Santa Susana Field Laboratory (Area IV) SEC Petition-00235 Follow-up Items

Presented by:

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Meeting of the Advisory Board on Radiation and Worker Health

Pittsburgh, PA

August 21, 2019

Remaining Petitioner Concerns

- Advisory Board requested that SC&A formally respond to two main issues raised by CORE Advocacy during Meeting 128 in Pittsburgh, PA:
  - Historical Site Assessments developed for the EPA in 2012 indicate numerous site areas where americium and/or thorium are listed as radionuclides of concern
  - Specific Site Assessment for Building 4023 indicated involvement in TRUMP-S* activities after the end of the SEC-00234 period (i.e. post-1988)

*__Tr__ans__u__ranic __M__anagement by __P__yropartitioning-__S__eparation

Historical Site Assessments

- Stated purpose of the Historical Site Assessments:

  "The objective of the HSA component of the radiological study was to provide a comprehensive investigation that identifies, collects, organizes, and evaluates historical information relevant to nuclear research operations as it pertains to radiological contamination in the Area IV Study Area. Once these areas were identified, potential areas where radiological contamination may exist at the site were identified for sampling."

Historical Site Assessments (cont.)

- SC&A examined the 2012 Site Assessments for evidence of operational work involving thorium and americium.
- SC&A specifically addressed each area identified by the petitioner in CORE Advocacy's 2017 report: *Locations of Americium/Thorium/ Associated Progeny and Approximate Dates of Building Demolition.*
- Results of SC&A's investigation are detailed in the July 2019 memo: *Evaluation of Petitioner-Specific Concerns Regarding SEC-00235.*

Historical Site Assessments (cont.)

- SC&A found no evidence of operational activities involving americium and/or thorium occurring after 1988.
- Site areas identified by CORE Advocacy:
  - Area underwent D&D prior to 1989 (16 identified areas, ~33%)
  - Area only included due to the proximity to another facility that historically handled Th-232/Am-241 (10 identified areas, ~20%)
  - Operational activities potentially involving Am-241 and Th-232 occurred prior to 1989 (10 identified areas, ~20%)
  - Area served as a storage facility only (6 identified areas, ~12%)
  - Area no longer in use after 1988 or demolished (5 identified areas, ~10%)
  - Area handled sealed sources only (1 identified area, ~2%)
  - Area did not handle Th-232/Am-241 (1 identified area, ~2%)

TRUMP-S Activities in Building 4023

- Historical Site Assessment for Building 4023:

  "In 1989, reports appear to indicate that Building 4023 served as a support facility for the Transuranic (TRU) Management by Pyropartitioning – Separation (TRUMP-S) operations in Building 4020, located in Subarea HSA-5D. Atomics International requested DOE's approval to utilize the facilities for a 2-year period beginning July 1988 for the Kawasaki Heavy Industries (KHI) and the Central Research Institute of the Electric Power Industry (CRIEPI) of Japan-sponsored "pyrochemical partitioning of actinides from PUREX waste" program. . . . The material used in this experiment was listed as including uranium, neptunium (Np-237), plutonium (Pu-239), and americium (Am-241)."

TRUMP-S Activities in Building 4023 (cont.)

- October 1988: Internal letter identifying deficiencies in the proposed usage application for TRUMP-S materials.
- July 1989: Internal letter documenting a planning meeting related to documentation required for the proposed TRUMP-S glovebox in the hot lab.
- Undated Report (likely mid-1989): *"A meeting was held with [redacted] to discuss the disposition of the waste* ***to be generated from the TRU partitioning tests****. Since the waste will contain transuranics (Pu, Am, Np) and cadmium, the waste generated in late 1989/early 1990 will be TRU/mixed waste. [Redacted] will be in contact with [Redacted] to determine what steps are needed to get a head start on the planning/disposal process."* [Emphasis added.]

TRUMP-S Activities in Building 4023 (cont.)

- October 1989: Internal letter states that a Test Readiness Review is to be held for the TRUMP-S glove box tests
- October 1989: Internal letter containing meeting minutes related to the TRUMP-S program: *"The following action items resulted at the meeting. These action items must be completed* ***prior to beginning the radioactive portion of TRUMP-S."*** [emphasis added]
- February 1990: Letter from Rockwell International to the NRC: *"This is in reply to your letter . . . regarding our recent transmittal to [redacted], wherein we provided additional information regarding the TRUMP-S program* ***to be conducted in the RIHL****."* [emphasis added]

TRUMP-S Activities in Building 4023 (cont.)

- February 1990 technical progress report notes:

  "*While Rockwell was awaiting DOE **permission to start up the test pending DOE review** of the NEPA Action Description Memorandum, Rockwell Management concluded it would be impractical to continue the TRUMP-S project beyond Stage 1 activities at the Santa Susana Field Laboratories. As a result, an effort was undertaken to locate a facility where the TRUMP-S actinide tests could be conducted for both Stage 1 and Stage 2."* [Emphasis added.]

TRUMP-S Activities in Building 4023 (cont.)

- February 1990: newspaper article describes the filing of legal cases by opponents to the TRUMP-S program:

> *"The cases challenge Rocketdyne's record of credibility in monitoring itself, the company's described "worst-case scenario" for i**ts planned "TRUMP-S" project,** its emergency contingency plan, and several other aspects of the company's application. . . .*
>
> *[Rocketdyne] is seeking permission to keep the lab open through Oct. 30 to complete one last experiment called TRUMP-S, for transuranic management by pyro-partitioning separation, and has announced plans to shut it down afterward.*
>
> *Originally, Rocketdyne was seeking a 10-year license extension, but cut its request to one year last October."* [Emphasis added.]

TRUMP-S Activities in Building 4023 (cont.)

- May 1990 newspaper article:

  "Rocketdyne announced in April that the "hot lab's" days were over. One last experiment called TRUMP-S, ***originally scheduled to take place in the "hot lab," was relocated to University of Missouri, at Columbia*** *in the heat of public challenges to the company's request to get the project licensed by the U.S. Nuclear Regulatory Commission.*

  The experiment would have been in a 4-by-3.5-by-7-foot shielded glove box.

  Now the TRUMP-S project — sponsored jointly by Japan and the DOE – is facing challenges in Missouri as well. But Rocketdyne officials are confident that the project will go forward there."
  [Emphasis added.]

Conclusions

- SC&A's conclusions remain unchanged from those presented to the Board during Meeting 128 in Pittsburgh, PA:
  - 2012 Historical Site Assessments indicate numerous site areas and existing structures where the potential for residual contamination exists (including americium and thorium)
  - Evidence suggests the radiological portion of the proposed TRUMP-S experiments never occurred at SSFL though significant planning and licensing steps had been taken
  - SC&A found no evidence of operational activities occurring at SSFL post-1988 involving americium and thorium
  - Dose reconstruction methods for exposure to residual levels of americium and thorium during D&D activities are under development by NIOSH

Questions?