresses concerns about the adequacy of the licensee's geological training for individuals tasked with implementing the environmental monitoring program, but does not specify why geological training is necessary to take samples sufficient for the purposes of the PTA ERMP or the Programmatic ERMP. The NRC does not require geological training to implement the PTA ERMP. In its SER for License Amendment No. 1,[80] the staff found the licensee's commitments regarding training acceptable. In its application for Amendment No. 2, the licensee made training commitments with regard to implementation of the ERMP in its UFP–QAPP[81] and Programmatic Radiation Safety Plan,[82] and the staff found them acceptable as detailed in its associated SER.[83] The licensee did not commit to requiring geological training to implement the PTA ERMP or the Programmatic ERMP.

In its SER for Amendment No. 2,[84] the staff concluded that the findings described in the SER support the issuance of a license amendment requiring the use of the site-specific ERMPs and the associated UFP–QAPP applicable to each military

[65] ADAMS Accession No.ML16265A233.

[66] The NUREG–1757 Volume 2, Rev. 1, Table H.2 values for the individual radionuclides were used instead of the values that account for progeny (i.e., the ''+C'' values) because the enrichment process that creates DU typically removes most of the progeny with an atomic weight less than U–234 from the DU.

[67] ADAMS Accession No. ML063000243.

[68] Soil screening values represent surficial surface soil concentrations of individual radionuclides that would be deemed in compliance with the 25 mrem/y (0.25 mSv/y) unrestricted release dose limit in 10 CFR 20.1402.

[69] ADAMS Accession No. ML16343A163.

[70] ADAMS Accession No. ML18017A784.

[71] ADAMS Accession No. ML17177A703.

[72] ADAMS Accession No. ML16343A163.

[73] ADAMS Accession No. ML17110A308.

[74] ADAMS Accession No. ML17110A308.

[75] ADAMS Accession No. ML17177A703.

[76] ADAMS Accession No. ML17177A703.

[77] ADAMS Accession No. ML16265A221 (Pkg.).

[78] ADAMS Accession No. ML16039A230.

[79] ADAMS Accession No. ML16265A233.

[80] ADAMS Accession No. ML16039A230.

[81] ADAMS Accession No. ML16265A233.

[82] ADAMS Accession No. ML16004A369.

[83] ADAMS Accession No. ML16343A163.

[84] ADAMS Accession No. ML16343A163.

installation. The UFP–QAPP addresses the quality assurance, quality control, and additional technical activities that must be implemented to ensure that data collected during ERMP activities at the Davy Crockett installations are of sufficient quality to support the NRC requirements. The petitioner did not support the claim that specific geological training is necessary to take samples sufficient to meet NRC requirements.

The petitioner has not provided information to support his assertion that ''organics and water'' should be sent for separate analysis. The concentrations of the radionuclides of concern are obtained from the analysis of the total sample. The analysis procedure does not require such a separation, nor does the license require the licensee to separate organics from water for separate analysis before sediment samples are analyzed. With respect to his statement that core sampling would be beneficial, the petitioner states that core sampling would provide historical information. However, obtaining historical information is not one of the purposes of the PTA ERMP. Scoping [85] and characterization surveys were performed by the licensee in the past,[86] and the staff, as documented in the SER for Amendment No. 1, found that they were sufficient to determine the extent and depth of Davy Crockett DU at the PTA. In its application for Amendment No. 1, the licensee reported that the average soil concentrations of uranium inside the RCA are less than the default NRC screening level for license termination. The NRC does not require additional characterization for the PTA.

For the reasons set forth above, the NRC finds that the site-specific ERMP for the PTA is adequate with respect to its description of procedures for sediment collection methods.

Concern 5: The PTA ERMP allows for inappropriate data evaluation methods to determine the presence of DU outside the ranges associated with PTA.

The petitioner states that there is an ''[i]nadequate definition of the activity ratios used to define DU presence,'' explaining that ''[g]iven the probable dilution factors of sediment sourcing and mixing multiple collected samples, any ratio of U238/234 greater than one should be considered indicative of DU. This was seen in a contractor report (Cabrerra), where soil samples often showed uranium 238/234 increased activity ratios.'' [87]

As part of its evaluation of this concern, the staff requested information[88] from the licensee, regarding how it intends to meet the 3-to-1 ratio of U–238 to U–234 in License Condition 17 when compositing sediment samples. In its response to the request,[89] the licensee clarified that the ''composite'' samples were all taken in essentially one location and a provision for taking 10 sub-samples was included to ensure sufficient sample volume was collected. Based on the licensee's clarification, the staff determined that dilution is not a concern as the sub-samples are more representative of a single sample than a ''composite'' sample.

The staff verified that the 3-to-1 ratio of U–238 to U–234 is appropriate. DU used for military purposes typically has a U–238 to U–234 activity ratio of approximately 5.5.[90] If that DU is mixed with natural uranium in the environment, that ratio will be lower because natural uranium has a U–238 to U–234 activity ratio of approximately 1.0.[91] Pursuant to License Condition 17, the licensee is required to notify the NRC of any uranium detected with a U–238 to U–234 ratio of 3 or more. Based on the assumption that the DU has a U–238 to U–234 ratio of 5.5 and natural uranium has a U–238 to U–234 activity ratio of 1.0, an activity ratio of 3.0 reflects a mixture of approximately 28 percent natural uranium and 72 percent DU (percent by activity).[92] Background levels of natural uranium in soil from PTA are approximately 0.4 pCi/g.[93]

A sample with 72 percent depleted uranium (by activity) and 0.4 pCi/g natural uranium would contain approximately 1 pCi/g DU, or approximately 0.15 pCi/g U–234, 0.01 pCi/g U–235, and 0.84 pCi/g U–238, which are well below the NRC soil screening values for decommissioning.[94] Therefore, the licensee's use of the 3.0 activity ratio is acceptable because it would allow the licensee to identify DU at concentrations below values that NRC finds protective of public health and safety.

The petitioner refers to a journal article [95] that explains that the ratio of U–238 to U–234 in natural uranium can vary because of differences in how U–238 and U–234 are transported in the environment. [96] However, the background concentrations of natural uranium at PTA are sufficiently low that variation in the U–238 to U–234 ratio of natural uranium at PTA is not expected to be large enough to compromise the licensee's ability to detect significant migration of DU in soils or sediments. For example, if the U–238 to U–234 ratio of natural uranium in PTA site soil or sediment were only 0.5 instead of 1.0 (a relatively large natural variation), a sample would have a U–238 to U–234 ratio of 3.0 if it had 19 percent natural uranium and 81 percent DU (by activity). Given the natural uranium background concentration of 0.4 pCi/g in PTA soil, that mixture would have a total activity of 2.1 pCi/g, or 1.7 pCi/g DU. As previously indicated, that concentration is well below the NRC soil screening values for uranium isotopes.

The environmental processes that cause variation in the U–238 to U–234 ratio in natural uranium can also affect the U–238 to U–234 ratio in DU exposed to the natural environment. However, the effect of the alpha recoil process described in the reference [97] supplied by the petitioner is to allow more U–234 than U–238 to be transported in water. That process would tend to increase the U–238 to U–234 ratio in solid samples of DU (i.e., soil and sediment), making the U–238 to U–234 ratio in those samples greater (i.e., more likely to exceed the threshold value of 3.0). Therefore, the staff finds that the previous conclusion that the licensee's proposed method to detect DU is adequate, is not challenged by either the expected natural variation in the U–238 to U–234 ratio in site soil and sediment or consideration of the potential effects of alpha recoil on DU at the site.

For the reasons set forth above, the NRC finds that the licensee has adequate data evaluation methods to determine the presence of DU at PTA.

III. Conclusion

The NRC fully evaluated the petitioner's concerns and based on the results of that evaluation, determined that there was no basis for granting the petitioner's request to modify, suspend, or take other action with respect to, Source Materials License No. SUC–1593 under 10 CFR 2.206. Accordingly, the NRC denies the petitioner's request to modify, suspend, or take other action with respect to Source Materials License No. SUC–1593. As provided in 10 CFR 2.206(c), the staff will file a copy of this final director's decision with the Secretary of the Commission for the Commission to review. As provided for by that regulation, the director's decision will constitute the final action of the Commission 25 days after the date of the decision unless the Commission, on its own motion, institutes a review of the decision within that time.

Dated at Rockville, Maryland, this 15th day of May, 2018.

For the Nuclear Regulatory Commission.

[85] ADAMS Accession No. ML092950352.

[86] USACE, 2007. Archives Search Report on the Use of Cartridge, 20MM Spotting Round M101, Davy Crockett Light Weapon M28, Schofield Barracks and Associated Training Areas, Islands of Oahu and Hawaii. Prepared by USACE, St Louis District.

[87] ADAMS Accession No. ML17177A703.

[88] ADAMS Accession No. ML17297B403.

[89] ADAMS Accession No. ML18009A456.

[90] IAEA, Depleted Uranium, retrieved at *https://www.iaea.org/topics/spent-fuel-management/depleted-uranium* on January 29, 2018.

[91] U–238 and U–234 in secular equilibrium have an activity ratio of 1.0; however, that ratio is only approximate in the natural environment because of differences in how U–238 and U–234 are retained in rock and soil.

[92] Because DU has a lower specific activity than natural uranium, that mixture would be 19 percent natural uranium and 81 percent DU by mass.

[93] ADAMS Accession No. ML12265A173 (Table 3).

[94] The NRC soil screening values for decommissioning are: U–234: 1.3E+01pCi/g; U–235: 8.0E+00pCi/g, and U–238 1.4E+01pCi/g. ADAMS Accession No. ML063000243 (Appendix B, Table B.2).

[95] Fleischer, R.L., 2008, Difficulties in using 234U/238U values to detect enriched or depleted uranium, Health Physics, v. 94, p.292–293.

[96] ADAMS Accession No. ML17249A091.

[97] Fleischer, R.L., 2008, Difficulties in using 234U/238U values to detect enriched or depleted uranium, Health Physics, v. 94, p.292–293.

Marc L. Dapas, Director,

Office of Nuclear Material

Safety and Safeguards

Attachment:

Petitioner's Comments on the

Proposed Director's Decision and

NRC's Responses

ATTACHMENT: PETITIONER'S COMMENTS ON THE PROPOSED DIRECTOR'S DECISION AND NRC'S RESPONSES

The petitioner provided comments to the U.S. Nuclear Regulatory Commission (NRC) on the proposed director's decision (Agencywide Documents Access and Management System (ADAMS) Accession No. ML17341A126 (Pkg.)) by electronic mail (e-mail) dated March 13, 2018 (ADAMS Accession No. ML18087A134). In the petitioner's March 13, 2018 e-mail, the petitioner notes that he has ''rephrased some statements to make it clearer to the review panel members who do not have full familiarity with the issues.'' For completeness, and where appropriate, the NRC staff (staff) provides clarifying remarks on its previous evaluation of the petitioner's concerns on the Davy Crockett depleted uranium (DU) inventory and the sediment sampling outside the Pohakuloa Training Area (PTA) Radiation Control Areas (RCAs).

The petitioner's comments do not alter the staff's overall analyses or conclusions in the director's decision and, therefore, do not require modification to the final director's decision.

Comment 1:

The petitioner asserts that the review process is flawed, as evidenced by (1) the selection and expertise of the reviewing staff members; (2) an emphasis on administrative review over technical review; and (3) the rejection of new and materially relevant facts presented in the petition and its supplements. With respect to this latter point, the petitioner provided information on an historic lava flow and referred to a statement made by the licensee previously indicating that sediment samples will not be collected because no sediment is present at the PTA.

Response 1:

The petition was reviewed in accordance with NRC Management Directive (MD) 8.11. MD 8.11 describes the composition and role of the petition review board and the process for reviewing Title 10 of the *Code of Federal Regulations* (10 CFR) 2.206 petitions. A copy of MD 8.11 was provided to the petitioner on April 25, 2017 (ADAMS Accession No. ML17110A299 (Pkg.)).

The staff considered all of the information provided by the petitioner in its review of the petition and its supplements. The staff notes that at the time the licensee submitted its initial license application for Source Materials License No. SUC–1593, the licensee had not identified an intermittent stream at the PTA. Since that time, as documented in its application for License Amendment No. 2, the licensee has identified an intermittent stream for sediment sampling outside of the PTA RCA boundaries. On page 2–1 of the Environmental Radiation Monitoring Plan (ERMP) in effect for the PTA (ADAMS Accession No. ML1625A231), the licensee states: ''The sediment sampling location at Pohakuloa TA was selected based on the surface water hydrology and potential for DU contribution and is located as follows:

- ERM–01—The selected sampling point is located at an intermittent stream at the installation's northern boundary, downstream from the RCAs. ERM–01 is accessible using the Lightning Trail or via Saddle Road.''

As explained in Enclosure 1 (ADAMS Accession No. ML17279A082) to the NRC's letter to the petitioner dated November 9, 2017 (ADAMS Accession No. ML17279A300 (Pkg.)), the licensee submitted a license amendment application (ADAMS Accession No. ML17158B356) to correct figure sizing/scaling errors in the ERMP annex for the PTA and two other sites. Because the petitioner's concern regarding the sediment sampling location at the PTA is now under staff's consideration as part of its review of this license amendment request, the 10 CFR 2.206 process is not appropriate for addressing that concern. The staff will inform the petitioner of the outcome of this licensing review.

Comment 2:

The petitioner asserts that the amount of DU specified in the license for the PTA is grossly underestimated and must be revised. In support of this assertion, the petitioner states that the component parts of the main warhead show a yellow coating consistent with DU oxide and the existence of firing pistons shows the dummy Davy Crockett warhead (M–390) was fired. The petitioner states that this concern is now supported with ''anecdotal evidence'' that the dummy warhead contained DU. The petitioner provides a link to a blog and web forum as this anecdotal evidence.

Response 2:

The petitioner's comments are directed at a concern that was not accepted for review under the 10 CFR 2.206 process and is not the subject of this director's decision. The basis for the rejection of this concern under the 10 CFR 2.206 process is described on pages 5 and 6 of Enclosure 1 to the proposed director's decision, under the concern identified as ''Insufficient Davy Crockett DU Inventory.''

The staff is unable to substantiate the new ''anecdotal evidence'' referred to in the petitioner's comment, and is therefore unable to conclude that this anecdotal evidence is evidence that the license underestimates the amount of DU present at the PTA. As explained in Enclosure 1 to the November 9, 2017, letter, the sufficiency of the Davy Crockett DU inventory was addressed in a previous application and safety evaluation report (SER) (Amendment No. 1). The staff evaluated the licensee's estimate of the DU inventory and documented its conclusions in the associated SERs for the initial licensing of the ranges with DU at the two military installations located in the Hawaiian Islands, and for Amendment No. 1. As part of its evaluations in both SERs, the staff considered the information in the licensee's report entitled ''Project Archive Search Report Use of Cartridge, 20mm Spotting M101 Davy Crockett Light Weapon M28 on U.S. Army Installations January 2008 Revised, June 2011.'' In addition, as part of its review of the initial license application for the PTA (ADAMS Accession No. ML13259A081), the staff previously reviewed the photographs (ADAMS Accession No. ML09295032) that were referenced in the petitioner's July 24, 2017, supplement (ADAMS Accession No. ML17249A091), as well as other reference documents provided by the licensee in its initial ERMP for the PTA (ADAMS Accession No. ML12046A506) that support the conclusion that the yellow residue on other Davy Crockett weapon system components is not DU.

Comment 3:

The petitioner asserts that the staff improperly introduced health-effect possibility as a reason to accept ''corrupt monitoring methodologies.'' The petitioner states that, even so, the estimated number of dummy warheads from the piston count should be used in configuring the RESRAD dose. The petitioner asserts that dose risk to the public should be assessed in a different manner from the resident farmer scenario.

Response 3:

The licensee did not include dummy warheads in its dose assessment because there is no evidence that dummy rounds contain DU at PTA. Source Materials License No. SUC–1593 applies to Davy Crockett M101 spotting rounds, which contain DU. As explained in the director's decision under Concern 4, scoping and characterization surveys were performed by the licensee in the past. The staff, as documented in the SER for Amendment No. 1, found that the licensee's efforts were sufficient to determine the extent and depth of Davy Crockett DU at the PTA.

The licensee used the resident farmer exposure scenario for its dose assessment for the PTA. The resident farmer is one who grows her or his own food on the contaminated site and collects her or his own water also from the contaminated site. The staff considers this scenario to be a bounding scenario for the Davy Crockett M101 spotting rounds at the RCAs. Once the exposure scenario is chosen, the second step in a dose assessment is to predict how the radionuclides will move through the environment to where they could come into contact with humans. The final step in a dose assessment is to then predict what the resulting dose would be. The total lifetime dose received by the individual is calculated from a given amount of a radionuclide ingested or inhaled (measured in curies) multiplied by a dose conversion factor from a related calculation of the dose from external penetrating radiation. Given that calculations for dose assessments are complex, they are best done on a computer.

The licensee used the computer program or code called RESRAD (short for RESidual

RADioactivity) to carry out the three steps described above using the resident farmer scenario. RESRAD is commonly used to make regulatory decisions about residual radioactivity levels at nuclear sites. This code was used by the licensee, and reviewed by the staff, to assess radiation exposures of a human receptor located on top of soils contaminated with DU. RESRAD allows users to specify the features of their site and to predict the dose received by an individual at any time over the next 100,000 years. RESRAD is particularly important because it has been accepted for use by the NRC in making regulatory decisions and is freely available to the public.

Comment 4:

The petitioner states that the use of NUREG–1301 is improper because it does not address stream sediment sampling.

Response 4:

As stated in the director's decision, while NUREG–1301 is not specific to DU in the form of spent rounds present in the environment, it is conservative for reviewing the licensee's proposed sampling methods and frequency because the expected risks from the presence of DU at the PTA are significantly less than those associated with radiological releases from an operating nuclear power plant. Also, the fact that this guidance addresses sediment from [the] shoreline of surface water instead of stream sediment does not affect the conservatism of applying the NUREG to environmental sampling at PTA.

Comment 5:

The petitioner challenges the staff's conclusions that the analytical methods in the PTA ERMP are appropriate and that the laboratory preparation methods are adequately described in the PTA ERMP. The petitioner states that the analytical method selected, an alpha spectrometer, presumably cannot detect ^{235}U unless very long counting times are used. The petitioner states ''an overwhelming number of procedural descriptions are provided with the phrase, 'TBD (to be determined)'' in Annex 17 and 19.

Response 5:

As stated in the director's decision under Concern 3, the staff disagrees with the petitioner that the analytical methods are not commonly used methods. Alpha spectrometry (US DOE HASL method 300) and inductively coupled-plasma mass spectrometry (ICP–MS) are commonly used methods for sample analysis to determine uranium isotopic activity or mass and have sufficient detection capability to accomplish the stated objectives of the monitoring activity.

Furthermore, the petitioner expressed concerns about appropriateness of the analytical methods by raising the issue of the long counting times for U–235. However, as described in Concern 3, the licensee has not proposed to count U–235, but instead plans to use the U–238 to U–234 ratio, as a surrogate, as required by License Condition 17.

With regard to the analytical procedures being adequately described including the use of the phrase ''TBD'', as described in the director's decision under Concern 3, the licensee is not required to submit information on laboratory preparation methods beyond the information presented in the Quality Assurance Plan (Annex 19 to the Programmatic ERMP) (ADAMS Accession No. ML16265A233). Also, the licensee is not required to submit environmental sampling procedures beyond the information presented in Annex 19 to the Programmatic ERMP. The licensee has made a commitment in its application for License Amendment No. 1 (ADAMS Accession No. ML16004A369) that:

''Each installation-specific ERMP will describe sampling in terms of sampling objectives, sampling protocols, analytical methods, and data quality assurance protocols. These descriptions will conform to commonly accepted practices and reliable sources as described in the Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM) (NRC, DOE, EPA, DOD 2000). Acceptable analytical methods include those commonly accepted from reliable references, as presented in MARSSIM, Table 7.2.''

The staff found this approach acceptable. In the SER for License Amendment No. 1 (ADAMS Accession No. ML16039A230), the staff found that, ''. . . in accordance with 10 CFR 40.32(c) . . . that the Army's proposed equipment and procedures in the programmatic RSP [Radiation Safety Plan] are adequate to protect health and safety and minimize danger to life or property.'' Review of specific procedures are covered in the NRC inspection process, not licensing. The staff may ask to review documentation regarding the analysis of sediment samples, such as laboratory procedures and methods and sampling procedures, during NRC inspections.

Comment 6:

The petitioner asserts that an Oak Ridge report (ADAMS Accession No. ML13101A090) demonstrates that the analytical methods used by the licensee are improper and that the proposed director's decision improperly ignores this report.

Response 6:

As explained in the director's decision under Concern 5, as part of the staff's review of the petitioner's concern regarding composite sample dilution, the staff requested information (ADAMS Accession No. ML17297B403) from the licensee, regarding how it intends to meet the 3-to-1 ratio of U–238 to U–234 in License Condition 17 when compositing sediment samples. The staff referred to the Oak Ridge Report (ADAMS Accession No. ML13101A090) in its request letter (ADAMS Accession No. ML17297B403), stating that ''this guidance indicates that a statistically-informed sampling regime should be followed if composite sampling is used over an area (i.e., not just at one sample location). The detailed guidance referenced above recommends (1) retaining sub-samples in case further analysis is needed, (2) establishing an adjusted limit that would trigger analysis of individual subsamples, and (3) using sub-samples of the same volume.'' In its response to the request (ADAMS Accession No. ML18009A456), the licensee clarified that the ''composite'' samples were all taken in essentially one location and a provision for taking 10 sub-samples was included to ensure sufficient sample volume was collected. Based on the licensee's clarification, the staff determined that dilution is not a concern as the sub-samples are more representative of a single sample than a ''composite'' sample.

Comment 7:

The petitioner states that there are significant barriers to flow from the RCAs at the PTA to the proposed sample collection site, and that the staff should have used objective programs to trace out surface flows. The petitioner states that the staff should mandate that the sampling location be adjacent to the RCA, ''not miles away with an intermittent lava berm.''

Response 7:

The petitioner's comments are directed at a concern that was not accepted for review under the 10 CFR 2.206 process and is not the subject of this director's decision. The basis for the rejection of this concern under the 10 CFR 2.206 process is described on pages 3 and 4 of Enclosure 1 (ADAMS Accession No. ML17279A082) to the NRC's letter to the petitioner dated November 9, 2017 (ADAMS Accession No. ML17279A300 (Pkg.)), under the concern identified as ''Inappropriate Sampling Location.'' As described in the staff's Response 1, above, the licensee submitted a license amendment application to the NRC to correct figure sizing/scaling errors in the ERMP annex for the PTA and two other sites. Because the petitioner's concern regarding the sediment sampling location at the PTA is now under staff's consideration as part of its review of this license amendment request, the 2.206 process is not appropriate for addressing that concern. The staff will inform the petitioner of the outcome of this licensing review.

[FR Doc. 2018–10840 Filed 5–21–18; 8:45 am]

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NUCLEAR REGULATORY COMMISSION

[Docket Nos. 50–247 and 50–286; NRC–2008–0672]

Entergy Nuclear Operations, Inc.; Indian Point Nuclear Generating Unit Nos. 2 and 3

AGENCY: Nuclear Regulatory Commission.

ACTION: Final Supplemental Environmental Impact Statement; issuance.

SUMMARY: The U.S. Nuclear Regulatory Commission (NRC) is issuing Volume 5 of the plant-specific Final Supplemental Environmental Impact Statement (FSEIS), Supplement 38 to NUREG–1437, ''Generic Environmental Impact