

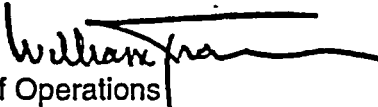


UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

December 7, 2001

MEMORANDUM TO: Chairman Meserve

FROM: William D. Travers 
Executive Director of Operations

SUBJECT: SEALED SOURCE AND DEVICE REGISTRY WEB SITE
ACCESS

I am responding to your request to review restrictions on public access to the Sealed Source and Device (SS&D) Registry web site. Our assessment is in Attachment 1.

In summary:

- The decision to restrict access to the web site for security reasons was made as part of the Agency-wide review of information available on the web. The SS&D Registry contains information on the design, radionuclide contents, and safety features of over 4000 sealed sources and devices.
- Access to individual SS&D registration certificates is still possible through the Agencywide Documents Access and Management System (ADAMS) and the U.S. Nuclear Regulatory Commissions (NRC's) and States' Public Document Rooms or by Freedom of Information Act (FOIA) requests.
- The staff took immediate steps to implement password access to the system for States, Military Master Materials Licensees (Navy and Air Force), and NRC staff who require access to support regulatory functions.
- Restrictions on access to the web site for the public will not cause an adverse safety impact. However, the staff recognizes that the restrictions are an inconvenience to the public. Although staff has arranged for persons to obtain SS&D information through direct contact with NRC or the States, the effort to respond to these inquiries creates additional burden on NRC and Agreement State staffs.
- Due to the large volume of data involved, it is not practical at this time to segregate the sensitive information in order to release partial contents to the public.

CONTACT: Michele Burgess, NMSS/IMNS
(301) 415-5868

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The restrictions on the SS&D web site are an interim measure. The staff recommends retaining password protection, pending issuance of final agency guidance on release of information to the public, as described in COMSECY 01-0030, dated October 29, 2001. When the final guidance is issued, the staff will reevaluate the SS&D restrictions as part of the agency-wide review.

Attachments:

1. SS&D Registry Web Site Assessment
2. Registration Certificate
3. SS&D Web Site Search
4. SS&D Web Site Notice
5. SS&D Web Site Guidance

cc: Commissioner Dicus
✓ Commissioner Diaz
Commissioner McGaffigan
Commissioner Merrifield
SECY
OGC
OCA
OPA
CFO

NOTE: SENSITIVE INFORMATION - LIMITED TO NRC UNLESS THE COMMISSION DETERMINES OTHERWISE

SEALED SOURCE AND DEVICE REGISTRY WEB SITE ASSESSMENT

Background:

The Sealed Source and Device (SS&D) registry web site contains the registration certificates for over 4400 sealed sources and devices that the U.S. Nuclear Regulatory Commission (NRC) and the Agreement States have issued [<http://www.hsrdo.nrc.gov/nrc/contents.htm>]. Each certificate describes the design and operation of the source/device, the radionuclide and its activity level, the safety features of the construction, technical drawings, and includes the address of the manufacturer/distributor. Attachment 2 contains an example of a registration certificate.

The SS&D web site is used primarily by the licensing staff of the NRC regional offices and the Agreement States, when issuing materials licenses. The staff uses the web site to verify that the sources and devices the applicant intends to use are appropriate for the intended conditions of use and have been reviewed by a competent regulatory authority. The staff also uses the site during incident response to identify the type and quantity of radioactive material present, and during the subsequent investigation to locate the device owner. Attachment 3 contains a copy of a simple search.

Public and commercial company uses of the site include reviews of safety and other information, searches for the application of a particular nuclide, or development of listings of sources/devices for various applications. Local governments and emergency response agencies may use the site during incident response, as described above.

Access to the SS&D web site was restricted for security reasons as part of the agency-wide review of information available on the web. The staff recognized the importance of the availability of this information and assigned high priority to resolution of this issue. After consideration of the safety impact of restriction of the system, the staff discussed alternatives with the regional offices and the Executive Board of the Organization of Agreement States. The staff then established password access in coordination with the Agreement States, which permits access to the SS&D web site for the NRC and States. In addition, the staff posted instructions on the web site for other users on how to obtain, through controlled channels, the information that they may need. Attachment 4 contains a copy of these instructions. The staff also provided guidance to the Agreement States regarding response to inquiries. Attachment 5 contains a copy of the guidance. This allows immediate access to the system for regulators' use, while providing control over outside requests for information. In addition, the staff subsequently issued passwords to the Environmental Protection Agency (EPA) and an NRC contractor, based on their requests for access in order to meet incident response and incident notification needs.

Access to individual SS&D registration certificates is still possible through the Agencywide Documents Access and Management System (ADAMS) and the U.S. Nuclear Regulatory Commissions (NRC's) and States' Public Document Rooms or by Freedom of Information Act (FOIA) requests.

Attachment 1

NOTE: SENSITIVE INFORMATION - LIMITED TO NRC UNLESS THE COMMISSION DETERMINES OTHERWISE

Consistent with the EDO's aforementioned COMSECY, the information in the registration certificates contained four of the six criteria for restricting release of information to the public:

- the registration certificates list the manufacturer and distributor of sources/devices, thus indicating specific addresses where significant numbers of units may be located (Criterion 2);
- the construction details of the specific designs, such as wall thicknesses, detailed diagrams, schematics, or cutaways are contained in the certificates (Criterion 4);
- the information in the certificates could be useful to defeat or breach the barriers to the radioactive material (Criterion 5);
- details regarding the quantities of radioactive materials in the source/device are present in the certificate (Criterion 6).

Discussion:

The staff has reviewed this issue in light of the concerns expressed to the Chairman.

IMPACT ON SAFETY:

An Agreement State licensee requested in an e-mail dated November 9, 2001, that the NRC restore unrestricted access to the SS&D web site, stating that "in the interest of safety, our field engineers need prompt access to this information." The staff acknowledges that restricted access to the web site causes delays in obtaining information, but does not agree that the delay is a safety concern. The delay does not create an unsafe condition. It merely means that the licensee has to delay action until he receives information through controlled channels.

OPTIONS:

The Staff has developed the following options regarding access to the SS&D web site:

Option 1: Retain Password Protection

Maintaining the present access through passwords controlled by NRC is consistent with the EDO's draft guidance, and enables the NRC, States, and other Federal agencies and contractors, to perform their functions without reductions in safety. With the procedure that is posted on the web site, the staff provides means for the public to obtain information, while maintaining control over the release of the information.

Response to inquiries has resulted in a small increase in NRC staff effort. Since the introduction of the password in September 2001, NRC has received approximately 30 inquiries as a result of the restriction.

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Option 2: Return to Unrestricted Access

Restoring unrestricted access to the web site could be easily accomplished, within a short lead-time, and would require only minimal contractor effort to remove the password. This option would eliminate staff effort responding to inquiries. However, this option is not consistent with the EDO's draft guidance, as discussed above.

Option 3: Expand Accessibility by Registering Outside Users

This option would expand the set of registered users. The staff would grant access to the entire system to those who meet certain criteria, which go beyond government agencies directly involved in regulatory functions and incident response. This would require staff to develop specific criteria regarding authorized entities (e.g., all NRC and Agreement State licensees and foreign regulatory agencies). Registration could be accomplished through an automatic process, requiring additional contracting effort, or through staff-issued registration, requiring additional staff effort. This option poses the problem of selectively determining which users should receive access or be denied access. It also raises questions about tracking users and maintaining security of passwords.

Option 4: Establish Web Site with Partial Information

This option would involve developing a web site that excludes sensitive information and would require the staff to redact over 4400 registration certificates. To conduct the redaction, the staff would have to develop specific criteria for which information to be released. In addition, this option would require a significant contracting effort and time to identify development options, rewrite the database and web site, and scan additional releasable versions of over 4400 certificates. This option may not satisfy the information needs of users, depending on the information they may be seeking (e.g., quantity or form of the radioactive material, containment design).

Conclusion:

As an interim measure, the staff recommends Option 1 -- to retain password protection, pending issuance of final agency guidance on release of information to the public. This option is consistent with the current guidance on release of information to the public, and does not adversely affect public health and safety. Long-term issues will be addressed upon issuance of the final guidance and based on the number and types of requests for information received by NRC and the Agreement States. In the future, the accessibility of the SS&D Registry on the web site will be reviewed and revised, as necessary.

**NOTE: SENSITIVE INFORMATION - LIMITED TO NRC UNLESS THE COMMISSION
DETERMINES OTHERWISE**

Registration Certificate NR-0220-S-103-S
dated March 30, 2000 (██████████)

REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF SEALED SOURCE
(AMENDED IN ITS ENTIRETY)

NO.: NR-220-S-103-S

DATE: March 30, 2000

PAGE: 1 of 10

SOURCE TYPE: Gamma Irradiator Source

MODEL: C-188 (Series) Types 1 through 13
C-306 (Series) Types 1 and 2

MANUFACTURER/DISTRIBUTOR: MDS Nordion, Inc.
(formerly Nordion International,
Inc. and Atomic Energy of
Canada, Ltd.)
447 March Road
Kanata, Ontario, Canada K2K 1X8

ISOTOPE:

Cobalt-60

MAXIMUM ACTIVITY:

(C-188, slug material)
17,000 curies (629 TBq)
(C-188, wafer and pellet material)
14,000 curies (518 TBq)
(C-306)
8,500 curies (314.5 TBq)

LEAK TEST FREQUENCY:

6 months

PRINCIPAL USE:

(M) Gamma Irradiator, Category IV

CUSTOM-SOURCE:

_____ YES X NO

REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF SEALED SOURCE
(AMENDED IN ITS ENTIRETY)

NO.: NR-220-S-103-S

DATE: March 30, 2000

PAGE: 2 of 10

SOURCE TYPE: Gamma Irradiator Source

DESCRIPTION:

The Models C-188 and C-306 are doubly encapsulated fusion welded sources consisting of one or two inner capsules and an outer capsule. The outer capsule is the same for each source model except for the length. The inner capsules vary according to the type and activity required.

The Model C-188 contains one or two inner capsules in various combinations according to type as shown in the table below:

<u>C-188 Type</u> <u>Number</u>	<u>Model Number</u> <u>Of Inner(s)</u>	<u>C-188 Type</u> <u>Number</u>	<u>Model Number</u> <u>Of Inner(s)</u>
1	C-177/C-177	7	C-177/AC-191
2	AC-191/AC-191	8	C-177/AC-195
3	AC-195/AC-195	9	C-177/AC-339
4	C-246	10	AC-191/AC-195
5	AC-339/AC-339	11	AC-191/AC-339
6	AC-345/C-348	12	AC-195/AC-339
		13	Two inners maximum.

The inner capsules vary according to the user requirements. The Model C-188 outer encapsulation is constructed of 316L stainless steel having dimensions as shown:

	<u>Max.</u>		<u>Nominal</u>		<u>Min.</u>	
	(inch)	(mm)	(inch)	(mm)	(inch)	(mm)
Overall length	17.9	454.7	17.8	452.1	17.7	449.6
Outside dia. at end caps	0.50	12.7	0.44	11.2	0.40	10.2
Outside dia. of body	0.40	10.2	0.38	9.7	0.37	9.4
Wall thickness of body	0.027	0.69	0.026	0.63	0.023	0.58

The end cap is attached to the main body using a fusion weld. Selection of the inner capsule/s varies according to user requirements in a configuration as shown above for Type Number 1 through 13. Source Models C-188 and C-306 have a consistent fit of minimum overall diameter and length dimensions between the inner and outer capsules to be within the range of a minimum diametrical clearance 0.001 inches (0.025 mm) and a minimum length clearance of 0.06 inches (1.5 mm) respectively.

REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF SEALED SOURCE
(AMENDED IN ITS ENTIRETY)

NO.: NR-220-S-103-S

DATE: March 30, 2000

PAGE: 3 of 10

SOURCE TYPE: Gamma Irradiator Source

DESCRIPTION (contd.):

This does not mean the diametrical gap will be 0.001 inches (0.025 mm) in all sources of Models C-188 and C-306. Previously distributed C-188 Types 1 to 12 and C-306 Types 1 and 2 have the same diametrical and longitudinal gap as they always had, as the designs of these sources have not changed.

The Model C-306 outer capsule is the same for all types. The inner capsule varies according to the user requirements. The Model C-306, Type 1 source contains one Model C-339 inner capsule; the Type 2 contains one C-177 inner capsule. Prior to December 21, 1998, the Model C-306, Type 1 source contained one Model AC-195 inner capsule, Type 2 contained one AC-191, and Type 3 contained one C-177 inner capsule.

The Model C-306 outer encapsulation is constructed of 316L stainless steel having dimensions as shown:

	<u>Max.</u>		<u>Nominal</u>		<u>Min.</u>	
	(inch)	(mm)	(inch)	(mm)	(inch)	(mm)
Overall length	9.6	243.9	9.5	241.3	9.4	238.8
Outside dia. at end caps	0.50	12.7	0.44	11.2	0.40	10.2
Outside dia. of body	0.40	10.2	0.38	9.7	0.37	9.4
Wall thickness of body	0.027	0.69	0.026	0.63	0.023	0.58

The end cap is attached to the main body using a fusion weld. Selection of the inner capsule varies according to user requirements; i.e., either Type 1 or Type 2 configuration. The fit of overall diameter and length dimensions between the inner and outer capsules is within the range of a minimum diametrical clearance 0.001 inches (0.025 mm) and a minimum length clearance of 0.06 inches (1.5 mm) respectively.

The inner capsules of source Models C-188 and C-306 have a maximum diameter of 0.32 inches (8.13 mm) and a minimum wall thickness of 0.015 inches (0.38 mm). The length of the inner capsules, the capsule material, and the radioactive source contents vary for each model as shown here in:

REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF SEALED SOURCE
(AMENDED IN ITS ENTIRETY)

NO.: NR-220-S-103-S

DATE: March 30, 2000

PAGE: 4 of 10

SOURCE TYPE: Gamma Irradiator Source

DESCRIPTION (contd.):

<u>Model No.</u> <u>of Inner</u>	<u>Radioactive</u> <u>Contents</u>	<u>Capsule</u> <u>Material</u>	<u>Max. length</u> <u>(inch) (mm)</u>	
C-246	pellets or slugs	SS316L	16.6	422
AC-339	pellets or slugs	Zircaloy 2/4	8.3	211
C-177	pellets or slugs	SS316L	8.3	211
AC-191	pellets or slugs	SS316L	8.3	211
AC-195	pellets or slugs	Zircaloy 2	8.3	211
AC-345	slugs	Zircaloy 2/4	11.3	287
C-348	slugs	SS316L	5.3	134
C-188				
Type 13	slugs, pallets, or, wafers	Zircaloy 2/4 SS316L	16.6	422

The source material in the inner capsules is either 0.03-0.25 inches (0.76-6.35 mm) long and 0.03-0.25 inches (0.76-6.35 mm) diameter nickel plated cobalt pellets, or approximately 0.25 inches (6.35 mm) diameter and 0.03-0.5 inches (0.76-12.7mm) long nickel plated cobalt wafers, or approximately 0.25 inches (6.35mm) diameter and 0.5-3.0 inches (12.7-76.2 mm) long nickel plated slugs.

The majority of sources contain slug material as active contents. Occasionally, for low activity or sources requiring close tolerance dose outputs, material in pellet/wafer form is used as the active contents. The use of pellets/wafers makes it possible to mix pellets/wafers of various activities along with inactive pellets/wafers to accurately obtain required dose outputs. The pellets/wafers are of metallic form and nickel plated and, thus, indispersable in water.

LABELING:

Each model of the inner capsule assemblies is engraved on the end capsule with a serial number except the Model C-246 which is engraved on the body. All batches of inner capsules used in Model C-188 shall be traceable to the C-188 serial numbers. The Quality Assurance records for the inner capsules of all sources are maintained by MDS Nordion, Inc. The serial numbers for all sources shall be issued and controlled by MDS Nordion, Inc.

REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF SEALED SOURCE
(AMENDED IN ITS ENTIRETY)

NO.: NR-220-S-103-S

DATE: March 30, 2000

PAGE: 5 of 10

SOURCE TYPE: Gamma Irradiator Source

Labeling(Contd.):

The Model C-188 and C-306 sources are engraved in the following manner:

- a unique serial number on the upper end cap face;
- either "C-188" or "C-306" and "Co 60" on the upper end cap diameter;
- the radiation trefoil and "MDSN X" (where MDSN designation of manufacturer, MDS Nordion, Inc., and X is the material heat number) on the lower end cap diameter. Sources manufactured under the earlier names of the company had been engraved correspondingly as "AECL" or "NII X."

DIAGRAM:

See Attachments 1 and 2.

CONDITIONS OF NORMAL USE:

The source Models C-188 and C-306 sources are designed primarily for use in wet source storage, pool type irradiators. Typical environments associated with the use of these irradiators include high temperatures, thermal shock due to sources being brought out of and into the water, and long term contact with water.

The sources may be used in dry source storage irradiators and environments for these devices would typically be less harsh. These uses would typically be medical facilities and laboratories fit for human occupancy. Therefore, the sources would be expected to be subjected to ambient temperatures and pressures. However, high activity sources may be exposed to elevated temperatures and temperature cycling due to internally generated heat.

REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF SEALED SOURCE
(AMENDED IN ITS ENTIRETY)

NO.: NR-220-S-103-S

DATE: March 30, 2000

PAGE: 6 of 10

SOURCE TYPE: Gamma Irradiator Source

PROTOTYPE TESTING:

The manufacturer conducted ANSI classification tests in order to classify the Model C-188 source. Category IV irradiators must have a minimum classification of E53424 to meet the requirements of 10 CFR 36.21 and ANSI N43.6. The Model C-188 source was successfully tested to E65646 in accordance with ANSI N542-1977, "Sealed Radioactive Sources, Classification." The tests were conducted by using dummy slug material rather than pellet material, because the slug configuration represented the more severe conditions. The manufacturer conducted an additional bend test, as specified in ANSI N43.10, "Safe design and Use of Panoramic Wet Source Storage gamma Irradiators." In the bend test, the Model C-188 source performed to Class 5.

The manufacturer stated that the Model C-306, Types 1 and 2, capsule met the standards of ANSI classification E54434 based on comparison with the Model C-188 capsule.

The manufacturer tested Model C-188 Type 13 for a worst-case scenario. Prototype models tested had a minimum 0.001 inches (0.025 mm) diametrical tolerance between the inner and the outer encapsulation. The inner length was represented by two equal solid rods of Type 316L stainless steel (stainless steel has a higher stiffness than Zircaloy). These solid bars exerted worst-case forces on the outer capsule during the ANSI testing. The solid bars were used to simulate the maximum resistance offered by the inner during testing. Tubing, without end caps, was used to simulate the least resistance by the inner during testing.

The outer source encapsulation retained its integrity over bounding stiffness range for the inner capsules. These worst-case prototypes were tested to E64424 classification and an additional class 5 bend test was done. The manufacturer test reports indicated that the outer encapsulation retained its integrity under these worst-case test conditions.

EXTERNAL RADIATION LEVELS:

A calculation of dose rates was done using the gamma radiation constant for cobalt-60 of 1.32 R/hr (13.2 mSv/hr) at one meter, per curie (39.4 in., per 37 GBq). A source containing maximum 17,000 curies (629 TBq) would be expected to yield the following dose rates:

REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF SEALED SOURCE
(AMENDED IN ITS ENTIRETY)

NO.: NR-220-S-103-S

DATE: March 30, 2000

PAGE: 7 of 10

SOURCE TYPE: Gamma Irradiator Source

EXTERNAL RADIATION LEVELS (Contd.):

<u>Distance from source</u>	<u>Radiation Level</u>	
	<u>R/hr</u>	<u>Sv/hr</u>
100 cm/39.4 in	(22,440) 22,000 2.72×10^4	220
30 cm/11.8 in	250,000 2.15×10^5	2,500
5 cm/1.97 in	9,000,000 2.67×10^6	90,000

A source containing 14,000 curies (518 TBq) would be expected to yield the following dose rates:

<u>Distance from source</u>	<u>Radiation Level</u>	
	<u>R/hr</u>	<u>Sv/hr</u>
100 cm/39.4 in	18,500	185
30 cm/11.8 in	205,000	2,050
5 cm/1.97 in	7,400,000	74,000

A source containing 8,500 curies (314.5 TBq) would be expected to yield the following dose rates:

<u>Distance from source</u>	<u>Radiation Level</u>	
	<u>R/hr</u>	<u>Sv/hr</u>
100 cm/39.4 in	11,000	110
30 cm/11.8 in	125,000	1,250
5 cm/1.97 in	4,500,000	45,000

QUALITY ASSURANCE AND CONTROL:

MDS Nordion, Inc. (formerly AECL and Nordion International, Inc.) maintains a quality assurance and control program which has been deemed acceptable for licensing purposes by NRC. A copy of the program is on file with the NRC.

As a sole manufacturer and distributor of source Model C-188, Type 13, MDS Nordion, Inc. is committed to ensure that inners of Model C-188, Type 13 sources manufactured and supplied to MDS Nordion, Inc. by other manufacturers, who maintain a NRC license, shall meet the requirements outlined in this registration certificate.

REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF SEALED SOURCE
(AMENDED IN ITS ENTIRETY)

NO.: NR-220-S-103-S

DATE: March 30, 2000

PAGE: 8 of 10

SOURCE TYPE: Gamma Irradiator Source

QUALITY ASSURANCE AND CONTROL (Contd.):

MDS Nordion, Inc. has committed to periodically conduct audits of subcontractors and source suppliers to ensure consistency and sustained production of quality products. Subcontractor and suppliers shall be audited as needed in accordance with the provisions of ISO 9000 registered Quality Program. The results of such audits, follow-ups and corrective actions shall be recorded, retained, maintained and made available for inspections and audits.

LIMITATIONS AND/OR OTHER CONSIDERATIONS OF USE:

- The sources shall be distributed only to persons specifically licensed by the NRC or an Agreement State.
- Handling, storage, use, transfer, and disposal: To be determined by the licensing authority. In view that the sealed sources exhibit high surface dose rates when unshielded, they should be handled only by experienced licensed personnel using adequate remote handling equipment and procedures.
- These sources shall not be subjected to an environmental or other condition of use which would exceed an ANSI N542-1977 Classification of 77E54434.
- All C-188 Type 13 source will be tested to ANSI N542 classification 77E64424. It must also pass the additional Class 5 bend test prescribed in ISO 2919-1999(E). A Type 13 configuration shall not be used until these tests have been successfully completed and the simulated sources have been found leak tight.
- Any inner capsules acquired from other manufacturers are subject to MDS Nordion, Inc. approved quality requirements. MDS Nordion, Inc. is responsible for ensuring manufacturer's conformance to these requirements and requirements of other USA regulatory authorities.
- This registration sheet and the information contained within

REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF SEALED SOURCE
(AMENDED IN ITS ENTIRETY)

NO.: NR-220-S-103-S

DATE: March 30, 2000

PAGE: 9 of 10

SOURCE TYPE: Gamma Irradiator Source

LIMITATIONS AND/OR OTHER CONSIDERATIONS OF USE (Contd.):

the references shall not be changed without the written consent of the NRC.

REVIEWER NOTE: Sources used in wet source storage irradiators shall be tested for contamination according to Section 36.59, 10 CFR Part 36.

REVIEWER NOTE: These sources may be used in dry source storage irradiators. Sources used in these devices shall be leak tested at intervals not to exceed six months using techniques capable of detecting 0.005 micro curie (185 Bq) of removable contamination.

SAFETY ANALYSIS SUMMARY:

Based on our review of the information and test data cited below, including the claimed ANSI classification, we continue to conclude that the Model C-188 and C-306 source designs are acceptable for licensing purposes.

Furthermore, we continue to conclude that the Model C-188 and C-306 sources would be expected to maintain their containment integrity for normal conditions of use and accidental conditions which might occur during the uses specified in this certificate.

REFERENCES:

The following supporting documents for the Models C-188 and C-306 sources are hereby incorporated by reference and are made a part of this registry document.

- Atomic Energy of Canada, Ltd. letters dated October 29, 1973, June 14, 1974, September 20, 1984, and July 18, 1985 with enclosures thereto.
- Nordion International, Inc. letters dated June 25, 1993, March 16, 1992, December 5, 1991, and October 3, 1988, with enclosures thereto, and letter received November 18, 1991, with enclosures thereto.

REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF SEALED SOURCE
(AMENDED IN ITS ENTIRETY)

NO.: NR-220-S-103-S

DATE: March 30, 2000

PAGE: 10 of 10

SOURCE TYPE: Gamma Irradiator Source

REFERENCES (Contd.):

- MDS Nordion, Inc. letters dated January 13, 1998, February 16, 1998, April 3, 1998, December 21, 1999, and March 6, 2000, with enclosures thereto.

ISSUING AGENCY:

U.S. Nuclear Regulatory Commission

Date: March 30, 2000


Reviewer:



Ujagar S. Bhachu

Date: March 30, 2000

Concurrence:


Seung Lee

Date: March 30, 2000

Concurrence:

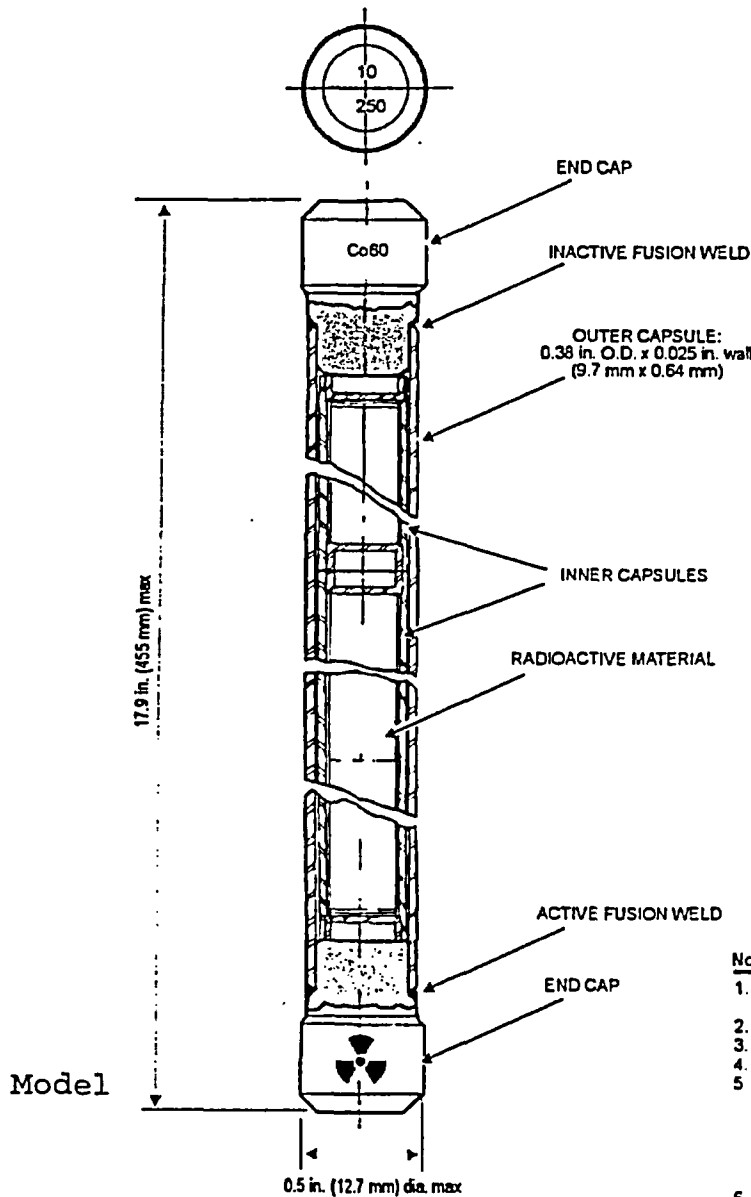

John Jankovich

REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF SEALED SOURCE
(AMENDED IN ITS ENTIRETY)

NO.: NR-220-S-103-S

DATE: March 30, 20000

ATTACHMENT 1



C-188 Type Number	Model Number of Inners
1.	C-177/C-177
2.	AC-191/AC-191
3.	AC-195/AC-195
4.	C-246
5.	AC-339/AC-339
6.	AC-345/AC-348
7.	C-177/AC-191
8.	C-177/AC-195
9.	C-177/AC-339
10.	AC-191/AC-195
11.	AC-191/AC-339
12.	AC-195/AC-339
13.	See Note 6

Notes

1. Conforms to IAEA Special Form requirements AECB Certificate No. CDN/0010/S-85.
2. Radioactive Material: Cobalt-60 in solid form.
3. Outer capsule material: Type 316L stainless steel.
4. All capsules are sealed by fusion welds.
5. Engraved on capsule:
 - (A) Upper end cap face: serial number diameter: C188 Co60
 - (B) Lower end cap diameter: MDSN X and Trefoil where X is material heat number.
6. Any inner design constructed from stainless steel or zircaloy consisting of one or more capsules containing Cobalt-60 pellets, slugs or wafers and of a design similar, but not identical to one or more of those contained in types 1 to 12.

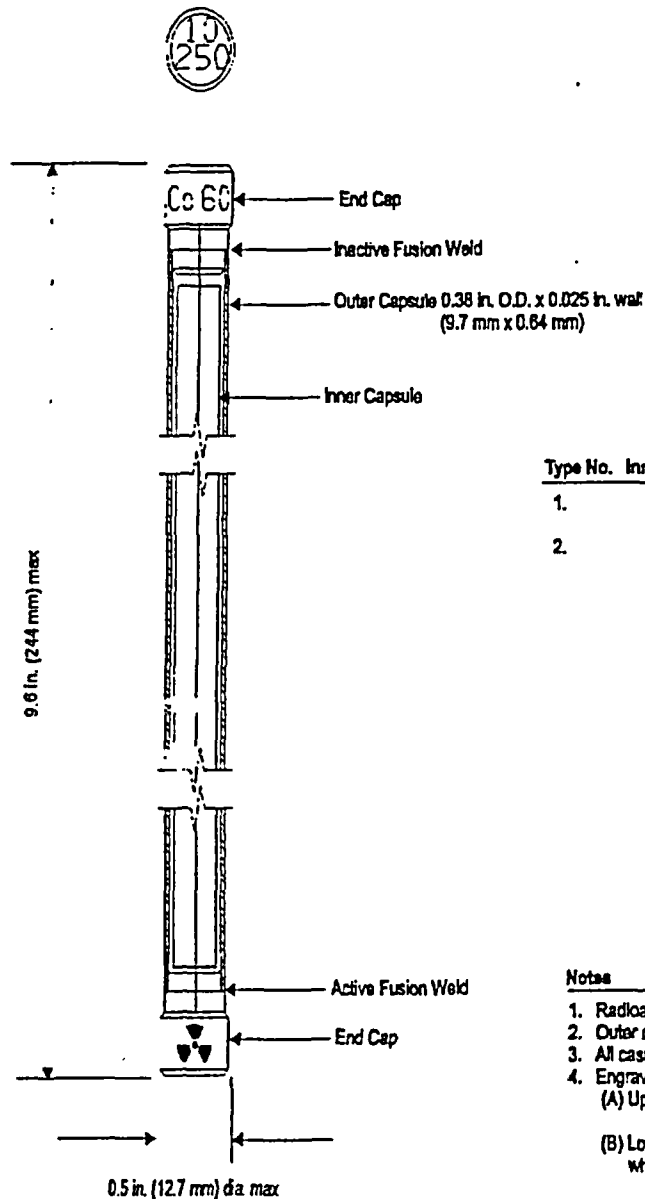
C-188 Sealed Source Assembly

REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
 SAFETY EVALUATION OF SEALED SOURCE
 (AMENDED IN ITS ENTIRETY)

NO.: NR-220-S-103-S

DATE: March 30, 20000

ATTACHMENT 2



Type No.	Inner Capsule	Qty
1.	C-330	1
2.	C-177	1

Notes

1. Radioactive Material: Cobalt-60 in solid form.
2. Outer capsule material: Type 316L stainless steel.
3. All capsules are sealed by fusion welds.
4. Engraved on capsule:
 - (A) Upper end cap (face: serial number (diameter): C-306 Co60)
 - (B) Lower end cap (diameter): MDSN X and Trefoil where X is material heat number.

C-306 Sealed Source Assembly

Web Site Search

Results of Simple Search on "cesium chloride" - Netscape

File Edit View Go? Communicate Help

Back Forward Reload Home Search Netscape Print Security Shop

Bookmarks Location: http://www.hrsd.oel.gov/nrc/sources/searchresult.cfm

Results of Simple Search on "cesium chloride"

Your search was performed on 11/26/01 at 8:19 AM. A total of 3505 documents were searched, and 27 matched your search criteria. Documents 1 through 27 are listed below.

STP Site Contents

Sample SDR cover sheets

What is the Registry?

Monsanto Research Corporation Am.Be Source Engineering Evaluation

Why can't I see these PDF files?

No.	Registry, Distributor/Manufacturer & Summary
1.	IL-1082-S-102-S - REVISS Services, Inc. (Score: 0.7867) Summary: SEALED SOURCE AMENDED IN ENTIRETY NO: IL-1082-S-102-S DATE: September 28, 1999 (supersedes IL-136-S-187-S) 1 of 7 PAGE: SOURCE TYPE: High Energy Gamma Source MODEL: R8000 Series (formerly CDC. REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES SAFETY EVALUATION OF SEALED SOURCE AMENDED IN ENTIRETY NO: IL-1082-S-102-S DATE: September 28, 1999 (Supersedes IL-136-S-187-S) 2 of 7 PAGE: SOURCE TYPE: High Energy Gamma...
2.	NR-0220-D-102-S - MDS Nordlon, Inc. (Score: 0.7867) Summary: DEVICE (AMENDED IN NO: REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES SAFETY EVALUATION OF DEVICE (AMENDED IN ITS ENTIRETY) : NO. NR-220-D-102-S DATE: SEP 17 1999 PAGE 2 OF 11 DEVICE TYPE: Gamma Irradiator DESCRIPTION: The Gammacell 1000, 1000 Elite and 3000 Elan are fully self-contained irradiators weighing approximately 2500 lbs.
3.	NR-8105-S-806-S - Thermotec Formerly TMA/Eberline (Score: 0.7742) Summary: ON OF DEVICE NO: NR-8105-S-806-S DATE: January 5, 1999 PAGE 2 OF 3 DEVICE TYPE: Calibration Sources DESCRIPTION: These sources are manufactured by CEA France. The radioactive compound for the SCS 1008 type source is Cesium chloride pellets. CEA France furnishes sources and wipe test certificates to Eberline.
4.	NR-8076-S-803-S - Industrial Reactor Laboratories, Inc. (Score: 0.7742) Summary: SEALED SOURCE NO.: NR-8076-S-803-S DATE: FEB 17 1999 PAGE 2 OF 3 DEVICE TYPE: Sealed Sources DESCRIPTION: Cobalt-60 sources may be in the form of metal pellets, wafers, slugs, or wire. REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES SAFETY EVALUATION OF SEALED SOURCE NO.:
5.	GA-1073-D-101-S - IMS Measuring Systems, Inc. (Score: 0.7742) Summary: GA-1073-D-101-S supersedes NR-375-D-103-S DATE: June 30, 1999 AND DEVICES PAGE: 1 of 7 DEVICE TYPE: Tube Thickness Gauge MODEL: 5301 DISTRIBUTOR: IMS Measuring Systems, Inc. 2221 Peachtree Road, NE Suite P-32 Atlanta, Georgia 30309 MANUFACTURER: Isotope Measuring Systems Dieselstrasse 55 Heiligenhaus, D-42568 GERMANY SEALED SOURCE MODEL DESIGNATION: Amersham Model RB6000 series (formerly CDC)

Document Done

Start Corel WordPerfect Results of Simple... GroupWise - Mailbox

8:06 AM

State and Tribal Programs Site
Retrieve SS&D Information

To obtain information about, or a copy of, a SSD registration certificate, please do one of the following:

If you know the distributor of the device, please contact the distributor directly.

If you do not know the distributor, or are unable to locate the distributor, please contact one of the following:

- If you are located in an Agreement State, please contact your local Agreement State Agency. Addresses for the Agreement State Agencies can be found in the state program directory. (<http://www.hsrdo.org/nrc/asframe.htm>)
- If you are located in any other state, please contact the U.S. Nuclear Regulatory Commission: Director, Division of Industrial and Medical Nuclear Safety, NMSS/NRC, Washington, DC 20555, or call 301-415-8722.

Guidance to NRC Regions/HQ and Agreement States

As a result of the recent temporary changes in public access to the OSTP's Index of Radioactive Sealed Sources and Devices, we are providing guidance to NRC and the Agreement States regarding the handling of inquiries involving the Index. In the past, NRC HQ distribution and website provided accessibility to all registration certificates. NRC HQ will continue its hard copy distribution of all NRC and AS newly issued or amended certificates. However, given the temporary shutdown of public access to the website, we are seeking assistance from the AS in assisting the public in obtaining information and copies of certificates. Until the issue of public accessibility can be resolved, we are asking each State to handle calls from licensees and members of the public located in their State. NRC HQ will continue to assist non-Agreement State entities. This approach will enable the NRC and the Agreement States to continue to provide fast and efficient responses to all inquiries.

For requests regarding the Index of Radioactive Sealed Sources and Devices (SSD), respond as you would normally to requests for publicly available information. NRC is not restricting access to hard copies of the registration certificates.

However, be alert for suspicious inquiries such as:

- unusual questions from employees or members of the public
- unusual inquiries targeted toward large sources or transuranics
- unusual requests for document searches, particularly regarding activity levels or engineering drawings

Report suspicious or unusual activities involving material having a credible threat potential to local law enforcement agencies, the local FBI, the NRC Operations Center at 301-816-5100, and applicable Agreement States Agencies.

For requests from non-licensees, NRC encourages documentation of such requests, in the event that future follow-up may be necessary.