

APPENDIX A  
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 8  
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
- ☒ B. AMENDMENT TO LICENSE NUMBER 50-19202-01
- ☐ C. RENEWAL OF LICENSE NUMBER \_\_\_\_\_

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

Alaska Welding Center, Inc.  
3021 Davis Road  
Fairbanks, AK 99709

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

At address listed in Item 2 and at temporary job sites throughout the United States where the U.S. Nuclear Regulatory Commission maintains jurisdiction over the use of by-product material.

## 4. NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION

Sandy N. Watson

## TELEPHONE NUMBER

(907) 474-0966

SUBMIT ITEMS 5 THROUGH 11 ON 8 1/2 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.

see attachment

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

see attachment

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

see attachment

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

see attachment

## 9. FACILITIES AND EQUIPMENT.

see attachment

## 10. RADIATION SAFETY PROGRAM.

see attachment

## 11. WASTE MANAGEMENT.

see attachment

## 12. LICENSEE FEES (See 10 CFR 170 and Section 170.31)

FEE CATEGORY 3P AMOUNT ENCLOSED \$ 230.00

## 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

*Sandy N. Watson*

## TYPED/PRINTED NAME

Sandy N. Watson

## TITLE

President

## DATE

8/24/87

## 14. VOLUNTARY ECONOMIC DATA

## a. ANNUAL RECEIPTS

<\$250K	\$1M-3.5M
\$250K-500K	\$3.5M-7M
\$500K-750K	\$7M-10M
\$750K-1M	>\$10M

☒

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

20-25

## c. NUMBER OF BEDS

n/s

## 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

## FOR NRC USE ONLY

## TYPE OF FEE

Amend.

## FEE LOG

Aug-1-V

## FEE CATEGORY

30

## COMMENTS

*M. Musser*

## AMOUNT RECEIVED

\$230

## CHECK NUMBER

C1517

## DATE

8/27/87

8801220350 870826  
REG5 LIC30  
50-19202-01 PDR



ITEMS 5 through 11  
NRC FORM 313  
Dated 08-24-87

ITEM 5

Radioactive Material

a.	Gamma source/element	Cobalt 60		
b.	Chemical and/or Physical Form	Solid Metal		
c.	<u>Radionuclei</u>	<u>Form</u>	<u>Technical Operations</u>	<u>Maximum Amount</u>
	Cobalt 60	Special Form	A 424 - 13	Not to exceed 300 Ci per source

To be used in Technical Operations Exposure Device Model 676

ITEM 6

To perform industrial radiography at temporary job site throughout the United States where the U.S.N.R.C. maintains jurisdiction over the use of by-product material.

ITEM 7

Sandy N. Watson, Radiation Safety Officer & ASNT-TC-1A Level III SB703  
Dale E. Thorpe, Radiation Safety Manager & ASNT-TC-1A Level III R-2001

*THE RADIATION SAFETY OFFICER WILL PERSONALLY REVIEW THIS  
ITEM 8 OPERATION PRIOR TO THE USE IN THE FIELD.*

Individuals working in restricted areas shall have passed tests No. 1 and 2 of the Alaska Welding Center, Inc. Radiation Safety Program, Revision No. 14 dated 8/24/87 and a ten (10) point efficiency/demonstration check list.

ITEM 9

The exposure device and source shall be stored in Alaska Welding Center, Inc. permanent storage facility located at 3021 Davis Road, Fairbanks, Alaska 99709.

ITEM 10

Radiation Safety Operating and Maintenance Procedures for the Technical Operations Exposure Device Model 767 are made part of Alaska Welding Center's Radiation Safety Program (See Amendment No. 14).

ITEM 11

Alaska Welding Center, Inc. will transfer the Exposure Device and source back to the manufacturer for disposal.

### Control Units

TO-664 Reel consists of a control panel built into a lightweight welded tubular cable reel and contains a handcrank to propel the source to the exposure position and back, and a source position indicating odometer calibrated in feet & inches.

TO-693 Pistol grip consists of a lightweight housing containing the handcrank and source position indicating odometer as incorporated in the TO-664 Reel.

The teflon-lined control cable consists of an outer sheath of flexible metal composite cable 25 feet long with a bright yellow polyvinyl cover and an inner spiral-wound flexible steel drive wire. Source guide tube consists of three sections of 7 foot flexible stainless steel cable with protective polyvinyl covering which can be used in 7, 14, 21 foot lengths. The end section is fitted with a stop for positive source location. Both the control cable and the source guide tubes can be stored on the control reel.



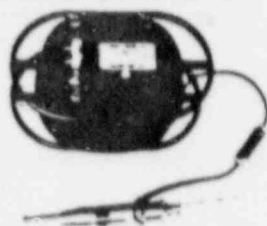
TO-693 PISTOL GRIP AND TO-664 REEL CONTROLS

### Source Assembly

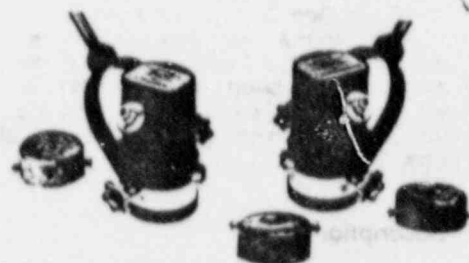
The source assembly consists of a hermetically sealed capsule containing the isotope attached to a leader cable. The opposite end of the leader cable has a connector for positive attachment to the source drive cable.

The source capsules meet the I.A.E.A. and USNRC requirements of "Special Form", which means they have passed rigorous tests that prove the integrity of the encapsulation.

### Optional Accessories



SOURCE POSITION INDICATOR TO-681



COLLIMATORS TO-719 & TO-527

- \*TO-527 Collimator with stand for directional 60° (other angle optional) beam or 20° panoramic "band" beam.
- TO-719 Depleted Uranium Collimator with inserts for directional or panoramic radiography (includes Labstand).
- TO-613 Snout Switch used with the TO-681 Source Position Indicator. This switch will pass through a 3 cm hole.
- TO-534 Combination Co<sup>60</sup>/Ir<sup>192</sup> slide rule type exposure calculator with leather case
- \*TO-681 Source Position Indicator used in conjunction with TO-527 Collimator or the TO-613 Snout Switch. This unit provides a visual signal to indicate the source fully extended position.
- TO-706 Cart for Models, 684, 680, 676 and 741 projectors.

\*NOTE: To permit full 21 foot travel of the source, an additional section of guide tube B-48907 must be substituted for the source stop section.

### Specifications

Isotope:	Cobalt <sup>60</sup>	Metric Equivalents
Capacity:	Model 684 10 curies Model 741 30 curies Model 680 100 curies Model 676 300 curies	
Application:	Radiography of steel from 1" to 7" thick Light alloys 3" to 15" thick	25 to 175 mm 75 to 375 mm
Shielding Material:	Depleted Uranium metal Model 684 150 lb. uranium Model 741 200 lb. uranium Model 680 285 lb. uranium Model 676 370 lb. uranium	68 kg 91 kg 130 kg 168 kg
Package Specifications:	All models meet I.A.E.A. and U.S.N.R.C. requirements for Type B packaging.	
Operating Specifications:	I.A.E.A. Model 684 USA/9028/B(U)T Model 741 USA/9027/B(U)T Model 680 USA/9035/B(U)T Model 676 USA/9029/B(U)T	U.S.N.R.C. Model 684 USA/9028/B(U)T Model 741 USA/9027/B(U)T Model 680 USA/9035/B(U)T Model 676 USA/9029/B(U)T
	Standard control cable length 25 feet Standard source travel up to 21 feet Longer cables and source travel available on special order	7.6 M 6.4 M

Dimensions:	Metric Equivalents
Model 684 Shield Assembly Length 17 inches Width 13 inches Height 9 1/2 inches Weight 225 pounds	43 cm 33 cm 24 cm 102.3 kg
Model 741 Shield Assembly Length 19 inches Width 14 inches Height 10 1/2 inches Weight 300 pounds	48 cm 36 cm 26.6 cm 136 kg
Model 680 Shield Assembly Length 21 inches Width 14 3/4 inches Height 11 1/2 inches Weight 405 pounds	53 cm 38 cm 30 cm 184 kg
Model 676 Shield Assembly Length 29 inches Width 15 inches Height 14 1/2 inches Weight 545 pounds	74 cm 38 cm 36.8 cm 250 kg
Control, 684 Reel Length 21 inches Width 12 inches Height 6.625 inches Weight 22 pounds	53.3 cm 30.5 cm 16.8 cm 10 kg
Control, 693 Pistol Grip Weight 19 pounds	8.6 kg
Guide Tubes, three 7-foot lengths Weight 5 pounds	2.1 M 2.3 kg
Tripod Stand Weight 10 pounds	4.6 kg

### Ordering Information:

TO684-664	Portable radiographic unit for Cobalt <sup>60</sup> sources up to 10 curies, complete with reel type control, source guide tubes, tripod and operating instructions.
TO684-693	Same as above except with pistol grip control.
A424-15	Source Assembly for Model 684 system.
TO741-664	Portable radiographic unit for Cobalt <sup>60</sup> sources up to 30 curies, complete with reel type control, source guide tubes, tripod and operating instructions.
TO741-693	Same as above except with pistol grip control.
A424-18	Source assembly for Model 741 system.
TO680-664	Portable radiographic unit for Cobalt <sup>60</sup> sources up to 100 curies, complete with reel type control, source guide tubes, tripod and operating instructions.
TO680-693	Same as above except with pistol grip control.
A424-14	Source assembly for Model 680 system.
TO676-664	Portable radiographic unit for Cobalt <sup>60</sup> sources up to 250 curies, complete with reel type control, source guide tubes, tripod and operating instructions.
TO676-693	Same as above except with pistol grip control.
A424-13	Source assembly for Model 676 system.



U.S. Department  
of Transportation

Research and  
Special Programs  
Administration

400 Seventh Street S.W.  
Washington, D.C. 20590

IAEA CERTIFICATE OF COMPETENT AUTHORITY

Special Form Radioactive Material Encapsulation

Certificate Number USA/0165/S

(Revision 1)

This certifies that the encapsulated sources, as described, when loaded with the authorized radioactive contents, have been demonstrated to meet the regulatory requirements for special form radioactive material as prescribed in IAEA<sup>1</sup> and USA<sup>2</sup> Regulations for the transport of radioactive materials.

I. Source Description and Radioactive Contents - The sources described by this certificate consist of the following Technical Operations, Inc., models which are welded capsules constructed of either 304 or 304L stainless steel to the listed capsule designs (see Appendix A) and which contain not more than the listed quantities of Cobalt-60 in metallic form:

<u>Model</u>	<u>Capsule Style</u>	<u>Activity (Curies)</u>
A424-2	60011, 60001	22
A424-3	60011, 60001	22
A424-4	60011, 60000	55
A424-5	60011, 60001	6
A424-7	60012, 60002	165
A424-8	60011, 60000	110
A424-10	60011, 60004	6
A424-11	60011, 60004	55
A424-12	60011, 60004	110
A424-13	60012, 60002	330
A424-14	60011, 60004	110
A424-15	60011, 60004	11
A424-16	60011, 60000	55
A424-17	60011, 60000	55
A424-18	60011, 60000	33
A424-19	60001, 60004	0.11
A453-1	60011, 60000	110
A453-2	60012, 60002	165
A453-3	60012, 60002	550
A453-6	60013, 60003	1100
A453-7	60011, 60000	110
A453-8	60011, 60000	55
A453-9	60011, 60000	55
A453-10	60011, 60000	55

II. This certificate, unless renewed, expires on September 30, 1987.

This certificate is issued in accordance with paragraph 803 of the IAEA Regulations and in response to the July 20, 1982, petition by Technical Operations, Inc., Burlington, Massachusetts, and in consideration of the associated information therein.

Certified by:



P. R. Rawl  
Chief, Radioactive Materials Branch  
Office of Hazardous Materials Regulation  
Materials Transportation Bureau

August 23, 1982  
(DATE)

1/ "Safety Series No. 6, Regulations for the Safe Transport of Radioactive Materials, 1973 Revised Edition" published by the International Atomic Energy Agency (IAEA), Vienna, Austria.

2/ Title, 49, Code of Federal Regulations, Part 170-178, USA.

Revision 1 issued to extend expiration date.

# FOR RADIOACTIVE MATERIALS PACKAGES

CERTIFICATE NUMBER 9029	REVISION NUMBER 5	PACKAGE IDENTIFICATION NUMBER USA/9029/B(U)	PAGE NUMBER 1	TOTAL NUMBER PAGES 2
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## MEMORANDUM

- a. This certificate is issued to certify that the packaging and contents described in Item 5 below, meet the applicable safety standards set forth in Title 10, Code of Federal Regulations, Part 71, "Packaging of Radioactive Materials for Transport and Transportation of Radioactive Material Under Certain Conditions."
- b. This certificate does not relieve the consignor from compliance with any requirement of the regulations of the U.S. Department of Transportation or other applicable regulatory agencies, including the government of any country through or into which the package will be transported.

THIS CERTIFICATE IS ISSUED ON THE BASIS OF A SAFETY ANALYSIS REPORT OF THE PACKAGE DESIGN OR APPLICATION  
 PREPARED BY (Name and Address) TITLE AND IDENTIFICATION OF REPORT OR APPLICATION

Technical Operations, Inc.  
 40 North Avenue  
 Burlington, MA 01803

Technical Operations, Inc. application dated  
 September 10, 1979, as supplemented.

DOCKET NUMBER 71-9029

## CONDITIONS

This certificate is conditional upon fulfilling the requirements of 10 CFR Part 71, as applicable, and the conditions specified below.

### (a) Packaging

(1) Model Nos.: 676 and 676E

### (2) Description

A steel encased, uranium shielded Gamma Ray Projector. Primary components consist of an outer steel shell, internal bracing, polyurethane potting material, depleted uranium shield, and an "S" tube. The contents are securely positioned in the "S" tube by a source cable locking device and shipping plug. Temper-proof seals are provided on the packaging and a 1/4-inch thick steel shipping plate is bolted over the source locking mechanism for additional protection during transport. The total weight of the package is approximately 545 pounds.

### (3) Drawings

The packaging is constructed in accordance with the following Technical Operations, Inc. Drawing Nos.:

67690, Sheets 1, 2, 3, 4 and 5 of 5, Rev. C  
 66025, Sheets 2 and 3 of 3, Rev. A

8410030222 2pp.

Page 2 - Certificate No. 9029 - Revision No. 5 - Docket No. 71-9029

5. (b) Contents

(1) Type and form of material

Cobalt 60 as sealed sources which meet the requirements of special form radioactive material.

(2) Maximum quantity of material per package

330 curies.

6. The source shall be secured in the shielded position of the packaging by the shipping plug, source assembly, and locking device. The shipping plug, source assembly used must be fabricated of materials resisting a 1475°F fire environment of one-half hour and maintaining their positioning function. The ball stop of the source assembly must engage the locking device. The flexible cable of the source assembly and shipping plug must be of sufficient length and diameter to provide positive positioning of the source in the shielded position.
7. The nameplates shall be fabricated of materials capable of resisting the fire test of 10 CFR Part 71 and maintaining their legibility.
8. The package authorized by this certificate is hereby approved for use under the general license provisions of 10 CFR §71.12.
9. Expiration date: September 30, 1989.

REFERENCES

Technical Operations, Inc. application dated September 10, 1979.

Supplements dated: October 4, 1979; and September 4, 1984.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

*R.H. O'Quinn*

for Charles E. MacDonald, Chief  
Transportation Certification Branch  
Division of Fuel Cycle and  
Material Safety, NMSS

Date: SEP 26 1984