

# North American Inspection, Inc.

P.O. Box 88  
Laurys Station, PA 18059  
(215) 262-1100



February 21, 1985

Director  
Office of Inspection and Enforcement  
United States Nuclear Regulatory Commission  
Washington, D.C. 20555

Dear Sir/Madam:

SUBJECT: Notice of Violation and Proposed Imposition of Civil  
Penalties (N.R.C. Inspections 84-01 and 85-01)  
Ref: N.A.I.I. License #37-23370-01

Persuant to the provisions of 10 CFR 2.201, North American  
Inspections, Inc., is herewith complying with said regulations and  
addressing the subject matter contained in the above inspections as  
follows:

1. Admission or denial of alleged violations contained in the above referred-to inspections.
2. Explanation--reason for violations where admitted by N.A.I.I.
3. The corrective action to be taken for any admitted violations and mandates or achieved results.
4. Quality Assurance implemented in N.A.I.I.'s Radiation Safety Program to preclude future violations.
5. N.A.I.I.'s commitment to ascertaining full compliance of (A) N.R.C. Rules and Regulations (B) D.O.T. Rules and Regulations, (C) Adherence to North American Inspection, Inc.'s Radiation Safety Program.
6. N.A.I.I.'s protest of the Imposition of Civil Penalty persuant to 10 CFR 2.205.
7. N.A.I.I.'s demonstration of extenuating circumstances to show error and subject notice.

8511010209 850221  
REG1 LIC30  
37-23370-01 PDR

## NON DESTRUCTIVE EXAMINATION SERVICES

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• FIELD • SHOP • LABORATORY •

1586 IE14  
11

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We understand that any information used to support our protest in accordance with 10 CFR 2.205 will be addressed in other correspondence independent of this action, however, most of the subject matter contained herein will be used to support our contention of the Civil Penalty is unreasonable and the Compliance Division used unsupported documented evidence in part of the twelve violations contained in their inspections 84-01 and 85-01.

For the purpose of continuity, I will address the twelve violations contained in Dr. Thomas E. Murley's cover letter dated February 6, 1985, covered in your docket number 30-20982 in the same sequence expressed by Dr. Murley.

However, before I address these items of noncompliance and proposed imposition of Civil Penalties, there is certain information that is relevant that should be considered a pream to my responses.

#### BACKGROUND

As a result of the compliance inspection of October 18 & 19, 1984, and subsequent November 14, 1984, enforcement conference conducted at U.S.N.R.C. Region I's office, the writer committed to have an independent overview of (A) N.A.I.I.'s license conditions and Radiation Safety Program, (B) a critique and recommendations of alleged U.S.N.R.C. violations in the two audits conducted by Region I, (C) make recommendations as necessary.

In that Mr. Hopkins has what I consider to be an excellent working knowledge of radiation safety programs associated with the use of license material, I requested his participation to assist in this matter. Please find attached (Attachment 2) a copy of Mr. Hopkins' resume expressing approximately 30 years of technical and administrative involvement in U.S.N.R.C. License Material, as well as other technical background that supports his expertise and recognition qualifying him to accomplish N.A.I.I.'s request. It should be noted that Mr. Hopkins was directly involved in the (A) Application of Byproduct Material License, (B) Application for Quality Assurance Approval - (Transportation - Packaging, Procedures), (C) Implementation of N.A.I.I.'s Personnel and Procedure forms associated with A&B above.

On February 5, 1985, Mr. Hopkins arrived in Laurys Station to begin investigative work that we felt necessary. Mr. Hopkins did not perform his investigative work in accordance with a predetermined agenda and was assured by me no restraints would be imposed on his request for records, documents, interviews or referenced material in any manner. From February 5 through February 11, Mr. Hopkins

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reviewed and interviewed all information he felt necessary to render an opinion and recommendations concerning N.A.I.I.'s RSO Program, as well as the alleged violations by the U.S.N.R.C. From February 12 through February 15, Mr. Hopkins reviewed with the writer his report in detail of all reference material contained in his overview. In that it is my opinion after reviewing Mr. Hopkins' responses it would be redundant for me to alphabetically respond to items A through J in detail pertaining to the violations contained in Dr. Murley's February 6 cover letter, due to my concurrence with Mr. Hopkins' findings and recommendations and will, therefore, implement his recommendations as defined in N.A.I.I.'s course agenda dated February 18, 1985 (Attachment 1). However, I will make brief comments concerning the twelve items, wherein it is my opinion that I can add to or supplement Mr. Hopkins' report dated February 16, 1985.

RESPONSES TO NOTICE OF VIOLATION AND PROPOSED IMPOSITION OF CIVIL PENALTIES

Response A

Mr. Hopkins' report covers this item, and we were not in noncompliance in that the individual identified as "B" in your report was improperly classified as an Assistant Radiographer when in fact this individual was qualified on April 14, 1984, by Mr. Hopkins. We do admit, however, that the production of qualifying documents were not produced by N.A.I.I.'s management to support this qualification.

Response B

I would only add to Mr. Hopkins' response that it is N.A.I.I.'s position that as a service company we were subordinate to Bethlehem Steel Corporation's Radiation Safety Program in Bethlehem Steel's manual entitled Regulations Covering the Use of Ionizing Radiation dated June 1983, with particular emphasis on paragraph 19.6 through paragraph 19.17 (copy attached).

Response C-1

Comment same as B.

Response C-2

This area has been covered in Mr. Hopkins' letter, and the radiation limits noted in your press release identified as I-85-24 wherein your calculations express 11 millirems in a two-hour period

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is exaggerated and not consistent with our source utilization dated October 4, 1984.

Response D

It is N.A.I.I.'s position that the radiography performed at Laurys Station facility has never been performed under the definition of permanent facilities. The mere fact that the Laurys Station office is considered a permanent office facility in no way applies nor constitutes by definition that these ever existed or does exist a permanent facility, as defined in 10 CFR 34.29 (B).

Response E (1 thru 3 inclusive)

N.A.I.I.'s procedure identified as (Radioactive Material Transportation - Shippent[s]) contained in Mr. Hopkins' report does satisfy 10 CFR 71 and D.O.T. - 49 requirements. We do not consider at the time of the inspector's review N.A.I.I. was in noncompliance in that the vehicle and source were both in storage. It is N.A.I.I.'s intent to fully understand our transportation procedure and is covered in our course agenda dated February 18, 1985.

Response F

Comment: It is apparent from the inspector's review that N.A.I.I.'s personnel did not survey the entire length of the guide tube and the entire circumference of the projector. It is our position that the intent of this requirement is to assure that radioactive sources are returned to their safe, shielded position after each exposure. This, I feel without question, was accomplished after each exposure of the situation in question.

Response G

There is a misunderstanding on behalf of compliance on N.A.I.I.'s standard forms to record utilization as required by 10 CFR 34.27. On October 19, 1984, the inspector insisted that our management control check-out record identified as Form RS-4-2 was used to satisfy the requirements of 10 CFR 34.27, when in fact during the compliance inspection conducted January 16, 1985, in Lebanon, New Jersey, the inspector in detail item #8 was satisfied with our utilization log Form RS-4-6 which is intended to satisfy the requirements of 10 CFR 34.27. We do not concur this item as supporting noncompliance as identified in inspection report #84-01.

Response H

No comment. See response by Mr. Hopkins.

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Response I

See Mr. Hopkins' response concerning this item. I would only add, from a management's point of view, similarity of Form RS-5-1 which is used to support and certify radiographers' and assistant radiographers' qualifications was confused with Form Number PQ-1, which shows the level of certification under SNT-TC-1A.

Response J

See Mr. Hopkins' response. N.A.I.I.'s position is that we do not consider "secure" to having the same meaning as "lock." Otherwise, why would both words be used in paragraph 10 CFR 34.22 A & B if one word meant the same as both.

It is the writer's opinion and Mr. Hopkins' contention that at worst we are in violation of four areas of noncompliance. This is to say that items A through J contain more than one consideration per item, and in some of these items, we consider noncompliance in partial consideration of the items so noted and estimate that we have an aggregate of four (4) noncompliances.

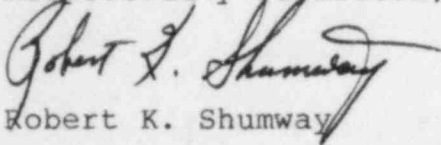
We do not consider the collective violations that have been categorized in the aggregate as severity level III problem (supplements) IV, VI, to be accessed in cumulative penalties of \$5,000 if accessed equally, among the areas N.A.I.I. admits to noncompliance. Further, we do not feel that fair consideration has been dealt by the Office of Public Affairs, Region I, in their news release number I-85-24 dated February 19, 1985. Our reasons are: a public affairs representative and Francis Costello visited the Hi-Way Restaurant adjacent to our facilities on February 19, 1985, and attempted an interview with one of the proprietors, which is an immigrant, and thoroughly frustrated and confused the proprietor. Further, Mr. Abraham and Mr. Costello, after dropping off the news release in our office, toured our facilities at will without notification and/or authorization of a N.A.I.I. staff member. To further complicate this matter, the Morning Call reporter, Randy Kraft, contacted the proprietor of the restaurant on February 21, 1985, to discuss this news release. Both proprietors, being unlearned of the U.S.N.R.C.'s practices, regulations, enforcement, etc., were extremely concerned that a news release concerning their restaurant (the only restaurant in Laurys Station) could have a devastating commercial effect on their economic well being. In that the radiation incident concerning the restaurant is alleged and has not been supported, we feel that this action on behalf of U.S.N.R.C. Region I is very unethical and can result in the character assassination of two small business concerns. By copy of this letter, you are advised that N.A.I.I. will within two days

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file an answer in accordance with 10 CFR 2.205 protesting the Civil Penalties denying in part violations listed, where necessary, demonstrate extenuating circumstances; and it should be noted this letter and all correspondence relating to inspections identified as 84-01 and 85-01 will be used in our request for the department of enforcement to rescind Civil Penalties stated herein and a number of items listed as noncompliance.

Respectfully submitted,



Robert K. Shumway

RKS/saj  
Enclosures

cc: N.C.R. Region I - Regional Administrator  
Commonwealth of Pennsylvania  
Morning Call, Attention Randy Kraft

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Contained herein are the following letters, attachments, and enclosures:

## LETTER

Letter dated February 21, 1985 from Robert K. Shumway to Director, Office of Inspection and Enforcement

## ATTACHMENTS

1. Training Agenda Refresher Course
2. Resume of Radiation Safety Consultant, S. M. Hopkins, PE
3. Bethlehem Steel Corporation's Radiation Safety Manual (Part 19 for Subcontract Radiography)

## ENCLOSURES

- I. Letter from S. M. Hopkins dated February 16, 1985 to R. K. Shumway containing Exhibits 1 thru 6
- II. U.S.N.R.C.'s Inspection #84-01 (October 18 & 19, 1984)
- III. N.A.I.I.'s Response to N.R.C.'s Inspection #84-01 dated November 13, 1984
- IV. U.S.N.R.C.'s Inspection #85-01 (January 10 & 16, 1985)
- V. Notice of Violation and Proposed Imposition of Civil Penalties covered under letter dated February 6, 1985, from Dr. Thomas E. Murley (Docket #30-20982)

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SUBJECT: UNDERSTANDING / UPGRADE OF NORTH AMERICAN INSPECTION, INC.'S  
RADIATION SAFETY OFFICER PROGRAM.

The following subjects and demonstrations are required to satisfy the commitments of N.A.I.I. and are in accordance with the recommendations of S.M. Hopkins after his review of N.A.I.I.s' Radiation Safety Officer program during the first and second week of February 1985.

SUBJECT #1 - Management seminar and workshop demonstrations in parts 4 and 5 of N.A.I.I.s' Operations and Emergency Procedures Manual including but not limited to all forms and record keeping associated with these parts of the Operations and Emergency Procedure Manual.

SUBJECT #2 - Management conference covering N.A.I.I.s' U.S.N.R.C.'s license applications including all data covering the conditions of N.A.I.I.s' license and all exhibits associated therewith.

SUBJECT #3 - Eight (8) hours classroom/workshop with all current N.A.I.I.s' Radiographers and Radiographers' Assistants covering parts 4 and 5 of N.A.I.I.s' Operations and Emergency Procedure Manual with particular emphasis on forms and record keeping to support standard reporting.

SUBJECT #4 - Eight (8) hours classroom/workshop with all N.A.I.I.s' Radiographers and Radiographers' Assistants covering rules and regulations as contained in U.S.N.R.C. C.F.R. Title 10 parts 19, 20, 21 and 34 as applicable to N.A.I.I.s' involvement in industrial radiography.

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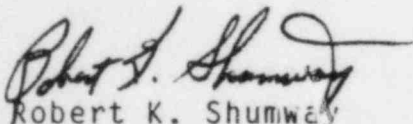
Page 2

SUBJECT: UNDERSTANDING / UPGRADE OF N.A.I.I.s' RSO PROGRAM (cont')

SUBJECT #5 - Collective management/employee conference on individual responsibilities as defined in N.A.I.I.s' Employee Policy Manual.

The following will be conducted by Mr. S.M. Hopkins and records of the accomplishments of this agenda will be recorded in each employees qualification file as applicable. Each employee will be expected to sign a statement of understanding and an endorsement of collective management/employee relationship to further enhance the quality of regulation understanding within the company.

I Robert K. Shumway herewith authorize the foregoing agenda with no restraints on the employee/instructor dialogue. Further, if determined by Mr. Hopkins that any employee whether management or otherwise is not receptive and does not participate, I will consider this just cause for immediate termination.



Robert K. Shumway  
Corporate RSO, President

Date: February 18, 1985

cc: S.M. Hopkins  
All N.A.I.I. Employees  
RSO File

# North American Inspection, Inc.

P.O. Box 88  
Laurys Station, PA 18059  
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## RESUME'

S. M. HOPKINS, P.E.  
S.S. #238-52-3868

**TITLE:** Radiation Safety Officer  
NORTH AMERICAN INSPECTION, INC.

**PURPOSE:** The purpose of this resume' is to establish S. M. Hopkins training, certifications and work experiences to qualify his position concerning the Radiation Safety Program as defined in Part 7.0 of NORTH AMERICAN INSPECTION, INC.'S application for a Radioactive Material License dated January 31, 1984.

This resume' is limited to Mr. Hopkins background with respect to the Radiography portion of his work experience concerning radioisotopes, as well as x-ray generators.

### I. WORK EXPERIENCE(S), TECHNICAL TRAINING/CERTIFICATION(S)

1. COMPANY: Babcock and Wilcox Company, 1956 - 1959  
Barberton, Ohio
  - a. WORK EXPERIENCE: X-ray Operator "A".
  - b. TECHNICAL TRAINING: Periodic training in Radiation Safety as well as the characteristics of radioisotopes.
  - c. CERTIFICATIONS: X-ray Operator/Radiographer.
2. COMPANY: Pipeweld X-Ray Corporation, 1959 - 1962  
Perrysburg, Ohio
  - a. WORK EXPERIENCE: Field Industrial Radiographer
  - b. TECHNICAL TRAINING: Progressive training in the company's Operating and Emergency Procedures in Radiation Safety.
  - c. CERTIFICATIONS: Industrial Radiographer

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I. WORK EXPERIENCE(S), TECHNICAL TRAINING/CERTIFICATION(S):

(continued:)

3. COMPANY: Babcock and Wilcox Company - 1962 - 1964  
Barberton, Ohio (USNRC Lic. #34-02160-04)
  - a. WORK EXPERIENCE: Radiographic Supervisor
  - b. TECHNICAL TRAINING: Symposiums in courses relating to Radiation Safety.
  - c. CERTIFICATIONS: Radiographer.
4. COMPANY: Crane Valve Company, 1964 - 1966  
Chicago, Illinois
  - a. WORK EXPERIENCE: Chief Radiographer.
  - b. TECHNICAL TRAINING: (1) Argonne National Laboratories - ten (10) hour technical course in Isotope Characteristics.  
  
TECHNICAL TRAINING: (2) Illinois Institute of Technology - (Research Institute) - Technical course in Advanced Radiographic Techniques using low-energy radioisotopes.
  - c. CERTIFICATIONS: Company Radiation Safety Officer
5. COMPANY: Babcock and Wilcox Company, 1966 - 1971  
Barberton, Ohio (USNRC Lic. #34-02160-04)
  - a. WORK EXPERIENCE: Radiation Safety Officer
  - b. TECHNICAL TRAINING: (1) Ohio State University - Two (2) week course on the Fundamental Principles on NDE, which included mathematics controlling and governing the use of Radioisotopes and X-ray Emitters.  
  
TECHNICAL TRAINING: (2) Southwest Research Institute - Symposium covering radiation associated with Nuclear Power Plants.

S. M. HOPKINS, P.E.

RESUME'

PAGE 3.

I. WORK EXPERIENCE(S), TECHNICAL TRAINING/CERTIFICATION(S):

(continued:)

5. TECHNICAL TRAINING: (3) Twenty-six (26) hour course in Radiation Safety conducted by Picker X-ray Corporation, Cleveland, Ohio.
  - c. CERTIFICATIONS: Radiation Safety Officer/Certification Training Director.
6. COMPANY: Industrial Inspection Industries, Inc.  
North Canton, Ohio 1971 - 1981
  - a. WORK EXPERIENCE: President and Chief Operating Officer - Corporate Radiation Safety Officer.
  - b. TECHNICAL TRAINING: (1) Symposium of Radiation Safety and Protection in Industrial Radiography, Washington, D.C. (Sponsored by: American Society of Nondestructive Testing; U.S.N.R.C.; Bureau of Radiological Health; Health Physics Society; National Institute of Occupational Safety and Health.  
  
TECHNICAL TRAINING: (2) Progressive seminars and conferences on Radiation Safety in connection with Technical Societies.
  - c. CERTIFICATIONS: Corporate Radiation Safety Officer. USNRC Lic. #34-14071-01.
7. COMPANY: North American Inspection, Inc. - present  
Allentown, Pennsylvania
  - a. WORK EXPERIENCE: Radiation Safety Officer
  - b. TECHNICAL TRAINING: N/A
  - c. CERTIFICATIONS: Radiation Safety Officer

Note: In connection with numbers 4, 5, and 6, had overall responsibilities for the development and implementation of the Radiation Safety Programs as well as training and certification of Radiographers in accordance with requirements of 10CFR - Part 34.

# North American Inspection, Inc.

P.O. Box 88  
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(215) 262-1100

## RESUME'

S. M. HOPKINS, P.E.



### TITLE

Consultant  
NORTH AMERICAN INSPECTION, INC.

### BACKGROUND

The purpose of this resume is to establish Mr. Hopkins' qualifications and background in respective areas of the company.

### QUALIFICATIONS/CERTIFICATIONS

1. ASNT-TC-1A Level III by examination in the discipline of:

RADIOGRAPHIC TESTING  
LIQUID PENETRANT TESTING  
MAGNETIC PARTICLE TESTING  
ULTRASONIC TESTING

ASNT Level III Certification Number - EL-634

2. Navships 250-1500-1 Test Examiner in:

RADIOGRAPHIC TESTING  
MAGNETIC PARTICLE TESTING (WET AND DRY)  
LIQUID PENETRANT TESTING

Navships 250-1500-1 Test Examiner Number - 1216 & 1643

3. Professional Engineer

Branch "Quality" Certificate Number - QU-4524  
Engineering Certificate issued by -  
The State of California

4. Inspector for Specialized Service issued by Department of Transportation Federal Aviation Administration in:

RADIOGRAPHIC TESTING  
MAGNETIC PARTICLE TESTING  
LIQUID PENETRANT TESTING  
EDDY CURRENT TESTING  
ULTRASONIC TESTING  
Certification No. C65-5

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S.M. HOPKINS, P.E. (CONTINUED - PAGE TWO)

EDUCATIONAL BACKGROUND/SEMINARS/SYMPOSIUMS

1. High School  
Franklinville High School  
Franklinville, North Carolina
2. Ohio State University (1962)  
Columbus, Ohio  
  
Two (2) week course in the Fundamental Principles  
of Nondestructive Testing.
3. Illinois Institute of Technology (1966)  
Chicago, Illinois
4. Argonne National Laboratory (1965)  
Argonne, Illinois  
  
Ten (10) hours in Radioisotope Characteristics in  
connection with Technical Society.
5. Krautkramer Ultrasonic School (1967)  
Chicago, Illinois  
  
Forty (40) hours in Ultrasonic Theory and Techniques.
6. American Welding Society (1965)  
Chicago, Illinois Chapter  
  
Sixteen (16) hour course in Welding Techniques and  
Application.
7. American Society for Nondestructive Testing (1968)  
Cleveland, Ohio Chapter  
Forty (40) hours in Ultrasonic Technique Applications
8. Southwest Research Institute (1969)  
San Antonio, Texas  
  
Seventh (7th) Symposium on Nondestructive Testing  
conducted in conjunction with ASNT-South Texas Section
9. Akron University (Community Technical College - 1964)  
Akron, Ohio  
  
Twenty-six (26) hour course in Metals - conducted by  
The Department of Special Programs.

**North American Inspection, Inc.**

S.M. HOPKINS, P.E. (EDUCATION BACKGROUND/SEMINARS/SYMPOSIUMS  
CONTINUED - PAGE THREE)

10. Akron University (Community Technical College - 1964)  
Akron, Ohio

Twenty-six (26) hours in Advanced Mathematics  
conducted by The Department of Special Programs.

11. Symposium on Radiation Safety and Protection in  
Industrial Radiography - 1972  
Washington, D.C.

Sponsored by:

- (a) American Society of Nondestructive Testing
- (b) U.S.N.R.C.
- (c) Bureau of Radiological Health
- (d) Health Physics Society
- (e) National Institute of Occupational  
Safety and Health

12. American Welding Society - 1978  
Tulsa, Oklahoma

Sixteen (16) hours Pipeline Welding and Inspection  
Conference.

13. American Welding Society Conference - 1980  
Houston, Texas

Pipeline Welding and Inspection - API-1104 Codes.

14. American Welding Society - 1980  
Atlanta, Georgia

Nondestructive Testing of Weldments in the Petro-  
chemical and Electrical Power Industries.

15. American Society of Nondestructive Testing - 1980  
Houston, Texas

ASNT-TC-1A - Use and Abuse.

**WORK EXPERIENCE**

1. BABCOCK AND WILCOX COMPANY - 1956 to 1959  
Power Generation Division  
Barberton, Ohio

S.M. HOPKINS, P.E. (WORK EXPERIENCE - CONTINUED PAGE FOUR)

Three (3) years experience as an NDE Technician using Ultrasonics (UT), Isotopes/X-ray machines (RT), Magnetic Particle (MT) equipment, and Penetrants (PT), (piping, vessels and castings).

2. PIPEWELD X-RAY CORPORATION 1959 to 1962  
Perrysburg, Ohio

Two and one-half (2-½) years experience as a Field NDE Technician - RT, PT, MT, UT (refineries, shipyard, bridges, concrete, foundries, piping, etc.)

3. BABCOCK AND WILCOX COMPANY 1962 to 1964  
Power Generation Division  
Barberton, Ohio

Two (2) years as an NDE Supervisor responsible for NDE activities for one shift.

4. CRANE VALVE COMPANY 1964 to 1966  
Chicago, Illinois

Two and one-half (2-½) years as Chief Radiographer for the Chicago Plant - responsibilities included all NDE activities, plus responsibility for all repair welding associated with valves, castings, fittings, etc.

5. BABCOCK AND WILCOX COMPANY 1966 to 1970  
Erection Department  
Barberton, Ohio

Three (3) years as Supervisor of Quality Control of Erection Activities - including the administration of Field Nondestructive Technicians.

6. BABCOCK AND WILCOX COMPANY 1970 to 1971  
B & W Construction Company  
Barberton, Ohio

One (1) year experience as Supervisor of Technical Services. Responsibility included administering Technical Services provided by the B & W Construction Company.

S. M. HOPKINS, P.E. (WORK EXPERIENCE - CONTINUED PAGE FIVE)

7. INDUSTRIAL INSPECTION INDUSTRIES, INC. 1971 to 1981  
5250 Mayfair Road  
North Canton, Ohio

Ten (10) years as President of Industrial Inspection Industries, Inc. - responsibilities included overall organization of Nondestructive Testing, Laboratory (Field and Laboratory Services), Soils Laboratory, Soils Drilling, On-site Heat Treating, Welding Overview, Expediting Services, Third Party QA/QC Overview and Soils Engineering.

In connection with work experience defined in 4, 5, 6 & 7, responsibilities included providing SNT-TC-1A Level III responsibility and Radiation Safety Officer for U.S.N.R.C. and State Radioactive Material Licensed Programs.

8. HARFOR, INC. 1981 to 1982  
Houston, Texas

Executive Vice President/Quality Assurance Director. One (1) year directing overall Quality Assurance functions concerning fabrication and construction under the following codes: ASME - Section 1, ASME - Section 5, ASME - Section 8 - Division 1 & 2, ANSI B31-1, B31-3, AWS (Structural)

Responsibilities included company code certificates as well as Nondestructive examinations in the shop and field operations. Additionally, job responsibilities included being the Administrative Assistant to the company president - concerning all technical requirements associated with the fabrication process and field erection process, as well as vendor surveillance concerning Quality Assurance (this included auditing of personnel certification requirements as defined in ASNT-TC-1A).

9. HARFOR ENERGY, INC. 1982 to 1983  
Division of Harfor, Inc.  
Houston, Texas

One (1) year as Chief Executive Officer responsible for overall contracts, engineering, manufacturing, construction, and Quality Assurance of manufacturing and construction associated with:

*North American Inspection, Inc.*

S. M. HOPKINS, P.E. - (WORK EXPERIENCE - CONTINUED PAGE SIX)

1. Off-shore drilling rigs
  2. Refineries
  3. PVC Plants
  4. Pulp and Paper Industry
  5. Power Plant Industry
10. NORTH AMERICAN INSPECTION, INC. - present  
Allentown, Pennsylvania
- Consultant - Overall responsibilities for  
technical, personnel certification, contract  
adherence, Radiation Safety and Overall Quality  
Control/Quality Assurance.

PERSONAL ACHIEVEMENTS

1. Developed and implemented approved USNRC Training Programs for the purpose of training and certifying Radiographers and Assistant Radiographers in accordance with 10-CFR Part 20 and 34.
2. Developed and implemented training and certification program for the purpose of training and certifying SNT-TC-1A LEVEL I and II Technicians in Radiographic, Ultrasonic, Liquid Penetrant and Magnetic Particle Testing.
3. Certified SNT-TC-1A LEVEL III in RT, PT, UT, & MT by ASNT Certification Panel, as well as passing LEVEL III examinations in the above four (4) test methods.
4. Served on local board of ASNT - Chapters in Chicago and Cleveland.
5. Lectured in connection with educational programs conducted by ASNT and AWS on NDT topics.
6. Certified as a Professional Engineer "Quality" - State of California.

TECHNICAL SOCIETIES

1. ASNT - Houston Chapter
2. ASTM - #H760437
3. AWS - Stark Central Chapter
4. National Society of Professional Engineers (Texas Society)

# Certificate of Membership

is granted to

*S. M. Hopkins*

in this organization,  
which is dedicated to the  
development and perpetuation  
of the highest standards of  
professional service and  
efficiency in the field of  
nondestructive testing.



*Raymond Johnson*  
Managing Director

THE AMERICAN SOCIETY OF  
NONDESTRUCTIVE TESTING ENGINEERS

# Society for Nondestructive Testing



*This is to certify that*  
**Sam M. Hopkins**  
*has completed the Course of Lectures*  
*presented by the*  
**Cleveland Section**  
*on the subject of*  
**ASNT-TC-1A**  
**Level II-Ultrasonic Inspection-General**  
*and has had a satisfactory attendance record.*

*Given this 8 day of May*  
**1968**

---

SECRETARY OF THE SECTION

---

CHAIRMAN OF THE SECTION

# American Welding Society



## education department

awards this

### Certificate of Participation

to:

S.M. HOPKINS

for attending and contributing to:

PIPELINE WELDING AND INSPECTION CONFERENCE  
February 1-2, 1978, Tulsa, Okla.

*J. L. Dato*

*Ralph G. Dorman*



# AMERICAN WELDING SOCIETY

*By authority of the Board of Directors*

*S. M. Hopkins*

*is hereby certified and designated as*

**MEMBER**

*and entitled to all privileges thereof*

*May 1, 1973*

*R. J. Stout*

PRESIDENT

*Edward A. Fenton*

EXECUTIVE DIRECTOR

NON-PROFIT ORGANIZATION  
FOUNDED IN 1919



TO ADVANCE THE ART  
AND SCIENCE OF WELDING



# Certificate

*S. M. Hopkins*

*has Satisfactorily Completed a Krautkramer Course in  
Ultrasonic Testing and Measuring*

*held at  
Chicago, Illinois*

*This Certificate is awarded in recognition of  
Personal Interest, Satisfactory Attendance, and  
Active Participation.*

KRAUTKRAMER ULTRASONICS, INC.  
One Research Drive, Stratford, Conn.

GRADE:

*(S)*

DATE:



*Signed at Stratford, Connecticut*

*This 1st day of December 1967*

*Chas. H. H. H.*  
General Manager

*Paul W. H. H.*  
Instructor(s)

SOCIETY FOR *Nondestructive*



TESTING, INC.

*This is to Certify that*

SAM HOPKINS

*has satisfactorily completed a special Course of Lectures,  
presented by the Chicago Section, on the Subject of*

"NDT Doesn't Cost, It Pays"

*and is hereby awarded this Certificate of Achievement in recognition thereof*

*In Witness Whereof, we set the seal of*

The CHICAGO SECTION, SOCIETY FOR NONDESTRUCTIVE TESTING

this 27th day of April, 1966

*Luigi L. Kerlin*

Secretary

Educational Director

Chairman

SOCIETY FOR *Nondestructive*



TESTING, INC.

*This is to Certify that*

SAMUEL M. HOPKINS

*has satisfactorily completed a special Course of Lectures,  
presented by the Chicago Section, on the Subject of*

RECENT PROGRESS IN TESTING TECHNIQUES

*and is hereby awarded this Certificate of Achievement in recognition thereof*

*In Witness Whereof, we set the seal of*

*The CHICAGO SECTION, SOCIETY FOR NONDESTRUCTIVE TESTING*

this 24 day of FEBRUARY 1965

Secretary

Chairman



**american  
welding society**  
education department

**CERTIFICATE OF PARTICIPATION**

awarded to **SAM M. HOPKINS**  
in recognition of valued contribution to:

**PRODUCT LIABILITY FOR KEY DECISION-  
MAKERS AND TECHNICAL MANAGERS**

  
EXECUTIVE DIRECTOR

  
ASSISTANT MANAGER, EDUCATION



# The Ohio State University College of Engineering

This Certifies that

**Samuel M. Hopkins**

has satisfactorily completed a course of instruction in  
**Fundamental Principles of Nondestructive Testing**  
conducted by the College of Engineering under the direction of  
the Department of Welding Engineering

*Novice S. Fawcett*  
President, The Ohio State University

Columbus, Ohio, September 21, 1962

*Harold A. Boly*  
Dean of the College of Engineering  
*Roy B. McClellan*  
Chairman, Dept. of Welding Engineering



The  
American Society for Nondestructive Testing

Be it known that

**Samuel M. Hopkins**

has met heretofore established and published Requirements for Certification by ASNT as

**NDT Level III**

In the Nondestructive Testing Methods as specified in the Endorsements

*Samuel A. Wand*

President - ASNT

*George C. P. Miller*

Chairman - Personnel Training and Certification Committee

**EL 634**

Certificate Number

Endorsements - The Holder of this Certificate has been Certified by ASNT as NDT Level III in the General Requirements for the NDT Methods specified below

Certificate No. EL-634  
RADIOGRAPHY  
DATE ISSUED 9/83 TESTING METHOD 9/88  
DATE EXPIRES  
*RPM*  
TECHNICAL DIRECTOR ASNT

Certificate No. EL-634  
MAGNETIC PARTICLE  
DATE ISSUED 9/83 TESTING METHOD 9/88  
DATE EXPIRES  
*RPM*  
TECHNICAL DIRECTOR ASNT

Certificate No. EL-634  
ULTRASONIC  
DATE ISSUED 9/83 TESTING METHOD 9/88  
DATE EXPIRES  
*RPM*  
TECHNICAL DIRECTOR ASNT

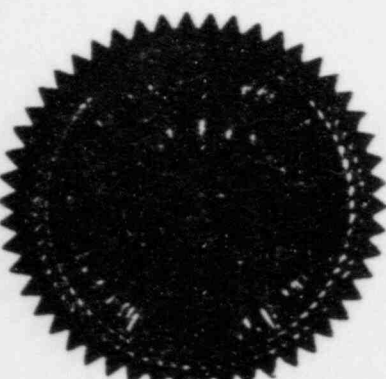
Certificate No. EL-634  
PENETRANT  
DATE ISSUED 9/83 TESTING METHOD 9/88  
DATE EXPIRES  
*RPM*  
TECHNICAL DIRECTOR ASNT

Certificate No. EL-634  
Radiography  
DATE ISSUED 9/78 TESTING METHOD 11/83  
DATE EXPIRES  
*Michael T. Hoff*  
TECHNICAL DIRECTOR ASNT

Certificate No. EL-634  
Ultrasonic  
DATE ISSUED 9/78 TESTING METHOD 11/83  
DATE EXPIRES  
*Michael T. Hoff*  
TECHNICAL DIRECTOR ASNT

Certificate No. EL-634  
Penetrant  
DATE ISSUED 9/78 TESTING METHOD 11/83  
DATE EXPIRES  
*Michael T. Hoff*  
TECHNICAL DIRECTOR ASNT

Certificate No. EL-634  
Penetrant  
DATE ISSUED 9/78 TESTING METHOD 11/83  
DATE EXPIRES  
*Michael T. Hoff*  
TECHNICAL DIRECTOR ASNT





The  
American Society for Nondestructive Testing

Be it known that

**Samuel M. Hopkins**

has met heretofore established and published Requirements for Certification by ASNT as

**NDT Level III**

In the Nondestructive Testing Methods as specified in the Endorsements

*Samuel A. Wend*

President - ASNT

*George C. P. Miller*

Chairman - Personnel Training and Certification Committee

**EL 634**

Certificate Number

Endorsements - The Holder of this Certificate has been Certified by ASNT as NDT Level III in the General Requirements for the NDT Methods specified below:

Certificate No. EL 634

Radiography

9-78 TESTING METHOD 11-81  
DATE ISSUED DATE EXPIRES

*Robert T. Anderson*  
TECHNICAL DIRECTOR ASNT

Certificate No. EL 634

Magnetic Particle

9-78 TESTING METHOD 11-81  
DATE ISSUED DATE EXPIRES

*Robert T. Anderson*  
TECHNICAL DIRECTOR ASNT

Certificate No. EL 634

Ultrasonic

9-78 TESTING METHOD 11-81  
DATE ISSUED DATE EXPIRES

*Robert T. Anderson*  
TECHNICAL DIRECTOR ASNT

Certificate No. EL 634

Penetrant

9-78 TESTING METHOD 11-81  
DATE ISSUED DATE EXPIRES

*Robert T. Anderson*  
TECHNICAL DIRECTOR ASNT

Certificate No. EL-634

Radiography

9/78 TESTING METHOD 11/83  
DATE ISSUED DATE EXPIRES

*Robert T. Anderson*  
TECHNICAL DIRECTOR ASNT

Certificate No. EL-634

Magnetic Particle

9/78 TESTING METHOD 11/83  
DATE ISSUED DATE EXPIRES

*Robert T. Anderson*  
TECHNICAL DIRECTOR ASNT

Certificate No. EL-634

Ultrasonic

9/78 TESTING METHOD 11/83  
DATE ISSUED DATE EXPIRES

*Robert T. Anderson*  
TECHNICAL DIRECTOR ASNT

Certificate No. EL-634

Penetrant

9/78 TESTING METHOD 11/83  
DATE ISSUED DATE EXPIRES

*Robert T. Anderson*  
TECHNICAL DIRECTOR ASNT



# The National Society of Professional Engineers



*This certifies that*

**S. M. Hopkins, P.E.**

*is a member*

Texas Society of Professional Engineers  
*a member State Society*  
of The National Society of Professional Engineers  
and is entitled to all the rights, privileges and  
distinctions bestowed thereby.

*Date of membership November 1978*



*Otto A. Termon*

SECRETARY

**REGULATIONS GOVERNING  
THE USE OF  
IONIZING RADIATION**



Revised  
June, 1983

**BETHLEHEM STEEL CORPORATION  
AND  
SUBSIDIARY COMPANIES**

19.6 The Radiation Control Engineer and the local Radiation Coordinator shall be notified of all jobs involving vendor radiography. This notification shall include:

- (1) The vendor's name, address and phone number;
- (2) The vendor's NRC or State license number;
- (3) The Corporate facility involved;
- (4) The types of items to be radiographed;
- (5) The location of the restricted area;
- (6) The time of day radiography is to be performed;
- (7) The intended sources and strengths;
- (8) The length of the service contract.

19.7 All new nuclear radiographic sources shall be surveyed upon receipt, in accordance with Sections 17.10.1 to 17.10.9. This survey shall be recorded on a Utilization Log.

19.8 The Radiation Control Engineer shall perform an initial survey of all new permanent radiographic use locations.

19.9 Written procedures shall be prepared by the Radiographer-in-Charge which describe the safe handling and operation of each type of radiographic device that is to be used. A copy of each procedure shall be submitted to the Radiation Control Engineer for review prior to adoption.

19.10 A utilization log shall be maintained of all uses of radiation sources for radiographic purposes. Such a log shall include a description of the exposure device or storage container, the identity

of the radiographer, the kind and quantity of the radioactive material or the kVp, mA and exposure time of an X-ray, the location of and the date of use, the survey meter serial number and the pocket dosimeter readings.

19.11 The Radiation Control Engineer shall periodically review operational procedures, records, utilization logs, inventories and other pertinent information relative to radiographic operations in order to determine general compliance with Corporate regulations, operating and emergency procedures, applicable governmental regulations, and license conditions.

19.12 The Environmental Health Division shall notify appropriate governmental agencies of proposed vendor radiography if required by applicable regulations.

19.13 A minimum of two persons shall attend all radiographic operations performed by an outside vendor. One shall be the radiographer supplied by the contractor. The second person may be either a Corporation employee or a vendor employee. The second person shall be someone who has been instructed in and understands the safe method of returning the radioactive source to an adequately shielded container or how to turn off the radiation producing equipment should the radiographer become unable to do so, and how to make a radiation protection survey and interpret the results.

19.14 It is the vendor's responsibility to provide personnel monitoring dosimeters to all non-

Corporation personnel entering a restricted area. In the event the vendor fails to provide dosimeters to outside inspectors, dosimeters will be provided by the Corporation. All Corporation inspectors shall be provided dosimeters, which are available from the Radiation Coordinator at each facility.

19.15 Inspectors, either Bethlehem or contractor employees, required to enter a restricted area will be given instructions that:

19.15.1 They are not to enter a restricted area during an exposure.

19.15.2 They may enter the restricted area only after they personally observe that the radiographer has returned the source to its shielded position and has made a survey of the collimator, guide tube and source shield.

19.16 All inspectors are to have an operating survey meter whenever they enter a restricted area. Meters are available on loan from the Radiation Control Laboratory. Instructions will be provided in the proper use of the meter prior to its use. This instruction may be provided by the Radiation Control Engineer or by the plant Environmental Health Engineer.

19.17 All vendors performing radiography for the Corporation shall be given a copy of these regulations and shall govern their operations in accordance with these as well as the regulations applicable in the State in which the radiography is being performed.

# North American Inspection, Inc.

P.O. Box 88  
Laurys Station, PA 18059  
(215) 262-1100



February 16, 1985

North American Inspection, Inc.  
Attention Mr. R. Keith Shumway  
P. O. Box 88  
Laurys Station, Pennsylvania 18059

Subject: North American Inspection, Inc. (N.A.I.I.) Radiation  
Safety Program - U.S.N.R.C. License #37-23370-01.

Reference: (I) U.S.N.R.C. Region I inspection dated 10-18-84  
and 10-19-84 - Report #84-01.

(II) N.A.I.I.'s response dated 11-13-84 to U.S.N.R.C.  
audit dated 10-18-84 and 10-19-84.

(III) U.S.N.R.C. Region I inspection dated 1-10-85  
and 1-16-85 - Report #30-20982/85-01.

(IV) Notice of Violation and Proposed Imposition of  
Civil Penalties dated 2-6-85 from Mr. Thomas E.  
Murley (U.S.N.R.C. - Region I).

Dear Mr. Shumway:

Pursuant to your request, wherein the writer was requested to review N.A.I.I.'s Radiation Safety Program and license conditions stated in license #37-23370-01 along with references I thru IV inclusive.

The writer has reviewed the results of the compliance inspection contained in report #84-01 in December 1984, with particular emphasis on the ten (10) items noted as N.A.I.I. being in noncompliance with license conditions/U.S.N.R.C. Regulations and/or N.A.I.I. Radiation Safety Program. In that you requested that I do an independent review of N.A.I.I.'s Radiation Safety Program with respect to procedure adherence, U.S.N.R.C. regulation adherence, and/or U.S.N.R.C. license adherence, I have chosen to perform my review as follows.

First, I will make my recommendations and comments on the above referred-to items I thru IV inclusive, and in that order.

## NON DESTRUCTIVE EXAMINATION SERVICES

Radiography • Magnetic Particle • Ultrasonic • Penetrants • Leak Testing • Eddy Current • Visual  
Welder Qualification • Inspection Management • Film Interpretation • Quality Assurance Overview • Expediting  
• FIELD • SHOP • LABORATORY •

page 2 (continued)

Secondly, I will disclose my evaluation of N.A.I.I.'s Radiation Safety Program with adherence to regulations, procedures, and management control.

Thirdly, I will make recommendations which I feel necessary to establish the quality assurance and safeguards of N.A.I.I.'s Radiation Safety Program to preclude future misinterpretations, misunderstandings, and lack of enforcement on behalf of N.A.I.I.'s management.

I. Subject: Compliance Inspection Critique of Compliance Inspection Contained in Report #84-01.

For the purpose of continuity and understanding, I will address my responses in the same numerical sequences as defined as details of said compliance inspection.

1. Persons Contacted. Individual "B" (will discuss later).
2. Organization Facility and Equipment. No violations were identified.
3. Field Site Inspection. The inspector states that three (3) violations were noted in the radiography being performed at Bethlehem Steel Corporation as follows:
  - A. Violation: The finding that individuals performing radiography did not survey the guide tube after each exposure is an apparent violation of 10 CFR 34.43 (b).
  - B. Violation: The finding that the radiographer failed to maintain direct surveillance to protect against unauthorized entry into the high radiation area in the building adjacent to the Cobalt exposure area is an apparent violation of 10 CFR 34.41.
  - C. Violation: The finding that an exposure rate greater than 200 MR/HR existed in an unrestricted area is an apparent violation of 10 CFR 20.015 (b).

It should be understood that the World War II building project #17 has approximately four (4) bays and, what the inspector considered to be adjacent to the end of the building in his survey, was merely another bay of building #17 that is used to store casting patterns, and the access to the storage bay by the Bethlehem personnel would require a requisition and notification to N.A.I.I.'s personnel and

February 16, 1985

page 3 (continued)

further, where the reading was taken by the inspector in the adjacent bay was at an overhead roll-up door position and was the worst exposure condition for the day, due to the casting positioning in the bay where radiography was being conducted. As a matter of interest, for N.A.I.I. to open these chain-driven overhead doors, a pair of bolt cutters had to be used after the U.S.N.R.C. inspection to open said overhead doors. It should also be noted that the Bethlehem Corporation Safety Department was very much aware of N.A.I.I.'s radiography activity and subsequently, restricted Bethlehem's personnel from being in the area that the inspector noted a 200 MR/HR reading at the door in the adjacent bay. N.A.I.I.'s personnel were informed that they had no reason to enter this vacant area, in that no personnel was authorized to enter said area while radiography operations were being conducted. Notwithstanding this area, all other access to radiation areas was posted and a constant surveillance of the radiation area was maintained.

With reference to the three (3) items of noncompliance noted by the U.S.N.R.C. inspector at the Bethlehem site identified as A, B, and C above: (A) Radiographer "B" and Assistant Radiographer "C" did not survey the entire source guide tube as required by 10 CFR 34.43 (b) and N.A.I.I.'s Operating Procedure paragraph 4.9 A (2). However, in N.A.I.I.'s Operating Procedure paragraph 4.5 C (1), a base line radiation survey is established prior to the first exposure and the survey as required in N.A.I.I.'s procedure for paragraph 4.9 A (2) must be a duplicate of that required in paragraph 4.5 C (1). While Radiographer "B" and Assistant Radiographer "C" did not survey the entire length of the source guide tube, did not preclude their assurance that the source(s) returned to the shielded, safe position. Otherwise, due to the manufacture of the cameras, they would have been unable to lock the camera. It should be understood that the radiation surveys, as required by 10 CFR 34.43 (b) must be administered and implemented with a certain degree of discretion. For example, I'll make reference here to the sentence that states "The entire circumference of the radiographic exposure device shall be surveyed." This would be impossible in the absence of a crane for the Cobalt 100 curie projector. However, a Radiographer or Assistant Radiographer can ascertain that the source has returned to the safe and shielded position by correlating the base line survey of the camera to production radiation surveys for a given camera. (B) As previously stated, it is N.A.I.I.'s contention that this is not an item in noncompliance as defined in 10 CFR 34.41, in that the N.A.I.I. radiographic personnel did not have Bethlehem Corporation's permission to be in this area, and it is N.A.I.I.'s further contention that this high radiation area was locked as defined in 10 CFR 20.203 (b) in that this area was supposed to be locked to protect against unauthorized or accidental entry. (C) With reference to this item of noncompliance, it is N.A.I.I.'s

page 4 (continued)

contention that no person could have received radiation doses in excess of those identified in 10 CFR 20.105 (b) and subparagraph (1) & (2). Further, it is N.A.I.I.'s understanding that this bay was secured as defined in 10 CFR 20.203 (c), (2), (iii).

4. Training and Qualification of Personnel. The compliance inspector contends that individuals "B" & "C" were acting as Radiographers prior to being qualified, as required by N.A.I.I.'s license application Part 5. The inspector's contention is in error, in that individual "B" (Donna Frack) was qualified as a Radiographer in accordance with N.A.I.I.'s licensing requirements to be a Radiographer as defined in 10 CFR 34.2 (b), and her personnel qualification records will support this qualification. The writer takes issue with references made to Level I and Level II qualification criterias used in this paragraph as being acceptable for qualification of Radiographers and Assistant Radiographers as defined in 10 CFR 34.2 (b) & (c) respectively. The Level I and Level II qualification references are used by the Society for Nondestructive Testing (SNT-TC-1A) and are not intended to qualify Radiographers and Assistant Radiographers as defined in 10 CFR Part 34. Further, it would appear that from the inspector's report, that N.A.I.I. is in noncompliance by not having a qualified Radiographer in constant surveillance of the radiography operation in this particular situation. This is not true in that individual "B" has been a qualified Radiographer since April 1984, as having satisfied qualification requirements of N.A.I.I.'s license condition as identified in Part 5 of N.A.I.I.'s submittal to the U.S.N.R.C. captioned "Training Program," which meets the requirements of 10 CFR Part 34, paragraph 34.31.

5. Licensee Internal Audits. No violations identified.

6. Operating and Emergency Procedures. The inspector has cited N.A.I.I. for not complying with 10 CFR 34.37 (Utilization Log). It is N.A.I.I.'s position that this is a non-valid recording of an apparent violation for reasons as follows. The basis for the violation was taken from N.A.I.I.'s form RS-4-2 of page 33 of Part 4 of N.A.I.I.'s Operating Procedure, which is identified as a check-out record and storage facility utilization (see exhibit #1). This record in no way substantiates the source utilization which is accomplished by the use of N.A.I.I.'s form RS-4-6 on page 37 of Part 4 of N.A.I.I.'s Operating Procedures (see exhibit #2). What in essence has happened is that the Radiographer has been cited for a violation concurrent with the daily utilization, if any, of the source in his/her possession. The Radiographer would not have been in violation of recording the utilization of the source and the completion of recordkeeping until after the termination of his/her shift.

page 5 (continued)

7. Use of Materials, Facilities, and Equipment. The violation indicated here by the compliance inspector is that the third bay, where temporary radiography had been performed on October 4, 1984, was intended by N.A.I.I. to be a permanent facility as defined in 10 CFR 34.29 (b), when in fact, this area has always been considered a temporary facility as defined in 10 CFR 20.203 (c) (4). This was established in a radiation profile mathematically and by actual demonstrations to support mathematical calculations by Industrial Inspection Industries, Inc., under their license # U.S.N.R.C. 34-14071-01 and approved by the writer as Corporate Radiation Safety Office, March 19, 1979 (see exhibit #3). The inference that a radiation area existed in the restaurant approximately 100 feet from the source location is an exaggeration on the inspector's part; in that inverse square law mathematics, half-value layers (HVL) of the building, and the tungsten collimator would support a radiation level of less than 1 MR/HR of the exterior of N.A.I.I.'s building. This, coupled with the fact that a single 5-minute exposure was taken, would support our contention that no radiation area has ever existed in the restaurant adjacent to N.A.I.I.'s building. Further, as part of N.A.I.I.'s Quality Assurance Program for the radiography operation, N.A.I.I. has positioned at strategic locations in the office, film badge monitors and control badges that is intended to record any air-borne radiation. It is N.A.I.I.'s contention that this facility is considered a temporary facility with respect to radiography operations, as long as all pertinent safety rules and regulations are complied with. With regards to the radiation survey report that indicated a 2 MR/HR boundary at 200 feet from the source during the October 4, 1984, exposure, the Radiographer has admitted and will sign an affidavit that he used the exposure tables contained in Part 4 of his Radiation Safety Operations Manual in lieu of actual calculations. Further, he did not post a radiation sign at the 200 foot boundary. It is the writer's contention that this Radiographer shall be reprimanded for not complying with standard exposure rules as contained in his Operating and Emergency Manual.

8. Personnel Monitoring Control. The inspector cited N.A.I.I. for violating 10 CFR 20.408 (b) which requires that N.A.I.I. forward individual termination reports to terminated employees and to the Director, Office of Nuclear Regulatory Research, U.S.N.R.C., Washington, D.C. 20555. These reports shall be furnished within thirty (30) days after the exposure of the individual has been terminated by the licensee or ninety (90) days after the date of the termination of employment or work assignment; whichever is earlier.

While N.A.I.I. did forward said termination report of radiation history to the employee, however, N.A.I.I. neglected to forward a copy of same to the U.S.N.R.C. with their understanding and

February 16, 1985

page 6 (continued)

thinking that an annual report was all that was required for individual exposures. It is the writer's observation that N.A.I.I. is in noncompliance for reasons as stated by the inspector.

10. Transportation. The compliance inspector noted three (3) violations identified as follows:

- A. The finding that a D.O.T. Radioactive Yellow III label was not affixed to the exposure device while in transit is an apparent violation of 10 CFR 7.15 (a) with regard to 49 CFR 172.403 (c).
- B. The finding that the vehicle was not placarded while transporting a Radioactive Yellow III package is an apparent violation of 10 CFR 71.5 (a) with regard to 49 CFR 172.504 (a) and Table I footnotes of that section.
- C. The finding that the radioactive exposure device was not secured in order to prevent shifting while in transit is an apparent violation of 10 CFR 71.5 (a) with regard to 49 CFR 173.448 (a).

With reference to the citations A, B, and C, there's no supporting documents or references in the compliance inspector's findings to support these violations. When the inspector surveyed the mobile darkroom, it was locked and contained inside N.A.I.I.'s building with a "Caution Radioactive Material" sign on the back door to indicate source storage in the darkroom. The statement that the truck was used the previous day is hearsay. No form RS-4-4 (see exhibit #4) was made reference to by the compliance inspector nor was the utilization for said source used to support the use and/or transportation of said source. The writer's contention is that this incident could have happened, and a potential for it happening was prevalent. However, during the inspection, the truck was not in use requiring the transportation index on the camera and/or the requirement of the D.O.T. Radioactive Yellow III placards. Further, the violation recorded concerning the security of said source to prevent shifting while in transit is not applicable, in that the inspector has not verified transit. Concerning the transportation of radioactive sources by N.A.I.I., the writer's contention is that N.A.I.I.'s procedure identified as "Radioactive Material Transportation/Shipments" contained in Section 5 of N.A.I.I.'s Radiography Operations Manual meets the requirements of 10 CFR Part 71, The D.O.T. Title 49 Parts 171 thru 177 (see exhibit #5). It is apparent that this procedure was not disclosed to the U.S.N.R.C. inspectors during their audits, which is necessary in that it was not part of the byproduct material license. My review with N.A.I.I. management personnel disclosed that there exists a lack of understanding in parts of this procedure.

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II. Subject: N.A.I.I.'s Response Dated November 13, 1984, to the U.S.N.R.C. Audit Dated October 18 & 19, 1984 - U.S.N.R.C. Report #84-01.

The writer is herewith requesting that this response on behalf of N.A.I.I. be rescinded for reasons that: (1) the response does not properly address the subject matter of the U.S.N.R.C.'s inspection, (2) does not resolve items in dispute, (3) does not support corrective actions necessary to upgrade N.A.I.I.'s Radiation Safety Program in terms of management control and Radiographer and Assistant Radiographer adherence. Note: In that the writer did not attend the enforcement conference at Region I, King of Prussia, Pennsylvania, on November 14, 1984, plus the fact that the writer is not in receipt of the meeting agenda, and/or minutes of said meeting; no opinion or understanding of this meeting is expressed by the writer.

III. Subject: U.S.N.R.C. - Region I Inspection Dated January 10, 1985, and January 16, 1985 - Report #30-20982/85-01.

#### DETAILS

1. Persons Contacted:

- \*R. K. Shumway, President
- \*J. Guthrie, Operations Manager
- J. Maslowski, Radiographer
- S. Simpson, Radiographer
- B. Shumway, Assistant Radiographer

R. K. Shumway, President, and J. Guthrie, Operations Manager, were present at the exit interview only at the Company's Laurys Station, Pennsylvania, facilities.

2. Training. The inspector noted that one (1) Radiographer had not completed the procedural examination as required by N.A.I.I.'s Training Program identified as Appendix 5-A. Additionally, he questioned N.A.I.I.'s interruptions of trained Radiographers as submitted in our license application as Part 5. The writer's audit disclosed that N.A.I.I.'s management was not using N.A.I.I.'s form RS-5-1 (see exhibit #6), which is intended for use of ascertaining previous Radiographer certifications.

3. Audits. No violations identified.

4. Survey Records. No violations identified.

5. Utilization Logs. No violations identified.

page 8 (continued)

6. Transportation. No violations identified.

7. Use of Laurys Station, Pennsylvania, Facilities. No violations identified. \* See response for violation noted in inspection dated October 18 & 19, 1984.

8. Field Site Inspection. During a field audit on Route #22 near Lebanon, New Jersey, the compliance inspector reviewed radiographic operations being performed by J. Maslowski, Radiographer. As a result of this inspection, the inspector noted one (1) item in his operation that constituted an apparent violation of 10 CFR 34.22 (a). It is the writer's interpretation that the exposure device did have a lock to prevent the accidental removal of the sealed source from its shielded position. This requirement further states that the device shall be kept locked when not under the direct surveillance of a Radiographer or Assistant Radiographer. In addition to the foregoing, during the radiographic operations, the sealed source assembly shall be secured in the shielded position each time the source is returned to that position. Further, subparagraph B states in part that the sealed source, (projector), storage container, source changers shall be kept locked when containing a sealed source; except when under the direct surveillance of a Radiographer and/or Assistant Radiographer. It is the writer's contention, that the apparent violation cited by the inspector indicates that his definition of "secure" means "locked." We do not concur that definition in that the Radiographer properly surveyed his camera to assure that the source was in the secured position and the camera was under his constant surveillance at all times. Our definition of "secure" means the same as defined in Webster's dictionary. If the commission's interpretation means "lock," the wording contained in 10 CFR 34.22 (a) and (b) should be revised to reflect "lock" in lieu of "secure." The writer does not concur this citation as being an item of noncompliance.

9. Exit Interview. In the exit interview, the inspector expressed concern that N.A.I.I. had not taken proper action to correct the D.O.T. labeling violations identified during the October 19, 1984, inspection. Additionally, concern was expressed concerning survey records and utilization logs with regards to the D.O.T. Please refer to the writer's comments in inspection report #84-01 concerning D.O.T. requirements; and particularly, please note our D.O.T. requirements as specified in Part 5 of N.A.I.I.'s Radiography Operations Manual.

#### SUMMARY

After review of N.A.I.I.'s Radiography Operations Program in connection with applicable Federal and State Rules and Regulations,

page 9 (continued)

and in conjunction with the comprehension and understanding level of N.A.I.I.'s employees, it is the writer's opinion that while N.A.I.I. has an adequate program to guard against misuse of procedures, understandings and lack of understanding, there exists a communication void, as well as resistance to change factor within the N.A.I.I. family. One must understand that, for the most part, the majority of N.A.I.I.'s employees to present have been employed by three (3) or more nondestructive test contractors within a year prior to their employment with N.A.I.I. This situation only compounds N.A.I.I.'s Quality Assurance of their R.S.O. Program, in that for the most part, these employees have a "I know it" attitude and comprehend very little, if anything, during training lectures and demonstration exercises to assure understanding of N.A.I.I.'s Radiation Safety Program. It is up to the management of N.A.I.I. to enforce the POLICY MANUAL in terms of violations. Secondly, N.A.I.I.'s management must make Radiographers responsible for their acts. Thirdly, the writer found gross misunderstandings of management and radiographers with reference to N.A.I.I.'s transportation procedure of radioactive materials. This not only includes paperwork for common carriers but also sole-use vehicles (N.A.I.I.).

#### RECOMMENDATIONS

It is the writer's recommendation that N.A.I.I. employ someone with the necessary background to administer and implement N.A.I.I.'s Radiation Safety Program. Further, that management subject themselves to a training class and workshop to fully understand the commitments of N.A.I.I. with respect to license conditions, U.S.N.R.C. Regulations, D.O.T. Regulations, and procedures contained in N.A.I.I.'s Radiation Safety Manual; and this to include the necessary forms and paperwork to support the Radiation Safety Program. With respect to Radiographers and Assistant Radiographers, it is the writer's recommendation that all present and future radiation workers be subjected to training classes and workshops to afford them the knowledge of source use, source requirements, source transportation, and vital paperwork that supports the program. Any individual found to be willfully negligent shall be disciplined in accordance with the requirements of "Conduct and Discipline" contained in the COMPANY'S EMPLOYEE POLICY MANUAL on pages 18 thru 21. And likewise, the management personnel shall fulfill their responsibilities as defined in the COMPANY'S EMPLOYEE POLICY MANUAL on pages 5 thru 7.

#### CONCLUSION

It is the writer's opinion and recommendation that N.A.I.I. use this document to support the Company's position that the Notice of Violation and Proposed Imposition of Civil Penalties dated

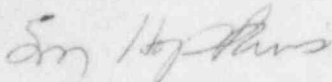
February 16, 1985

page 10 (continued)

February 6, 1985, signed by Mr. Thomas E. Murley, Regional Administrator, be rescinded, all or in part, based on our responses contained herein to the two (2) inspections that initiated the notice of fine.

It is the writer's opinion that after the U.S.N.R.C. reviews this response, the violations do not constitute severity Level III problems (Supplements IV & VI).

Respectfully submitted,



S. M. Hopkins, PE  
RSO/Consultant

Enclosures: 1 thru 6

cc: Thomas T. Martin, Director/Division of Engr. & Tech. Programs  
Thomas E. Murley, Regional Administrator

SMH/saj



EXHIBIT #1

CHECK-OUT RECORD  
"STORAGE FACILITY UTILIZATION LOG"

FORM RS-4-2  
Rev. 0 (1-84)  
Page 33

This Check-Out Utilization Log will be maintained for sealed sources and their exposure devices, X-ray machines and survey meter calibration devices removed from the permanent storage facility at N.A.I.I., Laurys Station, Pa. This Log will remain at the storage vault and the following information must be maintained.

[illegible]

This Utili ion Log must be kept up-to-date and available for review by the Company R.S.O. at all times.



EXHIBIT #2

NORTH AMERICAN INSPECTION, INC.

P.O. BOX 88  
LAURYS STATION, PA. 18059

Page 37

FORM RS-4-6

Rev. 0 (1-84)

## "UTILIZATION LOG"

1. NAME \_\_\_\_\_ S.S. NO. \_\_\_\_\_ DATE \_\_\_\_\_
2. TYPE SOURCE \_\_\_\_\_ CAMERA MODEL & S/N \_\_\_\_\_  
SOURCE S/N & CURIES \_\_\_\_\_
3. JOB SITES EXPOSURE LOCATION (CITY AND AREA) \_\_\_\_\_
4. MAXIMUM RADIATION LEVEL AT PERIMETER OF RESTRICTED AREA \_\_\_\_\_ MR/HR
5. RADIATION LEVEL AT 6 INCHES FROM SURFACE OF DEVICE \_\_\_\_\_ MR/HR  
(When securing prior to vehicle storage)
6. RADIATION LEVEL ON SURFACE OF VEHICLE STORAGE CONTAINER \_\_\_\_\_ MR/HR
7. RESULTS OF DAILY INSPECTION \_\_\_\_\_
8. SURVEY METER NO. \_\_\_\_\_ CALIBRATION DUE DATE \_\_\_\_\_
9. LEAK TEST DUE DATE \_\_\_\_\_ QUARTERLY INVENTORY DUE DATE \_\_\_\_\_
10. QUARTERLY INSPECTION DUE DATE \_\_\_\_\_ TOTAL EXPOSURE TIME \_\_\_\_\_
11. TOTAL NUMBER OF EXPOSURES \_\_\_\_\_ FILM BADGE NUMBER \_\_\_\_\_
12. RADIATION REPORT COMPLETED (YES OR NO) \_\_\_\_\_ CAPS ON SOURCE TUBE \_\_\_\_\_
13. SUPPLEMENTAL LOG COMPLETED (YES OR NO) \_\_\_\_\_ VEHICLE SURVEYED \_\_\_\_\_
14. DOSIMETER REPORT COMPLETED (YES OR NO) \_\_\_\_\_
15. DOSIMETER SERIAL NUMBERS \_\_\_\_\_
16. FINAL STORAGE RESULTS (MR/HR) \_\_\_\_\_
17. COMMENTS \_\_\_\_\_

RADIOGRAPHERS SIGNATURE



Exhibit #3

SERVICE DIVISION

5250 MAYFAIR ROAD, NORTH CANTON, OHIO 44720

TELEPHONE - DAY 216 - 494-9436 OR 216 - 253-5701

March 19, 1979

Robert Keith Shumway  
4504 Troxell Drive  
Whitehall, Pennsylvania

SUBJECT - Request for temporary use of Field Office (Laurys Station, Pa.) for isotope radiography in accordance with USNRC and Industrial Inspection Industries, Inc. rules and regulations.

REFERENCE - Radiation profile results performed on February 20, 1979.

Dear Keith,

Concerning the use of our Field Office at Laurys Station, Pennsylvania to perform temporary radiography based on the above referred to report, you are permitted to perform temporary radiography as defined in Part 20 of the USNRC Regulations with the following restrictions.

1. No open air exposures permitted.
2. All exposures to be taken in the area identified as #5 on page #3 of exhibit #1.
3. A Radiation Area sign must be posted on bay #3 door exterior during exposure periods.
4. A High Radiation sign must be posted at the walkway from bay #2 to bay #3.
5. No unauthorized (non-radiation workers) shall be permitted in the building when exposures are in progress.
6. At no time, nor any exposure condition, shall there be a calculated exposure reading of 2 MR/HR or greater in the office area and the exterior of the building.
7. This facility must be limited by definition to the time frame as defined in Title 10, Part 20 of the USNRC Rules and Regulations.
8. The control film badge (monitor) must always maintain the same physical location during temporary exposures and non-exposure periods.

**FIELD, SHOP AND LABORATORY SERVICES IN**

RADIOGRAPHY • MAGNETIC PARTICLE INSPECTION • EDDY CURRENT TESTING • PENETRANTS  
VISUAL INSPECTION • WELDER QUALIFICATION • X-RAY FILM PROCESSING

March 19, 1979

Page 2

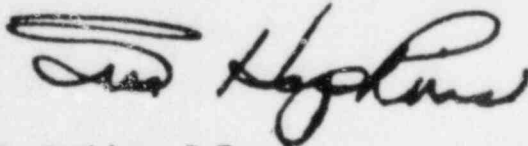
In addition, all source changes shall be made in this area and during any exposure, whether source change or otherwise, a qualified radiographer must be in constant surveillance and control access to the Radiation Area.

Your Utilization Logs must reflect any source use in this facility to the same extent as would be reflected at any of our customer locations.

It is your responsibility as District Radiation Safety Officer to assure that our Radiation Safety Program is being implemented in your area and this approval does not constitute any deviation from our Standard Operating Procedures. These demonstrations are intended as a safe-guard for Industrial Inspection Industries, Inc.

Respectfully,

INDUSTRIAL INSPECTION INDUSTRIES, INC.

A handwritten signature in dark ink, appearing to read "S. M. Hopkins". The signature is fluid and cursive, with a large, stylized "H" and "S".

S. M. Hopkins, P.E.

President - Corporate Radiation Safety Officer

cc - Radiation Safety File  
Radiation Safety Director  
Division V.P. (C.R.D.)

SMH  
ms



SUBJECT: Request for permission to perform Radiography in accordance with the requirements of Title 10 - Part 20 - Paragraph 20.203 Sub-paragraph 4 (Temporary Facility)

REFERENCE: Industrial Inspection Industries, Inc., 3906 Main St., Laurys Station, Pennsylvania

I. Mathematical calculations of radiation areas based on the use of a 100 curie source of IRIDIUM 192 positioned at location (\*) identified on Page #3 of Exhibit #1 to establish a radiation profile.

Based on the "Inverse Square Law", the radiation intensity from a 100 curie unshielded IRIDIUM 192 would express a dose rate of 68 MR/HR in the office area as identified in Exhibit #1 which is approximately 32 feet from the source. This would also apply to the source storage area under the office at the same location. Based on four (4) half-value-layers (HVL) of concrete, the theoretical reading in the office would be reduced to approximately 4 MR/HR, while the storage area has an additional 2 (HVL) of concrete. This would theoretically reduce the dose rate in the source storage area to approximately 1 MR/HR. In that the temporary exposure area is subterranean, no values of exposure were calculated. The second mathematical radiation exposure condition was computed on the parking lot side of building #1 as defined in page #1 of exhibit #1. The distance from the theoretical source to the outside wall of the field office is 44 feet. Between the theoretical source position and the outside wall exist 8 (HVL) of concrete. Based on an open air source of 100 curie of IRIDIUM 192 at 44 feet, the dose rate would be approximately 363 MR/HR notwithstanding the 8 (HVL) of concrete. (1.9 inches per HVL). Mathematical computation of the 8 (HVL) of concrete would theoretically reduce the surface reading on the exterior wall of the field office adjacent to the parking lot to less than 1.5 MR/HR.

For reasons that the Golden Dream Ice Cream Parlor identified as building #4 on page #1 of Exhibit #1 share parking spaces with Industrial Inspection Industries, Inc.'s Field Office, it will be necessary to make actual exposure conditions to support and substantiate the foregoing mathematics. It should be noted that theoretically based on the inverse square law calculations, that the only area that would require the posting of a Radiation Area sign as required by 10-CFR, Part 20, Paragraph 20.203 Sub-paragraph B would be the access door in Bay #3. (the door that is 12' 8" wide.)

II. Demonstrations of actual radiation areas profile within the Field Office and the exterior.

Subject: Request for permission to perform Radiography in accordance with the requirements of Title 10 - Part 20 - Paragraph 20.203 Sub-paragraph 4 (Temporary Facility)

Reference: Industrial Inspection Industries, Inc.  
3906 Main St., Laurys Station, Pennsylvania

A 102 curie source of IRIDIUM 192 was used in the demonstration housed in a TO-660 exposure device - source model #A-424-9 (T.O.). The source was cranked out using a 7' guide tube using a source stand positioning the source 24" from the floor. The control for the crank assembly was located at (\*\*) as identified on Page #3 of Exhibit #1. The two (2) calibrated survey meters used in this demonstration were (1) Victoreen - Model 592-B and (2) Eberline - Model PIC-6A. The first reading recorded was adjacent to the bathroom identified as area #8 on Page #3 of Exhibit #1. The exposure reading at this area was 150 MR/HR uncollimated. The next reading was taken in the upstairs office identified as area #1, on Page #3 of Exhibit #1 with a reading inside the office area of 80 MR/HR from the uncollimated source. The next reading was taken in the source storage area downstairs under the office with an exposure reading of 20 MR/HR from the uncollimated source. The next reading was taken on the exterior of the area, identified as area #5, on Page #3 of Exhibit #1 with a radiation exposure reading of 15 MR/HR. (this is due to the subterranean effect of the source in relation to the exterior reading). The next reading was taken on the field office exterior adjacent to the parking lot with a radiation exposure reading of approximately 1.2 MR/HR from the uncollimated source. The next reading was taken at the doorway of the bay where the source was located (the 12' 8" door) with a radiation reading of 835 MR/HR uncollimated.

Other random readings were recorded across the back and sides of building #1 identified as Building #1, on Page #1 of Exhibit #1 with the highest reading recorded being 15 MR/HR. It should be noted that no readings were taken on the roof of building #1, in that no access is available without a ladder being assembled.

Phase 2 of this demonstration included the use of an Industrial Inspection Industries, Inc. Teapot Collimator identified in RS-GP-7-2 of our Radiography Operations Manual RSM-1. The Teapot Collimator has a shielding value of 10 (HVL) (2" of lead in all areas). Again, the collimator was positioned 24" from the floor and actual readings were again taken with the previously identified two (2) radiation survey instruments. The first collimated reading was recorded adjacent to the bathroom identified as area #8 on Page #3 of Exhibit #1, with readings ranging at the floor from 1.5 MR/HR to .5 MR/HR at 8' up the wall from the floor. The next reading was

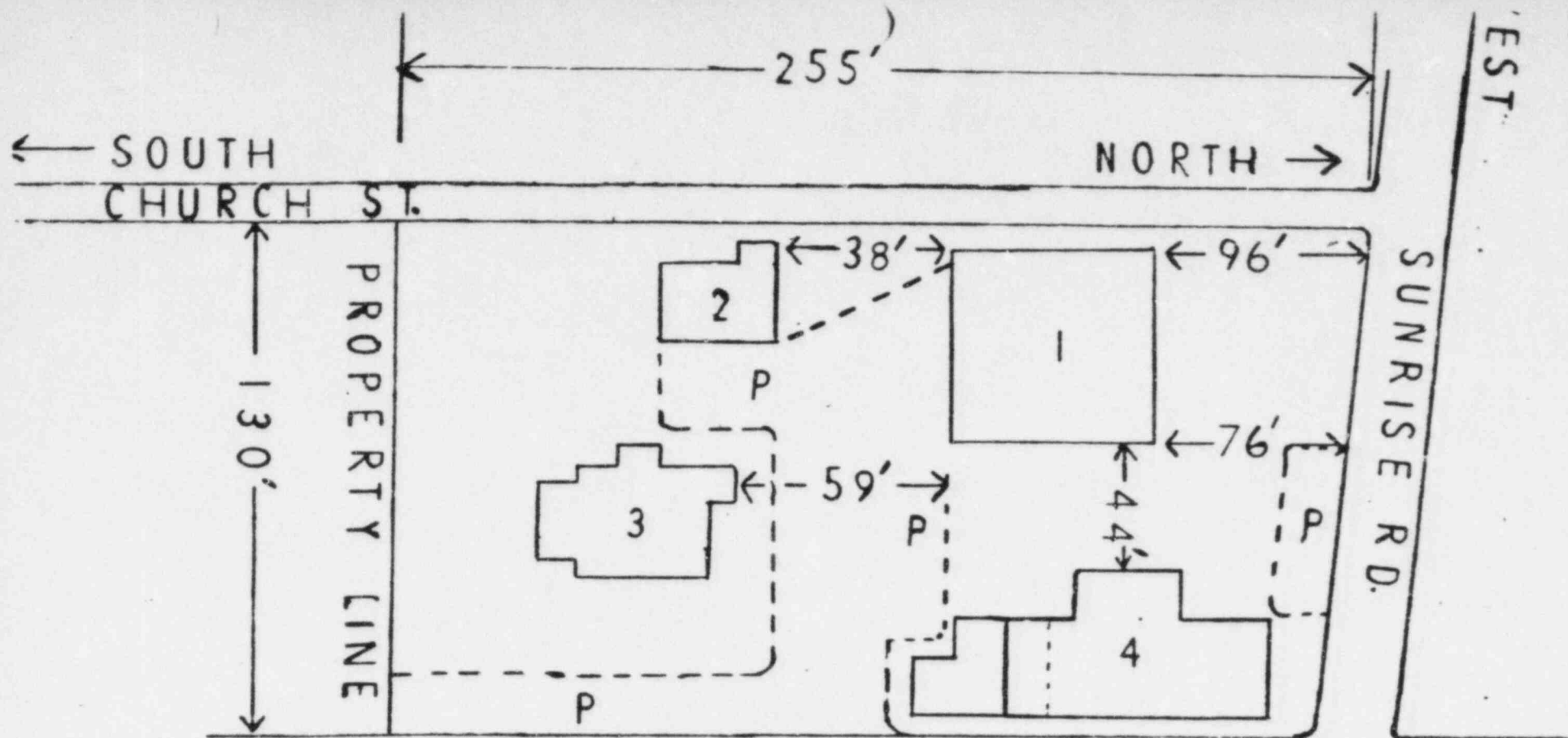
Subject: Request for permission to perform Radiography in accordance with the requirements of Title 10 - Part 20 - Paragraph 20.203 Sub-paragraph 4 (Temporary Facility)

Reference: Industrial Inspection Industries, Inc.  
3906 Main St., Laurys Station, Pennsylvania

taken in the office area identified as area #1, second floor, on Page #3 of Exhibit #1, with the readings ranging from .5 MR/HR on the wall closest to the source with no measurable reading on the parking lot side of the wall. The next reading was taken in the storage area under the office, identified as area #1, first floor, on Page #3 of Exhibit #1. No measurable, (less than .5 of 1 MR/HR) reading was noted. The next survey was taken on the outside of the building adjacent to the parking lot in six (6) locations with no measurable radiation level. The next survey was taken at the overhead doorway identified as Bay #3 with the reading ranging from 1 MR/HR to 3 MR/HR. The 1 MR/HR was obtained approximately 8' from the floor surface and the 3 MR/HR was obtained 1' from the floor surface outside this door. The walkway into Bay #3 did have a radiation area of 25 MR/HR. Random surveys were taken of the building exterior with the source in the collimated position and no radiation areas as defined in 10-CFR - Part 20 were noted.

Demonstration date February 20, 1979 - performed by Don Shumway and Jim Bastardi.

Approved by S. M. Hopkins - Corporate Radiation Safety Officer.



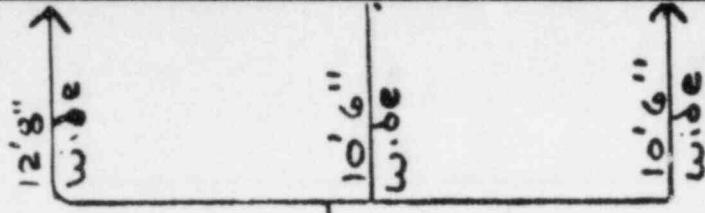
- 1-WAREHOUSE / WORK AREA
- 2-GARAGE
- 3-MAIN OFFICE
- 4-ICE CREAM SHOP

P = PARKING

Notes:

## BUILDING #1

- 1 Storage room constructed with 6" thick, five retardant material, with 6' thick locking door.
- 2 Shaded area is 2' to 4' above building floor.
- 3 Five retardant ceilings, and metal roof.
- 4 Building walls constructed of concrete block.
- 5 Future exposure booth.
- 6 All floors are concrete. 3 Over Head Doors
- 7 Radioactive sources will be inside storage area, using DOT approved fire proof shipping barrels for each source.
- 8 Bathroom.



North →

CHURCH ST.

Sunrise Rd.

RADIATION  
SOURCE

47'11"

15'7" ⑤

⑧

15'9"

④ 8" Std Block Wall

CRANK  
ASSY. CONTROL Walk way

③

14'

Storage  
area

1st Floor

2nd Floor

Office

14'6"

①

46'11"

12'8"  
wide

10'6"  
wide

10'6"  
wide

Doors ←

Main Entrance  
36" wide

② Pg. #3

## DAILY RADIATION SURVEY REPORT

Page 35  
Form RS-4-4 (Rev. 0)  
(1-84)

RADIOGRAPHER \_\_\_\_\_ JOB LOCATION \_\_\_\_\_

DATE \_\_\_\_\_ TIME \_\_\_\_\_ PROJECT \_\_\_\_\_

1. SOURCE OF RADIATION: IR-192 S/N \_\_\_\_\_, CO-60 S/N \_\_\_\_\_, X-RAY S/N \_\_\_\_\_
2. CURIES: \_\_\_\_\_ X-RAY KV-MA MAXIMUM: \_\_\_\_\_
3. SURVEY METER NO. \_\_\_\_\_ CALIBRATION DUE DATE \_\_\_\_\_
4. CAMERA MODEL NO. \_\_\_\_\_ MANUFACTURER \_\_\_\_\_ S/N \_\_\_\_\_
5. DAILY EQUIPMENT CHECK PERFORMED? (Form No. RS-4-3) EQUIPMENT ACCEPTABLE? YES \_\_\_\_\_ NO \_\_\_\_\_
6. RADIOGRAPHER DOSIMETER S/N \_\_\_\_\_ DATE CALIBRATION DUE \_\_\_\_\_
7. ASST. RADIOGRAPHER DOSIMETER S/N \_\_\_\_\_ DATE CALIBRATION DUE \_\_\_\_\_
8. RADIOGRAPHER FILM BADGE S/N \_\_\_\_\_ ASST. RADIOGRAPHER FILM BADGE NO. \_\_\_\_\_
9. SOURCE DECAY CURVE IN LOB BOOK? YES \_\_\_\_\_ NO \_\_\_\_\_
10. SOURCE TRANSPORTATION DOCUMENTS IN LOG BOOK? YES \_\_\_\_\_ NO \_\_\_\_\_
11. RADIOGRAPHY MANUAL S/N \_\_\_\_\_, 3 OR MORE RADIATION SIGNS IN LAB/SITE? YES \_\_\_\_\_ NO \_\_\_\_\_
11. DOSIMETER RECORD RECEIVED: RADIOGRAPHER: (START 0 MR FINISH \_\_\_\_\_ MR)  
ASSISTANT RADIOGRAPHER: (START 0 MR FINISH \_\_\_\_\_ MR)

12. TOTAL EXPOSURE TIME FOR SHIFT/DAY: \_\_\_\_\_ HOURS, \_\_\_\_\_ MINUTES
13. PERSONNEL NOTIFIED OF RADIATION AREAS, WHERE APPLICABLE? YES \_\_\_\_\_ NO \_\_\_\_\_
14. CONSTANT SURVEILLANCE? YES \_\_\_\_\_ NO \_\_\_\_\_ DID YOU USE ROPES? YES \_\_\_\_\_ NO \_\_\_\_\_  
DID YOU USE SIGNS? YES \_\_\_\_\_ NO \_\_\_\_\_ WAS A COLLIMATOR USED? YES \_\_\_\_\_ NO \_\_\_\_\_
15. RECORD OF PHYSICAL SURVEY MADE TO DETERMINE SOURCE IS IN SHIELDED POSITION PRIOR TO SECURING EXPOSURE DEVICE \_\_\_\_\_

- a. IRIDIUM 192 \_\_\_\_\_ MR/HR AT 6 INCHES FROM SURFACE. ON CONTACT \_\_\_\_\_ MR/HR
- b. COBALT 60 \_\_\_\_\_ MR/HR AT SURFACE OF EXPOSURE DEVICE.

## 16. VEHICLE STORAGE SURVEY:

- 1a. LEAVE: \_\_\_\_\_ MR/HR AT DRIVER, \_\_\_\_\_ MR/HR AT OUTSIDE SURFACE, \_\_\_\_\_ MR/HR AT 1 FT. FROM SURF?
- 1b. RETURN: \_\_\_\_\_ MR/HR AT DRIVER, \_\_\_\_\_ MR/HR AT OUTSIDE SURFACE, \_\_\_\_\_ MR/HR AT 1 FT. FROM SURF?

EXPOSURE AREA A, B, OR C AS MAY BE APPLICABLE, WHERE MORE THAN ONE (1) EXPOSURE CONDITION EXISTS PER WORK SHIFT, RECORD IN EXPOSURE AREA A, B, OR C:

RESULT OF PHYSICAL SURVEY

BARRICADE EQUIPMENT

☐ SIGNS ☐ ROPE

☐ CONSTANT SURVEILLANCE

\_\_\_\_\_

RESULT OF PHYSICAL SURVEY

BARRICADE EQUIPMENT

☐ SIGNS ☐ ROPE

☐ CONSTANT SURVEILLANCE

\_\_\_\_\_

RESULT OF PHYSICAL SURVEY

BARRICADE EQUIPMENT

☐ SIGNS ☐ ROPE

☐ CONSTANT SURVEILLANCE

\_\_\_\_\_

SIGNATURE OF RADIOGRAPHER \_\_\_\_\_

NAME OF ASST. RADIOGRAPHER (if applicable) \_\_\_\_\_

PROCEDURE  
IDENTIFICATION

## RADIOACTIVE MATERIAL TRANSPORTATION/SHIPMENT(S)

## 1.0 SCOPE:

"5.0"

- 1.1 This procedure describes the packaging and labeling requirements for transportation of radioactive material via NORTH AMERICAN INSPECTION, INC.'S vehicle and common carrier and is supported by NORTH AMERICAN INSPECTION, INC.'S Quality Assurance Program for Radioactive Material Packages - approval #0514. (See appendix RS-5-1.)
- 1.2 This procedure conforms to the requirements of U.S.N.R.C. Title 10-CFR Part 71, The Department of Transportation, Title 49 - Parts 171 through 177.
- 1.3 This procedure shall be used in conjunction with Part 4 - captioned Operating Procedures of this manual.

## 2.0 PACKAGING:

- 2.1 Projectors and Source Changers shall be packaged as described below:

PACKAGING REQUIREMENTS

EXPOSURE DEVICE OR SOURCE CHANGER	MAXIMUM ACTIVITY AND SOURCE TYPE	MINIMUM TYPE OF OVER- PACK OR CONTAINER
T/O 741 PROJECTOR	30 CURIES CO-60	NONE REQUIRED
G/I 50 PROJECTOR	50 CURIES CO-60	NONE REQUIRED
G/I 100 PROJECTOR	100 CURIES CO-60	NONE REQUIRED
T/O 680 PROJECTOR	100 CURIES CO-60	NONE REQUIRED
G/I 200 PROJECTOR	200 CURIES CO-60	NONE REQUIRED
T/O 676 PROJECTOR	250 CURIES CO-60	NONE REQUIRED
G/I TATTLETALE	125 MCI CS-137	A-7 METAL SHIP. CONT./6717 S.B.*
G/I MASTER MINDER 1 & 2	225 MCI CS-137	A-7 METAL SHIP. CONT./6717 S.B.*
G/I CENTURY S & SA	100 CURIES IR-192	6717 SHIPPING BARREL
T/O 660 PROJECTOR	100 CURIES IR-192	METAL STORAGE BOX/WOODEN OVERPACK
A/I 520 PROJECTOR	100 CURIES IR-192	METAL STORAGE BOX/WOODEN OVERPACK
G/I PIPELINER 1 PROJECTOR	100 CURIES IR-192	6717 SHIPPING BARREL
G/I PIPELINER 201 PROJ.	200 CURIES IR-192	6717 SHIPPING BARREL
T/O 616 PROJECTOR	200 CURIES IR-192	715 SHIPPING BARREL

\*S.B. = SHIPPING BARREL

PROCEDURE NO.

RSO-5

ISSUE DATE

1-84

REV. DATE

-0-

PROCEDURE TYPE

Radiation Safety

TEST METHOD

Radiography

2.0 PACKAGING: (continued)PACKAGING REQUIREMENTS

EXPOSURE DEVICE OR SOURCE CHANGER	MAXIMUM ACTIVITY AND SOURCE TYPE	MINIMUM TYPE OF OVER- PACK OR CONTAINER
T/O 771 SOURCE CHANGER	250 CURIES CO-60	NONE REQUIRED
G/I C-8 SOURCE CHANGER	200 CURIES CO-60	NONE REQUIRED
G/I C-10 SOURCE CHANGER	200 CURIES IR-192	6717 SHIPPING BARREL
T/O 650 SOURCE CHANGER	100 CURIES IR-192	NONE REQUIRED

2.2 When shipping an exposure device or source changer containing a radioactive source, assure that the source is in the properly stored position with the use of a calibrated survey instrument.

2.3 The exposure device or source changer shall be prepared for shipment as follows:

2.3.1 EXPOSURE DEVICE: Assure that the shipping plug is securely in place and sealed and the device is locked.

2.3.2 SOURCE CHANGER: Assure that the source hold down and cover are properly bolted and sealed.

3.0 MARKING:

3.1 Each package of radioactive material prepared for transport shall contain the following information marked on the exterior surface of the package.

## 3.1.1 PROPER SHIPPING NAME:

Source Changer or  
Package Containing  
Exposure Device

Proper Shipping Name

a. Containing Source

Radioactive Material  
Special Form N.O.S.

b. Empty (except lead shielded  
devices)

Radioactive Material  
L.S.A., N.O.S.

3.1.2 The name and address of NORTH AMERICAN INSPECTION, INC.

3.1.3 The U.S.N.R.C. Compliance Number or Type of Package.  
(See form RS-5-2)



## 4.0 LABELING:

4.1 Survey the package to determine the proper shipping label as described in the following:

<u>REQUIRED LABEL</u>	<u>RADIATION LEVEL AT SURFACE IN MR/HR</u>	<u>RADIATION LEVEL AT 3 FT. IN MR/HR</u>
RADIOACTIVE WHITE I (See Example RS-5-2, Figure "A")	0 - 0.5 MAX.	N/A
*RADIOACTIVE YELLOW II (See Example RS-5-2, Figure "B")	0.5 - 50.0 MAX. (and)	0.1 - 1.0 MAX.
*RADIOACTIVE YELLOW III (See Example RS-5-2, Figure "C")	50.0 - 100.0 MAX. (and/or)	1.1 - 10.0 MAX.

\*NOTE: The transport index is the highest radiation level in millirem per hour at three (3) feet from any accessible external surface of the package. This number shall be expressed in the next highest tenth and written in the transport index box on RADIOACTIVE YELLOW II AND III LABELS. e.g. 1.01 millirem = 1.1 millirem. Enter 1.1 in the transport index, or 0.0 millirem = 0.1 millirem. Enter 0.1 in transport index.

4.2 Complete two (2) appropriate labels indicating the contents, Iridium 192 or Cobalt 60 and the number of curies. For RADIOACTIVE II AND III LABELS, record the transport index in the box. (See note above.) The label shall be attached to opposite sides of the package - one being placed near the shipping label.

4.3 Empty exposure devices or source changers "DO NOT" require labeling if the following conditions exist:

- 4.3.1 THE RADIATION LEVEL AT THE SURFACE IS LESS THAN .5 MR/HR.
- 4.3.2 THERE IS NO MEASURABLE RADIATION LEVEL AT THREE (3) FEET FROM THE SURFACE.
- 4.3.3 IF THE ABOVE CONDITIONS EXIST, THE PACKAGE SHALL BE MARKED WITH THE FOLLOWING STATEMENT:

EXEMPT FROM THE SPECIFICATION, PACKAGING, MARKING,  
LABELING AND EXEMPT FROM THE PROVISIONS OF 49-CFR -  
173.393 PER 49-CFR 173.391.



5.0 SHIPPING PAPERS:

5.1 Shipments via commercial carrier:

5.1.1 A separate bill of lading or air bill shall be completed for "each package" of radioactive material.

5.1.2 The proper shipping name as described below shall be entered on the bill of lading or air bill:

PACKAGE CONTAINING EXPOSURE  
DEVICE OR SOURCE CHANGER

PROPER SHIPPING  
NAME

a. Containing A Source

RADIOACTIVE MATERIAL  
Special Form N.O.S.

b. Empty Device

RADIOACTIVE MATERIAL  
L.S.A., N.O.S.

5.1.3 When shipping a package of Radioactive Material that requires a RADIOACTIVE YELLOW II LABEL by Motor Freight, the bill of lading shall also contain the statement, "RADIOACTIVE PLACARDS SUPPLIED".

5.1.4 The bill of lading or air bill shall contain two (2) copies of the shipping and certification documents described in paragraph 6.

6.0 SHIPPING/CERTIFICATION DOCUMENT:

6.1 As a minimum, three (3) copies of the Shipper/Certification Document shown in Form RS-5-1 shall be completed for each package of Radioactive Material. Distribution of the Shipper/Certification Document shall be as follows:

1. Two (2) copies shall be attached to the bill of lading or air bill.
2. One (1) copy forwarded to the Radiation Safety Officer.

7.0 TRANSPORTING RADIOISOTOPES VIA NORTH AMERICAN INSPECTION, INC.'S  
AUTHORIZED VEHICLE:

7.1 The requirements of paragraphs 1, 2, 3, and 4 shall apply with additional requirements as follows:

7.1.1 A calibrated, operable Survey Meter shall be located in the vehicle near the driver.



7.0 TRANSPORTING RADIOISOTOPES VIA NORTH AMERICAN INSPECTION, INC'S  
AUTHORIZED VEHICLE: (continued)

7.1.2 A radiation survey shall be conducted to insure that the radiation level at the external surface of the vehicle and at the driver is 2 MR/HR or less.

7.1.3 Each vehicle, while transporting a radioisotope requiring a RADIOACTIVE YELLOW III LABEL, (see Example RS-5-2 - figure "C") shall display on the front, rear, and both sides of the vehicle, placards consisting of a diamond shaped sign containing the word "RADIOACTIVE".

7.1.3.1 These PLACARDS shall be removed or covered when the vehicle does not contain the article for which such marking is required. (D.O.T. - 49 Part 171.823, D)

7.1.4 Each vehicle requiring placarding as specified in paragraph 7.1.3 above shall have posted in a conspicuous place as shown in Example RS-5-3 notifying authorities who to call in the event of an accident.

7.1.5 D.O.T. Shipping Certificate (see form RS-5-2) shall be completed for each movement via NORTH AMERICAN INSPECTION, INC. vehicle.

8.0 SHIPMENT BY CARGO AIRCRAFT:

8.1 In addition to the requirements of paragraphs 1 through 6, the following requirements shall also apply for shipment of Radioactive Material via Cargo Aircraft.

8.1.1 The package shall have a "CARGO AIRCRAFT ONLY" label as shown in Example RS-5-4 affixed to the exterior surface.

9.0 SHIPMENT BY MOTOR FREIGHT:

9.1 In addition to the requirements of paragraphs 1 through 6, when shipping via Motor Freight, four (4) PLACARDS bearing the word "RADIOACTIVE" shall be supplied to the driver.

# SHIPPER'S CERTIFICATION FOR RADIOACTIVE MATERIALS

Page 6  
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Two completed and signed copies of this certification shall be handed to the carrier.  
(Use block letters) "EXAMPLE" RS-5-1

**WARNING:** Failure to comply in all respects with the applicable regulations of the Department of Transportation, 49-CFR, CAB 82 and, for international shipments, the IATA Restricted Articles Regulations may be a breach of the applicable law, subject to legal penalties. This certification shall in no circumstance be signed by a consolidator, a forwarder, or an IATA Cargo Agent.

This shipment is within the limitations prescribed for: (mark one)

☐ passenger aircraft And contains radioactive material intended for use in, or incident to, research, or medical diagnosis or treatment

☒ cargo-only aircraft

NATURE AND QUANTITY OF CONTENT					PACKAGE			
PROPER SHIPPING NAME	RADIONUCLIDE	GROUP	FORM	ACTIVITY		CATEGORY	TRANSPORT INDEX	TYPE
FOR U.S. SHIPMENTS, SEE SECTION 2, CAB 82, TARIFF 6-D	NAME OR SYMBOL OF PRINCIPAL RADIOACTIVE CONTENT	GROUP NUMBER OF GROUPS I TO VII	CHEMICAL FORM AND PHYSICAL STATE (GAS/ LIQUID/SOLID), or SPECIAL FORM, or SPECIAL ENCAPSULATION	NUMBER OF CURIES, or MILLI-CURIES	Number of Packages	I—WHITE or II—YELLOW or III—YELLOW LABEL	FOR YELLOW LABEL CATEGORIES ONLY	INDUSTRIAL or TYPE A, or TYPE B
RADIOACTIVE MATERIAL SPECIAL FORM N.O.S. UN 2974 CARGO AIRCRAFT ONLY	Ir-192	N/A	SPECIAL FORM	101Ci.	1	YELLOW-III	1.1	"B"

## ADDITIONAL INFORMATION REQUIRED FOR FISSILE MATERIALS ONLY

EXEMPTED FROM THE ADDITIONAL REQUIREMENTS FOR FISSILE MATERIALS SPECIFIED IN 7.1, OF PART 2 OF THE IATA RESTRICTED ARTICLES REGULATIONS ☐  
NAMES, PLUS QUANTITY IN GRAMS, OR CONCENTRATION OR ENRICHMENT IN U235:

NOT EXEMPTED: FISSILE CLASS I ☐ FISSILE CLASS II ☐ FISSILE CLASS III ☐

Additional certificates obtained by the Shipper when necessary:

Special Form Encapsulation Certificate(s) ☐

Type "B" Packaging Certificate(s) ☐

Certificate(s) for Fissile Material ☐

NOT REQUIRED FOR DOMESTIC SHIPMENT

Certificate(s) for Large Radioactive Source ☐

Government Approvals/Permits ☐

USA/6717/B(U) TYPE B PACKAGE

Special Handling Information

I hereby certify that the contents of this consignment are fully and accurately described above by Proper Shipping Name and are classified, packed, marked, labelled and in proper condition for carriage by air according to applicable national governmental regulations, and for International Shipments, the current IATA Restricted Articles Regulations.

Name and full address of Shipper  
GAMMA INDUSTRIES

2255 TED DUNAHEM AVENUE

BATON ROUGE, LA. 70802

Date

8.26.83

Name and title of person signing Certification  
JAMES DAVID DUPRE

SHIPPING AGENT

Signature of the Shipper (see WARNING above)

*James David Dupre*

Air Waybill No.

485 124 065

Airport of Departure

BTR

Airport of Destination



NORTH AMERICAN INSPECTION, INC.

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P.O. BOX 88  
LAURYS STATION, PA. 18059

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"EXAMPLE" RS-5-2

Figure "A"



MORE THAN 0.5 MREM/HR ON CONTACT AND IS NOT A "LARGE QUANTITY"



NORTH AMERICAN INSPECTION, INC.

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"EXAMPLE" R3-5-2

Figure "B"



VEHICLE PLACARD NOT REQUIRED: FOR USE ON SOURCE CHANGER IF:  
MORE THAN .05 BUT NOT MORE THAN 50 MREM/HR AT CONTACT  
AND NOT EXCEEDING I.I. OF 1.



NORTH AMERICAN INSPECTION, INC.

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"EXAMPLE" RS-5-2

Figure "C"



VEHICLE PLACARD REQUIRED: FOR USE ON SOURCE CHANGER IF:  
MORE THAN 50 MREM/HR AT CONTACT T.I. IS MORE THAN 1



NORTH AMERICAN INSPECTION, INC.  
P.O. BOX 88  
LAURYS STATION, PA. 18059

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Example RS-5-3

"NOTICE"

IN CASE OF ACCIDENT, WHEREIN THIS VEHICLE IS  
INVOLVED, EMERGENCY NOTIFICATION IS REQUIRED.

PLEASE CALL COLLECT:

NORTH AMERICAN INSPECTION, INC.

"DAY"

215-262-1100 - - - - - ALLENTOWN, PENNSYLVANIA

216-877-6231 - - - - - HARTVILLE, OHIO

412-324-5601 - - - - - WAYNESBURG, PENNSYLVANIA

"NIGHT AND HOLIDAYS"

215-262-1111 - - - - - ALLENTOWN, PENNSYLVANIA

412-324-5601 - - - - - WAYNESBURG, PENNSYLVANIA



NORTH AMERICAN INSPECTION, INC.

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EXAMPLE RS-5-4



AFFIXED ADJACENT TO RAM LABELS ON ALL "CARGO ONLY AIR SHIPMENTS"



NORTH AMERICAN INSPECTION, INC.  
P.O. BOX 88  
LAURY'S STATION, PA. 18059

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FORM RS-5-1

"SHIPPING/CERTIFICATION DOCUMENT FOR RADIOACTIVE MATERIAL"

SHIPPED TO: \_\_\_\_\_ CARRIER: \_\_\_\_\_  
\_\_\_\_\_  
WEIGHT: \_\_\_\_\_

☐ RADIOACTIVE MATERIAL SPECIAL FORM N.O.S. ☐ RADIOACTIVE MATERIAL L.S.A., N.O.S.

"EXPOSURE DEVICE AND MATERIAL IDENTIFICATION"

EXPOSURE DEVICE	SERIAL NO.	SOURCE NO.	NRC CERT. OF COMP.	TYPE OF PACKAGE
G/I TATTLETALE			USA-6717-B(U)	DOT 7-A Type A Overpack
G/I PIPELINER 1			USA-6717-B(U)	TYPE B Overpack
G/I PIPELINER 201			USA-6717-B(U)	TYPE B Overpack
G/I CENTURY S, SA(old)			USA-6717-B(U)	TYPE B Overpack
G/I 35 S, SA (old)			USA-6717-B	DOT 7-A Overpack
CENTURY S, SA (new)			USA-9135-B(U)	TYPE B
CENTURY UNIV. S, SA(new)			USA-9135-B(U)	TYPE B
GAMMATRON 50			USA-9126-B(U)	TYPE B
GAMMATRON 100			USA-9127-B(U)	TYPE B
GAMMATRON 200			USA-9127-B(U)	TYPE B
STERMINDER 1&2			USA-6717-B(U)	TYPE B (Overpack)
T/O 616			USA-9039-B(U)	TYPE B (Overpack)
T/O 660			USA-9033-B(U)	TYPE B
T/O 676			USA-9027-B(U)	TYPE B
T/O 741			USA-9027-B(U)	TYPE B
T/O 680			USA-9035-B(U)	TYPE B
SOURCE CHANGERS	SERIAL NO.	SOURCE NO.	NRC CERT. OF COMP.	TYPE OF PACKAGE
T/O 650			USA-9032-B(U)	TYPE B
T/O 771			USA-9107	TYPE B
G/I C-8			USA-9128-B(U)	TYPE B
G/I C-10			USA-6717-B	TYPE B Overpack

NATURE AND QUANTITY OF CONTENTS

LABELING

RADIONUCLIDE	FORM	ACTIVITY IN Curies
IRIDIUM 192	SPECIAL FORM	
COBALT 60	SPECIAL FORM	
CESIUM 137	SPECIAL FORM	
DEPLETED U238	NORMAL FORM	
LB. AT .15 MCI/LB.		

SHIPPING LABEL	TRANSPORT INDEX
RADIOACTIVE WHITE I	
RADIOACTIVE YELLOW II	
RADIOACTIVE YELLOW III	

SHIPPERS CERTIFICATION

This is to certify that the above named materials are properly classified, described, packaged, labeled, and labeled; and are in proper condition for transportation according to the applicable regulations of the DEPARTMENT OF TRANSPORTATION (D.O.T.)

TRANSPORTATION BY AIR

This shipment is within the limitations prescribed for cargo - only aircraft. (EX. RS-5-1)



NORTH AMERICAN INSPECTION, INC.  
P. O. BOX 88  
LAURYS STATION, PA. 18058

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FORM RS-5-2

DEPARTMENT OF TRANSPORTATION (D.O.T.) SHIPPING CERTIFICATE

1. N.R.C. PACKAGE APPROVAL NO. \_\_\_\_\_ (N.A.I.I. Form RS-5-1)
2. TRUCK/VEHICLE NO. \_\_\_\_\_ DRIVER \_\_\_\_\_
3. a. RADIATION SURVEY READING @ SURFACE OF TRANSPORT CONTAINER \_\_\_\_\_ MR  
b. TRANSPORT INDEX (0.1 to 10.0) \_\_\_\_\_ MR  
c. LABEL: CLASS I \_\_\_\_\_ CLASS II \_\_\_\_\_ CLASS III \_\_\_\_\_
4. ( ) MOBILE LAB ( ) PRIVATE VEHICLE ( ) COMPANY CAR
5. MR LEVEL AT DRIVER \_\_\_\_\_ MR; MR LEVEL AT PASSENGER \_\_\_\_\_ MR
6. a. TYPE OF RADIOACTIVE MATERIAL: ( ) IR-192; ( ) CO-60; ( ) OTHER  
b. NO. OF CURIES \_\_\_\_\_ TYPE PROJECTOR/SOURCE CHANGER \_\_\_\_\_

NOTE A: The radioactive material and vehicle covered in this certificate is considered "sole use" for NORTH AMERICAN INSPECTION, INC.

NOTE B: It is the responsibility of the Radiographer to complete this form for each shipment of radioactive material used in "sole use" vehicles for NORTH AMERICAN INSPECTION, INC.

\_\_\_\_\_  
RADIOGRAPHER

\_\_\_\_\_  
DATE

QUALITY ASSURANCE PROGRAM APPROVAL  
FOR RADIOACTIVE MATERIAL PACKAGES

REVISION NUMBER

0

Rev. 0 (1-84) "Page 14"

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974, as amended, and Title 10, Code of Federal Regulations, Chapter 1, Part 71, and in reliance on statements and representations heretofore made in Item 5 by the person named in Item 2, the Quality Assurance Program identified in Item 5 is hereby approved. This approval is issued to satisfy the requirements of Section 71.101 of 10 CFR Part 71. This approval is subject to all applicable rules, regulations, and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

2. NAME North American Inspection Inc.			3. EXPIRATION DATE 2-28-89
STREET ADDRESS P.O. Box 88			4. DOCKET NUMBER 71-0514
CITY Laurys Station	STATE PA	ZIP CODE 18059	

5. QUALITY ASSURANCE PROGRAM APPLICATION DATE(S)

January 31, 1984

## 6. CONDITIONS

Activities authorized by this approval: procurement, maintenance, repair and use to be executed with regard to transportation packages in special form. All other activities (i.e., design, fabrication, assembly, testing, and modification) shall be satisfied by obtaining certifications from package suppliers that these activities were conducted in accordance with an NRC-approved QA program. It shall remain the responsibility of the licensee-user that all transportation activities meet the requirements of 10 CFR §71.101.



FOR THE U.S. NUCLEAR REGULATORY COMMISSION

*Charles E. MacDonald*  
Charles E. MacDonald

FEB 24 1984

CHIEF, TRANSPORTATION CERTIFICATION BRANCH  
DIVISION OF FUEL CYCLE AND MATERIAL SAFETY  
OFFICE OF NUCLEAR MATERIAL SAFETY AND SAFEGUARDS

DATE

"APPENDIX RS-5-1"10.0 DESCRIPTION OF QUALITY ASSURANCE PROGRAM FOR TYPE "B"  
QUALITY SHIPMENTS OF RADIOACTIVE MATERIAL:10.1 ORGANIZATION:

- a. NORTH AMERICAN INSPECTION, INC. pursuant to 10-CFR 71.12 and 10-CFR 71.51 (a) is responsible for a Quality Assurance Program for Type "B" quality shipments and transportation of radioactive material. Fabrication and design of Type "B" packages are not included.
- b. The organizational structure in Section 7.0 is applicable.
  1. The Radiation Safety Officer (RSO), is responsible for administration of the program, training of personnel, procurement of manufacturer's certifications, maintaining packaging and shipping documents, retention of records and program audits.
  2. Radiographers are responsible for handling, storage, shipping and transporting radioactive packages in accordance with the procedures in Section 4.0; and they are responsible for inspecting, surveying and maintenance reports in accordance with the procedures in Section 4.0.

10.2 QUALITY ASSURANCE PROGRAM:

- a. Radiographers are trained in their responsibilities above according to Section 5.0.
- b. The Quality Assurance Program will be viable, requiring management approval, and the program encompasses specific requirements stated in the package approval for use, and general radiation safety and shipping requirements.
- c. Manufacturer's certifications will be requested and maintained on all N.R.C. Type "B" packages manufactured and procured after January 1, 1979.

10.3 DOCUMENT CONTROL:

- a. Packaging, shipping, inspection and handling instru-

"APPENDIX RS-5-1"10.3 DOCUMENT CONTROL: (continued)

ctions from the manufacturers shall be maintained for each model Type "B" package.

- b. The Radiation Safety Officer (RSO) shall insure that the shipment and transportation of Type "B" packages is conducted in accordance with the above documents.

10.4 HANDLING, SHIPPING, TRANSPORTATION AND STORAGE:

- a. Radiography personnel will handle, ship, transport and store radioactive packages in accordance with the procedures in Section 4.0.
- b. Radiography personnel will determine the completeness of package inspections and presence of manufacturer's certificates before shipment.

10.5 INSPECTION, SURVEYS AND MAINTENANCE REPORTS:

- a. Inspection, surveys and maintenance reports on Type "B" packages will be made in accordance with Section 4.0 procedures.
- b. Quarterly inspection and maintenance of Type "B" packages will be performed by the Radiation Safety Officer (RSO) as outlined in Section 7.0.

10.6 QUALITY ASSURANCE RECORDS:

- a. Utilization logs, shipment records, package surveys, and quarterly inspection records will be maintained as specified in Sections 4.0 and 7.0.
- b. Training records are maintained in accordance with Section 5.0.
- c. Equipment and package, procedures and instructions are maintained by the R.S.O.

10.7 AUDITS:

- a. Quarterly audits of the entire Radiation Safety Program are performed in accordance with Section 6.0.



"APPENDIX RS-5-1"

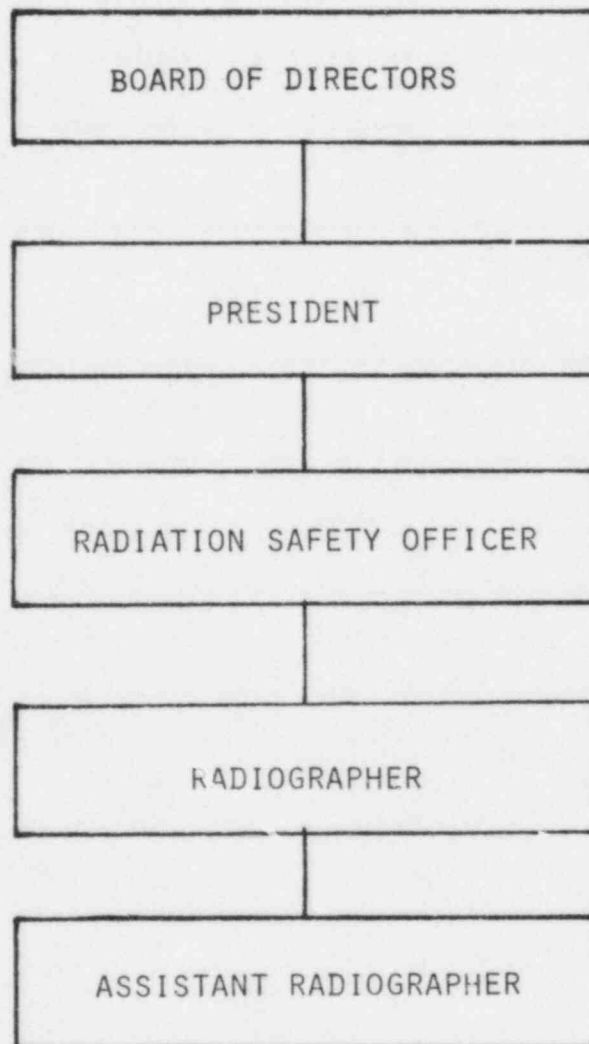
10.7 AUDITS: (continued)

- b. The quarterly audits include the necessary checks on the Quality Assurance Program as outlined in Section 7.0.
- c. Any deficiencies revealed by the audits are corrected in accordance with Section 7.0.



"APPENDIX RS-5-1"

"ORGANIZATIONAL CHART"





NORTH AMERICAN INSPECTION, INC.

P.O. BOX 88

FORM: RS-5-1

LAURYS STATION, PA. 18059

## 'RECORD OF PERSONNEL CERTIFICATION'

RADIOGRAPHER-RADIOGRAPHER ASSISTANTS

EMPLOYEE \_\_\_\_\_ S.S. # \_\_\_\_\_ / /

ADDRESS \_\_\_\_\_ CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

I. EDUCATION  
BACKGROUND

(1) SCHOOL \_\_\_\_\_

(2) SCHOOL \_\_\_\_\_

(3) SCHOOL \_\_\_\_\_

II. TECHNICAL  
TRAINING

(1) SCHOOL \_\_\_\_\_

(2) SCHOOL \_\_\_\_\_

(3) SCHOOL \_\_\_\_\_

III. PREVIOUS  
CERTIFICATION

(1) METHOD \_\_\_\_\_ DATE \_\_\_\_\_ COMPANY \_\_\_\_\_

(2) METHOD \_\_\_\_\_ DATE \_\_\_\_\_ COMPANY \_\_\_\_\_

(3) METHOD \_\_\_\_\_ DATE \_\_\_\_\_ COMPANY \_\_\_\_\_

(4) METHOD \_\_\_\_\_ DATE \_\_\_\_\_ COMPANY \_\_\_\_\_

IV. WORK EXPERIENCE \_\_\_\_\_

VISION TEST - DATE \_\_\_\_\_ TYPE \_\_\_\_\_

METHOD OF EXAMINATION: WRITTEN ( ) PRACTICAL ( ) ORAL ( ) OTHER \_\_\_\_\_

EXAMINATION GRADES: WRITTEN \_\_\_\_\_ PRACTICAL \_\_\_\_\_ ORAL \_\_\_\_\_ OTHER \_\_\_\_\_

CERTIFICATION: I certify that the information contained in I thru IV above is true and accurate. I understand that the presentation of false information concerning my qualifications as Radiographer or Radiographer Assistant will cause immediate termination of my employment for reasons of falsifying individual personal qualification documents.

\_\_\_\_\_  
RADIOGRAPHER\_\_\_\_\_  
DATE\_\_\_\_\_  
ASSISTANT RADIOGRAPHER\_\_\_\_\_  
DATE\_\_\_\_\_  
RADIATION SAFETY OFFICER (RSO)\_\_\_\_\_  
DATE



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION I  
631 PARK AVENUE  
KING OF PRUSSIA, PENNSYLVANIA 19406

Docket No. 030-20982  
CAL 84-22

License No. 37-23370

North American Inspections, Inc.  
ATTN: Robert K. Shumway  
President  
P. O. Box 88  
Laurys Station, Pennsylvania 18059

Gentlemen:

This refers to the inspection conducted on October 18 - 19, 1984 by Mr. J. Davis and Mr. J. McFadden of this office at your facility at 3906 Main Street, Laurys Station, Pennsylvania and at a field site in Bethlehem, Pennsylvania. This also refers to the telephone conversation between Mr. J. Joyner of my staff and Mr. J. Guthrie of your staff on October 26, 1984 regarding the radiation levels outside your Laurys Station, Pennsylvania facility.

Based on this telephone conversation, we understand that you will cease using your facility at 3906 Main Street, Laurys Station, Pennsylvania for industrial radiography until we conduct our enforcement conference with you on November 14, 1984.

If our understanding of your planned actions, as described above, is not in accordance with the actions being implemented, please contact this office by telephone and in writing within 24 hours of your receipt of this letter.

Sincerely,

Thomas T. Martin, Director  
Division of Engineering and  
Technical Programs

cc:  
Public Document Room (PDR)  
Nuclear Safety Information Center (NSIC)  
Commonwealth of Pennsylvania

8411130570



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION I  
631 PARK AVENUE  
KING OF PRUSSIA, PENNSYLVANIA 19406

08 NOV 1984

Docket No. 30-20982

License No. 37-23370-01

North American Inspection, Inc.  
ATTN: Robert K. Shumway  
President  
P. O. Box 88  
Laurys Station, Pennsylvania 18059

Gentlemen:

Subject: Inspection No. 30-20982/84-01

This refers to the routine safety inspection conducted Mr. J. Davis and Mr. J. McFadden of this office on October 18 and 19, 1984 of activities authorized by NRC License No. 37-23370-01 and to the discussions of our findings held by Mr. Davis and Mr. McFadden with yourself and members of your staff at the conclusion of the inspection, and to a subsequent telephone discussion between yourself and Mr. J. Joyner on October 25, 1984.

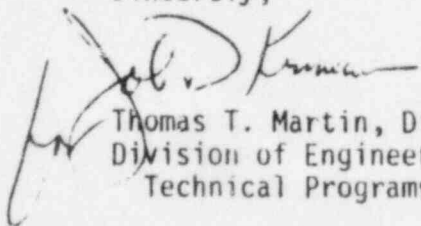
Areas examined during this inspection are described in the NRC Region I Inspection Report which is enclosed with this letter. Within these areas, the inspection consisted of selective examinations of procedures and representative records, interviews with personnel, and observations by the inspector.

As discussed during the telephone conversation between yourself and Mr. Joyner the apparent violations identified during this inspection will be discussed at an Enforcement Conference at our office in King of Prussia, Pennsylvania at 10:00 a.m., November 14, 1984. We understand that you will attend this meeting with members of your staff. You should be prepared to discuss the causes of these apparent violations and your proposed corrective action. Enforcement action for these violations will be considered following the Conference. The NRC Enforcement Policy is described in Appendix C of 10 CFR Part 2, a copy of which is enclosed for your information.

In accordance with 10 CFR 2.790(a), a copy of this letter and the enclosure will be placed in the NRC Public Document Room.

No reply to this letter is required. Your cooperation with us in this matter is appreciated.

Sincerely,

  
Thomas T. Martin, Director  
Division of Engineering and  
Technical Programs

Enclosure: NRC Region I Inspection Report No. 30-20982/84-01

84-1111-15220

U.S. NUCLEAR REGULATORY COMMISSION  
REGION I

Report No. 84-01

Docket No. 030-20982

License No. 37-23370-01

Priority 1

Category C1

Licensee: North American Inspection, Inc.  
P. O. Box 88  
Laurys Station, Pennsylvania 18059

Facility Name: North American Inspection, Inc.

Inspection At: Licensee's Facilities at 3906 Main Street, Laurys Station,  
Pennsylvania and a field location at the Bethlehem Steel Plant,  
Bethlehem, Pennsylvania

Inspection Conducted: October 18-19, 1984

Inspectors: J. Davis  
J. Davis Radiation Specialist

11-8-84  
date

J. McFadden  
J. McFadden Radiation Specialist

11-8-84  
date

Approved by: J. Kinneman  
J. Kinneman, Chief, Nuclear Material  
Section A

11-8-84  
date

Inspection Summary: Routine, unannounced inspection of radiation safety pro-  
gram on October 18 and 19, 1984

Areas Inspected: Management control systems, field site inspection, training and qualifications of personnel, licensee internal audits, operating and emergency procedures, use of materials, facilities and equipment, personnel monitoring control, leak tests, surveys, and transportation.

Results: Ten apparent violations were identified: Conduct of radiography without the personal supervision of a radiographer (paragraph 4); Conduct of radiography without direct surveillance of a high radiation area (paragraph 3); Excessive radiation levels in an unrestricted area (paragraph 3 and 7); Failure to have an alarm in the permanent radiographic installation (paragraph 7); Failure to survey the guide tube after completing the radiographic exposure (paragraph 3); Failure to maintain current utilization logs (paragraph 6); Failure to affix a D.O.T. Radioactive Yellow III label to exposure devices during transit (paragraph 10); Failure to placard a vehicle containing a Yellow III package (paragraph 10); Failure to secure exposure devices while in transit (paragraph 10); Failure to provide the NRC with a copy of termination reports (paragraph 8).

5411110223

North American Inspection, Inc.

2

cc w/encls:  
Public Document Room (PDR)  
Nuclear Safety Information Center (NSIC)  
Commonwealth of Pennsylvania

## DETAILS

### 1. Persons Contacted

#### Principal Licensee Employees

- \*R. K. Shumway, President
- \*J. Guthrie, Operations Manager
- \*G. Weaver, Assistant Radiation Safety Officer
- Individual A
- Individual B
- Individual C
- Individual D

\*Denotes those present at the exit interview.

### 2. Organization Facility and Equipment

Mr. R. Shumway is the President and Radiation Safety Officer for the licensee. Mr. J. Guthrie, the Operations Manager, is also an Assistant Radiation Safety Officer and reports directly to Mr. Shumway. Mr. G. Weaver is another Assistant Radiation Safety Officer and also reports to Mr. Shumway. The radiographers report directly to Mr. Guthrie.

At the time of the inspection, the licensee possessed five iridium-192 sources ranging in activity from 20 to 100 curies in a Technical Operation Model 660 and Gamma Industries Model Gamma Century S exposure devices. In addition, they had one cobalt-60 source of 90 curies in a Gamma Industries Model Gammaatron 100A exposure device.

At the present time, they employ five crews of one or more radiographers. The licensee representative stated that there were eight radiographers, one radiographer's assistant and one trainee. Two iridium exposure devices are normally stored inside of their portable dark room at the licensee's facilities at 3906 Main Street, Laurys Station, Pennsylvania. The cobalt exposure device is stored inside the licensee facilities at the same address. The three remaining exposure devices are stored inside the portable dark rooms on their job sites at Greenwood, New York, at Curry, Pennsylvania, and at Glenrock, Pennsylvania.

No violations were identified.

### 3. Field Site Inspection

The inspectors observed the radiographic operations at a field site location on the property of Bethlehem Steel Co., Bethlehem, PA. In Bethlehem's Old World War II Building (Project #17), the licensee was performing radiographic operations using both cobalt and iridium sources at either end of the building. Individual B was setting up, cranking out and rewinding the iridium source, and surveying the exposure device. Individual A was in the mobile dark room developing film. Individual C was

setting up, cranking out and rewinding the cobalt source, and surveying the exposure device. Individual D was assisting Individual C. During the course of the inspection, Individual A exchanged jobs with Individual B. Individual B developed film in the dark room and Individual A acted as the radiographer with the iridium source.

The inspectors observed that all 4 individuals had Landauer film badges and self-reading pocket dosimeters (0 to 200 mr) affixed to the belt loops of the pants. The dosimeter readings were in the range of 0-20 mr for all the individuals. They all stated that they rezero the dosimeters at the start of each shift. There were two Ludlum survey meters Model 6 available. The meter used with the iridium source was calibrated on August 15, 1984 by the manufacturer; the meter used with the cobalt source was calibrated on July 25, 1984 by the manufacturer.

The inspectors observed that both Individuals B and C did not survey up the guide tube after the exposure was completed. This observation was made on several different exposures for each of these two individuals. It was noted that Individual A did survey the guide tube when he completed an exposure.

The inspectors surveyed the radiation levels in the building adjacent to the end of the building where the cobalt exposures were taking place. Radiation levels of 200 millirem per hour were measured approximately two feet from the wall while the cobalt source was in the exposed position. It was noted that the licensee did not survey this area in the adjacent building and that there was not continual surveillance by the individuals performing radiography to protect against unauthorized entry into this high radiation area. In addition, there were no barriers erected around the iridium or cobalt exposure areas.

# 10 The finding that individuals performing radiography did not survey the guide tube after each exposure is an apparent violation of 10 CFR 34.43(b).

# 11 The finding that the radiographer failed to maintain direct surveillance to protect against unauthorized entry into the high radiation area in the building adjacent to the cobalt exposure area is an apparent violation of 10 CFR 34.41.

# 12 The finding that an exposure rate greater than 200 mr/hr existed in an unrestricted area is an apparent violation of 10 CFR 20.105(b).

#### 4. Training and Qualification of Personnel

The inspector reviewed the licensee training program. Individual A has taken the radiographic examination to be a Level II radiographer. Individual B has taken the radiographic examination to be a Level I radiographer (radiographer's assistant). Individual C has had 40 hours

of radiation training, but has not passed the radiographer's assistant examination. Individual D has had 8 hours of training and is considered to be a helper or trainee. Both the Assistant RSO and Individual A consider Individuals B and C to be radiographers's assistants and Individual D to be a helper or trainee.

The finding that two individuals (Individuals B and C) were acting as radiographers prior to completing a demonstration of competence to use the radiography equipment and without demonstration of their understanding of the operating instructions by successfully completing a written test is an apparent violation of 10 CFR 34.31.a.

#### 5. Licensee Internal Audits

The licensee representative stated that they have not conducted unannounced field inspections of the four individuals who were performing radiography at the Bethlehem Plant field site. Section 6.0 "Internal Management Review Procedures and Controls," attached to their application requires quarterly audits by the RSO such that each radiographer and assistant is inspected at least annually. However, since the license has only been in effect for the last six months, the licensee still has six months to audit each radiographer and radiographer's assistant who were involved in performing radiography at the Bethlehem Steel Plant.

No violation of NRC rules, regulations or license conditions were identified.

#### 6. Operating and Emergency Procedures

Individual A, B, C and D each had a copy of the Operating and Emergency (O&E) Procedures, Parts 19, 20 and 34 at the field site. In the training file each individual had signed a certification that he has the O&E and understands the manual.

The inspectors reviewed the utilization log. This log contains information describing the exposure device, the radiographer assigned, plant site, and date out and date in with radiographer initials. It was noted that the cobalt-60 exposure device was not in storage and not entered on the log. A licensee representative stated the source was at a field site (Bethlehem Steel), but agreed that information was not indicated in the log. It was also noted that, if a source was assigned to a field site and was replaced, the utilization log did not indicate the disposal of the old source and the replacement of the new source.

The inspectors reviewed the quarterly inventories and found them to contain all of the required information. Each source was accounted for on the inventory.

The finding that the cobalt exposure device was at a field site and an appropriate entry was not on the utilization log is an apparent violation of 10 CFR 34.27.

## 7. Use of Materials, Facilities and Equipment

The licensee's facility where test plates, vessels, etc., are radiographed is a cement block building with three overhead doors. One third of the building is divided from the remainder by a cement block wall with an open passway in the middle of the cement block. The north area of the building is partially below grade. This building is approximately 44 feet from a restaurant to the east and 100 feet from a residential area to the north.

The licensee's "Daily Radiation Survey Report," dated October 4, 1984, indicates that the licensee was radiographing weld plates using 100 curies of iridium-192 in this facility. The survey stated that there was "2 mr" at a boundary which existed at 200 feet from the source in all four directions. On the survey report, it was noted that signs were posted, that the radiographer had direct surveillance over the source, and that a tungsten collimator was used.

The finding that a radiation level in excess of 2 millirem in any one hour was present in an unrestricted area (restaurant) is an apparent violation of 10 CFR 20.105.

A licensee representative stated that only the cobalt exposure device was stored in this building. All of the locked iridium exposure devices are stored inside a pick-up truck with the door locked. The exposure devices are not placed inside a shielded vault when they are not in use.

The building which is intended for the performance of radiography and in which radiography is regularly performed is not equipped with either a visible or audible warning signal to warn of the presence of radiation.

The finding that neither a visible nor audible warning signal activated by radiation was installed in the permanent radiographic installation is an apparent violation of 10 CFR 34.29.(b)

The inspectors reviewed the calibration records for the survey meters. It was noted that each meter had a 2-1000 millirem per hour range and they were calibrated at 90 day intervals. Meters observed in the field and in one of the dark rooms were operable.

## 8. Personnel Monitoring Control

The inspectors observed that all four individuals performing radiography in the field were wearing a film badge and self-reading pocket dosimeter with a range of 0-200 mR. Review of the records indicated that each individual entered their daily exposures from the pocket dosimeters.

The inspectors reviewed the exposure records of all individuals working for the licensee since April 1984. The licensee is using Landauer film badges processed monthly. The highest exposure was 530 millirem per month and less than 1000 millirem for the quarter. One individual was

noted to be 18 years old. Review of records indicated that he did not receive occupational exposure prior to his 18th birthday and that his year-to-date exposure is 240 millirem. All exposures were within the limits specified in 10 CFR 20.101.

The license was issued on April 5, 1984; therefore, no annual report to the NRC has been required.

A licensee representative stated that four radiographers had terminated employment. The licensee sent termination reports to the individuals, but did not include a copy to the NRC.

The finding that the licensee did not furnish a copy of individual radiation exposure reports to the NRC is an apparent violation of 10 CFR 20.408(b).

9. Leak Test

All leak tests are being performed using the Gamma Industries KOWIPE leak test kit. The cobalt and iridium sources have been leak tested within the 6 month interval as required by the license condition. All sources had less than 0.005 microcuries of removable contamination.

No violations of NRC rules, regulations or license conditions were identified.

10. Transportation

The iridium exposure device was being stored inside the portable dark room on a pick up truck. A licensee representative stated this source was used the previous evening. The door to the dark room was locked. No signs or placards were observed on the truck or portable dark room.

The iridium source was inside a Tech/Ops Model 660 exposure device, which is a Type B container (USA/9033/B(U)). The inspector, using the licensee's survey meter, a Ludlum Model 6, calibrated on 7-25-84, measured the radiation levels at contact and 3 feet from the surface. Measurement at the surface was 60 mr/hr and at 3 feet was in the range of 1-2 mr/hr. Since this package exceeded 50 mr/hr at contact and 1 mr/hr at 3 feet, a DOT Radioactive Yellow III label was required on the exposure device (package). No DOT label was on the package. A licensee representative stated that he was unaware that such a label had to be affixed to the package.

The licensee representative stated that they only placard the vehicle when they transport the cobalt exposure device. He stated that he was not aware that, when the package required a DOT Radioactive Yellow III label, the vehicle had to be placarded. Since the iridium exposure device required a Radioactive Yellow III label, the vehicle also had to be placarded.

The exposure device was wedged in the dark room to prevent movement; however, it was not adequately secured to prevent shifting while in transit.

The finding that a DOT Radioactive Yellow III label was not affixed to the exposure device while in transit is an apparent violation of 10 CFR 71.5(a) with regard to 49 CFR 172.403(c).

The finding that the vehicle was not placarded while transporting a Radioactive Yellow III package is an apparent violation of 10 CFR 71.5(a) with regard to 49 CFR 172.504(a) and Table I footnotes of that section.

The finding that the radioactive exposure device was not secured in order to prevent shifting while in transit is an apparent violation of 10 CFR 71.5(a) with regard to 49 CFR 173.448(a).

11. Exit Interview

The inspectors met with the licensee representatives (denoted in Paragraph 1) at the conclusion of the inspection on October 19, 1984. The inspectors summarized the purpose and scope of the inspection and findings. At no time during the course of this inspection was any written material provided to the licensee by the inspectors.

# North American Inspection, Inc.

P.O. Box 88  
Laurys Station, PA 18059  
(215) 262-1100



November 13, 1984

United States Nuclear Regulatory Commission  
Region 1  
631 Park Avenue  
King of Prussia, PA 19406

Attention: Mr. Thomas T. Martin, Director - Division of Engineering and Technical Programs

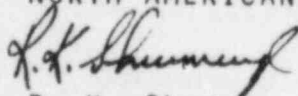
Subject: Field Audit - Non-Compliance Report of October 18, 1984  
No. 84-01 030-20982  
Inspectors: Mr. J. Davis, Mr. J. McFadden

Dear Mr. Martin:

This proposal will serve as NORTH AMERICAN INSPECTION, INC.'s program of correctional measures following receipt of U.S. N.R.C. letter of non-compliance dated November 8, 1984.

The material and attachments included herein contain the responses to the ten (10) apparent violations listed in the U.S. N.R.C. Region 1 Inspection Report No. 030-20982/84.01. It should be considered an adjunct to the Enforcement Conference at the U.S. N.R.C. Region 1 Headquarters on November 14, 1984.

Respectfully submitted,  
NORTH AMERICAN INSPECTION, INC.

  
R. K. Shumway  
President

RKS/lgo

CC: J.E. Guthrie  
G.W. Weaver

## NON DESTRUCTIVE EXAMINATION SERVICES

Radiography • Magnetic Particle • Ultrasonic • Penetrants • Leak Testing • Eddy Current • Visual  
Welder Qualification • Inspection Management • Film Interpretation • Quality Assurance Overview • Expediting  
• FIELD • SHOP • LABORATORY •

84-01-200328

**North American Inspection, Inc.**CORRECTIVE ACTION TAKEN PER VIOLATION

## REFERENCE ARTICLE 1:

- A. For clarification purposes in Article 3:
- Individual A - Kerry Frack, Radiographer
  - Individual B - Donna Frack, Assistant
  - Individual C - Bryan Shumway, Assistant
  - Individual D - Kenneth Frack, Trainee

## REFERENCE ARTICLE II:

- A. No violations were identified

## REFERENCE ARTICLE III:

- A. Violation of 10 CFR 34.43(b)
1. Both Radiographer Assistants (individuals B & C) were re-instructed in the proper method to survey an exposure device after securing it. Required to re-read 10 CFR 34.43 (b).
- B. Violation of 10 CFR 34.41
1. One Assistant Radiographer was assigned to visually monitor the area in question during the time that exposure was taking place. This would permit no unauthorized personnel from entering the area.
- C. Violation of 10 CFR 20.105 (b)
1. New boundaries were established and positioning of exposure device was altered to compensate for the high levels of radiation at the site. Also, (B) above was implemented in this violation.

## REFERENCE ARTICLE IV:

- A. Violation of 10 CFR 34.31 (a)
1. All Assistant Radiographers and Radiographers have been, and will be, designated by the standard test method as prescribed in NORTH AMERICAN INSPECTION, INC.'s Quality Control Manual - Part II -RT-PQ-1-A, and by the guidelines established in 10 CFR 34 subpart 34.31-training, which is an integral part of our Operating and Emergency Procedures Manual. All the above material has been approved by the U.S. N.R.C. in NORTH AMERICAN INSPECTION, INC.'s original application for licensing.

**North American Inspection, Inc.**

## REFERENCE ARTICLE IV (cont.)

## A. Violation of 10 CFR 34.31 (a) (cont.)

2. In addition to the standard test method, each employee shall have completed the following:
  - a. Vision examination as prescribed in paragraph 2.0, section PQ-1-A of the Quality Control Manual.
  - b. Assistant Radiographers will have a minimum of three (3) months of the job training.
  - c. Successful completion of NORTH AMERICAN INSPECTION, INC.'s "Radiographic Procedures" examination.
  - d. See attachment 1.
    1. Radiographic Procedure Test
    2. Radiographers Test 1 and 2
    3. Practical Examination Sheet
    4. Vision Certification
3. As referenced in Article IV of the N.R.C. report, Individual C, who had not taken the Radiographer's Assistant examination, has completed same at this writing.
4. Both individual B and C have also demonstrated a practical exam of their knowledge of application of theory.
5. Regarding individual D, he is a trainee and was only utilized at the site to help move the material being radiographed. Individual D had proper personal monitoring, but had no part in the radiographic process.

## REFERENCE ARTICLE V

- A. No violations were identified
- B. Let the following material and attachments serve as an adjunct to this article.
  1. The Radiographers and Radiographer's Assistants presently under the employment of NORTH AMERICAN INSPECTION, INC. have had current Field Inspection/Audit Reports performed unannounced.
  2. These audits will be performed at no more than three (3) month intervals.
  3. See attachment 2.

## REFERENCE ARTICLE VI

## A. Violation of 10 CFR 34.27

## 1. Utilization Log update - Storage

More stringent controls have been implemented in the daily usage of the Utilization Log. Additional information is being provided that was not used previously. If a change is made in sources in the field, this change will be reflected in the Log. Also, Mr. Guthrie or Mr. Weaver will check the log every morning to assure it is complete.

2. See Attachment 3.

## REFERENCE ARTICLE VII

## A. Violation of 10 CFR 20.105

1. Radiographic exposure in the facility at 3906 Main St., Laurys Station, PA was done only in emergency situations. All exposures were made after the hour of midnight.
2. Because of the configuration of the building in Laurys Station, PA, all exposures were made in the blind corner of the third (3rd) bay of the shop. This area is approximately 4.5 feet underground on two walls. There is also the addition (in this corner) of an 8 inch cinder block wall.
3. In reference to the Highway Restaurant mentioned in the Article VII violation:
  - a. The restaurant building located approximately 44 feet south-east of the shop.
  - b. From the actual physical exposure area in the shop, there is a total linear footage of 91 feet to the rear of the restaurant.
  - c. The restaurant building is approximately      feet below grade from the floor of the facility at the shop.
  - d. The rear of the restaurant is also underground, with the exception of 3 feet. The exposed part of the restaurant is comprised of 8 inch cinder block. The area immediately inside is for storage, and there is no human occupancy. It is an additional 9 feet and one (1) more wall to the consumable area.
  - e. The total distance in linear footage from exposure to public is 100 feet.
  - f. In addition, there are two (2) 8" inch cinder block walls in the shop facility between the source and the public.

*North American Inspection, Inc.*

## REFERENCE ARTICLE VII (cont.)

## A. Violation of 10 CFR 20.105 (cont.)

## 3. Highway Restaurant (cont.)

g. There have been no exposures taken during the operation of the restaurant.

## 4. In reference to the residential area to the north:

a. Total distance is 100 feet.

b. Exposures are made at a depth of 4.5 feet below grade facing this area. Plus the 8 inch cinder block wall.

5. The "Daily Radiation Survey Report" dated October 4, 1984 which stated a 2 MR boundary at two hundred (200) feet in all directions was in error. The perimeter survey was placed on record based on an open, collimated exposure. Due to the configuration of the facility and the location of the actual exposure, this would not be accurate.

6. Utilizing Iridium-192 as the only source of radiation with a maximum capacity of one hundred (100) curies, there seems no way possible there can be a hazardous level of radiation in either case.

## B. Violation of 10 CFR 34.29 (b)

1. Neither a visible nor an audible warning system has been installed at the facility at 3906 Main St., Laurys Station, PA.

a. Because of the infrequent use of it as an exposure facility.

b. Because of the uncertainty of retaining the facility as the headquarters for N.A.I.I.

c. All isotope exposure work has been ceased at the facility until such time as the facility is properly prepared or the location is moved.

C. See Attachment 4

## REFERENCE ARTICLE VIII

## A. Violation of 10 CFR 20.408

1. The report to the Director of Management and Program Analysis, U.S. N.R.C. Washington, D.C. 20555

2. Report to terminated employee

3. Form and documentation was completed for section (1) above pursuant to 10 CFR 20 sub-part 20.408 (b) and section (2) above pursuant to 10 CFR 19 sub-part 19.13.

**North American Inspection, Inc.**

## REFERENCE ARTICLE VIII (cont.)

## A. Violation of 10 CFR 20.408 (cont.)

4. See attachment 5.

## REFERENCE ARTICLE IX

- A. No violations were identified.

## REFERENCE ARTICLE X

- A. Violation of 10 CFR 71.5 (a) with regard to 49 CFR 172.403(c).
  1. The yellow III label was not affixed to the projector, but is being affixed to the source storage container where applicable.
- B. Violation of 10 CFR 71.5 (a) with regard to 49 CFR 172.504(a).
  1. All placarding is being used when transporting yellow III material.
  2. "Caution Radioactive Material" signs on all darkroom and storage facilities.
- C. Violation of 10 CFR 71.5 (a) with regard to 49 CFR 173.448(a).
  1. Permanently attached storage containers are presently being installed in all mobile units.
    - a. These storage boxes are constructed of .750 inch thick plywood, and will be lined with .125 or .250 lead sheeting if needed to maintain radiation levels. There is a concealed hinge and locking clasp on the lid. The boxes will be permanently mounted by bolting to the interior of the darkroom.

## REFERENCE ARTICLE X - ADDENDA 10 CFR 71.5

It has been NORTH AMERICAN INSPECTION, INC.'s contention that a vehicle must be placarded if and only if the Transport Index is such that it falls under a yellow III classification. Since the survey is required to be taken at a distance of three (3) feet, and the source is in its storage container in the darkroom, if a level of 1.1 MR to 10.0 MR maximum is not recorded, placarding would not be necessary. If a reading of 50.0 MR to 100.0 MR is recorded at the surface, the container should be labeled "Radioactive Yellow III", and it was not necessary to placard the mobile unit darkroom while in transit.

The above statement applies, in the particular instance, to the transporting of Iridium-192 projectors to and from temporary job sites.

Part 5 Section 7.0 - Transporting Radioisotopes by way of N.A.I.I. authorized vehicles.

SUPPLEMENTAL ADDENDA

## ARTICLE I - Posting of Notice of Accessibility to Records.

- A. All appurtenant records pertaining to the regulations in 10 CFR-19-20-34; the license; license conditions or documents incorporated into a license by reference, and amendments thereto: The operating procedures applicable to licensed activities; and any notice of violation involving radiological working conditions, proposed imposition of civil penalties, or order issued pursuant to subpart B of part 2 of this chapter, and any response from the licensee.
- B. This notice has been posted in the work area of the central office at 3906 Main Street, Laurys Station, PA and it has been made a part of NORTH AMERICAN INSPECTION, INC.'s mobile facilities.
- C. See Attachment 6.

North American Inspection, Inc.

SUPPLEMENTAL ADDENDA

ARTICLE II - Radiation Survey Reports

- A. Based on the data required and the information provided on our Survey Report, we (N.A.I.I.) feel that for most radiographic operations it is complete. However, should a particular exposure sequence differ from the norm, an additional statement has been added that would require a sketch of the necessary perimeters and deviations, to be recorded on the back of the above report.
- B. Statement: "Any variations in physical surveys should be noted and sketched on the reverse side of this form."
- C See Attachment 7.

*North American Inspection, Inc.*

SUMMARY

All the aforementioned violations have either been corrected or are in the process of being corrected. The infractions have been reviewed with all NORTH AMERICAN INSPECTION, INC. personnel, and every effort is being put forth to ammend them. It is the contention of the company that the audit was conducted without reservation, and that some important mis-interpretations were brought to our attention.



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION I  
63 PARK AVENUE  
KING OF PRUSSIA, PENNSYLVANIA 19406  
FEB 12 1985

Docket No. 30-20982

License No. 37-23370-01

North American Inspection, Inc.  
ATTN: Robert K. Shumway  
President  
P.O. Box 88  
Laurys Station, Pennsylvania 18059

Gentlemen:

Subject: Inspection No. 30-20982/85-01

This refers to the routine safety inspection conducted by Mr. F. Costello and of this office on January 10, 1985, at your facility in Laurys Station, Pennsylvania and by Mr. J. McFadden of this office on January 16, 1985, at a field site in Lebanon, New Jersey, of activities authorized by NRC License No. 37-23370-01 and to the discussions of our findings held by Mr. Costello with yourself and Mr. J. Guthrie of your staff at the conclusion of the inspection.

Areas examined during this inspection are described in the NRC Region I Inspection Report which is enclosed with this letter. Within these areas, the inspection consisted of selective examinations of procedures and representative records, interviews with personnel, and observations by the inspector.

Enforcement action will be provided in separate correspondence.

In accordance with 10 CFR 2.790(a), a copy of this letter and the enclosure will be placed in the NRC Public Document Room.

No reply to this letter is required. Your cooperation with us in this matter is appreciated.

Sincerely,

Thomas T. Martin, Director  
Division of Radiation Safety and  
Safeguards

Enclosure: NRC Region I Inspection Report No. 30-20982/85-01

cc w/encl:  
Public Document Room (PDR)  
Nuclear Safety Information Center (NSIC)  
Commonwealth of Pennsylvania

4502190082

U.S. NUCLEAR REGULATORY COMMISSION  
REGION I

Report No. 30-20982/85-01

Docket No. 30-20982

License No. 37-23370-01

Priority 1

Category C1

Licensee: North American Inspection, Inc  
P.O. Box 88  
Laurys Station, Pennsylvania 18059

Facility Name: North American Inspection, Inc.

Inspection At: Licensee's Facilities at 3906 Main Street, Laurys Station,  
Pennsylvania and a field location near Lebanon, New Jersey

Inspection Conducted: January 10 and 16, 1985

Inspectors: Franis M. Costello  
F. Costello, Senior Radiation Specialist

February 11, 1985  
date

J. McFadden  
J. McFadden, Radiation Specialist

2-11-85  
date

Approved by: J. Kinneman  
J. Kinneman, Chief, Nuclear Material  
Section A

2-11-85  
date

Inspection Summary: Special unannounced inspection of radiation safety program  
on January 10 and 16, 1985.

Areas Inspected: Training, audits, survey records, utilization logs, transpor-  
tation, use of Laurys Station facility, and a field site inspection.

Results: Two apparent violations were identified: Failure to provide required  
practical performance examination to a radiographer (paragraph 2); failure to  
secure radiography source in shielded position after each exposure (paragraph  
8).

8502190088

## DETAILS

### 1. Persons Contacted

- \*R. K. Shumway, President
- \*J. Guthrie, Operations Manager
- J. Maslowski, Radiographer
- S. Simpson, Radiographer
- B. Shumway, Radiographer Assistant

Denotes those present at the exit interview.

### 2. Training

The inspector reviewed the training records for radiography personnel who were employed at a job site in Monroeville, Pennsylvania, where the licensee performed radiography from December 7 to December 20, 1984. The inspector noted that written tests and records of practical examinations were available for all but two of the eight individuals who had been hired for that job. The licensee president contacted these individuals' supervisor in the Pittsburgh area and stated to the inspector that this supervisor had assured him that tests for these individuals were available in the supervisor's office. The licensee president stated that copies of the Pittsburgh training records would be sent to the main office in Laurys Station for inclusion in the training file.

The inspector asked the licensee representatives how they complied with Section 5.3 of the supplement to their application which requires that previously trained radiographers submit verification of their experience and submit evidence of the completion of a recognized formal training program. Licensee representatives stated that, in some cases they had personal knowledge of this experience and training and, in other cases, they relied on the word of the individuals and on the observation of their work practices. The inspector determined that, of the eight individuals working at the Monroeville job site, licensee representatives had personal knowledge of the experience and training of three individuals. For the other individuals, the licensee representatives stated that each was interviewed to determine the extent of the individual's training and experience. The inspector was shown the notes made by licensee representatives which summarized the results of these interviews. The inspector expressed his concern that there was no independent verification of the training and experience of these individuals. The licensee president stated that a procedure would be developed to verify that the training and experience of new hires.

The inspector reviewed the training records for selected radiographers who work out of the Laurys Station office. He noted that one radiographer had not completed practical performance examination prior to his performing as a radiographer on December 28, 1984 and thereafter.

The failure to require an individual to complete a practical performance examination before he was permitted to perform radiography constitutes an apparent violation of Condition 17 of License No. 37-23370-01.

3. Audits

The inspector reviewed the records of licensee internal audits and discussed these audits with licensee representatives. Licensee representatives stated, and the records indicated, that each radiographer and radiographer's assistant who were involved in radiography had been audited during the fourth quarter of 1984.

Licensee representatives stated that Mr. S. Hopkins, who had assisted in the preparation of their original license application, would conduct an independent review of the licensee's radiation safety program during the week of January 21-25, 1985.

No violations were identified.

4. Survey Records

The inspector reviewed selected records of surveys performed by radiographer working out of the Laurys Station office and at the Monroeville, Pennsylvania, job site. He noted numerous instances in which the survey records indicated "2mR/hr" in all directions at the same distance over an extended period of time. The survey records did not appear to reflect the changing radiological conditions which would be expected for the varying field conditions. These field conditions included the use of directional collimation and the performance of radiography in a ditch. Licensee representatives acknowledged that greater review of these records was necessary and stated that they would reemphasize to their radiographers the importance of recording accurate data on their survey records.

No violations were identified.

5. Utilization Logs

The inspector reviewed the licensee's storage facility utilization log and observed the radiography devices which were currently in storage. He noted that exposure device #2757, an iridium-192 exposure device, was recorded in the log as being in storage. The inspector noted, however, that the device was not in the storage vault. Licensee representatives stated that source utilization logs are individually maintained for each device. The inspector reviewed the utilization logs for device #2757 and noted that they indicated that the device was in the field. Licensee representatives stated that an error had been made in recording that this device had returned from the field and that greater attention would be given to ensuring the accuracy of the storage facility utilization log.

No violations were identified.

#### 6. Transportation

The inspector questioned what actions the licensee had taken to correct the violations of transportation requirements which had been identified during the October 19, 1984, NRC inspection. The licensee representatives stated that placards had been obtained for each vehicle and were being used while transporting radiographic exposure devices which required a Radioactive Yellow III label. The inspector observed proper placards on the sides of a licensee vehicle.

The licensee representatives stated that boxes had been installed in their vehicles to secure the radiographic exposure device to prevent shifting while in transit. The inspector observed that a box had been installed and secured to the floor of one of the licensee's vehicles.

Licensee representatives stated that Radioactive Yellow III labels were still not being affixed to radiographic exposure devices and stated their belief that the storage box inside the vehicle should be considered the "package" and should have this label affixed to it. The inspector questioned whether the licensee had affixed Radioactive Yellow III labels to any of the storage boxes. Licensee representatives stated that they had not yet done so because they were uncertain whether this practice would be acceptable to the NRC. The inspector stated that it was necessary that the required labelling be provided and licensee representative agreed to affix the label to the storage box when required, until they receive further guidance from the NRC on the acceptability of this practice.

No violations were identified.

#### 7. Use of Laurys Station Facility

The inspector observed that no radiography was taking place in the Laurys Station facility at the time of the inspection. Licensee representatives stated that no radiography had been conducted at this facility since the NRC Confirmatory Action Letter dated October 26, 1984.

No violations were identified.

#### 8. Field Site Inspection

Two radiographers and two trucks were inspected on January 16, 1985 on Route 22 near Lebanon, New Jersey. A local gas company was having an approximately 10-inch diameter pipeline laid along the roadside. Radiography of a pipeline weld was in progress at the start of the inspection. J. Maslowski was observed performing radiography; S. Simpson did not perform radiography during the inspection. The inspector reviewed the individuals' certification as Level II radiographers, the utilization logs and survey records. The inspector observed the performance of several radiographic exposures. He noted the use of personal monitoring equipment, survey meters and collimation. He also observed that the

radiographer surveyed the exposure device and guide tube after each exposure and provided direct surveillance to protect against unauthorized entry into a high radiation area. During the exposures, the inspector observed the proper placement of caution signs and that the radiographer surveyed the radiation levels in unrestricted areas. The inspector noted that the radiographer failed to secure the source in the shielded position after each exposure.

This failure constitutes an apparent violation of 10 CFR 34.22(a).

The inspector reviewed the licensee's compliance with DOT transportation requirements and observed the licensee's secured storage boxes inside trucks for transport of exposure devices and labeling of shipping containers. He noted that the shipping papers were completed properly.

9. Exit Interview

The inspector met with licensee representatives (denoted in paragraph 1) at the conclusion of the inspection on January 10, 1985. The inspector summarized the purpose and scope of the inspection. He expressed his concern that the licensee had not taken prompt actions to correct the DOT labeling violation identified during the October 19, 1984 inspection and to ensure that the survey records and utilization logs were being properly completed. Licensee representatives stated that they would take prompt actions with regard to these matters and that the individual who had not completed the required practical performance examination would complete this examination by January 12, 1985.



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION I  
631 PARK AVENUE  
KING OF PRUSSIA, PENNSYLVANIA 19406

Docket No. 30-20982  
License No. 37-23370-01  
EA 85-01

February 6, 1985

North American Inspection, Inc.  
ATTN: Robert K. Shumway  
President  
P.O. Box 88  
Laurys Station, Pennsylvania 18059

Gentlemen:

SUBJECT: NOTICE OF VIOLATION AND PROPOSED IMPOSITION OF CIVIL PENALTIES  
(NRC INSPECTIONS 84-01 AND 85-01)

This refers to the NRC safety inspection conducted on October 18-19, 1984 at your office in Laurys Station, Pennsylvania, and at a radiography field site in Bethlehem, Pennsylvania, of activities authorized by NRC License No. 37-23370-01. The report of the inspection was forwarded to you on November 8, 1984. During the inspection, ten violations of NRC requirements were identified. On November 14, 1984, we held an enforcement conference with you and members of your staff during which these violations, their causes, and your corrective actions were discussed.

Another NRC safety inspection was conducted on January 10 and 16, 1985, at, respectively, your office in Laurys Station, Pennsylvania, and a radiography field site in Lebanon, New Jersey. The report of this inspection will be forwarded to you by separate correspondence. During the inspection, two violations of NRC requirements were identified.

These twelve violations, which were identified during the two inspections conducted by the NRC of your licensed activities, are of significant concern because they collectively indicate that adequate oversight and control of the radiation safety program was not exercised. These violations demonstrate the need for improvements in management control over licensed activities to assure adherence to NRC requirements and the safe performance of work.

To emphasize the importance of adequate control of the radiation safety program, I have been authorized, after consultation with the Director, Office of Inspection and Enforcement, to issue the enclosed Notice of Violation and Proposed Imposition of Civil Penalties in the amount of Five Thousand Dollars (\$5,000) for the violations set forth in the enclosed Notice. The violations have been classified in the aggregate as a Severity Level III problem in accordance with the NRC Enforcement Policy, 10 CFR Part 2, Appendix C, as revised, 49 FR 8583 (March 8, 1984). The base civil penalty amount for a Severity Level III problem is \$5,000.

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

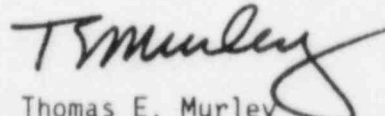
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You are required to respond to the enclosed Notice and, in preparing your response, you should follow the instructions specified in the Notice. In your response, you should address the commitment made during the January, 1985 inspection to have a consultant perform a complete evaluation of your radiation safety program. Your response should include (1) the name and qualifications of the individual; (2) the specific aspects of the program to be covered by the assessment; and (3) the schedule for completion of the assessment. You should also provide this office a copy of the assessment report upon completion of the assessment. Your reply to this letter and the results of future inspections will be considered in determining whether further enforcement action is appropriate.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice", Part 2, Title 10, Code of Federal Regulations, a copy of this letter and the enclosure will be placed in the NRC's Public Document Room.

The responses directed by this letter and the enclosed Notice are not subject to the clearance procedures of the Office of Management and Budget as required by the Paperwork Reduction Act of 1980, PL 96-511.

Sincerely,

  
Thomas E. Murley  
Regional Administrator

Enclosure: Notice of Violation and  
Proposed Imposition of Civil Penalties

cc w/encls:  
Public Document Room (PDR)  
Nuclear Safety Information Center (NSIC)  
Commonwealth of Pennsylvania

NOTICE OF VIOLATION  
AND  
PROPOSED IMPOSITION OF CIVIL PENALTIES

North American Inspection, Inc.  
Laurys Station, Pennsylvania

Docket No. 30-20982  
License No. 37-23370-01  
EA 85-01

An NRC inspection of activities authorized under NRC License No. 37-23370-01 was conducted at a field site in Bethlehem, Pennsylvania, and at the Laurys Station, Pennsylvania, facility on October 18-19, 1984. Another NRC safety inspection was conducted on January 10 and 16, 1985, at, respectively, the licensee's office in Laurys Station, Pennsylvania, and a radiography field site in Lebanon, New Jersey. During these inspections, twelve violations of NRC requirements were identified. Collectively, these violations indicate that adequate management control and oversight of the radiological safety program was not exercised during radiography operations at the Bethlehem site and at the Laurys Station facility.

To emphasize the importance of adequate control of the radiation safety program, the Nuclear Regulatory Commission proposes the imposition of civil penalties in the amount of Five Thousand Dollars for these matters. In accordance with the revised NRC Enforcement Policy, 10 CFR Part 2, Appendix C, published in the Federal Register (49 FR 8583) on March 8, 1984, and pursuant to Section 234 of the Atomic Energy Act of 1954, as amended ("Act"), 42 U.S.C. 2282, PL 96-295, and 10 CFR 2.205, these particular violations and the associated civil penalties are set forth below:

- A. 10 CFR 34.31(a) requires that no individual act as a radiographer until that individual can demonstrate his understanding of the instructions which he has received regarding the subjects covered in Appendix A of Part 34 and has successfully completed a written test and a field examination on the subjects covered.

Contrary to the above on October 18, 1984, at a field site in Bethlehem, Pennsylvania, individuals were permitted to act as radiographers prior to demonstrating their understanding of the subjects outlined in Appendix A of Part 34, prior to passing a written test, and prior to demonstrating their competence to use the licensee's radiographic exposure devices, survey instruments, and related handling tools.

- B. 10 CFR 34.41 requires the radiographer or radiographer's assistant to maintain direct surveillance of the operation to protect against unauthorized entry into a high radiation area.

Contrary to the above, on October 18, 1984, at a field site in Bethlehem, Pennsylvania, a high radiation area existed in a building adjacent to the area where radiographic operations were being performed, and direct surveillance was not maintained to protect against unauthorized entry into the high radiation area.

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- C. 10 CFR 20.105(b) requires that radiation levels in unrestricted areas be limited so that an individual who was continuously present in the area could not receive a dose in excess of 2 millirems in any hour or 100 millirems in any seven consecutive days.

Contrary to the above,

1. On October 18, 1984, at a field site in Bethlehem, Pennsylvania, radiation levels of 200 millirems per hour existed in an unrestricted area of an adjacent building when radiography was being conducted using a cobalt-60 source. Access to this area was not controlled for the purposes of radiation protection.
2. On October 4, 1984, radiation levels in excess of the limits set forth in 10 CFR 20.105(b) existed in a restaurant which is located 44 feet from the licensee's facility in Laurys Station, Pennsylvania in which radiography took place.

- D. 10 CFR 34.29(b) requires that each entrance used for personnel access to the high radiation area in a permanent radiographic installation have both visible and audible warning signals to warn of the presence of radiation. The visible signal is required to be actuated by radiation whenever the source is exposed and the audible signal is required to be actuated when an attempt is made to enter the installation while the source is exposed.

Contrary to the above, as of October 19, 1984, the permanent radiographic installation located in the Laurys Station, Pennsylvania, facility did not have the required warning signals installed.

- E. 10 CFR 71.5(a) requires that licensed material being transported comply with the applicable requirements of the regulations appropriate to the mode of transport of the Department of Transportation in 49 CFR Parts 170-189.

1. 49 CFR 172.403(c) requires that packages containing radioactive material with radiation levels in excess of 50 millirem per hour at the package surface or 1 millirem per hour at three feet be affixed with a Radioactive Yellow III label.

Contrary to the above, on October 19, 1984, a radioactive exposure device exhibiting radiation levels of 60 millirem per hour at the surface and 1-2 millirem per hour at three feet was transported without a Radioactive Yellow III label affixed to the device.

2. 49 CFR 172.504(a) requires that a vehicle carrying packages bearing the Radioactive Yellow III label be placarded on each end and each side with "Radioactive" placards.

Contrary to the above, on October 19, 1984, a radioactive exposure device that should have been labeled with a Radioactive Yellow III label was transported in a vehicle which was not properly placarded.

3. 49 CFR 173.448(a) requires each shipment of radioactive material to be secured in order to prevent shifting during normal transportation conditions.

Contrary to the above, on October 18, 1984, a radioactive exposure device was transported without being secured to the vehicle in order to prevent shifting during normal transport.

- F. 10 CFR 34.43(b) requires that a physical radiation survey be made after each radiographic exposure to determine that the sealed source has been returned to its shielded position. The entire circumference of the radiographic exposure device must be surveyed and, if the device has a source guide tube, the survey must include the entire length of the guide tube.

Contrary to the above, on October 18, 1984, a radiographer's assistant did not perform a survey that was adequate to determine that the sealed source had returned to its shielded position in that the survey did not include the entire circumference of the exposure device and the entire length of the guide tube.

- G. 10 CFR 34.27 requires that a utilization log be maintained indicating the plant or site where the radiation exposure devices are used.

Contrary to the above, on October 19, 1984, a cobalt-60 exposure device was used at a field site in Bethlehem, Pennsylvania, but such use was not indicated in the utilization log.

- H. 10 CFR 20.408(b) requires that a report be sent to the NRC of an individual's exposure to radiation when he terminates employment.

Contrary to the above, since April 5, 1984, four individuals terminated employment, but as of October 19, 1984, termination reports were not provided to the NRC.

- I. Condition 17 of License No. 37-23370-01 requires that licensed material be possessed and used in accordance with statements, representations, and procedures contained in the application dated January 31, 1984, and letters dated March 22, 1984, and May 4, 1984.

Item 5.3.3 on page 5.2 of the application dated January 31, 1984, requires that a person hired with radiographer credentials from another company complete a practical performance examination before being assigned to perform radiography.

Contrary to the above, as of January 11, 1985, a person hired with radiographer credentials from another company did not complete a practical performance examination before being assigned to perform radiography.

- J. 10 CFR 34.22(a) requires that, during radiography operations, the sealed source assembly be secured in the shielded position each time the source is returned to that position.

Contrary to the above, on January 16, 1985, a radiographer performed a number of radiographic exposures and cranked the source from the end of the guide tube to the shielded position in the exposure device each time, but did not secure the source between each exposure.


Collectively, these violations have been categorized in the aggregate as a Severity Level III problem (Supplements IV and VI). Cumulative Civil Penalties - \$5,000 assessed equally among the violations.

Pursuant to the provisions of 10 CFR 2.201, North American Inspection, Inc. is hereby required to submit to the Director, Office of Inspection and Enforcement, USNRC, Washington, D.C. 20555, with a copy to the Regional Administrator, Region I, 631 Park Avenue, King of Prussia, Pennsylvania 19406, within 30 days of the date of this Notice, a written statement or explanation in reply, including for each alleged violation (1) admission or denial of the alleged violation; (2) the reasons for the violation, if admitted; (3) the corrective steps that will be taken and the results achieved; (4) the corrective steps that will be taken to avoid further violations; and (5) the date when full compliance will be achieved. Consideration may be given to extending the response time for good cause shown. Under the authority of Section 182 of the Act, 42 U.S.C. 2232, this response shall be submitted under oath or affirmation.

Within the same time as provided for the response required above under 10 CFR 2.201, North American Inspection, Inc. may pay the civil penalties in the amount of Five Thousand Dollars (\$5,000) or may protest imposition of the civil penalties in whole or in part by a written answer. Should North American Inspection, Inc. fail to answer within the time specified, the Director, Office of Inspection and Enforcement, will issue an order imposing the civil penalties in the amount proposed above. Should North American Inspection, Inc. elect to file an answer in accordance with 10 CFR 2.205 protesting the civil penalties, such answer may: (1) deny the violations listed in this Notice in whole or in part; (2) demonstrate extenuating circumstances; (3) show error in this Notice; or (4) show other reasons why the penalties should not be imposed. In addition to protesting the civil penalties in whole or in part, such answer may request remission or mitigation of the penalties. In requesting mitigation of the proposed penalties, the five factors contained in Section V.B of the revised Enforcement Policy should be addressed. Any written answer in accordance with 10 CFR 2.205 should be set forth separately from the statement or explanation in reply pursuant to 10 CFR 2.201, but may incorporate by specific reference (e.g., citing page and paragraph numbers) to avoid repetition. The attention of North American Inspection, Inc. is directed to the other provisions of 10 CFR 2.205 regarding the procedure for imposing a civil penalty.

Upon failure to pay any civil penalties due, which have been subsequently determined in accordance with the applicable provisions of 10 CFR 2.205, this matter may be referred to the Attorney General, and the penalty, unless compromised, remitted, or mitigated, may be collected by civil action pursuant to Section 234c of the Act, 42 U.S.C. 22982.

FOR THE NUCLEAR REGULATORY COMMISSION

  
Thomas E. Murley  
Regional Administrator

Dated at Bethesda, Maryland  
this 6<sup>th</sup> day of February 1985.