

MAR 11 1958

DLR:CMF

Nuclear Development Corporation of America
5 New Street
White Plains, New York

Attention: Mr. Roger Miles, Health Physicist

Gentlemen:

This refers to the inspection conducted on October 14 and November 16, 1957 of your activities authorized under byproduct Material Licenses No's 31-350-1, 2, and 3 and Source Material license No. C-3395.

It appears that certain of your activities were not conducted in full compliance with the conditions of your byproduct Material License and the requirements of the AEC's regulations in Part 20, Title 10, Code of Federal Regulations, in that:

1. Records of surveys at the Grove and New Street facilities were not maintained as required by 10 CFA 20.401(c).
2. Mr. H. J. Sax who is listed in condition 11 of License No. 31-350-2 is no longer responsible for the material covered by this license.
3. The 1 mc Co⁶⁰ sealed source used at the Grove Street location was not tagged as specified in condition 17 of License No. 31-350-1.

It was noted that these deficiencies were called to your attention and that you agreed to take remedial action at once. Should you have any questions regarding this matter, please feel free to contact us. These items will be reviewed during the next scheduled inspection of your operation.

No other deficiencies have been noted as a result of this visit. We appreciate the cooperation given to the AEC representative making the visit.

Very truly yours,

OFFICE	DLR	DLR	James E. Mason, Chief Isotopes Branch	DLR
SURNAME	CMFerrell/rh	LRRogers	Division of Licensing and Regulation	Mason JRMason
CC:	3/5/58 CMF	Inspection Division, NYOO		
DATE				

Office Memorandum • UNITED STATES GOVERNMENT

TO : H. L. Price, Director
Division of Licensing and Regulation

DATE: FEB 1 1958

FROM : Marvin M. Mann, Assistant Director, Compliance
Division of Inspection

SUBJECT: NUCLEAR DEVELOPMENT CORP. OF AMERICA, LICENSE NOS. 31-350-1, 2, 4;
10 CFR 30; C-3395, 10 CFR 40

Symbol: INS:CCP

Attached is a copy of the inspection report, prepared by the New York Operations Office Inspection Division, concerning activities of the subject licensee.

Information gathered during inspection shows that the licensee was in non-compliance with the following:

License 31-350-2 Condition No. 11. Supervision of Byproduct Material.
Designated user or supervisor as listed in this condition is no longer responsible for the material.
(Par. 13 of report.)

License 31-350-4 Condition No. 17. Tagging of sealed sources.
1 millicurie Cobalt-60 sealed source, located at the Grove Street plant, was not tagged as specified in this condition.
(Par. 19 of report.)

10 CFR 20.401(c) Records of surveys, radiation monitoring and disposal.
Records of surveys, at the Grove and New Street facilities, are not maintained.

It is suggested that a letter be addressed to the licensee to inform him of the above non-compliance items and request that appropriate action be taken to correct or overcome these deficiencies. When corrective action has been completed on this matter, please furnish the office that conducted the inspection with copies of pertinent correspondence and these items will be checked during the next regularly scheduled inspection.

A summary of this case will be included in the February report to the Office of the General Manager.

A copy of this memorandum and the enclosure has been furnished the Office of the General Counsel.

Enclosure:
Cpy Rpt Dtd 1-16-58

JAN 27 1958

Marvin M. Mann, Assistant Director
Division of Inspection, Washington

Robert W. Kirkman, Director
Inspection Division

TRANSMITTAL OF LICENSE COMPLIANCE INSPECTION REPORT - 10 CFR 30, 40

SYMBOL: INS:WEK

Transmitted herewith is the following inspection report involving
"technical non-compliance":

Nuclear Development Corporation of America
5 New Street
White Plains, New York

License No. 31-350-1; -2; -4

C-3395

The following items of non-compliance were noted during the inspection
of the licensee's facilities:

Condition 11 of license -2: In that Dr. N. I. Sax no longer
has responsibility for the 4 curie Po²¹⁰ sealed source.

Condition 17 of license -4: In that a 1 millicurie Co⁶⁰ sealed
source at the Grove Street plant was not tagged.

20.401(c) In that no record has been maintained of the surveys
conducted at the Grove Street and New Street plants.

The individual users were advised of the above items of non-compliance
and each indicated a willingness to correct them.

We feel that no significant radiological hazard exists as a result
of these items of non-compliance.

We recommend that the licensee be sent a letter requiring correction
of the above items.

Enclosure:
Insp. rpt. (2)

UNITED STATES ATOMIC ENERGY COMMISSION

COMPLIANCE INSPECTION REPORT

<p>1. Name and address of licensee or permit holder</p> <p>Nuclear Development Corporation of America 5 New Street White Plains, New York</p>	<p>2. Date of inspection Oct. 16, 1957 - White Plains, N.Y. Nov. 14, 1957 - Pawling, N.Y.</p> <p>3. Type of inspection Initial</p> <p>4. 10 CFR part(s) applicable 20-30-40</p>
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5. License (or permit) number(s) and expiration date(s)					
Number	Date	Exp. date	Number	Date	Exp. date
C-3395 (Mr. Murphy)		5/1/58	31-350-4 (Mr. Miles)		10/31/59
			31-350-1 (Dr. Goldring)		4/30/58
			31-350-2 (Dr. Sax)		9/30/58

6. Scope of license(s) and permit

PART 40
C-3395 - Authorized use of 15 lbs. of natural uranium during the term of this license for use in mechanical property tests.

PART 30
31-350-1 - Authorized use of 50 millicuries of activity as a result of the service irradiation of iron, stainless steels and components thereof, for use as stated in Application No. 31-350-1.

7. Special conditions and limitations of license(s) or permit

31-350-1
 10. Licensed material to be used by, or under the supervision of Dr. Goldring.
 11. Licensed material may be used at 90 Grove Street, White Plains, New York.
 12. Labeling shall not be required for laboratory containers such as beakers, flasks and test tubes, used transiently in laboratory procedures during presence of the user.

31-350-2
 10. Byproduct material to be used only at NDA Experimental Station, Rt. 55, Pawling, N.Y.

8. Inspection findings

Nuclear Development Corporation of America uses licensed byproduct material at three separate locations in New York State. Dr. Irving Tabershaw is the Chairman of the Health Physics Department and Mr. Roger Miles, an assistant, serves as the R.S.O. Approximately 20 individuals use the byproduct material. Somewhat less than 20 millicuries of irradiated iron and stainless steel are stored at the New Street plant in White Plains and at the Pawling experimental station. The licensee intends to dispose of this material in the near future. One 4 curie Po²¹⁰ sealed source is mounted in a water tank at the Pawling facility. The source is used mainly for calibration and irradiation experiments. Two 230 millicuries

9. Items of noncompliance

Condition 11 of License -2: "Authorized User"
Condition 12 of License -4: "Tagging of sealed sources"
20.401(a) "Records of surveys"

10. Give date of last previous inspection: **None**

11. Is "Company Confidential" information contained in this report? **No**
 (Specify page(s) and paragraph(s))

DISTRIBUTION:

2 cys Division of Inspection, Washington
2 cys Inspection Division, NYOO

Approved by:

W. E. Kriegsmann (Inspector)

Robert W. Kirkman, Director
New York

(Operations office)

January 16, 1958

(Date report prepared)

If additional space is required for any numbered item above, the continuation may be extended to the reverse of this form using foot to head format, leaving sufficient margin at top for binding, identifying each item by number and noting "Continued" on the face of form under appropriate item.

RECOMMENDATIONS SHOULD BE SET FORTH IN A SEPARATE COVERING MEMORANDUM

ITEM 6 CONT'D

31-350-2 - Authorized use of 100 curies Po^{210} as Mound Laboratory Po-Be sealed neutron sources. Four sources with a maximum of 40 curies per source to be used as a series of neutron sources for the following uses: (1) Checking out and calibration of neutron detection and monitoring devices (2) Multiplication effect of critical arrays of nuclear fuels (3) For a series of experiments involving the production and measurement of "capture" gamma rays.

31-350-4 - Authorized use of two sealed sources with total activity not to exceed 460 millicuries as Oak Ridge National Laboratory sealed sources of Co^{60} for instrumentation calibration and shielding tests. 10 millicuries Co^{60} as Atomic Energy of Canada, Ltd., sealed source, Model No. AECL MC-10. 1 millicurie Co^{60} as Atomic Energy of Canada, Ltd., sealed source Model No. AECL MC-1 for instrument and dosimeter calibration.

ITEM 7 CONT'D

11. Licensed material to be used by, or under the supervision of Dr. Sax.
12. Labeling shall not be required for laboratory containers such as beakers, flasks and test tubes, used transiently in laboratory procedures during presence of user.
13. Byproduct material must be encapsulated prior to possession by licensee.
14. Byproduct material shall be used as sealed sources for purpose stated and sources shall not be altered, opened, or combined.
15. Leak testing of the sources licensed above shall be carried out at intervals of ninety days and records of the leak test results shall be furnished the AEC upon request.
16. Written administrative instructions establishing radiological protection control procedures shall be furnished to all individuals responsible for handling licensed material. The procedures shall include the assignment of responsibility for radiological protection and security of the source from unauthorized removal.
17. Licensee shall report to the Commission within 48 hours any incident which has resulted or could result in an exposure to any individual in excess of a dose of 3 rem or any incident involving loss of the licensed material.

31-350-4

11. Sealed sources licensed above may be used also at Nuclear Development Corporation of America facilities located at 90 Grove Street, White Plains, New York and Route 55, Pawling, New York.
12. Byproduct material to be used by or under the supervision of Mr. Miles.
13. This license supersedes License No. 31-350-3 dated August 22, 1957.
14. Byproduct material must be encapsulated prior to possession by licensee.
15. Sealed sources licensed above shall not be opened.
16. Written administrative instructions covering appropriate radiological protection phases of operational procedures and establishing responsibility for radiological protection, control, and security of the byproduct material shall be supplied individuals using or having responsibility for use of such material.
17. Each sealed source container (capsule) of licensed material to be used outside of a shielded exposure device shall have permanently attached to it a durable, legible and visible tag. The tag shall be attached directly to the container (capsule), or by the use of a durable chain or leader. The tag shall be at least one inch square and shall bear a radiation caution symbol in conventional colors, magenta or purple on a yellow background, and a minimum of the following instructions: "Danger - Radioactive Material - Do Not Handle - Notify Civil Authorities if Found."
18. Leak testing of the ORNL Co^{60} sealed sources licensed above shall be carried out at intervals of not more than six months and records of leak test results shall be furnished the AEC upon request.

ITEM 8 CONT'D

Co⁶⁰ sealed sources are stored at Pawling. One 90 millicurie Co⁶⁰ sealed source is at New Street and one millicurie Co⁶⁰ sealed source is stored at Grove Street. The cobalt sources are used occasionally for the calibration of instruments and were not in use at the time of the inspection. Extensive facilities are devoted to the use of byproduct material under AEC contract. Sufficient operable radiation detection instruments were available to each of the individual users. Licensed byproduct material is stored in restricted areas. Satisfactory radiation safety instructions have been prepared. A bi-weekly film badge service is in effect and no overexposures were noted. Surveys have been conducted at each of the facilities and leak tests have been performed as required on the sealed sources. Procurement procedures are satisfactory to ensure that the licensed limit is not exceeded. All radioactive wastes produced by the licensee are disposed of through Navy facilities at Earle, New Jersey, by arrangement with the AEC. The one millicurie Co⁶⁰ source at Grove Street was not tagged (Para. 19). All areas and containers were properly posted or labeled. Records of purchase, waste disposal, film badge results and leak test results were properly maintained. No records were maintained of the surveys conducted at the New and Grove Street addresses (Para. 21). The licensed user for license -2, Dr. N. I. Sax, no longer has responsibility for the 4 curie Po²¹⁰ source (Para. 13).

PART 40

Approximately 3 lbs. UO₂ are currently on hand for use in mechanical property tests. The material is not currently in use and is being stored in a safe at the New Street plant.

PART 30 INSPECTION

Nuclear Development Corporation of America
5 New Street
White Plains, New York

Dates of Inspection: October 16, 1957 - White Plains, New York
November 14, 1957 - Pawling, New York

Person Accompanying Inspector:

New York State Department of Labor representative was invited but was unable to accompany inspector.

Persons Contacted:

Mr. Roger Miles, Health Physicist
Mr. Peter Murphy, Accountability Officer
Mr. J. J. Gabay, Physicist
Dr. E. L. Zimmerman, Physicist
Dr. Irving Tabershaw, Chairman, Health Physics Department

12. Organization & Administration

The Nuclear Development Corporation of America uses licensed material at three separate locations: 5 New Street, White Plains, 90 Grove Street, White Plains, and at their experimental station on route 55, Pawling, New York. The Health Physics Department, under the direction of Dr. Irving T. Tabershaw, maintains overall responsibility for radiological safety. Mr. Roger Miles, an assistant, has the specific responsibility for ensuring compliance with the regulations and is the designated R.S.O. Approximately 20 individuals are involved in the use of byproduct materials.

13. Facilities and Uses of Byproduct Material

31-350-1 - Iron and stainless steel was irradiated at Brookhaven National Laboratory for corrosion tests and resulted in about 20 millicuries of total activity. The experiments have been completed and the remaining irradiated material is currently in storage at New Street and Pawling, awaiting disposal.

31-350-2 - One 4 curie Po^{210} source is stored in a 6' deep tank of water at the Pawling Experimental Station under the supervision of Dr. E. L. Zimmerman. The designated user, Dr. N. I. Sax, stated that he no longer has responsibility for this material. The tank of water is surrounded by a polyethylene sheet in order to prevent the escape of radioactive materials in the event of rupture of the source. Dr. Zimmerman stated that protective clothing and remote handling devices are employed in the handling of the source.

31-350-4 - The following sealed sources have been purchased and are used under this license at the locations indicated: Two 230 millicurie Co^{60} sealed sources at Pawling, one 9 millicurie Co^{60} sealed source at New Street, one millicurie Co^{60} sealed source at Grove Street. These sources are used only occasionally for the calibration of instruments and at the time of the inspection were all in storage.

14. Instrumentation

Operable radiological detection instruments were available to the licensee as is indicated in Exhibit "A" to this report.

15. Radiological Safety Precautions and Procedures

Written radiological safety instructions have been prepared for the operations under each of those licenses requiring written instructions.

Surveys have been conducted on an "as required" basis for all the facilities of the licensee. Records were maintained of surveys conducted at Pawling but no records were maintained of either the Grove or the New Street facilities.

15. Radiological Safety Precautions and Procedures (Cont'd)

Air samples are taken at intervals of 24 hours at the Pawling facility. Records of the results were properly maintained and indicated that excessive levels of airborne radioactive material have not been produced. Leak tests have been conducted on the Po^{210} source at monthly intervals. The 230 millicurie Co^{60} sources have been on hand for less than 6 months, but Mr. Miles stated that the 6 month requirement for leak testing would be observed in the cases of these sources. All laboratories are kept locked and all material is stored in restricted areas.

16. Procurement Procedures and Control

Mr. Peter Murphy, the Accountability Officer, maintains copies of all licenses issued to Nuclear Development Corporation of America. He is responsible for reviewing all purchase orders and ensuring that the licensed limits are not exceeded. The polonium source was purchased from Mound Laboratory, the 10 millicurie and one millicurie Co^{60} sealed sources purchased from AECL and the two 230 millicurie Co^{60} sealed sources were purchased from Canadian Radium. Records of procurement were satisfactorily maintained.

17. Storage

The 10 millicurie Co^{60} source and waste irradiated stainless steel are stored in a locked safe on the first floor of the New Street building. The one millicurie Co^{60} source is stored in a locked safe in the basement laboratory of the Grove Street facility. The two 230 millicurie Co^{60} sealed sources are stored in a locked safe in an enclosed area at the Pawling facility. The Po^{210} Neutron source is permanently mounted in a water tank.

18. Waste Disposal

Licensed material is disposed of through the Navy facilities at Earle, New Jersey, by arrangement with the AEC. Satisfactory records of the wastes disposed of have been maintained by the licensee. The major portion of the radioactive wastes have consisted of contract and special nuclear materials and only small amounts of irradiated stainless steel and iron have been disposed of to this date.

19. Posting

All areas and containers were properly posted or labeled except that the one millicurie Co^{60} sealed source at Grove Street was not tagged.

20. Personnel Monitoring

A bi-weekly film badge service from R. S. Landauer is employed by the licensee. A review of the records indicated that no overexposures have occurred. In addition to the film badges, pocket dosimeters are issued to all individuals at the experimental station at Pawling. Records are not maintained of the readings obtained from the dosimeters as they are only used as a check on the film badges and to make immediate evaluations in the event of a possible overexposure.

21. Records

Records of purchase, waste disposal, film badge results, and leak test results were properly maintained by the licensee. Records of the surveys conducted at the Grove and New Street facilities were not maintained.

22. Additional Information

The licensed material possessed by the licensee represents only a small fraction of the total amount of radioactive material present. The licensee is operating under several AEC contracts and special nuclear material licenses. Large quantities of mixed fission products were at each laboratory and a total of approximately 15 millicuries of Co^{60} in the form of monitor wires was, in addition, found during the inspection. Extensive facilities are available for the handling of fuel elements and other components of high activity.

The individual users agreed to comply with all applicable regulations.

NDA

RADIATION DETECTION INSTRUMENTS

Nuclear Development Corporation of America

90 Grove Street, White Plains

- 2 Technical Measurements Corporation Model SG-2A scalers
- 2 Atomic Instrument Company end window flow gas counters
- 1 Atomic Instrument Company model 410 geiger lab monitor
- 1 Nucleonic Corporation model DM-1A geiger lab monitor
- 1 Atomic Instrument Company gamma spectrometer

AEC Instrument Recall Program

- 1 Universal Atomics model 407 survey instrument
- 1 SIC-17C

5 New Street, White Plains

- 1 Nuclear Instrument and Chemical Company model 2612 geiger survey meter
- 2 Victoreen model 356 alpha survey meters

AEC Instrument Recall Program

- 1 SGM-4D
- 2 SIC 17-C
- 1 SIC 17-D
- 1 SGM 4-D
- 1 Universal Atomics model 407

Route 55, Pawling

- 1 Nucleonic Corporation model FN-1 neutron survey meter
- 1 Victoreen model 641-SE gamma scintillation survey meter
- 4 Nuclear Instrument and Chemical model 2612 geiger survey meters
- 2 Victoreen model 356 geiger survey meters
- 3 Victoreen model 263 geiger survey meters
- 1 RCA model WF 12A geiger survey meter
- 1 Technical Associates model HRJ-3 Juno survey meter
- 1 Technical Associates model SRJ-3 Juno survey meter
- 2 TMC SG3A Scalers with 1 gamma crystal, 1 alpha crystal,
1 G-M detector

EXHIBIT "A"

PART 40 INSPECTION

Nuclear Development Corporation of America
5 New Street
White Plains, New York

Dates of Inspection: October 16, 1957 - White Plains, New York
November 14, 1957 - Pawling, New York

Approximately 3 lbs. of UO_2 are on hand for use in mechanical property tests. Material is not currently being used and is stored in a safe on the first floor laboratory at New Street. The containers and laboratories were properly posted to indicate the presence of radioactive material. Considerable amounts of source material are also on hand under AEC contracts.

