MS-16

Medical Center

500 West Fort Street
Boise ID 83702

71

Veterans Administration

July 30, 1985

In Reply Refer To: 531/113
Control #15853

Nuclear Materials Safety Section
ATTN: **Jack E. Whitten**
U.S. Nuclear Regulatory Commission, Region IV
611 Ryan Plaza Drive, Suite 1000
Arlington, TX 76011

SUBJ: Renewal Application, NRC License #11-1831l-01

1. This is in reference to your letter of May 29, 1985, under Control No. 15853, requesting additional information needed for the processing of the renewal application for NRC License #11-1831l-01.

A. It is our intent that the calibration of radiation survey and monitoring instruments will be contracted out to the following firm:

Morrison-Knudsen Co., Inc.
Safety and Environmental Services Department
Commercial Dosimetry Services Division
P.O. Box 7808
Boise, ID 83729

(Idaho State Radioactive Materials License number is included as Attachment No. 1)

B. As detailed in Attachment No. 2, the Radiation Protection Guide (RPG) is being amended to require all packages containing licensed material be opened as described in Appendix F of Regulatory Guide 10.8.

C. Generally, requirements dealing with the use of radionuclides in animal research are included in the RPG, Part 26, page 54. With regard to the incineration of radioactive animal carcasses, please refer to the details of Attachment No. 3 which constitutes the submission of incinerator data to, and approval by the State of Idaho Air Quality Bureau.

D. Our letter of March 11, 1985, does contain a typographical error. Please amend Item 1.b. to refer to 33.15(b) of 10 CFR, Part 33.

E. Page 1.a of our September 28, 1984, application contains a reference to Y-40. This is also a typographical error and should be amended to read Y-90.

2. Thank you for your consideration.

JAMES A. GOFF
Medical Center Director

FEE EXEMPT

Attachments (3)

"America is #1—Thanks to our Veterans"

4/15853

VA MEDICAL CENTER
500 W. FORT STREET
BOISE, ID 83702-4598

July 30, 1985

531/113
Control #15853

Nuclear Materials Safety Section
ATTN: **Jack E. Whitten**
U.S. Nuclear Regulatory Commission, Region IV
611 Ryan Plaza Drive, Suite 1000
Arlington, TX 76011

SUBJ: Renewal Application, NRC License #11-18311-01

1. This is in reference to your letter of May 29, 1985, under Control No. 15853, requesting additional information needed for the processing of the renewal application for NRC License #11-18311-01.

A. It is our intent that the calibration of radiation survey and monitoring instruments will be contracted out to the following firm:

Morrison-Knudsen Co., Inc.
Safety and Environmental Services Department
Commercial Dosimetry Services Division
P.O. Box 7808
Boise, ID 83729

(Idaho State Radioactive Materials License number is included as Attachment No. 1)

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2. Thank you for your consideration.

JAMES A. GOFF
Medical Center Director

Attachments (3)

STATE OF IDAHO

RADIOACTIVE MATERIALS LICENSE

Pursuant to the Radiation and Nuclear Material Act (Sections 39-3001–39-3019) and the Idaho Radiation Control Regulations, Part B and in reliance on statements and representations heretofore made by the licensee designated below, a license is hereby issued authorizing such licensee to transfer, receive, possess and use the radioactive material(s) designated below; and to use such radioactive materials for the purpose(s) and at the place(s) designated below. This license is subject to all applicable rules, regulations, and orders now or hereafter in effect of the Idaho Department of Health and Welfare and to any conditions specified below.

Licensee	3. License number
1. Name Morrison-Knudsen Company, Inc. Safety & Environmental Services Dept. Commercial Dosimetry Services Div.	IDA-95-3
2. Address P.O. Box 7808 Boise, Idaho 83729	4. Expiration date March 31, 1983
	5. License cross reference

6. Radioactive materials (element and mass number)	7. Chemical and/or physical form	8. Maximum quantity licensee may possess at any one time
A. Cesium-137	A. Sealed source (New England Nuclear Model NER-570A)	A. One source not to exceed 500 millicuries

9. Authorized use:

A. To be used in a New England Nuclear Model NER-401H Gamma Source Assembly for calibration of radiation survey instruments, pocket dosimeters, and thermo-luminescent dosimeters.

CONDITIONS

10. Radioactive materials described in items 6, 7, 8, and 9 of this license shall be used and/or stored at One Morrison-Knudsen Plaza, Boise, Idaho.

11. The Radiation Protection Officer under this license shall be Bruce Henry Peterson.

12. Radioactive material shall be used by or under the supervision of Bruce Henry Peterson.

Rev. with Amendment # 1

STATE OF IDAHO

RADIOACTIVE MATERIALS LICENSE

License Number IDA-95-3

Morrison-Knudsen Company, Inc.
Safety & Environmental Services
Department
Commercial Dosimetry Services Div.
P.O. Box 7808
Boise, Idaho 83729

Conditions, continued:

13. A. Sealed sources containing radioactive materials shall not be opened by the licensee.

B. The sealed sources described in this license shall be tested for leakage and/or contamination at intervals not to exceed six months.

C. Records of leak test results shall be kept in units of microcuries and maintained for inspection. If the test reveals the presence of 0.005 microcuries or more of removable radioactive material, the licensee shall immediately withdraw the sealed source from use and shall cause it to be decontaminated and repaired or to be disposed of in accordance with Idaho Department of Health and Welfare Radiation Control Regulations. A report shall be filed with the Radiation Control Section, Idaho Department of Health and Welfare, Statehouse, Boise, Idaho 83720, within five days of the test, which will include a description of the defective source or device, the results of the test, and the corrective action taken.

14. The licensee shall comply with the provisions of the Idaho Radiation Control Regulations, Part C, "Standards for Protection Against Radiation."

15. Except as specifically provided otherwise by this license, the licensee shall possess and use radioactive material described in items 6, 7, and 8 of this license in accordance with statements, representations, and procedures contained in the following documents:

A. Application and attachments dated February 27, 1981, from Bruce Peterson, Manager of Radiation Programs.

B. Morrison-Knudsen Company, Inc.'s "Procedures Manual for Commercial Dosimetry Services", revised February 27, 1981.

STATE OF IDAHO

RADIOACTIVE MATERIALS LICENSE

License Number IDA-95-3

Morrison-Knudsen Company, Inc.
Safety & Environmental Services
Department
Commercial Dosimetry Services Div.
P.O. Box 7808
Boise, Idaho 83729

Conditions, continued:

16. A. Notwithstanding the radioactive materials described in items 6, 7, and 8(A) above, the licensee may possess radioactive materials on leak test samples received and analyzed as described in the licensee's "Procedures Manual for Commercial Dosimetry Services", revised February 27, 1981.

B. Any leak test samples analyzed as greater than .005 microcuries of radioactive material shall be reported in writing within five days to the Radiation Control Office, Idaho Department of Health and Welfare, Statehouse, Boise, Idaho 83720.

Date March 19, 1981

For the Idaho Department of Health & Welfare

By Alan L Justus

Alan L. Justus
Sr. Radiation Physicist
Radiation Control Section

DH68566-B

STATE OF IDAHO

RADIOACTIVE MATERIALS LICENSE

License Number IDA-95-3

Amendment No. 1

Morrison-Knudsen Company, Inc.
Safety & Environmental Services Dept.
Commercial Dosimetry Services Division
P.O. Box 7808
Boise, Idaho 83729

In accordance with application and attachments dated March 9, 1983 from

Bruce H. Peterson, License No. IDA-95-3 is amended as follows:

Item 4 (Expiration Date) is changed to read:

4. (Expiration Date) March 31, 1985

Condition 14 is changed to read:

14. The licensee shall comply with the provisions of the Idaho Radiation Control Regulations, Parts 1-9100 through 9149, "Standards for Protection Against Radiation" and Part 1-9450 "Notices, Instructions and Reports to Workers: Inspections".

Condition 15.C is added

15.C Morrison-Knudsen Company, Inc.'s "Commercial Dosimetry Services Operations Manual" dated March 1, 1983

Date _____

For the Idaho Department of Health & Welfare

By _____
Larry C. Boschult
Sr. Radiation Physicist
Radiation Control Section

DH68566-B

HWE - 0112

STATE OF IDAHO

RADIOACTIVE MATERIALS LICENSE

License Number IDA-95-3

Amendment No. 2

Morrison-Knudsen Company, Inc.
Safety & Environmental Services Dept.
Commercial Dosimetry Services Division
P.O. Box 7808
Boise, Idaho 83729

In accordance with letter and attachments dated October 7, 1983 from Bruce H. Peterson, License No. IDA-95-3 is amended as follows:

Items 6, 7, 8 and 9, Subitem B are added:

6. Nuclide	7. Form	8. Maximum Amount
B. Cesium-137	B. Sealed source (J.L. Shepherd and Associates Model 6810)	B. One source not to exceed 130 curies

9. Authorized use
B. For use in a J.L. Shepherd and Associates Model 81-10 Single Source Beam Irradiator for dosimeter calibration.

Condition 15 Subpart C is changed to read:

15.C. Morrison-Knudsen Company, Inc's. "Commercial Dosimetry Services Operations Manual" dated March 1, 1983 and revisions dated March 23, 1983 and October 4, 1983.

Date October 27, 1983

For the Idaho Department of Health & Welfare

By Larry Boschult

Larry Boschult
Sr. Radiation Physicist
Radiation Control Section

CH68566-B

HWE - 0112

STATE OF IDAHO

RADIOACTIVE MATERIALS LICENSE

License Number IDA-95-3

Amendment No. 3

Morrison-Knudsen Company, Inc.
Safety and Environmental Services Dept.
Commercial Dosimetry Services Division
P.O. Box 7808
Boise, Idaho 83729

In accordance with application and attachments dated February 14, 1985 from Bruce H. Peterson, License No. IDA-95-3 is amended as follows:

Item 4 (Expiration date) is changed to read:

4. (Expiration date) March 31, 1987.

Conditions 10 and 15, Subpart C, are changed to read:

10. Radioactive materials described in Items 6, 7, 8 and 9 of this license shall be used and/or stored at 4 Morrison-Knudsen Plaza, Boise, Idaho 83729.

15.C. Morrison-Knudsen Company, Inc.'s "Commercial Dosimetry Services Operations Manual" dated March 1, 1983 and revisions dated March 23, 1983, October 4, 1983 and February 14, 1985.

Date February 25, 1985

For the Idaho Department of Health & Welfare

By Larry Boschult

Larry Boschult
Sr. Radiation Physicist
Radiation Control Section

DH568566-B

HWE - 0112

MORRISON-KNUDSEN COMPANY, INC.
SAFETY DEPARTMENT
P.O. Box 7808 Boise, ID 83729

INSTRUMENT CALIBRATION
PRICE SCHEDULE
7/85

I. SURVEY METERS

Service includes:

1. Check Batteries (replace at cost if necessary).
2. Adjust instrument response.
3. Certify meter response at about 75%, 50% and 25% of nominal scale value for each range.

Service charges:

Individual survey meters	$25.00/Unit

Optional Meter repair service is available upon request.

Survey Meter Leasing

$15.00/month with two recalibrations per year.
$20.00/month with four recalibrations per year.

II DIRECT READING POCKET DOSIMETERS

Service includes:
1. Needle jump test.
2. Rotation test.
3. 7-day leak test.

Service charges:

Dosimeters to 500 mR range	$3.00 each
Dosimeters to 1000 mR range	$6.00 each
Dosimeters over 1000 mR range	$10.00 each
Minimum Charge	$20.00

Terms:

Terms of payment are net 30 days after receipt of invoice. A credit service charge of 1½% per month (18% annual percentage rate) will be charged on unpaid balances.

SURVEY METER CALIBRATIONS

MODEL NUMBER	STANDARD CALIBRATION	ELECTRONIC ALIGNMENT	ISOTOPIC SOURCE ONE POINT	ISOTOPIC SOURCE TWO POINTS	X-RAY SOURCE	TWO POINTS PER RANGE
440	A1		$65.00			$ 90.00
440 RF/A	A1		65.00			90.00
440 RF/C	C1				$95.00	
444	A1		65.00			160.00
488A	A1		65.00			
492	A1		65.00			90.00
495	E1	$55.00				
496	E1	55.00				
499	E1	55.00				
497	A2			$85.00		
592B	A1		65.00			90.00
470A	A1		65.00			160.00
471	A1		65.00			160.00
471A	A1		65.00			160.00
471RF	A1		65.00			160.00
666	A1		65.00			160.00
740 F & G	A1		65.00			90.00
808D	A2			85.00		
2012	A2			85.00		
2035	A2			85.00		
885	A1		65.00			
490 w/all GM Probes	A1		65.00			
490 w/489-4 Only	A1		65.00			90.00
491 w/all GM Probes	A1		65.00			90.00
491 w/491-30 Only	A1		65.00			90.00
493 w/all GM Probes	A1		65.00			90.00
493 w/491-40 Only	A1		65.00			90.00
493 w/493-50 Only	A1		65.00			90.00
498 w/all GM Probes	A1		65.00			
498 w/491-40 Only	A1		65.00			90.00
498 w/493-50 Only	A1		65.00			90.00

Standard Victoreen calibrations of all new units are performed as listed and are routine manufacturing operation and are included in the listed price of the unit. Two points per range calibrations are available as an option as listed. Cost of these calibrations is to be added to the listed price of the unit.

STANDARD CALIBRATIONS

A-1 Consists of electronic alignment plus one point isotopic check to ensure accuracy within specified limits ..... $ 65.00

A-2 Consists of electronic alignment plus two points isotopic check to ensure accuracy within specific limits ..... $ 85.00

C-1 Consists of one point X-ray source check to ensure accuracy within specified limits ..... $ 95.00

E-1 Consists of electronic instrument alignment ..... $ 55.00

OPTIONAL CALIBRATIONS

D-1 Consists of two points per rate range to ensure accuracy within specified limits ..... $ 90.00

D-2 Consists of two points per rate range to ensure accuracy within specified limits ..... $ 160.00

LIMITS OF CALIBRATION

High Range—250 R/HR
Low Range—0.3 mR/hr

VETERANS ADMINISTRATION MEDICAL CENTER
500 W. Fort St.
Boise, ID 83702-4598

August 12, 1985

MEDICAL CENTER MEMORANDUM NO. 115-85-2

SUBJ: RADIATION PROTECTION GUIDE

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1. SUMMARY: Radiation Protection Guide dated September 1, 1984, and Medical Center Memorandum No. 115-84-1, dated October 1, 1984, are rescinded. There are spelling, grammatical, and procedural changes.

2. POLICY: The attached plan provides for the establishment of the Radiation Control and Radioactive Drug Research Committee, authorization for the use of radioactive materials, responsibilities of the users, policies and procedures for the use of these materials, and general instructions.

3. REFERENCES:

Current Nuclear Regulatory Commission Guidelines
Current JCAH Accreditation Manual
M-2, Part XX

4. RESPONSIBLE OFFICIAL:

Chief, Laboratory Service
Chief, Nuclear Medicine Service

JAMES A. GOFF
Medical Center Director

ATTACHMENT

DISTRIBUTION "A"
+ One to each Committee Member

Boise VAMC
Attachment of 2
Changes:

TABLE OF CONTENTS

MAXIMUM PERMISSIBLE DOSE (MPD): Maximum dose of radiation which may be received by persons working with ionizing radiation, which will produce no detectable damage over the normal life span.

MILLIROENTGEN (mR): A submultiple of the roentgen equal to one on-thousandth (1/1000th) of a roentgen. (See Roentgen)

MONITORING, RADIOLOGICAL: Periodic or continuous determination of the amount of ionizing radiation or radioactive contamination present in an occupied region as a safety measure for purposes of health protection.

Area Monitoring: Routine monitoring of the level of radiation or of radioactive contamination of any particular area, building, room or equipment.

Personnel Monitoring: Monitoring any part of an individual, his breath, excretions, or any part of his clothing. (See Radiological Survey).

RAD: The unit of absorbed dose which is equal to the absorption of energy in the amount of 100 ergs/gram of any material. For the purpose of these regulations, one Rad is considered to be the dose delivered by one Roentgen of X or gamma radiation.

RADIATION AREA: Any area to which access shall be limited as deemed necessary by cognizant authority and in which appropriate precautionary measures are taken to protect personnel from exposure to radiation or radioactive materials. A radiation area includes any area accessible to personnel in which there exists:

a. Ionizing radiation at such dose-rate levels that a major portion of the body, head and trunk, active blood-forming organs, gonads, or lens of the eye could receive in any one hour a dose of five mrem, or in any five consecutive days a dose in excess of 100 mrem.

b. Airborne radioactivity levels in excess of the amounts specified for a 40-hour week in Table 1. Column I of Appendix B in Title 10, Part 20 of the Code of Federal Regulations.

RADIOACTIVE CONTAMINATION: A radioactive substance dispersed in materials or places where it is undesirable.

RADIOACTIVE MATERIALS: For purposes of these regulations include all materials which contain atoms that emit ionizing radiation spontaneously, and are artificially produced or natural but found in concentrations and/or isotopic abundance greater than that in nature. Practically all materials found on earth contain traces of radionuclides. We do not consider human, animals, or plants to be radioactive, even though they contain small amounts of Radium, K-42, C-14 and H-3. The ability to identify a material as radioactive is based on the sensitivity of detection apparatus, the length of counting time and the background of the instrument. For practical purposes we are limited to detection of radioactive materials where activity is equivalent to greater than the square root of background.

8. RADIATION PROTECTION PROGRAM

8.1 Materials Covered.

All radium, radon, and other artificially produced or isotopically enriched radioactive materials used in the Boise VA Medical Center are included in the provisions of this Radiation Protection Program.

8.2 Governmental Regulation.

All applicable state and federal regulations shall be in force.

8.3 Procurement.

All by-product materials shall be procured under the by-product material license issued to the Boise VA Medical Center by the NRC. No individuals will be permitted to obtain by-product material under individual license.

8.4 Inventory.

The Committee on Radiation Control and Radioactive Drug Research shall ascertain that proper written records of receipts, transfer and disposal of radioactive materials in the Medical Center are maintained, as well as current inventories of the total quantity of each radionuclide possessed by the Boise VA Medical Center.

8.5 Education.

The Committee on Radiation Control and Radioactive Drug Research shall be responsible for supervision of the preparation and dissemination of information pertaining to federal and state rules and regulations pertaining to radiation safety.

8.6 Violations.

Violations of established safety practices may result in the loss of Committee approval to use sources of ionizing radiation until corrective measures have been effected. Violations which are not corrected after reasonable notice and negotiation will be reported to the Chief of Staff and the Medical Center Director.

8.7 Withdrawal of Approval.

The Committee may withdraw approval from a user for a specific use and/or a specific radionuclide if circumstances dictate. It may withdraw approval for all uses from a user if repeated violations of established radiation safety procedures indicate that continued approval would likely result in overexposure to personnel, or release into the environment of quantities of radioactive materials in excess of those permitted under our license.

a. restricted area will not expose radiation workers in the area to more than 100 mrem in any five consecutive days from all sources of radiation;

b. unrestricted area will not lead to exposure of personnel to more than

(1) 0.5 Rem in any one year

(2) 2 mrem in any one hour

(3) 100 mrem in any seven consecutive days.

9.2.1 Availability of Shielding Materials.

Shielding materials are available on loan from the Radiation Safety Officer.

9.3 Aerosols, Dusts, and Gaseous Products.

Procedures involving aerosols, dusts or gaseous products or procedures which might produce airborne contamination in excess of the limits specified in Appendix B of 10 CFR 20 shall be conducted in a hood, dry box, or other suitable closed system.

9.3.1 Maximum Permissible Concentration Release.

All radioactive materials released from such systems shall not exceed the maximum permissible concentration in air for the nuclide in question. See Appendix B, Table II of 10 CFR 20 for appropriate values.

9.3.2 Storage of Radioactive Gases.

Radioactive gases must be stored in gas-tight containers and must be kept in areas having ventilation approved by the Director of Radiation Control.

9.3.3 Hood Testing.

Hoods to be used for work with radioactive materials will be tested by the Radiation Safety Officer to insure that they have adequate air flow at the face of the hood, depending on their use.

9.4 Work Surfaces.

All work surfaces (bench tops, hood floors, etc.) as well as storage areas and areas adjacent to permanent set-ups and sinks should be covered at all times with stainless steel or plastic trays, uncracked glass plates, or other impervious materials. For some purposes a plastic-backed absorbent paper (e.g., "Kimpak") may be satisfactory. If such paper is used, it should be changed frequently.

a. Alpha activity detectable at the surface in excess of 0.0005 microcuries;

b. Removable beta or gamma activity in excess of 0.005 microcuries per 100 cm^2 by wipe sample techniques;

c. Beta and/or gamma radiation in excess of 0.2 millirads per hour at the surface.

9.11 Exposure of Individuals to Radiation in Restricted Areas.

Appropriate personnel monitoring devices, such as film or TLD badges, will be used for all personnel who can reasonably expect to receive doses in excess of ¼ of the MPD. No approved user shall possess, use, receive, or transfer sources of radiation in such a manner as to cause any radiation worker in a restricted area to receive from all sources of ionizing radiation a dose in excess of the following:

	Type of Exposure	Rem per calendar quarter	Rem per year
a)	Whole body, head & trunk, active blood-forming organs, gonads, or lens of the eye	1.25	5*
b)	Skin of whole body	7.5	30
c)	Hands & forearms, feet & ankles	18.75	75
d)	Bone-Body burden	0.1 micrograms of radium-226	

*Accumulated Dose = 5 (N-18)
N = the individual's age in years at his last birthday. Individuals under age 18 shall not be permitted to remain in restricted areas, except by special permission of the Committee under 10 CFR 20.104.

9.12 Exposure of Individuals to Radiation in Unrestricted Areas.

No user shall possess, use or transfer sources of radiation in such a manner as to create in any unrestricted area:

a. radiation levels which, if an individual were continuously present in the area, could result in his receiving a dose in excess of two millirems in any one hour; or

b. radiation levels which, if an individual were continuously present in the area, could result in his receiving a dose in excess of 100 millirems in any seven consecutive days; or

c. radiation levels which could result in any individual receiving a dose in excess of 500 millirems in any calendar year.

12. PROCEDURES FOR SAFELY OPENING PACKAGES CONTAINING RADIOACTIVE MATERIALS (entire section amended)

12.1 Special requirements will be followed for packages containing quantities of radioactive material in excess of the Type A quantity limits as specified in paragraphs 20.205(a)(1) and (c)(1) of 10 CFR Part 20 (more than 20 Ci for Mo-99 and Tc-99m). They will be monitored for surface contamination and external radiation levels within 3 hours after receipt if received during working hours or within 18 hours if received after working hours, in accordance with the requirements of paragraphs 20.205(a) through (c). All shipments of liquids greater than exempt quantities will be tested for leakage. The NRC Regional Office will be notified in accordance with the regulations if removable contamination exceeds 0.01 μCi/100 cm^2 or if external radiation levels exceed 300 mR/hr at the package surface or 10 mR/hr at 3 feet (or 1 m).

12.2 For all packages, the following additional procedures for opening packages will be carried out:

a. Put on gloves to prevent hand contamination.

b. Visually inspect package for any sign of damage (e.g., wetness, crushed). If damage is noted, stop procedure and notify Radiation Safety Officer.

c. Measure exposure rate at 3 feet (or 1 m) from package surface and record. If >10 mR/hr, stop procedure and notify Radiation Safety Officer.

d. Measure surface exposure rate and record. If >200 mR/hr, stop procedure and notify Radiation Safety Officer.

e. Open the package with the following precautionary steps:

(1) Open the outer package (following manufacturer's directions, if supplied) and remove packing slip.

(2) Open inner package and verify that contents agree with those on packing slip. Compare requisition,* packing slip, and label on bottle.

(3) Check integrity of final source container (i.e., inspect for breakage of seals or vials, loss of liquid, and discoloration of packaging material).

(4) Check also that shipment does not exceed possession limits.

f. Wipe external surface of final source container and remove wipe to low background area. Assay the wipe and record amount of removable radioactivity (e.g., μCi/100 cm^2, etc.). Check wipes with a thin-end-window G-M survey meter, and take precautions against the spread of contamination as necessary.

* In the case of special orders (e.g., therapy doses), also compare with physician's written request.

g. Monitor the packing material and packages for contamination before discarding.

(1) If contaminated, treat as radioactive waste.

(2) If not contaminated, obliterate radiation labels before discarding in regular trash.

12.3 Maintain records of the results of checking each package, using "Radioactive Shipment Receipt Record" (see next page) or a form containing the same information.

13. CALIBRATION OF RADIATION MONITORING EQUIPMENT

13.1 Frequency.

All portable survey instruments in routine use for monitoring ionizing radiation must be recalibrated at least every six months. This must be done by the Radiation Safety Officer or an agency or person approved by the Radiation Safety Officer. Records of these calibration values and calculations are to be kept by the Radiation Safety Officer.

13.2 Standards.

Calibrated or standard sources from the National Bureau of Standards or a firm licensed by the National Bureau of Standards, such as encapsulated radium-226, cesium-137, cobalt-60 and C-14 are acceptable.

13.3 Gamma-ray Calibration Procedures for Portable Survey Meter.

Using a calibrated gamma reference source in an open area free from scattering objects closer than 1 Meter, plot the actual meter reading versus the dose rate calculated at various distances (using the inverse square law) on 2-cycle log-log graph paper and determine the appropriate correction factor for all meter readings. Correction factors greater than ±20% from expected reading are indications for removal from use and repair if necessary.

13.3.1 Pocket Dosimeters.

For pocket dosimeters, we use a calibrated source at one meter and measure approxiamte 1/4, 1/2, and 3/4 of full scale deflections, recording the time required for each excursion, recharging the dosimeter between readings. Record the calculated dose in milliroentgens and determine the correction factor (the number by which all readings must be multiplied in order to give true readings) for each exposure. A plot of the correction factor may be made as a function of dose on linear graph paper which then represents the calibration curve for a given pocket dosimeter. Remove from service those pocket dosimeters whose correction factor lies outside the range of 0.8 to 1.2.

16. INSTRUCTIONS FOR TECHNOLOGISTS WHERE PATIENT RECEIVES TREATMENT DOSE OF RADIONUCLIDE.

a. Arrange for a single bedded room with a private bath.

b. Notify Radiation Control Office (Ext. 7478).

c. Review orders.

d. If a patient receiving 131-I for treatment of cancer, ascertain if TSH is to be given.

e. As soon as treatment dose arrives from Radiation Control, place in storage area until needed.

f. Take the following equipment to the patient's room:

(1) Plastic bottle for urine (131-I).

(2) Plastic bags for radioactive trash.

(3) Lavendar topped tubes for blood samples (131-I).

(4) Vacutainer holder and needles (131-I).

(5) Plastic gloves.

(6) Plastic bottle with water (131-I).

(7) Straws (131-I).

g. Bring lead cart with radionuclide (131-I) into the patient's room.

h. Take blood samples at times determined by attending physician.

i. If desired by the attending physician, measure and record 131-I activity in urine.

j. Disposal: Transfer urine to Radiation Control Office for storage prior to disposal.

k. When the patient is dischared, check everything in the room to see if there is any contamination in excess of 0.005 μCi removable (telephone, bedding, floor, bathroom, etc.). Decontaminate if necessary.

17. RADIATION SAFETY OFFICER'S DUTIES WHERE MEDICAL CENTER PATIENTS RECEIVE TREATMENT DOSES OF RADIONUCLIDES

a. Provide signs for door, tags for patient's bed.

b. Provide radiation monitoring service in area where the patient is to reside.

(1) Film badge or pocket dosimeters.

(2) Ionization chamber and/or G-M counter.

c. Provide specific instructions for nurse.

d. Provide specific instructions to Medical Officer and Technologist as indicated for radiation safety purposes.

e. Measure radiation levels in patient's room after administration of dose.

f. Establish boundaries for visitors.

g. Tag patient's bed, indicating exposure at 1 meter, time and date.

h. Specify the date when radiation safety precautions concerning visitor's privileges terminate.

i. Cover door knobs, telephones, etc., with plastic gloves or plastic wrap to protect from contamination.

j. Cover floor area around bed and along pathway to bathroom with absorbent pads.

18. INSTRUCTIONS FOR NURSES AND WARD PERSONNEL WHERE PATIENTS HAVE RECEIVED TREATMENT DOSES OF RADIOACTIVE 131-I (_____ mCi)

(Given Orally)

Patient Name _____ Room # _____ Date _____

18.1 Patient.

a. Patient is to be in a single bedded room with the door suitably marked to indicate the recent administration of therapeutic radionuclide (over 30 mCi). Room is to have a bath used by patient only.

b. Patient must wear a hospital gown for first 48 hours.

c. When patient vacates the room, notify the Section of Nuclear Medicine so that monitoring may be performed. Do not remove ANYTHING from the room except the patient's personal articles.

d. Patients may purchase articles from the cart, newspapers, etc. They may have flowers.

18.2 Nursing Staff.

a. Attendants caring for the patient must be 18 years of age or older.

b. Pocket dosimeters or film badges will be provided for nursing personnel regularly attending this patient if monitoring is required as defined in Section 9.11. Monitoring will not be required if the dosage of 131-I is less than 30 mCi.

c. If you are pregnant, do not attend this patient.

d. Necessary patient care (not to include back rubs, vital signs unless specifically requested) is the only justification for entry into the room by nurses and ward personnel.

e. If the patient should vomit or be incontinent, personnel attending the patient should don scrub gowns, disposable gloves and shoe coverings. The soiled area should be covered with incontinent pads. The Chief of Nuclear Medicine and the R.S.O. or his assistant should be notified immediately.

f. Provision should be made for vomiting by providing a waterproof cardboard container during the first 24 hours after administration of the radionuclide. If this is used by the patient, handle only with plastic or rubber gloves. Remove it to a corner of the room and notify the Radiation Safety Officer (RSO) or his assistant.

g. A plastic or rubber covering should be placed on the mattress and pillowcase. The use of disposable linens is encouraged.

h. If patient perspires profusely, bedding, towels, etc. are to be handled with rubber gloves and placed in a laundry bag in the patient's room to be checked by the RSO or his assistant before they are sent to the laundry. These precautions should also apply if the patient is incontinent of urine. This bag should be identified with the patient's name, room number, date and contents.

i. Scrub gowns and disposable gloves or rubber gloves should be used when attending to the patient. Wash gloves before removing from hands, remove gloves and place used disposable gloves in separate plastic bag and reusable gloves and linen in another. Wash hands paying particular attention to fingernails. Attach a card to the bag noting the patient's name, room, date and contents. A separate container will be placed near the door for rubber gloves and gowns. This must be checked by the RSO or his assistant before release to the laundry.

j. If the patient should die during this period of isolation, the Chief of Nuclear Medicine and the RSO or his assistant should be notified immediately.

k. The use of disposable trays, utensils, linens, etc., is strongly recommended. These items should be retained in a properly labeled plastic bag, in the patient's room, until monitored by nuclear medicine personnel and approved for disposal.

l. The urine (may) (may not) be flushed down the toilet. BE CAREFUL NOT TO SPLASH. Follow with 6 flushings.

m. Bedpans and urinals used should be kept for individual use and precautions against radiation contamination maintained for 5 days. Disposable gloves must be used in handling bedpans and urinals, and must be disposed of after use.

18.3 Visitors.

Visitors are restricted to not more than 1 hour unless otherwise specifically permitted. They must be instructed to sit at a distance from the patient, beyond the line placed by the RSO or his assistant. Persons under the age 18 will not be permitted to visit the patient.

18.4 General.

NOTE: THIS PATIENT WILL CONTINUE TO CONTAIN RADIOACTIVE MATERIAL FOR SEVERAL WEEKS AND YOUR PROLONGED PRESENCE IN HIS/HER IMMEDIATE VICINITY IS TO BE AVOIDED. DO NOT ENTER THE ROOM UNLESS NECESSARY, MAKE YOU STAY AS BRIEF AS POSSIBLE AND REMEMBER THE GREATER THE DISTANCE BETWEEN YOU AND THE PATIENT, THE SAFER YOU ARE.

Please observe these directions carefully. If there are any questions call:

19. INSTRUCTION SHEET FOR PATIENTS RECEIVING RADIOACTIVE IODINE

The rules of the Boise VA Medical Center requires that all patients receiving more than 30 millicurie of 131-I be kept in a single bedded room with the door suitably marked. You will be asked to remain in this room until the levels of raioactivity have decreased to the point where you may travel outside of the room without restrictions. It is required that you wear a hospital gown for most of this period of time. It is preferable that visitors should be adults who would stay in your room for only short periods of time and sit at a distance from you. No visitors under 18 years of age will be permitted.

When you are discharged you will be informed of any further restrictions which should be obsered. For example, the ages of visitors at home who could see you without restrictions or with restrictions if appropriate. In general, it is the policy of the hospital to keep you in the hospital until any risk to family or friends has passed.

As you will recall from your discussions with the physician, the radioactive material which you have received is for the purpose of treating you. It is not necessary or even wise that other people should be exposed to the treatment that will be beneficial to you.

JOHN B. TWEETEN, M.D.
Telephone: 336-5100 (Ext. 7275)

INSTRUCTIONS FOR FAMILY OF RELEASED PATIENT Additional section

Name of Patient _____

Name of Hospital _____ Address _____ Tel. No. _____

For further information contact _____ Tel. No. _____

Please show this form to every physician consulted concerning the patient until _____

_____ was treated on _____, 19___
(Name of patient)

with _____ millicuries of _____ in the form of _____

NO SPECIAL RADIATION SAFETY PRECAUTIONS ARE NECESSARY AFTER _____
(date)

UNTIL THAT DATE:

Persons under 45 years of age should not remain closer than the following distances from the patient, for the time period indicated:

_____ to _____
(date) (date)

Medical Center

500 West Fort Street
Boise ID 83702

Veterans
Administration

April 12, 1985

In Reply Refer To: 531/138

James Riddell
Bureau of Air Quality
Division of Environment
Department of Health & Welfare
Statehouse
Boise, Idaho 83720

Dear Mr. Riddell,

Per telephone conversation with the VA Safety and Occupational Health Specialist, Heidi Parke, the following information is submitted to be included in our permit for the new incinerator under construction at this facility:

Liquid scintillation media and small to medium animal carcasses containing "de minimus" concentrations of H-3 and C-14 will be incinerated approximately 2 - 3 times per week. Present levels are .08 microcuries per week. Projected use per week would be 10 microcuries which is still well within the acceptable limits outlined in 10 CFR, Part 20. The hopper of the incinerator is 30"x40"x37" and our calculations were based on approximately one air exchange per second.

If we can be of further assistance please call Heidi Parke (208) 338-7270 Ext. 7059.

James M McClain

JAMES A. McCLAIN
Chief, Engineering Service

RECEIVED
APR 1 6 1985
DHW - Div. of Environment
Air Quality Bureau

Boise VAMC
Attachment #3

Jerry file
Vicki file

STATE OF IDAHO

DEPARTMENT OF HEALTH
AND WELFARE

DIVISION OF ENVIRONMENT
Statehouse
Boise, Idaho 83720

May 13, 1985

#0738

CERTIFIED #P397137665

James A. Goff, Director
VA Medical Center
500 W. Fort St.
Boise, Idaho 83702

Dear Mr. Goff:

On March 22, 1985, we advised you that your March 1, 1985, application to construct/install a pathological/refuse incinerator at your Boise VA Medical Center was complete. Based upon that application, we now find that the proposed source meets the provisions of Section 1-1012, Rules and Regulations for the Control of Air Pollution in Idaho. Therefore, I am pleased to enclose your Permit to Construct.

If you have any questions regarding the terms or conditions of the enclosed permit, please contact Mr. Robert J. Graves, Manager, Planning & Permits Section, Idaho Air Quality Bureau at 334-5360.

Sincerely,

Lee V. Stokes, Ph.D.
Administrator

LVS/ag
Enclosure

cc: COE 1.1
Source File
Jim Close, IDHW, Boise Field Office

STATE OF IDAHO

PERMIT TO CONSTRUCT AN AIR POLLUTION EMITTING SOURCE

PERMIT NUMBER

0020-0033

AQCR: 064 | CLASS: B | SIC: 8062

ZONE: 11 | UTM COORDINATE (km): 565.3, 4831.0

1. PERMITTEE

Veterans Administration Medical Center

2. PROJECT

Pathological - Refuse Incinerator - 500 lb/hr

3. ADDRESS		COUNTY	NO. OF FULL TIME EMPLOYEES
500 W. Fort St.		Ada	431
4. CITY	**STATE**	**ZIP CODE**	**PROPERTY AREA AT SITE (Acreage)**
Boise	Idaho	83702	57
5. PERSON TO CONTACT		**TITLE**	**TELEPHONE NUMBER**
Jerry Fischer		Engineer	(208) 338-7270

6. EXACT PLANT LOCATION

Approx. 75' North of Bldg. #50, VA Medical Center, Boise, ID

7. GENERAL NATURE OF BUSINESS AND KINDS OF PRODUCTS

Medical - Surgical Hospital

8. GENERAL CONDITIONS

This permit is issued according to the **Rules and Regulations for the Control of Air Pollution in Idaho**, Section 1-1012, and pertains only to emissions of air contaminants which are regulated by the State of Idaho and to the sources specifically allowed to be constructed by this permit.

This permit (a) does not affect the title of the premises upon which the equipment is to be located, (b) does not release the permittee from any liability for any loss due to damage to person or property caused by, resulting from, or arising out of the design, installation, maintenance, or operation of the proposed equipment, (c) does not release the permittee from compliance with other applicable local laws, regulations or ordinances, (d) in no manner implies or suggests that the Department of Health and Welfare, or its officers, agents, or employees, assumes any liability, directly or indirectly, for any loss due to damage to person or property caused by, resulting from, or arising out of design, installation, maintenance, or operation of the proposed equipment.

This permit is not transferable to another person, place, piece or set of equipment. This permit will expire if construction has not be gun within two years of its issue date or if construction is suspended for two years.

THIS PERMIT HAS BEEN GRANTED ON THE BASIS OF DESIGN INFORMATION PRESENTED WITH ITS APPLICATION. CHANGES OF DESIGN OR EQUIPMENT MUST BE APPROVED IN ADVANCE BY THE DEPARTMENT.

ADMINISTRATOR
DIVISION OF ENVIRONMENT

May 14, 1985
DATE

HWE 0070

PERMIT TO CONSTRUCT

PERMIT NUMBER 0020-0033-010

PERMITTEE, PROJECT, AND LOCATION

Pathological-Refuse Incinerator
VA Medical Center
Boise, Idaho

SOURCE

Pathological-Refuse Incinerator Model #CA-500P - Maximum Charge Rate - 500 lb/hr

1. This pathological - refuse incinerator shall be operated in accordance with Section 1-1501 and 1-1502 of the Rules and Regulations for the Control of Air Pollution in Idaho, at a particulate emission rate of 0.2 lb. particulate/100 lb. of refuse burned.

2. Section 1-1201 of the Rules and Regulations for the Control of Air Pollution in Idaho, shall apply such that the effluent stack gas opacity shall not exceed 20% opacity for a total of three (3) minutes in any sixty (60) minute period. This determination must be made in accordance with U.S. EPA Reference Method 9.

3. This incinerator shall be operated and maintained as specified in the Advanced Combustion Systems, Model #CA-500P Operations and Maintenance Manual.

4. All personnel authorized to operate and/or maintain this incinerator shall be thoroughly trained and knowledgeable to perform their respective functions correctly as specified in the Operations and Maintenance Manual.

5. When this equipment is fully operational, a compliance evaluation of the installation shall be made by the Idaho Air Quality Bureau personnel. If the results of the evaluation are satisfactory, the requirement to perform the Particulate Emission test may be waived.

6. Radioactivity material charged to the incinerator is limited to 10 uci/wk H^3 and 10 uci/wk C^{14}.

ADMINISTRATOR
DIVISION OF ENVIRONMENT

May 14, 1985
DATE

PERMIT TO CONSTRUCT GENERAL PROVISIONS

A. All emissions authorized herein shall be consistent with the terms and conditions of this permit. The emission of any pollutant in excess of the limitations specified herein, or noncompliance with any other condition or limitation contained in this permit, shall constitute a violation of this permit and the **Rules and Regulations for the Control of Air Pollution in Idaho**, and the Environmental Protection and Health Act, Idaho Code 39-101, et. seq.

B. The permittee shall at all times (except as provided in the **Rules and Regulations for the Control of Air Pollution in Idaho**) maintain in good working order and operate as efficiently as practicable, all treatment or control facilities or systems installed or used to achieve compliance with the terms and conditions of this permit and other applicable laws for the control of air pollution.

C. The permittee shall allow the Director, and/or his authorized representative(s), upon the presentation of credentials:

1) To enter upon the permittee's premises where an emission source is located, or in which any records are required to be kept under the terms and conditions of this permit; and

2) At reasonable times to have access to and copy any records required to be kept under the terms and conditions of this permit, to inspect any monitoring methods required in this permit, and to require stack emission testing in conformance with accepted EPA procedures when deemed appropriate by the Director.

D. Nothing in this permit is intended to relieve or exempt the permittee from compliance with any applicable federal, state, or local law or regulation, except as specifically provided herein.

E. The permittee shall notify the Idaho Air Quality Bureau, in writing, of the required information for the following events within five working days after occurrence:

1) Initiation of Construction - Date
2) Completion/Cessation of Construction - Date
3) Anticipated Production Startup - Date
4) Actual Production Startup - Date
5) Maximum Production Rate - Production Rate and Date

F. If emission testing is specified, the permittee must schedule such testing within sixty (60) days after achieving the maximum production rate, but not later than one-hundred and eighty (180) days after initial startup. Such testing must **strictly** adhere to U.S. Environmental Protection Agency approved methods. Testing procedures and specific time limitations may be modified by the Idaho Air Quality Bureau by prior negotiation if conditions warrant adjustment. The Idaho Air Quality Bureau shall be notified at least fifteen (15) working days prior to the scheduled compliance test. Any records or data generated as a result of such compliance test shall be made available to the Department upon request.

The performance tests will be performed at the **maximum** production rate. If this maximum rate is not achieved during testing, the allowable production rate will be limited to the production rate attained during testing.

G. The provisions of this permit are severable, and if any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.