



RESPONSE TO FREEDOM OF INFORMATION ACT (FOIA) / PRIVACY ACT (PA) REQUEST

2000-0041

4

RESPONSE TYPE FINAL PARTIAL

REQUESTER

Monica Gambino/Joseph Pohl

DATE

JUL 19 2000

PART I. -- INFORMATION RELEASED

- No additional agency records subject to the request have been located.
- Requested records are available through another public distribution program. See Comments section.
- APPENDICES Agency records subject to the request that are identified in the listed appendices are already available for public inspection and copying at the NRC Public Document Room.
- APPENDICES **D** Agency records subject to the request that are identified in the listed appendices are being made available for public inspection and copying at the NRC Public Document Room.
- Enclosed is information on how you may obtain access to and the charges for copying records located at the NRC Public Document Room, 2120 L Street, NW, Washington, DC.
- APPENDICES **D** Agency records subject to the request are enclosed.
- Records subject to the request that contain information originated by or of interest to another Federal agency have been referred to that agency (see comments section) for a disclosure determination and direct response to you.
- We are continuing to process your request.
- See Comments.

PART I.A -- FEES

- AMOUNT * You will be billed by NRC for the amount listed. None. Minimum fee threshold not met.
- \$ You will receive a refund for the amount listed. Fees waived.
- * See comments for details

PART I.B -- INFORMATION NOT LOCATED OR WITHHELD FROM DISCLOSURE

- No agency records subject to the request have been located.
- Certain information in the requested records is being withheld from disclosure pursuant to the exemptions described in and for the reasons stated in Part II.
- This determination may be appealed within 30 days by writing to the FOIA/PA Officer, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001. Clearly state on the envelope and in the letter that it is a "FOIA/PA Appeal."

PART I.C COMMENTS (Use attached Comments continuation page if required)

SIGNATURE - FREEDOM OF INFORMATION ACT AND PRIVACY ACT OFFICER

Carol Ann Reed *Carol Ann Reed*

RESPONSE TO FREEDOM OF INFORMATION ACT (FOIA) / PRIVACY ACT (PA) REQUEST

2000-0041

JUL 19 2000

PART II.A -- APPLICABLE EXEMPTIONS

APPENDICES
D

Records subject to the request that are described in the enclosed Appendices are being withheld in their entirety or in part under the Exemption No.(s) of the PA and/or the FOIA as indicated below (5 U.S.C. 552a and/or 5 U.S.C. 552(b)).

- Exemption 1: The withheld information is properly classified pursuant to Executive Order 12958.
- Exemption 2: The withheld information relates solely to the internal personnel rules and procedures of NRC.
- Exemption 3: The withheld information is specifically exempted from public disclosure by statute indicated.
 - Sections 141-145 of the Atomic Energy Act, which prohibits the disclosure of Restricted Data or Formerly Restricted Data (42 U.S.C. 2161-2165).
 - Section 147 of the Atomic Energy Act, which prohibits the disclosure of Unclassified Safeguards Information (42 U.S.C. 2167).
 - 41 U.S.C., Section 253(b), subsection (m)(1), prohibits the disclosure of contractor proposals in the possession and control of an executive agency to any person under section 552 of Title 5, U.S.C. (the FOIA), except when incorporated into the contract between the agency and the submitter of the proposal.
- Exemption 4: The withheld information is a trade secret or commercial or financial information that is being withheld for the reason(s) indicated.
 - The information is considered to be confidential business (proprietary) information.
 - The information is considered to be proprietary because it concerns a licensee's or applicant's physical protection or material control and accounting program for special nuclear material pursuant to 10 CFR 2.790(d)(1).
 - The information was submitted by a foreign source and received in confidence pursuant to 10 CFR 2.790(d)(2).
- Exemption 5: The withheld information consists of interagency or intraagency records that are not available through discovery during litigation. Applicable privileges:
 - Deliberative process: Disclosure of predecisional information would tend to inhibit the open and frank exchange of ideas essential to the deliberative process. Where records are withheld in their entirety, the facts are inextricably intertwined with the predecisional information. There also are no reasonably segregable factual portions because the release of the facts would permit an indirect inquiry into the predecisional process of the agency.
 - Attorney work-product privilege. (Documents prepared by an attorney in contemplation of litigation)
 - Attorney-client privilege. (Confidential communications between an attorney and his/her client)
- Exemption 6: The withheld information is exempted from public disclosure because its disclosure would result in a clearly unwarranted invasion of personal privacy.
- Exemption 7: The withheld information consists of records compiled for law enforcement purposes and is being withheld for the reason(s) indicated.
 - (A) Disclosure could reasonably be expected to interfere with an enforcement proceeding (e.g., it would reveal the scope, direction, and focus of enforcement efforts, and thus could possibly allow recipients to take action to shield potential wrongdoing or a violation of NRC requirements from investigators).
 - (C) Disclosure would constitute an unwarranted invasion of personal privacy.
 - (D) The information consists of names of individuals and other information the disclosure of which could reasonably be expected to reveal identities of confidential sources.
 - (E) Disclosure would reveal techniques and procedures for law enforcement investigations or prosecutions, or guidelines that could reasonably be expected to risk circumvention of the law.
 - (F) Disclosure could reasonably be expected to endanger the life or physical safety of an individual.
- OTHER (Specify)

PART II.B -- DENYING OFFICIALS

Pursuant to 10 CFR 9.25(g), 9.25(h), and/or 9.65(b) of the U.S. Nuclear Regulatory Commission regulations, it has been determined that the information withheld is exempt from production or disclosure, and that its production or disclosure is contrary to the public interest. The person responsible for the denial are those officials identified below as denying officials and the FOIA/PA Officer for any denials that may be appealed to the Executive Director for Operations (EDO).

DENYING OFFICIAL	TITLE/OFFICE	RECORDS DENIED	APPELLATE OFFICIAL		
			EDO	SECY	IG
Hubert J. Miller	Regional Administrator, RI	Appendix D	✓		

Appeal must be made in writing within 30 days of receipt of this response. Appeals should be mailed to the FOIA/Privacy Act Officer, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, for action by the appropriate appellate official(s). You should clearly state on the envelope and letter that it is a "FOIA/PA Appeal."

**APPENDIX D
RECORDS BEING WITHHELD IN PART**

<u>NO.</u>	<u>DATE</u>	<u>DESCRIPTION/(PAGE COUNT)EXEMPTION</u>
1.	04/29/69	Ltr from W. E. Piros to Charles Nilsen (2 pages) Exemption #6
2.	05/19.69	Back-Up Notes To Form AEC-591 (9 pages) Exemption #6
3.	06/21/68	Exhibit F - Industrial Hygiene Job Investigation (1 page) Exemption #6
4.	No date	Exhibit G - Bio-Assay History (1 page) Exemption #6
5.	01/02/69	Ltr from C. W. Nilsen to H. W. Crocker (7 pages) Exemption #6
6.	08/15/68	Ltr from Allen Brodsky to Keith A. Bodden (2 pages) Exemption #6
7.	No date	Back-Up Notes (10/17-19/67) (11 pages) Exemption #6
8.	03/22/73	Ltr from D. F. Knuth to J. P. O'Reilly (1 page) Exemption #6
9.	02/22/73	Ltr from David W. Rees to L. Manning Muntzing (1 page) Exemption #6
10.	11/08/72	Ltr from James P. O'Reilly to Paul R. Shoop (1 page) Exemption #6
11.	02/03/72	Ltr from Charles H. Pillard to Donald C. Burnham (8 pages) Exemption #6
12.	No date	Exhibit J - Note from K. A. Bodden to B. W. Ward (1 page) Exemption #6
13.	No date	Exhibit F - Fire Brigade Members (1 pages) Exemption #6
14.	02/02/72	Exhibit A - Ltr from Paul R. Shoop to USAEC Region I (2 pages) Exemption #6

**APPENDIX D
RECORDS BEING WITHHELD IN PART**

<u>NO.</u>	<u>DATE</u>	<u>DESCRIPTION/(PAGE COUNT)EXEMPTION</u>
15.	02/03/72	Exhibit B - Ltr from Mede C. Milsom to USAEC (2 pages) Exemption #6
16.	06/16/72	RO Investigation Report No. 72-01 (29 pages) Exemption #6
17.	11/27/74	Ltr from Herman C. Kimpel to USAEC Region I (1 page) Exemption #6
18.	12/11/74	Ltr from Raymond H. Smith to Harold D. Thornburg (1 page) Exemption #6
19.	04/29/71	Statistical Summary (2 pages) Exemption #6
20.	No date	Documentation Record (19 pages) Exemption #6
21.	02/24/72	Ltr from C Beck to P Shoop (1 page) Exemption #6
22.	06/09/72	Ltr from J O'Reilly to P Shoop (2 pages) Exemption #6
23.	06/05/72	Transmitted by Fax (3 pages) Exemption #6
24.	06/07/72	Ltr from J O'Reilly to P Shoop (2 pages) Exemption #6
25.	04/26/71	Ltr from W Lorenz to file, Thru H Crocker (10 pages) Exemption 6

*Have
Curt
LWT 5/1*



Westinghouse Electric Corporation

Atomic Equipment Division

Cheswick, Pa. 15024

April 29, 1969

CABLE: WECHSWICK

Telephones: (412) 274-6300

(412) 363-8700

SNM-338

info reported in inspection notes of 4/16/69, W.P.

• Mr. Charles Nilsen
U. S. Atomic Energy Commission
Region 1, Division of Compliance
970 Broad Street
Newark, New Jersey 07102

Dear Mr. Nilsen:

Following is a report of findings concerning a suspected uptake of Plutonium in one of our employes. This data is given to you for your information purposes only. We feel at this time that our findings are substantiated in that there was no significant uptake of Plutonium.

EX6

The employe who was suspected of having an uptake of Plutonium was ~~████████████████████~~ in our Advanced Reactors Division, Plutonium Facilities. The bioassay data is as follows:

May 2, 1967	.02 ± .03 dpm
December 12, 1967	.04 ± .02 dpm
June 21, 1968	13.1 ± 2.6 dpm
July 29, 1968	21.08 ± 1.3 dpm
August 2, 1968	Feces 8.52 ± 1.28 dpm per sample (1.45 ± 0.46 urine) Whole body count, Presbyterian Hospital - negative
September 12, 1968	0.0 ± .03
October 10, 1968	0.0 ± .03
February 11, 1969	0.0 ± .03, 0.00 ± 0.05 (Feces)

We have not been able to explain the two positive results which occurred on June 21, 1968, and July 29, 1968; however, evidence is that there was no measurable uptake as detected by the subsequent negative results in both the

Information in this record was deleted in accordance with the Freedom of Information Act, exemptions 6
FOIA- 2000-0041

ITEM # 1 *D11*

MAY 1 1969

Mr. Charles Nilsen

- 2 -

April 29, 1969

EX 6
whole body count and urine analyses. Air sampling and smear data also during the periods prior to the positive urinalysis gives no indication of release. We, of course, will continue evaluating bioassay samples from [redacted] on a routine basis. If there are any further questions in reference to our findings, please let me know.

Very truly yours,

W. E. Piros

W. E. Piros, Manager
Health, Safety, and Services

WEP/rs

U. S. ATOMIC ENERGY COMMISSION

DIVISION OF COMPLIANCE

Region I

Title: WESTINGHOUSE ELECTRIC CORPORATION
3 Gateway Center
Box 2278
Pittsburgh, Pennsylvania
License No. SNM-338
Docket No. 70-337
License 37-5809-3

Period of Visit: April 14-16, 1969

Inspectors: H. W. Crocker 5/20/69
C. W. Nilsen, Fuel Facilities Inspector Date

H. W. Crocker 5/20/69
W. R. Lorenz, Radiation Specialist Date

Reviewed by: H. W. Crocker 5/20/69
H. W. Crocker, Senior Fuel Facilities Inspector Date

Information in this record was deleted
in accordance with the Freedom of Information
Act, exemptions 6
FOIA- 2090-0041

ITEM # 2

~~ITEM # 1~~

D/2

9

BACK-UP NOTES TO FORM AEC-591

By : C. W. Nilsen, Fuel Facilities Inspector
W. R. Lorenz, Radiation Specialist

Date: May 19, 1969

Title : WESTINGHOUSE ELECTRIC CORPORATION
Pittsburgh, Pennsylvania
License No. SNM-338
(Docket No. 70-337)
License 37-5809-3
Inspection Dates: April 14-16, 1969

INTRODUCTION AND SUMMARY

1. An announced inspection was made of the subject licensee's facilities on April 14-16, 1969 by C. W. Nilsen, Fuel Facilities Inspector and W. R. Lorenz, Radiation Specialist, CO:I. The purpose of the visit was to review the licensee's safety program and compliance with the license and federal regulations. A form AEC-591 was issued at the completion of the inspection indicating that there were not items of noncompliance or unsafe practices noted.
2. At the time of the inspection all three production lines in the Nuclear Fuel Division were operating. The division is scheduled for high fuel production through 1969.
3. Fast fuel studies with plutonium carbide are being discontinued and research work will be concentrated on plutonium-oxide studies as of July 1969. This activity will be expanded into new glove boxes to be installed in an existing area in the Plutonium Fuels Development Laboratory building.
4. For byproduct license it appears that good control and safety have been designed into the use of the material. The material currently possessed is in the form of sealed sources. The licensed activities under the SNM license are essentially the same as previously reported with the one exception of the start up of a new semi-automatic fuel process line. Good control appears to be exercised over the materials and a review of their air sampling data and bioassay data confirm the good control.

DETAILS

Scope

5. The inspection included a detailed tour of all SNM storage and processing areas., a review of the licensees bioassay program, air sampling system and results, and discussion on bioassay check points. During this visit the activities licensed under license number 37-5809-3 were also reviewed.

Organization

6. An organizational change has been made in the Materials Systems Laboratory (MSL) in that Mr. Wiggins, Manager no longer reports to Dr. F. Forscher. MSL is now under Material Services with A. L. Feild Jr., as Manager. (See Exhibit H page No. F20).
7. Persons with whom significant discussions were held, are as follows:

Advanced Reactors Division (ARD)

Cheswick Fuel Facility

W. R. Jacoby, Manager
R. W. Horgos, Engr.

Nuclear Fuel Division (NFD)

Manufacturing

R. E. Bish, Manager Manufacturing
B. Mills, Manager Cheswick Plant Operations

Engineering

R. J. Wiggins, Materials Systems Laboratory Manager

Atomic Equipment Division

Electromechanical Division

E. J. Cattabiani, General Manager

Industrial Relations

W. E. Piros, Safety and Services Manager

K. E. Bodden, Senior Health Physicist

Nuclear Fuel Division - Manufacturing

8. The manufacturing area was toured. Full production on all three fuel lines was in progress and this is to continue for the rest of the year. Current activity is associated with fuel for Indian Point 2, Rochester Gas and Electric and a Japanese reactor.
9. All areas were still posted as on previous inspections with the criticality limits for slab thickness, volume, mass and cylinder diameter. No violations were observed and although operations were in full production housekeeping appeared to be good.
10. When the Columbia plant goes into operation all uranium oxide and fuel element hardware will be shipped from Columbia to Cheswick. The Cheswick plant now does their own fuel element hardware fabrication.

Nuclear Fuel Division - Materials Systems Laboratory

11. The Materials Systems Laboratory was toured. The SNM storage vault contained all unclad SNM under this license and all material was properly stored. No production of fuel pellets was being performed. Three Saxton 3X3 elements were being assembled. No violations were noted.
12. The laboratory will be producing pellets for a Danish reactor in the near future at enrichments of 2, 4 and 5% U-235.

Advanced Reactors Division - Cheswick Fuel Facility

13. The Cheswick Fuel Facility was inspected and no deficiencies noted. Hood limits were current and vault storage was as required by the license.
14. Activities are being completed for carbide fuels and all work will be reorientated toward plutonium oxide type fuels on July 1, 1969. The current carbide pins are 80% U (93% enriched) - 20% Pu. These EBR II

pins are being fabricated at a rate of one per week. Each fuel pin contains about 150 gms SNM.

15. The Cheswick Fuel facility is expanding into 13 new glove boxes to be installed in a designated area of the Plutonium Fuel Development Laboratory building. This new area is scheduled for completion by July 1969 and will be used for Plutonium-oxide fuel development. The first activity will be fabrication of oxide fuels containing 43%, 65% and 93% plutonium as oxide. The job is for about 112 fuel pins. Production rate will be about one pin per week.
16. Records of the plant audits for the past 6 months were reviewed and no nuclear safety violations were recorded.

Health Physics Review of Operations

17. During the tour it was noted that cotton gloves are worn by all operators and that dusty operations such as powder loading and handling are performed in controlled and exhausted systems. Each operation which may cause uranium air concentrations is ventilated and exhausted thru an absolute type filter. The exhausts do not lead to the unrestricted areas but exhaust into the manufacturing area. Personnel comfort air is recirculated from the manufacturing area treated and returned to the manufacturing area.
18. The licensee's chem lab is operated on a clean basis, 10 d/m per 100 cm² of contamination. Minimum quantities of uranium are handled in the area and from a contamination standpoint the area is maintained as a clean area.
19. Attached as Exhibits A, B, and C are the floor plan layouts for NFD, MSL and ARD .

Air Sampling

20. The licensee collects general air samples from about each of their facilities, using a common vacuum line. Air is collected, according to Boden, over a 24 hour period on Whatman #41 filter paper. The air flow rate is approximately .4 l/min., collected samples are counted in a T/A auto counter Model ASC-10 alpha scintillation detector unit. Almost the entire uranium handled at these facilities is insoluble, therefore 220 d/m/m³ is the permitted air concentration.

21. General air samples are located in areas most likely to show air activities, that is in close proximity to processing equipment.
22. The air sampling data from 1/68 thru 4/69 for NFD, was reviewed. Twenty-two general air samples are currently collected from this area. The air sample results for the period 1/69 thru 4/15/69 have been plotted and are shown in Exhibit D. The average concentration in the area is approximately 5×10^{-12} uCi/ml or 11 d/m/m³.
23. On two occasions in NFD, the daily air concentration exceeded 220 d/m/m³.
24. One occasion resulted during charge preparation when the load was placed on a scale. This occurred on two days in January. The air concentration went to 2×10^{-10} uCi/ml and 6×10^{-10} uCi/ml. The cause was determined and the operation was relocated to within a hood.
25. On the second occasion in February, the air concentration reached 10^{-9} uCi/ml. The cause was determined to be a rack for empty trays. The trays and pans were centrally collected and the concentration and movement of these trays caused the air concentrations. As a result, trays are no longer centrally collected.
26. In the MSL, where work is sporadic, twelve general air samplers are located about the facility. Similar records were reviewed for the period 1/68 to 4/69. Typical of the results, is that plotted for the period 1/69 thru 4/15/69, shown in Exhibit E. Average air concentration in the MSL are approximately 10^{-12} uCi/ml or 2.2 d/m/m³.
27. In the ARD, 11 general air samplers are located about the facility as shown in Exhibit C. These sample results were reviewed for the period 1/69 to the present, and the results all indicated no activity (less than 10^{-14} uCi/ml).

Bioassays

28. The licensee's bioassay program is outlined in their site health physics manual. Essentially this manual states that personnel will be urine sampled a minimum of yearly, with activity check points at 25 d/m/liter for uranium and 1 d/m/liter for plutonium.

29. In actuality, according to Bodden, routine urine samples are collected every 3 to 4 months from technicians and engineers who spend more than 35% of their time in the process areas. Personnel in restricted areas less than 35% of their time, such as maintenance personnel, secretaries, etc., are routinely urine sampled every 6 months. Chem lab personnel are urine sampled every 6 months.
30. Urine samples are analyzed by Eberline (plutonium) and International Chemical & Nuclear Corp., (uranium). ICN has since gone out of business in Pittsburgh and Bodden is currently looking for a new processor of uranium urine samples.
31. Currently no routine fecal sampling program is in effect at the facility. Bodden said that in the near future he hopes to obtain one spot fecal sample from the persons more frequently urine sampled. He expects that this spot sampling will be done between the second and third routine urine samples.
32. No routine whole body counting of personnel is performed at the site.
33. A review of the routine urine sample results, both uranium and plutonium, indicated that with few exceptions the uranium results were below 25 d/m/l, and the plutonium results were below 0.1 d/m/l with one exception. A routine plutonium urine sample submitted by [REDACTED] indicated 13.1 d/m/ sample. Immediate resampling and investigation indicated a second higher result and no evidence of an exposure to cause such results. Additional sampling with spike, indicated possible laboratory analysis problems. Whole body counting at Presbyterian Hospital indicated negative. Subsequent urine sampling indicated negative which is inconsistent with the initial high results. Bodden concluded that [REDACTED] did not receive a plutonium uptake. For final bioassay data on this case see Exhibits F and G. (This situation was reviewed previously during the inspection of August 27-28, 1968 and covered in inspection report dated January 2, 1969). Ex 6
34. Bodden said that a person will be immediately bioassayed and possibly whole body counted depending on the breathing zone, nasal smear, general air sample results and the operation performed. His result would be viewed in the light of the circumstances under which the possible exposure occurred. Confirmed exposures would be reported to the Commission.

37-5809-3

35. Under this license, Westinghouse at Cheswick is authorized to possess;
(a) any byproduct material as sealed sources up to 25 curie (Amendment #7)
and (b) any byproduct material in any form up to 50 millicuries. These
materials can be used in R&D programs. License condition 13 requires
that leak tests be made on their sealed sources.
36. All the material used under this license is located in a separate cyclone
fenced security building at the site. The material under this license
is in the form of sealed sources of Sr-90 and Co-60. Twenty-Two Sr-90
sealed sources varying in activity from 1 uCi to 20 mCi are used as
backscatter sources. The one 10 curie Co-60 sealed source they possess
is used in cross sectional density studies.
37. Only three of the Sr-90 sealed sources are used at any one time. The
sources are mounted in a specially designed shielded and interlocked
enclosure such that the radiation levels outside the enclosures are essent-
ially background. The interlocks were checked by the inspector and noted to
be operable. Sources when mounted in the enclosures are used daily.
Sources not in use are stored in a locked plastic storage cabinet within
the facility.
38. The Co-60 source is locked in place in a specially shielded mount such
that the source is not moved or handled in any way but that the material
to be tested passes under the source. Radiation levels around the set
up are essentially background.
39. A radiation technician is permanently assigned to the facility and maintains
health physics surveillance and all radiation records and profile measure-
ments about each gauging set up.
40. Leak tests are performed by the technician and the results are maintained
on source leak test record cards. Sealed sources are leak checked every
5 months or when removed from service. A review of the records indicated
all results to be less than .005 uCi.
41. The storage box, storage containers, operating enclosures, and housing
were all posted with, "Caution Radioactive Material" signs with the proper
symbols and "Caution Radiation Area", signs and symbols. Storage containers
were all properly labeled.

42. All persons in and around the area were supplied Eberline film badges in determining whole body exposures and finger badges for extremity exposures. A review of the records indicated that all the results are negative. Bodden said that they plan to drop the film badge service next month.

Summary Review

43. A summary review was held with Mr. Cattabiani, General Manager, Electro-mechanical Division, who replaces Mr. Sarles as site landlord. Mr. Cattabiani has site responsibility for safety. Mr. Piros and Mr. Bodden were also in attendance.
44. A form AEC-591 was issued indicating no items of noncompliance for licenses SNM-338 and 37-5809-3.
45. It was pointed out that the inspector noted on one occasion a person not wearing gloves when touching raw fuel. The suggestion was made that the licensee should restate the policy of wearing gloves when touching fuel.

Ex 6

INDUSTRIAL HYGIENE JOB INVESTIGATION

NAME [REDACTED]		DEPT. Advanced Reactors Division	
WORK AREA		SUPV. Dr. W. R. Jacoby	
TYPE OF URINALYSIS	ROUTINE First sample	SPECIAL	RECHECK Second sample
IRANIUM	PLUTONIUM X	GROSS BETA-K 40	OTHER
DATE COLLECTED	RESULT	DATE COLLECTED	RESULT
6/21/68	13.1	9/12/68	0.00 d/m/sample

Date scheduled for urinalysis _____

Findings (see back for possible contributing factors) Prior to the bio-assay sample July 1968, the subject was involved in a ^{glove} change which produced airborne contamination of approximately 4×10^{-13} uCi/cc (normal average concentration - 8×10^{-14} uCi/cc). Respirators were worn by all personnel involved in the change and no loose contamination was detected in area. The subject, however, indicated that for a few moments he cleared the respirator from his mouth in order to give instructions.

Conclusions The above described situation is the only incident that standouts during the period before the bio-assay sample. The results of a feces study indicated the possibility of exposure approaching a body burden. A whole body study was performed at the Presbyterian University Hospital; the results of the study indicated no "... evidence of internal radioactivity contributable to occupational exposure...." (Memo from Brodsky to K.A. Bodden dated August 15, 1968).

Corrective Action Additional bio-assay samples will be taken during the months of September and October 1968. Recommendation will be made for the purchasing of full face masks with audio speaker for supervising personnel. Iapal samplers will be used during glove change to correlate breathing zone concentrations to fixed air sampling stations results.

Information in this record was deleted in accordance with the Freedom of Information Act, exemptions 6
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ITEM # 3

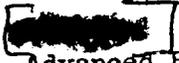
INVESTIGATED BY
K. A. Bodden, Senior Health Physicist

EXHIBIT F

DATE
10/24/68

D/3

EX6



Advanced Reactors Division
Westinghouse Electric Corporation

BIO-ASSAY HISTORY

<u>DATE</u>	<u>Pu-Urine d/m/sample</u>	<u>Pu-Feces d/m/sample</u>	<u>Uranium - Urine d/m/sample</u>
8/22/66			1
5/2/67	0.02 ± 0.03		
12/12/67	0.04 ± 0.02		
6/21/68	13.1 ± 2.6		
7/29/68	21.08 ± 4.3		
7/30/68			0.00 ± 0.03
8/1/68 - 10 a.m.	1.03 ± 0.36		
11 a.m.	0.64 ± 0.64		
3 p.m.	2.02 ± 0.50		
7 p.m.	1.09 ± 0.19		
8/2/68 9:30 a.m.	1.45 ± 0.46	8.52 ± 1.28	1
8/2/68 - whole body count - Presbyterian Hospital - <u>NEGATIVE</u>			
9/ 12/68	0.00 ± 0.03		
10/ 10 /68	0.00 ± 0.03		
2/11/69	0.00 ± 0.03	0.00 ± 0.05	

EX4

Information in this record was deleted
in accordance with the Freedom of Information
Act, exemptions 6
FOIA- 2000-0041

ITEM # 4 D/4



UNITED STATES
ATOMIC ENERGY COMMISSION
DIVISION OF COMPLIANCE
REGION I
970 BROAD STREET
NEWARK, NEW JERSEY 07102

201 645-2380

Rp

January 2, 1969

File

THRU: H. W. Crocker, Senior Fuel Facilities Inspector
Region I, Division of Compliance

BACK-UP NOTES TO FORM AEC-591
WESTINGHOUSE ELECTRIC CORPORATION
3 GATEWAY CENTER
BOX 2278
PITTSBURGH, PENNSYLVANIA
LICENSE NO. SNM-338

The operations at Westinghouse, Cheswick are being maintained at their high safety level. No hazards or unsafe practices were noted and the managers at the various operations appeared to be familiar with the day-to-day activities. An "all clear" form AEC-591 was issued as a result of the inspection.

The possible plutonium deposition appears to be resolved by the current low bioassay result that was telephoned to the inspector by Mr. Piros on September 3, 1968. This incident and the overall bioassay program will be reviewed in detail during the next inspection.

Mr. Piros realizes that the increased high activities at the Cheswick site are going to require additional personnel. He is reviewing his organization and anticipates hiring additional health physicists people and a criticality engineer.

CWN
C. W. Nilsen
Fuel Facilities Inspector

Information in this record was deleted
in accordance with the Freedom of Information
Act, exemptions 6
FOIA- 2000-0041

ITEM # 5

D/S

(7)

U. S. ATOMIC ENERGY COMMISSION

DIVISION OF COMPLIANCE

Region I

Title: WESTINGHOUSE ELECTRIC CORPORATION
3 Gateway Center
Box 2278
Pittsburgh, Pa.
License No. SNM-338
Docket No. 70-337

Period of Visit: August 27 and 28, 1968

Inspector: C. W. Nilsen 1/2/69
C. W. Nilsen, Fuel Facilities Inspector Date

Reviewed by: H. W. Crocker 1/2/69
H. W. Crocker, Senior Fuel Facilities Inspector Date

BACK-UP NOTES TO FORM AEC-591

By: C. W. Nilsen, Fuel Facilities Inspector Date: January 2, 1969

Title: WESTINGHOUSE ELECTRIC CORPORATION
Pittsburgh, Pennsylvania
License No. SNM-338
Docket No. 70-337
Inspection Dates: August 27 and 28, 1968

INTRODUCTION AND SUMMARY

1. An announced inspection was made of the subject licensee's facilities on August 27 and 28, 1968, by C. W. Nilsen, Fuel Facilities Inspector, CO:I. The purpose of the visit was to review the licensee's safety program and compliance with license conditions and federal regulations. A form AEC-591 was issued indicating that there were no items of noncompliance or unsafe practices. Mr. R. A. Feil, Reactor Inspector, CO:I, accompanied the inspector on the visit.
2. The form AEC-591 was sent from the CO:I office on September 24, 1968. Activities are continuing on the new facility to be used for plutonium oxide fuels. This facility is scheduled for start-up in November, 1968. A possible plutonium deposition based on urine samples was reviewed and it was verified by additional samples and whole body counting that a deposition of plutonium had not taken place.

DETAILS

Scope

3. The inspection included a tour of all SNM processing areas and the new plutonium facility. A detailed review was made of material control in production areas and of the possible plutonium deposition to an employee.

Organization

4. An organizational change has been made in the Nuclear Fuel Division under Mr. R. E. Bish, Manufacturing Manager. Mr. Bish will be

responsible for the Cheswick Plant and the new South Carolina plant. Under Mr. Bish will be Mr. P. J. Koppel, Manager of the South Carolina facility and Mr. B. Mills, Manager of Cheswick operations. Mr. Mills accompanied the inspector on the tour of the Nuclear Fuel Division facility.

Persons Contacted:

5. Personnel with whom significant discussions were held are as follows:

Advanced Reactors Division

Engineering Advanced Materials

W. R. Jacobi, Ceramic Development Manager
R. M. Hargos, Ceramic Development

Nuclear Fuel Division

Manufacturing

F. Cellier, Manufacturing Planning Manager
B. Mills, Manager Cheswick Plant, Operations

Engineering Advanced Fuels

R. J. Williams, Materials Systems Lab, Manager
J. Devero, Senior Engineer (Ceramic)

Atomic Equipment Division

Industrial Relations

W. E. Piros, Safety and Services Manager

Nuclear Fuel Division - Manufacturing

6. The manufacturing area was toured to observe materials handling control. The area was well posted with limits for controlling SNM. All material was properly stored in the storage vault area. Housekeeping appeared to be maintained at its normal high level.

7. The new line to be used for the production of fuel pellets was observed. The new line has been used for the production of fuel pellets but is currently shut down. The line has given satisfactory performance although some areas will be modified before the system is used for basic line design at the new plant.
8. During a tour of the manufacturing area, it was observed that the centerless grinder was being cleaned. A tray of wet sludge from cleaning the grinder had been placed in an unauthorized area on top of a storage rack used for fuel storage. No pellets were stored in the rack at the time and the situation was immediately corrected. No citation was issued as the licensee immediately took action and followed their normal violation procedures, which involves both the supervisor and the man responsible for the violation being reprimanded. A violation report was also written and brought to the attention of Mr. Bish for his review.
9. Future production activities include fuel for the Swiss Reactor, Connecticut Yankee, Indian Point No. 2, and others.

Nuclear Fuel Division - Advanced Fuel

10. The Materials System Laboratory was toured and no violation or unsafe practice was noted. The area appeared in good order. There was no SNM processing being done in the area. Production will be starting on the fabrication of fuel for the Saxton 2-A Core. This job includes both 12-1/2% U-235 and 9-1/2% U-235. The job is to be completed in November, 1968.
11. All operating areas in the lab were posted as to the limits based on 93% enrichment. Use of 93% enrichment limits does not hamper production and therefore makes the control in the laboratory much easier. The vault was observed and all material appeared to be stored as required.

Advanced Reactors Division - Advanced Materials

12. The Ceramic Development Laboratory was toured. Production is continuing on plutonium uranium carbide fuel pins.
13. Control of SNM in the laboratory was reviewed. A vault custodian is responsible for maintaining records of all material transfers from one box to another. Before material can be transferred

between boxes, the operator completes the required forms which are in turn given to the vault custodian. These forms must be approved by the vault custodian before the transfer can be made. In addition, all boxes are marked with the SNM inventory. These box inventory signs are not current at all times but are brought up to date at least once per day by the vault custodian and he therefore has records of the amount of material in each box and knows if transfers can be made.

14. A possible plutonium deposition to an employee, [REDACTED] EX 6 was found by a routine bioassay sample taken on June 21, 1968. The analysis which was received on July 24, 1968, indicated 13.1 ± 2.6 dpm per sample. A second bioassay sample was immediately taken on July 24, 1968, and the answer was received on July 30, 1968, indicating 21.8 dpm/24 hour sample. As a result of the two high urine samples, Westinghouse had [REDACTED] whole body counted at the University of Pittsburgh. Attachment No. 1 shows the result of the whole body count. The whole body count did not show any positive results for a plutonium deposition. EX 6
15. The samples that indicated the plutonium deposition were analyzed by Eberline. Mr. Piros then tried to evaluate the data and noted that a bag failure on May 3, 1968, did give slight contamination to the area. [REDACTED] was involved in the bag failure. An air sampler located about 2 feet from the bag failure was counted and showed 22 dpm per 24 m³ for 24 hours. This represents 1.3 dpm/m³ or 5.9×10^{-13} uCi/cc which is well below the Part 20 limits. Mr. Piros also stated that when Eberline reported the high upper Pu count for the urine sample taken on July 24, 1968, they reported a 0.00 uranium figure. This did not seem logical as the material being processed is 20% Pu, 80% uranium. Mr. Piros also submitted additional samples on August 2, 1968, which included one of his own. The report on these samples lead Mr. Piros to suspect Eberline's data as the analysis indicated that he had a high sample. Eberline then said that all the data associated with the August 2, 1968, samples were in error. EX 6
16. A fecal sample taken on August 2, 1968, was reported at 8.52 ± 1.28 dpm for 1.69 Grams of sample. According to Eberline this is not representative of a plutonium uptake.
17. On September 3, 1968, Mr. Piros called the inspector via telephone and told him that a urine sample taken on August 16, 1968, indicated $0.22 \pm .13$ dpm/24 hour sample. Based on this negative result and the whole body count, Westinghouse feels that there was

no body deposition. Mr. Piros is continuing his study of the problem to ensure himself that the sampling program is being maintained in a manner that will show plutonium uptake. With the new plutonium facilities planned for the site Mr. Piros wants to insure that he has an adequate program.

Summary Review

18. A summary review was held with Mr. P. M. Sarles, General Manager Atomic Equipment Division, and Mr. Piros. The inspector told Mr. Sarles that no items of noncompliance nor unsafe practices were noted during the inspection. The inspector also stated that he still had some reservations about the possible plutonium deposition and would like to be kept informed as to the results of the continuing bioassay sampling of [REDACTED] The inspector also stated that he would like a copy of the report which Westinghouse is preparing with reference to this possible plutonium deposition. Mr. Sarles stated that he would be glad to send a copy of their report and that they were by no means satisfied with the results that they were obtaining from Eberline and they would continue to follow this problem until it was resolved. Mr. Sarles also stated that he might take a trip into Eberline to indicate to them directly his displeasure with their results. EX 6
19. Mr. Sarles is highly interested in the safety of the site and indicated that he would be watching all activity very closely in the future. He also stated that he wants this sampling program problem to be resolved before the new Pu facility is brought on line.



GRADUATE SCHOOL OF PUBLIC HEALTH
UNIVERSITY OF PITTSBURGH • PITTSBURGH, PENNSYLVANIA 15213

RADIATION HEALTH
L-401 PRESBYTERIAN-UNIVERSITY HOSPITAL

August 15, 1968

Mr. Keith A. Bodden
Senior Health Physicist
Atomic Equipment Division
P. O. Box 217
Cheswick, Pennsylvania 15024

Dear Mr. Bodden:

EX6

We have evaluated both the low-energy and high-energy spectra of [redacted] whom we counted on August 2, 1968. Neither spectra show any evidence of internal radioactivity contributable to occupational exposure. Our sensitivity limit for measuring pure Pu-239, by counting the 17 KeV x-rays from the chest with the 2" Dx 1mm NaI crystal placed against the chest for a 40-minute count, would be approximately 0.03 μ Ci of Pu-239 if the plutonium were spread throughout the lung. As you know, the permissible burden based on bone would be about 0.04 μ Ci for a life-time exposure (Health Physics 3, June, 1960), and the permissible burden that has been calculated for the lung, based on theoretical average dose rates and a RBE of 10 for alpha particles, would be about 0.016 μ Ci. Thus, with these measurements we can be certain that some amount of plutonium is in the body, particularly if it were absorbed in a more soluble form and then retained in the bone. However, the counting data make it appear that at least [redacted] probably does not have many times a lung burden of Pu-239. Furthermore, if [redacted] does have a serious lung or bone burden many times the permissible levels, the amount of Am-241 growing into the burden from the 0.886 weight percent of Pu-241 will eventually make [redacted] burden detectable by external counting techniques. In the meantime, further urine samples analyzed specifically for Pu-239 and/or Am-241 may shed further light on the exposure history.

EX6

EX6

As you will see from the enclosed photographs of [redacted] spectra, the K-40 and Cs-137 burdens are in the normal range and no evidence of internal gamma-emitting nuclides is present in the high-energy spectra. A Cs-137 burden of only 0.0023 μ Ci, within the normal range from fallout, was measured.

EX6

Enclosed are copies of the printouts and photographs of the spectra of [redacted] controls, and standards. We hope this information will be helpful.

Information in this record was deleted
in accordance with the Freedom of Information
Act, exemptions 6
FOIA- 2000-0041

ATTACHMENT NO. 1

ITEM #

6 D/6 ②

August 15, 1968

Sincerely yours,



Allen Brodsky, Sc. D., C. H. P.,
Technical Director
Radiation Medicine Department

Approved by:



Niel Wald, M. D., Director
Radiation Medicine Department

AB:pc
Enclosures
cc: Dr. Wald

U. S. ATOMIC ENERGY COMMISSION
DIVISION OF COMPLIANCE
Region I

Licensee: WESTINGHOUSE ELECTRIC CORPORATION
3 Gateway Center
Box 2278
Pittsburgh, Pennsylvania
License No. SNM-338
Docket No. 70-337

Dates of Visit: October 17 thru 19, 1967

Inspectors: CW Nilsen 11-16-67
C. W. Nilsen, Fuel Facilities Inspector Date

J. F. Bresson 11-16-67
J. F. Bresson, Radiation Specialist Date

Reviewed by: H. W. Crocker 11/12/67
H. W. Crocker, Senior Fuel Facilities Inspector Date

Information in this record was deleted
in accordance with the Freedom of Information
Act, exemptions 6
FOIA- 2000-0041

ITEM # 7 ^{D/7}
(11)

BACK-UP NOTES TO FORM AEC-592

Licensee: WESTINGHOUSE ELECTRIC CORPORATION
3 Gateway Center
Box 2278
Pittsburgh, Pennsylvania
License No. SNM-338
Docket No. 70-337

Dates of Visit: October 17 thru 19, 1967

By: C. W. Nilsen, Fuel Facilities Inspector
and
J. F. Bresson, Radiation Specialist

INTRODUCTION

Scope

1. An announced inspection was made of the subject licensee's Cheswick facilities on October 17, 18 and 19, 1967, by C. W. Nilsen, Fuel Facilities Inspector, and J. F. Bresson, Radiation Specialist, CO:I. The purpose of the visit was to review the licensee's nuclear safety and health physics programs for compliance with the license and federal regulations. All facilities under the license where SNM material is being processed were toured by the inspection team. The nuclear safety review included an inspection of all facilities where SNM material is being processed, with a detailed review of the uranium development laboratory and the plutonium facility. The health physics inspection included a general orientation for the Radiation Specialist of the licensee's activities with a detailed review of the bioassay program and plutonium system.

Summary

2. A form AEC-592 was issued for two deficiencies noted in the nuclear safety program of the Materials Systems Laboratory (see paragraph 19), and for a deficiency noted in the bioassay program (see paragraphs 15, 16 and 17). The nuclear safety violations were corrected during the inspection and the 592 indicates that no reply is required. The violations pertained to establishment of criticality zones which did not include the proper separation distances and improper control over open containers in the pit under the storage vault. The health physics violation which will require an answer from the licensee, pertains to improper follow-up action on bioassay samples that exceed the licensee's action point.
3. Westinghouse started processing plutonium in the Advanced Materials Laboratory on July 11, 1967. No problems have been noted. There is very little navy fuel activity and the licensee expects to have all navy work completed by the end of the year. Construction activities on the new Plutonium Fuels Development Laboratory were reviewed and the facility is expected to be processing plutonium shortly after the first of the year in 1969.

DETAILS

Plant Organization

4. Plant organization was reviewed and is as shown in Attachment #1. The only major change in plant organization is a new position of Manager, Advance Fuel, under Dr. F. Forscher. Dr. Forscher will be responsible for the plutonium activities at the Cheswick site as shown, and Mr. Wiggins, Manager, Materials Systems Laboratory, reports to Dr. Forscher.
5. Persons with whom significant discussions were held, are as follows:

Advanced Reactors Division

Engineering, Advanced Materials

W. R. Jacoby, Ceramic Development Manager

R. M. Horgos, Facilities Engineering, Ceramic Development

Nuclear Fuel Division

J. J. Povejsil, General Manager

Manufacturing

R. E. Bish, Manufacturing Manager

F. Cellier, Manufacturing Planning Manager

Engineering, Advanced Fuel

Dr. F. Forscher, Advanced Fuel Manager

R. J. Wiggins, Manager, Materials Systems Lab.

Dr. D. Herbst, Engineer, Materials Assistance Lab.

Operations Services

Safety Industrial Hygiene

R. Tschiegg, Accountability

Atomic Equipment Division

Industrial Relations

W. E. Piros, Supervisor, Industrial Health and Safety

Except where noted otherwise, information in each section of the report was received from the individual noted next to the section title.

Organization of Health Physics Section - Piros

6. Piros has site-wise responsibility for health and safety, no matter which Westinghouse organization has control over the various facilities on site. He reports to R. D. Atherley, Manager of Industrial Relations, Atomic Equipment Division, who in turn reports to P. M. Sarles, General Manager, Atomic Equipment Division. Piros has seven technicians working for him currently. He has also recently hired a new health physicist, Keith Bodden, who is to report November 13, 1967, and will more closely supervise the Health Physics technicians. Piros has responsibility for nuclear safety in addition to health physics responsibility.
7. One technician is assigned to the Pump Repair Facility (PRF) where operations are performed on contaminated pumps under License No. 37-5809-1. Three technicians are now assigned to the Astro Fuel Facility. This is a three-shift operation, conducted under a Naval fuel contract. One technician is supplied to cover both Jacoby's Plutonium Laboratory and Wiggin's Materials Separation Laboratory (MSL). Finally, two technicians are currently assigned to cover the two-shift operation under Bish's Nuclear Fuels Division (NFD) fuel element manufacturing program. To complete the picture, Piros indicated that another plutonium facility under the NFD is currently being constructed. It will be headed by Olsen and will require two additional technicians to be hired sometime in 1968.
8. All new operations are thoroughly discussed by management personnel and safety personnel. Health physics aspects of new operations are discussed by Piros, who then with the assigned technician, formulates a schedule for performance of various health physics activities. The schedules as well as various procedures are then written. The technician is responsible for following these procedures. Piros from time to time audits his work and is immediately available should problems arise. Piros attempts to remain informed as to various radiation conditions in all facilities.

Nuclear Fuel Division - Cellier

9. Activities in the Nuclear Fuel Division have not changed since the last inspection. The 10,000 square foot addition that was mentioned during the last inspection has been essentially completed and is being used. This new area is being monitored by a radiation-detection unit although SNM material is not currently being used in this area. The installation of the new fabrication line is proceeding and is expected to be completed some time after the first of the year. The new line is being automated to the greatest extent possible and will be a pilot-type operation for the lines to be installed in the new plant to be built in South Carolina.
10. Mr. Tschiegg said that the material that had been removed from the duct work above the oxide fabricating equipment has been analyzed. 318.5 kg of uranium were removed from this duct work with an average of 3.55% U-235. This item was reviewed in the report of January 9 and 10, 1967.

11. The uranium processing facilities were toured and everything was noted to be under good control. At the time of the inspection, there were no major operations being conducted, although Westinghouse was completing a refueling job for Yankee.
12. Following the tour, various records were examined. It was noted that all fuel operations personnel have received less than 50 mrem/month external exposure.
13. A stationary air-sampling system has been provided in this facility. There are 17 permanently mounted samplers scattered throughout the facility. Piros said that this operation has been going on for several years and potential trouble areas have been determined by means of spot air samples. The permanent station locations have been determined from spot sampling data. Records were examined, and it was noted that the samples are changed and counted daily. Applicable MPC is 10^{-10} uCi/cc for in-plant samples. It was noted that the highest sample recorded with 2.9×10^{-10} uCi/cc, but that 40 hour averages have been in the neighborhood of 5×10^{-12} uCi/cc. There are two exhaust stacks leading from this production facility. They are sampled on alternate days. These records were examined, and it was noted that all samples have been evaluated as less than 10^{-12} uCi/cc with applicable MPC being 4×10^{-12} uCi/cc.
14. Contamination samples in the NFD area are taken according to a pre-determined schedule. Locker rooms are smeared daily. Powder receiving rooms are smeared once or twice per week when working and various other parts of the lines area are smeared approximately four times a week. Applicable external surface contamination limits are 1000 dpm/100 cm² in the pressing and charge-loading areas. It was noted that since June 1967, the hot locker rooms have averaged from 500 to 1000 dpm/100 cm² and various areas in the process facility have ranged from 2 to 10,000 dpm/100 cm², average being around 2,000. Piros indicated that he has not been completely happy with cooperation received in this area as far as clean-up is concerned, but that he does not feel the contamination levels are high enough to warrant a major complaint. He further stated that the area is to be decontaminated shortly, since most of the contracts have been fulfilled, and no new work in this area is contemplated until late December 1967. Contamination levels in other areas of the processing facility range to 500 dpm/100 cm² and in the powder receiving area, up to 4,000 dpm/100 cm², average being 200 to 300 dpm/100 cm².
15. Urine samples are collected on a frequency ranging from two to six months per person depending on his job. It is noted that by letter dated September 12, 1966, DML incorporated revision 5 of the Health Physics Manual WAED-HP-103 into the license. Page 25 establishes various checkpoints. Applicable U-235 recheck points are 25 dpm/l. Section 6.7 on page 26, states in part, "if these values are exceeded an additional urine sample will be collected promptly to determine whether the excretion is continuing (or to rule out the possibility that this sample was inadvertently contaminated)."
16. These samples are evaluated at Westinghouse's East Pittsburgh Industrial Hygiene

Laboratory, under the direction of W. Speicher. Urinalysis records were examined, and it was noted that since the previous inspection conducted in December 1966, several personnel have exceeded the 25 dpm/liter checkpoint. It was further determined that several of these personnel work for the Astro Nuclear Fuel Division which is under exempt contract. However, the following cases were detected in which personnel involved were exposed to licensed material, exceeded the checkpoint, and resampling was not performed.

EXG

<u>Name</u>	<u>Result dpm/liter</u>	<u>Sampling Date</u>
[REDACTED]	40	10/ 5 /66
[REDACTED]	28	7/28/67
[REDACTED]	101	7/28/67
[REDACTED]	30	2/ 6 /67
[REDACTED]	56	7/28/67
[REDACTED]	49	7/29/67
[REDACTED]	31	5/25/67
[REDACTED]	56	5/ 5 /67
[REDACTED]	33	5/12/67
[REDACTED]	26	7/28/67
[REDACTED]	31	4/21/67

17. It was determined that the mechanism for determining resampling of various individuals has broken down to some degree. It was further noted that it takes from four to five weeks on an average for results to be received from the Westinghouse Laboratory. At the close of the discussion, Piros admitted that his program was deficient in the resampling area, and he immediately began to take steps to correct this deficiency.

Materials System Laboratory - Wiggins

18. The Materials System Laboratory was toured and the inspector noted that great improvement had been made in the SNM control procedures in the laboratory. All areas are posted with the current controlling licensed conditions and the new vault is constructed as indicated in the recent license amendment. The vault is also posted with the current storage limitations. In touring the laboratory it was evident to the inspector that Mr. Wiggins, the laboratory manager, Dr. Herbst, the engineer responsible for criticality control, and the other

people in the laboratory responsible for SNM movement, were thoroughly familiar with the license. Frequent audits of the laboratory are made by Mr. Wiggins and Mr. Piros. Mr. Piros showed the inspector reports of inspections of the facility and these reports indicated that no major violations had been observed by Mr. Piros. The violations mainly involved the lack of labels on containers indicating uranium content and enrichment.

19. Two minor infractions of the license were noted by the inspector in the laboratory. As a result of the inquiry by DML, Westinghouse indicated that all containers in the pit under the storage vault would be ⁱⁿ an ~~inadvertent~~ *inverted* position or covered. While touring the pit, the inspector noted a five-gallon pail in the pit and another large vessel that were not covered. Mr. Wiggins indicated surprise at the finding of the bucket, stating that he had been down there several times and had cleaned the area. The bucket was removed. The large tank was covered as it can not be readily removed from the pit. A second item of noncompliance noted in the laboratory was with respect to the criticality zones established for work locations. Each criticality zone is posted as to the limits. The zones are also controlled by taping the floor. In several areas the tape established a common boundary between the two criticality zones. The license establishes that work locations would be separated by 12 inches. The tape is used to indicate the work location boundaries and therefore it should be separated by 12 inches. These tapes were changed. These two violations in the licensee's nuclear safety program were corrected. The Form AEC-592 for these two items will not require an answer from the licensee.
20. A furnace used to dry uranium pellets is controlled with the limit specifying a 1-1/2" maximum slab for SNM material. On looking in the furnace, the inspector noted that the furnace, although not being used currently for uranium material, was filled with containers of various sizes, including bottles and trays approximately 4 inches deep. The licensee stated that he does not normally restrict the furnace to 1-1/2" deep trays to prevent mixing geometrically safe containers with unsafe containers. The inspector reviewed problems that may be associated with this practice and the licensee indicated that procedures will be established to limit the furnace to containers that are sized within the limits.

Advanced Materials Laboratory - Horgos

21. The licensee started processing plutonium in the Advanced Materials Laboratory on July 11, 1967. At the time of the inspection the license had 1.868 kg of plutonium and 9.134 kg of U-235. No uranium has been processed in the glove boxes.
22. The material stored in the vault was being stored according to the license conditions. There was an accumulation of some junk in the vault and the licensee stated that this was a result of the vault custodian not having been cleared to enter the vault and that as soon as this clearance is received, these conditions will be improved.

23. The glove box atmosphere system is functioning properly. The licensee currently has six boxes on one purifying unit and two boxes on the other purifying unit. The six boxes are being maintained at approximately 300 parts per million oxygen and 8 parts per million water. The two boxes on the other purifying unit are being maintained at 8 parts per million oxygen and 1-1/2 parts per million water. The licensee plans on installing additional purifying units so that there will be a purifying unit per two boxes.
24. The current practice for material control is to weigh the material into a box, weigh the material out of the box, bag out all waste, and assign a Pu value to this waste based on the difference between the in and out values. Very little waste has been accumulated to date.
25. As indicated in previous reports, the licensee maintains a low-pressure water system in the glove boxes for cooling purposes. This low-pressure water system is designed so that leaks in this system, will not leak water in the glove boxes but glove box atmospheres into the water lines. With respect to this system, there was not sufficient capacity to operate one of the induction heating units. The licensee installed an auxiliary recirculating water system for this and limits this auxiliary system to 3.4 liters of water. The reservoir for the auxiliary system is located under the glove box and is sized for this amount of water. The water is circulated only through the induction coil. It has been found that the water in the low-pressure water system contains 2.3×10^{-4} uCi/ml. This, according to Piro, was due to a sudden leak in the furnace line and happened all at once. It represents approximately 1.5 grams of plutonium in 50 gallons of water. The system is sampled weekly.
26. The Pu facility is routinely monitored by the nuclear safety committee as required. These reviews were noted by the inspector and no violations were noted. The only items noted on these reviews pertain to industrial safety, and although nuclear safety is reviewed, no nuclear safety items have been noted.
27. The plutonium laboratory currently consists of two lines of six glove boxes each. All but one glove box utilize an argon atmosphere. The argon is recirculated, entering and exiting dry boxes through absolute type filters and is repurified prior to re-entry into the boxes. Automatic flow and pressure regulation devices are provided to ensure that the differential between the dry boxes and the operating area is at least .5 inches water. Inspection of manometric gauges provided on each box indicated a negative pressure differential ranging from .5 to .75 inches of water. Jacoby stated that this pressure differential has not varied since the boxes were first tested last spring. Automatic corrective action takes place when the pressure differential drops toward zero. A Dwyer switch is activated which opens a solenoid valve, pulling more air out of the boxes. Should the pressure differential become too negative, -3" water, a Dwyer negative sensor is activated which opens a solenoid valve shunting more argon into the system. In addition, a U. S. Dynamics purifier has

been installed to keep a constant pressure differential in the range of .5 inches water. This has not been 100% satisfactory and three more purifiers, each with its own automatic corrective device, have been purchased and will be installed as needed to provide a more constant pressure differential.

28. A second air handling system is provided to maintain the process room at approximately .1 inch water negative pressure to surrounding rooms. An exhaust air system is provided and is regulated to maintain this differential. When doors to the process room are opened, a Dwyer switch is activated which allows more air to be exhausted from the room. Exhaust air passes through one of two parallel banks of two absolute type filters each. Exhaust air from this duct is sampled by means of a filter paper sampler.
29. In-room air samples are evaluated daily. There are ten stationary air samplers permanently mounted near the various plutonium boxes. This is a "house-vac" system with one sampling pump pulling approximately one cubic meter per hour through all samplers. Station no. 10 evaluates air leaving the room through the exhaust stack. Samples are counted from ten to fifteen minutes and are evaluated at the 95% confidence level. Forty hour MPC is noted to be 2×10^{-12} uCi/cc or 4 dpm/m^3 . Records were examined, and it was noted that all in-room samples have been less than $.9 \text{ dpm/m}^3$, average being approximately $.2 \text{ dpm/m}^3$. Station no. 10, the stack effluent sampler, was noted to range to $.13 \text{ dpm/m}^3$ which is equal to MPC of 6×10^{-14} uCi/cc. Average stack samples are approximately $.06 \text{ dpm/m}^3$.
30. In addition to these stationary samples, specific hi-vol samples are taken during various operations such as bagging in and out material. Also, the licensee possesses an Eberline AIM-3A alpha proportional counter which is equipped with a fixed filter. According to Piros, this monitor can see approximately ten times in-room MPC, and is utilized to detect extremely high conditions. It is a portable monitor and is utilized in the area where work is being performed. The filter paper is changed at least daily.
31. Contamination surveys are performed in the facility at least weekly, although Piros indicated that increased activity will mean increased survey frequency. Lab limits are $100 \text{ dpm}/100 \text{ cm}^2$ alpha. Records indicated that thus far, contamination levels have been less than $2 \text{ dpm}/100 \text{ cm}^2$.
32. Gloves are checked daily with an Eberline Instruments RM-3A, a count rate meter equipped with a scintillation alpha detector. Technicians utilize these meters to check gloves before and after entry. They also wear surgeon's gloves inside the dry-box gloves. Hands are also checked for contamination after entry. Piros indicated that he was about to set up a smearing program for testing gloves.
33. The health physics technician has begun a program for determining beta-gamma dose rates to hands. He has taped dosimeters and film badges inside gloves in a box in which is located 160 grams plutonium. Beta-gamma levels inside these gloves have ranged from 2 to 4 mr/hr. In addition a gamma survey is performed weekly

at the glove box exteriors. A diagram of the laboratory, including all glove box locations has been prepared as a survey record. Dose rates around the various glove boxes and the quantity of plutonium within each box, ^{are} recorded. It was noted that with 190 grams of plutonium in box #1, the general dose rate at the exterior of the box face ranged from 1.5 to 2 mr/hr.

EX-6
34. Urinalysis for plutonium workers is performed by Eberline. Samples are collected every two months. A 500 ml aliquot is precipitated and then plated out via electro-deposition. It is then counted for alpha. Eberline claims to be able to see something less than 1 dpm/liter and also has scanning equipment available to determine the energy of the alpha emission. The workers are required to submit samples in the Medical Department. They are required to wash, and wear their street clothes to the office where they submit the sample. Two or three days are needed to fill the bottles. The reporting time, according to Piros, can be within a week, and if an incident were to occur, a system has been set up to get results in 24 hours. It was noted that since startup, one set of samples was submitted on September 7, 1967. It was noted that the highest level was submitted by [redacted] and was evaluated at $1 \pm .13$ dpm/liter. All others were less than .9 dpm/liter, average being approximately .1 dpm/liter or less. Piros stated that he has not instituted a fecal analysis program as yet, although he has not ruled this out as a possibility, nor has he ruled out whole body counting.

35. Film badges are supplied by Landauer and are changed monthly. It was noted that for the period August 26 thru October 1, 1967, three workers received whole body exposures of 50, 100 and 130 mrem. Piros stated that these individuals had spent from five to six hours per day working at the glove boxes in radiation areas of up to 2 mr/hr. All other film badge results were noted to be less than 30 mrem/month. It was noted that these film badges are provided with beta-gamma sensitive film, neutron sensitive film and an accident dosimetry package. This consists of a little plastic box in which are a sulphur pellet, gold foil, a gold foil wrapped in cadium and an indium foil.

Atomic Equipment Division

36. The navy fuel shop was toured. Very little navy fuel remains on site and all navy fuel will be shipped by the end of the year. Mr. Piros still maintains good control over the navy shop.

37. The laboratory under the control of Mr. H. K. Lembersky was toured. At the time of the inspection, the lab inventory was approximately 1300 grams of U-235. A limit of 350 grams U-235 in process was being maintained. A second control, although not specifically spelled out, indicated to the inspector that each room in the laboratory is limited to less than 350 grams U-235. One room in the laboratory contained more than this amount due to a 5 inch waste bottle which contained approximately 345 grams of U-235. This waste is to be recovered and sent off-site. Records are kept on all U-235 and these records seem to prevent material from accumulating in one place. Stored waste and samples not being processed are not included in the 350 grams in process limit.

38. The low enriched material, around 5% enrichment, is not inventoried but accumulated and then returned to the process. The liquid waste is accumulated in a 55-gallon drum at a concentration of less than 3 grams per liter. Only waste generated during one specific type of analysis performed on low-enriched material is accumulated in the drum to prevent mixing the enrichments. Mr. Piros was not aware that a 55-gallon drum was being used to accumulate this waste as this procedure had been initiated by the people in the Power Division so that the material would not be transferred to them in small bottles. No hazard was found with this operation. The inspector did request Mr. Piros to review SNM control in the laboratory to ensure he was aware of all current operating procedures.
39. The Metallurgy Laboratory was toured by the inspector and it is limited to less than 350 grams of U-235. The laboratory is doing very little work on uranium at the present time and does not anticipate any increase in activity and possibly an altogether discontinuance of work on SNM.

Management Discussion

40. Preliminary summary reviews were held with Bish, Wiggins, and Jacoby. The health physics, ^{SNM}concompliance item occurred mainly in Bish's Manufacturing Division. Bish requested that the urinalysis problem be discussed with him in detail. He stated that he would ensure that corrective action would be taken immediately. Further, he questioned the long period of time it takes for results to be obtained from the laboratory. He stated emphatically that if requested by Piros he would speak directly to Speicher on this matter. He stated that if the problem could not be resolved, he would not be adverse to going out on bid to a commercial vendor for urinalysis service.
41. The nuclear safety items noted in the Materials Systems Laboratory were discussed with Mr. Wiggins and Mr. Piros and corrective action was completed.
42. A final summary review was held with Mr. Povejsil, General Manager, Nuclear Fuel Division. The inspectors told Mr. Povejsil that an AEC-592 form would be issued as the result of the inspection. The nuclear safety deficiencies were discussed as requiring no answer. The health physics item was discussed and Mr. Povejsil stated that the item would be corrected.



UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON, D.C. 20545

MAR 22 1973

J. P. O'Reilly, Director, Directorate of Regulatory Operations, RO:I

REQUEST FOR RO INVESTIGATION DOCUMENTATION, WESTINGHOUSE ELECTRIC CORPORATION, CHESWICK, PENNSYLVANIA, INJURY TO [REDACTED] ON JANUARY 29, 1972

EX6

EX6 Agents of [REDACTED] have requested copies of AEC documents relating to the RO investigation of the circumstances surrounding the injury to [REDACTED]. A copy of the request is enclosed.

EX6 The Office of Administration will make the appropriate documents available to [REDACTED] agents. However, before the investigation report, and the inspection report for the 1/10-12/73 inspection, can be released, it is necessary that Region I obtain the Westinghouse review for proprietary information. A written response on the proprietary information review should be obtained from Westinghouse. It is also necessary that Region I review the Region I files to identify all documents relating to the injury and subsequent investigation. Copies of these documents, except for those documentations already in RO HQ which were identified and discussed with Mr. Crocker on March 21, 1973, should be forwarded to Gen Roy, Chief, Radiological Protection Branch, as soon as possible.

In order that this release of information may be accomplished on a timely schedule, you are requested to obtain the Westinghouse review as soon as possible. We suggest that Westinghouse be requested to respond within two weeks. You will note that the Office of Administration's interim reply (enclosure 2) has promised an early response.

Donald F. Knuth
D. F. Knuth, Deputy Director
for Field Operations
Directorate of Regulatory Operations

Enclosures:
As stated

Information in this record was deleted
in accordance with the Freedom of Information
Act, exemptions 6
FOIA- 2000-0041

ITEM # 8 D/8

DAVID W. REES

Investigations

920 STATE AVENUE
CORAOPOLIS, PENNSYLVANIA 15108

February 22, 1973

U.S. Atomic Energy Commission
Washington 25, D.C.

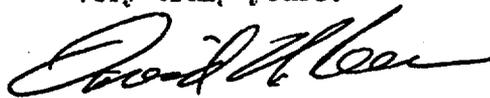
Attention: Mr. L. Manning Muntzing

In re: Injured - [REDACTED] EX6
Accident date - 1-29-72
Employer - Westinghouse
Location - Cheswick, Pennsylvania
Your investigator - Alvin F. Ryan

Dear Mr. Muntzing:

The law firm of Conte, Courtney, Tarasi & Price has been retained by [REDACTED] EX6
to pursue a third party action in his behalf. They have requested that I investigate his accident. It is my information that your investigations are generally exempt from publication but that exceptions are made in cases where the public interest would not be adversely affected. With this exception in mind, I am requesting copies of all materials in your possession relating to primary facts, ultimate facts, conclusions and the rationale for conclusions that Mr. Ryan or any other investigators or supervisors submitted.

Very truly yours,



David W. Rees

cc: Conte, Courtney, Tarasi & Price
Attention: Louis M. Tarasi, Jr., Esq.

Information in this record was deleted
in accordance with the Freedom of Information
Act, exemptions 6
FOIA- 2000-0041

ITEM # 9

D19

DR-3382

Rec'd Off. Dir. of Reg.
6-2-73

NOV 8 1972

Mr. Paul R. Shoop
Utility Operators Department
International Brotherhood of Electrical Workers
1125 - 15th Street, N.W.
Washington, D. C. 20005

References: Our letter dated June 9, 1972
In response to your letter dated February 2, 1972

Dear Sir:

Our investigation at Westinghouse Electric Corporation, Cheswick, Pennsylvania, with respect to the accident which caused an injury to ~~XXXXXXXXXX~~ on January 29, 1972, has been completed.

EY6

In accordance with our letter of June 9, 1972, I have enclosed copies of our enforcement correspondence and the reply letters by Westinghouse Electric Corporation.

Sincerely,

James P. O'Reilly
Director

Enclosures:

1. Enforcement letter dated June 9, 1972
2. Westinghouse letters dated June 27 and October 13, 1972
3. Acknowledgement letter dated November 8, 1972

bcc: Gen Roy, RO
H. D. Thornburg, RO
R. H. Engelken, RO
RO Files
PDR
NSIC
State of Pennsylvania

ITEM # 10 D/10

Information in this record was deleted
in accordance with the Freedom of Information
Act, exemptions 6

FOIA- 2000-0041

OFFICE ▶	CRSS:I				
SURNAME ▶	Lorenz:SS <i>Lorenz</i>	Smith	Nelson	O'Reilly	
DATE ▶	11/8/72	11/8/72	11/8/72		

International Brotherhood
of Electrical Workers

C O P

IBEW

1125-15th St. N.W.
Washington, D.C.
20005

February 3, 1972

Mr. Donald C. Burnham, Chairman
Westinghouse Electric Corporation
Westinghouse Building
Gateway Center
Pittsburgh, Pennsylvania 15222

Dear Mr. Burnham:

EX6
I want to call your attention to an unfortunate incident which happened on January 29, 1972 at the Company's Cheswick, Pennsylvania Nuclear Equipment Plant. On that day employee [REDACTED] suffered an amputation of an arm in an accident involving powdered uranium. That such an accident should happen in the first place is difficult to believe, but it becomes further incredible that it occurred in a plant involving radioactive materials.

At various times in negotiations with the IBEW, we have urged that the Company along with the Union establish a formal procedure in our contracts for the recognition of a union safety committee and schedule periodical meetings to discuss with the local plant management safety problems. As recently as December 1971, the IBEW System Council EM-1 Executive Board reaffirmed our position that additional procedures for handling safety matters are now necessary. In spite of the national interest and the legislation in the area of Occupational and Health, Westinghouse refused to recognize or meet with local union safety committees.

I urge that this case involving [REDACTED] be investigated by your office and the Company meet at the earliest possible time with the union to negotiate some contractual provisions covering a union safety committee. Such committee can not now benefit [REDACTED] but it can certainly be an effective deterrent toward any such future mishaps. The time has long since passed with a Corporation the size and complexity of Westinghouse can ignore these safety matters.

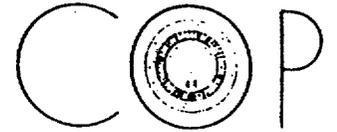
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Act, exemptions 6
FOIA- 2000-0041

ITEM # 11

D/11

8

International Brotherhood
of Electrical Workers



IBEW

1125-15th St. N.W.
Washington, D.C.
20005

Mr. Durnham

page 2

February 3, 1972

Local Union 1914 and the International Office intends to take all steps that are necessary with the Federal Occupation Safety and Health Administration and with the Atomic Energy Commission to assure that there is not a reoccurrence of this type of accident.

I was amazed to learn from the local union that Health Physics personnel were not assign to the shift on which the accident occurred or available to accompany [redacted] to the EY6 hospital.

Sincerely yours,

Charles H. Pillard,
International President

CHP: nlc
cc: A. R. Johnson
P. H. Menger
C. H. Tupper
V. Verdeckel
H. Milson ✓
H. Gober
B. Pease

International Brotherhood
of Electrical Workers

Prior to accident - General area

Surface contamination:
Airborne activity:
Radiation level:

.. After the Accident - General area

Surface contamination:
Airborne activity:
Radiation level:

EX 4

[REDACTED] Body
Surface contamination:

Emergency Vehicle (after Use)
Surface contamination:

EX 6

Hospital - areas [REDACTED] was in
Surface contamination:

Bioassay Results
Beta-gamma:
Alpha:

Body Scan Results (HP from site probably performed this)
Appropriate reporting units:

Isotope of Uranium involved
Uranium - 235:
Uranium - 238:
Other:

Form of Uranium Isotope
Pellet:
Powder:
Other:

Whole Body Count results (if performed)
Appropriate reporting units:

Time accident occurred:

EX 6

Time [REDACTED] left site:

Time of arrival at Hospital:

International Brotherhood
of Electrical Workers

EX 6

Time HP called to report to hospital:

Results and date of last bioassay or body scan of [REDACTED] prior to the acci

Length of experience working with radioactive material:

Briefly describe health physics organization an operation (total manpower, manpower per shift, emergency plan training etc.) as it exists now:

Briefly describe emergency squad organization and proficiency:

Is there an emergency vehicle for transporting accident victims on site or is a private ambulance service called in?

Please send any article pertaining to this accident that appeared in the local newspapers.

1. Surface contamination - ON COVERALLS AND T-SHIRT - SO

A. COVERALLS - $D/m/27$

B. SOCKS - $D/m/15$ AVERAGE

C. UNDERSHIRT - $D/m/9$

D. UNDERSHORTS - $D/m/9$

• $D/m/cm^2$ - DISINTEGRATION PER MINUTE / 100 CENTIMETER²

• M.P.C. - MAXIMUM PERMISSIBLE CONCENTRATION HRS.

[REDACTED] body

Ex. 6

After the Accident - General area

- 1. Surface contamination - YES 1980/D/M/100 CM²
- 2. Airborne activity - YES 1.2 M.P.C. HRS.
- 3. Radiation level - NOT CONCERNED

Prior to accident - General area.

- 1. Surface contamination - YES 1980/D/M/100 CM²
- 2. Airborne activity - YES 1.2 M.P.C. HRS.
- 3. Radiation level - NOT CONCERNED

Emergency Vehicle (after use)

1. Surface contamination - emergency blanket + sheet

Negative Loose contamination

EX6

Hospital - Area [REDACTED] was in.

1. Surface contamination - NONE IN OPERATING OR RECOVERY IS

Bioassay Results

1. Beta-gamma
 2. Alpha
- } IN PROCESS

Body Scan Results (H.P. from site probably performed this)

1. Appropriate reporting units - NO INFORMATION

Isotope of Uranium involved

1. Uranium - U-235 - 3% of enriched UO₂ (Uranium-oxide)

Form of Uranium Isotope.

1. Power

Whole Body count results (IF performed)

1. NO BODY COUNT WAS TAKEN - NO REASON TO TAKE ONE.

Time accident occurred - 4:10 P.M.

Left site - 4:15 - 4:20 P.M.

Arrival at hospital - 4:25 - 4:30 P.M.

Time H.P. called to report to Hospital.

4:30 P.M.

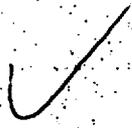
EX 6 Results and data of Last bioassay or body scan of [REDACTED] prior to the accident.

1. Before 6-16-71
2. 0 - D/m/ Leader
3. 48 Hrs. Total void collector
4. 1.6 Leader - 4/ D/m/ Leader

Length of experience working with radioactive material

1. Off and one about 1 year

Briefly describe H.P. organization and operation (total manpower per shift - emergency plan training etc.)

1. ONE H.P. ON DAYLIGHT (FIRST SHIFT)
 2. NO H.P. ON AFTERNOON (SECOND SHIFT)
 3. ONE H.P. ON MIDNIGHT (THIRD SHIFT)
 4. NO EMERGENCY PLAN TRAINING
- 

Is there a emergency vehicle for transporting accident victims on site or is a private ambulance service called in.

1. Company owned ambulance is on the site
which was purchased about one year ago.

Briefly describe emergency squad organization and proficiency. 1. Inadequate.

Health, Safety and Services
222-5619
June 8, 1970
Safety and Industrial
Hygiene Orientation

NUCLEAR FUEL DIVISION

Mr. B. W. Ward

EX 6

Please have newly [REDACTED] report to my office on Wednesday, June 10, 1970, at 8:30 a.m. for an Industrial Hygiene Orientation. Upon completion of this orientation, the safety orientation will be given by Mr. C. W. Bates, in his office.

Thank you

K. A. Badden
K. A. Badden, Supervisor
Industrial Hygiene

cc Mr. C. W. Bates

EXHIBIT J

Page 1 of 1

Information in this record was deleted
in accordance with the Freedom of Information
Act, exemptions 6
FOIA-2000-0041

ITEM # 12 D112

EXHIBIT F

FIRE BRIGADE MEMBERS

Robert Arnold - [REDACTED]

Charles Batcher - [REDACTED]

Dale Bills

Bob Eichler

William Francis [REDACTED]

Earl Goughler - [REDACTED]

Albert Horsman [REDACTED]

Eli Langdon - [REDACTED]

Franklin Lomika [REDACTED]

John Millburn [REDACTED]

J. Monteleone [REDACTED]

Dom Pizoli [REDACTED]

Don Rupp [REDACTED]

Russell Wiles - [REDACTED]

Andrew Felock [REDACTED]

Merle Clawson [REDACTED]

Thomas Fannie [REDACTED]

Richard Gray - [REDACTED]

Robert Dunning [REDACTED]

Louis Teichman - [REDACTED]

Joseph Bosco - [REDACTED]

105 → Thomas Bombich [REDACTED]

106 → Richard Capellman [REDACTED]

107 → Thomas Haubrich [REDACTED]

108 → Edward Rutkowski [REDACTED]

Gary Bartel - [REDACTED]

Edward A. Delligatti [REDACTED]

Jack Juris - [REDACTED]

Alex G. McKillop - [REDACTED]

~~David Smith~~ [REDACTED]

Edward Szalla [REDACTED]

William Bagdon, [REDACTED]

Richard Pfeifer [REDACTED]

Arthur A. Schrecengost, [REDACTED]

EX6

in accordance with the Freedom of Information Act, exemptions

ITEM # 20007004 (continued on next page)

D112

Thomas A. Elliott

John Fontana -

Dave Ezatoff -

Wesley Burton -

Louis Able -

David Carson

J. Malloy -

A. Qortazzo -

EX6



EW

1125-15th St. N.W.
Washington, D.C.
20005

February 2, 1972

United States Atomic Energy Commission
Region I
Division of Compliance
970 Broad Street
Newark, N. J. 07102

Gentlemen:

It has come to our attention that our Brother, [REDACTED] suffered an arm amputation as a result of an accident involving the use of powdered uranium at the Westinghouse Nuclear Equipment Divisions Cheswick Plant, Chewick, Penna. on January 29, 1972. EX6

We are particularly concerned that during the course of and as a result of the accident [REDACTED] was not exposed to concentrations of radioactive materials which would result in an overexposure of the maximum permissible body burden; The body burden for uranium isotopes is extremely low. EX6

✓ We raise some questions concerning the handling of the accident.
✓ Health physics personnel were not assigned to the shift that the accident occurred. The other two shifts of the three shift operation had health physics personnel assigned. Health physics personnel should be assigned to all shifts in this particular type operation.

✓ As a result, no health physics personnel were available when the emergency plan was initiated, to accompany [REDACTED] to the hospital. The hospital had no cognizant personnel available on their staff for monitoring duty when [REDACTED] arrived. It is highly desirable that health physics personnel accompany the victim to the off site location to provide ready information to the attending physicians who may not have monitoring equipment. An important secondary function is to assure that contamination is not spread to areas which the general public might have access to. EX6

Exhibit A

Page 1 of 2

ITEM # 14

D114 (2)

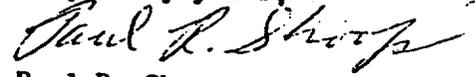
-2-

At some time after [redacted] arrival at the hospital, the licensee's health physics personnel reported to the hospital to perform monitoring services. EXL

It is reported that the equipment [redacted] was operating is experimental with modifications having been made. It is also reported that equipment similar to this is in use at the licensee's other facility. We are desirous that this type accident is not repeated. EXL

We appreciate the attention you will direct to this accident. If possible, this office would like a copy of your findings and recommendations.

Very truly yours,



Paul R. Shoop
International Representative
Utility Operations Department

PRS: cm

CC: IVP Johnson

C. H. Tupper, Director of Safety

V. R. Verdekel, Int'l. Rep.

R. H. Mills, Int'l. Rep.

M. Milsom, Bus. Mgr., L. U. 1914

Page 2 of 2

Exhibit A



International Brotherhood of Electrical Workers

AFL - CIO

LOCAL 1914

BOX 232 • CHESWICK, PENNSYLVANIA

Phone: 274-8550

Feb. 3, 1972

United States Atomic Energy Commission
Region 1
Division of Compliance
970 Broad Street
Newark, N. J. 07102

Gentlemen:

The contents of the following letter is to inform you of a industrial accident involving enriched uranium U-238 powder.

On January 29, 1972 at approximately 4:10 in the afternoon a industrial accident occured at the Cheswick site of Westinghouse Cheswick, Penna. The accident occured in the Nuclear Fuel Dept. of Westinghouse plant. The Nuclear Fuel Dept. of Westinghouse at the Cheswick site is responsible for the fabrication of nuclear fuel components for commerical power plants.

The individual involved is a [redacted] member of Local 1914 I.B.E.W. WHO AT age [redacted] is employed by the Westinghouse Elec. Corp. as a oxide man in the Nuclear Fuel Dept. His primary duties are to prepare uranium powder by mixing and blending them for future operations. On the day of the accident [redacted] was operating a Chilsenator machine which function,s to blend and compress powder fuel. While operating this machine [redacted] acq- uired the use of a wooden stick to assist him in keeping the powder flowing into the mixing portion of the machine.

EX 4

EX 6

The metal arms of the mixing section of the machine caught hold of the wooden stick. In a natural reaction to retrieve the stick [redacted] left hand became engaged in the machine. Unable to reach the controls of the machine (because of their position in relation ship to the machine) [redacted] left arm continued into the machine until it was pulled off at the elbow.

EX 6

Exhibit B

Page 1 of 2

ITEM #

15

D/15

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FOIA- 2000-0041





International Brotherhood of Electrical Workers

AFL - CIO

LOCAL 1914

BOX 232 • CHESWICK, PENNSYLVANIA

Phone: 274-8550

-2-

Through the quick response of a fellow employee and
and members of the security force [REDACTED] was given first aid
and rushed to Citizens General Hospital in New Kensington, pa.
by means of the Companys Ambulance. Through proper care and rest
we are happy to say [REDACTED] is recovering. We regret that this report
had to be made and advise that if any questions arise that we may
help in answering please feel free in contacting us.

EX6

Very truly yours

Mede C. Milson Pres

Mede C. Milson
Local 1914 I.B.E.W.

cc A. Johnson IVP
P. Shoop IR

Exhibit B

Page 2 of 2

JUN 16 1972

Gen W. Roy, Chief, Materials and Fuel Facilities Branch
Directorate of Regulatory Operations, HQ

RO INVESTIGATION REPORT NO. 72-01
WESTINGHOUSE ELECTRIC CORPORATION
CHESWICK, PENNSYLVANIA

The subject investigation report is forwarded for your information.

The Washington, D.C. Headquarters of the IBEW expressed some concern and made some allegations regarding the incident in a letter dated February 2, 1972. Enclosed for your information is our letter to the union containing our investigation findings which Dr. Beck promised the union in his letter of February 24, 1972. The draft letter of our investigation findings, as well as the documentation letter with enclosures, were transmitted to you by facsimile on June 3, 1972.

Our review of the licensee's emergency procedures revealed that they followed, in general, the requirements of Part 50, Appendix E, Section II. These requirements are geared to major emergencies such as natural disasters, criticality, excursions, major explosions, fires, etc., and involve mass evacuations. They do not, however, have provisions for emergencies of the type encountered in this investigation. Accordingly, we recommend that Licensing, upon renewal of a facility license, impose a license condition requiring the licensee to institute procedures to be followed when an individual has been injured or there is an imminent risk of injury and the injury or risk of injury may be complicated by external or internal exposure to ionizing radiation.

Following completion of enforcement action, Region I will conduct an inspection of this facility, with particular emphasis in the area of training, emergency planning and safety evaluation of new or modified equipment.

ITEM #

16

Information in this record was deleted in accordance with the Freedom of Information Act, exemptions 6

Paul R. Nelson, Chief
Materials Radiological Safety Branch

Enclosures: 2000-004

1. Subject Investigation Report (Orig & 2)
2. Record card & Unusual Occurrence Card
3. Ltr of Investigation findings

~~SECRET~~

D116
29

CO:	P. A. Morris, RO	R. H. Engelken, RO			
OFFICE:	H. D. Thornburg, RO	RO Files			
SURNAME:			Lorenz, mvk	Ryan	Nelson
DATE:			06-15-72		6/15/72

REGULATORY INVESTIGATION REPORT
DIRECTORATE OF REGULATORY OPERATIONS
REGION I

Subject: Westinghouse Electric Corporation
Cheswick, Pennsylvania 15024
License No. SNM-338

Unsafe operation resulting in a severed arm of an employee while operating a powder preparation machine in a low enriched uranium fuel processing line.

Period of Investigation: February 10, 11, 24, 25, 1972

Investigators:

W. R. Lorenz

A. F. Ryan

4/13/72
Date

6/11/72
Date

Reviewed by:

P. R. Nelson

Date

Reason For Investigation

An investigation was initiated by RO:I into the circumstances involving an industrial accident at the Westinghouse Electric Corporation facility at Cheswick, Pennsylvania, as a result of a phone call received by RO:I on February 4, 1972 in which the licensee reported the incident. This phone report was followed by a letter dated February 4, 1972 from the licensee in which the incident was confirmed. The incident, occurring on January 29, 1972, resulted in severing a man's arm.

Summary of Facts

An employee was receiving initial instruction in operating a powder preparation machine by an operator. During the initial operations the employee was momentarily left alone, at which time, he used a dowel stick to loosen packed powder in a feed hopper. The stick inadvertently dropped and the employee instinctively reached for the stick. His hand became impaled on a mixing bar which resulted in the loss of the employee's left arm below the elbow. The employee was removed from the machine and taken to a local hospital where his arm was amputated above the elbow. The radiological aspects of the accident were insignificant.

The licensee's training, safety practices and emergency procedures were reviewed. Deficiencies noted during the investigation are set out in the details of this report.

Items of Noncompliance

1. Contrary to 20.206(a), you failed to instruct an employee in the precautions to be taken during the operation of your powder preparation machine to prevent injuries involving radioactive material. Specifically, the employee was not informed of the hazard associated with the use of a stick in and around moving machine parts. (contributed to incident) (See paragraphs 12, 19, 28, 43, 48, 49, 74, 75 and 90)
2. Contrary to License Condition 18 which incorporate your emergency procedures, only initial contacts were made with the local hospital as indicated in your letter dated May 6, 1971, and the hospital's letter in response dated June 15, 1971. Specifically, prior arrangements were not made including pre-designating various hallways and rooms within the hospital for handling low contaminated cases, and having available portable battery-operated detection instruments for area and wound monitoring. (unrelated to incident) (See paragraph 115a)

Safety Items

1. The licensee's present system of one employee training another provides (a) no means by which the supervisor knows what instructions and precautions have been given the employee, (b) no training followup by supervisor to assure safe procedures are being followed, and (c) no periodic retraining to assure that employees remain knowledgeable. (unrelated to incident) (See paragraphs 33, 44, 47, 78 thru 82, 106 thru 112, and 114)
2. Equipment modifications were made to the powder preparation equipment at your Cheswick facility, and no safety review was made of the equipment prior to placing the equipment into service. In addition, this was in violation of your procedures entitled, "Safety Review for New, Modified, or Relocated Equipment". (contributory to incident) (See paragraphs 113 and 114)

Persons Contacted or Interviewed

Mr. Paul Thomas, Manufacturing Manager (representing Mr. E. J. Cattabiani, Manager of Electro-Mechanical Division and Site Landlord)
Mr. P. Koppel, Nuclear Fuels Division, Manager
Mr. K. Bodden, Supervisor Industrial Hygiene & Health Physicists
Mr. W. Piros - Manager Industrial Health & Safety Services
Mr. J. Denero - Engineer
Mr. F. DeFatta - Electrician
Mr. J. Nowikowski - operator
Mr. A. E. Nemet - Operator
Mr. M. P. Ternoway - Operator
Mr. J. Wallace Powell - Operator
Mr. R. Fritzius - Foreman
Mr. R. Reid - Operator
Mr. A. Frost - Operator
Mr. M. Milson - Operator (IBEW Local President)
Mr. R. Fitzgerald - Guard
Mr. J. Bates - Safety Engineer

Exhibits:

- A. Letter dated February 2, 1972 from P. R. Shoop, International Representative Utility Operations Department of IBEW to CO:I.
- B. Letter dated February 3, 1972 from M. C. Milson, President Local 1914 Cheswick, Pennsylvania IBEW to CO:I.

- C. Letter dated February 4, 1972 from K. A. Bodden, Supervisor Industrial Hygiene at Westinghouse Cheswick to CO:I.
- D. Formal Safety Monthly Program for 1971
- E. Safety Review for New, Modified or Relocated Equipment.
- F. Fire Brigade Members
- G. Nuclear Fuel Division Safety Observers
- H. List of NFD Personnel at Annual Safety Meeting covering Health Physics and Criticality Topics.
- I. Evacuation Drill Critique of November 16, 17, 1971.
- J. Notice of Initial Industrial Hygiene and Safety Presentation
- K. Industrial Hygiene Rules for Nuclear Fuels Division
- L. Letter dated May 6, 1971 from W. Piros, Manager, Health, Safety and Services, Westinghouse Cheswick, to Mr. T. Paden, Administrator, Citizen's General Hospital
- M. Letter dated June 15, 1971 from Mr. T. Paden to W. Piros
- N. Newspaper report of the incident

DETAILS

Introduction

1. CO:I was informed by phone on February 4, 1972 followed by a letter dated February 4, 1972 (Exhibit C) of an incident occurring at the licensee's facility on January 29, 1972. The incident resulted in a severed arm and the details were being supplied for our information only according to Mr. K. Bodden, Health Physicist at the site. Additional notice of the incident was received in this office from the International Brotherhood of Electrical Workers (IBEW) in letters from the Washington DC International Representative dated February 2, 1972 (Exhibit A) and from the Cheswick, Pennsylvania, Local 1914 of the IBEW on February 3, 1972 (Exhibit B).
2. A TWX was sent on February 4, 1972 informing CO:HQ of the incident. CO:HQ, by letter dated February 9, 1972 suggested an immediate investigation in that allegations relating to the incident were made by the IBEW Washington DC office in a letter to Dr. Beck dated February 2, 1972.

Interviews

3. Peter Koppel, Facility Manager

Koppel was interviewed February 10, 1972 in his office in the Nuclear Fuel Division, Westinghouse Plant at Cheswick, Pennsylvania. Koppel stated that the chilsonator was installed in the plant in May 1971. It was used for research and development in processing powder. In January 1972 it had been run for about three weeks on problem powder. This was material received from the Westinghouse plant at Columbia, South Carolina with which the NFD had problems in that the powder packed together and was difficult to use in the machines. Koppel stated that the machine had no vibrator which would have prevented the powder from adhering to the sides of the machine. He stated that an employee had recommended that a vibrator be obtained. Koppel stated that he believed a work order had been placed for the vibrator.

4. Koppel stated that on the three shifts, approximately 12 to 13 people had worked on the chilsonator. It was used mainly by first and second shift people.

5. Koppel stated that the chilsonator was an experimental machine. If it had been a production item, a job evaluation sheet would have been made up. Koppel stated that no written procedures for the use of the machine had been prepared.
6. Koppel stated that the men on the first shift had been instructed by a company engineer in the use of the chilsonator. These men, in turn, taught other employees on their shift and some of the men on the second shift.
7. Koppel stated the chilsonator had not been used since January 29, 1972, the date of the accident. He stated that improvements related to safety would be made in the machine and an automatic feed installed.
8. Changes in the chilsonator made subsequent to the accident included the removal of the Westinghouse built hopper, the installation of a screen and modification of the tines of the mixing bar by tying them together to sweep the sides of the hopper.
9. Koppel stated that the chilsonator had been ready for use January 30, 1972. The third shift had started the cleanup of the machine on January 29, 1972 but the machine had not been used since that time. Koppel stated there would be further modifications of the screen before the machine is used again. Koppel voiced the opinion that training of the men, with a job evaluation form and improved safety devices should be sufficient to assure that the machine can be used without further danger.
10. John V. Denero, Engineer

John V. Denero was interviewed February 11, 1972 in the office of the manager, Nuclear Fuel Division, Westinghouse, Cheswick, Pa. Denero stated he has been employed at Cheswick, Pennsylvania for the past three years as Manager, Fabrication Process Development in the Nuclear Fuel Division Engineering Department. Denero stated that in March, 1971 the Division rented a chilsonator from the Fitzpatrick Company of Chicago, Illinois. The machine was to be used for compacting powder. The machine was procured to see if it could be used successfully in compacting the powder. Denero stated that he considered it to be a developmental piece of equipment. He stated that a technical representative from the Fitzpatrick Company showed him how to operate the machine.

Denero also had the instruction manual. On the basis of the instruction received from the Fitzpatrick representative and the information in the instruction manual and aided at first by the Fitzpatrick representative, Denero instructed some of the men in the use of the chilsonator. According to Denero, they would use fifty pounds of depleted uranium on an intermittent basis until they were familiar with the operation.

11. Denero stated that in July or August of 1971 he was informed that the men were complaining, through their union, that they had to climb up to the hopper to put material into the machine. This involved climbing up a step ladder approximately 12 feet high. The safety representatives also complained of this hazard. As a result, the base or legs of the chilsonator were removed lowering it by about four feet.

12. In December 1971 according to Denero, the Health Physics technicians complained of airborne contamination from dumping the powder into the high hopper. Surveys taken during this time showed there had been an increase in the airborne counts. Denero stated that in December, 1971 or in January, 1972 the hopper was removed. Denero stated that the hopper had been equipped with a vibrator. The hopper had not been an original part of the chilsonator. The hopper had been fabricated at the Westinghouse plant and added to the equipment in July, 1971. Denero stated that the vibrator was not removed from the Westinghouse hopper. It was not placed on the Fitzpatrick hopper because it would not work efficiently on the heavier metal. Denero stated that in January, 1972, a suggestion was made that a vibrator be installed on the hopper. Denero stated his department agreed to this, because in their opinion it should feed the powder more efficiently. Denero stated that to clean out the machine to move the powder down into the rollers the operator would stop the machine and use a dowel stick to prod the powder from the sides of the hopper. The man would then start up the machine again. Denero stated that the engineering department had not suggested the use of the stick. It did not object to the use of the stick when it became aware that this was the procedure being used. Denero stated that on the occasions when he saw anyone using the dowel stick, it was with the chilsonator stopped. Denero stated that he had never observed anyone using a rubber mallet on the chilsonator, Denero stated that he learned after the accident to [REDACTED] that a rubber mallet had been used by the men to move the powder. Denero stated that he had no first hand knowledge of the accident to [REDACTED] but had learned of it on January 31, 1972.

EX 6

13. Frank DeFatta, Electrician

DeFatta was interviewed February 11, 1972 at NFD, Westinghouse Plant, Cheswick, Pennsylvania. He stated he has been employed by Westinghouse for 15 years and has been at NFD for the past 15 months.

14. DeFatta stated he had received training in safety from Bates, in Health Physics from Bodden, and in criticality from Piros. He stated that he did not install nor operate the chilsonator. He stated that on January 29, 1972 he had stayed overtime. He had called his wife and while at the telephone heard a commotion. He was informed that a man had been hurt. He stated that he then went into the area and saw a man lying on the floor. He was not bleeding. DeFatta saw that the man's left arm had been cut off and he bent down to hold the stump of the arm off the floor. He also removed the glove from the man's right hand. A stretcher had been brought in, the man placed on it and he was taken out to the ambulance. DeFatta got into the ambulance with the injured man to go to the hospital. DeFatta stated that when they arrived at Citizen's General Hospital in New Kensington, Pennsylvania, he informed the nurse that the injured man had worked with uranium. DeFatta stated that the nurse told him that survey instruments were not available at the hospital but would have to be brought from the Westinghouse plant. DeFatta stated that he returned to the plant.
15. DeFatta stated that he believes that the emergency and safety programs can be improved. He stated that he does not know what training the guards receive. He believes that they should be given first aid training. DeFatta stated he thinks the ambulance driver did a good job. DeFatta stated that he has had first aid training. He believes that in addition to the driver, another man trained in first aid should also be on the ambulance. He stated that if it were necessary to assist the injured man then a qualified first aid man would be available. DeFatta stated that Fritzius the foreman and another operator named Powell had been in the ambulance but he did not know whether they had first aid training.

16. John Nowikowski, Oxide man

Nowikowski was interviewed February 10, 1972 at the NFD Westinghouse plant, Cheswick, Pennsylvania. He stated that he had been employed by the company for four years and 8 months. He stated that he has been in the NFD 2 1/2 years and is presently on the second shift.

17. Nowikowski stated that on January 29, 1972 he was working in the second line attempting to remove a screw from a piece of equipment. He had obtained an Allen wrench from the maintenance shed in the third line. While in that area he saw Andy Nemet and [REDACTED] working in the third line area. Nowikowski said that while he was working he heard hollering. He did not pay attention to it at first. About the third time he heard the hollering, he went to see what had happened. He saw [REDACTED] at the chilsonator with his left arm caught in the machine. Nowikowski stated that he took hold of [REDACTED] took him off the machine and put him in line 2. EX 6

18. Nemet had gone to the telephone to call the guard to get the ambulance. Some other men procured the stretcher that was available in the area and Nowikowski helped to carry [REDACTED] to the ambulance on the stretcher. EX 6

19. Nowikowski stated that the chilsonator is a machine used for mixing powder. He stated that he had been instructed in operating the chilsonator by Bill Ward, the first shift foreman. Nowikowski said that when he was instructed in the use of the equipment the chilsonator had a hopper about 6 feet high above the mixing screws. He stated that he had to go up a ladder about six feet high with a platform at the top. He stated that after emptying the fiber pack into the hopper, he had been instructed to use a rubber mallet to shake the powder down by hitting the side of the lower hopper with the mallet. He stated that if the powder still did not go down he was told by Ward that the men on the first shift would take a dowel stick, such as is used in moving the rods, stop the machine and put the stick in a hole in the top of the roller box to move the powder. Nowikowski said that he had done this work only on one eight hour shift. This was during the week before the accident occurred to [REDACTED]. He stated that when the powder packed, he would stop the machine, remove the plastic cover and insert the stick. Nowikowski said that he had safety training from Mr. Kunkle the safety manager. Nowikowski said that Kunkle had shown films and had given talks on handling materials about two or three times a year. EX 6

20. Nowikowski said that they also had evacuation drills but had no training in accident procedures.

21. Nowikowski said that the men had been instructed to call an emergency number for assistance.

22. Nowikowski stated that someone complained of the height of the hopper. The top of the hopper was taken down and the powder was fed directly into the mixing box. Nowikowski believes that [redacted] had not worked on the chilsonator before January 29, 1972 because Nemet was instructing [redacted] in how to use the machine. EX 6

23. Andrew E. Nemet, Oxide Man

Nemet was interviewed February 10, 1972 at the NFD, Westinghouse plant, Cheswick, Pennsylvania. Nemet stated he had been employed for 1 year and nine months.

24. Nemet stated that on January 29, 1972 he was working on the second shift with [redacted] on powder prepping. He described this as screening the powder in a slugger in line one and then taking it to line 3 to put in the chilsonator. Nemet said the second shift had been using the chilsonator for only about 3 or 4 weeks. He added that it initially had been used by the men on the first shift. EX 6

25. Nemet stated that he had been instructed in the use of the machine by John Nowikowski. He stated that this instruction was only in the use of the control buttons and the pressure gauge. He stated that he had observed other men feed the chilsonator, use a rubber mallet to shake the powder down and also use dowel sticks to move the powder. He stated that he did not have any direct instruction in these procedures.

26. Nemet said that he had used the chilsonator three times before January 29, 1972. On that date, he showed [redacted] how to operate the chilsonator. Nemet stated that no one had told him to instruct [redacted] in the use of the machine but that he did it on his own. EX 6

27. Nemet stated that he showed [redacted] the controls. The controls consist of four black buttons placed horizontally and beneath them four red buttons placed horizontally. He stated that he showed [redacted] the sequence in which the buttons are operated. [redacted] borrowed Nemet's flow pen to mark the direction of the buttons in the on and off sequence. EX 6

28. Nemet stated he then showed [redacted] how to put the powder in and told him how to use the mallet. Nemet stated he did not show nor did he tell [redacted] how to use a dowel stick to dislodge the powder, although some dowel sticks were near the chilsonator. EX 6

29. Nemet stated that the men who used the chilsonator had recommended that a vibrator be installed in order to dislodge the powder. According to Nemet, the company had obtained one but it had not been installed before January 29, 1972. Nemet stated that the vibrator was placed near the machine a week or two before January 29, 1972.
30. Nemet stated that [redacted] told him that he thought he [redacted] could run the machine and suggested to Nemet that he get more powder, Nemet did so. He stated that while he was in line 1 getting the powder he heard [redacted] scream. He looked toward the chilsonator and saw Nowikowski and [redacted] were near the presses in line 2. Nowkowski was yelling to call an ambulance. Nemet stated that he ran to the telephone, dialed the emergency number and foreman, Bob Fritzius, came over. Nemet stated he gave the telephone to Fritzius and went over to [redacted] Nemet stated that [redacted] told him he had dropped a stick into the hopper. Nemet stated that he told [redacted] that he had seen [redacted] use the mallet. [redacted] explained that he did not want to break the hopper which already had a crack in it. EX 6
31. Nemet stated that during the past twenty one months he has attended two safety talks, one given by Mr. Bates. Nemet stated he did not recall getting any instruction in the emergency procedures. He stated that they had an evacuation drill about a month or a month and a half ago.
32. (Nemet stated that he thinks safety at Westinghouse is "lousy".) He stated the ambulance driver had not been told [redacted] arm was off but that it had been cut. He stated that the ambulance started to come in the back way, that a chain was across the road and the ambulance had to come around to the front entrance. He stated that there was no Health Physics man assigned on the second shift. There has been none for the six months Nemet has been on the second shift. Nemet stated that when he worked on the midnight shift an HP man had been assigned. He stated there is also an HP man assigned to the first shift. EX 6
33. Nemet stated that Mr. DeFatta, a maintenance man, who had accompanied [redacted] to the hospital in the ambulance had told Nemet that there were no survey instruments at the hospital to which [redacted] had been taken, and one had to be brought from the plant at Cheswick. EX 6

34. Michael P. Ternoway, pellet man

Ternoway was interviewed February 10, 1972 at NFD, Westinghouse plant, Cheswick, Pennsylvania. He stated he has been employed at Westinghouse since October 26, 1959 and has been in NFD several years.

35. Ternoway stated that he usually works the second shift, 3:30 pm to midnight. Ternoway stated that on January 29, 1972 he was in line 2 checking the furnace sheets. He stated that it was early in the shift. He heard some hollering in the shop. He stated that he and Bob Fritzius, the foreman, ran out to check on the cause of the hollering. He stated that they saw [redacted] on the floor near the presses in the aisleway at line 2. His left arm had been cut off. Ternoway stated that he ran to the telephone to call the emergency number but learned that someone had already placed the call. He stated that he went to where [redacted] lay. He helped put [redacted] on the stretcher. They started to take [redacted] to the front, but learned the ambulance was at the rear door. Ternoway stated that he went ahead to clear the way to the rear door. He went out in the roadway to signal the ambulance. Ternoway stated that he had no idea of the time that had passed between the time he first heard the hollering and the time [redacted] was put in the ambulance.

EX 6

36. Ternoway stated that Bob Fritzius, the foreman, Wally Powell, an oxide man and Frank DeFatta a maintenance man went to the hospital in the ambulance with [redacted]

EX 6

37. Ternoway stated he returned to his work.

38. Ternoway stated that he had not been instructed in operating the chilsonator. He stated that his job is to operate the furnaces.

39. Ternoway stated that he believed [redacted] had been assigned to NFD around the Christmas holidays. Ternoway stated he did not know how long [redacted] had operated the mixer nor what instructions he had received in its operation. Ternoway stated that he had been instructed in emergency procedures for accidents, spills and fire. He stated that instruction is given to the men by a Health Physicist, K. Bodden. He stated that the foreman would also instruct him in safety procedures on various jobs that he would be doing. Ternoway stated there are two to four such group meetings each year. In addition to the instruction, he stated that they have had emergency evacuation drills at least three times a year.

EX 6

40. Ternoway stated that he had not been involved in a real emergency until the day of this accident on January 29, 1972. He stated that he had seen the Health Physicist come into the shop on the first and third shifts and make checks and tests with his instruments. However, he does not know whether a Health Physicist is assigned to the second shift. Ternoway stated that he had worked the first and third shifts as well as the second shift but has spent most of his time on the second shift and has worked least on the first shift.

41. John Wallace Powell, oxide man

Powell was interviewed February 10, 1972 at NFD, Westinghouse plant, Cheswick, Pennsylvania. Powell stated he has been employed at Westinghouse for 7 years, the last 2 1/2 years in NFD.

42. He stated that on January 29, 1972 he accompanied [REDACTED] to Citizen's General Hospital at New Kensington, in the ambulance after [REDACTED] had his arm cut off in the chilsonator. Powell stated that at the hospital he had stayed with [REDACTED] while the doctors worked on him. He stated that two health physics men had come in with survey instruments. He stated they needed some instrument and one of them had come back in the ambulance to the plant. Powell stated that the men had instruments with them when they came to the hospital.

EX6

43. Powell stated he had operated the chilsonator but did not recall who had taught him to operate it. Powell stated that when the powder caked in the machine he would use a rubber mallet or would put a stick into the hopper to clean the powder. He stated that the high hopper was not on the machine when he was operating it. He stated that when he used the stick, if he felt it catch he would quickly pull it back.

44. Powell stated he has had no training in emergency procedures, but that he had been instructed to call a telephone number in case of emergencies. He stated that he knows where the fire extinguishers are located and where the stretcher may be found. He stated he has had evacuation drills three or four times a year. Powell stated that he had not been at any classes held by Mr. Bates. He stated that Bodden had shown the men films about the powder and Piros had shown one film about wearing safety glasses.

45. Powell concluded his statement by recommending that every man should be given instruction in first aid, that they should fully know the machines they work on and should be taught by qualified people, not by fellow employees.

46. Robert Fritzius, Second Shift Supervisor

Fritzius was interviewed February 10, 1972 at NFD, Westinghouse plant, Cheswick, Pennsylvania. He stated that he has been employed by Westinghouse for three years. He stated that he has been supervisor on the second shift for all but one month of that time when he was on the first shift.

47. Fritzius stated that he believes in training new men by assigning an experienced fellow employee to work with the new man rather than he, Fritzius, giving the instruction to the man. He believes that the men are more receptive from a fellow employee rather than from a supervisor.

48. Fritzius stated that on January 29, 1972 he told Andy Nemet, an oxide man to instruct [REDACTED] in the job of powder prepping, including the use of the chilsonator. Fritzius stated this machine has been in the shop about six months. He stated that until a month before this, the machine had been used only by the first shift people. Fritzius stated that he had obtained instruction in the use of the chilsonator from the first shift foreman and an engineer. Fritzius stated that he had been instructed to use a rubber mallet to dislodge powder that settled on the side of the chilsonator. Fritzius stated that he was unaware that a stick could be used to dislodge the powder.

EX 6

49. Fritzius stated that he had taught Nowikowski to operate the chilsonator and how to remove the caked powder with the rubber mallet. Fritzius stated that Nowikowski then taught other men to operate the machine. Fritzius did not remember who had taught Nemet to operate the chilsonator. Fritzius stated that he did not know nor did he see that sticks were used to dislodge the powder.

50. He stated that on January 29, 1972 after he had given Nemet his instructions, he, Fritzius, was checking the furnace charts when he heard a moan. He stated he had been working with Ternoway. Ternoway went to see what had happened. He then observed Ternoway running and when he saw this he, Fritzius, went over and saw [REDACTED] had lost his arm. Fritzius stated that he went to notify the guard of the emergency but was informed that the ambulance was already on its way. Fritzius stated that he

EX 6

went to the hospital in the ambulance. On the way [redacted] told him the accident had happened when he reached for the stick he had dropped into the hopper. Fritzius stated that when he got back to the shop he did not question the men about the use of the stick. He stated that he did question Andy Nemet. Nemet, according to Fritzius, had stated that he told [redacted] how to use the mallet and that the last he had seen of [redacted] before the accident, he was using the mallet.

EX6

51. Fritzius stated that whenever his men have a problem they come to him for help and he gives them the proper instruction to their problem.
52. Fritzius stated that one of the operators is a safety observer. He stated that if the men request a safety meeting he would arrange it through Mr. Bates. He stated that the men had made no request for a safety meeting.
53. Fritzius stated that they have evacuation drills two to four times a year for fire or criticality. He also stated that Mr. Bodden has lectured the men on criticality and health physics and that Mr. Bates and Mr. Piros have given talks to the men on safety.
54. Fritzius stated that he believes the emergency procedures, safety program and the evacuation drills are good and that his men have a good understanding of them.
55. Wesley E. Piros, Manager, Health and Safety Services
Keith A. Bodden, Industrial Hygiene Supervisor

Piros and Bodden were interviewed jointly February 10, 1972 in Piros' office at the Westinghouse plant, Cheswick, Pennsylvania.

56. At the start of the interview they informed the AEC representatives that the use of the chilsonator by Westinghouse was considered to be proprietary information. They stated the chilsonator had been on the premises about nine months and that it was used for compacting powder. The powder is received from the Westinghouse plant at Columbia, South Carolina. According to Piros and Bodden, the powder is gummy and adheres to the press. By using the Chilsonator, the powder is processed for use. Bodden and Piros stated the machine is in line three.

57. The accident to [REDACTED] occurred January 29, 1972. The chilsonator had been used on a limited basis, about two hours a day, for about three weeks. The powder, before being put into the chilsonator, is first put into a slugger and then a granulator. EX6
58. Bodden stated that [REDACTED] had been employed June 8, 1970 and assigned to NFD. He remained there until October 18, 1971 at which time he was transferred to EMD. He remained there until January 10, 1972 at which time he returned to NFD. EX6
59. Piros stated that there was no written procedure for the use of the chilsonator. He stated that [REDACTED] and Nemet, who were oxide men, worked together. [REDACTED] had never operated the chilsonator before. Nemet, according to Piros, had learned to operate the chilsonator from a Westinghouse engineer. EX6
60. Piros stated that when the chilsonator was received it had a forced feed. Piros stated this was replaced with a hopper made by the Westinghouse Company. He stated that a safety review of the chilsonator was made by C. W. Bates. This review included the control panels and switches. He stated that there had been no Safety Committee review. An engineer, John Denero, and Bates made the safety review. Piros stated there was no writeup of the safety review.
61. Piros stated that ordinarily the initial review of the new piece of equipment is done by a maintenance foreman and Bates. A caution tag, "Do Not Operate" is put on the machine until the review is done. After the review, the tag is removed and the equipment is put into use.
62. Piros and Bodden stated that they considered this accident to have been an industrial type accident. The employee had his left arm amputated in a machine, there had been no uptake, based on bioassay samples which showed four DPM per liter. Bodden stated that the average uptake for the men working in the area is 8 DPM per liter.
63. With regard to the injured man, Bodden stated that bioassay samples were collected January 30, and January 31, 1972. A continuous 36 hour sample was started on January 29, 1972 about 10:00 p.m. and continued until 10:00 a.m. on January 31, 1972. This consists of 1500 cubic centimeters which when assayed showed 4.5 ± 1.2 dpm per liter. Bodden stated this was the only sample.
64. Piros stated that the president and vice president of the employees union, the International Brotherhood of Electrical Workers were in on January 31, 1972 to discuss the accident. Their only concern appeared to be that no HP was assigned to the second shift. Bodden stated that he attended this meeting along with Herb Kunkle, manager of industrial relations and Pete Koppel, facility manager.

65. Bodden stated that he does not feel that there is a health hazard, per se, in the plant. He stated that air samples are always below MPC, that there is a monitoring program and he considers NFD to be a low risk radiation facility. He stated that the air sampling is the key to health physics coverage. There is HP coverage on the first shift and on the third shift because the data obtained from the air sampling can be processed into the computers during these shifts but the computer is not available for use during the second shift.
66. Bodden and Piros stated that Citizen's General Hospital to which [redacted] was taken does not have monitoring equipment. There is an arrangement by which Westinghouse will send monitoring equipment in the ambulance if an employee has had an accident involving radioactive materials. EX 6
67. Bodden stated that Bob Eichler, a safety inspector, and William McDonald a health physics technician are both qualified as ambulance drivers. Bodden stated that guards have been given first aid training and also are qualified ambulance drivers familiar with the contents of the vehicle.
68. Piros stated that the chilsonator had been equipped with a hopper raised above the floor. The men had to carry the forty pound fiber packs of powder up a platform which he estimated was six feet high. He stated that the men objected to the high ladder and the dust that resulted from dumping the powder into the high hopper. At the request of the men, through their union, the hopper was removed and a lower, three step, ladder replaced the six foot high platform.
69. Piros stated that there was no protective device on the chilsonator because it had not been contemplated that a man would do other than dump powder from the container into the mixer. Piros stated that two inspectors from the Bureau of Occupational Safety, State Department of Labor and Stuart Levin of the Pennsylvania State Department of Health had been in during the week of January 31, 1972 concerning this accident. According to Piros the inspectors found no violation in connection with the construction or use of the chilsonator.
70. [redacted] Oxide Man
[redacted] was interviewed at his home [redacted] on February 24, 1972. His wife [redacted] and Joel A. Claster, an attorney representing [redacted] were also present. EX 6

71. Claster's office is at 866 - Fourth Avenue, New Kensington, Pennsylvania.
72. [REDACTED] stated that he had worked for Westinghouse since about June 6, 1970. He had been assigned to NFD as custodian of stores (Janitor). He subsequently was assigned to putting pellets into rods, putting the plug into the rod, sealing and coloring it. There was a reduction in force and on October 18, 1971, he was transferred to EMD where he worked as a handy man. He worked in EMD from October 18, 1971 to January 10, 1972. He returned to NFD January 10, 1972 where he worked as an oxide man. EX 6
73. [REDACTED] stated that during the first part of his employment, when he had been a pellet man, he had learned to operate the grinding machine, to run the press and prepare powder. He stated that during this period he had not used the chilsonator and did not know whether it was in NFD during this earliest period. EX 6
74. When he returned to NFD on January 10, 1972 he worked on prepping powder. He stated that he had not worked on the chilsonator until he worked with Nemet on January 29, 1972. He stated that Nemet, on January 29, 1972, showed him how to work the chilsonator control buttons and how to put the powder into the machine. [REDACTED] stated that the control buttons were set too far from the machine to be reached while standing in front of the machine. He stated that the control buttons were on a cage. [REDACTED] stated that Nemet showed him how to use a dowel stick, about 2 feet long and about a quarter inch in diameter, to remove powder from the sides of the hopper. [REDACTED] stated that usually Powell or Nowikowski, who have a lot of experience would train the men. However, on the occasion, Nemet had been told by the foreman, Bob Fritzius, to train [REDACTED] on the chilsonator. EX 6
75. Nemet, according to [REDACTED] put a batch of powder into the hopper. The powder built up on the sides of the hopper. [REDACTED] stated that there was a rubber hammer by the side of the machine and that Nemet had used it to hit the machine to loosen the powder from the sides. [REDACTED] stated the hopper was dented from having previously been hit with the hammer. [REDACTED] stated the powder did not go down fast enough after Nemet hit the hopper with the mallet. Nemet took a dowel stick, which was used to move the pellets, to shake the powder down. EX 6
76. [REDACTED] commented on the installation of the machine in that an electrician had refused to wire the chilsonator because the buttons were too far from the machine and the wiring was faulty. [REDACTED] stated there was a similar machine in the Columbia, South Carolina, Westinghouse plant. EX 6

77. In connection with the powder prepping, [REDACTED] stated that ordinarily two men would work on line 1 and one man on line 2. EX 6

78. [REDACTED] was asked about the training he had received. He stated that in the first job he had, in which he handled materials and cleaned up; he was simply given directions as to what to do, that the job was simply a matter of handling (radioactive) materials and cleaning the area. On the work as (radioactive) pellet man, he had been given on the job training by a fellow employee. [REDACTED] stated that there was a safety man on all shifts. He stated that on one occasion he was working on the grinding machine when the siren went off. [REDACTED] stated that this couldn't be heard above the noise of the machine. Another man had told him that the siren had gone off and that he should get out. He subsequently discovered that this alarm was on one of the ovens. EX 6

79. [REDACTED] stated that when he was working handling radioactive materials and as a janitor he worked without direct supervision. He stated that a foreman would come over when material was received, to be weighed and stored. He was instructed in how to loosen the bolts on the containers and how to hook the crane to the containers to move them. [REDACTED] stated that when a shipment would arrive the foreman would sign for the material, weigh it and then let one of the men continue with the job while he went off on some other work. EX 6

80. [REDACTED] stated that when he was working as a pellet man, another fellow employee showed him how to load the trays, and how to weld the rods. He stated that the instructions for this job were in a blue book which gave instruction as to the number of pellets to be put in the rod, and that the procedures as set out in the book were carefully followed. EX 6

81. [REDACTED] stated that when he first returned to NFD in January, 1972 he was assigned to the first shift where he was put with an experienced man doing the various jobs. After two weeks he was transferred to the second shift. He stated that the foreman is the judge of the man's qualification. When he went on the second shift he worked with Wally Powell. If he needed any help and Powell was not available he would ask the other men for instruction. EX 6

82. With regard to emergency and safety training, [REDACTED] stated that the Cincinnati grinder had safety instructions with regard to wearing glasses. No other machines had instructions on them. [REDACTED] stated that about five or six months ago there had been a meeting at which the matter of wearing safety glasses was discussed. On another occasion, the foreman discussed the quality of the powder and production problems. [REDACTED] stated that the foreman had never told him to shower when he had finished his day's work. He observed the other men showering and they had told him that this was to be done before leaving. EX 6

83. [redacted] stated that during the time he was on first shift there had been two fire drills, and one since he had been assigned to the second shift. On all three occasions the men had evacuated the building. A ringing bell was the signal for the fire drill. [redacted] stated that on emergency evacuations, the safety man on the shift would show the others where to go. [redacted] stated there was no HP man assigned on the second shift. He stated that he had heard rumors that this was in order to save money. [redacted] stated that the rubber mallet and stick had to be used on the chilsonator because there was no vibrator that would shake the powder down. EX6

84. At a point where discussion of the accident that had happened to [redacted] began, [redacted] became upset and left the room to regain control of himself. During this interval his wife stated that she had been told by Bodden that the men worked in pairs, that there was a "buddy" system in giving training and that Bodden had denied knowing that the men used a stick to move the powder. EX6

85. [redacted] subsequently returned. He described the accident as well as he could remember it. He stated that he had put powder into the hopper and had told Nemet he could manage alright, that Nemet should go to get more powder. [redacted] then noticed the powder sticking to the sides of the hopper. He took one of the several sticks that were lying nearby and started to push the powder down. The machine was operating at this time. He stated that he dropped the stick. Instinctively, he reached in to grab it when his hand got caught by one of the tines on the mixer. Before he could pull it out his arm also went further in. He believes he was screaming at this time and was then helped by some other men. He was taken to the hospital in the ambulance. Further surgery was done on his arm. He remained in the hospital from January 29, 1972 to February 8, 1972. He stated that he is now getting therapy designed to train him to use his right hand ([redacted] had been left handed). He will also be fitted with a prosthetic device to replace his left arm. EX6

86. Anthony T. Frost, Oxide man

Frost was interviewed February 25, 1972 at the Westinghouse plant in Cheswick, Pennsylvania. He is an oxide man on the first shift and is also a member of the executive board of IBEW local 1914. Frost stated he has been employed at Westinghouse for nine years.

87. Frost stated that the control buttons for the chilsonator are approximately 4 to 4 1/2 feet from the machine. He stated that if a man is working at the machine it is necessary for him to turn around and take at least one step toward the buttons to operate them.

88. Frost stated that after the chilsonator had been installed the legs had been removed to reduce the height the men had to climb to put material into the hopper.
89. Frost stated that the hopper installed on the machine by Westinghouse had been removed at his suggestion because of airborne contamination.
90. Frost stated that everyone on the first shift who used the chilsonator used a stick to move the powder when it packed. He stated that the sticks were readily accessible.
91. Frost stated he knew nothing about the operations on second shift except through hearsay. He stated that if a foreman was observant he would have seen the men using the stick.
92. Frost stated that no one anticipated a man would put his hand into the hopper. Frost stated that when he instructed a man in the use of the chilsonator he would caution him to keep his hands out of the hopper. Frost stated he had been taught to use the equipment by John Denero the engineer.
93. Mede C. Milson, President, Local 1914, IBEW

Milson was interviewed at his home, [REDACTED] EX6
[REDACTED] on February 24, 1972. He was informed by the representatives of Region I that they had conducted an investigation of the accident in which [REDACTED] had his left arm amputated while at work at the NFD, Cheswick, Pennsylvania. Milson was informed that the Headquarters of IBEW had communicated with the Division of Compliance and additional information concerning this accident would be communicated to the union when the investigation is completed.

94. Milson stated that he has been employed at Westinghouse for 15 years and has been President of Local 1914 of IBEW for the past 7 years.
95. Milson stated that he does not think the men employed by Westinghouse get proper training when they come on the job. He stated that Westinghouse does have a good training program but it does not use the program. He offered as an illustration that men who worked in "hot" areas were not properly instructed in entering these areas, that he, Milson, on several occasions had seen employees wearing street shoes, indicating they had not used the available rubbers or plastic covering for their shoes.

96. With regard to the chilsonator, Milson stated that an electrician employed by Westinghouse had refused to wire the chilsonator because the panel box was to be hung on a wire fence and the control buttons were too far from the machine. Milson stated that the union had suggested that a vibrator be attached to the chilsonator. Westinghouse management had not indicated agreement or disagreement with this suggestion.
97. Milson pointed out that Tony Frost, a member of the union executive board, had suggested that the hopper be taken off the chilsonator because of the increased air contamination. This had been done as suggested by the union in behalf of the employees.
98. Milson stated that Westinghouse has a safety committee but that its work is virtually nil.
99. With regard to the training, Milson pointed out that the Westinghouse management seems to lean more to familiarization versus training. He explained that when a man knows how to turn on a machine he is then put on the job. His ability to properly operate the machine is dependent on the foreman's evaluation of his ability.
100. Robert Fitzgerald, Guard

Fitzgerald was interviewed February 24, 1972 at his guard station outside NFD. He was the guard on duty when [redacted] was injured January 29, 1972 and drove the ambulance from Cheswick, Pennsylvania to New Kensington, Pennsylvania. Fitzgerald stated that he has received 15 hours of instruction in basic first aid and has also had some training in advanced first aid. He stated that both courses are of 15 hours duration each. Fitzgerald stated that all guards are qualified ambulance drivers, trained to use the ambulance equipment. EX6

101. Fitzgerald stated that if an injury occurs to a man employed in an area in which work with radioactive materials is done, a health physics technician is available to treat the patient. Health physics technicians, according to Fitzgerald are trained in first aid and also qualified ambulance drivers. Fitzgerald stated that members of the fire brigade are also trained in first aid.

102. Fitzgerald stated that he has no written instructions as to his duties as a guard or for emergency conditions. He stated these instructions are oral, given by Eichler and Bates, the safety men for emergencies requiring first aid, and by Lt. Labe who is in charge of the guard force. Fitzgerald stated that there is an emergency call list at the fuel building lobby. This area is manned 24 hours a day. His instructions are, in the event of an emergency, to go down the list making telephone calls until he does reach one of the persons on the list.
103. Fitzgerald stated that he is given a refresher course in first aid every three years. The key to the ambulance according to Fitzgerald is kept in the front office lobby during the day and after 6:00 p.m. is kept in the fuel lobby where a guard is on duty. An extra key is available in the fuel lobby at all times.
104. With regard to [REDACTED] accident, Fitzgerald stated that on January 29, 1972 Citizen's General Hospital was notified of the accident and the staff at the hospital was ready to receive the patient. Fitzgerald stated that [REDACTED] was brought right into the emergency room. No questions were asked about radiation but the doctors did express a desire to see the health physics people. Fitzgerald stated that in accordance with instructions of the health physics technician, who had arrived after the ambulance reached the hospital, he had removed the covers from the stretcher and the cot and put them in plastic bags. The technician surveyed Fitzgerald at the same time he surveyed the ambulance. EX 6
105. With regard to survey instruments being available for hospital use, Fitzgerald stated that he has no instructions to pick up instruments in an emergency. This determination is left to the health physics technician. He stated that there are no survey instruments maintained in the ambulance. Fitzgerald stated that he has had four hours of instruction in radiation health while assigned to the plutonium fuel development laboratory.

Training

106. According to Bodden, initial notice of orientation is given to all employees as directed in Exhibit K. This orientation includes topics such as signing an AEC-4 form, radiation signs, criticality signs, checking hands, emergency plans, emergency packs, etc. Mr. Bates, Safety engineer, orientates the new employee in general safety, fires, emergency situations, use of safety equipment, reporting injuries,

compensation, horse play, housekeeping, etc.

Additional training given includes the following:

- a. American Red Cross Training
- b. Advanced American Red Cross Training
- c. General Safety Lecture
- d. Air Sampling
- e. Whole Body Counting
- f. Industrial Safety

107. American Red Cross training was given to Fire Brigade members during June 6, thru 21, 1971 for 3 hours per day. A list of fire brigade members is enclosed as Exhibit F.
108. Advanced American Red Cross training was given to Fire Brigade members, guards and senior personnel at the site. The training was given in July and August 1971.
109. A General Safety Lecture was given to all NFD personnel on May 26, 1970. The list of attendees is shown on Exhibit H. This safety lecture given by Bodden covered health physics and criticality topics.
110. A safety meeting was held on air sampling and the reason sampling is performed and the meaning of the results. This training was given, according to Bodden's records, on June 12, 1971 to all shift personnel. Additional information was given shift foremen on November 9 and 10, 1971, and again on December 17, 1971 to all NFD operators.
111. In April 1971, 13 NFD personnel were scheduled for whole body counting and instructions were given these personnel as to the purpose, results, meaning to the individual.
112. Industrial safety meetings are held monthly. These meetings cover such subjects as outlined in the Formal Safety Monthly Program for 1971 as shown in Exhibit D. Personnel from each area volunteer annually to serve as safety observers. Safety observers attend these meetings and during routine work are expected to report unsafe practices or conditions. A list of personnel who have gone thru this training and work in the Nuclear Fuels Division (NFD) is shown in Exhibit G. Industrial Hygiene Rules for Nuclear Fuels Division are posted at the foreman's desk in the manufacturing area. These rules are included as Exhibit K.

Industrial Safety Procedures

113. According to Piros and Bates, the safety engineer, new equipment is tagged out of service or use until a safety review is made of the equipment by the safety engineer, maintenance foreman and the area foreman. This procedure is outlined as shown in Exhibit E. Although the procedure calls for similar safety reviews for modified or relocated equipment, according to Bates, this was not done for modifications made to the chilsonator. Piros said that the program will be reinstated as detailed in Exhibit E.

Equipment Operation

114. The piece of equipment was received at the site in May 1971 according to J. Denero the engineer. The equipment is designed as a cocoa bean grinder. Westinghouse was attempting to develop the equipment so that it could be adopted to their fuel process line. The equipment was to replace the slugging-granulator operations. Initial installation and operation was performed as prescribed i.e. the equipment was tagged out and safety reviewed prior to experimental use. The engineer instructed foremen and operators on the day shift in the operations of the equipment. The instructions were basically those contained in the instruction manual. Only union personnel are permitted to operate equipment. Developmental runs were performed using the equipment with an adapted feed hopper, on a batch basis, during the summer and fall of 1971. During this period the feed hopper went thru several revisions none of which were safety reviewed, according to Bates. Using the standard Westinghouse training technique for personnel to operate equipment, those persons instructed by the engineer, then, in turn, instructed other persons in the operation of the equipment. A person is considered qualified to operate a piece of equipment when, after instruction from another operator of the equipment, the foreman is of the opinion that the new man is qualified. This method of training personnel is not indigenous to the NFD facility but to the entire Westinghouse organization. The inspector verified this through questioning of non nuclear operators in the presence of the safety engineer, Mr. Bates

Emergency Procedure

115. The licensee's emergency procedures are generalized and are contained in Amendment 18 to the license. Over and above that required by license Westinghouse also has detailed emergency procedures. The procedures were reviewed by the inspector during this investigation. The following discrepancies were noted:

- a. Although initial contacts have been made with Citizen's General Hospital in New Kensington, Pennsylvania as indicated in the correspondence enclosed as Exhibits L and M, no further formal arrangements for training have taken place; no prior arrangements were made including pre-designating various hallways and rooms within the hospital for handling low level contaminated cases and no portable battery-operated detection instruments were immediately available for area and wound monitoring.
 - b. The emergency plans outline funeral home and ambulance services to transport injured persons when in fact the licensee possesses its own equipped ambulance with trained personnel.
 - c. An updated list of persons to be notified with home telephones is not maintained. An example is that Mr. B. Mills is included on the list of NFD persons to contact. Mr. Mills, former manager of NFD, is now located at the Westinghouse South Carolina plant.
116. Evacuation drills are conducted twice annually with all personnel evacuating their respective areas. On these occasions, the foreman reviews emergency practices with personnel. The last full scale evacuation drill with outside involvement was conducted in September, 1970 according to their records. After each evacuation drill of the site a critique is made. An example of such a critique is enclosed as Exhibit I. According to Bodden, during such drills, foremen take the opportunity to instruct and review with the evacuated people various aspects of the drill such as evacuation route, forms to be filled out, radiation levels to be expected, emergency equipment, etc.

Health Physics Aspect

117. The fuel processed at the facility is power reactor fuel at 3.5% enriched U-235. The isotopic analysis of the fuel processed at the time of the incident is as follows: U-235 - 3.425%; U-234 - .028%; U-236 - .014%; and U-238 - 96.534%. Bodden's evaluation of the air concentrations to which [redacted] was exposed for the 7 day period included process air sample and general air sample results. These air sample results coupled with the time [redacted] was in the various areas indicate that [redacted] was exposed to a total of 2.7 MPCa - hr for the seven day period to the accident. Urine sample results for [redacted] collected prior to the incident indicated 22 d/m/l on a day's sample collected on December 15, 1970 and 0 d/m/l on a day's sample collected on June 16, 1971. Urine sample results collected during the period 10:00 p.m. on January 29, 1972 through 10:00 a.m. on January 31, 1972 indicated a total of 4.50 d/m/l. Samples of [redacted] clothes and the hospital sheet used for [redacted] were sampled obtaining approximately 100 cm² sections of his socks, pants, undershirt, underwear and sheet. The results, when asked, indicated 10 d/m, 27 d/m, 9 d/m, and 12 d/m respectively. A survey of [redacted]

EXB

face, neck, hair, arms, and injured forearm all indicated no contamination when using an Eberline wound monitor (NA I crystal). A hospital survey of all areas and equipment used in association with the incident was made using an Eberline PAC-4G survey meter. No contamination was found according to their records. The amputated portion of [redacted] arm and the severed portion were disposed of through the hospital morgue facilities. Less than 1000 d/m of activity were noted on these portions.

EX 6

Site Health Physics Surveillance

118. Health physics coverage of the activities conducted at the fuel processing site are on a service basis. Site safety personnel provide the services to the NFD and any other division located at the site. Routine daily surveys are performed on the day shift, equipment release survey are performed on the day shift, special surveys are performed on the day shift. A third shift health physics technician is assigned to collect routine air samples, and to perform other assigned tasks. No routine second shift health physics technician is assigned as there is no routine service required during that period according to Bodden and Piros. On several occasions when special evaluations were being performed such as process equipment air sample studies, particle size determination were being made on the variation in controls of materials relative to personnel were in progress, a health physics technician would be assigned and given specific activities to pursue but not for general process control of the fuel process, according to Bodden.

Publicity

119. Only one report of the incident was made and the details reported in the Valley Daily News, New Kensington Pennsylvania, on February 3, 1972. The article is enclosed as Exhibit N.

Management Summation

120. A management summation was held on February 24, 1972 with Mr. Paul Thomas, Manager of Manufacturing acting in the absence of Mr. E. J. Cattabiani, General Manager of the electromechanical Division and site landlord. In addition Mr. P. Koppel, Mr. K. Bodden, and Mr. W. Piros were in attendance. Representing RO:I were Mr. A. Ryan and Mr. W. Lorenz.
121. Items discussed included training of personnel in that no formal training program was established to instruct people in radiation hazards, equipment use, and qualifications for operation of equipment.
122. Thomas was informed that no safety review was made of the equipment in question subsequent to modification made of the equipment.
123. Regarding emergency procedures Thomas was informed that emergency hospital arrangements were not completed and that the guard emergency call list required updating.
124. The licensee's staff had no firm comment regarding formal training. Piros stated that regarding equipment operation the entire company qualifies personnel on basically an observation basis of a qualified employee with foreman approval.
125. Regarding equipment modification safety reviews the licensee agreed to reinstitute the program. Also, a followup on the hospital arrangements would be made to finalize these emergency procedures as required.

LAW OFFICES OF
DICKIE, McCAMEY & CHILCOTE
SUITE 3180 · UNITED STATES STEEL BUILDING
PITTSBURGH, PA. 15219

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J. ROY DICKIE
1884-1962
HAROLD E. McCAMEY
1894-1967
SANFORD M. CHILCOTE
1905-1974

November 27, 1974

AREA CODE 412
TELEPHONE 281-7272

U. S. Atomic Energy Commission
Directorate
Regulatory Operations
Region 1
631 Park Avenue
King of Prussia, Pennsylvania 19406

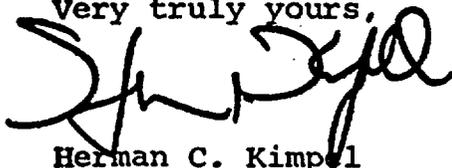
Gentlemen:

I am defending a lawsuit involving one [REDACTED] who was injured in an accident on January 29, 1972 at the Westinghouse Plant in Cheswick, Nuclear Fuel Division. At the time, [REDACTED] was employed as an oxide man, handling some form of nuclear fuel. He got his hand caught in the machine he was working with, and sustained an injury. EX6

I have since learned that your Commission conducted an investigation at the Plant, and would appreciate your advice as to how I can go about securing a copy of your investigative report.

I will await your advice.

Very truly yours,

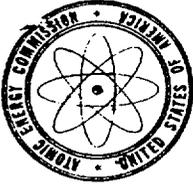


Herman C. Kimpel

HCK:db

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ITEM # 17 D/17



UNITED STATES
 ATOMIC ENERGY COMMISSION
 DIRECTORATE OF REGULATORY OPERATIONS
 REGION 1
 631 PARK AVENUE
 KING OF PRUSSIA, PENNSYLVANIA 19406

DEC 11 1974

Harold D. Thornburg, Chief, Field Support and Enforcement Branch,
 Directorate of Regulatory Operations

INFORMATION REQUEST

RO Summary Investigation Report No. 72-01
 Westinghouse Electric Company
 Cheswick, Pennsylvania
 License No. SNM-338

Reference: Track No. F18018H0

I am forwarding a copy of a letter dated November 27, 1974, from
 Herman C. Kimpel, Attorney-at-Law, requesting investigative reports
 of the subject incident involving [REDACTED] for your action.

EX6

During a telephone discussion on December 4, 1974, Mr. Kimpel stated
 that he was representing the Fitzpatrick Company who manufactured
 the equipment involved in the accident. He also stated that he
 would require the information within 60 days.

I am also enclosing copies of other letters relating to previous
 requests for the investigative information.

Mr. Kimpel has been notified that he would be provided the information
 that is available for release by your office, as discussed with F. Dreher
 on December 4, 1974.

Raymond H. Smith
 Investigation Specialist

Enclosures:
 As Stated

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ITEM # 18

D/18

OFFICE ▶	CRESS				
SURNAME ▶	Smith:ny	Nelson			
DATE ▶	12/4/74	12/11/74			



From : Health, Safety and Ser
 WIN : 222-5619
 Date : April 29, 1971
 Subject: Summary of 1971 Uranium
 Whole Body Counts

TO FILES

STATISTICAL SUMMARY

1. Sixteen employes counted - 13 NFD; 2 EMD; and 1 WNCO.
 2. Overall average percent MPLB on 11 positive results was 23 ± 11%.
 3. Eleven NFD line workers - 10 positive; 1 negative.
- One NFD line Foreman - positive results.
 One NFD Management - negative results.
 Two EMD (Former NFD line workers transferred from line areas for approximately six months.) - negative results.
 One WNCO employe - negative results.
 One EMD employe (Transferred from NFD) - positive results. This employe was counted because his bio-assay results were over the Westinghouse Administrative limit for two consecutive samples.

SUMMARY

The 16 Westinghouse employes' whole body count results during the period of April 14 - 16, 1971, indicated no significant lung depositions. All results were received within a 24-hour period by the use of Helgeson's telephone and tele-typewriter system.

Results were negative on two former NFD line workers who had less than 50% of MPLB in February, 1970, and who transferred to other non-Uranium processing jobs approximately seven months ago. Based upon the biological half-life of 380 days for a chronic exposure of Uranium-Dioxide, this seems to indicate that depositions detected are probably large particles in the upper G.I. tract and upper respiratory tract. These particles are eliminated, via the feces, from the body within a 24-hour period. Random feces sampling also strongly supports this conclusion.

Conclusion of W.B. count data.

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ITEM # 19 (I)

2 pages. D/19

EX 6



Westinghouse Electric Corporation

SUMMARY APRIL 1971 WHOLE BODY COUNTING- (HELGESON):

URANIUM (MPLB-3%-352 µGr.)

BIO-ASSAY RESULTS

REASON FOR W.B.C.

EMPLOYEE	FACILITY	%MPLB	URINE		REASON FOR W.B.C.
			D/M/L(Vol.)	FECES D/M/S(Amt.)	
[REDACTED]	NFD-Mfg.	32	29(0.4L)	690(3.5gr.)	Work area 20% MPC-hrs.
[REDACTED]	NFD-Mfg.	24	26(0.2)	1860(4.7)	Work area 20% MPC-hrs.
[REDACTED]	NFD-Mfg.	26	33(0.4)	No sample	Work area 20% MPC-hrs.
[REDACTED]	NFD-Mfg.	14	20(0.2)	0(0.04)	[REDACTED] Pellet area
[REDACTED]	NFD-Mfg.	28	19(0.32)	730(1.8)	Work area 20% MPC-hrs.
[REDACTED]	NFD-Mfg.	N.D.	0(0.35)	0(1.1)	[REDACTED]
[REDACTED]	NFD-Mfg.	29	9(0.27)	650(8.9)	Urine > 20 D/M/L for CY19
[REDACTED]	NFD-Mfg.	N.D.	5(0.45)	No Sample	Urine > 20 D/M/L for CY19
[REDACTED]	NFD-Mfg.	21	15(0.32)	540(2.9)	CY70 WBC 22% MPLB
[REDACTED]	NFD-Mfg.	22	12(0.32)	120(1.2)	CY70 Avg. urine result - 20 D/M/L
[REDACTED]	ARD	N.D.	0(0.75)	51(2.9)	CY70 WBC 33%(left NFD 9/7)
[REDACTED]	EMD	18	0(0.38)	164(2.2)	CY70 WBC 11%(left NFD 6/7)
[REDACTED]	NFD-Mfg.	15	24(0.35)	no sample	CY70 WBC 11% of MPLB
[REDACTED]	EMD	16	5(0.22)	20(1.5)	CY71 High Bio-assay(left - NFD 4/71)
[REDACTED]	EMD	27	0(0.9)	1100(4.0)	Work Area 20 MPC-hrs.
[REDACTED]	WNCO	N.D.	0(0.29)	No Sample	Routine

PLUTONIUM (MPLB = 16 nCi)

[REDACTED]	ARD	*62	0(0.8)	0.98(1.7)	Follow-up to 6/68, high bit assay - see files
[REDACTED]	ARD	N.D.	0(0.7)	0(0.3)	Routine
[REDACTED]	PFDL	N.D.	0.07(0.5)	0.18(2.2)	[REDACTED]. Routine
[REDACTED]	PFDL	N.D.	0.14(0.8)	1.23(3.0)	Jan. 1971 incident follow-u see files
[REDACTED]	PFDL	N.D.	0.06(0.6)	0.09(0.5)	Wet Oxide, Routine
[REDACTED]	PFDL	*N.D.	0.35(0.6)	0.24(2.6)	Jan. 1971 incident follow-u see files
[REDACTED]	PFDL	*62	0.06(0.8)	0.94(1.7)	Wet Oxide, Routine
[REDACTED]	PFDL	N.D.	0(0.9)	0.0(6.3)	Maintenance, Routine
[REDACTED]	PFDL	N.D.	0.05(0.6)	0.24(0.57)	[REDACTED] Routine

STATISTICAL SUMMARY

Uranium - 16 employes counted (13 NFD, 2 EMD, and 1 WNCO)
23±11% of MPLB average result
Average Feces: 600±600 D/M/S; Urine: 16±16 D/M/L

Plutonium- 9 employes counted (7 PFDL and 2 ARD)
2 positive results (1 ARD and 1 PFDL)
Average Feces: 0.6±0.6 D/M/S; Urine: 0.15±0.15 D/M/L

*Whole body counts at the University of Pittsburgh indicates that these results are statistical and not a lung deposition.

~~ITEM #~~

(S) (H)

Reyes

Documentation received
for the 1/29/72 accident
at Steelinghouse Hummer
Plant, Cheverich, Pa.

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ITEM # 20

0/20

19

2/3/72 Letter from M. C. Wilson, IBEW,
to RO: I ~~safe~~ giving
notification of the injury of
union member in an
accident on 1/29/72 at 4:10 PM
at the Westinghouse Uranium
Plant, Chewick, Pa.

*

2/4/72 TWX from PR Nelson to SSW RO: I reporting loss of arm accident at Westinghouse Uranium Feb. Plant (SNM-338) that occurred on 1/29/72. RO: I to examine the occurrence during next inspection.

2/7/72 Letter from Paul R. Shoop, ^{IBEW} to RO: I expressing concern over accident.

2/15/72 Letter by CKPech to P. Shoop (prepared by RO: I and facsimiled to HQ on 2/15/72) answering Shoop's 2/2/72 letter.

3/7/72 memo to file by W. R. Lorenz regarding 3/1/72 information request telephone call from Mr. Oliver (O. S. H. A.).

2/4/72 Letter from K. A. Rodden, Westinghouse to W. R. Lorenz, RO: I referencing action between the two on 2/4/72. The letter included, as an attachment, the health physics summary of the accident, that Rodden prepared.

*

2/9/72

Letter from R. R. Campbell to J. P. O'Neil
requesting that POI initiate an

~~investigation into the~~
~~investigation into the~~
~~investigation into the~~

2/13/72

News release by Sterling House
on the accident

2/13/72

Letter from P. Shop (IBEW) to
P. E. Brennan (Porting Board)

requesting copying investigation
attached is a list of IBEW questions
and answer (by Sterling House?). There are
changed as well in POI on 3/27/72.

2/17/72

Letter from C. H. Taylor (IBEW) to
St. Anthony (OSHA) regarding the
concern because OSHA did not

plan to investigate the 1/29/72
accident. Attached to Taylor's
letter was the

2/18/72
 Letter from C.H. Taylor (IBEW) to St. Taylor (AFL-CIO Standing Committee on Occupational Safety and Health) referring to IBEW's request to OSHA for investigation of the accident, and IBEW's plan to make a formal complaint to OSHA.

5/3/72
 Letter from N. S. Taylor (OSHA) to M. E. Wilborn, President - Local 1914 IBEW, enclosing OSHA's citation cover letter regarding the OSHA inspection at Westinghouse.

6/7/72
 Letter from J.P. D. Rilly, RO: I to P. Hoop (I.B.E.W.) regarding the investigation conducted by RO: I on the accident, and listing of the RO: I findings thereof.

6/19/72
 Letter from J.P. D. Rilly, RO: I to P. Hoop (I.B.E.W.) regarding the investigation conducted by RO: I on the accident, and listing of the RO: I findings thereof.

6/19/72
 Letter from J.P. D. Rilly, RO: I to P. Hoop (I.B.E.W.) regarding the investigation conducted by RO: I on the accident, and listing of the RO: I findings thereof.

*
2/24/72 Letter from Mr. C. H. Beck
to R. Blake, BSEW, informing
him that an investigation
has been initiated into
the 1/29/72 accident and
that report will be prepared
if the findings.

~~3/1~~
4/2/72 S. Inspector's evaluation
of report regarding the investigation
(70-3377201) of the Chileseniter
accident of 1/29/72. (W.R. Stevens)

6/5/72 Letter prepared by RO: I and sent to HQ, to be signed by Dr. C. H. Bell to P. Sharp. Letter not sent to Sharp (RO: I sent letter to Sharp).

~~6/8/72~~
 6/8/72 Facsimile from Steve Payer to R. R. Nelson ^{replies to} regarding ~~the~~ ^{supplies} ~~request~~ ^{request} for equipment. Letter to be sent to Dr. Livingston.

*
 6/19/72 ^{Interview} ~~Letter~~ ^{Letter} from J. P. D'Arcy to E. G. Cattabiani regarding the 2/10, 11, 24 and 25/72 investigations of the Challenger accident at McMurdo Base.

*
 11/8/72 Letter from J. P. O'Reilly to
 P. Shoop, IBEW, enclosing
 copies of our enforcement
 correspondence and the
 Westinghouse replies regarding
 our investigation of the
 1/29/72 accident.

G. W. Roy, RO:HQ

107338
In accordance with D. Knuth's letter of
3/22/73, attached is our documentation record
for the Westinghouse accident on 1/29/72.

cc: D. Knuth, RO:HQ

Documents that were not on Mr. Bidinger's list
as being in RO:HQ are also attached. As
discussed with you, we have serious concerns
relating to the release of an investigation
report. We plan no further action.

H. W. Crocker, RO:I

3/27/73

attachment

Documentation Record
for the 1/29/72 accident
at Steelinghouse Hummer
Plant, Newark, Pa.

File
3/29/73

2/2/72 Letter from P.R. Skoof, IBEW
 (Industrial Union of
 Electrical Workers) to RO: I
 regarding the Ipson's EX6
 concern over the [redacted] accident.

2/3/72 Letter from M. C. Wilson,
 IBEW to RO: I giving
 notification of the accident
 in which a union
 member was injured,
 on 1/29/72, at 4:10 PM, at the
 Westinghouse Aluminum
 Fabrication Plant, Chewink,
 Pa.

2/3/72 News release by
 Westinghouse Electric Corp.
 concerning the 1/29/72
 accident.

2/4/72

*

TUX from P.R. Nelson, PO: No 201, Roy, PO: HB, reporting the accident of 1/29/72 under Victim No. SNM-358; TUX states PO: I will examine the accident during the next investigation.

2/4/72

Letter from Chester House (K.A. Rodden, Neely, Skipton) to PO: I (Dr. R. Farley) reporting that telephone of 2/4/72. The letter included, as an attachment, the local police summary of the 1/29/72 accident.

2/7/72

Letter from C.H. Turpin (IBEW) to St. Quentin (OSHA) relating to concern because OSHA did not plan to investigate the 1/29/72 accident. Attached was a letter dated 2/3/72 from P.R. Hood (IBEW) to D.C. Rumbach, Chester House V.P., requesting a meeting.

investigation into the 1/29/72 accident, a meeting with
The Union to discuss the
accidents and related safety
policies. Attached to Shop's
letter was a list of IBEW
positions concerning the
accident, and a listing of
amounts to these quarters. The
answers were on non
returned paper and envelope
was not returned in any
manner.

2/9/72*

Letter from R. M. Engelken to
G. P. O'Reilly regarding that
ROI initiate an investigation
into the 1/29/72 accident.

2/15/72 Letter from C.R. Beck (Reg. No.)
to P.R. Shop (IBEW) concerning
letter 2/2/72 letter. (The letter
by Mr. Beck was prepared by ROI
and forwarded to RO:HQ, 2/15/72)

2/18/72 Letter from C.H. Tupper (IBEW) to S. Taylor (AFL-CIO Standing Committee on Occupational Safety and Health) referring to IBEW's request to OSHA for investigation of the accident, and IBEW's plan to make a formal complaint to OSHA.

* 2/24/72 Letter from Dr. C.K. Beck to P. Shoop, IBEW, informing him that an investigation has been initiated into the 1/29/72 accident and that Shoop will be informed of the findings.

⑤

3/7/72 memo to file by W.R. Farley regarding 31172 information request received from Mr. Oliver (OSHA).

4/21/72 OSHA's evaluation of regarding the investigation (70-3717201) of the childminder accident of 1/29/72. (W.R. Farley)

Letter from N. S. Tracy (OSHA) to M. C. Williams, President - Local 1914 IBEW, enclosing OSHA's citation cover letter regarding the OSHA inspection at Westinghouse. 5/3/72

Letter from J. P. D'Arcy, PO: I to P. Hoop (I.B.S.W.) regarding the investigation conducted by PO: I on the accident, and listing of the PO: I findings there of. 6/7/72 (6/9/72)

Draft letter to ~~the~~ sent to Mr. Hoop on 6/19/72. PO: I letter sent to P. Hoop on 6/19/72.

6/18/72

Forcible from St. Ol. Bay to
P.R. Nelson, suggesting the
format for the first two
paragraphs of the enforcement
letter being prepared for
transmission to Orestingham

6/19/72 *

Enforcement letter from
PO:I (G.P. O'Riagh) to Orestingham
(E.G. Catechism) regarding the
2/10, 11, 24 and 25/72 investigation
of the 1/29/72 accident.

6/16/72 *

Letter from PO:I (P.R. Nelson)
to PO:K:Q (St. W. Corp), transmitting
Investigation Report no. 70-337/72-0
regarding the Orestingham
accident of 1/29/72. NO
card and record card were
also attached.

6/26/72* note to files by T. W. Brockett concerning the addition of a license condition to SNM-338, requiring "Annex B - minimum Requirements For Licensee's Plans For Coping With Radiation Emergencies."

6/27/72* and 10/13/72 Letters from St. Augustine to RD:I, describing the licensee's corrective actions regarding the items of noncompliance and safety items for the 6/9/72 enforcement letter.

10/4/72 Meeting held at RD:I with Messrs. H. Kunkle, Mgr. Industrial Relations and St. Pison, Mgr. Health and Safety, St. Augustine. Meeting was to discuss inadequacies of licensee's letter of 6/27/72 and the actions St. Augustine will plan to take to correct these items.

11/18/72 *
Telex from J. P. O'Reilly to
P. Hoop, IBED, enclosing
copies of wet enforcement
correspondence and the
Washington replies regarding
wet investigation of the
1/29/72 accident.

11/18/72 *
ROI: I acknowledge letter
reporting Washington enforcement
reply of 6/27 and 10/13/72.



UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON, D.C. 20545

J. P. O'Reilly

FEB 24 1972

Mr. Paul R. Shoop
Utility Operations Department
International Brotherhood of Electrical Workers
1125 15th Street, N. W.
Washington, D. C. 20005

Dear Sir:

This acknowledges your letter to me dated February 2, 1972, and your letter to the Director, Region I, Division of Compliance, dated February 2, 1972. In these letters you expressed a serious concern for the health and welfare of [REDACTED]

EX 6

We are also concerned about [REDACTED] welfare and other health and safety aspects of this accident. Accordingly, we have assigned an investigator and a radiation specialist to conduct an on-site investigation. Although our investigation is not yet complete, you will be pleased to know that our preliminary findings indicate that [REDACTED] injury was not complicated by the intake of radioactive material.

EX 6

Upon completion of our investigation, we will inform you of our findings in the areas in which you have expressed an interest.

Sincerely,

Clifford K. Beck

Clifford K. Beck
Deputy Director of Regulation for
Compliance, Safeguards, and Materials

cc: J. P. O'Reilly, Director
Region I - Div. of Compliance

0/27

ITEM # 22

Information in this record was deleted
in accordance with the Freedom of Information
Act, exemptions 6
FOIA- 2000-0041

JUN 9 1972

Mr. Paul R. Shoop
Utility Operators Department
International Brotherhood of Electrical Workers
1125 - 15th Street, N.W.
Washington, D.C. 20005

Dear Sir:

By letter to you dated February 24, 1972, from Dr. C. K. Beck, it was stated that we were conducting an investigation at Westinghouse Electric Corporation, Cheswick, Pennsylvania, with respect to the accident which caused an injury to [redacted] on January 29, 1972. The letter also stated that after our office had completed its investigation, you would be informed of our findings in the areas where you expressed an interest.

The investigation disclosed that [redacted] received no internal deposition of uranium as a result of the accident. The investigation also disclosed that Westinghouse failed to (1) adequately instruct employees in the hazards associated with the operation of the powder preparation machine; (2) assure by supervisory review and evaluation of employee training that safe methods of operation were being followed; (3) perform a safety evaluation of the powder preparation machine subsequent to its modification; and (4) implement emergency plans with the hospital to assure the availability of cognizant personnel and appropriate survey instrumentation.

The above matters were brought to the attention of Westinghouse management and appropriate corrective actions have already been initiated by the company. We intend to continue our examination of the case until satisfactory resolution of all deficiencies found during the investigation is achieved and verified by our inspectors. Copies of enforcement correspondence, including the reply by Westinghouse, will be forwarded to you for your information.

Your letter of February 2, 1972, questioned the handling of the accident by Westinghouse because no health physics personnel were assigned to the shift during which the accident occurred. We do not believe it is necessary for health physics personnel to be physically present at the plant during every shift for such operations as were in progress at the time of the accident.

Information in this record was deleted
in accordance with the Freedom of information
Act, exemptions 6
FOIA- 2000-0041

ITEM # 24

D 122
②

OFFICE ▶	RO					
SURNAME ▶	<i>Lorenz/nvk</i>	<i>Nelson</i>	<i>O'Reilly</i>			
DATE ▶	06-09-72					

Your February 2 letter also advised us that equipment similar to the powder preparation machine involved in the accident was in use at Westinghouse's "other facility." Our investigation did not disclose or identify any similar equipment which has been or is being used by the company. If you have information on such equipment, it is requested you inform us.

We also wish to inform you that the Pittsburgh office of the Occupational Safety and Health Administration has completed an investigation of this industrial accident. Four citations relating to OSHA regulations were noted, none of which related to our areas of responsibility. We have also been in contact with cognizant personnel from the State of Pennsylvania to assure that they are aware of our findings.

Should you have any questions concerning our investigation, we will be pleased to discuss them with you.

Very truly yours,

James F. O'Reilly
Director

bcc: L. D. Low, RO
R. H. Engelken, RO

Transmitted by Jasmine
6/5/72 1:45 P.M.

Information in this record was deleted
in accordance with the Freedom of Information
Act, exemptions 6
FOIA- 2000-0041

ITEM # 25

D/28
③



UNITED STATES
ATOMIC ENERGY COMMISSION
DIVISION OF COMPLIANCE
REGION I
970 BROAD STREET
NEWARK, NEW JERSEY 07102

201 645-

Mr. Paul R. Shoop
Utility Operators Department
International Brotherhood of Electrical Workers
1125 - 15th Street N.W.
Washington, D.C. 20005

Dear Sir:

The investigation of the accident at Westinghouse Electric Corporation, Cheswick, Pennsylvania, in which [REDACTED] a member of your union lost his left arm, has been completed. Although it is possible that additional information may be available to us as part of our enforcement and followup actions, we are in the position of informing you of our findings in accordance with my letter of February 24, 1972. EX6

The investigation revealed that; (1) no uptake of uranium was received by [REDACTED] (2) inadequate instructions were provided employees in the hazards associated with the operation of the powder preparation machine, (3) supervisory review and followup of employee training to ensure that safe methods were being followed was lacking, (4) a safety evaluation was not made of the powder preparation machine following modifications, and (5) emergency plans had not been implemented with the hospital to assure the availability of "cognizant" personnel and survey instrumentation. EX6

These findings have been discussed with Westinghouse management and in most of these areas, corrective action has already been initiated. These areas will be followed closely until satisfactory resolution is achieved and verified by our inspectors. Copies of enforcement correspondence, including the reply by Westinghouse Corporation, will be forwarded to you for your information.

In your letter of February 2, 1972, you questioned the handling of the accident in that there was no "HP" (health physics) personnel assigned to the shift in which the accident occurred, "although HP's are assigned to the other two shifts". It is our view that prudent radiological safety practice does not dictate the necessity for health physics personnel to be on every shift for such operations as were in progress. It is noted that Westinghouse Corporation assigned a health physics person to a second shift for administrative purposes, namely the processing of continuous air

samples. You also informed us that equipment similar to the powder preparation machine was "being used at the licensee's other facility". Our investigator was unable to identify similar equipment used by the Westinghouse Corporation. If you have information on such equipment, it is requested that you inform us.

We also wish to inform you that the Pittsburgh office of the Occupational Safety and Health Administration has informed our Region I office, Directorate of Regulatory Operations, that they are reviewing this industrial accident. We have made arrangements with the Pittsburgh office so that we will be made aware of their findings to assure that all safety matters within our areas of responsibility are fully resolved. We have also been in contact with cognizant personnel from the State of Pennsylvania to assure that they are aware of our findings.

Should you have any questions concerning our investigation, we will be pleased to discuss them with you.

Very truly yours,

Dr. Clifford K. Beck
Director, Office of Government Liaison

cc: Mr. James P. O'Reilly, Director, Region I

bcc: L. D. Low, RO
R. H. Engelken, RO

To: J P O Kelly, R O: I

DRAFT RHANDLER:akb
June 7, 1972

Mr. Paul R. Shoop
Utility Operators Department
International Brotherhood of Electrical Workers
1125 - 15th Street, N. W.
Washington, D. C. 20005

Dear Sir:

By letter to you dated February 24, 1972, from Dr. C. K. Beck, it was stated that we were conducting an investigation at Westinghouse Electric Corporation, Cheswick, Pennsylvania, with respect to the accident which caused an injury to [redacted] on January 29, 1972. The letter also stated that after our office had completed its investigation, you would be informed of our findings in the areas where you expressed an interest.

Exb

The investigation disclosed that [redacted] received no measurable internal deposition of uranium as a result of the accident. The investigation also disclosed that Westinghouse failed to (1) adequately instruct employees in the hazards associated with the operation of the powder preparation machine; (2) assure by supervisory review and evaluation of employee training that safe methods of operation were being followed; (3) perform a safety evaluation of the powder preparation machine subsequent to its modification; and (4) implement emergency plans with the hospital to assure the availability of cognizant personnel and appropriate survey instrumentation.

Exb

D/24

Information in this record was deleted
in accordance with the Freedom of Information
Act, exemptions 6
FOIA- 2000-0041

ITEM # 26

(2)

Mr. Paul R. Shoop
IBEW

-2-

June 7, 1972

The above matters were brought to the attention of Westinghouse management and appropriate corrective actions have already been initiated by the company. We intend to continue our examination of the case until satisfactory resolution of all deficiencies found during the investigation is achieved and verified by our inspectors. Copies of enforcement correspondence, including the reply by Westinghouse, will be forwarded to you for your information.

Your letter of February 2, 1972, questioned the handling of the accident by Westinghouse because no health physics personnel were assigned to the shift during which the accident occurred. We do not believe it is necessary for health physics personnel to be physically present at the plant during every shift for such operations as were in progress at the time of the accident.

Your February 2 letter also advised us that equipment similar to the powder preparation machine involved in the accident was in use at Westinghouse's "other facility." Our investigation did not disclose or identify any similar equipment which has been or is being used by the company. If you have information on such equipment, it is requested that you inform us.

→ Should you have any questions concerning our investigation, we will be pleased to discuss them with you.

Very truly yours,

James P. O'Reilly
Director

bcc: L. D. Low, RO
R. H. Engelken, RO



UNITED STATES
ATOMIC ENERGY COMMISSION
DIVISION OF COMPLIANCE
REGION I
970 BROAD STREET
NEWARK, NEW JERSEY 07102

201 645-

APR 26 1971

To : File

Thru: H. W. Crocker, Senior Fuel Facilities Inspector
Region I, Division of Compliance

WESTINGHOUSE ELECTRIC CORPORATION
PITTSBURGH, PENNSYLVANIA
LICENSE NO. SNM-338
DOCKET NO. 70-337
REPORT NO. 71-1
INSPECTION DATE: 3/22-25/71 (ANNOUNCED)

The noncompliance resulting from the previous inspection (11/23-25/70) with regard to inadequate evaluations of airborne activity has been corrected. Improved evaluations of airborne activity are now made. In fact, as a result of the evaluations, overexposures have been discovered and reported. The current noncompliances, as indicated on the AEC-592, resulted from a failure to report the overexposure as indicated in their records.

The most encouraging item resulting from this inspection is that the licensee is pursuing a program to reduce the airborne activity in the processing area from the equipment to an average of 50 d/m/m³.

One interesting study was made at the facility in particle sizing. Initial results indicate that only about 20% of the airborne activity from the grinders is respirable. This results in relatively higher fecal sample results and lower urine results.

No immediate health and safety or nuclear safety problem appears evident as a result of this inspection and a routine reinspection should be scheduled,

W R Lorenz
Walter R. Lorenz
Radiation Specialist

cc: Gen W. Roy, w/backup notes
A. Giambusso, CO
L. Kornblith, CO
R. Engelken, CO

Information in this record was deleted
in accordance with the Freedom of Information
Act, exemptions 6
FOIA- 2000-0041

D/25
ITEM # 27 (10)

U. S. Atomic Energy Commission
Division of Compliance

Region I

Licensee: Westinghouse Electric Corporation
3 Gateway Center
Pittsburgh, Pennsylvania
License No. SNM-338
Docket No. 70-337
Report No. 71-1

Date of Visit: March 22 - 25, 1971 (Announced)

This report does not contain any company confidential material.

Inspected by:

W. R. Lorenz

W. R. Lorenz, Radiation Specialist

4/23/71
Date

Reviewed by:

H. W. Crocker

H. W. Crocker, Sr. Fuel Facilities
Inspector

4/23/71
Date

By : Walter R. Lorenz, Radiation Specialist, CO:I

Title: Westinghouse Electric Corporation
3 Gateway Center
Box 2278
Pittsburgh, Pennsylvania
License No. SNM-338
Docket No. 70-337
Report No. 71-1

Inspection Dates: March 22 - 25, 1971 (Announced)

INTRODUCTION AND SUMMARY

1. During this routine inspection of this facility the previous item of non-compliance was reviewed in addition to a review of the licensee's current status with respect to nuclear and health safety practices, and compliance with federal regulations. The previous inspection was made on November 23 thru 25, 1970.
2. Fuel manufacturing remains as the dominant activity under this license. UO₂ is processed to pellets, loaded in fuel rods and assembled into fuel bundles for PWR's. The only significant change under this license is the shutting down of the Materials Systems Lab (MSL). MSL personnel are being reassigned.
3. As a result of the previous noncompliance the licensee has improved their system to evaluate and determine the extent of exposure personnel receive via air concentrations. In fact as a result of this system eight over-exposures were noted and reported as required. However, in February one overexposure was recorded but overlooked. This resulted in noncompliance with 20.103(a) overexposing the person, 20.405(a) failure to notify the Commission, and 20.405(c) failure to notify the individual.

DETAILS

Scope

4. During this inspection the entire site was toured to familiarize J. Youngblood, CO:HQ with the total operations. Particular attention was given to NFD production facility. The current status of the organization was reviewed, bioassay data was reviewed, stack sample results, corrective action resulting from several overexposures to excessive air concentrations, in plant air concentrations and particle size study results.

Organization

5. Mr. P. Koppel remains as manager of the NFD at Cheswick but the NFD General Manager, Mr. D. J. Pavejsil has been replaced by Mr. T. Stern.
6. The Material System Laboratory (MSL) under Mr. Lange included six technicians and five engineers. This small group has been eliminated. The building is being cleaned out as there is no other MSL work.
7. The Astronuclear Lab (WINCO) currently employs 25 engineers and technicians. Material is used at this facility under license 37-5809-3. A cut back in personnel is expected but the degree as yet is not known.
8. As far as Piros knows the above cut back in personnel will not affect his staff of a health physicist and eleven technicians. One technician will be shifted from WINCO to TLD studies.
9. Within the NFD organization production is on a three shift, five day per week basis. Three lines are operated by seven to ten people including the foreman. Health physics technicians cover the 8:00 am - 4:00 pm shift and the 12:00 midnight to 8:00 am shift.

Persons Contacted

10. W. E. Piros, Industrial Safety and Services Manager
K. Bodden, Health physicist
P. Koppel, Manager, NFD at Cheswick

Bioassay Data

11. The license requires quarterly urinalysis of persons potentially exposed to airborne radioactive materials. Any urine result greater than 25 d/m/day is required to be rechecked.
12. Maintenance production line personnel, and area engineers are sampled quarterly. Rod loading personnel are sampled twice yearly. High bay and office personnel are sampled every two years.
13. Each urine result over 25 d/m/day is evaluated in the light of the man exposed, his work location, history, air concentrations he was exposed to during the previous week and the day of sample collection, magnitude of air sample results, etc. From this type information and an interview with the person a write up of the results is made and recommendations are set out to remove the person from additional work related exposure, re-sample the person or take more serious action such as whole body counting and/or fecal analysis.

14. Urinalysis samples are sent to Eberline Instrument Corporation for analysis. There is a three day delay in shipping and one to two weeks delay in receiving results by mail. Westinghouse has a standing order that should any result exceed 25 d/m/sample, that result is to be phoned to them. Eberline has a minimum detectable activity of .05 d/m/700 ml for 3% enriched uranium. The minimum acceptable volume is 150 ml of sample. All results are normalized to d/m/liter.
15. A review of the results for 1970 thru 3/71 indicate an average of 7.5 d/m/liter. The maximum noted was 80 d/m/liter (resample result=less than 25 d/m/liter).
16. Fecal sample results (not required by license condition) varied from 200 d/m/sample to 5060 d/m/sample (19 samples collected from selected persons). A line operator [REDACTED] had this highest result. This sample was a follow-up sample precipitated by a 30 d/m/l urine sample collected on 12/8/70. The follow-up urine sample collected the same day as the fecal sample indicated 2.7 d/m/liter.

EX 6

Whole Body Counting Results

17. In October 1970, Westinghouse had 11 persons whole body counted by Helgeson Nuclear Services, Inc. According to Bodden the results were not reliable and in February a recount was made along with the counting of additional people. A summary of the results along with bioassay data is as follows:

Name	Whole Body Count			Fecal** d/m/Sample	Urine** d/m/l	Comment
	10/70	2/31/71	2/24/71			
<u>NFD</u>						
[REDACTED]		35	0	372	24	
[REDACTED]		12	13	585	16	
[REDACTED]		0			0	
[REDACTED]		17			5.8	
[REDACTED]	39		0		0.0	
[REDACTED]		11		1,133	4.4	
[REDACTED]	78			932	12	
[REDACTED]		14		1,000	19	
			53 (2/28)			
				Cont'd		

EX 6

*Past urine sample results indicate no exposure

**Fecal and urine samples were obtained on the day of the corresponding whole body count.

Whole Body Count

Name	% MPLB			Fecal** d/m/Sample	Urine** d/m/l	Comment
	10/70	2/31/71	2/24/71			
EX6 	100		33	3587	0.0 12	
			91	882	11	
	0		11(2/28)	797	29	
	0				21	
MSL						
EX6 	94*	0		45 12	5.3 7	No loose fuel work
		7				
		25*	0(2/28)	0.7	3.8	No loose fuel work
EX6 	0*			16	0	No loose fuel work
WNGO						
EX6 	0*				7	No loose fuel work
		0*			12	No loose fuel work
		0*			15	No loose fuel work
		0*		0.45	8.7	No loose fuel work
	93*			45	5.3	No loose fuel work
		0		12	3.6	
	0*			47	0	No loose fuel work

(Cont'd)

*Past urine sample results indicate no exposure
 **Fecal and urine samples were obtained on the day of the corresponding whole body count.

Name	Whole Body Count % MPLB			Fecal** d/m/Sample	Urine** d/m/l	Comment
	10/70	2/31/71	2/24/71			
EX6 [REDACTED]	0			91	0	No loose fuel work
EMD [REDACTED]		12*		0	0	No loose fuel work
EX6 [REDACTED]		12*		0	0	No loose fuel work
[REDACTED]		0*		0	0	No loose fuel work
[REDACTED]		0*				No loose fuel work

*Past urine sample results indicate no exposure

**Fecal and urine samples were obtained on the day of the corresponding whole body count.

18. According to Bodden the 10/70 whole body count results were reviewed with Helgeson and the data was considered unreliable.
19. The data indicates that personnel are definitely being exposed to airborne concentrations but none of the results indicate, by itself, levels in excess of part 20 limits according to Bodden. This conclusion is substantiated by air sample data and personnel time studies.

Special Studies

20. Bodden has embarked on a special study involving the particle sizing of the airborne activity around various equipment. To date 11 samples have been collected from the Royal Master and Cincinatti centerless grinders. These are the most problem equipment items in the manufacturing line. Bodden uses an Anderson particle size sampler having seven plates. Particle sizing is made from less than .3 microns to greater than 30 microns. Particle size ranges are selectively plated out on each appropriate stage of the seven stage sampler. The particles are separated not on the basis of actual micron size, ie., the physical size of the particle, but on the basis of its aerodynamic size. The aerodynamic size is most appropriate in determining respirable air activities. Respirable particle sizes are determined by including 20% of all

particles of 3.3 to 5.5 microns, 50% of all particles of 2.0 to 3.3 microns, and all particles smaller than 2.0 microns.

21. The centerless grinder study samples have initially indicated that approximately 75 - 80% of the particles generated are in the nonrespirable range. According to Bodden this data complements the high fecal data indicated from sample results of grinder operators.
22. Although this data is pertinent to evaluating personnel lung and body burdens, Bodden is not at this time including the particle size information towards satisfying 10 CFR 20 criteria.

Stack Sampler Results

23. Exhaust stacks from the facility are the same as reported in paragraphs 14 and 15 of the 11/23-25/70 inspection report. Sampling is also as previously reported. A review of the stack sample results since the last inspection indicate that for only three weekly periods, 8/9-14/70, 8/22-28/70 and 3/11-17/71 did the coverage concentrations exceed part 20 limits of 8.8 d/m³. The respective results were 9, 11, and 10 d/m³. On all other occasions the results indicated less than 8.8 d/m³ with the average at 3.0 d/m³.

In Plant Air Concentrations

24. Bodden currently has an air sampling system in the SNM process line in which general area air samples are collected and operating station air samples are collected. These results are averaged in weekly periods and recorded. A review of these weekly average general area and station sample results was made by the inspector. The maximum general area air sample result (weekly averaged) was 88 d/m³ and the average of the weekly average was 43 d/m³. The maximum operating area air sample result (weekly averaged) was 191 d/m³ and the average of the weekly average was 88 d/m³. These records were reviewed for the weekly period starting 8/9-14/70 thru 3/11-17/71. MPC in the area is 220 d/m³.

Personnel Exposures to Air Concentrations

25. As a result of the previous inspection in which noncompliance was noted with respect to evaluations of personnel exposures to air concentrations, Bodden has established a log system involving air concentrations and personnel exposure time periods. MPC in the restricted areas of their plant is 1×10^{-10} uCi/ml (220 d/m³) and a 40 hour exposure in seven days is permissible. Bodden limits personnel to 8800 d/m³ hours (220 x 40).

26. General and operating area air samples are collected daily for each process line. Each operator is required to account for his time in the area on a daily basis and report the information thru the foreman to Bodden. The air concentrations in the areas on a daily basis and the time spent in the areas on a per man basis is established and recorded. The data sheets include overtime. By this method Bodden keeps account of each person in the area and his exposure. A review of the data indicates that the limits of 8800 d/m³-hour was exceeded for one person. The data is as follows:

EX 6

<u>Name</u>	<u>Date</u>	<u>d/m/m³ x hr.</u>	<u>Running 7 Day Exposure Accumulation (d/m(m³ x hr.)</u>
[REDACTED]	2/1/71	238	-
	2/2/71	406	644
	2/3/71	1508	2152
	2/4/71	3377	5529
	2/5/71	554	6083
	2/6/71	1484	7567
	2/7/71	560	8127
	2/8/71	224	8113
	2/9/71	3520	11227
	2/10/71	564	10283
	2/11/71	224	7130

27. As can be seen on 2/8/71, 2/9/71, and 2/10/71 the seven day exposure limit was exceeded. Contrary to 10 CFR 20.103(a), .405(a), and .405(c) this exposure was not reported to the Commission nor was the extent of the exposure reported to the person.

Incident Report

28. Since the last inspection the licensee by letter dated 1/12/71 to the Commission reported eight exposures to personnel in excess of the maximum permissible air concentrations set out in 20.103. These overexposures occurred during centerless grinder operations.

29. During this inspection each grinder was observed as to the corrective action taken on the part of the licensee. There are four centerless grinders located, two each, in each of two production lines. On two of the four grinders the work station was adjusted so as to cause the operator to stand at a greater distance from the source of airborne activity, that is the pellet feed out of the grinders. On the remaining two grinders a different approach was taken to determine and eliminate the cause of airborne activity. On these latter two grinders plexiglass was fitted on the pellet feed outlet. In addition one of these two grinders was fitted with a Cuno filter to reduce the uranium concentration in the water of the grinder.

30. Each of these corrective actions will be evaluated as to the best result and that action will be adopted for all the grinders.

Examination of Facility

31. During the examination of the NFD manufacturing facility the line areas appeared neat and in order, as usual. It was noted that the two Cincinatti grinders were replaced with Royal Master grinders; one on 1/10/71 the other on 2/15/71. The Cincinatti grinders were the greatest source of air activity in the production line.

Management Discussion

32. At the end of the inspection on 3/25/71 Mr. Cattabiani, the site landlord was out of town and Mr. P. Koppel, Manager of NFD represented management for the site. Also present were Messers. Piros and Bodden. B. J. Youngblood, CO:HQ, also attended the management meeting along with the inspector.
33. Koppel was informed of the item of noncompliance with respect to exposing an individual to excessive air concentrations and the resulting failure to report the overexposure to the Commission and the individual. According to Bodden the noncompliance was a result of an oversight on the part of the licensee in that when the individual was exposed to approximately one-half the maximum permissible no attempt was made to restrict the individual from additional exposures.
34. The inspector stated that it was encouraging to note the expediency with which the Cincinatti grinders were replaced as a result of the last inspection. Koppel said that by the end of this year, all equipment used in processing uranium will be modified so that the maximum air concentration will be only 50% of MPC. Currently, Koppel said that to aid in reducing air concentrations generated by equipment that is air exhausted, absolute filters will be changed when air flow at the open face areas reach 110 lfm instead of 100 lfm.