



STATE OF CONNECTICUT

DEPARTMENT OF PUBLIC SAFETY OFFICE OF CIVIL PREPAREDNESS

QUALITY ASSURANCE PROGRAM

For

Materials License No. 06-06472-03

issued to

State of Connecticut
Department of Public Safety
Office Of Civil Preparedness
Radiological Maintenance &
Calibration Facility
56 St. Clair Avenue
New Britain, Conn. 06051

License No. 06-06472-03 allows the M&C Facility to possess and use our present inventory of the following two calibration devices containing licensed material:

- ITEM 1. ^{137}Cs , 130 curies, sealed source, ORNL Model 2339A, Source No. C392, dtd. 5/3/68. Technical Operations CDV-794, Model 2 Calibrator, Serial No. 013, 180 lbs. of depleted Uranium Shielding.
- ITEM 2. ^{137}Cs , 120 curies, sealed source, ORNL Model C-86, dtd. 5/23/62. Landers, Frary & Clark Calibrator, Picker X-Ray Source Holder PSP-6024-3 (BE-1417).

The purpose for this Quality Assurance Program is to establish an acceptable method for the one-time interstate transfer of Item 2 for use by another Licensee. This Program is also intended to be the basis for a proposed intra-state transfer of Item 1 in conjunction with a proposed relocation of the Radiological Maintenance And Calibration Facility to Hartford, Connecticut. It may also become necessary to ship Item 1 for future source replacement due to radioactive decay.

I. ORGANIZATION

The State of Connecticut, as Licensee, is responsible for the safe transfer of the sources listed above. The safe shipment of radioactive material is in the best interest of the State of Connecticut and we are committed to insure compliance with the provisions of this Quality Assurance Program.

All shipments of licensed material will be packaged and shipped via commercial carrier from the Radiological Maintenance & Calibration Facility which is located at the licensees address shown above.

The Radiological Equipment Maintenance Officer is the Supervisor of the Federally Funded Maintenance & Calibration Facility and is listed in the Materials

Phone:

360 Broad Street — Hartford, Connecticut 06115

8107280671 810610
PDR ADOCK 07100459
C PDR

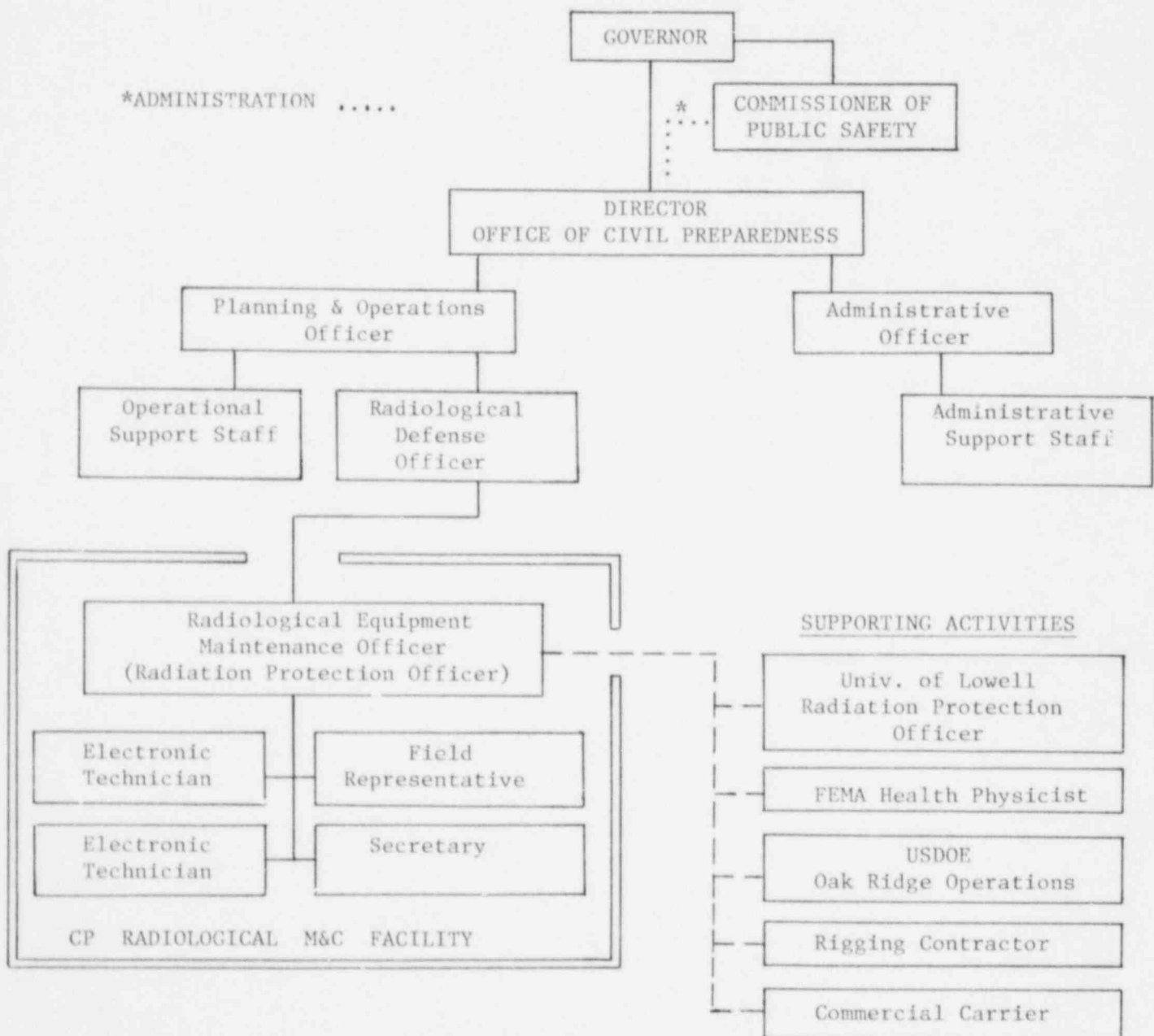
An Equal Opportunity Employer

License file as Radiation Protection Officer. He is responsible to the State Radiological Defense Officer for the operation of the Maintenance & Calibration Facility which includes the safe handling and control of licensed material assigned to this Agency.

Technical support continues to be available from the Regional Health Physicist, Federal Emergency Management Agency (Project Officer for our Maintenance and Calibration Contract) and from the U.S. Department of Energy, Oak Ridge Operations.

The Radiation Protection Officer has the necessary authority and organizational freedom to insure compliance with the requirements of this Quality Assurance Program. This will include the necessary coordination with USDOE to obtain specification packaging. Safety considerations will not be compromised in regard to cost or scheduling of shipments.

The Licensees Table of Organization is shown below:



II. QUALITY ASSURANCE PROGRAM

The scope of the licensees Quality Assurance Program is intended to comply with the provisions of 10 CFR 71.12. The shipment of either source will require the use of an approved Overpack which will be available to the State of Connecticut as follows:

- A. The shipment of Item 1 (Technical Operations CDV-794 Calibrator) is dependent on the development of an approved package by the Federal Emergency Management Agency (FEMA). The Technical Operations CDV-794 Calibrator is the property of FEMA and they are presently involved with USDOT in the development of a suitable Overpack. When an approved package becomes available for the DOT specification 55 Calibrator, the necessary documentation and procedures for safe shipment will be submitted.
- B. The shipment of Item 2, (ORNL Sealed Source in Picker X-Ray Source Holder) will require the use of an approved USDOE Overpack meeting the requirements of DOT specification 20WC-5. USDOE has agreed to make a 20WC-5 Overpack available to the State of Connecticut and provide documentation that the Overpack meets the DOT specifications for 20WC-5.

The use of a 20WC-5 Overpack requires a single, snug fitting, existing specification 55 inner container.

The Oak Ridge National Laboratory C-86 Sealed Source containing 120 Curies of ^{137}Cs (CsCl) was encapsulated on May 23, 1962. The Source was listed in an ORNL catalog as a size 3 stainless steel capsule. Because of the lack of existing data on the methods of encapsulation employed by ORNL, we cannot certify that the capsule meets the special form requirements of 10 CFR 71.4(0). However, prior to shipment, a wipe will be taken at the container exposure port to insure the present integrity of the Source Capsule. Semi-annual leak tests have not indicated any leakage associated with this Source Capsule.

The Source Capsule is contained within a Picker X-Ray Corporation Container Model No. PSP-6024-3 which is a Bureau of Explosives Container BE#1417. This storage container is equipped with an inner rotating wheel which holds the Source. When the Source is not being used, the portion of the wheel containing the Source Capsule is located at the innermost center of the container. When the Source is to be used, it is positioned by rotating the wheel 180 degrees which brings the Source Capsule to an emitting port located at the front of the container. Rotation of the wheel is accomplished by an externally mounted, electrically operated motor drive assembly. This assembly incorporates a spring-return mechanism which rotates the wheel so the Source Capsule is returned to the stored position should a power failure occur while the Source is exposed. The basic shielded container is cube shaped and measures approximately eleven inches on a side.

Drawings and container specifications are not available from either Picker X-Ray Corporation or the Bureau of Explosives, which prevents

us from qualifying the container to DOT Specification 55. However, the basic concept is that of a metal encased lead shielded container with small containment breeches at the front exposure port and the top exposure control shaft feed-thru. Prior to shipment, the source exposure control mechanism will be secured in place by a metal bracket to insure that the Source Capsule will remain in the stored position. The motor drive will also be removed before shipping to allow the use of the original steel cover which provides additional protection for the source exposure control mechanism. The dimensions of the inner container increase to 11"x15" x15" with the protective steel cover in place.

The source container will then be secured within the USDOE 20WC-5 Overpack by means of wooden 2"x4"s to form a snug fitting ring between container and Overpack. The top and bottom spacing will also be packed in the same manner using wooden 2"x4"s cut to the appropriate length to prevent movement of the inner container.

The cover will be secured on the Overpack and the package will be monitored for exterior radiation.

The package containing the Transport Group III, Type B quantity will be marked on two opposite sides using Radioactive-Yellow II Labels bearing the appropriate transport index and activity data.

Transport of this package by common carrier to the University of Lowell represents our one time use of this package.

The Radiation Protection Officer will coordinate the loan of the USDOE Overpack which will include the receipt of necessary certification from USDOE that this Overpack conforms to specification 20WC-5.

Once the Overpack is received, the Radiation Protection Officer will prepare the package for shipment in accordance with the procedures listed in Section IV.

As discussed above, we are not able to certify that the encapsulated material meets the special form requirement. We also cannot certify that the metal encased, lead shielded inner container meets the requirements of Specification 55. However, the USDOE 20WC-5 Overpack is intended to upgrade the original package which was shipped by Picker X-Ray Corporation in 1962. Therefore, we are submitting this Quality Assurance Program as a proposed basis for the approval of the one-time shipment of this material to the University of Lowell.

III. DOCUMENT CONTROL:

All documents related to the shipment of Radioactive Material will be maintained by the Radiation Protection Officer and will be available for inspection at the Radiological Maintenance & Calibration Facility in New Britain, CT

Records pertaining to the individual shipment of the two calibration devices will be retained in separate files and will include related correspondence, an approved Quality Assurance Plan and the necessary Quality Assurance Records shown in Section V.

Radioactive Material will not be shipped prior to the receipt of an Approved Quality Assurance Plan supplemented by the required supporting documentation.

IV. PROCEDURES FOR PACKAGE PREPARATION:

(Inspection, Test, Operating Status, Handling, Storage and Shipment)

The Radiation Protection Officer will prepare the packages for shipment in accordance with the following check lists of Procedures and Attached Drawings:

- A. Procedures for preparation of Item 1 for shipment will be submitted when available from FEMA.
- B. Procedures for preparation of Item 2 for shipment are as follows:

Receipt of Empty Overpack From USDOE

- 1. Coordinate availability of Rigging Contractor with arrival of Overpack by Common Carrier from USDOE. Supervise unloading of Overpack to prevent handling damage.
- 2. Monitor exterior and interior surfaces of USDOE Overpack using CDV-700M Survey Meter (thin end window G-M with loudspeaker) to check for obvious contamination.
- 3. In accordance with 49 CFR 173.397, wipe exterior surfaces of Overpack and monitor with CDV-700M Survey Meter to insure that levels of removable contamination, when averaged over an area of 300 cm², do not exceed 10% of the maximum permissible level. Wipe interior surfaces of Overpack and monitor with CDV-700M Survey Meter to insure levels are below ORNL certified levels.
- 4. Submit the 300 cm² wipes of interior and exterior surfaces of Overpack to the Connecticut Dept. Of Environmental Protection, Radiation Control Unit for Independent Permanent Wipe Record, and verification within limits of 49 CFR 173.397.
- 5. Visually inspect to insure that Overpack is as described in the USDOE Package Certification and Drawings. Remove inappropriate labels from previous use.
- 6. Visually inspect for defects in Overpack such as cracks; loose or damaged laminated sections; missing or damaged Tie Rods, Lag Screws, Bolts and Lock Washers; missing or damaged nameplate; misalignment or poor seal of Cover; other damage effecting package integrity or discrepancies with ORNL Drawings.

7. Defects or questionable condition of the Overpack will be reported to USDOE for repair action or resolution of safety implications prior to use.

Preparation of Inner Container

1. Remove Nosecone and Attenuator Wheel from front of Inner Source Container while supporting with Chain Hoist.
2. Perform Wipe Test at Inner Source Container Exposure Port and submit wipe to Connecticut Department of Environmental Protection - Radiation Control Unit for laboratory counting. Source shipment will not be made prior to receipt of Leak Test Report in accordance with Condition 14 of our Materials License.
3. Remove Motor Drive Assembly and extraneous hardware from exterior of Inner Source Container.
4. Secure Source Exposure Control Mechanism using steel bracket to prevent accidental exposure during shipment. This is critical to the safety of the shipment and the proposed bracket is detailed in the attached drawing.
5. Remove Inner Source Container from Calibrator Shell using Chain Hoist and secure protective steel cover on inner Source Container.
6. Monitor exterior surfaces of Inner Source Container using CDV-700M Survey Meter for any abnormally high exposure rates which could indicate problems with design or manufacture of Inner Container. Normal exposure rates for exterior of package must conform to 49 CFR 173.399.

Load and Secure Inner Source Container Within Overpack

1. Cut wooden 2"x4"s to length of Overpack Interior and form a ring within the Overpack.
2. Cut additional wooden 2"x4"s to the appropriate length to center the Inner Source Container within the Overpack.
3. Load the Inner Source Container, using an Overhead Chain Hoist, into the Overpack which has been lined on sides and bottom with lengthwise wooden 2"x4"s in a snug fitting arrangement.
4. Place remaining wooden 2"x4"s lengthwise above the Inner Source Container to fill the remaining space.
5. Fill any remaining significant voids around Inner Source Container with wooden 2"x4"s cut to the necessary size to prevent movement within the Overpack.
6. Align the lid on Overpack and secure with all nuts and lockwashers.

Survey, Label and Ship Overpack

1. Survey Radiation levels on exterior of Overpack using CDV-700M Survey Meter to insure that dose rates are within the limits established by 49 CFR 173.399.
2. Affix Radioactive Warning Labels on two opposite sides of Overpack and include Transport Index and Activity Data on each.
3. Mark address information and prepare shippers certification.
4. Coordinate arrival of Common Carrier with availability of Rigging Contractor. Supervise loading of Overpack onto tractor trailer to prevent damage.
5. Coordinate receipt of Overpack with University of Lowell.
6. Inspect and survey Empty Overpack for return to USDOE.

V. QUALITY ASSURANCE RECORDS:

An approved Quality Assurance Plan establishes the extent of documentation necessary to show conformance with the approved Program. As a minimum, the following Quality Assurance Records will be maintained by the Radiation Protection Officer (RPO) in accordance with Section III of this Document:

- A. A list of Quality Assurance Records applicable to the shipment of Item 1 will be submitted when a procedure has been developed by FEMA.
- B. Quality Assurance Records pertaining to the shipment of Item 2 are as follows:
 1. USDOE 20WC-5 Overpack Certification
 2. Laboratory Report of Overpack Contamination Levels
 3. Source Leak Test Report
 4. Procedural Check List signed by RPO
 5. Radiation Survey and Marking Data
 6. Shipper's Certification of Compliance with Approved Quality Assurance Plan.
 7. Shipping Receipt
 8. Copy of University of Lowell Materials License Amendment and letter of receipt.
 9. Radiation Survey of Empty Overpack prior to return to USDOE

VI. AUDITS:

The one time shipment of our excess Calibration Source to the University of Lowell and the relocation of our remaining Calibrator to Hartford, CT or infrequent shipment for repair or Source replacement will necessitate that each shipment be prepared for transfer to Common Carrier by the Radiation Protection Officer. This will provide a 100% level of inspection of those items listed in Section IV, Procedures For Package Preparation.

A signed copy of the procedural checklist will be included as an integral part of the Quality Assurance Records and will contain notations of any non-conforming items along with actions taken to resolve problems.

The qualifications and training of the Radiation Protection Officer have previously been submitted and are part of our License File.

In the event that a new Radiation Protection Officer is assigned, the necessary training and experience qualifications will be submitted to update the License File.

VII. ATTACHMENTS:

- A. Supplemental information regarding the shipment of Item 1 will be submitted when available.
- B. The following supplemental information is attached regarding the shipment of Item 2:
 1. Overpack Certification Material from USDOE
 - A. Letter of Certification
 - B. Diagram of Overpack
 - C. USDOE Inspection Procedures
 - D. Overpack Assembly Drawings
 2. Drawing of Inner Source Container
 3. Drawing of Source Container within Overpack
 4. University of Lowell License Amendment #20-07446-01



ATTACHMENT VII. B.1
Overpack Certification Material from USDOE

Quality Assurance Program
Materials License No. 06-06472-03

Department of Energy
Oak Ridge Operations
P.O. Box E
Oak Ridge, Tennessee 37830

May 18, 1981

Mr. Lee Gerlander
Connecticut Maintenance and Calibration Facility
56th St. Clair Avenue
New Britain, Connecticut 06051

Dear Mr. Gerlander:

DOT SPECIFICATION 20WC-5 OVERPACK

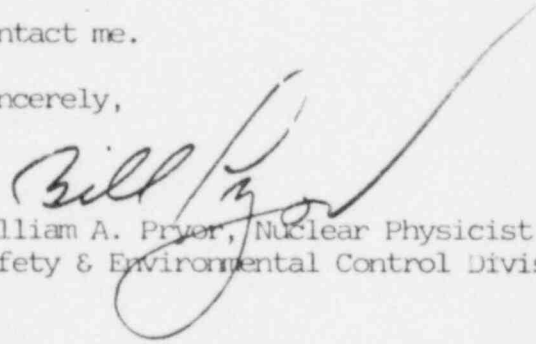
Reference is given to recent telephone request for design, fabrication, and procedural information on the subject ORNL-owned overpack.

The ORNL Fire and Impact Shield (DOT Spec. 20WC-5) for DOT Type B Radioactive Materials shipment was fabricated according to the enclosed ORNL drawings and is certified to meet the requirements of CFR 49-178.194, Specification 20WC.

The container that will be used for your shipment (WF-10) has been inspected per attached ORNL Operations Division Procedure Nos. RD-P-0-12-4-11 and RD-P-0-5-8-24. An inspection sheet certifying the container is in good condition for future shipments has been included in the enclosed documentation. A cut-away sketch indicating dimensions is also enclosed.

If you have further questions, please contact me.

Sincerely,

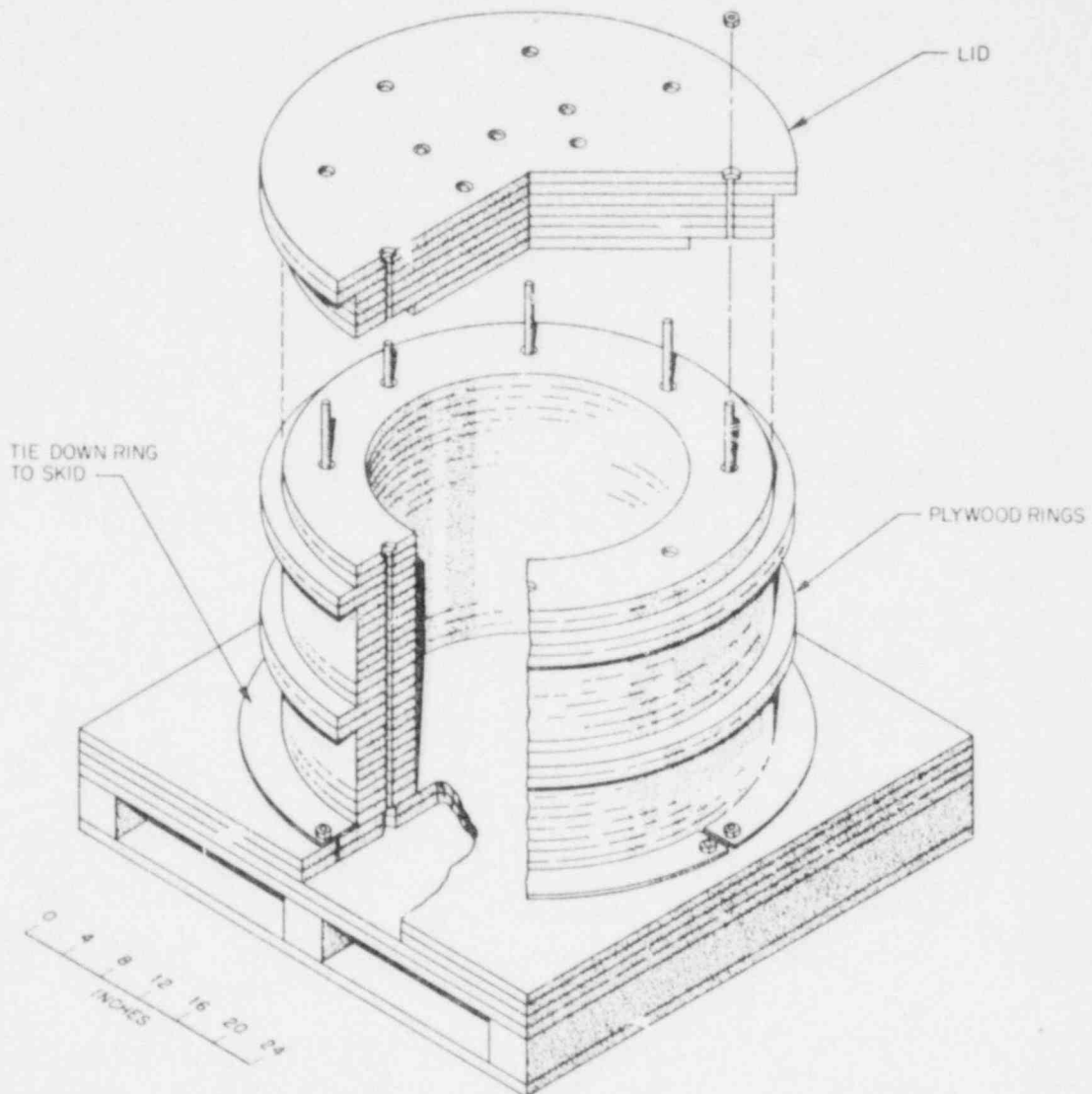

William A. Pryor, Nuclear Physicist
Safety & Environmental Control Division

SE-332:WAP
FSS: 1151

Enclosures:
Above stated

cc w/o encl:
W. A. Johnson, SE-332

SHIELD TYPE	INSIDE DIAM		INSIDE HEIGHT		PALLET DIM.		OUTSIDE HEIGHT		APPROX. WT	
	INCHES	CM	INCHES	CM	INCHES	CM	INCHES	CM	LB	KG
20 WC-1	7 1/4	18.4	24	61	42 X 42	107 X 107	39	99	150	68
20 WC-3	19 1/8	48.6	34	86	48 X 48	122 X 122	54	137	450	200
20 WC-4	24 1/4	61.6	19	48	48 X 48	122 X 122	41	104	900	400
20 WC-5	27	68.6	27	69	60 X 60	152 X 152	51	130	1500	680



FIRE AND IMPACT SHIELD; US DOT-20 WC-1, 3, 4, AND 5

OPERATIONS DIVISION
RADIOISOTOPE DEPARTMENT

BUILDING 3029

SOURCE DEVELOPMENT LABORATORY

QUALITY ASSURANCE PROCEDURE FOR TYPE B SHIPPING CONTAINERS

PROC. NO. 24
PAGE 1 OF 6
DATE 2/7/80

Incoming Type B Containers

1. Container is opened under the supervision of the Packing Foreman and a representative of the Health Physics Division. Radiation readings and smear levels on the external and internal surfaces are recorded. These records are stored in the auditable Quality Assurance (QA) file in Buildings 3029.
2. If container is contaminated externally or internally, it is cleaned to ORNL smear tolerance of 500 dis/min beta-gamma or 30 dis/min alpha. The final smear level is recorded by Health Physics and placed in the container's QA file.
3. If the radiation level internally or externally is greater than 1 mr/hr beta-gamma or 500 dis/min alpha, the container is to be decontaminated to the above tolerance. If decontamination efforts fail, the container is tagged out of service and the Department Head is notified in writing of the status. A copy of the notification is placed in the container's QA file. EXCEPTION: Uranium carriers may read up to 10 mrem/hr internally or externally.
4. Fire Shields

The RSPO Foreman will visually inspect all fire shields for cracks in the wood, protective coatings, foam glass, and/or steel covers. Defects in these items are to be recorded in the container's QA file and a blanket work order issued immediately to repair same. A copy of the blanket work order and the copy of the completed work order are to be placed in the container's QA file. An inspection of the repair work is to be made by the RSPO Foreman and a record of acceptance placed in the container's QA file.

Outgoing Type B Containers

1. Shielded Containers
 - a. Vacuum leak test will be performed by operating personnel and recorded in the container's QA file in Building 3029 before the container can be used for loading encapsulated radioactive material.
 - b. An Inspection Engineering report on the internal weld dye penetrant inspection is valid for 6 months prior to shipment. If inspection is over 6 months old, a new dye penetrant inspection of the internal welds must be made and the results recorded in the QA file. All repairs will be inspected and approved by Inspection Engineering and recorded in the QA file.

APPROVED

SUPERVISOR
J. H. [Signature]

PROCESS GROUP LEADER

R. W. [Signature]

DATE
2/7/80

OPERATIONS DIVISION
RADIOISOTOPE DEPARTMENT
BUILDING 3038
RADIOISOTOPE PACKING AND SHIPPING
PROCEDURE FOR HANDLING RETURNED CONTAINERS
EMPTY CONTAINERS

PROC. NO. 11
PAGE 1 OF 2
DATE 4/8/80

1. Empty containers being returned are received at the west end of Building 3038.
2. Containers from the three UCND plants are smeared by the area Health Physicist and a material transfer tag is attached to the carrier. Off site returns are received at X-10 Receiving where they are checked by Health Physics before transfer to Shipping.
3. Upon receiving the container, the container number is entered into the Container Receiving Record Book, on the Bill of Lading, and written up on an Isotope Container Receiving Report. The receiving report will be signed by the operator and the Shipping Supervisor. The blue copy of the container receiving report will be attached to the container; the white copy to the Bill of Lading. (Shipping Supervisor will be present when containers are checked in.)
4. The Bill of Lading and the white copy of the Isotope Container Receiving Report will be picked up by the Shipping Supervisor and forwarded to the Isotope Sales Office.
5. All empty type "B" containers are transferred to Building 3029 for Quality Assurance test.
6. After type "A" containers are checked in, the carriers are broken down in the presence of Health Physics and smeared inside. (Tritium cylinders are transferred to hood in east end of Building 3038 for smearing and decontaminating.)
7. If contamination is found the containers are cleaned by operating personnel and resmeared by Health Physics to meet shipping smear tolerances.
8. Once the containers are cleaned and tagged by Health Physics they are checked for defects by supervision and approved or disapproved for reshipment.
9. The approved carriers are tagged and stored at Building 3036 until needed for shipments.
10. The Shipping Supervisor will write work orders to repair carriers with defects.

APPROVED:

OPERATOR
R. D. Johnston

PROCESSING LEADER

R. B. Schick

DATE
4/8/80

OPERATIONS DIVISION
RADIOISOTOPE DEPARTMENT

PROC. NO. 24
PAGE 5 OF 6
DATE 2/7/80

BUILDING 3029
SOURCE DEVELOPMENT LABORATORY
QUALITY ASSURANCE PROCEDURE FOR TYPE B SHIPPING CONTAINERS

CONTAINER INSPECTION SHEET

Date 4-20-81

Container Number WF-10
(20WC-5)

EXTERNAL INSPECTION

By _____

Smear < 500 dpm By; < 20 dpm alpha

Condition Good Fair Poor

Repairs Needed None

Action Taken _____

INTERNAL INSPECTION

By R.D. Johnston

Smear < 500 dpm By; < 20 dpm alpha

Decontaminated: Yes No By _____

CONTAINER TESTING

Vacuum Test NA Gaskets NA

Weld Dye Check NA Bolts & Lock Washers Good

Repairs Made _____

RE-TESTING

Vacuum Test _____

Weld Dye Check _____

CONTAINER CERTIFIED FOR SHIPMENT - Date 4-21-81

By R.D. Johnston

APPROVED

SUPERVISOR
[Signature]
UCL-12530A (3-4-77)

PROCESS GROUP LEADER
R.D. Johnston

DATE 2/7/80

OPERATIONS DIVISION
RADIOISOTOPE DEPARTMENT

BUILDING 3029

SOURCE DEVELOPMENT LABORATORY

QUALITY ASSURANCE PROCEDURE FOR TYPE B SHIPPING CONTAINERS

PROJ. NO. _____
PAGE 2 OF 6
DATE 2/7/80

c. Gaskets will be changed every 6 months and recorded in the container's QA file. Gasket material from stores stock must be verified by the store stock number.

2. Fire Shields

Fire shield lids and bolting devices will be inspected before shipment by the Packing Foreman to insure proper fit of the locking mechanism to hold the lid securely in place during transit. A record of this inspection is to be placed in the container's QA file. All repairs are to be made before shipment and the blanket work order with its completed form is to be filed in the container's QA file.

APPROVED

SUPERVISOR

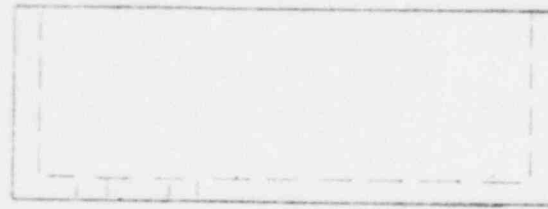
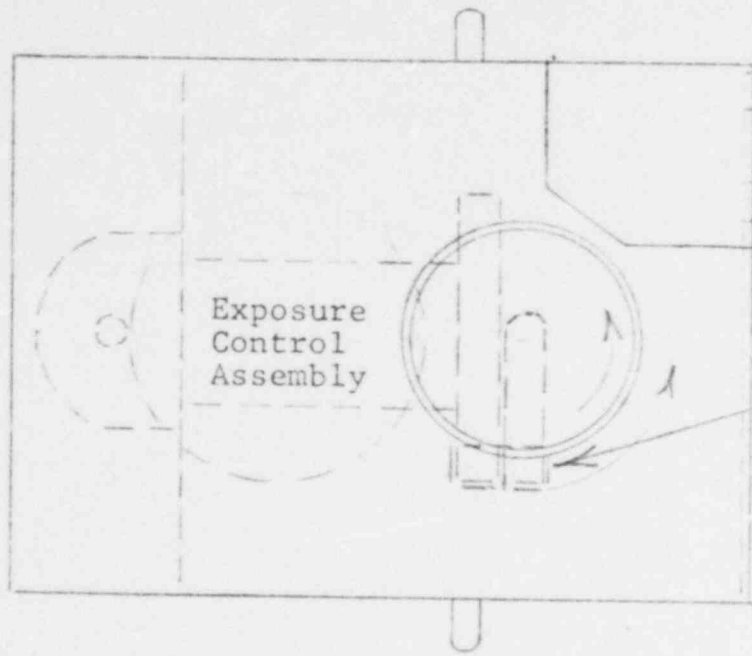
J. H. Moore

PROCESS GROUP LEADER

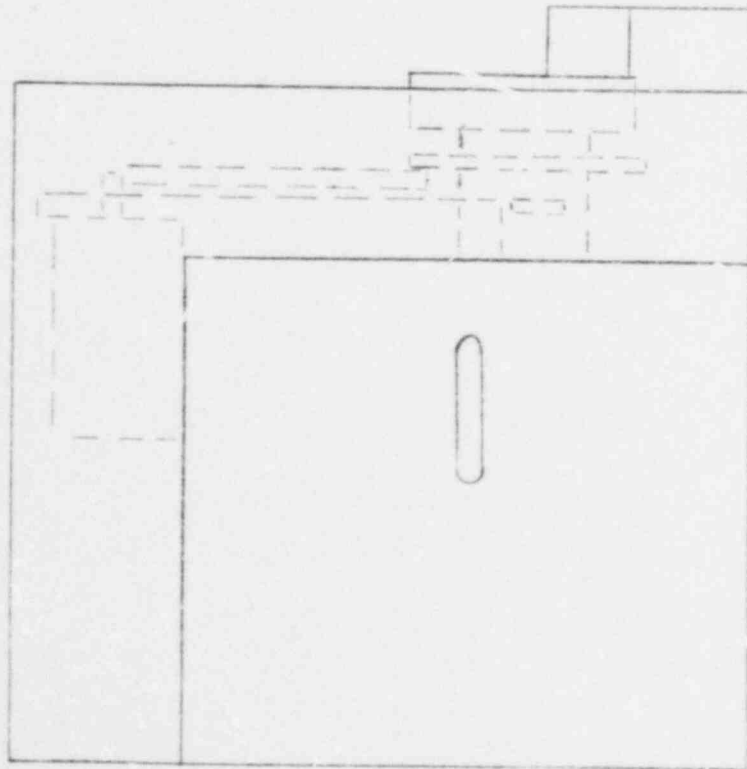
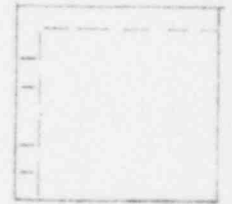
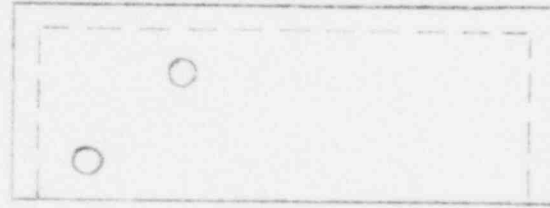
R. W. Schuch

DATE 2/7/80

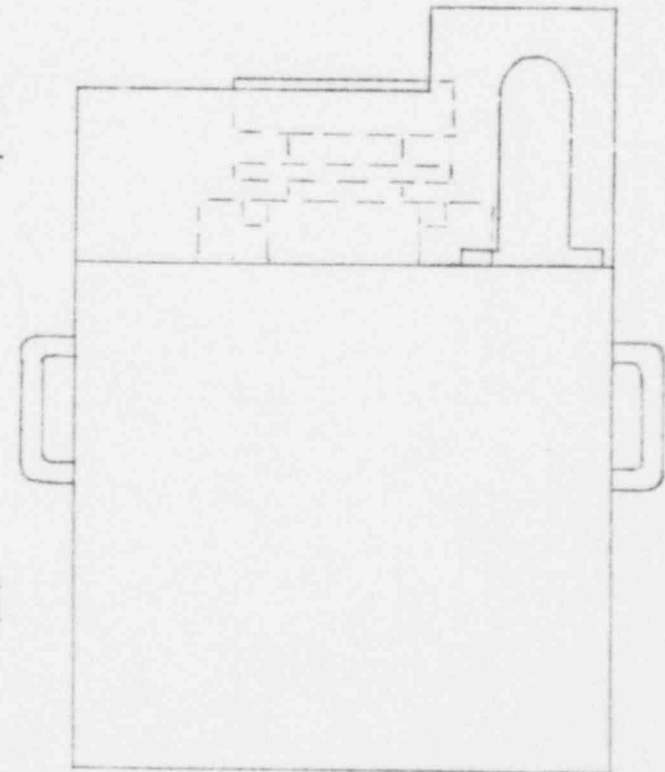
ATTACHMENT VII. B.2
Inner Source Container
Quality Assurance Program
Materials Licence No. 06-06472-03



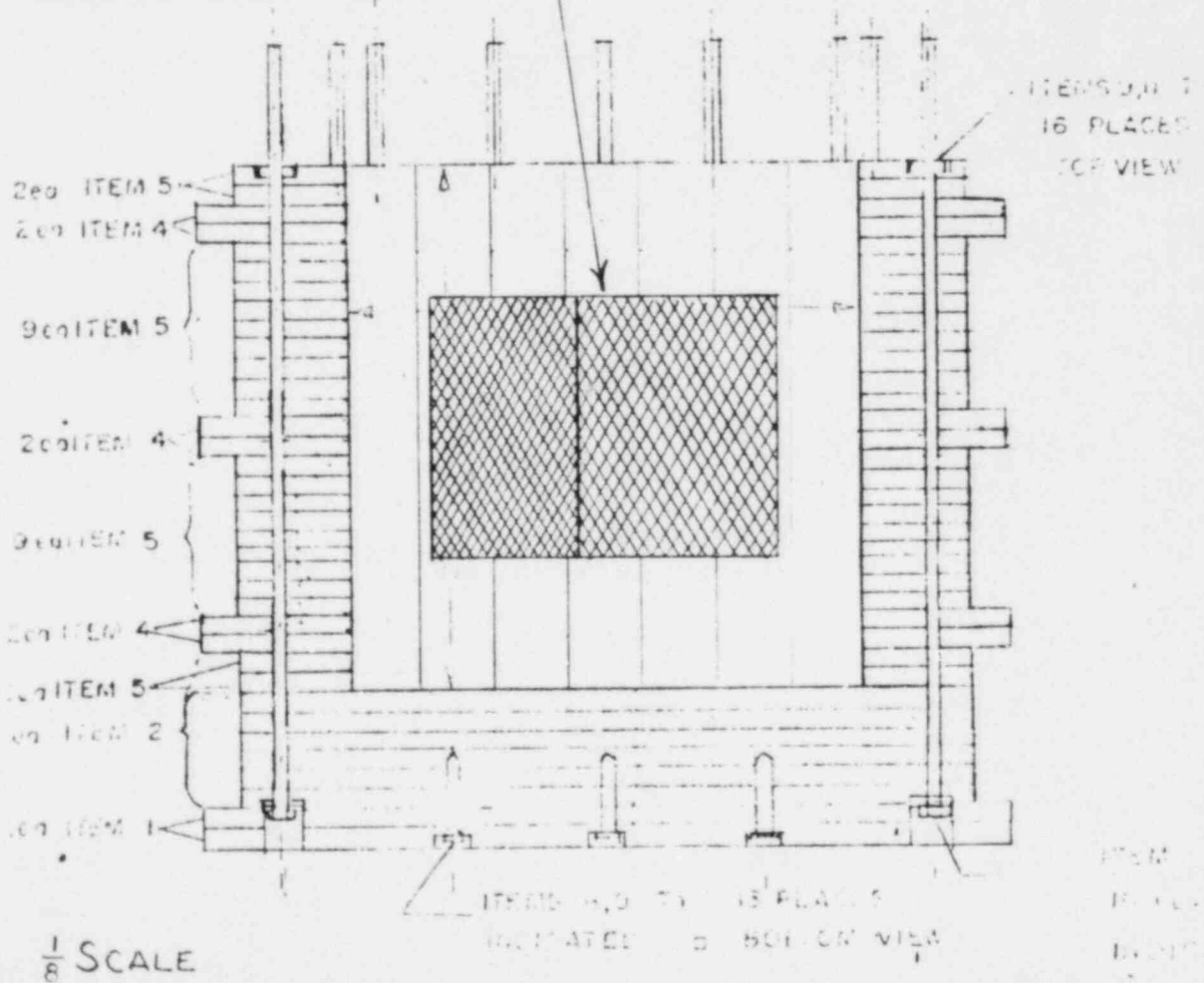
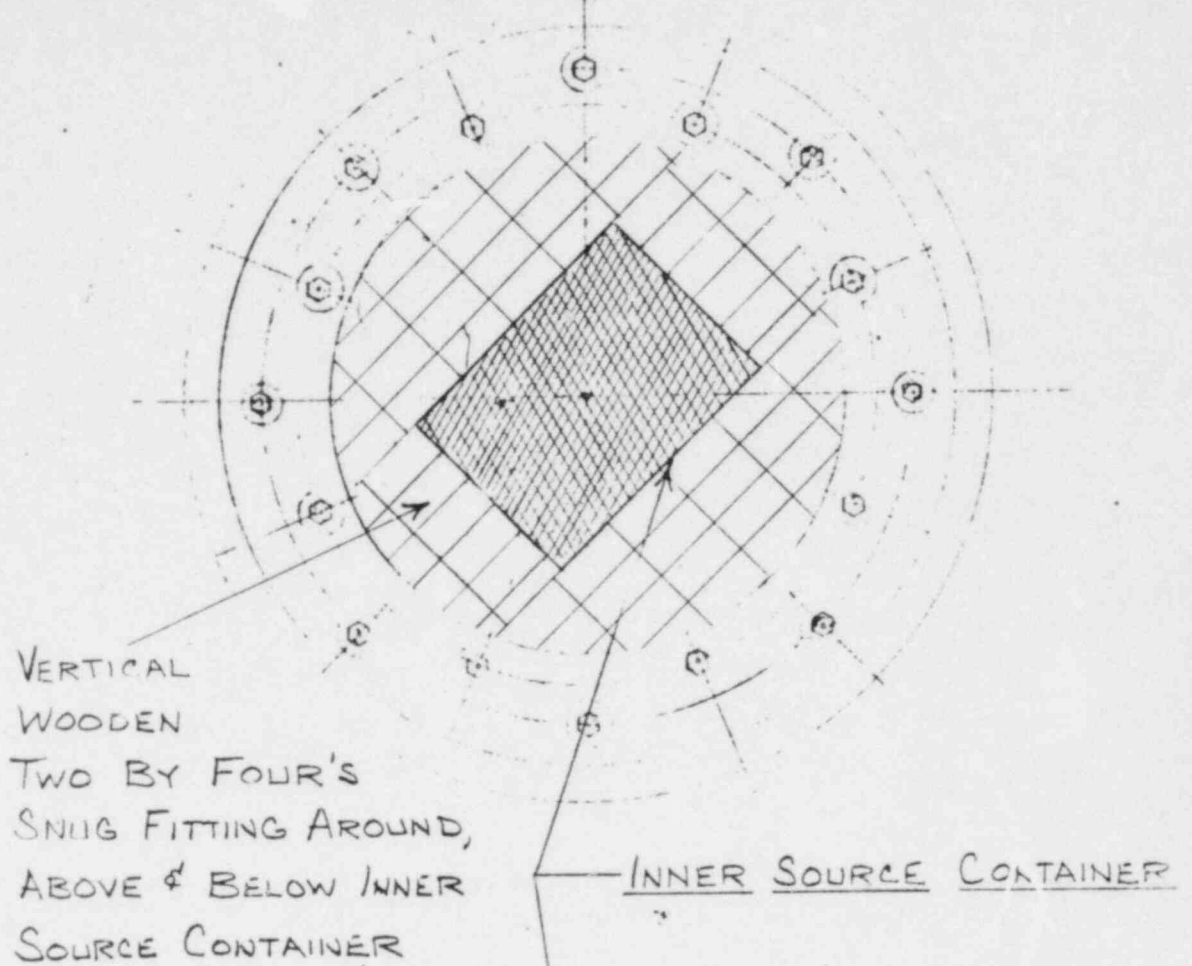
Full-Scale Detail of Steel Bracket
for Securing Source Exposure Mechanism



Protective
Steel Cover



$\frac{1}{2}$ Scale



This Copy Is For Your Files

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Amendment No. 26

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and Title 10, Code of Federal Regulations, Chapter 1, Parts 30, 31, 32, 33, 34, 35, 36, 40 and 70, and in reliance on statement and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess, and transfer byproduct, source, and special nuclear material designated below; to use such material for the purpose(s) and at the place(s) designated below; to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s); and to import such byproduct and source material. This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, as amended, and 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.

Licensee 1. University of Lowell 2. 1 Textile Avenue Lowell, Massachusetts 01854		In accordance with application dated June 22, 1977, 3. License number 20-07446-01 is amended in its entirety to read as follows:	
		4. Expiration date October 31, 1982	
		5. Docket or Reference No.	
6. Byproduct, source, and/or special nuclear material	7. Chemical and/or physical form	8. Maximum amount that licensee may possess at any one time under this license	
A. Any byproduct material with Atomic Nos. 3 through 83, inclusive B. Cobalt 60 C. Cesium 137 D. Hydrogen 3 E. Hydrogen 3 F. Thorium 228 G. Californium 241 H. Cesium 137	A. Any B. Sealed sources C. Sealed sources D. Any E. Tritiated Tintanium Targets F. Any G. Sealed source (Savannah River Models ALC or SALC) H. Sealed source (U.S. Nuclear Type 371)	A. 100 millicuries of each byproduct material with Atomic Nos. 3 through 83, inclusive B. 5 curies C. 5 curies D. 2 curies E. 20 curies F. 50 millicuries G. 1 microgram H. 10 curies	

ATTACHMENT VII. B.4
 Univ. of Lowell License Amendment

Quality Assurance Program
 Materials License No. 06-06472-03

U. S. NUCLEAR REGULATORY COMMISSION
MATERIALS LICENSE

Page 2 of 4 Pages

Supplementary Sheet

Continued From Page _____

License Number 20-07446-01

Docket or
Reference No. _____

Amendment No. 26

6. Byproduct, source, and/or special nuclear material

7. Chemical and/or physical form

8. Maximum amount that licensee may possess at any one time under this license

- G. Americium 241
- H. Californium 252
- I. Cesium 137
- J. Neptunium 237
- K. Polonium 210

- L. Sealed source
- M. Sealed source (ORNL Custom Design)
- N. Sealed source (ORNL)
- O. Foils
- P. Any

- Q. 500 microcuries
- R. 1 microgram
- S. 120 curies
- T. 3.55×10^{-3} millicuries
- U. 1 millicurie

V. Authorized use

V. through M. Research and development as defined in Section 30.4(q), Title 10, Code of Federal Regulations, Chapter 1, Part 30, "Licensing of Byproduct Material".

CONDITIONS

- 10. Licensed material shall be used only at the licensee's address stated in Item 2 above.
- 11. The licensee shall comply with the provisions of Title 10, Chapter 1, Code of Federal Regulations, Part 19, "Notices, Instructions and Reports to Workers; Inspections" and Part 20, "Standards for Protection Against Radiation."
- 12. Licensed material shall be used by, or under the supervision of, individuals designated by the Radiation Safety Committee.

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