

**Special Exposure Cohort Petition**  
under the Energy Employees Occupational  
Illness Compensation 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: 07/31/2010

**Special Exposure Cohort Petition — Form B**

Page 1 of 7

**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 parts 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.

If you have questions about the use of this form, please call the following NIOSH toll-free phone number and request to speak to someone in the Office of Compensation Analysis and Support about an SEC petition: 1-877-222-8570.

<b>If you are:</b>	<input type="checkbox"/> A Labor Organization,	Start at D on Page 3
	<input checked="" type="checkbox"/> An Energy Employee (current or former),	Start at C on Page 2
	<input type="checkbox"/> A Survivor (of a former Energy Employee),	Start at B on Page 2
	<input type="checkbox"/> A Representative (of a current or former Energy Employee),	Start at A on Page 1

**A Representative Information — Complete Section A if you are authorized by an 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:**

\_\_\_\_\_  
Mr./Mrs./Ms. First Name

\_\_\_\_\_  
Middle Initial

\_\_\_\_\_  
Last Name

A.4 **Address:**

\_\_\_\_\_  
Street

\_\_\_\_\_  
Apt #

\_\_\_\_\_  
P.O. Box

\_\_\_\_\_  
City

\_\_\_\_\_  
State

\_\_\_\_\_  
Zip Code

A.5 **Telephone Number:** (\_\_\_\_\_) \_\_\_\_\_ - \_\_\_\_\_

A.6 **Email Address:** \_\_\_\_\_

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 employee(s) indicated in Parts B or C of this form. An authorization

Name or Social Security Number of First Petitioner: \_\_\_\_\_

Special Exposure Cohort Petition — Form B

**B Survivor Information — Complete Section 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 Social Security Number of Survivor:**

**B.3 Address of Survivor:**

Street Apt # P.O. Box

City State Zip Code

**B.4 Telephone Number of Survivor:** ( ) -

**B.5 Email Address of Survivor:**

- B.6 Relationship to Employee:**  Spouse  Son/Daughter  Parent  
 Grandparent  Grandchild

**C Employee Information — Complete Section C UNLESS you are a labor organization.**

**C.1 Name of Employee:**

First Name Middle Initial Last Name

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

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

**C.3 Social Security Number of Employee:**

**C.4 Address of Employee (if living):**

Street Apt # P.O. Box

City State Zip Code

**C.5 Telephone Number of Employee:**

**C.6 Email Address of Employee:**

**C.7 Employment Information Related to Petition:**

**C.7a Employee Number (if known):**

**C.7b Dates of Employment:** Start 1957 End 1961

**C.7c Employer Name:** AMES LABORATORY

**C.7d Work Site Location:** MOSTLY SPEEDING BLDG., AMES, IA

**C.7e Supervisor's Name:**

Name or Social Security Number of First Petitioner: \_\_\_\_\_

**Special Exposure Cohort Petition — Form B**

**D Labor Organization Information — Complete Section 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:**

\_\_\_\_\_

**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 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 employees (if known):**

\_\_\_\_\_

Name or Social Security Number of First Petitioner: \_\_\_\_\_



Special Exposure Cohort Petition — Form B

**F Basis for Proposing that Records and Information are Inadequate for Individual Dose —  
Complete Section 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.

The employees attest that radiation monitoring was not routinely performed during this era.  
As this site was so heavily contaminated with initially uranium and subsequently thorium from production, metallurgy, and given that active remediation has continued for 50 years since production ceased it is appropriate to consider expansion of the prior SEC's for this site, currently limited to the production era for all workers and limited to renovation workers in subsequent years to include all employees through at least 1960

- 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 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.

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Part F is continued on the following page.

**Special Exposure Cohort Petition**

under the Energy Employees Occupational  
Illness Compensation Act

**U.S. Department of Health and Human Services**

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National Institute for Occupational Safety and Health

OMB Number: 0920-0639

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**Special Exposure Cohort Petition — Form B**

Page 6 of 7

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.

*The discussions from the June 14-16 Advisory Board Mtg. Questioning the cessation of the SEC in 1954 are included.*  
(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 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 Section G.**

AI \_\_\_\_\_

**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  
Office of Compensation Analysis and Support  
NIOSH  
4676 Columbia Parkway, 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.**

Name or Social Security Number of First Petitioner: \_\_\_\_\_

**Special Exposure Cohort Petition**under the Energy Employees Occupational  
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**Special Exposure Cohort Petition — Form B**

Page 7 of 7

**Public Burden Statement**

Public reporting burden for this collection of information is estimated to average 300 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. 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 the NIOSH petition forms (A and B) is voluntary but your provision of information required by these forms is mandatory for the consideration of a petition, as specified under 42 CFR Part 83. Petitions that fail to provide required information may not be considered by HHS.

Name or Social Security Number of First Petitioner: \_\_\_\_\_

**Special Exposure Cohort Petition — Form B**

Appendix — Petitioner 2

**Use of this form and disclosure of Social Security Number are voluntary. Failure to use this form or disclose this number will not result in the denial of any right, benefit, or privilege to which you may be entitled.**

**Use this Appendix for Petitioner 2.**

This appendix form is to be used as needed. Petitioner 2, or his or her representative, should complete the parts applicable to him or her.

Refer to the General Instructions on completing petitioner information for Parts A, B, or C.

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.

Except for signatures, please **PRINT** all information clearly and neatly on the form.

<b>If you are:</b>	<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 Section A if you are authorized by an 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:**

First Name \_\_\_\_\_ Middle Initial \_\_\_\_\_ Last Name \_\_\_\_\_

**A.4 Address:**

Street \_\_\_\_\_ Apt # \_\_\_\_\_ P.O. Box \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_

**A.5 Telephone Number**

**A.6 Email Address:**

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 employee(s) indicated in Parts B or C of this form. An authorization form for this purpose is provided.

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

Name or Social Security Number of First Petitioner



**Special Exposure Cohort Petition — Form B**

**Appendix — Petitioner 3**

**Use of this form and disclosure of Social Security Number are voluntary. Failure to use this form or disclose this number will not result in the denial of any right, benefit, or privilege to which you may be entitled.**

**Use this Appendix for Petitioner 3.**

This appendix form is to be used as needed. Petitioner 3, or his or her representative, should complete the parts applicable to him or her.

Refer to the General Instructions on completing petitioner information for Parts A, B, or C.

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.

Except for signatures, please **PRINT** all information clearly and neatly on the form.

<b>If you are:</b>	<input checked="" 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 type="checkbox"/> A Representative (of a current or former Energy Employee),	Start at A

**A Representative Information — Complete Section A if you are authorized by an 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:**

\_\_\_\_\_  
Mr./Mrs./Ms. First Name

\_\_\_\_\_  
Middle Initial

\_\_\_\_\_  
Last Name

A.4 **Address:**

\_\_\_\_\_  
Street

\_\_\_\_\_  
Apt #

\_\_\_\_\_  
P.O. Box

\_\_\_\_\_  
City

\_\_\_\_\_  
State

\_\_\_\_\_  
Zip Code

A.5 **Telephone Number:** (\_\_\_\_\_) \_\_\_\_\_

A.6 **Email Address:** \_\_\_\_\_

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 employee(s) indicated in Parts B or C of this form. An authorization form for this purpose is provided.

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

Name or Social Security Number of First Petitioner: \_\_\_\_\_

Special Exposure Cohort Petition — Form B

Appendix — Petitioner 3

**B Survivor Information — Complete Section 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 Social Security Number of Survivor:**

**B.3 Address of Survivor:**

Street Apt # P.O. Box

City State Zip Code

**B.4 Telephone Number of Survivor:** ( ) -

**B.5 Email Address of Survivor:**

**B.6 Relationship to Employee:**  Spouse  Son/Daughter  Parent  
 Grandparent  Grandchild

Go to Part C.

**C Employee Information — Complete Section C.**

**C.1 Name of Employee:**

First Name Middle Initial Last Name

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

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

**C.3 Social Security Number of Employee:**

**C.4**

**C.5**

**C.6 Email Address of Employee:**

**C.7 Employment Information Related to Petition:**

**C.7a Employee Number (if known):**

**C.7b Dates of Employment:** Start 1950 End 1954

**C.7c Employer Name:** AMES LABORATORY AMES IA

**C.7d Work Site Location:**

**C.7e Supervisor's Name:**

Sign Part G of the original petition.

Ames Laboratory	Guide	10202.001
Office: Environment, Safety, Health & Assurance	Revision:	1
Title: RW II Radiation Producing Device User's Study Guide	Effective Date:	04/30/08
Page: 21	Review Date:	04/30/11

## 6.1 Basis of Recent Guidelines

In general, the guidelines established for radiation exposure have had as their principle objectives: (1) the prevention of acute radiation effects (e.g., erythema, sterility), and (2) the limiting of the risks of late, stochastic effects (e.g., cancer, genetic damage) to "acceptable" levels. Numerous revisions of standards and guidelines have been made over the years to reflect both changes in the understanding of the risk associated with various levels of exposure and changes in the perception of what constitutes an "acceptable" level of risk.

*This applies to the dates I was employed. Also*

\* Current guidelines for radiation exposure are based upon the conservative assumption that there is no safe level of exposure. In other words, even the smallest exposure has some probability of causing a late effect such as cancer or genetic damage. This assumption has led to the general philosophy of not only keeping exposures below recommended levels or regulatory limits but of also maintaining all exposures "as low as is reasonably achievable" (ALARA). This is a fundamental tenet of current radiation safety practice.

## 6.2 Regulatory Limits for Occupational Exposure

Many of the recommendations of the ICRP and other radiation protection groups regarding radiation exposure have been incorporated into regulatory requirements by various countries. For Department of Energy facilities, radiation exposure limits are found in Title 10, Part 835 of the Code of Federal Regulations (10 CFR 835). Table 2 provides a summary of the dose limits for occupational external exposures.

## 6.3 Recommended Exposure Limits for Pregnant Workers

Because of the increased susceptibility of the human embryo and fetus to damage from ionizing radiation, established dose limits to the embryo/fetus are much lower than for adults. 10 CFR 835.206(a) requires that the dose equivalent to the embryo/fetus from the period of conception to birth, as a result of occupational exposure of a declared pregnant worker be limited to 500 mrem.

\* Workers who find that they are pregnant are encouraged to declare their pregnancy in writing to their supervisors; the Laboratory will then take steps to keep exposures within the stated limit. Forms for declaring pregnancy are available from ESH&A (G40 TASF).

## 6.4 Regulatory Limits for Non-occupational Exposure

For whole body exposure the non-occupational exposure limit is 100 mrem/yr. This is in addition to the 360 mrem/yr received, on average, by individuals in the U.S. from natural background radiation and manmade radiation sources. The 100 mrem/yr limit also applies to individuals under age 18 who work in the vicinity of radiation sources.

I was 18

Summary Minutes June 14-16, 2006  
NIOSH/CDC Advisory Board on Radiation and Worker Health

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Dr. Ziemer offered any members of the public who wished to comment on the Conflict of Interest policy the opportunity to do so. Mr. Richard Miller of the Government Accountability Project accepted, and his statement in its entirety may be found on the NIOSH/OCAS web site at www.cdc.gov/niosh/ocas.

\*\*\*\*\*

**PUBLIC COMMENT SESSION**

Public comment was solicited on the first two days of the meeting. The following is the only member of the public who spoke on this date. A full transcript of his public comment is available on the NIOSH/OCAS web site at www.cdc.gov/niosh/ocas.

Mr. Jeff Walburn, SPFFA, Local 66.

With no further public comment offered, the Board officially recessed until 8:30 a.m.

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Thursday, June 15, 2006

Dr. Ziemer opened the day with reminders to register attendance, sign up if desired for the day's public comment session and take copies of the agenda and other pertinent documents. Dr. Wade noted that when the petition for Ames Laboratory comes before the Board it will be the first in which SC&A has been aggressively involved in looking into issues. The Board has made every effort to make all the processes, including debate, full and open.

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**AMES LABORATORY SEC PETITION  
NIOSH EVALUATION REPORT**

Dr. James Neton,  
NIOSH

Dr. Neton presented NIOSH's evaluation of petition SEC-00038 on behalf of Ames Laboratory. He began with a sketch of petition-related activities and dates. The original proposed class included a broad scope of seven work categories. That definition, complete with

numerous job titles and site buildings, was provided. He detailed NIOSH's search for data within the NIOSH OCAS Claims Tracking System (NOCTS), noting the almost complete lack of monitoring data available therein. He described the Ames Laboratory in terms of its structure and its radiological activities, notably thorium operations. The physical plant was never intended to house a production scale operation and its ventilation was inadequate.

Dr. Neton detailed the information NIOSH obtained from each of its sources, including several databases, interviews with Ames staff members, the Ames Laboratory web site, and documentation provided by petitioners. He provided a breakdown of the dosimetry data into external and internal. As a whole, the dosimetry data is sparse. Monitoring and source term information is spotty. Under the first prong of the two-prong test established by EEOICPA, NIOSH came to the determination that the available monitoring records and process descriptions are insufficient to complete dose reconstructions with sufficient accuracy.

Regarding the second prong of that test, health endangerment, NIOSH's study of the evidence indicates that workers may have received episodic internal/external exposures from working with thorium, plutonium and thoron; however, those exposures do not meet the litmus test of an exposure equivalent to one that would result from a criticality accident, so the default 250-day requirement is used. Based on NIOSH's analysis, the revised proposed class definition added the 250 day requirement and eliminated job titles per se, substituting more encompassing wording. Dr. Neton explained why the proposed definition end date was one year earlier than that of the petitioner's proposed definition. That decision was based on cessation of operations in 1954 for both uranium and thorium activities and NIOSH's ability to establish plausible upper bounds for exposures in 1955. In summary, he delineated what NIOSH can and cannot do regarding dose reconstructions for internal, external, neutron and medical exposures.

\*\*\*

Discussion Points:

- Why the 250-day limit was used in the instance of episodic exposures.
- The potential for Ames workers still employed in 1955 to constitute a different class.
- The Board need to devise a way to handle situations in facilities with essentially no monitoring programs during relevant time periods.

\*\*\*

**AMES LABORATORY PETITIONERS RESPONSE**

Dr. Laurence Fuortes represented the petitioners to address errors they contend have been made in the past. He alleged lack of attention to worker health and safety from the very top levels of administration. The petitioners have three main issues. They concern the semantics of discrete event equivalent to a criticality and whether the intention of the legislation is being realized; NIOSH's recommendation of 250 days; and the date at which the petition's class is defined.

His statement in its entirety may be found on the NIOSH/OCAS web site at [www.cdc.gov/niosh/ocas](http://www.cdc.gov/niosh/ocas).

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**AMES LABORATORY SEC PETITION  
WORKING GROUP REPORT  
and SC&A REVIEW**

Dr. James Melius,  
Working Group Chair  
Dr. Hans Behling,  
Sanford Cohen & Associates

Dr. Melius reported that at the conference call in April the work group had identified issues and determined it would be helpful to have SC&A perform a limited review of the information, the NIOSH evaluation report and the petition. The issues concerned residual contamination and episodic exposure. SC&A's recent report has not yet been reviewed by NIOSH.

\*\*\*

Dr. Behling highlighted only the outstanding issues in SC&A's report, along with those which might require Board resolution. Essential components of the review process included reviews of the petition and of available relevant documents; an assessment of NIOSH's petition evaluation report, and issues potentially requiring Board resolution.

SC&A concluded, as did NIOSH, that dose reconstructions would be difficult in light of information deficiencies and gaps. However, the question arose as to what constituted the Ames project, whether production or potential exposures went beyond the production period to be included as part of the SEC petition. This open question needed careful consideration, as did the possibility that the 1954 end date

Summary Minutes June 14-16, 2006  
NIOSH/CDC Advisory Board on Radiation and Worker Health

might have been <sup>\*</sup>arbitrary. Dr. Behling reviewed results of a 1952 Atomic Energy Commission (AEC) survey conducted at the Ames Laboratory facility. The report identified serious deficiencies, along with 36 recommendations aimed primarily at reducing air concentration.

SC&A then identified three issues, the first one questioning whether the 1954-1955 time frame should be considered as the prime period for the SEC; the second concerning the class of workers and whether guards were included; and the most important issue, episodic doses that could have contributed to an exposure that might have workers eligible for the exposure period that was not necessarily defined by the 250-day work aggregate.

The second criterion involving a potential look at the 250-day period was the definition under paragraph 83.13 mentioning other events involving similar high level exposure resulting from the failure of radiation protection controls. The 1952 survey clearly pointed to a failure of those controls.

Thorium 232 calculations due to routine exposures were displayed; they were taken from the 1952 survey of exposures. Additional discussion between SC&A and NIOSH was needed to resolve the meaning of the numbers. The calculations illustrated the potential of one routine exposure in one day to constitute a significant health risk.

\*\*\*

Discussion subsequent to the presentation was lengthy and technical, and included offerings from the Board, NIOSH, SC&A and the petitioners. Topics included the following.

Discussion Points:

- Whether the basis for SC&A's implication that the SEC class should be continued was residual contamination itself or the ability to do dose reconstruction.
- Whether SC&A acted appropriately in going beyond the scope of what they had been asked to review.
- The matter is not whether there was persistent contamination in some buildings, but whether NIOSH can put plausible upper bounds on the exposures in those buildings.
- NIOSH's internal dose calculation estimates are much lower than those presented by SC&A.
- Further discussion on this matter, and other issues, is needed.
- A request for NIOSH to share their calculations on the upper bound.
- A request for explanation of why the 50-year committed organ dose is

Summary Minutes June 14-16, 2006  
NIOSH/CDC Advisory Board on Radiation and Worker Health

listed as a rate.

- A request for dates for which data is available.
- Clarification that guards, firemen and secretaries will be included in the NIOSH proposed SEC class definition.
- Consideration of the Ames storage facilities for thorium and uranium.

\*\*\*

As working group Chair, Dr. Melius read into the record their recommendation to the Board, which is received as a motion requiring no second:

The Board recommends that the following letter be transmitted to the Secretary of Health and Human Services within 21 days. Should the Chair become aware of any issue that in his judgment would preclude the transmittal of this letter within that time period, the Board requests that he promptly informs the Board of the delay and the reasons for this delay, and that he immediately works with NIOSH to schedule an emergency meeting of the Board to discuss this issue.

The Advisory Board on Radiation and Worker Health (the Board) has evaluated the SEC petition 00038 concerning workers at the Ames Laboratory under the statutory requirements established by EEOICPA and incorporated into 42 CFR Section 83.13. The Board respectfully recommends a Special Exposure Cohort be accorded to all Department of Energy employees or its contractor or subcontractor employees who were monitored or should have been monitored while working at Ames Laboratory in one or more of the following facilities/locations: Chemistry Annex 1 (also known as the "old women's gymnasium" and "little Ankeny"), Chemistry Annex 2, Chemistry Building (also known as "Gilman Hall"), Research Building or the Metallurgical Building (also known as "Harley Wilhelm Hall") for a number of work days aggregating at least 250 work days during the period from January 1<sup>st</sup>, 1942 through December 31<sup>st</sup>, 1954, or in combination with the work days within the parameters established for one or more other classes of employees in the SEC.

These workers were employed during the early years of the nuclear weapons production. There are very little monitoring data available for the Ames Laboratory during the years in question. NIOSH concluded that the available monitoring and source term information is not sufficient to document or estimate the potential maximum radiation exposures for workers at the Ames Laboratory under plausible circumstances during the time period in question. The Board concurs with this conclusion.



May 14, 2009

**TO WHOM IT MAY CONCERN:**

I have provided care to [redacted] for many years and have been involved in management of both [redacted] left and [redacted] cancer in 1987 and 1997 respectively.

I am aware of the fact the patient was potentially exposed to radiation during employment in the Ames Laboratory. I have reviewed the literature on radiation exposure and [redacted] cancer.

I believe it is more likely than not that her exposure to radiation therapy in the workplace played a role in the development of both of [redacted] cancers.

# Ames Laboratory News

INSTITUTE FOR ATOMIC RESEARCH

IOWA STATE UNIVERSITY

AMES, IOWA

Volume 1, No. 13

March 18, 1960

Editor, B. J. Gleason

## THE LABORATORY BUSINESS OFFICE

The third in a series of articles designed to better acquaint the various Ames Laboratory groups.

The Laboratory Business Office was recently established to replace the Administrative and Personnel Department of the Laboratory. Responsibilities of this office include: general administration; budget preparation; personnel services; property management; transportation; and contract administration. The Laboratory metalworking, woodworking, glassblowing and electronics shops also are administered through this office.

Mr. Alex Edwards, Laboratory Business Manager, is in charge of the Laboratory Business Office. He joined the staff in 1948 and worked as an Administrative Aide to the Director until his recent appointment to Laboratory Business Manager.

Administrative Services are handled through Mr. Eugene Catus, Admin. Asst.; who has been with the Laboratory since 1950. He assists in the preparation and analysis of budgets for the Atomic Energy Commission and Iowa State University, and prepares wage and salary back-up information for consideration by the Salary Review Committee.

Mr. Curtis Roberg began employment with the Laboratory in 1948 with the Shipping, Receiving and Property Department. He assumed his present duties as Personnel Assistant in 1957. Personnel Services, which include college recruitment, employment of E-base and hourly personnel and the maintenance of all personnel records for Laboratory employees, are Curt's responsibilities.

Ardith Jensen is Secretary to the Laboratory Business Manager and began her employment with the Laboratory in 1951. In 1952 she was promoted to her

present position as Secretary. Her primary responsibilities are to handle correspondence and dictation for Mr. Edwards and to arrange appointments and meetings for the discussion of Laboratory business matters. Ardith also prepares a number of administrative reports concerning the Laboratory and of interest to the Atomic Energy Commission.

The responsibility for processing the personnel action sheets and time sheets goes to Mrs. Vicki Goss. Vicki also takes care of the clerical preparation and assembly of the Laboratory budgets and the maintenance of the files relating to these subjects. She is one of the newer members of the staff, having begun her employment in the fall of 1959.

Dale Knutson, Asst. Accountant, began his employment in the Accounting Office in 1956; he was transferred to his present position in early 1958. Dale works very closely with Gene Catus in processing and maintaining a log of the work orders, cost codes and purchase orders. He prepares much of the statistical data and many details used in budget preparation and analysis.

Academic vacation records, compilations of information on the Synchrotron operation and the coordination of the details of our shop order system are taken care of by John Politis, Asst. Accountant. John was originally employed as a Patrolman in 1950 before being transferred to the Laboratory Business Office in 1952.

The "Ames Laboratory Travel Bureau" is operated by Mrs. Rosalie Locker. Shortly after she began work at the Laboratory in 1957 as a stenographer, she also assumed the responsibility of making travel arrangements for all Laboratory sponsored trips. Rosalie also serves as secretary to Mr. Roberg in handling the correspondence which pertains to Laboratory personnel matters.

Mrs. Allene Adams is another new member of the staff. She has the responsibility of preparing and

(Continued on page 2)

12

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12

#### 2.1.4 Physical Chemistry Annex 2

The Physical Chemistry Annex 2 Building was a brick fireproof structure built east of Wallace Road in early 1944 to house the recovery of uranium from scrap uranium metal turnings collected from other Manhattan Project sites (Spedding 1947). Operations in this building through December 1945 produced more than 300 tons of recovered uranium metal (Spedding 1947). Operations ended in 1953 when the building was converted to a plumbing shop; it was razed in 1972 (Ames 1985). The area where the building stood was covered with concrete and served as a parking lot and loading zone. The area was surveyed in May 1979 (Voss 1979). Part of the General Services Building now covers part of the former building site (see Figure 2-1).

#### 2.1.5 Metallurgy Building (Wilhelm Hall)

The Metallurgy Building, constructed by the AEC, was completed in October 1949 (Ames 1951). The building houses research directed toward the development of special metals and alloys used in nuclear energy projects (Ames 1962). Zircaloy was initially developed at Ames Laboratory as part of a basic study of the zirconium-tin alloy phase diagram (Ames 1962). The subject of reactor coolants was studied, as were the heat-transfer properties of various metals and alloys (Ames 1951). Equipment available for research, development, and production in metallurgy included many types of furnaces; high-vacuum systems; pyrometric devices; fabricating and testing machines; metallographs; X-ray diffractometers; and ultrasonic, spectrographic, dilatometric, and other instruments for examination and study of metals and alloys (Ames 1962). A glovebox line in the Metallurgy Building was used to study the behavior of plutonium in molten metal systems (Ames 1962).

Thorium production and research activities were moved from Physical Chemistry Annex 1 to the Metallurgy Building in 1949 and work on thorium continued until 1953 (Hokel et al. 1998). Poor contamination control practices and poor ventilation contributed to contamination of the building (Hokel et al. 1998). However, contamination levels have been reduced by mitigation, decontamination, remodeling, and renovation projects (Hokel et al. 1998). Contamination still exists in many interspatial areas of the building and in some relatively inaccessible areas (Hokel et al. 1998).

#### 2.1.6 Research Building (Spedding Hall)

\* The Research Building was constructed by the AEC and occupied in early 1951 (Ames 1951). Many metals, including the rare earths, were investigated for mechanical, chemical, electrical, and other properties, and were studied by experimental techniques that probed the inner structures and forces of the materials (Ames 1962). Research facilities in the building included a 150-kV accelerator that produced 14-MeV neutrons; a glovebox line for radiochemistry experiments; a hot canyon and hot cell with steel shielding, lead glass windows, and manipulators for work with highly radioactive materials; and an electron microprobe analyzer (Ames 1967). The hot canyon was two stories high with the lower level in the basement adjacent to the hot cell. Research activities included electron beam welding; the study of electronic structure of metals; and the separation, preparation, and measurement of properties of the rare earth metals (Ames 1967). The initial research on liquid metal coolants was done at Ames Laboratory in an engineering sodium test loop utilized in corrosion, fluid-flow, and heat transfer studies with liquid sodium (Ames 1967).

#### 2.1.7 Office and Laboratory Building

The Office and Laboratory Building connects the Chemistry and Physics Buildings and provides administrative offices of the Ames Laboratory, the special research laboratories used jointly by chemists and physicists, and a large physical sciences reading room (Ames 1951).

June 1, 2009



THE Ames Laboratory  
Creating Materials & Energy Solutions

U.S. DEPARTMENT OF ENERGY

## Special Director's Message

### Elevated Beryllium Levels Identified in Inactive Spedding Hall Fume Hood Vent Stacks

Recently, radiological and beryllium survey sampling was conducted on inactive fume hood vent stacks in Spedding Hall, in preparation for energy saving projects that include lining of the building's vent stacks. Some radiological contamination was anticipated, due to historical activities related to uranium and thorium production processes, and in some of the stacks elevated levels of radiological contamination were recorded, mostly as fixed contamination. Initial results of beryllium wipe tests also indicated levels of beryllium above the detection limits (0.5  $\mu\text{g}/100 \text{ sq.cm.}$ ) in several of the inactive stacks, and this contamination was unexpected due to the historical understanding that beryllium work had been very limited in Spedding and not of the type that would result in residual contamination.

The results indicate the presence of beryllium contamination in unused fume hood stacks which are not accessible to research and administrative workers. The contamination in the unused stacks does not indicate there is contamination in the rooms where the stacks are located. Results from a 2008 beryllium survey of spaces in TASF, MD, HWH, and Spedding (mostly hallways and offices) indicated no detectable levels of beryllium. Additional room surveys are planned for the laboratories and offices where the contaminated stacks are located. Room occupants are being contacted regarding the room survey activities. Testing is also planned for other fume vent stacks in Spedding.

*This raised a  
big red flag  
to me!*

## **AMES LABORATORY, CHEMICAL DISPOSAL SITE**

(Ames, Iowa)

### **GENERAL DESCRIPTION**

The Ames Laboratory Chemical Disposal (CDS) site is located north of Ontario Street on Scholl Road, Ames, Iowa. The site occupies 2 acres in the Southeast 1/4 of the Northeast 1/4 and in the Northeast 1/4 of the Southeast 1/4 of Section 32, T84N, R24W, Story County, Iowa. The site is owned by Iowa State University and was entered on the Registry in July 1991.

### **SITE CLASSIFICATION**

**For 2002: The site is re-classified to "d" Site Properly Closed Requires Continued Management.**

### **TYPE AND QUANTITY OF HAZARDOUS WASTE**

- The types of hazardous waste at this site are radioactive materials, volatile organic compounds and heavy metals

Ames Laboratory operated by the Iowa State University (ISU) Institute for Physical Research and Technology, for the U.S. Department of Energy (DOE). Starting in the early 1950s the site was used as an uncontrolled disposal area for the laboratory equipment and chemicals from ISU researchers. The quantities and types of materials disposed of during that period are unknown.

In the late 1950s, ISU erected a fence around the area of the chemical disposal site. From 1957 to 1966 the site was used for the disposal of radioactive materials and hazardous chemicals. Nine unlined pits, used to bury radiological and hazardous chemicals contained in steel pails, drums and plywood boxes, were located at the southeast corner of the CDS site. Substances identified as buried at the site include thorium waste, uranium waste, beryllium oxide, yttrium, asbestos, lithium, mercury, thallium salts, cyanide, and zirconium.

Another location within the fenced area (west of the pits) was used to burn uranium metal shavings and other debris directly on the ground surface. Remediation of the burn area was conducted in 1980 and again in 1987. Surface contamination was also discovered in 1987 and was partially remediated. A soil investigation conducted in 1990 revealed elevated levels of thorium and uranium in several areas of the CDS.

Assessment activities at the site include groundwater monitoring and soil sampling. In 1993, groundwater contamination with radioactive isotopes was found in the on-site alluvial aquifer. Further assessment of the extent of groundwater contamination was completed in 1998. The groundwater remains contaminated with radioactive materials, volatile organic compounds and heavy metals. The heavy metal concentration of uranium is as high as 7,500 ug/L, while the Gross Alpha and Beta measurements of radionuclides in groundwater are as high as 2,600 pCi/L. The safe drinking water standard (MCL) for Gross Alpha is 15 pCi/L.

### **SUMMARY OF HEALTH AND ENVIRONMENTAL IMPACTS**

- The primary environmental and public health concern is exposure to radioactive waste.

The Ames Laboratory Chemical Disposal site is located within the city of Ames, Iowa. The site is situated at the head of a ravine that drains to Squaw Creek approximately 1,800 feet west of the site. The creek flows five miles to the southeast into the South Skunk River. The Ames water wells are located approximately three miles east and southeast of the site.

### **SUMMARY OF ASSESSMENT, MONITORING OR REMEDIATION**

The U.S. Department of Energy provided funding to Ames Laboratory and Iowa State University to conduct a site assessment to fully characterize the contamination at the site. An Interim Removal Action (IRA) was proposed by Ames Laboratory and approved by the department in April 1993. The IRA was conducted in 1994. As part of the

February 1, 2010

Dear

I am requesting to be included in the Ames Lab SEC for the Research Building (now Spedding Hall) by extending the dates to 1961. I am convinced that I was exposed to radioactive materials and dust during my employment from which caused my infiltration adenocarcinoma in the and my poorly differentiated histiocytoid cancer in the for which I have no family history or known risk factors. In including a copy of a letter from my oncologist, that states he believes it is "more likely than not" my exposure to radiation in the workplace played a role in the development of both my cancers. In addition, my son during my last nine months of employment, I developed papillary thyroid cancer at which is also associated with radiation exposure. Also, my boss was diagnosed with bone cancer. These cancers developed in the for the 3 of us and definitely appear to be more than coincidence.

Stated that multiple studies have found links between brain, breast and bone cancers

And exposure to toxic substances and that mixtures of chemicals and radiation and the database has never been peer reviewed and does not take into account the combined effects of low-level radiation and toxic chemicals.

During a major renovation in my building causing contamination from tearing out walls & floors and repairing or replacing leaking pipes and drains and valves. They were also making ductwork changes, additions and re-routing which was creating a hazard to me. During this time, they used plywood partitions for protection.

The "hot" canyon and "hot" cell were installed at this time, which was used for work with highly radioactive materials. Releases were not documented, which was typical back then.

From 1957-1966 Ames Lab disposed of radiological and hazardous chemicals (to a waste site north of the facility) including thorium waste, uranium waste, beryllium oxide, yttrium, asbestos, lithium, mercury, thallium salts, cyanide and zirconium. I was working four years of those dates, so we know they were still using those materials during and after my employment.



walked by frequently potentially spreading material from shoes & clothing from their work areas as they walked by. I also filed a lot of paperwork that was sent thru for me to file.

The Ames Lab Newsletters, which I'm glad I saved from 1960, indicate they were still using several radioactive materials in conducting their research. The pictures show primitive and often unsafe, unprotected equipment that created leaks & explosions.

On occasion, I would walk thru my building & go thru a tunnel to the Metallurgy building (Wilhelm Hall) which raises the question of possible "bystander effect". I was never given a monitor and was never told that anyone wore them because of the radioactive materials. It was all a secret to us.

It is not feasible to estimate exposures with reasonable accuracy using very limited data. Since they did not have any monitoring records for me and stated

4

they could only do a partial dose reconstruction for me, I should be automatically considered for the SEC. I have shown there is a <sup>very</sup> reasonable likelihood that my exposure at Ames Lab caused my cancer, as well as my son's.

Dr. Neton described Ames Lab in terms of its structure and its radiological activities, notably thorium operations. The physical plant was never intended to house a production scale operation and its ventilation was inadequate.

During an Ames Lab SEC Petition working group report and SC+A review for my building, SC+A concluded, as did NIOSH, that dose reconstructions would be difficult in light of information deficiencies and gaps. However, the question arose as to what constituted the Ames project, whether production or potential exposures went beyond the production period to be included as part of the SEC petition. This open question needed careful consideration as did the possibility that the 1954 end date might have been "arbitrary". The matter was not whether there was persistent contamination, but whether NIOSH can put plausible upper bounds on those exposures. The presumption should be that I was exposed, and the

only safe level is Zero.

In my most dose estimate I received, it states I was potentially exposed to radiation and detailed it in part, but stated that maximum internal and external exposure cannot be completely reconstructed from 1955 thru 1970. This indicates the POC of less than 50% they gave me can't be accurate.

I read that decontamination efforts at the Ames Lab facilities didn't take place until 1988. Since my building was not properly decontaminated after processing radioactive materials such as thorium and uranium before my employment, I was potentially exposed to significant amounts of radiation.

I have wrongly been denied coverage under the law for being exposed to radiation left over from nuclear weapons activities because of a dose reconstruction based on very little data and inappropriate technical assumptions.

I have not been shown clear and convincing evidence that my cancer was not caused by exposure while working at Ames Lab.

on June 9, 2009 the Ames Lab Director

issued a message as follows in part:  
 Some radiological Contamination was Anticipated, due to historical activities related to Uranium and Thorium production processes and in some stacks, elevated levels of radiological Contamination were recorded, mostly as fixed Contamination. So it's still there - what can I say! At least its contained supposedly.

When I filed my claim 3 years ago, I regret that I didn't have any of this documentation to provide. I came across the Ames Lab Newsletters I saved from 1960 & then began finding additional information. I maintain that my NIOSH DR didn't take into account the very high hazards that were created with the major renovations (including the same floor level as my office) and the research with radioactive materials and their un-documented releases. I question whether the "worst" case selected was indeed the worst case.

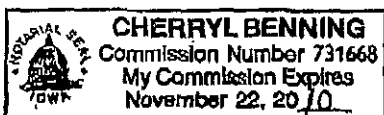
USAEC Spoke  
 at Ames Lab on Oct. 13, 1960. He stated the following during his speech "Nuclear technology presents new and different problems. Here we must consider the question of high temperatures resistance, corrosion, structural qualities and a host of other problems and, in addition, the Effects of Radiation

Considering what I was exposed to during those 4 years, its Common Sense that there is no other explanation for my cancers, my Son's thyroid Cancer and my boss' Cancer. The highly questionable 28.45% POC they gave me was more than enough to cause my Cancer, especially when Zero is the only safe level. My boss was compensated. I should be also, as his co-worker.

I would appreciate any help you can provide.

Sincerely,

PS: The Ames Lab office of environment, Safety, Health & Assurance issued this Statement on 4/30/08. Current guidelines for radiation exposure are based upon the conservative assumption that there is no safe level of exposure.



*Cherryl Benning*