Summary of Discussion Points and Document Review in Support of SEC-00235 for Area IV of the Santa Susana Field Laboratory

White Paper

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OBJECTIVE OF THIS WHITE PAPER

The objective of this white paper is to provide the Advisory Board on Radiation and Worker Health (ABRWH) with a summary on the efforts put forth by NIOSH and SC&A to address the Board's concerns about the SEC-00235 petition evaluation as of January 2020. This includes clarification of recurring discussion items that were not formally responded to by NIOSH. It also presents a summary of all documents submitted by the petitioner after the evaluation report of SEC-00235 was completed (Appendix A), including a detailed review of the ~ 1500 pages of additional documentation submitted by the petitioner during the August 2019 Board meeting (Appendix B).

AVAILABLE DOCUMENTS AND TRANSCRIPTS

There have been a number of reports issued on SEC-00235 and there have been several instances of discussions between the ABRWH, the SSFL ABRWH Work Group (SSFL WG), SC&A, and NIOSH. The following is a list of the available reports from NIOSH and SC&A on the subject of SEC-00235:

- **NIOSH SEC Petition Evaluation Report for SEC-00235**, May 11, 2017 [NIOSH 2017a]

- SC&A Review of the SEC-00235 Evaluation Report: **"A focused Review of the NIOSH SEC-00235 Petition Evaluation Report for Santa Susana Field Laboratory, Area IV"** (SCA-TR-2017-SEC011, Rev 0), Issued November 2017 [SC&A 2017]

- NIOSH White Paper: **"Air Sample Data at Area IV SSFL in Support of SEC-00235"**, Nov. 6, 2018 [NIOSH 2018a]

- NIOSH White Paper: **"Status of Operations Involving Thorium and Americium at Area IV SSFL During the Remediation Period (1988-Present)"**, Nov. 6, 2018 [NIOSH 2018b]

- SC&A Review of NIOSH white papers: **"Review of Remaining Internal Dose Topics Related to the Evaluation of SEC-00235 at the Santa Susana Field Laboratory"** (SCA-TR-2019-SEC002 Rev. 0), February 20, 2019 [SC&A/Saliant 2019]

- SC&A Memorandum: **"Evaluation of Petitioner Specific Concerns Regarding SEC-00235"**, July 25, 2019 [SC&A 2019a]

- SC&A Review of additional petitioner documentation: **"Review of Documentation Provided by CORE Advocacy Related to the Evaluation of SEC-00235 at the Santa Susana Field Laboratory"** (SCA-TR-2019-SEC006 Rev. 0), Nov. 25, 2019 [SC&A 2019b]

The petition was discussed before the SSFL work group (WG) and the ABRWH on nine occasions. All transcripts are available on the NIOSH DCAS public website (https://www.cdc.gov/niosh/ocas/) and the meeting information is summarized in Table 1 below:

Table 1. Summary of ABRWH and SSFL WG meetings on SEC-00235

Type	Date	Page numbers[a]	Reference	Topic and Tasking
ABRWH, 118th Meeting	8/24/2017	71-106	NIOSH 2017b	• NIOSH presents SEC-00235 Evaluation Report (ER) • SC&A tasked with review of SEC-00235
SSFL WG	12/4/2017	All	NIOSH 2017c	• SC&A presents review of SEC-00235 ER • SC&A suggests NIOSH look at air data and Am and Th operations
ABRWH, 120th Meeting	12/14/2017	6-37	NIOSH 2017d	• SC&A presents review of SEC-00235 • NIOSH tasked to review air data and Am and Th operations
SSFL WG Meeting	12/03/2018	All	NIOSH 2018c	• NIOSH presents white papers on air data and Th/Am operations during remediation period
ABRWH, 126th Meeting	12/12/2018	94-108	NIOSH 2018d	• NIOSH presents white papers on air data and Th/Am operations • SC&A tasked with the review of NIOSH white papers
SSFL WG Meeting	03/25/2019	All	NIOSH 2019a	• SC&A presents review of NIOSH white papers
ABRWH, 128th Meeting	4/17/2019	49-96	NIOSH 2019b	• SC&A presents review of NIOSH white papers • SC&A tasked to review EPA Historical Site Assessment and details for TRUMP-S program
ABRWH, 130th Meeting	8/21/2019	74-107	NIOSH 2019c	• SC&A presents review of EPA Historical Site Assessment and details on TRUMP-S program • SC&A and NIOSH are tasked with reviewing ~1500 pages of additional petitioner documentation

a. Page numbers of meeting transcript pertaining to SEC-00235 discussion

REMAINING ISSUES RELATED TO DOSE RECONSTRUCTION (TBD ISSUES)

Several issues related to the site profile and dose reconstruction (DR) approach remain active items from earlier (i.e. prior to SEC-00235) ABRWH discussions on SSFL related sites. These issues are currently categorized as "site profile issues" meaning that they do not represent a DR infeasibility but pertain to method development and refinement of the dose reconstruction approach that is summarized in the Technical Basis Documents (TBDs) and the Technical Information Bulletins (TIBs). These tasks will become active once the SEC discussions have been settled for Area IV and the De Soto Avenue Facility. The issues fall into the following general categories (but are not listed here in detail):

- General update of the site profile documents reflecting new information from data collections done during the SSFL SEC evaluations and resolution of outstanding issues from SC&A site profile review [ORAUT 2006, 2008, 2009, 2010a, 2010b, 2010c; SC&A 2010, 2014, SC&A/Saliant 2008]

- Update and issues resolution of the internal coworker model (ORAUT-OTIB-0080) [ORAUT 2014]

- Update and issues resolution of the external coworker model (ORAUT-OTIB-0077) [ORAUT 2009]

SEC-00235 - TIMELINE AND DECISION HISTORY

This section is a summary of all presentations and discussions on SEC-00235 for Area IV SSFL in chronological order.

August 2016 to August 2017:

The petition for SEC-00235 was received on August 9. 2016 and qualified on February 1, 2017. The petitioner requested class was for:

> *"All employees of North American Aviation, to include corporate successors and subcontractors who worked at Area IV of the Santa Susana Field Laboratory (SSFL) from December 31, 1964 through the present".*

The petitioner submitted a number of documents to support the petition. All 52 documents were reviewed by NIOSH and are discussed in Section 4.6 of the NIOSH SEC-00235 ER (NIOSH 2017a). These supporting documents are available to ABRWH members and SC&A staff in the DSA viewer application (under petition number "235") with Reference ID numbers 127147, 127726, 127201 – 127639.

NIOSH found that the submitted evidence did not support the petition bases required under 42 CFR 83.9 but recognized that a known issue with the bioassay contractor CEP could be considered under "documentation […] indicating that radiation monitoring records for members of the proposed class have been lost, falsified or destroyed" [Procedures for designating 2018]. The detailed decision process and on the qualification stage of this petition can be found in the Petition Document Review Document [NIOSH 2017e]. The pertinent sections on the decision process are as follows:

- "NIOSH reviewed all of the supplied documents, petitioner statements, and the two affidavits provided in support of the petition. No basis for qualification of the petition was identified in the submission documents." [NIOSH Note: a majority of the documents pertained to the operational period of Area IV SSFL, prior to 1988, an era that had previously been added to the SEC under (SEC-00234)].

- "However, NIOSH has identified information in Area IV and Atomics International documents to support one or more of the petition bases. As indicated in the site profile and several claimant files, Controls for Environmental Pollution (CEP) was used as a bioassay vendor in 1991, 1992 and 1993. Sample results from CEP are considered invalid by NIOSH because of quality issues with the laboratory (USNRC 1994). The results may be considered lost, falsified or destroyed for the purposes of qualifying the petition for further evaluation by NIOSH."

Based on these findings, NIOSH qualified the petition for evaluation for the period when CEP was used as the bioassay contractor ("CEP period"). The evaluated class as shown in the ER was [NIOSH 2017a]:

> *"All employees of the Department of Energy, its predecessor agencies, and their contractors and subcontractors who worked at Area IV of the Santa Susana Field Laboratory in Ventura County, California, from August 1, 1991 through June 30, 1993."*

August 2017:

NIOSH presented the SEC-00235 ER to the ABRWH. NIOSH did not recommend that a class be added to the SEC because it was found that the available data is sufficient to bound internal radiation doses with sufficient accuracy for the evaluated period. The ABRWH tasked SC&A with a review of the NIOSH ER [NIOSH 2017b].

December 2017:

SC&A issued their review of the SEC-00235 ER in November 2017 and presented their findings to the SSFL WG and the ABRWH in December 2017. SC&A reviewed the NIOSH decision-making process regarding the qualification of the petition as well as NIOSH's assessment on the

dose reconstruction feasibility during the CEP period with the following conclusions [SC&A 2017, p. 17]:

- *"There are sufficient employee and workplace monitoring data to bound potential external exposures."*
- *"The nature of radiological work (namely, decontamination and decommissioning (D&D) activities) does not appear to significantly change before, during, or after the 1991–1993 time period."*
- *"It would be beneficial to compare general air and breathing zone data from the 1991–1993 period to the operational period (surrogate data period) to assure radiological conditions are sufficiently similar or bounding for use in internal dose assessment."*
- *"The bioassay data obtained during the remediation period did not exceed the bioassay data from the operations period (pre-1988)."*
- *"Extending uranium, plutonium, and mixed fission product intake rates in ORAUT-OTIB-0080 would likely bound any potential intakes that may have occurred during the CEP period […]. However, SC&A's review of ORAUT-OTIB-0080 identified several findings and observations that are directly relevant to the calculation of intake values proposed for use during the 1991–1993 period. These findings and observations have yet to be discussed or resolved."*
- *"NIOSH has not established how it will reconstruct internal exposures to other actinide contaminants, such as americium and thorium, during the evaluated period. Such methods should be developed to assure that dose reconstruction is feasible for all radionuclides with the potential for exposure."*

During the discussion, SC&A suggested that NIOSH take a more detailed look at the available breathing zone and general air data during the D&D period, because the coworker model was not really developed to address D&D operations. The air data from the evaluated period should be compared to the available air data during the operational period, to corroborate that there was not some significant increase in air contamination during the 1991-1993 period. The discussion largely centered on the fact that there is no visible increase in the bioassay result levels before and after the CEP period and that the general trend of the bioassay was downward, compared to the operational period. NIOSH pointed out that a detailed analysis of air data may be possible but would be very time consuming, especially when was only to be used to corroborate exposure levels. SC&A indicated that this effort should be more of a scoping approach based on the available summary data and not a detailed data capture of raw air data. The implications of the use of summary data and the expected resulting lacking granularity was discussed with the WG [NIOSH 2017c, p. 62] and the WG stated their agreement with the approach before the effort

was started. Another issue discussed during the WG call was the fact that the status of the thorium and americium operations during the D&D period have not been addressed in the evaluation report for SEC-00235. NIOSH agreed with the WG and SC&A and committed to review the available summary air data and the status of the Am and Th operations during the D&D period.

The SC&A review of SEC-00235 was reiterated to the ABRWH at the December 14, 2017 meeting in Albuquerque, NM [NIOSH 2017d] and NIOSH was formally tasked as follows:

- NIOSH is going to issue a report on the air sample data
- NIOSH is going to issue a report on the status of the Am and Th operations
- NIOSH is going to provide sample DRs for the CEP period after the discussion on air data and the Am/Th operations have been resolved
- NIOSH and SC&A are going to review the additional petitioner submissions [CORE Advocacy 2017a, 2017b]
- SC&A requested sample DRs using the internal and external coworker models based on new models (this is not a site profile issue) [NIOSH 2017c, p. 82]

Petitioner Statements and Document Submission (Dec. 2017)

The petitioner shared a document with the SSFL WG during the WG call and the WG tasked SC&A to review this document [Core Advocacy 2017b]: "Department of Energy (DOE) Operations & Proprietary Interests Santa Susana Field Laboratory (SSFL) Area I / Area IV Energy Technology Engineering Center (ETEC) Operations at The Bowl (Area I) to Support Area IV programs." The petitioner also submitted "Petitioner Response to: A focused review of the NIOSH SEC-00235 Petition Evaluation Report (ER), Santa Susana Field Laboratory Area IV" [Core Advocacy 2017a] on Dec. 4, 2017.

During the ABRWH meeting, the petitioner provided an additional document on locations of Am and Th use at Area IV: "Santa Susana Field Laboratory Area IV: Locations of Americium / Thorium / Associated Progeny and Approximate Dates of Building Demolition [Core Advocacy 2017c]. The petitioner also stated in the WG call and the ABRWH meeting [NIOSH 2017d, p. 35] that she submitted evidence that the Helgeson whole body count data was omitted from the records by Boeing. However, it was not clarified during the discussion where in the submitted documentation cited above this information can be found.

December 2018:

NIOSH issued two white papers in in November 2018. They discuss the Am and Th operations and the air sample data during the remediation period at Area IV SSFL. The details of these white papers were presented to the SSFL WG on December 3, 2018 [NIOSH 2018c] and to the ABRWH at the December 12, 2018 meeting in Redondo Beach, CA [NIOSH 2018d].

Air sample data summary during the remediation period at Area IV SSFL [NIOSH 2018b]:

> *"There are BZ and GA air data available for Area IV of the SSFL during the CEP period, but they are not complete for some quarters. Data for the Hot Lab is available and can be considered a bounding scenario, based on available operations descriptions and workers being monitored. There is no clear evidence that the general air and breathing zone data are in any way unusual, given the operational status of the facilities at the time. Elevated air samples and whole body count results are in line with the work that was being completed then. There were a few localized elevated samples observed during the 1993 period, when bioassay are not useable for the first half of the year, but there is no indication that between the WBC and the bioassay sampling taking place in August would have led to significant missed exposures. Whole body counts and BZ samples were collected for workers in locations likely to receive an intake. Not all air and BZ data is available for all quarters and facilities, but it is believed this is because it has not been captured, not because it does not exist. There is no evidence that additional data capture for remaining quarters and facilities will lead to a different conclusion on the status of the air data or the feasibility to assess internal doses for Area IV SSFL using available data or the coworker model."*

Status of operations on Th and Am during the remediation period at Area IV SSFL [NIOSH 2018a]:

> *"A detailed review of the operational facilities during the remediation period for Area IV SSFL does not indicate a sustained radiation exposure potential similar to the operational period. The remaining radionuclides of concern at Area IV in 1992 were Cs-137, Sr-90, Co-60 and Pu-239. Only Cs-137 and Sr-90 were present in sufficient quantity to be readily dispersed for inhalation by workers, and Cs-137 was considered the most important radionuclide of concern during this period in operational history (Moore, 1992). Although the D&D of remaining facilities may result in unpredictable exposures to residual contamination, it is believed that the facility had at that point a state-of-the-art radiation protection program that was capable of detecting relevant radionuclides, and that those data are available for dose reconstruction under EEOICPA. NIOSH, therefore, does not believe that the exposure potential outlined in the SEC-00234 evaluation report continued into the remediation period (post-1988)."*

The December 3, 2018 WG call discussion centered around the DR approach for Th and Am and how it would be addressed during the remediation period. Also, the air data report was discussed, and a large part of the discussion centered around the fact that the analyzed data are quarterly averages and whether or not the raw data are available to NIOSH (possibly) and how much effort it could/would take to collect and analyze those (a significant effort).

The NIOSH white papers were presented to the ABRWH on December 12, 2018. The discussion points were similar to the ones raised during the SSFL WG discussion just prior to this meeting. SC&A was formally tasked to review the NIOSH white papers as well as the additional petitioner submitted documents (see below).

Petitioner Statements and Document Submission (Dec. 2018):

During the WG call, the petitioner raised the issue of missing records from an Energy Employee case file where Boeing allegedly omitted claimant monitoring records from their data request response (NIOSH 2018d, p. 134) [Note: This report is titled: "Case Study: Boeing Response to the Document Acquisitions Request (DAR) A comparison between original Employment records and the DAR" [CORE Advocacy 2018] is from April 30, 2018 and was submitted to NIOSH by email. The case is not currently a claim that is with NIOSH for dose reconstruction]. NIOSH pointed out that it has been assisting DOL and DOE with trying to sort data request issues with Boeing. SC&A was not formally tasked to address this particular issue. During the ABRWH meeting, the petitioner mentioned the Boeing incident database and provided a thumb drive with incident files [SSFL and De Soto no date]. The ABRWH tasked SC&A and NIOSH with a review of the contents of the thumb drive. SC&A was also formally tasked to review the NIOSH white papers.

March 2019:

SC&A issued their findings "Review of Remaining Internal Dose Topics Related to the Evaluation of SEC-00235 at the Santa Susana Field Laboratory" on February 20, 2019 and presented this to the SSFL WG in March respectively. SC&A concluded the following regarding the NIOSH white papers on air data and the operations with Th and Am [SC&A/Saliant 2019, p. 23]:

> *"…SC&A did not identify evidence of internal exposure potential to americium and/or thorium sources that would preclude dose reconstruction feasibility. However, the operational history of americium and thorium exposure was clearly established in SEC-00234 and then described in Boeing 2007 as decontamination and decommissioning contaminants of interest. NIOSH 2006 and Rockwell 1992a indicate that thorium and americium could be present as potential sources of exposure. NIOSH 2010 reaffirms americium and thorium as a potential source of exposure and provides environmental intakes of both radionuclides based on stack emissions at ETEC. Given the uncertainty*

related to off-normal work conditions associated with decontamination and decommissioning activities, NIOSH might consider establishing an occupational exposure model, in place of an environmental intake model, that uses available air sampling results (BZ and GA) or some fraction of the administrative limits in place at the time. This might be particularly important if BZ data is not generally provided in a claimant's dosimetry file. This would assure a claimant favorable and bounding dose assignment for thorium and americium.

With regard to Item 2, SC&A found no evidence in either the available documentation or GA air sample data that radiological conditions were significantly different from the operational period that would preclude the use of coworker intake models developed for uranium, plutonium, and fission/activation products (strontium and cesium) during the CEP Period. Although, there are several outstanding findings/observations associated with the SSFL coworker model that are still under consideration by the ABRWH (SC&A 2014), SC&A does not consider these outstanding findings/observations to be SEC issues at this time. SC&A believes the remaining coworker issues can be resolved via the site profile review process."

The SSFL WG voted to concur with NIOSH to not recommend a class to be added to the SEC for SEC-00235 for the upcoming full Board Meeting in April 2019 [NIOSH 2019a].

Petitioner Statements and Document Submission (March 2019):

The petitioner sent NIOSH a list of box numbers [Box list EMCBC no date] in January 2019 from an unidentified source (presumably a Freedom of Information Act request to an agency). The petitioner raised the issue with NIOSH and SC&A regarding the listed 1463 boxes of DOE records relevant to the SSFL. The suggested issue was that the boxes were listed as being sent from Boeing to the DOE Environmental Management Consolidated Business Center (EMCBC) in Cincinnati and therefore may not have been available to NIOSH for review. Calls between NIOSH/ORAUT and the EMCBC confirmed that the listed box contents were indeed sent from Boeing at some point in the past and the data was still in the process of being cataloged and is available to NIOSH for data capture. NIOSH clarified that data capture process is ongoing at Area IV SSFL and clarified some details of said process.

The petitioner submitted two additional documents to the WG:

- Santa Susana Field Laboratory Area IV, Locations of Americium/Thorium/Associated Progeny and Approximate Dates of Building Demolition, originally submitted to the Board on December 13, 2017, resubmitted to WG in March 2019 [Core Advocacy 2017c]

- Excerpt of Santa Susana Field Laboratory Historical Site Assessment, Final Technical Memorandum: Area IV, Subarea HAS-5A, December 2011, pages 12-23 [Santa Susana Field Laboratory 2011]

April 2019:

SC&A presented their review of the NIOSH white papers on air data and the status of Am/Th operations to the ABRWH in April 2019 at the Board meeting in Pittsburgh, PA. In addition to the discussion on the SC&A report, SC&A presented their review of two additional documents sent in by the petitioner in March 2019. The first document is a list of SSFL buildings that were to prove operations associated with thorium and americium and other nuclides. The radionuclide listing in this reference was done for remediation purposes to assess what soil testing should be done for cleanup purposes. The second document had some information about the building where the TRUMP-S program was to be completed. Some research in the underlying references did not indicate that the TRUMP-S program material was experimented on at Area IV SSFL [NIOSH 2019b].

SC&A also mentioned the status of the ~1500 Boxes containing SSFL/De Soto related records. The box list was sent to NIOSH and the Board in January 2019 [Box list EMCBC no date]. NIOSH clarified that all newly received records would be searched by keyword and the records collected by NIOSH on a continuous basis as they are available. There is no indication that any data is in some form missing or not available to NIOSH. Any additional SSFL data could be searched and collected in the future, a situation that is common for many of the EEOICPA sites. The ABRWH requested for SC&A and the WG to become involved in providing keywords for data capture. A formal request for input on the keywords used for data capture was sent by NIOSH to the ABRWH on April 30, 2019 and a collection of keywords provided by SC&A was added to the keyword list [Katz 2019].

SC&A also presented their review of the Boeing incident database [SSFL and De Soto no date]] that was submitted by the petitioner during the December 2018 Board meeting [NIOSH 2019a, p. 13-14]:

> *" There are over 700 […] individual files in it. By my count, there were 71 files related specifically to the Santa Susana post-1988, 22 of which involve a detectable spread of contamination. Ten of the files were related to set exams during the SEC 235 period. […] Only one of those 10 actually involved a detectable spread of contamination.*
>
> *The conclusions: after review of the incident database, we did not identify any incidents where thorium was identified. There was a single incident involving americium. It involved a smoke detector, which was an element not only at Area IV, but the other areas of the site at various points in time were using americium smoke detectors. In this case,*

while cleaning it a low-level contamination made it to the hands and the worker was immediately deconned and was negative.

Also, the incidents we reviewed did not indicate a significantly different internal exposure potential during the CEP period and during other D&D activities in the years surrounding this CEP period or the during the operational period, for which coworker data is available. "

The board continued to question the granularity of the air data and the fact that the currently available air data is based on quarterly reports. It was pointed out that the site used air sampling as the first method of contamination control and any results of concern would be followed up by bioassay sampling.

The board voted to table the discussion to await further evaluation of SC&A of petitioner submitted documents (see below).

Petitioner Statements and Document Submission (April 2019):

The petitioner stated that NIOSH had not adequately addressed the petitioner's proposed corrections to the SSFL site profile [CORE Advocacy 2016] that was submitted in 2016 [Note: This document is a 416-page document that extensively references the 2011 EPA historical site assessment documents, which are available in full in the NIOSH SRDB [EPA 2012a,b,c,d,e,f,g,h].

The petitioner expressed concern that SC&A is not given access to all relevant information, so that SC&A comes to the same conclusion as NIOSH.

The petitioner claims that the EPA Historical Site assessment [EPA 2012 a,b,c,d,e,f,g,h] and the documentation about the TRUMP-S program have not been adequately reviewed by NIOSH.

As a result of discussions, the ABRWH tasked SC&A with a detailed review into the EPA site assessment as well as the status of the TRUMP-S processes in Building 4023.

August 2019:

A vote was taken by the ABRWH to un-table the discussion for SEC-00235 [NIOSH 2019c].

SC&A issued their memorandum "Evaluation of Petitioner-Specific Concerns Regarding SEC-00235" in July 25, 2019 and presented those findings at the August 2019 ABRWH Meeting in Oak Ridge, TN. SC&A concluded in their memorandum that there is no evidence currently in the available documentation that demonstrates that operational exposures involving thorium and americium continued to occur after 1988. Regarding the TRUMP-S research, the reviewed

documentation indicates that actual handling and processing of the TRUMP-S material did not take place at Area IV SSFL [SC&A 2019a].

During the ABRWH discussion, board members continue to raise the issue about the air data and the fact that the values presented in the white paper are based on quarterly averages. Board members also took issue with NIOSH using "unattributed quotes" to support their position on SEC-00235. It was pointed out to the ABRWH that the air data averages as presented in the NIOSH white paper are not actually used to support dose reconstruction.

Petitioner Statements and Document Submission (August 2019):

The petitioner stated that there was additional evidence to support the claims that the TRUMP-S program and the operations with Th and Am continued during the remediation period. The petitioner supplied a thumb drive with the information to NIOSH.

A vote was taken to table the discussion pending review of additional documents submitted by the petitioner. NIOSH and SC&A were tasked to review the documents concurrently.

November 2019:

SC&A issued a report on their review of the additional documentation in November 2019 (SC&A 2019b). The NIOSH evaluation of the same is included in this report (Appendix B). The findings are expected to be discussed during the April 2020 ABRWH meeting.

SC&A concluded as follows:

- *"SC&A found no evidence in the documentation that the SSFL operating contractor did not monitor remediation workers who needed monitoring or that such monitoring was inadequate" (with the exception of the CEP period)*

- *"SC&A found no evidence in the documentation that radiological operations occurred at SSFL that were related to TRUMP-S."*

- *"SC&A found no evidence in the currently available documentation that TRU waste was generated after 1988 due to post-1988 operations."*

CLARIFICATION OF NIOSH'S POSITION OF RECURRING DISCUSSION POINTS:

Several discussion items have come up repeatedly. NIOSH does not issue formal response to all ABRWH issues or petitioner submitted documents, unless a topic is extensive enough to warrant a separate white paper (and tasked to do so by the ABRWH). However, in this summary document, NIOSH would like to formally respond to several items, to clarify and possibly aid in closure of several discussion items.

Documents, Data Access and Legal Requirements on Documentation:

NIOSH places *all* data items collected during data capture events and information submitted by petitioners and stakeholders in the appropriate electronic record keeping systems (SRDB for general site related documentation, DSA for petition specific documentation, both for some). The NIOSH Health Physicist (HP) responsible for the petition reviews the document for relevance to the petition. If the documentation is lengthy, the NIOSH HP may task their contractor ORAU to assist with the review. Unless the new documentation would change NIOSH's proposed recommendation on the evaluation report, NIOSH would not issue a formal response on the additional documentation unless there was a specific request to do so from the ABRWH.

NIOSH does not withhold information from the ABRWH or its contractors. All ABRWH members and contractor staff have access to the same electronic data base resources that NIOSH staff have. If a board member or contractor has trouble finding a specific piece of documentation, NIOSH staff are readily available to assist with locating it.

Interviews of former workers or site experts are a standard component of the SEC evaluation process [NIOSH 2011]. For SEC-00235, NIOSH interviewed two former workers and referenced the interview transcript in the SEC-00235 evaluation report as "Personal Communication." This is standard procedure. The information from these interviews has been called "unattributed quotes" by the ABRWH on public record. NIOSH would like to point out that the interview information in the SEC petition evaluation report is *redacted because of the requirements of the Privacy Act*. The reference section of the SEC ER contains all the necessary information that would allow ABRWH members to access the full interview transcripts (including names and position of the interviewed individuals) in the Site Research Data Base (SRDB).

The Area IV Site Profile:

The petitioner has repeatedly raised the issue that the site profile document for SSFL is outdated and therefore dose reconstruction is not possible. A suggested revision to the Site Profile of 416 pages was received from the petitioner in 2016 [CORE Advocacy 2016].

The objective of a site profile document is to provide a relatively *succinct* summary of the site background and the dose reconstruction methods use and to aid in transparency of the process of dose reconstruction. Due to the on-going research on many of the EEOICPA covered sites, site profile documents are almost never completely up to date. In cases where updated information is needed for a dose reconstruction that is not available in the Site Profile, the health physicist will use additional documentation available in the SRDB. In short, just because site-specific information is not listed in the Site Profile, does not mean that it is not available to NIOSH and could not be used in dose reconstruction. Site profile updates are lengthy and involved processes and are generally done after the completion of an SEC evaluation. The current project plan is to update the SSFL site profile once the SEC questions on SEC-00235 and SEC-00246 have been

settled. The reason for this is the fact that the findings of the SEC evaluation affect the information in the Site Profile, and it would not be an efficient use of resources to go through multiple update cycles.

Air Sample Data from Quarterly Reviews:

The BZ and GA data from quarterly reviews was analyzed to corroborate exposure levels during the remediation period, which based on available urine data suggest a lower exposure potential than during the operational period. The analysis was suggested by SC&A and backed by the WG. During the discussion on tasking, NIOSH and the WG discussed that these values are averages and therefore the resulting analysis would lack granularity [NIOSH 2017b, p. 62]. The WG did not seem to take issue with this problem then. However, each subsequent discussion at the ABRWH has raised the issue of the use of quarterly averages of GA and BZ data as a reason to disagree with the WG recommendation on SEC-00235. NIOSH would like to point out that NIOSH did not arrive at the recommendation on SEC-00235 using the GA and BZ air data but did the analysis upon suggestion from the ABRWH and SC&A to add possible supporting evidence to their conclusion. It should be pointed out that NIOSH is not using air data as a major part of their DR approach, although there is a possibility of using individual BZ information if needed and available. The air sample data was analyzed to corroborate data trends upon request by the work group. A dismissal of the NIOSH air data white paper would not change the NIOSH recommendation on SEC-00235.

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Photograph of a shipping cask and individuals reportedly the site closure team Area IV RMHF [no date]. [SRDB Ref ID: 178270]

Procedures for designating classes of employees as members of the special exposure cohort under the Energy Employees Occupational Illness Compensation Program Act of 2000. 42 CFR Part 83 [2018]. [SRDB Ref ID: 179160]

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SSFL and De Soto accident, incident, and occurrence reports [no date]. [SRDB Ref ID: 175308]

Various authors [1987–2014]. SSFL documents related to DOELAP compliance. [SRDB Ref ID: 178278]

APPENDIX A – ADDITIONAL PETITIONER SUBMISSIONS

The table below is a summary of documents related to SEC-00235 that were submitted to NIOSH and the ABRWH after NIOSH issued the ER for SEC00235 (see SEC-00235 ER for a listing of documentation submitted with the petition). The last column has a brief summary of the NIOSH review of the document and how it pertains to the ER according to NIOSH's assessment.

Table A-1: Documents submitted by petitioner after NIOSH issued SEC-00235 ER

Title	Pages	Submittal Date	DSA ID	Reference	NIOSH assessment
Department of Energy (DOE) Operations &Proprietary Interests, SSFL Area I/Area IV, ETEC Operations at The Bowl (Area I) to Support Area IV Programs	30	Aug. 24, 2017	128311	Core Advocacy 2017b	Documents lists DOE supporting operations in Area I. At this time only DOE/DOL can designate additional facility coverage under EEOICPA. Currently only Area IV is a covered facility.
Petitioner Response to: A focused review of the NIOSH SEC-00235 Petition evaluation report (ER): Santa Susana Field Laboratory, Area IV	11	Dec. 4, 2017	128674	SC&A 2017	Petitioner response to the SC&A review of the NIOSH ER. Petitioner disagrees with NIOSH recommendation on SEC-00235. Claims include assertions that NIOSH has not responded to data falsification issues and that SC&A has not been provided with complete information. Petitioner plans to submit new information supporting petition.
Santa Susana Field Laboratory Area IV Locations of Americium/Thorium/Associated Progeny and Approximate Dates of Building Demolition	8	Dec. 13, 2017	128712	Core Advocacy 2017c	Excerpt of EPA Historical Site Assessment document, locations that list Am and Th as radionuclides of concern. Indicates sampling was done for residual contamination from previous operations but does not prove that operations took place during remediation period.
Revision of Bioassay Roster	4	January 22, 2018	19107	Kellehar 1963	Atomics International document from 1963 for a revision of the bioassay roster. Applies to pre-remediation period that is currently an SEC period.
Email: Visitor Logs and Quarterly Reviews	6	Feb. 27, 2018	128836	Blaze 2018	Document related to location codes used by SSFL sites for the visitor logs. Does not directly pertain to issues related to SEC-00235.

Title	Pages	Submittal Date	DSA ID	Reference	NIOSH assessment
Case Study: Boeing Response to the Document Acquisitions Request DAR, A comparison between original employment records and the DAR,	294	April 30, 2018	n/a	Core Advocacy 2018	Not submitted for SEC-00235 but related to Area IV claims. A records request from Boeing showed a discrepancy between the documents sent by Boeing to DOL and the worker's own records. NIOSH assisted DOE in trying to resolve the issue. This case was mentioned during the ABRWH discussions. The claim in question is not at NIOSH for DR, but NIOSH has reviewed the worker's radiation dosimetry file from the Boeing database that contains internal and external dosimetry data for the worker in question.
Boeing Incident data base, ~ 1500 files	n/a	Dec 12, 2018	n/a	SSFL and De Soto accident no date[a]	NIOSH reviewed all ~1500 files, 506 were uploaded to the SRDB, remainder was already present or not related to radiation incidents. None of the incident reports have any information that would affect DR feasibility during the CEP period.
EMCBC box list	39	January 2019	129631	Box list EMCBC no date	Spreadsheet table of box list numbers, descriptors and dates. NIOSH worked with the DOE EMCBC in Cincinnati to confirm that those box contents are available in their holdings and the information in the listed boxes is available for NIOSH data capture.
Letter: Personnel Records Excluded from Document Acquisition Requests (DARs)	12	January 28, 2019	n/a	Blaze 2019a	Not submitted for SEC-00235 but related to Area IV claims. An individual records request from Boeing showed a discrepancy between the documents sent by Boeing to DOL and the worker's own records. NIOSH assisted DOE in trying to resolve the issue. The claim in question is not at NIOSH for DR.

Title	Pages	Submittal Date	DSA ID	Reference	NIOSH assessment
Santa Susana Field Laboratory Historical Site Assessment Final Technical Memorandum, Area IV, Subarea HAS-5A	12	March 25, 2019	129314	Santa Susana Field Laboratory 2011	This excerpt has some information on Building 4023, where some of the TRUMP-S program operations took place, but no indication that materials were processed at Area IV.
Technical Progress Report Private Sector Initiative Between the United States and Japan, Jan. 1993 – Sep. 1998	27	Aug. 21, 2019	129599	Boeing 1998	Report on the TRUMP-S program. Indicates that the operations moved to MURR as indicated in other documentation.
Acceptable Knowledge Document for the Energy Technology Engineering Center Debris, RLETECD	67	Aug. 21, 2019	129598	Graeger 2008	Document indicates that TRU waste was shipped from Area IV during D&D operations
Acceptable Knowledge Summary Report for Energy Technology Engineering Center Transuranic Mixed Debris, Transuranic Mixed Solidified Liquids, and Low-Level Mixed Organic Liquid Waste Streams	65	Aug. 21, 2019	129597	Bolts et al. 2007	Document indicates that TRU waste was shipped from Area IV during D&D operations
Boeing, Performance Development Partnership, Employee Performance Document	3	Aug. 21, 2019	129596	Boeing 2003	Employee review document. Indicates work on D&D operations.

Title	Pages	Submittal Date	DSA ID	Reference	NIOSH assessment
Photograph of work crew in front of shipping cask, 2003	1	Aug. 21, 2019	129595	Photograph of shipping cask no date	Photograph of employees in front of a shipping cask
Petitioner Response, SEC 00235 Santa Susana, August 2019 WG Meeting, Oak Ridge, TN	3	Aug. 21, 2019	129594	Blaze 2019b	See Appendix B
Collection of documents related to Area IV SSFL	1053[b]	Aug. 21, 2019	129593	Various 1987–2014	Collection of documents related to various items during the remediation period. Mainly CEP documentation and 10 CFR 835 compliance documentation. See appendix B for more detail.
SEC-00235 Santa Susana Field Laboratory (SSFL) Supplement to Document: EID-04711: Closure of ETEC, TRU Waste Stream C1-B55 Acceptable Knowledge Summary Report, The Boeing Company 2002	85	Sep. 19, 2019	129609	Core advocacy 2002	See Appendix B

a. Also available to the Board at: K:\ABRWH\AB Document Review\Santa Susana\Boeing Flashdrive
b. The original petitioner submission was 1276 pages, from which duplicate pages were removed for SRDB upload

APPENDIX B - NIOSH REVIEW OF PETITIONER DOCUMENTATION SUBMITTED AUG. 2019

NIOSH and SC&A were tasked to review the additional documents provided by the petitioner in August 2019. SC&A issued a detailed report in November 2019 (SC&A 2019b). The collection of documents is approximately 1500 pages. One of the files consisted of a single ~1200-page file containing numerous individual documents (Compliance, various dates). A brief summary of the individual documents is provided in Appendix A. The analysis below responds to various specific concerns listed in the CORE Advocacy letter that accompanied the documents [Blaze 2019b]:

"NIOSH's limited scope of the SEC has diverted attention away from important key points that supported the original class definition, which included all workers, 1955 to the present, regardless of administrative affiliation or "Time Clock Location."

> At the time the petition for SEC-00235 was received by NIOSH, the entire operational period, from 1955-1988 was already part of the SEC. The SEC classes that have been established at Area IV are for all workers who worked at Area IV. SEC classes are typically defined by work area (location), not by contractor affiliation. This has been the typical format for an SEC class definition and is based on requirements by the Department of Labor, who is in charge of administering the class. NIOSH is aware that determining the location and timeline of a work history has been a challenge for Area IV and has therefore defined the class as broadly as possible. The evidence submitted with petition SEC-00235 was evaluated against the entire remaining covered period (1988-present) when considering what part of the period should qualify for evaluation.

"We cannot determine worker access to Area IV, or track worker rotation between site areas, or between Santa Susana, Canoga and DeSoto."

> NIOSH is aware that worker movement between sites is challenging, but determination where a given worker worked is done by DOL. When a claim arrives at NIOSH for dose reconstruction, NIOSH will use available internal and external monitoring records (or coworker model information) to assign dose to a worker. It is not always necessary to know the exact work location to make a claimant favorable dose estimate. NIOSH will use the most claimant favorable assumptions when completing a dose reconstruction for a worker whose work location is unknown. Any available evidence from the claim file and the worker interview (if available) is also used.

"Job Titles are inconsistent with Job Duties and Work Locations, preventing relevant exposure scenarios from being developed."

Each dose reconstruction is developed based on all available data, including, but not limited to job title information. In the absence of specific information, the most claimant favorable assumption is used.

"The Site Profile remains defective; it cannot be used in dose reconstruction. It certainly should not be used to develop new models for current Site Remediation workers who risk Americium and Thorium exposure at the 50 radiological locations that remain missing from the Site Profile, along with all corresponding environmental data."

The site profile is not defective, it is merely outdated. What is used for dose reconstruction and model development is NIOSH's site research database and all the documentation contained therein as needed for each individual claim. The site profile is intended to be a relatively succinct summary of all the information available to NIOSH that is used for dose reconstruction and that would help a reviewer and a member of the public to understand the methods used for dose reconstructions. The site profile will be updated once the SEC issues surrounding Area IV SSFL and De Soto have been settled.

"There are DOE Facilities located at Area I – acknowledged by SC&A and NIOSH, completely ignored by Department of Labor. Workers who participated in these DOE operations are disqualified.

Site coverage is determined by DOL with information obtained from DOE. These agencies are aware of the issue, but NIOSH cannot comment on any decision-making regarding Area I.

"Today, Boeing systematically withholds all employment records, preventing workers from establishing employment. They are summarily disqualified. We are all familiar with the detailed and extensive nature of Boeing's employment databases, and surely recognize that this is obstruction. DOE is unresponsive."

NIOSH has received the Boeing database containing all radiological monitoring folders from Area IV SSFL and De Soto workers and can search those in cases where radiation dose records from Boeing are believed to be incomplete. That said, NIOSH does receive worker monitoring data from Boeing for individual claims and they have been found sufficient for dose reconstruction for all claims at NIOSH at this time.

"Rather than focus on the issues that have been raised, they limited its scope to 1991-93, and the deeds of a past contractor." [NIOSH Note: this is referring to the fact that not the entire remediation period qualified for evaluation]:

For a SEC class to be qualified for evaluation, the evidence submitted with the petition has to support certain criteria, outlined in the law [Procedures for designating classes 2004] and explained on the petition form. None of the originally submitted documents supported the petition bases. However, NIOSH found that the 1991-1993 period when discredited bioassay contractor CEP provided bioassay analyses, supported the basis of "data being lost or falsified." This decision process has been outlined in the Petition Document Review file [NIOSH 2017e] and the SEC ER [NIOSH 2017a].

"SC&A verified Americium separation at Santa Susana and De Soto, to 1993."

The referenced statement is as follows [ORAUT 2014, p. 58]: "There are 24 records in the unscreened electronic dose database where americium was specifically analyzed from the late 1960s through 1993. Health and safety personnel, mechanics, an electrician and an inspector were occupations that were monitored for americium." This statement refers to monitoring records for workers who may have been exposed to americium and were monitored for such. The monitoring of individuals for exposure to americium only confirms the health and safety program at SSFL was cognizant of potential exposure to americium during work processes. The act of monitoring workers for potential exposure to a substance is not the same as verification of americium separation or any other operational program involving americium. Since the issue of the OTIB-0080 review cited above, more in-depth research into the status of Am operations specifically during the remediation period found no indication that operations with Am and Th took place at Area IV as referenced by NIOSH [NIOSH 2018b] and SC&A (*"Review of Remaining Internal Dose Topics Related to the Evaluation of SEC-00235 at the Santa Susana Field Laboratory, February 20, 2019"* [SC&A/Saliant 2019].

"NIOSH confirmed Americium and Thorium in stack emissions in 1995, suggesting operations. (NIOSH 2006, pg. 9 and pg. 12)

By 1995 the facility was in decommissioning status and did not do processing operations anymore. Stack effluent analyte panels were reported for a standard suite of radionuclides, none of which were present at a level that would indicate operations. The intakes that NIOSH derived in the environmental TBD were based on a calculation done by NIOSH using gross measurements.

"Boeing Technical Progress Reports detail TRUMP-S operations at Area IV, 1993-1998." (Boeing: 1998):

The report states *"During 1994 through September 1997 the TRUMP-S process was demonstrated at a 1/6000 and 1/2000 scale of a plant required to process the PUREX waste generated by Japan's 800 tonne/yr PUREX reprocessing plant.* ***The process was***

demonstrated at MURR (Missouri University Research Reactor) by MURR, UMC, CRIEPI, KHI and Boeing personnel. *The demonstration tests utilized simulated PUREX wastes consisting of nonradioactive components with actinides added in the proper proportions to simulate the waste generated when Japan's PUREX plant is processing 48,000-megawatt day/tonne burnup PWR fuel.*" The TRUMP-S program was intended to use small quantities of plutonium, neptunium and americium. The materials for this testing were stored in the Fuel Storage Facility, Building 4064 before the project was transferred to the University of Missouri in Columbia, MO. The project was transferred sometime after 1990. Documentation indicates the program work was planned but did not begin at Area IV, and there was no use of the materials stored at Area IV. There is no indication of any release of materials from the TRUMP-S materials stored at Area IV.

"Reports describe transuranic generation and processes between 2002-2008, and storage of transuranics for up to 20 years prior to repacking operations" (CORE Advocacy, 2019a, Graeger, 2008, Bolts et al., 2003):

The references cited above support the fact that the D&D program removed materials contaminated with transuranics from Area IV facilities and packaged the wastes for disposal. The waste packaging occurred primarily within glovebox structures. The Acceptable Knowledge documents provide data on the radionuclides, surface radiation dose rate, radiological activity, and both TRU and plutonium content estimates with assumptions or adjustments to the data. There is no information in these documents indicating new or ongoing operations working with transuranic materials.

2003 Photograph: Transuranic Cask and Site Closure Team, Area IV RMHF. (Photograph, 2003)

This file contains a photograph of 33 individuals posing with what appears to be a type B shipping cask. Such a cask would be used to ship waste contaminated with transuranics for disposal.

2003 Employment Performance Development Summary. (Boeing 2003):

This redacted employee performance development summary describes a development plan, the strengths and areas for improvement, for an employee involved in the ETEC closure. The development summary mentions the employee's assistance in achieving a major milestone on the critical path to closure, the shipment of the transuranic waste to Hanford. The document supports the knowledge that Area IV shipped transuranic contaminated waste to Hanford.

Under the FOIA, we obtained Boeing's requests for exemption from DOE's requirements to monitor Site Remediation workers. They are dated 1991 into the 2000s. (Compliance, various dates):

> The individual memos and reports included in this file are related to requests for exemption from certain provisions of 10 C.F.R. 835 and include memos, program documentation, incident summaries, plans, procedures and reports. These requests were evaluated by DOE for exemption from the cited requirements; only one of the five requests for exemption from provisions of 10 C.F.R. 835 was granted, that personnel who enter radiological areas under the escort of a qualified radiation worker do not have to complete a subject matter exam after familiarization training. The other four were denied and so have no bearing on practices or potential exposure [Various 1987–2014, p. 107] Included in the file are documents provided by Boeing with data in support of their claim that the exposure conditions at Area IV SSFL do not meet the threshold necessary to trigger the requirement for DOELAP accreditation of the monitoring program.
>
> There is no indication in the documents that the site discontinued monitoring site remediation workers. The documents indicate Boeing requested an exemption from DOELAP accreditation of their external monitoring program, not from the practice of monitoring site remediation workers, who were participating in the existing program. Boeing indicates in the documentation the dosimetry contractor for whole-body exposure monitoring (R.S. Landauer, Jr. and Co.) was accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) and was compliant to both NRC and State of California regulatory requirements as supporting justification to continue using the services of the contractor.
>
> The site requested exemption from the requirement to determine the total effective dose equivalent as the sum of the internal dose and the external dose, on the basis that determining external dose was required by regulation but the regulatory threshold for monitoring and assessing internal dosage is not met by the site exposures. DOE ES&H (EH-52) found the site did not explain what made it unnecessary or burdensome to take and record internal dose measurements at Area IV. The exemption request did not specify levels above which internal doses would have to be calculated and summed with external doses. Not doing so, calculating and summing internal doses with external doses, could result in the omission of significant internal doses from individual monitoring records. Documentation of the expected financial or operational impact of efforts to comply with the requirements was not provided with the exemption request. DOE stated that efforts to ensure compliance should not have substantial impact on resources. The exemption request was disapproved in a memo dated 1/5/96. The Radiation Protection Plan (RPP) Rev 0 was approved on 6/21/95 and the amendment to the documented RPP, including the disposition of the five exemption requests was approved on 12/23/96.

The site also requested an exemption from the requirement that the knowledge of radiation safety possessed by general employees shall be verified by examination. The alternative proposed and accepted was that employees with unescorted access to controlled areas would be verified by examination, and general employees, trained but not verified by examination, would only be allowed access with properly qualified escort.

The reference document "SSFL documents related to DOELAP compliance" contains a selection of documents related to various different subjects [Various 1987–2014]. The documents were uploaded or verified to be present in the SRDB as outlined in the table below:

Table B-1: Segments of Compliance, various dates and SRDB Ref ID documents:

PDF Page:	Title	Date	Pages	SRDB Ref ID
1	Weekly Update of CEP Issues	Nov. 4, 1994	8	166177
9	Bioassay Sample Results - Letters to Employees on CEP Investigation	Dec. 5, 1994	28	178277
37	Rocketdyne's Internal Dosimetry Program	Nov. 6, 1998	5	166180
42	DOELAP for Radiobioassay; Supporting data for Exemptions	Apr. 20, 2001	9	166141
51	DOELAP for Radiobioassay; Determination of Need	Feb. 26, 2001	2	166133 166134 166135 166136 166137
53	Activity Reports for Radiation Protection and Health Physics Services	1993-1995	36	pp 2-9 duplicate of 166188 pp 10-15 duplicate of 166133 pp. 16-21 duplicate of 166134 pp. 22-27 duplicate of 166135

PDF Page:	Title	Date	Pages	SRDB Ref ID
				pp. 28-33 duplicate of 166136 pp. 34-36 duplicate of 166137
89	Memo - Area IV Characterization Radioisotope Bid Package	Dec. 1, 1993	10	166139
99	Hot Spot at B/064	Aug.1995	6	166142
105	Bioassay Analysis Results - Letter to Employee on CEP Investigation	Nov. 21, 1994	1	166145
106	Amendment to RPP	Jan. 21, 1997	2	166138 pp. 2-3
108	Internal Dosimetry Program Review	Aug. 14, 1998	21	166147
129	Rad Worker II Equivalency	Oct. 11, 1995	8	166149
137	Request for Waiver DOELAP	Apr. 14, 1995	6	166151
143	External Dosimetry Technical Basis Document	Aug.12, 1994	34	166146
177	Incident Report: CAT Scanner Operation with Individual Inside Cell	Nov. 24, 1992	18	178276
195	Internal Dose Assessment Program Procedures	Dec. 8, 1982	73	73474
268	Duplicates of Pages 492 to 715	n/a	224	n/a
492	Amendments to ETEC Radiation Protection Plan	1996	18	166138 pp 2-19
510	Requests for Exemptions to 10 CFR 835	1996	26	166138 pp 20-40
536	Radiological Protection for DOE Activities	Sep. 29, 1995	10	166138 pp 44-53
546	RPP Approval	1995	6	166138 pp 54-59

PDF Page:	Title	Date	Pages	SRDB Ref ID
552	10 CFR 835 Radiation Protection Plan	Jun. 3, 1995	389	166138 pp 60-448
941	Memo - Performance of CEP	Sep. 2, 1993	53	166150
994	Quarterly Review of RIHL for Radiation Safety	Apr. 2, 1991	12	166159
1006	Activity Report for Radiation Protection and Health Physics Services	Nov. 28, 1994	6	166162
1012	Radiological Incident Reports	1988 - 1997	77	178275
1089	Resubmittal of request for Waiver for DOELAP Certification (additional info re: doses received)	May 12, 1995	7	166194
1096	Internal Dose Program Technical Basis Document and Procedure	Apr. 14, 2000	58	163084
1154	Methods and Procedures for Radiological Monitoring	Aug. 6, 2006	50	166196
1204	Status of 10 CFR 835 Implementation	Nov. 14, 1995	5	166197
1209	Status of 1992 Objective and Goals and Proposed 1993 Objectives and Goals	Jul. 31, 1992	5	166198
1214	Transmittal of 10 CFR 835 RPP	Jun. 5, 1995	2	178274
1216	Radiochemistry Audit of CEP	May 18, 1992	41	166200
1257	ETEC Advance Questions/Agenda	n/a	8	178273
1265	Code Numbers for Dosimetry Locations	Feb. 5, 2002	12	178272
*[a]	DOELAP Compliance EMBC	n/a	1053	178278

a. Multiple documents, contained in a single large file provided by the petitioner (09_DOELAP_COMPLIANCE_emcbc-2018-00694-f blaze.pdf) have been reviewed and loaded into the SRDB, both as individual files and as a composite document.