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Advisory Board on Radiation and Worker Health; August 26-27, 2020

Comment On: CDC-2020-0077-0001
Advisory Board on Radiation and Worker Health, National Institute for Occupational Safety and Health; August 26-27, 2020

Document: CDC-2020-0077-DRAFT-0010
Comment from Alliance of Nuclear Worker Advocacy Groups

Submitter Information

Email: [identifying information redacted]
Organization: Alliance of Nuclear Worker Advocacy Groups

General Comment

Please accept the written public comments and supporting documents for the Advisory Board on Radiation and Worker Health meeting. See attached file(s)

Attachments

- TBarrie comments ABRWH 8_2020 pt. 1
- TBarrie comments ABRWH 8_2020 pt 2
- TBarrie comments ABRWH 8_2020 pt. 3

ABRWH Meeting August 26/27, 2020

Public Comments – Terrie Barrie, ANWAG & Petitioner

Good Evening Members of the Board and Dr. Roberts. My name is Terrie Barrie of the Alliance of Nuclear Worker Advocacy Groups. I am also the co-petitioner for SEC petitions 192, 250, and 257.

I'd like to provide you with a few first-hand observations from someone who is active in the petition process and strives to work by the rules. Recently, NIOSH did not qualify the Rocky Flats petition 257. I don't think the Board is privy to NIOSH's internal deliberations or communications about petition requirements, the qualification process, providing advice for corrective action and so forth. I think it's important for the Board to understand these steps, and it's well within the purview of the Board to assess and provide recommendations in these matters. A request for Administrative Review of the decision was placed in the mail and uploaded to the docket for today's meeting. However, I thought I would use some examples from NIOSH's letter to help you understand. The documents I reference have been provided as exhibits in the petition.

First, the petition qualification notification letter is extremely difficult to understand. It was so difficult it literally took me days to compose these comments in the hope that I could explain the problems clearly to you. Allow me to elaborate on the content of this letter. For background, the original petition (for 257) was based on lack of monitoring for

metallic U235. Shortly after the petition form was filed, I received an incident report requested from DOE through FOIA a couple of years ago. After consultation with NIOSH, I added that incident report as another example of inadequate monitoring and possible falsification of records.

This is the easy part for me to explain- despite me mentioning this verbally and twice in writing the notification letter ignores the possible falsification of records. The letter does not even give a simple reason for denial such as, "NIOSH has carefully reviewed the possibility that records were falsified but found this not to be true."

The notification reads like the reason the petition didn't qualify was because I checked the wrong boxes on the form. There was no real explanation of why the evidence supplied was not sufficient.

For instance, NIOSH said that using E-5 of the form as the basis for petition did not qualify because E-5 must be, and I quote, "...discrete incidents likely to have involved exceptionally high level exposures, such as a criticality..." end quote.

When I first read that, I assumed they were talking about the incident report which involved a glovebox explosion releasing plutonium. By the way, that section of the regulations deals with health endangerment and not whether the petitioner provided the minimum amount of documentation to qualify a petition.

I continued to read the entire paragraph and NIOSH states that quote, "The basis was provided in the form of a cover letter submitted with the SEC Petition Form B and pertained to the inability to reconstruct uranium doses with sufficient accuracy..." and that NIOSH found that Rocky Flats did monitor for uranium exposure during the SEC proposed class time period.

What? Is NIOSH saying that the incident did not release a sufficiently high level of exposure to *plutonium* or was the reason because Rocky Flats monitored for uranium exposure? Again, it took me days but I finally figured out what NIOSH meant.

Second, this next item is one that may have been an issue with other petitions that did not qualify for the Board's review. Submitted was one page of a 174-page DOE document which supported one of the assertions that NIOSH's cannot reconstruct dose with sufficient accuracy for uranium. What was NIOSH's response? "We have that document in our database. It doesn't provide new information."

There was a specific reason for submitting this one page. It supported the fact that U-235 was found on a lathe which is used to machine metals.

NIOSH failed to respond to the petitioners' argument and explain exactly why this particular document was not relevant. Instead, they dismissed it outright because they

had the entire report in their database. How many times has NIOSH used that explanation in other petitions that did not qualify?

My request of the Board is to review past and future petition qualification denials and provide recommendations to facilitate communication with Petitioners. I could not find anything in the statute or the regulations which prevent the Board from creating a Work Group to review the documentation submitted for petitions which did not qualify and NIOSH's explanation(s) why they did not qualify. A report similar to the one sent to the Secretary on the dose reconstruction review could be submitted to the Secretary. I think that should be done.

Ten years ago, Dr. Howard, NIOSH Director, initiated the Ten-Year Review. Recommendation #21 states,

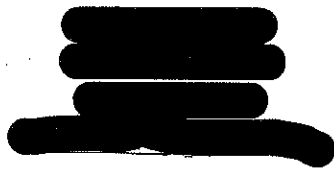
“NIOSH should continue and expand its efforts to cooperate with petitioners. Such efforts increase petitioners' knowledge of what is needed to gain SEC approval and should aid NIOSH in more quickly obtaining whatever information petitioners have about exposures and practices at potential SEC sites.”

This potential Work Group should also assess the formal and informal guidance provided by NIOSH to petitioners and the value of that assistance.

Last, one final issue I'd like to comment on is the new redaction policy. I only heard bits of the Argonne West Work Group meeting in July, but I did read SC&A's report and saw how it was overly redacted. The Board members requested the unredacted version. The petitioners need that version, too. Both NIOSH and SC&A have years of experience with protecting the privacy of individuals and I believe this new policy inhibits the transparency of the process.

Submitted: Terrie Barrie, August 26/27, 2020

Terrie Barrie



August 20, 2020

NIOSH/Division of Compensation and Analysis Support
1090 Tusculum Avenue
MS C-46
Cincinnati, OH 45226-1938

Subject: Request for Administrative Review of SEC petition 00257

To Whom It May Concern:

As the authorized representative for petitioner of the Rocky Flats petition 00257, I respectfully request the decision not to qualify the petition be reversed and that the petition is immediately forwarded to the Advisory Board on Radiation and Worker Health (Board) for further evaluation. This request is made in a timely manner.

The reasons that the National Institute for Occupational Safety and Health (NIOSH) did not qualify the petition, according to the letter dated July 31, 2020, are vague, inconsistent, incorrect, and ignored the evidence and arguments provided by the petitioner.

Regulations Regarding the Minimal Requirements to Qualify and NIOSH's Explanations Why This Petition Did Not Meet Those Standards

According to NIOSH's regulations and their website, the Minimum Requirements for a Petition to Qualify for Evaluation are as follows:

1. The claimant's authorization of the petition, based on NIOSH having found it could not complete a dose reconstruction for the claimant submitting the petition [an 83.14 petition); or
2. A proposed class definition identifying:
 - o Facility
 - o Relevant locations at the facility
 - o Job titles/duties
 - o Period of employment
 - o Exposure incident, if relevant.

The basis for infeasibility of dose reconstruction; either:

- o Lack of monitoring; or

- Destruction, falsification, or loss of records; **or**
- Expert report; **or**
- Scientific or technical report. (emphasis added)

NIOSH found no issue with the petitioner identifying the

- Facility
- Relevant locations at the facility
- Job titles/duties
- Period of employment

For background, the original petition designated as Number 00257 was based on lack of monitoring for metallic U235. Shortly after the petition form was filed, I received an incident report requested from the Department of Energy (DOE) through Freedom of Information Act (FOIA) request. I submitted this request a couple of years ago. This incident involved an explosion of a glovebox containing plutonium. After consultation with NIOSH, I added that incident report as another example of inadequate monitoring and possible falsification of records.

NIOSH's letter of July 31, 2020 reads like the reason the petition did not qualify was because the wrong boxes were checked on the form. There was no real explanation of why the evidence supplied was not sufficient enough to be presented to and reviewed by the Board.

Despite the confusing response, it appears that NIOSH's basis for not qualifying the petition is that the petitioners did not provide evidence that there was a lack of monitoring *or* falsification of records. Ample evidence was provided with the petition to show both lack of monitoring *and* falsification of records that would meet the minimum requirements to qualify the petition, as explained below.

NIOSH's Reasons not to Qualify the Petition and Petitioner's Rebuttal

1. NIOSH addressed Line E.5 of the SEC petition form which asks,

*E.5 Is the petition based on one or more unmonitored, unrecorded, or inadequately monitored *or* recorded exposure incidents? (emphasis added)*

NIOSH's first response concerns the incident report provided after the SEC petition form was submitted. Their decision why the evidence of this incident was rejected was because,

In the context of qualifying a petition using the E.5 basis, NIOSH regulation, 42 CFR §83.13 (c)(3)(i) refers to "...discrete incidents likely to have involved exceptionally high level exposures, such as a nuclear criticality incidents or other events involving similarly high levels of exposures resulting from the failure of radiation protection controls...". NIOSH reviewed and evaluated the incident you provided documentation for and determined that it did not result in

exceptionally high radiation exposures. NIOSH, therefore, could not qualify your petition under the E.5 basis.

42 CFR §83.13 (c)(3)(i) is the step in the regulations *after* NIOSH determines whether to evidence submitted by the petitioner meets the minimal requirement to assert that NIOSH cannot reconstruct dose with sufficient accuracy. Paragraph (i) only addresses whether the exposure to radiation created an endangerment to the health of the workers. The complete of paragraph (i) is,

For classes of employees that may have been exposed to radiation during discrete incidents likely to have involved exceptionally high level exposures, such as nuclear criticality incidents or other events involving similarly high levels of exposures resulting from the failure of radiation protection controls, NIOSH will assume for the purposes of this section that any duration of unprotected exposure could cause a specified cancer, and hence may have endangered the health of members of the class.

NIOSH committed a serious error when they used this section of the regulations to not qualify the petition. This section is not applicable to whether the incident in question (an explosion of a plutonium glovebox with injury) showed that the workers were inadequately or not monitored during that incident. NIOSH ignored the conclusions the petitioner. This and the other evidence provided with the petition will be discussed more fully later in this paper.

2. The original petition form was based upon the premise that Rocky Flats machined a metallic form of U-235 during this time period. U-235 was not supposed to be present at Rocky Flats after 1966. After a discussion with NIOSH, I agreed that this issue would be more appropriate under F.2 instead of E.5.

F.2 reads,

1. *If We have attached either documents or statements provided by affidavit that indicate that radiation monitoring records for members of the proposed class have been lost, falsified, or destroyed; or that there is no information regarding monitoring, source, source term, or process from the site where the energy employees worked. (Attach documents and/or affidavits to the back of the petition form.)*
3. NIOSH's letter did not address U-235 metal at all. They just issued a generic statement that they have internal monitoring data for uranium. They did not say that they have internal monitoring data specifically for the metal form of U-235.
4. NIOSH ignored the fact that there is a possible falsification of the Termination Record supplied as evidence. NIOSH also ignored the petitioner's assertion that the December 3,

6.1.6.1 ...*If the petition does not qualify as received, the petitioner will be advised of the deficiencies and provided 30 calendar days (which may be extended) to submit additional information to remedy those deficiencies.*

In their letter dated June 9, 2020 NIOSH identified only one deficiency. This “deficiency” concerned whether the document, *An Assessment and Evaluation for Recycle/Reuse of Contaminated Process and Metallurgical Equipment at the DOE Rocky Flats Plant Site – Building 865*, should have been placed in Line F.1 instead of F.4.

I objected to the characterization as “deficiency” and informed NIOSH in my June 11, 2020 response that NIOSH should have labeled this as a “clarification” instead. That “deficiency” would have had no bearing on whether the petition qualified for the Board’s review.

As will be explained below, NIOSH did not provide a reasonable explanation on each and every piece of evidence the petitioner provided to support the petition.

2. Metallic Form of U-235 Machined

██████████ submitted a statement that he machined a large ingot of U-235 in Rocky Flats Building 444. His records submitted show that he was assigned to Building 444 in April, 1985 for a few months.

██████████ statement says that after the machining process the “...sample was sent back to R & D.”

According to NIOSH’s Site Description Document for the Rocky Flats Plant¹ it appears that Building 865 was the R&D facility,

Building 865 began operations in 1970. It served as an R&D facility primarily for manufacturing processes using uranium and beryllium. The work involved metalworking and metallurgy techniques. The metallurgical operations involved the development of alloys and alloying processes, and fabrication of prototype hardware. Metalworking operations include melting and casting, forging, press forming, extrusion, drawing, rolling, diffusion bonding, hydrospinning, swaging, cutting and shearing, and heat-treating. In addition, glovebox operations involved high-purity beryllium powder and machining operations that generally involved nonfissionable materials.

This could very well be the Building ██████████ referred to in his statement. However, NIOSH never asked ██████████ to clarify the statement or request that he be interviewed by NIOSH staff.

In support of ██████████ statement, the petitioner provided page 59 of *An Assessment and Evaluation for Recycle/Reuse of Contaminated Process and Metallurgical Equipment at the DOE Rocky Flats Plant Site – Building 865*, published in 1993. It proves that there was

¹ <https://www.cdc.gov/niosh/ocas/pdfs/tbd/rocky2-r1.pdf>

residual contamination of U-238, U-235 and U-234 on a lathe – a metal working machine – four years after production basically ceased at Rocky Flats.

NIOSH dismissed this document claiming that since it was already in their database it was not new evidence. Granted they may have the entire document in their files but it is apparent they did not read page 59 or understand the relevance to the petitioner’s arguments.

NIOSH insists that all metallurgical processes involved U-235 ended in 1966. The letter never explained why page 59 itself is not relevant. It clearly shows that U-235 was residual contaminant on the lathe. Granted, it appears that the residual contamination came from machining U-238, but the fact remains it is on a metal processing equipment. It matters not if the U-235 came from the U-238 or if it was the remains of a process used on, perhaps, a metallic U-235 ingot. NIOSH failed to explain why this was not relevant.

Evidence was also provided that during the proposed class, Rocky Flats only monitored for gross uranium. I provided additional documentation in my June 11, 2020 response to clarify some issues that in the late 1990s monitoring was performed for individual uranium isotopes instead of gross uranium. The intent was to provide an example of the difference in monitoring methods from one decade to the next. This was submitted to support the petitioner’s assertion that NIOSH cannot reconstruct dose with sufficient accuracy if they do not know which type of uranium a worker was exposed to. Guessing which isotope the worker was exposed to fails to meet the “sufficient accuracy” standard required by the law.

Page 6 of the petition documents also show possible falsification of records as well as the inadequacy of the termination records. The termination record clearly shows that there is an erasure/white-out before “U-235” was entered in the block.

| 17. | INTERNAL EXPOSURE | 18. | 19. | 20. | 21. | NUCLEIDS | (LJ) |
|-----|-------------------|-----|-----|-----|--------------|----------|------|
| | | IB | | | CP4239 | | |
| | | IB | | | CAN241 | | |
| | | MB | | | U235 | | |
| | | MLV | | | PLU239 AM241 | | |

also machined U-238. This document does not reflect that exposure.

NIOSH’s Internal Dosimetry for Rocky Flats, ORAUT-TKBS-0011-5, states,

After 1963 (when EU operations were phased out), the default condition was to credit the result to plutonium. In either case, the results should be considered to be upper bounds because of the nonspecificity of the analysis [32]. The MDAs for gross alpha in Table 5-11 were determined as described in Attachment A.

Table 5-11. Median MDAs for gross alpha measurements.

| Period | dpm/24-hr sample |
|-----------|------------------|
| 1952 | 1 |
| 1953 | 0.88 |
| 1954-1959 | 0.79 |
| 1960-1962 | 0.55 |
| 1963 | 0.55 |
| 1964-1971 | 0.69 |

Uncertainties for the gross alpha urine results have not been quantified or reported. To estimate the uncertainty for results without a reported uncertainty, a reasonable approach is to divide...

Yet [REDACTED] remembers machining an ingot of U-235 in the mid-1980s.

The same document continues,

The urine data logs through 1971 do not identify the involved isotopes. However, it is reasonable to assume that all the alpha-emitting uranium isotopes were included in the air proportional detector measurements. For the 1980s, 238U contributes 89% of the alpha activity. Therefore, the logs have not been reviewed to determine the other uranium isotopes. Rather, it is favorable to claimants to assume that the reported urine result pertains only to 238U and to determine additional intakes for the other uranium isotopes. (emphasis added)

Yet [REDACTED] termination records do not show any exposure to U-238 despite the fact that he machined it in Building 444. And remember that U-238 does contain a certain amount of U-235.

NIOSH's statement that they have monitoring data does not fulfill their burden to provide the "...findings and conclusions, and the reasons or basis therefor, on all the material issues of fact, law, or discretion presented on the record..." as required under the APA.

3. December 3, 1985 Incident

NIOSH minimized the seriousness of the incident by labeling it as a "plutonium contamination event".

A glovebox exploded in the face of a worker who was cleaning it, causing severe physical injuries to the face and upper body of the worker. A plutonium fire occurred because of the explosion.

The incident occurred at 10:04 am in Building 771.

In a phone call with NIOSH on May 11, 2020 and a subsequent email dated the same day, I explained that this incident report received from DOE through a FOIA request presented the following issues:

1 - The original estimated release into the atmosphere, calculated 4 to 6 minutes after notification was 7 curies, page 8. The 1957 fire was only estimated to be 2.4 curies.²

2 - The "Onsite Analysis", written 15 to 17 minutes after the notification shows the which buildings downwind of the fire were affected and where the workers should assemble, page 1

3. Page 2 shows the where the plume of contamination would travel to the surrounding communities. This was created at 36 to 38 minutes after notification.

4. The windspeed used for the calculation on page 8 at 10:06 am shows 43 mph. I may have missed it but the highest recorded windspeed is 30 mph shown on page 33. The average windspeeds are quite low. Page 41 shows the windspeed at 10:10 am to be 27 mph. There is no record of windspeed taken at 10:06 am. All records appear to be taken at 10:08 am.

5. Page 45 and 46 explain that the Fire Department had a power outage due to high winds at 10:30 am, 28-30 minutes after explosion. Windspeed at that time was

6. Page 48 shows that the employee who was injured in the explosion had 500 cpm on her overalls. She had severe injuries to her face and there's no record of skin contamination to that part of her body. Page 50 shows that another worker involved in the first response had 100,000 cpm on his wrist. Body count results are N/A on page 48.

NIOSH's letter disqualified this piece of evidence only because they contend that the incident did not result in "exceptionally high level exposures". Yet, page 8 of the FOIA response shows that 30 minutes after the explosion that a Category 3 Emergency, existed for exposure >5 REM existed and that Rocky Flats should consider evacuation for the "Downwind FencePost". It is likely the "FencePost" meant the eastern boundary of the Rocky Flats Plant.

² Subsequent research shows that the 1957 fire released anywhere between 2.9 and 36 curies, https://colorado.gov/pacific/sites/default/files/HM_sf-rocky-flats-1957-fire.pdf

COMPARE EFFECTIVE WHOLE BODY DOSES TO CEH EMERGENCY CATEGORIES:

CAT. I < 1 REM 'INCREASED SURVEILLANCE'
CAT. II 1-5 REM 'DUCK & COVER'
CAT. III > 5 REM 'CONSIDER EVACUATION'

COMMENTS:

BASED ON 10:30AM WST WIND DATA WE STILL SHOW A CATEGORY 3 AT THE DOWNWIND FENCEPOST BUT LESS THAN A CATEGORY 1 AT FOUR MILES. THIS IS BASED ON MAXIMUM CREDIBLE ACCIDENT OF 100 GRAMS ROCKY FLATS PLUTONIUM RELEASE.

CALCULATIONS PERFORMED BY JM Langsted
PHONE 471 7005

One would expect that a situation where the workers and the public should consider evacuating their workplace and homes would be a high enough level of exposure. And as explained above, however, it is not necessary to prove that an incident resulted in high exposures to qualify a petition. Only that the incident provides evidence that a worker or a group of workers were not monitored or were inadequately monitored.

30 minutes after the explosion, which could have released as much as 100 grams of plutonium if not more, the incident report clearly shows which Rocky Flats workers should have been evacuated. There is no evidence from the incident report that these workers were indeed evacuated. NIOSH does not explain their conclusion why they did not consider the recommended evacuation order was not significant or whether these workers were indeed evacuated to the western side of the plant.

Unlike NIOSH's investigation into [REDACTED] bioassay records or whether they had a copy of *An Assessment and Evaluation for Recycle/Reuse of Contaminated Process and Metallurgical Equipment at the DOE Rocky Flats Plant Site – Building 865* in their database, NIOSH did not report that they actually investigated the bioassay records for the workers involved in the incident as they should have. Neither did they report on whether those employees who were working downwind were evacuated to a safer place and were appropriately monitored for this incident.

This major explosion does not even show up in their site profile, <https://www.cdc.gov/niosh/ocas/pdfs/tbd/rocky2-r1.pdf>, as an incident in Attachment D. Why not? I received it through a FOIA request. It should be in their database.

There also appears to be falsification of records as noted above in number 4 of the May 11, 2020 email to NIOSH. Page 8 of the incident report states that the wind speed was 43 MPH at 10:06 AM. There is no corresponding data collection in the incident report which

confirms this windspeed. The earliest windspeed document in the report occurs at 10:08 AM noting that the windspeed was 12 MPH.

NOTE: ENTER "-99 9" FOR MISSING NUMERIC DATA

WIND DIRECTION (DEG):
287

WIND SPEED (M/S):
12

TEMPERATURE (DEG F):
47

P/G STABILITY CLASS (1-6):
4

SEA LEVEL PRESSURE (IN. HG) (DEFAULT = 29.923):
29.72

SNOW LINE ELEVATION (FT ABOVE SEA LEVEL)
USE 15000 FOR NO SNOW, 4000 FOR SNOW EVERYWHERE:
7000

CURRENT MONTH (1 - 12):
12

3-DEC-85

10:08:02

JHL & RJH

CONCLUSION

NIOSH's decision to not qualify Petition 00257 for a class of Rocky Flats workers must be reversed and that the petition is immediately forwarded to the Advisory Board on Radiation and Worker Health for further evaluation.

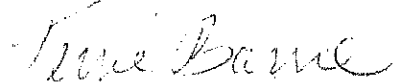
NIOSH has,

- Failed to address the possible falsification of records despite being advised of them.
- Failed to identify any piece of evidence/supporting documents which was deficient.
- Failed to work with the petitioner's authorized representative on issues before the letter to disqualify the petition was issued as specified in NIOSH's own internal policy document.
- Failed to thoroughly research the December 3, 1985 glovebox explosion to determine whether those directly involved with the incident but also those who were working in the plume received proper monitoring or were evacuated to a safe place.
- Failed to address each and every issue submitted by the petitioner as required by the APA.

The petition has met the minimum requirements to qualify Petition 00257.

Thank you for your time and consideration.

Sincerely,



Terrie Barrie

Cc: 

Enclosures: SEC Petition complete with supporting document
December 3, 1985 Incident Report
Email dated 12/16/2019
Email dated 5/11/2020
Letter from NIOSH to petitioners dated 6/9/2020
Letter from petitioners to NIOSH dated 6/11/2020
Letter from NIOSH to petitioners dated 7/31/2020

Terrie Barrie

April 21, 2020

SEC Petition
NIOSH DCAS
1090 Tusculum Avenue, MS-C47
Cincinnati, Ohio 45226
Fax: (513) 533-6826

Subject: Special Exposure Cohort Petition for the Rocky Flats Plant

To Whom It May Concern:

Please accept the enclosed petition to expand the Special Exposure Cohort class to include all workers from the Rocky Flats Plant from January 1, 1984 through December 31, 1989.

The basis for this petition is as follows:

- The Department of Energy records¹ state that highly enriched uranium (HEU, U-235) processes ended at the Rocky Flats Plant by 1966.
- The Division of Compensation and Analysis Support's technical document to reconstruct dose for HEU after December 31, 1983 only considers exposure to the liquid form, uranyl nitrate, and only in Building 886².
- A worker's termination record dated 1989, attached, shows that he has a systemic burden of Uranium 235 in his kidneys.
- The worker was a journeyman machinist at Rocky Flats and worked on various metals, including plutonium and uranium.
- The machinist remembers machining U-235 and his statement to that is attached.
- The worker's records confirm that he was present in Building 444, where he states he machined the HEU, after the end of the current SEC class.
- Page 59 of DOE/HWP-139³ states that a lathe was used in Building 865 to machine depleted uranium (DU)
 - A small amount (0.5%) of U-235 also remains in the containment after the enrichment process. Thus, the ratio of isotopes in the containment (in $\mu\text{Ci/cc}$) is $1/0.005/0.00014$ of U-238/U-235/U-234. •

¹ https://www.lm.doe.gov/land/sites/co/rocky_flats/haer/base/Buildings/881.htm

² <https://www.cdc.gov/niosh/ocas/pdfs/dps/dc-rfpirdcmf-r0.pdf>

³ <https://www.osti.gov/servlets/purl/10143975>

- While the machinist's records do show that he has a systemic burden of U-235 his other dosimetry records do not delineate whether his uranium exposures were due to U-234, U-235 or U-238.

In conclusion, DCAS cannot reconstruct dose with sufficient accuracy for the Rocky Flats Plant from January 1, 1984 through December 31, 1989 because,

- U-235 was machined at Rocky Flats after 1966.
- DCAS only considers the liquid form of U-235 when reconstructing dose after December 31, 1983 and only in Building 886.
- Machining depleted uranium will have some residue of U-235 remaining in the machine tool.
- Building 444 was not the only building which machined depleted uranium.

If you have any questions or need further clarification, please do not hesitate to contact me.

Sincerely,

Terrie Barrie

Terrie Barrie

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

cc: [REDACTED]

Enc: SEC petition and supporting documents

Special Exposure Cohort Petition
under the Energy Employees Occupational
Illness Compensation Program Act

U.S. Department of Health and Human Services
Centers for Disease Control and Prevention
National Institute for Occupational Safety and Health

OMB Number: 0920-0639

Expires: 01/31/2023
Page 1 of 7

Special Exposure Cohort Petition — Form B

Use of this form is voluntary. Failure to use this form will not result in the denial of any right, benefit, or privilege to which you may be entitled.

General Instructions on Completing this Form (complete instructions are available in a separate packet):
Except for signatures, please **PRINT** all information clearly and neatly on the form.

Please read each of Parts A – G in this form and complete the sections appropriate to you. If there is more than one petitioner, then each petitioner should complete those sections of Parts A – C of the form that apply to them. Additional copies of the first two pages of this form are provided at the end of the form for this purpose. A maximum of three petitioners is allowed.

If you need more space to provide additional information, use the continuation page provided at the end of the form and attach the completed continuation page(s) to Form B.

For Further Information: If you have questions about the use of this form, please call the following NIOSH phone number and request to speak to someone in the Division of Compensation Analysis and Support about an SEC petition: 513-533-6825.

| | | |
|--------------------|--|------------|
| If you are: | <input type="checkbox"/> A Labor Organization, | Start at D |
| | <input type="checkbox"/> An Energy Employee (current or former), | Start at C |
| | <input type="checkbox"/> A Survivor (of a former Energy Employee), | Start at B |
| | <input checked="" type="checkbox"/> A Representative (of a current or former Energy Employee); | Start at A |

A. Representative Information Complete Part A if you are authorized by an Energy Employee or Survivor(s) to petition on behalf of a class.

A.1 Are you a contact person for an organization? Yes (Go to A.2) No (Go to A.3)

A.2 Organization Information:

Name of Organization

Position of Contact Person

A.3 Name of Petition Representative:

Mrs TERRIE BARRIE

Mr./Mrs./Ms. First Name Middle Initial Last Name

A.4 Address of Petition Representative:

Street Apt # P.O. Box

City State Zip Code

A.5 Telephone Number of Petition Representative:

A.6 Email Address of Petition Representative:

A.7 Check the box at left to indicate you have attached to the back of this form written authorization to petition by the survivor(s) or energy employee(s) indicated in Parts B or C of this form.

If you are representing a Survivor, go to Part B;
if you are representing an Energy Employee, go to Part C.

Special Exposure Cohort Petition
under the Energy Employees Occupational
Illness Compensation Program Act

U.S. Department of Health and Human Services
Centers for Disease Control and Prevention
National Institute for Occupational Safety and Health

OMB Number: 0920-0639

Expires: 01/31/2023
Page 2 of 7

Special Exposure Cohort Petition — Form B

B. Survivor Information Complete Part B if you are a Survivor or representing a Survivor.

B.1 Name of Survivor:

Mr./Mrs./Ms. First Name Middle Initial Last Name

B.2 Address of Survivor:

Street Apt # P.O. Box

City State Zip Code

B.3 Telephone Number of Survivor: (____) _____

B.4 Email Address of Survivor: _____

B.5 Relationship to Energy Employee: Spouse Son/Daughter Parent
 Grandparent Grandchild

Go to Part C.

C. Energy Employee Information Complete Part C UNLESS you are a labor organization.

C.1 Name of Energy Employee:

Mr./Mrs./Ms. First Name Middle Initial Last Name

C.2 Former Name of Energy Employee (e.g., maiden name/legal name change/other):

Mr./Mrs./Ms. First Name Middle Initial Last Name

C.3 Address of Energy Employee (if living):

Street Apt # P.O. Box

City State Zip Code

C.4 Telephone Number of Energy Employee: _____

C.5 Email Address of Energy Employee: _____

C.6 Employment Information Related to Petition:

C.6a Energy Employee Number (if known): _____

C.6b Dates of Employment: Start _____ End _____

C.6c Employer Name: _____

C.6d Work Site Location: ROCKY FLATS

C.6e Supervisor's Name: _____

Go to Part E.

Special Exposure Cohort Petition
under the Energy Employees Occupational
Illness Compensation Program Act

U.S. Department of Health and Human Services
Centers for Disease Control and Prevention
National Institute for Occupational Safety and Health

OMB Number: 0920-0639

Expires: 01/31/2023

Special Exposure Cohort Petition — Form B

Page 3 of 7

D. Labor Organization Information Complete Part D ONLY if you are a labor organization.

D.1 Labor Organization Information:

Name of Organization

Position of Contact Person

D.2 Name of Petition Representative:

Mr./Mrs./Ms. First Name Middle Initial Last Name

D.3 Address of Petition Representative:

Street Apt # P.O. Box

City State Zip Code

D.4 Telephone Number of Petition Representative: () _____

D.5 Email Address of Petition Representative: _____

D.6 Period during which labor organization represented energy employees covered by this petition
(please attach documentation):

Start _____ End _____

D.7 Identity of other labor organizations that may represent or have represented this class
of energy employees (if known):

Go to Part E.

Special Exposure Cohort Petition — Form B

E. Proposed Definition of Energy Employee Class Covered by Petition Complete Part E.

E.1 Name of DOE or AWE Facility: ROCKY FLATS

E.2. Locations at the Facility relevant to this petition:
ALL

E.3 List job titles and/or job duties of energy employees included in the class. In addition, you can list by name any individuals other than petitioners identified on this form who you believe should be included in this class:
ALL

E.4 Employment Dates relevant to this petition:

| | | | |
|-------|-----------------|-----|-------------------|
| Start | <u>1/1/1984</u> | End | <u>12/31/1989</u> |
| Start | _____ | End | _____ |
| Start | _____ | End | _____ |

E.5 Is the petition based on one or more unmonitored, unrecorded, or inadequately monitored or recorded exposure incidents?: Yes No

If yes, provide the date(s) of the incident(s) and a complete description (attach additional pages as necessary):

SEE ATTACHED COVER LETTER

Special Exposure Cohort Petition — Form B

F. Basis for Proposing that Records and Information are Inadequate for Individual Dose Reconstruction Complete Part F.

Complete at least one of the following entries in this section by checking the appropriate box and providing the required information related to the selection. You are not required to complete more than one entry.

- F.1 I/We have attached either documents or statements provided by affidavit that indicate that radiation exposures and radiation doses potentially incurred by members of the proposed class, that relate to this petition, were not monitored, either through personal monitoring or through area monitoring.

(Attach documents and/or affidavits to the back of the petition form.)

Describe as completely as possible, to the extent it might be unclear, how the attached documentation and/or affidavit(s) indicate that potential radiation exposures were not monitored.

- F.2 I/ We have attached either documents or statements provided by affidavit that indicate that radiation monitoring records for members of the proposed class have been lost, falsified, or destroyed; or that there is no information regarding monitoring, source, source term, or process from the site where the energy employees worked.

(Attach documents and/or affidavits to the back of the petition form.)

Describe as completely as possible, to the extent it might be unclear, how the attached documentation and/or affidavit(s) indicate that radiation monitoring records for members of the proposed class have been lost, altered illegally, or destroyed.

SEE ATTACHED COVER LETTER

Special Exposure Cohort Petition
under the Energy Employees Occupational
Illness Compensation Program Act

U.S. Department of Health and Human Services
Centers for Disease Control and Prevention
National Institute for Occupational Safety and Health

OMB Number: 0920-0639

Expires: 01/31/2023
Page 6 of 7

Special Exposure Cohort Petition — Form B

F.3 I/We have attached a report from a health physicist or other individual with expertise in radiation dose reconstruction documenting the limitations of existing DOE or AWE records on radiation exposures at the facility, as relevant to the petition. The report specifies the basis for believing these documented limitations might prevent the completion of dose reconstructions for members of the class under 42 CFR Part 82 and related NIOSH technical implementation guidelines.

(Attach report to the back of the petition form.)

F.4 I/We have attached a scientific or technical report, issued by a government agency of the Executive Branch of Government or the General Accounting Office, the Nuclear Regulatory Commission, or the Defense Nuclear Facilities Safety Board, or published in a peer-reviewed journal, that identifies dosimetry and related information that are unavailable (due to either a lack of monitoring or the destruction or loss of records) for estimating the radiation doses of energy employees covered by the petition.

(Attach report to the back of the petition form.)

Go to Part G.

G. Signature of Person(s) Submitting this Petition Complete Part G.

All Petitioners should sign and date the petition. A maximum of three persons may sign the petition.

Tomie Prance
Signature

4/20/2020
Date

Signature

Date

Signature

Date

Notice: Any person who knowingly makes any false statement, misrepresentation, concealment of fact or any other act of fraud to obtain compensation as provided under EEOICPA or who knowingly accepts compensation to which that person is not entitled is subject to civil or administrative remedies as well as felony criminal prosecution and may, under appropriate criminal provisions, be punished by a fine or imprisonment or both. I affirm that the information provided on this form is accurate and true.

Send this form to:
SEC Petition
Division of Compensation Analysis and Support
NIOSH
1090 Tusculum Ave, MS-C-47
Cincinnati, OH 45226

If there are additional petitioners, they must complete the Appendix Forms for additional petitioners.
The Appendix forms are located at the end of this document.

Public Burden Statement

Public reporting burden for this collection of information is estimated to average 3 minutes per response, including time for reviewing instructions, gathering the information needed, and completing the form. If you have any comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, send them to CDC Reports Clearance Officer, 1600 Clifton Road, MS-E-11, Atlanta GA, 30333; ATTN:PRA 0920-0639. Do not send the completed petition form to this address. Completed petitions are to be submitted to NIOSH at the address provided in these instructions. Persons are not required to respond to the information collected on this form unless it displays a currently valid OMB number.

Privacy Act Advisement

In accordance with the Privacy Act of 1974, as amended (5 U.S.C. § 552a), you are hereby notified of the following:

The Energy Employees Occupational Illness Compensation Program Act (42 U.S.C. §§ 7384-7385) (EEOICPA) authorizes the President to designate additional classes of employees to be included in the Special Exposure Cohort (SEC). EEOICPA authorizes HHS to implement its responsibilities with the assistance of the National Institute for Occupational Safety (NIOSH), an Institute of the Centers for Disease Control and Prevention. Information obtained by NIOSH in connection with petitions for including additional classes of employees in the SEC will be used to evaluate the petition and report findings to the Advisory Board on Radiation and Worker Health and HHS.

Records containing identifiable information become part of an existing NIOSH system of records under the Privacy Act, 09-20-147 "Occupational Health Epidemiological Studies and EEOICPA Program Records and WTC Health Program Records, HHS/CDC/NIOSH." These records are treated in a confidential manner, unless otherwise compelled by law. Disclosures that NIOSH may need to make for the processing of your petition or other purposes are listed below.

NIOSH may need to disclose personal identifying information to: (a) the Department of Energy, other federal agencies, other government or private entities and to private sector employers to permit these entities to retrieve records required by NIOSH; (b) identified witnesses as designated by NIOSH so that these individuals can provide information to assist with the evaluation of SEC petitions; (c) contractors assisting NIOSH; (d) collaborating researchers, under certain limited circumstances to conduct further investigations; (e) Federal, state and local agencies for law enforcement purposes; and (f) a Member of Congress or a Congressional staff member in response to a verified inquiry.

This notice applies to all forms and informational requests that you may receive from NIOSH in connection with the evaluation of an SEC petition.

Use of this form is voluntary. Failure to use this form will not result in the denial of any right, benefit, or privilege to which you may be entitled.

Special Exposure Cohort Petition
under the Energy Employees Occupational
Illness Compensation Program Act

U.S. Department of Health and Human Services
Centers for Disease Control and Prevention
National Institute for Occupational Safety and Health

Petitioner Authorization Form

OMB Number: 0920-0639

Expires: 01/31/2023

Page 1 of 2

**Use of this form is voluntary. Failure to use this form will not result in
the denial of any right, benefit, or privilege to which you may be entitled.**

Instructions:

If you wish to petition HHS to consider adding a class of energy employees to the Special Exposure Cohort and you are NOT either a member of that class, a survivor of a member of that class, or a labor organization representing or having represented members of that class, then 42 CFR Part 83, Section 83.7(c) requires that you obtain written authorization. You can obtain such authorization from either an energy employee who is a member of the class or a survivor of such an employee. You may use this form to obtain such authorization and submit the completed form to NIOSH with the related petition. Please print legibly.

For Further Information: If you have questions about these instructions, please call the following NIOSH phone number and request to speak to someone in the Division of Compensation Analysis and Support about an SEC petition: 513-533-6825.

**Authorization for Individual or Entity to Petition HHS on Behalf of a Class of Energy Employees for
Addition to the Special Exposure Cohort**

I,

Name of Class Member or Survivor

Street Address of Class Member or Survivor Apt. # P.O. Box

City, State, Zip Code of Class Member or Survivor

do hereby authorize:

Terrie Barrie

Name of Petitioner

Address of Petitioner Apt. # P.O. Box

City, State and Zip Code of Petitioner

to petition the Department of Health and Human Services on behalf of a class of energy employees that includes:

All Rocky Flats workers employed from 1/1/1984 through 12/31/1989

Name of Class Member (energy employee, not the employee's survivor)

for the addition of the class to the Special Exposure Cohort, under the Energy Employee's Occupational Illness Compensation Program Act (42 U.S.C. §§ 7384-7385).

In providing this authorization, I recognize that the petitioner named above will have all the rights of a petitioner as provided for under 42 CFR Part 83.

Signature of Class Member or Survivor

Date

04/20/2020

My name is [REDACTED] I was a journeyman machinist at Rocky Flats from March 1982 to July 1989.

My termination papers show that I have a systemic burden in my kidneys of U-235.

I remember I did a machining process on a large ingot of U-235 in Building 444. I took a sample of the metallurgical content, put it into a sampling can, marked and labeled the can per traveler as to when I took that sample. I did this process to determine the grain structure of the metal. This was performed on a mill. I did not wear a respirator. I remember it was shipped back to R & D.

I knew it was U-235 because it sparked and flickered when you looked at it. U-238 didn't do that. And it was warm to the touch.

While I did have air monitoring when I machined beryllium in 444, I do not remember having that when I machined the U-235.

According to my employment records I was in Building 444 in 1985.

Signed: _____

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

Date: _____

4/20/2020

INSTRUCTIONS FOR COMPLETING DOE FORM 8484.8
Termination Occupational Exposure Report

1. GENERAL INSTRUCTIONS

- a. Pursuant to DOE §484.1, a Termination Exposure Report summarizing whole body exposures recorded during the period of employment by DOE and DOE contractor shall be prepared upon termination.
- b. Please print all information. The letter 'O' should be printed '0' to differentiate it from the number zero. Similarly, the letter '2' should be printed '8' to differentiate it from the number '2'. Several of the data items require data to be right justified (R.J.), written from the right hand side of the field, while others require data to be left justified (L.J.), written from the left hand side of the field. All months and days should be represented by two-digit numbers (e.g., September 3, 1941, should be written, 09-03-41).
- c. Only one character per indicated space is allowed. Do not use more than the allotted spaces on the form.
- d. **PREPARED BY, DATE, ORGANIZATION, AND ADDRESS**—This information is for reference, should future verification be required from the individual who originally encoded the summary information. If cards or tapes are submitted, this portion of DOE FORM 8484.8 should be completed and submitted with them.
- e. For each individual reported, there must be identification data ('1' in column 80) and either external exposure data ('2' in column 80) or internal exposure data ('3' in column 80). The '2' or '3' cards, as many as necessary, should be grouped and follow the '1' card when submitted to assure that all exposure data for an individual is reported.

2. SPECIFIC INSTRUCTIONS

- a. **SOCIAL SECURITY NUMBER:** Enter social security number of individual being reported. Use the word "none" for individuals with no social security number and "unknown" for those who refuse to reveal it. In either case, the entry should be left justified.
- b. **EMPLOYMENT DATE:** Enter date the individual was hired. For visitors, hire dates are not required.
- c. **NAME:** Enter first name of the individual starting in column 22, the middle initial in column 37, and the last name starting in column 38. If there is no middle initial, leave that box blank.
- d. **BIRTH:** Enter birthdate of individual.
- e. **TERMINATION:** Enter the date the individual was terminated. For visitors, the end exposure date will be the same as the termination date.
- f. **CONTRACT CODE:** A unique identifier assigned to each contractor and DOE office reporting to the Radiation Exposure System. The contract code should be left justified in the field with hyphens included and spaces trailing. This section and item 7, Type, must always be completed and consistent for all cards (1 through 3).
- g. **TYPE:** Enter alphabetic character to indicate type of organization:
 - (1) 'C' = DOE Contractor
 - (2) 'G' = DOE Office
- h. **BEGIN:** Enter beginning monitoring date of exposure for external exposure reports.

- i. **END:** Enter ending monitoring date of exposure for external exposure reports.
- j. **AREA EXP:** Enter 1-character code to indicate the area of exposure:
 - (1) 'WB' = Whole Body
 - (2) 'SK' = Skin
 - (3) 'HN' = Hands
 - (4) 'FA' = Forearms
 - (5) 'EX' = Externally
 - (6) 'EY' = Eye
 - (7) 'HD' = Head
 - (8) 'GN' = Gonads
- k. **EXTERNAL EXPOSURE:** Indicate the total dose in REMS that was recorded for the specified part of body during the indicated period of exposure; use seven digits, three decimal positions. If the total dose was recorded as being _____, justify data and omit the decimal point, e.g., code 1.252 as 1252.

- l. **TYPREC:** Always equal 'T' for terminated employees. Always equal 'V' for report of visitor exposure.

- m. **TYPEXP:** Always equal 'E' for external.

- n. **SYSTEM:** Enter system code of exposure for internal exposure reports.

- o. **END:** Enter ending date of exposure for internal exposure reports.

- p. **ORGAN CODE:** Enter organ code to indicate internal exposure.

| | | | |
|----------------------|----|--------------------|----|
| (1) Lung | 28 | (8) Liver | 56 |
| (2) Bone | 11 | (9) Testes | 78 |
| (3) Digestive System | 30 | (10) Prostate | 77 |
| (4) Whole Body | 00 | (11) Thyroid | 96 |
| (5) Kidney | 71 | (12) Ovary | 87 |
| (6) Spleen | 07 | (13) Muscle | 13 |
| (7) Pancreas | 59 | (14) Adrenal Gland | 93 |

- q. **INTERNAL EXPOSURE:** Enter estimate of internal disposition; seven digits, three decimal positions (right justify numbers omit the decimal point, e.g., code 45.252 as 45252). If the total dose was recorded as being minimal (i.e., less than measurable by the monitoring system employed), place an 'M.'

- r. **METH. DOSE:** Method of determining dose:
 - (1) B - Bioassay
 - (2) IV - In-vivo count

- s. **ORGAN CODE:** Second organ code (see number 16, if required).

- t. **UNITS:** Unit of measure codes:
 - (1) Microcuries 'C'
 - (2) Micrograms 'D'
 - (3) % of Body Burden 'A'
 - (4) % of Lung Burden 'G'
 - (5) % of Thyroid Burden 'H'

- u. **NUCLIDES:** Enter the deposited nuclide(s), left justified. Use the proper isotope notation as shown in Chapter XI, omitting hyphens and spacing. If the dose resulted from a mixture of nuclides, list the major nuclides in descending order of activity (i.e., Cesium 137 and Cobalt 60 would be listed).

- v. **TYPREC:** Always equal 'T' terminated employees. Always equal 'V' for report to visitor exposure.

- w. **TYPEXP:** Always equal 'I' for internal.

ROCKY FLATS PLANT

NAME: [REDACTED]

WORK HISTORY

| COMPANY NAME | JOB TITLE | BUILDING | START DATE |
|------------------------|-----------|----------|------------|
| ROCKWELL INTERNATIONAL | | | 03/01/1982 |
| ROCKWELL INTERNATIONAL | | 460 | 10/15/1984 |
| ROCKWELL INTERNATIONAL | MACHINIST | 444 | 04/08/1985 |
| ROCKWELL INTERNATIONAL | MACHINIST | 440 | 08/05/1985 |
| ROCKWELL INTERNATIONAL | MACHINIST | 460 | 10/21/1985 |
| ROCKWELL INTERNATIONAL | MACHINIST | 460 | 01/23/1986 |
| ROCKWELL INTERNATIONAL | MACHINIST | 460 | 04/07/1986 |
| ROCKWELL INTERNATIONAL | MACHINIST | 460 | 04/28/1988 |
| ROCKWELL INTERNATIONAL | MACHINIST | 460 | 10/11/1988 |

POTENTIAL EXPOSURE SURVEILLANCE

PRIOR EXPOSURE CURRENT EXPOSURE

PULMONARY FUNCTION

| DATE | FVC | FEV1 | RATIO |
|------------|------|------|-------|
| 04/16/1981 | 4.10 | 2.57 | |
| 09/10/1982 | 5.27 | 4.51 | 86 |
| 07/05/1983 | 5.13 | 4.22 | 82 |
| 06/27/1985 | 5.18 | 4.37 | 84 |

AUDIOGRAM

| DATE | LEFT | | | | | | | | RIGHT | | | | | | | |
|------------|------|------|------|------|------|------|------|-----|-------|------|------|------|------|------|--|--|
| | 500 | 1000 | 2000 | 3000 | 4000 | 6000 | 8000 | 500 | 1000 | 2000 | 3000 | 4000 | 6000 | 8000 | | |
| Baseline | 5 | 0 | 0 | 0 | 5 | 70 | 65 | 10 | 0 | 0 | 0 | 0 | 10 | 35 | | |
| 09/10/1982 | 10 | 0 | 0 | 0 | 10 | 75 | 70 | 5 | 0 | 0 | 5 | 10 | 75 | | | |
| 07/05/1983 | 5 | 0 | 0 | 0 | 5 | 70 | 80 | 0 | 0 | 0 | 5 | 10 | 35 | | | |

HAZWARP

HAZARDOUS WASTE REMEDIAL ACTIONS PROGRAM

Leading the Way to Environmental Stewardship

An Assessment and Evaluation for Recycle/Reuse of Contaminated Process and Metallurgical Equipment at the DOE Rocky Flats Plant Site - Building 865

August 1993

DISCLAIMER

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.



Prepared by
Theta Technologies, Inc.
subcontract 62R-MD463V

HAZARDOUS WASTE REMEDIAL ACTIONS PROGRAM
Environmental Restoration and Waste Management Programs
Oak Ridge, Tennessee 37831-7608
managed by MARTIN MARIETTA ENERGY SYSTEMS, INC.
for the DEPARTMENT OF ENERGY
under contract DE-AC05-84OR21400

MASTER

Table 3.1—Sample Calculation To Establish Authorized or Supplemental Limits for Volumetric Contamination for Unrestricted Equipment Release

| | | |
|--------------------------------|--|------------------------|
| Requirement: | Characterization of volumetric contamination requires that the activity ($\mu\text{Ci}/\text{cc}$) of radionuclides be established. | |
| Nuclide of Concern: | Depleted Ura: ${}^{238}\text{U}$ | |
| Equipment for Release: | Lathe Machine | |
| Exposure Limit: | 100 mrem/yr. (total exposure from both surface and volumetric contamination) | |
| Modeling Assumptions: | <ul style="list-style-type: none"> • The contamination consists of U-238 that is a by product of uranium enrichment. Since it is extremely chemically pure, no long-term daughter products have built up since enrichment, except for a minor amounts (1.4 E-2 %) of U-234. A small amount (0.5%) of U-235 also remains in the containment after the enrichment process. Thus, the ratio of isotopes in the containment (in $\mu\text{Ci}/\text{cc}$) is 1/0.005/0.00014 of U-238/U-235/U-234. • All loose surface contamination has been removed, so that the radiation consists of beta and gamma only. Thus, the conversion factor between rem and rad is 1. • The operator works at the machine for 40 hours per week for 50 weeks per year, or 2,000 hours per year. Thus, the allowable exposure rate is $5\text{E-}5$ R/hour. • The machine is modeled as a cylinder of length 241.5 cm and radius 144.8 cm. The cylinder is composed of a homogenous mixture of iron and air of density 3.9 g/cc, approximately modeling the interior spaces in the real equipment. The contamination is homogeneously distributed throughout the cylinder. • The "reasonable and likely" location at which the exposure is measured is one cm outward from the cylinder surface (145.8 cm from the cylinder center line) and 73.3 cm from one end. | |
| Aim of the Calculation: | Determine the allowable activity of depleted uranium contamination for the lathe machine targeted for free-release that is compatible with the current 100 mrem/yr. total exposure limit. | |
| Model Used: | ISOSHLD | |
| Source Activity Limits: | U-235 | 1.950×10^{-5} |
| | U-234 | 5.000×10^{-7} |
| | U-238 | 3.900×10^{-3} |



Terrie Barrie <tbarrieanwag@gmail.com>

Marchitti - Rocky Flats - NIOSH 050825

Terrie Barrie [REDACTED]

Mon, Dec 16, 2019 at 12:55 PM

To: "Rutherford, LaVon B. (CDC/NIOSH/DCAS)" <lrr5@cdc.gov>

Thanks. So it wouldn't be unusual for U-235 parts to be machined at Rocky Flats? And, if so, is it reflected in the methodology?

I apologize for being dense :)

Terrie Barrie

ANWAG
[REDACTED]

On Mon, Dec 16, 2019 at 12:11 PM Rutherford, LaVon B. (CDC/NIOSH/DCAS) <lrr5@cdc.gov> wrote:

I vaguely remember your discussion with the petitioner. As for enriched uranium (U-235), they stopped producing enriched uranium, but they were working with enriched uranium in the 1980s. If you remember the Critical Mass Lab used uranyl nitrate solution in the criticality experiments in the 1980s. The uranyl nitrate was enriched uranium.

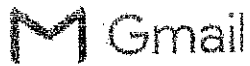
LaVon

From: Terrie Barrie [REDACTED]**Sent:** Monday, December 16, 2019 2:03 PM**To:** Rutherford, LaVon B. (CDC/NIOSH/DCAS) <lrr5@cdc.gov>**Subject:** Re: Marchitti - Rocky Flats - NIOSH 050825

I made public comments at the August meeting about [REDACTED] and the Y-12 SEC petitioner describing to me independently how difficult it was to hold onto a certain part. The petitioner told me it was U-235 at Y-12.

Terrie Barrie

ANWAG
[REDACTED]



Terrie Barrie [REDACTED]

Amendment to SEC petition 257

Mon, May 11, 2020 at 12:04 PM

Terrie Barrie [REDACTED]
 To: L Rutherford <lrr5@cdc.gov>

H LaVon,

Thanks for the call today. Per your instructions, Please add the following information to SEC petition 257. I received this document on Friday afternoon through a 2 year old FOIA request from DOE.

https://drive.google.com/file/d/1zy-tjGvayfmlp8Tj2zNF15EThr4drezX/view?fbclid=IwAR3ua62u-hrlx6mzn-rcyvVJxifl_83U2sukF1Vy1tlvBiNvzX1quTxVPk4

I believe this document shows that RF inadequately monitored workers and possibly falsified the report or at least hid relevant information.

Here are a few of my observations:

- 1 - The original estimated release into the atmosphere, calculated 4 to 6 minutes after notification was 7 curies, page 8. The 1957 fire was only estimated to be 2.4 curies.
- 2 - The "Onsite Analysis", written 15 to 17 minutes after the notification shows the which buildings downwind of the fire were affected and where the workers should assemble, page 1
3. Page 2 shows the where the plume of contamination would travel to the surrounding communities. This was created at 36 to 38 minutes after notification.
4. The windspeed used for the calculation on page 8 at 10:06 am shows 43 mph. I may have missed it but the highest recorded windspeed is 30 mph shown on page 33. The average windspeeds are quite low. Page 41 shows the windspeed at 10:10 am to be 27 mph. There is no record of windspeed taken at 10:06 am. All records appear to be taken at 10:08 am.
5. Page 45 and 46 explain that the Fire Department had a power outage due to high winds at 10:30 am, 28-30 minutes after explosion. Windspeed at that time was
6. Page 48 shows that the employee who was injured in the explosion had 500 cpm on [REDACTED] overalls. [REDACTED] had severe injuries to [REDACTED] face and there's no record of skin contamination to that part of [REDACTED] body. Page 50 shows that another worker involved in the first response had 100,000 cpm on [REDACTED] wrist. Body count results are N/A on page 48.
7. Pages 48 and 50 shows "No High Airheads"

Thanks again. I really appreciate your help with this.

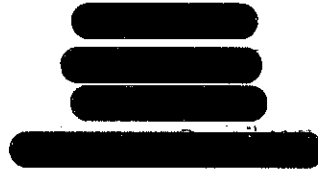
Thanks,

Terrie

Terrie Barrie
 ANWAG



Terrie Barrie



June 11, 2020

Grady Calhoun,
Director
Division of Compensation and Analysis Support
National Institute for Occupational Safety and Health
Robert A. Taft Laboratories
1090 Tusculum Avenue
Cincinnati, OH 45226-1938

Subject: SEC petition 257

Dear Mr. Calhoun,

Thank you for the opportunity to review the summary of the May 28, 2020 call and to provide additional documentation. Below are my comments.

- **Clarification 2.** [REDACTED] email address is [REDACTED]
- **Clarification 6.** Attached are examples of urinalysis records for the 1980s and late 1990s. As you can see, in the 1980s only gross uranium was monitored. [REDACTED], who provided his testimony about machining U235 also machined U238. In the late 1990s the individual isotopes were monitored. I can provide unredacted copies upon request.
- **Clarification 8.** I am enclosing an email to Mr. LaVon Rutherford for the record. This email details the petitioners' positions why the incident in December 1985 shows that workers were not adequately monitored and that records may have been falsified.
- **Deficiency.** With respect, I disagree with this characterization. The Final Rules for the Special Exposure Cohort (SEC) petitions does not require that a scientific or technical report, published or issued by a government agency must be provided to support a SEC petition. Therefore, this should be classified as a "Clarification." I do agree with the end result that this document should be moved to F.1.

If additional information to support the petition is located, I will provide that by July 9, 2020.

I, Terrie Barrie, give written permission to the Division of Compensation and Analysis Support to identify me as the authorized representative for this petition.

Sincerely,

Terrie Barrie
Rocky Flats Authorized Representative for SEC Petition 257

Cc: [REDACTED] Petitioner for Rocky Flats SEC petition 257

Enclosures



DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

National Institute for Occupational
Safety and Health
Robert A. Taft Laboratories
1090 Tusculum Avenue
Cincinnati, OH 45226-1938
Phone: 877-222-7570
Fax: 513-533-6826

SEC Tracking Number: SEC00257

June 9, 2020

Terrie Barrie
[REDACTED]

Dear Mrs. Barrie,

I am writing to you about our May 28, 2020 phone call regarding your Special Exposure Cohort (SEC) petition. We let you know that we reviewed the documents that you recently sent to us and discussed your petition. We summarized the discussion and listed any issues in the accompanying enclosure. Please:

- Review the discussion and issues identified in the enclosure;
- Let us know whether you want to make changes to the petition within *10 days* after you receive this letter; and
- Send any additional information you would like us to consider within *30 days* after you receive this letter.

If we determine that the information you have provided thus far is insufficient to qualify your petition for further evaluation, and we don't hear from you before the deadlines have passed, we may choose to close your petition. If you need more than 30 days to address any of the deficiencies detailed below, please let us know.

Feel free to email your response to dcas@cdc.gov. If you do so, please put SEC00257 in the subject line. If we decide that your petition qualifies for the evaluation process, we will never release information that identifies you to the public unless you authorize us in writing to do so. We will then:

- Post a summary of the petition on our website; and
- Send our decision to the Advisory Board on Radiation and Worker Health, which makes the recommendation on whether to add the worker class to the SEC.

For your convenience, we have enclosed the SEC Rule. If you need help understanding the Rule, your petition, or if you have any questions, email Josh Kinman, NIOSH's SEC Petition Counselor, at jkinman@cdc.gov or call him at 513-533-6831.

Sincerely,

Grady Calhoun, Director
Division of Compensation Analysis and Support
National Institute for Occupational Safety and Health

Summary of Telephone Conversation and Agreements
SEC00267 – Rocky Flats Plant

On May 28, 2020, Pat K. of the Oak Ridge Associated Universities (ORAU) Team facilitated a qualification consultation telephone call with Mrs. Terrie Barrie. William F. and Robert B. (ORAU Team) also participated on the call. We have summarized the conversation in this letter. The letter includes questions and/or statements from the interviewer first, with the interviewee's responses in italics.

Please carefully review the following clarifications and issues.

1. **Clarification.** On Form B, Section A, you are petitioning as an authorized representative of an energy employee [REDACTED]. You submitted the required Petitioner Authorization Form signed by [REDACTED]. On your Form B, Section A, Items A.3-A.6, you have provided contact information.

During the call, the contact information for the authorized representative was confirmed:

A.3 Name of Petitioner Representative: [REDACTED]
A.4 Address: [REDACTED]
A.5 Telephone No.: [REDACTED]
A.6 Email: [REDACTED]

2. **Clarification.** On Form B, Section C, Items C.1 – C.5, you provided the following information as a former Energy Employee. In Section C.6, the employment information was provided.

During the call, the contact information of the petitioner was confirmed:

C.1 Energy Employee: [REDACTED]
C.3 Address: [REDACTED]
C.4 Telephone No.: [REDACTED]
C.5 E-mail: none provided
C.6b Dates of Employment: 1983-2005

3. **Clarification.** On Form B, Section E, Item E.2, regarding locations at the facility that are relevant to this petition, you listed "all" locations.

During the call, you confirmed that you intend to include all areas at the Rocky Flats Plant in the class description.

4. **Clarification.** In Form B, Section E, Item E.3, you indicated "all" for the job title or duty of the employees in the proposed class.

During the call, you confirmed that you intend to include all workers at the Rocky Flats Plant in the class description.

5. **Clarification.** On Form B, Section E, Item E.4, you listed employment dates relevant to this petition as January 1, 1984 – December 31, 1989 at the Rocky Flats Plant.

During the call, you confirmed that the relevant time period for this petition is January 1, 1984 through December 31, 1989.

6. **Clarification.** On Form B, Section E, Item E.5, you indicate that the petition is based on one or more unmonitored, unrecorded, or inadequately monitored or recorded exposure incidents. The complete description for the basis of petition was provided in an attached cover letter. Review of the cover letter did not find any information provided on exposure incidents. The information provided would be a better fit under item F.1 for "potential radiation exposures were not monitored."

During the call, you confirmed that the basis of petition provided in the cover letter with the Form B should be moved from Item E.5 to Item F.1.

In addition, you indicated that you intended to submit an additional document on uranium bioassay analyses pre-1990 vs. post-1990 (gross vs. isotopic) in support of basis Item E.5.

7. **Clarification.** In the seventh bullet of information provided in the cover letter of the petition, the ratios of uranium isotopes are provided in tCi/cc. In Table 3-1 of a technical document provided with the petition, the units are in μ Ci/cc.

During the call, you confirmed that the unit of activity in the cover letter should be changed from tCi/cc to μ Ci/cc to match the units used in Table 3-1.

8. **Clarification.** On May 11, 2020, an additional document was submitted in support of the petition (received on 4/28/2020). The additional document provides information about a plutonium contamination event in December 1985. The basis for the petition was that DCAS cannot reconstruct dose with sufficient accuracy for the Rocky Flats Plant from January 1, 1985 through December 31, 1989 due to uranium, specifically U-235.

During the call, you requested the additional document be provided under basis Item E.5 which states the petition is based on one or more unmonitored, unrecorded, or inadequately monitored or recorded exposure incidents.

In addition, you requested that plutonium be added to the proposed SEC class description for which doses could not be reconstructed with sufficient accuracy.

9. **Deficiency.** On Form B, Section F, Item F.4, you indicated that a scientific or technical report was attached to the petition. On pages 18 and 19 of the petition PDF, there is a cover page of a DOE technical report titled "An Assessment and Evaluation for Recycle/Reuse of Contaminated Process and Metallurgical Equipment at the DOE Rocky Flats Plant Site – Building 865" and Table 3-1 from the report. F.4 is for a scientific or technical report "that identifies dosimetry and related information that are unavailable (due to either a lack of monitoring or the destruction or loss of records) for estimating the radiation doses of energy employees covered by the petition."

During the call, you indicated that the technical report "An Assessment and Evaluation for Recycle/Reuse of Contaminated Process and Metallurgical Equipment at the DOE Rocky Flats Plant Site - Building 865" should be disregarded for basis Item F.4 and instead be included as part of basis Item F.1.

Proposed Class Definition. Based on the previously discussed information, it appears that your class definition will include: All employees who worked in any areas of the Rocky Flats Plant in Golden, CO from January 1, 1984 through December 31, 1989.



National Institute for Occupational
Safety and Health
Robert A. Taft Laboratories
1090 Tusculum Avenue
Cincinnati, OH 45226-1938
Phone: 877-222-7570
Fax: 513-533-6826

July 31, 2020

SEC Tracking Number: SEC00257

Terrie Barrie
[REDACTED]
[REDACTED]

Dear Ms. Barrie:

I am writing to let you know that your Special Exposure Cohort (SEC) petition did not qualify for evaluation. Based on the information you provided on your submitted SEC Petition-Form B, and during our subsequent telephone conversations with you, NIOSH considered the following class of workers for possible addition to the SEC: All employees who worked in any area of the Rocky Flats Plant in Golden, Colorado, during the period from January 1, 1984 through December 31, 1989. After we carefully considered your statements, we did not find sufficient information to support any of the qualification bases.

You identified E.5, F.2, and F.4 as the original petition basis items on the SEC Petition-Form B. During the consultation telephone call on May 18, 2020, you indicated that additional documentation you submitted about a plutonium contamination event on December 3, 1985 should be in support of item E.5. The E.5 basis requires "one or more unmonitored, unrecorded, or inadequately monitored or recorded exposure incidents." NIOSH reviewed the submitted documentation and searched its databases for additional information related to the December 3, 1985 plutonium contamination event at the Rocky Flats Plant.

In the context of qualifying a petition using the E.5 basis, NIOSH regulation, 42 CFR § 83.13 (c)(3)(i) refers to "...discrete incidents likely to have involved exceptionally high level exposures, such as nuclear criticality incidents or other events involving similarly high levels of exposures resulting from the failure of radiation protection controls...". NIOSH reviewed and evaluated the incident you provided documentation for and determined that it did not result in exceptionally high radiation exposures. NIOSH, therefore, could not qualify your petition under the E.5 basis.

NIOSH also evaluated the statements made on the Form B and during the consultation telephone call to support petition qualification under the F.1 basis. This basis requires

that "radiation exposures and radiation doses potentially incurred by members of the proposed class were not monitored either through personal monitoring or through area monitoring." This basis item was initially submitted under basis item E.5. During the consultation telephone call, we mutually agreed that it be moved to the F.1 basis item. The basis was provided in the form of a cover letter submitted with the SEC Petition-Form B and pertained to the inability to reconstruct uranium doses with sufficient accuracy for the Rocky Flats Plant from January 1, 1984 through December 31, 1989. NIOSH has determined that the Rocky Flats Plant had policies in place to monitor radiation doses incurred by members of your proposed class of workers. NIOSH has found that the claimant records provided by DOE for the proposed class of workers include uranium internal dosimetry results for potentially exposed workers. NIOSH did not find evidence that potentially exposed personnel were not monitored; therefore, we could not qualify your petition under the F.1 basis.

Petition basis F.2 requires "documents or statements provided by affidavit that indicate that radiation monitoring records for members of the proposed class have been lost, falsified, or destroyed; or that there is no information regarding monitoring, source, source term, or process from the site where the energy employees worked." NIOSH did not find evidence that indicated radiation monitoring records were not available and determined that sufficient source term and process information was available during the January 1, 1984 through December 31, 1989 time period. NIOSH therefore could not qualify your petition under the F.2 basis.

Although not specifically requested by you in your petition or during subsequent telephone conversations, NIOSH did consider qualification of your petition under the F.3 basis item on the SEC Petition-Form B. NIOSH did not find any support to qualify the petition under the F.3 basis.

Petition basis F.4 requires a scientific or technical report which identifies dosimetry and related information that are unavailable for estimating the radiation doses of energy employees covered by the petition. You provided the cover page and page 59 from report DOE/HWP-139 titled "An Assessment and Evaluation for Recycle/Reuse of Contaminated Process and Metallurgical Equipment at the DOE Rocky Flats Plant Site - Building 865" (August 1993). NIOSH has a complete copy of the report in its document holdings. Review of the document determined that it did not provide any new information that was previously unavailable for estimating radiation doses. NIOSH therefore could not qualify the petition under the F.4 basis.

Enclosed with this letter for your reference, is a copy of the NIOSH regulation 42 CFR Part 83 (pages 486-498). Section 83.11 specifically addresses petitions that do not meet the requirements needed to qualify for evaluation, and Section 83.11(e) refers to proposed findings. Section 83.11 has been highlighted for your convenience.

You may ask for an administrative review of this finding within 30 calendar days of receiving this letter. If you choose to ask for a review of our finding, please:

1. Make your request in writing;
2. Tell us why you believe our finding should be reversed, based on the information you submitted with your petition; and
3. Send it to the address at the bottom of this letter.

Please remember that an administrative review is only based on the information that is currently part of your petition. You may not send new information as part of a review request. We will consider any new information as a revision of the petition. If you do not ask for an administrative review, we will close your petition 31 calendar days after the date you receive this letter. Please include your NIOSH SEC Tracking Number (SEC00257) on all correspondence, which should be addressed to:

NIOSH/Division of Compensation Analysis and Support
1090 Tusculum Avenue
MS C-46
Cincinnati, Ohio 45226-1938

If you have any questions regarding your petition, please feel free to contact the NIOSH SEC petition counselor, Joshua Kinman. Mr. Kinman can be contacted directly at 513-533-6831 or toll-free at 1-877-222-7570. You can also contact him by email at <dcas@cdc.gov>.

Sincerely,



Grady Calhoun, Director
Division of Compensation Analysis and Support
National Institute for Occupational Safety and Health

Enclosure