NRC FORM 313
(1-84)
10 CFR 30, 32, 33, 34, 35 and 40

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED BY OMB
3150-0120
Expires: 5-31-87

APPLICATION FOR MATERIAL LICENSE

INSTRUCTIONS: SEE THE APPROPRIATE LICENSE APPLICATION GUIDE FOR DETAILED INSTRUCTIONS FOR COMPLETING APPLICATION. SEND TWO COPIES OF THE ENTIRE COMPLETED APPLICATION TO THE NRC OFFICE SPECIFIED BELOW.

FEDERAL AGENCIES FILE APPLICATIONS WITH:

U.S. NUCLEAR REGULATORY COMMISSION
DIVISION OF FUEL CYCLE AND MATERIAL SAFETY, NMSS
WASHINGTON, DC 20555

ALL OTHER PERSONS FILE APPLICATIONS AS FOLLOWS, IF YOU ARE LOCATED IN:

CONNECTICUT, DELAWARE, DISTRICT OF COLUMBIA, MAINE, MARYLAND, MASSACHUSETTS, NEW JERSEY, NEW YORK, PENNSYLVANIA, RHODE ISLAND, OR VERMONT, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION I
NUCLEAR MATERIAL SECTION B
631 PARK AVENUE
KING OF PRUSSIA, PA 19406

ALABAMA, FLORIDA, GEORGIA, KENTUCKY, MISSISSIPPI, NORTH CAROLINA, PUERTO RICO, SOUTH CAROLINA, TENNESSEE, VIRGINIA, VIRGIN ISLANDS, OR WEST VIRGINIA, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION II
MATERIAL RADIATION PROTECTION SECTION
101 MARIETTA STREET, SUITE 2900
ATLANTA, GA 30323

IF YOU ARE LOCATED IN:

ILLINOIS, INDIANA, IOWA, MICHIGAN, MINNESOTA, MISSOURI, OHIO, OR WISCONSIN, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION III
MATERIALS LICENSING SECTION
799 ROOSEVELT ROAD
GLEN ELLYN, IL 60137

ARKANSAS, COLORADO, IDAHO, KANSAS, LOUISIANA, MONTANA, NEBRASKA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, SOUTH DAKOTA, TEXAS, UTAH, OR WYOMING, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION IV
MATERIAL RADIATION PROTECTION SECTION
611 RYAN PLAZA DRIVE, SUITE 1000
ARLINGTON, TX 76011

ALASKA, ARIZONA, CALIFORNIA, HAWAII, NEVADA, OREGON, WASHINGTON, AND U.S. TERRITORIES AND POSSESSIONS IN THE PACIFIC, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION V
MATERIAL RADIATION PROTECTION SECTION
1450 MARIA LANE, SUITE 210
WALNUT CREEK, CA 94596

PERSONS LOCATED IN AGREEMENT STATES SEND APPLICATIONS TO THE U.S. NUCLEAR REGULATORY COMMISSION ONLY IF THEY WISH TO POSSESS AND USE LICENSED MATERIAL IN STATES SUBJECT TO U.S. NUCLEAR REGULATORY COMMISSION JURISDICTION.

1. THIS IS AN APPLICATION FOR *(Check appropriate item)*

- [ ] A. NEW LICENSE
- [X] B. AMENDMENT TO LICENSE NUMBER 13-03341-02E
- [ ] C. RENEWAL OF LICENSE NUMBER _____

2. NAME AND MAILING ADDRESS OF APPLICANT *(Include Zip Code)*

NUCLEAR MEASUREMENTS CORPORATION
2460 N. Arlington AV
Indianapolis, IN 46218

3. ADDRESS(ES) WHERE LICENSED MATERIAL WILL BE USED OR POSSESSED:

NUCLEAR MEASUREMENTS CORPORATION
2460 N. Arlington AV
Indianapolis, IN 46218

4. NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION

Donald L. DeMoss

TELEPHONE NUMBER: (317) 546-2415

SUBMIT ITEMS 5 THROUGH 11 ON 8½ x 11" PAPER. THE TYPE AND SCOPE OF INFORMATION TO BE PROVIDED IS DESCRIBED IN THE LICENSE APPLICATION GUIDE.

5. RADIOACTIVE MATERIAL
a. Element and mass number, b. chemical and/or physical form, and c. maximum amount which will be possessed at any one time

6. PURPOSE(S) FOR WHICH LICENSED MATERIAL WILL BE USED

7. INDIVIDUAL(S) RESPONSIBLE FOR RADIATION SAFETY PROGRAM AND THEIR TRAINING AND EXPERIENCE

8. TRAINING FOR INDIVIDUALS WORKING IN OR FREQUENTING RESTRICTED AREAS

9. FACILITIES AND EQUIPMENT

10. RADIATION SAFETY PROGRAM

11. WASTE MANAGEMENT

12. LICENSEE FEES *(See 10 CFR 170 and Section 170.31)*
FEE CATEGORY: 3A
AMOUNT ENCLOSED: $ 120.00

13. CERTIFICATION. *(Must be completed by applicant)* THE APPLICANT UNDERSTANDS THAT ALL STATEMENTS AND REPRESENTATIONS MADE IN THIS APPLICATION ARE BINDING UPON THE APPLICANT.

THE APPLICANT AND ANY OFFICIAL EXECUTING THIS CERTIFICATION ON BEHALF OF THE APPLICANT NAMED IN ITEM 2, CERTIFY THAT THIS APPLICATION IS PREPARED IN CONFORMITY WITH TITLE 10, CODE OF FEDERAL REGULATIONS, PARTS 30, 32, 33, 34, 35, AND 40 AND THAT ALL INFORMATION CONTAINED HEREIN, IS TRUE AND CORRECT TO THE BEST OF THEIR KNOWLEDGE AND BELIEF.

WARNING: 18 U.S.C. SECTION 1001 ACT OF JUNE 25, 1948, 62 STAT. 749 MAKES IT A CRIMINAL OFFENSE TO MAKE A WILLFULLY FALSE STATEMENT OR REPRESENTATION TO ANY DEPARTMENT OR AGENCY OF THE UNITED STATES AS TO ANY MATTER WITHIN ITS JURISDICTION.

SIGNATURE—CERTIFYING OFFICER	TYPED/PRINTED NAME	TITLE	DATE
Donald L. DeMoss	Donald L. DeMoss	Executive Vice President	1/30/85

14. VOLUNTARY ECONOMIC DATA

a. ANNUAL RECEIPTS
- [ ] <$250K
- [ ] $250K–500K
- [ ] $500K–750K
- [ ] $750K–1M
- [ ] $1M–3.5M
- [ ] $3.5M–7M
- [ ] $7M–10M
- [ ] >$10M

b. NUMBER OF EMPLOYEES *(Total for entire facility excluding outside contractors)*

c. NUMBER OF BEDS

d. WOULD YOU BE WILLING TO FURNISH COST INFORMATION (dollars and/or staff hours) ON THE ECONOMIC IMPACT OF CURRENT NRC REGULATIONS OR ANY FUTURE PROPOSED NRC REGULATIONS THAT MAY AFFECT YOU? *(NRC regulations permit it to protect confidential commercial or financial proprietary information furnished to the agency in confidence)*

- [ ] YES
- [ ] NO

FEB 04 1985

REGION III

FOR NRC USE ONLY

TYPE OF FEE	FEE LOG	FEE CATEGORY	COMMENTS	APPROVED BY
Amend.	FEB 1	~~3A~~ 3I	#60 refunded To FEC Budget 3/4 Refund Ltr 3/14/85 Withdrawn after review	Marcus Brown

AMOUNT RECEIVED	CHECK NUMBER	DATE
$120	16085	2/14/85 3/20/85

PRIV 8508140370 850715
REG3 LIC30
13-03341-02E PDR

CONTROL NO. 7825 2

PRIVACY ACT STATEMENT

Pursuant to 5 U.S.C. 552a(e)(3), enacted into law by section 3 of the Privacy Act of 1974 (Public Law 93-579), the following statement is furnished to individuals who supply information to the Nuclear Regulatory Commission on NRC Form 313. This information is maintained in a system of records designated as NRC-3 and described at 40 Federal Register 45334 (October 1, 1975).

1. **AUTHORITY**: Sections 81 and 161(b) of the Atomic Energy Act of 1954, as amended (42 U.S.C. 2111 and 2201(b)).

2. **PRINCIPAL PURPOSE(S)**: The information is evaluated by the NRC staff pursuant to the criteria set forth in 10 CFR Parts 30, 32, 33, 34, 35 and 40 to determine whether the application meets the requirements of the Atomic Energy Act of 1954, as amended, and the Commission's regulations, for the issuance of a radioactive material license or amendment thereof.

3. **ROUTINE USES**: The information may be (a) provided to State health departments for their information and use; and (b) provided to Federal, State, and local health officials and other persons in the event of incident or exposure, for their information, investigation, and protection of the public health and safety. The information may also be disclosed to appropriate Federal, State, and local agencies in the event that the information indicates a violation or potential violation of law and in the course of an administrative or judicial proceeding. In addition, this information may be transferred to an appropriate Federal, State, or local agency to the extent relevant and necessary for an NRC decision or to an appropriate Federal agency to the extent relevant and necessary for that agency's decision about you.

4. **WHETHER DISCLOSURE IS MANDATORY OR VOLUNTARY AND EFFECT ON INDIVIDUAL OF NOT PROVIDING INFORMATION**: Disclosure of the requested information is voluntary. If the requested information is not furnished, however, the application for radioactive material license, or amendment thereof, will not be processed. A request that information be held from public inspection must be in accordance with the provisions of 10 CFR 2.790. Withholding from public inspection shall not affect the right, if any, of persons properly and directly concerned need to inspect the document.

5. **SYSTEM MANAGER(S) AND ADDRESS**: U.S. Nuclear Regulatory Commission
Director, Division of Fuel Cycle and Mat[illegible] Safety
Office of Nuclear Material Safety and Safeguards
Washington, D.C. 20555

NRC FORM 313
(7-84)
10 CFR 30, 32, 33, 34, 35 and 40

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED BY OMB
3150-0120
Expires 5-31-87

APPLICATION FOR MATERIAL LICENSE

INSTRUCTIONS: SEE THE APPROPRIATE LICENSE APPLICATION GUIDE FOR DETAILED INSTRUCTIONS FOR COMPLETING APPLICATION. SEND TWO COPIES OF THE ENTIRE COMPLETED APPLICATION TO THE NRC OFFICE SPECIFIED BELOW.

FEDERAL AGENCIES FILE APPLICATIONS WITH:

U.S. NUCLEAR REGULATORY COMMISSION
DIVISION OF FUEL CYCLE AND MATERIAL SAFETY, NMSS
WASHINGTON, DC 20555

ALL OTHER PERSONS FILE APPLICATIONS AS FOLLOWS, IF YOU ARE LOCATED IN:

CONNECTICUT, DELAWARE, DISTRICT OF COLUMBIA, MAINE, MARYLAND, MASSACHUSETTS, NEW JERSEY, NEW YORK, PENNSYLVANIA, RHODE ISLAND, OR VERMONT, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION I
NUCLEAR MATERIAL SECTION B
631 PARK AVENUE
KING OF PRUSSIA, PA 19406

ALABAMA, FLORIDA, GEORGIA, KENTUCKY, MISSISSIPPI, NORTH CAROLINA, PUERTO RICO, SOUTH CAROLINA, TENNESSEE, VIRGINIA, VIRGIN ISLANDS, OR WEST VIRGINIA, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION II
MATERIAL RADIATION PROTECTION SECTION
101 MARIETTA STREET, SUITE 2900
ATLANTA, GA 30323

IF YOU ARE LOCATED IN:

ILLINOIS, INDIANA, IOWA, MICHIGAN, MINNESOTA, MISSOURI, OHIO, OR WISCONSIN, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION III
MATERIALS LICENSING SECTION
799 ROOSEVELT ROAD
GLEN ELLYN, IL 60137

ARKANSAS, COLORADO, IDAHO, KANSAS, LOUISIANA, MONTANA, NEBRASKA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, SOUTH DAKOTA, TEXAS, UTAH, OR WYOMING, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION IV
MATERIAL RADIATION PROTECTION SECTION
611 RYAN PLAZA DRIVE, SUITE 1000
ARLINGTON, TX 76011

ALASKA, ARIZONA, CALIFORNIA, HAWAII, NEVADA, OREGON, WASHINGTON, AND U.S. TERRITORIES AND POSSESSIONS IN THE PACIFIC, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION V
MATERIAL RADIATION PROTECTION SECTION
1450 MARIA LANE, SUITE 210
WALNUT CREEK, CA 94596

PERSONS LOCATED IN AGREEMENT STATES SEND APPLICATIONS TO THE U.S. NUCLEAR REGULATORY COMMISSION ONLY IF THEY WISH TO POSSESS AND USE LICENSED MATERIAL IN STATES SUBJECT TO U.S. NUCLEAR REGULATORY COMMISSION JURISDICTION.

1. THIS IS AN APPLICATION FOR *(Check appropriate item)*

- [ ] A. NEW LICENSE
- [X] B. AMENDMENT TO LICENSE NUMBER 13-03341-02E
- [ ] C. RENEWAL OF LICENSE NUMBER _____

2. NAME AND MAILING ADDRESS OF APPLICANT *(Include Zip Code)*

NUCLEAR MEASUREMENTS CORPORATION
2460 N. Arlington AV
Indianapolis, IN 46218

3. ADDRESS(ES) WHERE LICENSED MATERIAL WILL BE USED OR POSSESSED:

NUCLEAR MEASUREMENTS CORPORATION
2460 N. Arlington AV
Indianapolis, IN 46218

4. NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION: Donald L. DeMoss

TELEPHONE NUMBER: (317) 546-2415

SUBMIT ITEMS 5 THROUGH 11 ON 8½ x 11" PAPER. THE TYPE AND SCOPE OF INFORMATION TO BE PROVIDED IS DESCRIBED IN THE LICENSE APPLICATION GUIDE.

5. RADIOACTIVE MATERIAL
a. Element and mass number, b. chemical and/or physical form, and c. maximum amount which will be possessed at any one time.

6. PURPOSE(S) FOR WHICH LICENSED MATERIAL WILL BE USED.

7. INDIVIDUAL(S) RESPONSIBLE FOR RADIATION SAFETY PROGRAM AND THEIR TRAINING AND EXPERIENCE.

8. TRAINING FOR INDIVIDUALS WORKING IN OR FREQUENTING RESTRICTED AREAS.

9. FACILITIES AND EQUIPMENT.

10. RADIATION SAFETY PROGRAM.

11. WASTE MANAGEMENT.

12. LICENSEE FEES *(See 10 CFR 170 and Section 170.31)*
FEE CATEGORY: 3A
AMOUNT ENCLOSED: $120.00

13. CERTIFICATION. *(Must be completed by applicant)* THE APPLICANT UNDERSTANDS THAT ALL STATEMENTS AND REPRESENTATIONS MADE IN THIS APPLICATION ARE BINDING UPON THE APPLICANT.

THE APPLICANT AND ANY OFFICIAL EXECUTING THIS CERTIFICATION ON BEHALF OF THE APPLICANT NAMED IN ITEM 2 CERTIFY THAT THIS APPLICATION IS PREPARED IN CONFORMITY WITH TITLE 10, CODE OF FEDERAL REGULATIONS, PARTS 30, 32, 33, 34, 35, AND 40 AND THAT ALL INFORMATION CONTAINED HEREIN, IS TRUE AND CORRECT TO THE BEST OF THEIR KNOWLEDGE AND BELIEF.

WARNING: 18 U.S.C. SECTION 1001 ACT OF JUNE 25, 1948, 62 STAT. 749 MAKES IT A CRIMINAL OFFENSE TO MAKE A WILLFULLY FALSE STATEMENT OR REPRESENTATION TO ANY DEPARTMENT OR AGENCY OF THE UNITED STATES AS TO ANY MATTER WITHIN ITS JURISDICTION.

SIGNATURE—CERTIFYING OFFICER	TYPED/PRINTED NAME	TITLE	DATE
Donald L. DeMoss	Donald L. DeMoss	Executive Vice President	1/30/85

14. VOLUNTARY ECONOMIC DATA

a. ANNUAL RECEIPTS
- [ ] <$250K
- [ ] $250K–500K
- [ ] $500K–750K
- [ ] $750K–1M
- [ ] $1M–3.5M
- [ ] $3.5M–7M
- [ ] $7M–10M
- [ ] >$10M

b. NUMBER OF EMPLOYEES *(Total for entire facility excluding outside contractors)*

c. NUMBER OF BEDS

d. WOULD YOU BE WILLING TO FURNISH COST INFORMATION *(dollar and/or staff hours)* ON THE ECONOMIC IMPACT OF CURRENT NRC REGULATIONS OR ANY FUTURE PROPOSED NRC REGULATIONS THAT MAY AFFECT YOU? *(NRC regulations permit it to protect confidential commercial or financial—proprietary—information furnished to the agency in confidence)*
- [ ] YES
- [ ] NO

FOR NRC USE ONLY

TYPE OF FEE	FEE LOG	FEE CATEGORY	COMMENTS	APPROVED BY
AMOUNT RECEIVED	CHECK NUMBER			DATE

PRIVACY ACT STATEMENT ON THE REVERSE

CONTROL NO. 78252

PRIVACY ACT STATEMENT

Pursuant to 5 U.S.C. 552a(e)(3), enacted into law by section 3 of the Privacy Act of 1974 (Public Law 93-579), the following statement is furnished to individuals who supply information to the Nuclear Regulatory Commission on NRC Form 313. This information is maintained in a system of records designated as NRC-3 and described at 40 Federal Register 45334 (October 1, 1975).

1. **AUTHORITY**: Sections 81 and 161(b) of the Atomic Energy Act of 1954, as amended (42 U.S.C. 2111 and 2201(b)).

2. **PRINCIPAL PURPOSE(S)**: The information is evaluated by the NRC staff pursuant to the criteria set forth in 10 CFR Parts 30, 32, 33, 34, 35 and 40 to determine whether the application meets the requirements of the Atomic Energy Act of 1954, as amended, and the Commission's regulations, for the issuance of a radioactive material license or amendment thereof.

3. **ROUTINE USES**: The information may be (a) provided to State health departments for their information and use; and (b) provided to Federal, State, and local health officials and other persons in the event of incident or exposure, for their information, investigation, and protection of the public health and safety. The information may also be disclosed to appropriate Federal, State, and local agencies in the event that the information indicates a violation or potential violation of law and in the course of an administrative or judicial proceeding. In addition, this information may be transferred to an appropriate Federal, State, or local agency to the extent relevant and necessary for an NRC decision or to an appropriate Federal agency to the extent relevant and necessary for that agency's decision about you.

4. **WHETHER DISCLOSURE IS MANDATORY OR VOLUNTARY AND EFFECT ON INDIVIDUAL OF NOT PROVIDING INFORMATION**: Disclosure of the requested information is voluntary. If the requested information is not furnished, however, the application for radioactive material license, or amendment thereof, will not be processed. A request that information be held from public inspection must be in accordance with the provisions of 10 CFR 2.790. Withholding from public inspection shall not affect the right, if any, of persons properly and directly concerned need to inspect the document.

5. **SYSTEM MANAGER(S) AND ADDRESS**: U.S. Nuclear Regulatory Commission
Director, Division of Fuel Cycle and Material Safety
Office of Nuclear Material Safety and Safeguards
Washington, D.C. 20555

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE, $300

FIRST CLASS MAIL
POSTAGE & FEES PAID
USNRC
WASH D C
PERMIT No. G-67

ITEM 5

In addition to the byproduct material and quantities as listed in CFR Title 10 Chapter 1, Part 30, Section 30.71, Schedule B, NMC requests a license ammendment to increase the activity to the following byproduct materials (Reference NMC License Number 13-03341-02E):

Byproduct, Source, and/or Special Nuclear Material	Chemical Form	Minimum Amount that License May Possess at Any One Time Under This License
Cobalt^{60}	Any	150 microcuries
Iodine^{131}	Any	1 microcurie
Barrium^{133}	Any	200 microcuries
Cesium^{137}	Any	300 microcuries
Krypton^{85}	Any	500 microcuries
Xenon^{133}	Any	500 microcuries
Carbon^{14}	Any	500 microcuries
Sodium^{22}	Any	100 microcuries
Yttrium^{88}	Any	200 microcuries

The radioisotopes to be used for:

1) Isotopic Calibration of Radiation Monitoring Instrumentation and for processing and distribution.

2) Check Source operation in Radiation Monitoring Instrumentation and for processing and distribution.

ITEM 6

The licensed material will be used for:

1) Isotopic Calibration Sources.

2) Check Sources.

The byproduct materials utilized for the Isotopic Calibration source are purchased as:

A) Standard Configuration (Vendor: Isotopes Products Model Series D)

1" diameter x 1/4" thick plastic disc with the source centrally mounted in a 3/16" diameter x 1/8" deep hole and plugged with epoxy. Reference Attachment I.

B) Filter paper standard:

1) 2.250 x .020 thick stainless disc with 2" diameter filter paper attached to discs. Reference Attachment II.

2) 2.187" x 1.750" thick stainless disc with 2" diameter filter paper attached to discs. Reference Attachment II.

C) Liquid Canister/U Tubes:

2700 cm³ liter stainless steel canister filled with liquid isotope.

40 cm³ stainless steel U Tubes filled with liquid isotope.

The byproduct materials used for Check Source operation are purchased (Vendor: Isotope Products Model N.287):

A) 1/8" diameter bead, active element absorbed onto an Ion exchange resin bead.

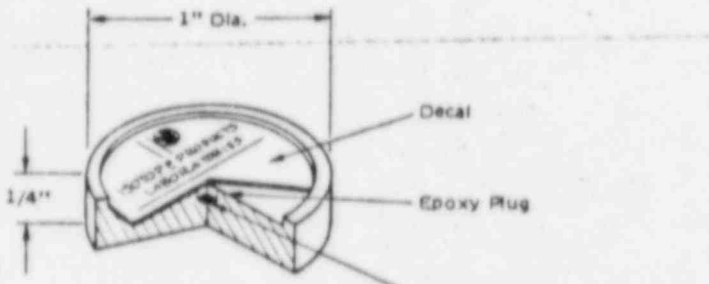
B) 3/16" diameter bead with a 3/32" diameter hole. The source is installed into the bead and welded closed.

When source configuration is large enough it is marked with the type of isotope activity, calibration date and radiation warning symbol and where applicable, an exempt quantity statement . Reference Attachment III.

When the source is too small to carry the above information, it is then applied to the source container.

Each operation instruction manual will contain a page which states the recommended usage, precautions and disposal practice. Reference Attachment IV.

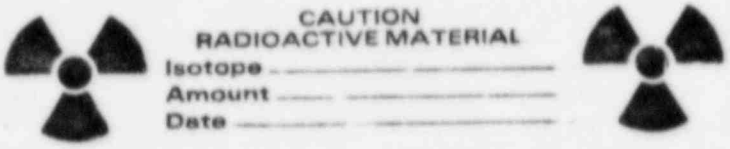
ATTACHMENT I



TYPE 'D' GAMMA STD

ATTACHMENT III

RADIATION WARNING SYMBOL
AND
EXEMPT QUANTITY STATEMENT



"EXEMPT QUANTITY OF RADIOACTIVE MATERIAL NOT FOR HUMAN USE. Introduction into foods or other human consumables is prohibited. Exempt quantities should not be combined".

CONTROL NO. 78252

ATTACHMENT IV

THE CHECK SOURCE

IS

RADIOACTIVE MATERIAL

THIS INSTRUMENT CONTAINS RADIOACTIVE MATERIAL IN THE AMOUNT WHICH IS EXEMPT FROM NRC OR AGREEMENT STATE LICENSING REQUIREMENTS.

RADIOACTIVE MATERIAL - NOT FOR HUMAN USE

INTRODUCTION INTO FOODS, BEVERAGES, COSMETICS, DRUGS OR MEDICINALS, OR INTO PRODUCTS MANUFACTURED FOR COMMERCIAL DISTRIBUTION IS PROHIBITED - EXEMPT QUANTITIES SHOULD NOT BE COMBINED.

PRECAUTIONS SHOULD BE TAKEN IN THE HANDLING OF THIS SOURCE. THE SOURCE PACKAGE SHOULD NOT BE OPENED, NOR MODIFIED IN ANY WAY THAT CHANGES IS INTEGRITY. THE SOURCE SHOULD BE DISPOSED OF IN A SAFE MANNER IN ACCORDANCE WITH STATE AND FEDERAL LAWS. THESE LAWS FORBID THE DISPOSAL BY MEANS WHICH MAY DESTROY ITS INTEGRITY OR RESULT IN ITS ACCESSIBILITY TO THE PUBLIC.

CONTROL NO. 78252

ITEM 7

INDIVIDUAL RESPONSIBLE FOR RADIATION SAFETY PROGRAM AND THEIR TRAINING AND EXPERIENCE:

DONALD L. DEMOSS
Acting Radiation Safety Officer

ITEM 8

See attached sheets.

Donald L. DeMoss - Mr. DeMoss has 12 years experience at NMC performing isotopic calibrations on NMC manufactured equipment at NMC and at facilities that have purchased NMC equipment. Mr. DeMoss has used numerous isotopes during the course of his 12 years experience at NMC. He has a Master's Degree from ISU in Physics.

TRAINING AND EXPERIENCE OF EACH INDIVIDUAL NAMED IN ITEM 8

8. TYPE OF TRAINING	WHERE TRAINED	DURATION OF TRAINING	ON THE JOB	FORMAL COURSE
a. Principles and practices of radiation protection.	NMC	12 years	(YES) NO	YES NO
	Indiana State University	3 years	(YES) NO	(YES) NO
b. Radioactivity measurement standardization and monitoring techniques and instruments.	NMC	12 years	(YES) NO	YES NO
	Indiana State University	3 years	YES NO	(YES) NO
c. Mathematics, including statistics of radiation.	NMC	12 years	(YES) NO	YES NO
	Indiana State University	3 years	YES NO	(YES) NO
d. Bilogical effects of radiation.	Indiana State University	3years	YES NO	(YES) NO

9. EXPERIENCE WITH RADIATION (Actual use of radioisotope or equivalent experience)

ISOTOPE	MAXIMUM AMOUNT	WHERE EXPERIENCE WAS GAINED	DURATION OF EXPERIENCE	TYPE OF USE
Cs^{137}	5 µCi	NMC/Indiana State University	15 years combined	Calibration & Preparation
Ra^{226}	5 µCi	NMC	15 years	
Pb^{210}	5 µCi	NMC/Indiana State University	15 years combined	
Co^{60}	>100 Ci	NMC/Indiana State University	15 years combined	
C^{14}	5 µCi	NMC/Indiana State University	15 years combined	
Pu^{239}	6.1 µg	NMC	15 years	
Xe^{133}	100 µCi	NMC	15 years	
Kr^{85}	100 µCi	NMC	15 years	

CONTROL NO. 78252

Edward A. Shearls - Mr. Shearls has 3 1/2 years experience at NMC performing isotope calibrations on equipment manufactured by NMC. He also documents the procedures utilized during calibration. He has used C^{14} as a tracer in biological field research and has taken lab courses at Indiana University detailing proper procedures for preparing and handling low level sources. He has used a trituim foil detector for pesticide analysis, receiving a PhD in 1979 from Indiana University for this work.

TRAINING AND EXPERIENCE OF EACH INDIVIDUAL NAMED IN ITEM 8

8. TYPE OF TRAINING	WHERE TRAINED	DURATION OF TRAINING	ON THE JOB	FORMAL COURSE
a. Principles and practices of radiation protection.	NMC	3 1/2 years	(YES) NO	YES (NO)
	Indiana University	2 years	(YES) NO	(YES) NO
	VIMS*	5yr on job/3 mo formal	(YES) NO	(YES) NO
b. Radioactivity measurement standardization and monitoring techniques and instruments.	Same as above.	Same as above.	(YES) NO	YES (NO)
			(YES) NO	(YES) NO
			(YES) NO	(YES) NO
c. Mathematics, including statistics of radiation.	Indiana University	Several course over college career (JV) & work @ VIMS	(YES) NO	(YES) NO
	VIMS		(YES) NO	(YES) NO
d. Bilogical effects of radiation.	Same as above.	Same as above.	(YES) NO	(YES) NO
			(YES) NO	(YES) NO

9. EXPERIENCE WITH RADIATION (Actual use of radioisotope or equivalent experience)

ISOTOPE	MAXIMUM AMOUNT	WHERE EXPERIENCE WAS GAINED	DURATION OF EXPERIENCE	TYPE OF USE
Cs^{137}	5 µCi	NMC	3 1/2 years	Calibration
Ra^{226}	5 µCi	NMC	3 1/2 years	Calibration
Pb^{210}	5 µCi	NMC	3 1/2 years	Calibration
Co^{60}	10 µCi	NMC	3 1/2 years	Calibration
C^{14}	5 µCi	Indiana University; VIMS	7 years (combined)	Biological Tracer
H^{3}	Very Low	Indiana University	4 years	Foil used in electron capture detector.

*VIMS - Virginia Institute of Marine Science

CONTROL NO. 78252

Mr. Wendell H. Bradley - Mr. Bradley has been the NMC individual user for nearly 35 years during which time he has prepared isotopic samples and performed calibraton with sealed and gaseous sources on numerous instruments. His qualifications have been previously itemized in prior applications for this license.

TRAINING AND EXPERIENCE OF EACH INDIVIDUAL NAMED IN ITEM 8

8. TYPE OF TRAINING	WHERE TRAINED	DURATION OF TRAINING	ON THE JOB	FORMAL COURSE
a. Principles and practices of radiation protection.	Argonne	4 years	(YES) NO	YES (NO)
	NMC	36 years	(YES) NO	YES (NO)
b. Radioactivity measurement standardization and monitoring techniques and instruments.	Argonne	4 years	(YES) NO	YES (NO)
	NMC	36 years	(YES) NO	YES (NO)
c. Mathematics, including statistics of radiation.	Argonne	4 years	(YES) NO	YES (NO)
	NMC	36 years	(YES) NO	YES (NO)
d. Bilogical effects of radiation.	Argonne	4 years	(YES) NO	YES (NO)

9. EXPERIENCE WITH RADIATION (Actual use of radioisotope or equivalent experience)

ISOTOPE	MAXIMUM AMOUNT	WHERE EXPERIENCE WAS GAINED	DURATION OF EXPERIENCE	TYPE OF USE
Ra^{226}	.1 µCi	NMC	40 years	Calibration &
Pb^{210}	5 µCi	NMC	40 years	Preparation
C^{14}	5 µCi	NMC	40 years	
Pu^{239}	6.1 µg	NMC	40 years	

CONTROL NO. 78252

James A. Eastham - Mr. Eastham has acquired his knowledge of radioactive materials in handling radioactive isotopes from Mr. Wendell Bradley during the 21 years on-the-job training at NMC.

TRAINING AND EXPERIENCE OF EACH INDIVIDUAL NAMED IN ITEM 8				
8. TYPE OF TRAINING	WHERE TRAINED	DURATION OF TRAINING	ON THE JOB	FORMAL COURSE
a. Principles and practices of radiation protection.	NMC	21 years	(YES) NO	YES (NO)
b. Radioactivity measurement standardization and monitoring techniques and instruments.	NMC	21 years	(YES) NO	YES (NO)
c. Mathematics, including statistics of radiation.	NMC	21 years	YES NO	YES (NO)
d. Bilogical effects of radiation.			(YES) NO	YES (NO)

9. EXPERIENCE WITH RADIATION (Actual use of radioisotope or equivalent experience)

ISOTOPE	MAXIMUM AMOUNT	WHERE EXPERIENCE WAS GAINED	DURATION OF EXPERIENCE	TYPE OF USE
Pu^{239}	6.1 µg	NMC	21 years	Calibration

CONTROL NO. 78252

ITEM 9

FACILITIES

When the Radioisotopes are not being used, they are stored in a designated source room under lock & key with controlled access. The room is properly marked with the Radiation Warning Symbol. (A magenta trefoil on a yellow background).

ITEM 10

Radiation Detection Instruments

Type of Instrument	Mfg Name	Model Number	Number Available	Radiation Detected	Sensitivity Range
1) GM Survey	NMC	GS-3	1	Gamma	0-20 mR/hr
2) Proportional Chamber	NMC	PC-4	1	Alpha/Beta	$3x10^{-5}$ Coulomb
3) GM Frisker	NMC	NU-4	1	Beta/Gamma	0-100K cpm
4) Pocket Dosimeter	Dosimeter Corp of America	862	6	Gamma	0-200 mR/hr

The monitors are calibrated in our facility using NBS traceable Ra^{226} sources of various strengths and geometrics. NMC performs an electronic calibration check twice a year.

NUCLEAR MEASUREMENTS CORPORATION (NMC) has a Q.A. Program which meets the requirement of 10 CFR 50 Appendix B. This program has been audited by several utilities and architectural and engineering firms and found to be satisfactory.

ITEM 11

Waste Management

NMC utilizes outside vendors for waste disposal. Unwanted or excess byproduct material is transferred to a corporation licensed to receive such waste in accordance with current license requirements.

Current Vendor: Gamma Industries
2255 Ted Dunham AV
Baton Rouge, LA 70802

NRC License 006-01