HAMILTON CARDIOLOGY ASSOCIATES

Mahmoud S. Ghusson, MD, FACC
Ghazanfar A. Jaferi, MD, FACC
Jay K. Patel, MD, FACC
Ronald G. Ryder, DO, FACC

MS 16
Q-6

July 2, 1997

James M. Bondick
Division of Nuclear Materials Safety
United States Nuclear Regulatory Commission
Region I
475 Allendale Road
King of Prussia, PA 19406-1415

Mail Control No. 124593

Dear Mr. Bondick:

In response to your letter dated June 10, 1997, Hamilton Cardiology Associates would like to provide you with the following additional information you have requested, pursuant to our Nuclear Regulatory License application of May 19, 1997.

1.a. Ms. Bryant is a consultant for our facility. In support of our request to approve Ms. Bryant as RSO we are submitting the delegation of authority which enables her to exercise authority over authorized users at this facility.

1.b. As RSO, Ms. Bryant will bring any radiation safety concerns to the attention of management at this facility. In the event that an allocation of funds is required to maintain regulatory compliance or to protect members of the public or personnel at this facility, the RSO will have the full support of management to fulfill this request.

1.c. Ms. Bryant provides health physics support on a consulting basis for other NRC licensed facilities. Ms. Bryant will be physically present at our facility to perform radiation safety audits, review radiation safety records, perform required quality control tasks and provide radiation safety inservicing at a minimum frequency of four hours per month. We feel this is commensurate with the scope of radioactive materials used at this facility. This time commitment will be provided during normal working hours when personnel will be present. Should additional time be required to provide the necessary radiation safety support for our facility, the RSO will be able to fulfill this role and will have the full approval of management.

1.d. During the RSO's absence, we will appoint Ronald Ryder, D.O. to serve as the point of contact at this facility.

The Professional Center at Hamilton
2073 Klockner Road Hamilton Township New Jersey 08690
(609) 584-1212 Fax (609) 584-0103

124593

JUL - 9 1997

OFFICIAL RECORD COPY ML 10

1.e. Ms. Bryant is available 24 hours a day to respond to questions or operational issues which may arise. In addition, she can be physically present at this facility within one hour during normal working hours and within 30 minutes during off duty hours in the event of an emergency.

2. We confirm that personnel will be instructed before beginning duties with or in the vicinity of licensed materials and will be re instructed whenever there is a significant change in duties regulations or terms of the license.

3. The Bicron Surveyor 2000 meter has a range of 0.1 to 2000 mr/hr. Since this range encompasses the range of the radiation measurement survey instrument, we wish to utilize this instrument in lieu of the radiation measurement survey instrument. To support this request, please note that we will only be utilizing material for cardiac imaging listed in 35.200 and will not be utilizing Technetium 99m generators or radio pharmaceuticals for therapy (group 35.300, 35.400).

4. Our survey instruments will be calibrated by Bio-Med Associates, Inc. NRC licence number 29-14967-01.

5. We confirm that backup instruments will be available to use when instruments are sent off site for calibration.

6. Our investigational levels for our ALARA program will be:

Whole body:	ALARA I:	125 mRem per quarter
	ALARA II:	375 mRem per quarter
Extremities:	ALARA I:	1250 mRem per quarter
	ALARA II:	3750 mRem per quarter

7. We have modified our procedure for Waste Disposal to conform to the practices at this facility. We are enclosing the revised procedure.

We are resubmitting the references for Ronald Ryder, D.O., and Janet M. Bryant, M.S. and are deleting the personal information contained. We are requesting that the original references be removed form our application and are replaced with the enclosed. We appreciate your attention to this matter and apologize for any inconvenience this may have caused.

If you require any additional information, please do not hesitate to contact me at 609-584-1212.

Sincerely,

Ronald Ryder, D.O., F.A.C.C.

cc: Janet Bryant, M.S.
Enclosure

HAMILTON CARDIOLOGY ASSOCIATES

DELEGATION OF AUTHORITY

TO: All Employees and Physicians

FROM: Ronald Ryder, D.O.

SUBJECT: Delegation of Authority

Janet M. Bryant, M.S. has been appointed Radiation Safety Officer and is responsible for ensuring the safe use of radiation. The Radiation Safety Officer is responsible for managing the radiation safety program; identifying radiation safety problems; initiating, recommending, or providing corrective actions; verifying implementation of corrective actions; and ensuring compliance with regulations. The Radiation Safety Officer is hereby delegated the authority necessary to meet those responsibilities.

RONALD G. RYDER, D.O. CURRICULUM VITAE

EDUCATION:

PHILADELPHIA COLLEGE OF OSTEOPATHIC MEDICINE, D.O.
CONFERRED, JUNE 1989
LA SALLE COLLEGE, PHILADELPHIA, PA
BA DEGREE IN CHEMISTRY, CONFERRED MAY 1985
GEORGE WASHINGTON HIGH SCHOOL, PHILADELPHIA, PA
ACADEMIC DIPLOMA, AWARDED 1981

HONORS:

J.I. SCHWARTZ AWARD--1992 RESIDENT
J.I. SCHWARTZ AWARD--1990 INTERN, AWARDED YEARLY TO THE GRADUATING RESIDENT OR INTERN FOR OUTSTANDING AND EXCEPTIONAL ABILITY AS A PHYSICIAN
CHYMAIN SOCIETY--TREASURER--1984 - 1985
GEORGE WASHINGTON HIGH SCHOOL--NATIONAL HONOR SOCIETY--1977-1981

LICENSE:

OSTEOPATHIC PHYSICIAN AND SURGEON--PA--1989 TO PRESENT

BOARD CERTIFICATION:

INTERNAL MEDICINE, CERTIFICATE #1424,
EFFECTIVE SEPTEMBER 23, 1993

MEDICAL EXPERIENCE:

EPISCOPAL HOSPITAL, PHILADELPHIA, PA
CARDIOLOGY FELLOW, 7/92 - PRESENT
PARKVIEW HOSPITAL, PHILADELPHIA, PA
MEDICAL RESIDENCY, 7/90 - 6/92
ROTATING INTERNSHIP-- 7/89 - 6/90

EXPERIENCE:

ASSISTANT PROFESSOR-EPISCOPAL HOSPITAL, SCHOOL OF PERFUSION, PHILADELPHIA, PA 8/94 - PRESENT
JUNIOR MEDICAL STAFF ATTENDING, EPISCOPAL HOSPITAL, PHILADELPHIA, PA 8/94 - PRESENT
CARDIOLOGY FELLOW, EPISCOPAL HOSPITAL, PHILADELPHIA, PA 7/92 - PRESENT. INVOLVED IN INVASIVE AND NON-INVASIVE ASPECTS OF CARDIOVASCULAR DISEASES. WILL HAVE TRANSESOPHAGEAL ECHOCARDIOGRAPHY, NUCLEAR LICENSE AND CARDIAC CATHETERIZATION PRIVILEGES AS OF 6/95

PARKVIEW HOSPITAL, PHILADELPHIA, PA ATTENDING-EMERGENCY ROOM PHYSICIAN 5/92 - PRESENT

CARE PAVILLION, PHILADELPHIA, PA STAFF PHYSICIAN-PROVIDING PRIMARY CARE FOR A 400 BED UNIT 11/89 - 4/91

PRESBYTERIAN HOSPITAL, PHILADELPHIA, PA CHEMISTRY AND ARTERIAL BLOOD GAS LAB 7/86 - 5/87

EKG AND EXERCISE STRESS TEST TECHNICIAN DURING MEDICAL SCHOOL 8/85 - 6/89

ABSTRACTS/PUBLICATIONS:

USEFULNESS OF PACING ELECTRODES FOLLOWING OPEN HEART SURGERY

HIGH ATRIAL THRESHOLDS AFTER OPEN HEART SURGERY PREDICT THE DEVELOPMENT OF ATRIAL FIBRILLATION

ACTIVITIES:

RESEARCH IN INORGANIC METALS
HEAD PROFESSIONAL AND INSTRUCTOR IN RACQUETBALL-NORTHEAST HEALTH SPA AND RACQUET CLUB RANKED 7TH NATIONALLY IN RACQUETBALL

AFFILIATIONS:

AMERICAN COLLEGE OF CARDIOLOGY-AFFILIATE IN TRAINING
AMERICAN OSTEOPATHIC ASSOCIATION
PENNSYLVANIA OSTEOPATHIC MEDICAL ASSOCIATION
PENNSYLVANIA RACQUETBALL ASSOCIATION

JANET M. BRYANT

Professional Experience:	Presently employed as a Health Physicist by Bio-Med Associates, Inc., Flemington, New Jersey since October 6, 1986. Bio-Med Associates is a Medical Physics Group servicing hospitals, private radiotherapy/radiology practice and industry in New Jersey, New York, and Pennsylvania. Nuclear Medicine duties include instrumentation quality control and calibration, preparation of N.R.C. and State Radioactive Materials license, continuing education lectures to medical staff and ancillary personnel, and preparation of policy manual for the J.C.A.H.O. Diagnostic Radiology duties include Radiation Protection Surveys and Performance Evaluations of X-Ray Equipment and Radiation Therapy Simulators, patient dosimetry, specification of lead shielding requirements, instructor on Radiation Safety and Quality Assurance.
Previous Employment:	Nuclear Medicine Technologist Atlantic City Medical Center, New Jersey 1980 - 1986
Certification:	American Board of Radiology Diagnostic Radiological Physics June 1996 Nuclear Medicine Technology Certification Board 1980
Professional Societies:	American Association of Physicists in Medicine New Jersey Medical Physics Society Health Physics Society
Education:	Rutgers University Master of Science Radiation Science 3.65 cumulative average - October 1994 Millersville State University B.S. Nuclear Medicine August 1980
References:	References will be furnished upon request.

PENNSYLVANIA
Bureau of Radiation Protection
P. O. Box 8469
Harrisburg, PA 17105-8469
May 15, 1995

Janet Bryant, M.S.

Dear Ms. Bryant:

This refers to your recent request for state approval to provide medical physics services under the Mammography Quality Standards Act (MQSA) "interim" rules and regulations, Section 900.12(a)(3)(i).

We have determined that you meet the state requirements for medical physicists and you are approved to conduct evaluations of mammography equipment and procedures under the Act. This approval will remain in effect unless superceded by the MQSA "final" rules and regulations.

A copy of the criteria used to determine your qualifications is enclosed. Please note that our approval assumes you will satisfy the continuing education requirements by October 1, 1997 and progress towards meeting this requirement will be checked during our annual certification inspections.

If you have any questions or if we can be of additional assistance, do not hesitate to contact this agency.

Sincerely,

Edward M Burtsavage

Edward M. Burtsavage
Assistant Chief
Division of Radiation Control

Enclosure

RECORD OF: JANET M. BRYANT

TUDENT NUMBER:

RECORD DATE: 09/06/94 PAGE: 1

THE STATE UNIVERSITY OF NEW JERSEY

RUTGERS

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BEING HAND CARRIED BY STUDENT

ORIGINAL TRANSCRIPT HAS A RED BORDER AND AN ARTIFICIAL WATERMARK ON THE BACK. HOLD AT AN ANGLE TO VIEW.

TITLE	SCH	DEPT	CRS	SEC	CREDITS	PR	GRADE
ALL 1990 GRADUATE SCHOOL-NEW BRUNSWICK							**NON-MATRICULATED**
ROGRAM: UNSPECIFIED (NON MATRIC)							
RADIATION CHEMISTRY	16	838	580	01	3.0		B
EGREE CREDITS: 3.0 TERM AVG: 3.000 CUMULATIVE AVG: 3.000							
PRING 1991 GRADUATE SCHOOL-NEW BRUNSWICK							**NON-MATRICULATED**
IOGRAM: UNSPECIFIED (NON MATRIC)							
RADIATION BIOPHYSICS	16	838	581	01	3.0		B+
GREE CREDITS: 6.0 TERM AVG: 3.500 CUMULATIVE AVG: 3.250							
LL 1991 GRADUATE SCHOOL-NEW BRUNSWICK							
OGRAM: RADIATION SCIENCE							
RADIATION & RADIOACT	16	838	591	01	4.0		B+
GREE CREDITS: 10.0 TERM AVG: 3.500 CUMULATIVE AVG: 3.350							
RING 1992 GRADUATE SCHOOL-NEW BRUNSWICK							
OGRAM: RADIATION SCIENCE							
RADIOISOTOPE LAB	11	375	492	01	1.0	G	A
SP TOPIC RAD HEALTH	16	838	598	01	3.0		A
GREE CREDITS: 14.0 TERM AVG: 4.000 CUMULATIVE AVG: 3.536							
L 1992 GRADUATE SCHOOL-NEW BRUNSWICK							
OGRAM: RADIATION SCIENCE							
UND RAD INSTRUMENT	16	838	595	01	3.0		B+
GREE CREDITS: 17.0 TERM AVG: 3.500 CUMULATIVE AVG: 3.529							

TITLE	SCH	DEPT	CRS	SEC	CREDITS	PR	GRADE
SPRING 1993 GRADUATE SCHOOL-NEW BRUNSWICK							
PROGRAM: RADIATION SCIENCE							
HEALTH PHYSICS LAB	11	375	495	01	1.0		B
RAD INST & DOSIMETRY	16	838	596	01	3.0		B
ADV SPECIAL PROBLEMS	16	838	626	01	3.0		A
DEGREE CREDITS: 24.0 TERM AVG: 3.429 CUMULATIVE AVG: 3.500							
SUMMER 1993 GRADUATE SCHOOL-NEW BRUNSWICK							
PROGRAM: RADIATION SCIENCE							
EXP PROB RAD HEALTH	16	838	601	B1	2.0		A
DEGREE CREDITS: 26.0 TERM AVG: 4.000 CUMULATIVE AVG: 3.538							
FALL 1993 GRADUATE SCHOOL-NEW BRUNSWICK							
PROGRAM: RADIATION SCIENCE							
NUCL ENERGY TECHNOL	16	838	592	01	3.0		A
DEGREE CREDITS: 29.0 TERM AVG: 4.000 CUMULATIVE AVG: 3.586							
SPRING 1994 GRADUATE SCHOOL-NEW BRUNSWICK							
PROGRAM: RADIATION SCIENCE							
SEM RADIATION SCI	16	375	590	01	1.0		A
NON-IONIZING RADN	16	375	593	01	3.0		B
DEGREE CREDITS: 33.0 TERM AVG: 3.250 CUMULATIVE AVG: 3.545							
DEGREE: MASTER OF SCIENCE **OCTOBER 1994**							
PROGRAM: RADIATION SCIENCE							

*** END OF TRANSCRIPT ***

; TRANSCRIPT IS NOT OFFICIAL WITHOUT THE SIGNATURE OF THE REGISTRAR.

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RAISED SEAL NOT REQUIRED

University Registrar

Rutgers, the State University of New Jersey

HAMILTON CARDIOLOGY ASSOCIATES
Procedure for Waste Disposal

General Guidance

1. All radioactive labels must be defaced or removed from containers and packages prior to disposal in in-house waste. If waste is compacted, all labels that are visible in the compacted mass must be defaced or removed.

2. Remind employees that nonradioactive waste such as leftover reagents, boxes, and packing material should not be mixed with radioactive waste.

3. Occasionally monitor all procedures to ensure that radioactive waste is not created unnecessarily. Review all new procedures to ensure that waste is handled in a manner consistent with established procedures.

4. In all cases, consider the entire impact of various available disposal routes. Consider occupational and public exposure to radiation, other hazards associated with the material and routes of disposal (e.g., toxicity, carcinogenicity, pathogenicity, flammability), and expense.

5. Whenever material is disposed, the disposal date and method should be logged in the Inventory/Administration Log.

PROCEDURE FOR DISPOSAL BY DECAY-IN-STORAGE (DIS)

Short-lived material (physical half-life less than 65 days) may be disposed of by DIS. If you use this procedure, keep material separated according to half-life. The record of each disposal must be retained for three years.

1. Consider using separate containers for different types of waste, e.g., capped needles and syringes in one container, other injection paraphernalia such as swabs and gauze in another, and unused dosages in a third container. Smaller departments may find it easier to use just one container for all DIS waste. Because the waste will be surveyed with all shielding removed, the containers in which waste will be disposed of must not provide any radiation shielding for the material.

2. When the container is full, seal it with string or tape and attach an identification tag that includes the date sealed, the longest-lived radioisotope in the container, the radioisotopes within the container, and the initials of the person sealing the container. The container may then be transferred to the DIS area.

3. Decay the material for at least 10 half-lives.

4. Prior to disposal as in-house waste, monitor each container as follows:

   a. Check your radiation detection survey meter for proper operation;

   b. Plan to monitor in a low-level (less than 0.05 millirem per hour) area;

   c. Remove any shielding from around the container;

d. Monitor all surfaces of each individual container;

e. Discard as in-house waste only those containers that cannot be distinguished from background. Record the date on which the container was sealed, the disposal date, type of material (e.g. paraphernalia, unused dosages), background dose rate, the survey meter used, and the initials of the individual who performed the disposal. Check to be sure no radiation labels are visible.

f. Containers that can be distinguished from background radiation levels must be returned to the storage area for further decay or transferred for burial.

PROCEDURE FOR RETURN TO PHARMACY/MANUFACTURER

1. Nuclear Pharmacy

   Refer to "Package Return Procedures" for limited quantity shipments.

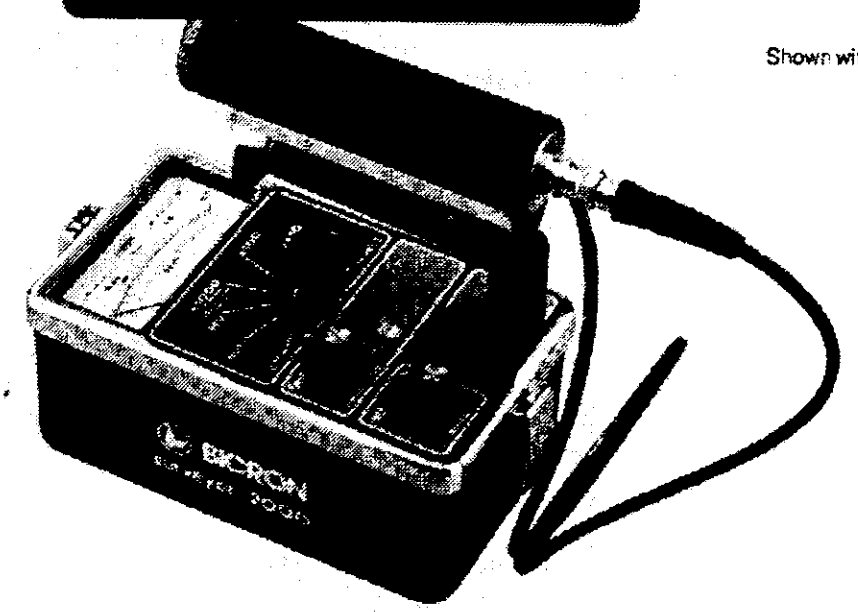
2. Manufacturer

   Packaging, shipping, and documentation of radioactive materials returning to the manufacturer should be in accordance with the manufacturer's instructions and must comply with 10 CFR Part 71 and Department of Transportation (DOT) regulations. Refer to "Procedure for Returning Generators to the Manufacturer."

Model: SURVEYOR 2000
Portable Survey Meter

BICRON

Nippon Bicron
Bicron No. 805 1-8, 1-Chome
Shinyokohama Kohoku-Ku
Yokohama 222 Japan
Telephone 045(474)5766
Telex 045(474)5767



Shown with optional GM probe

Features

- **ALPHA, BETA, GAMMA AND X-RAY DETECTION**
- **SINGLE 9-VOLT BATTERY**
- **EXCLUSIVE HV CHECK**
- **CHOICE OF GM PROBES**
- **VARIABLE RESPONSE TIME**
- **ANTI-SATURATION CIRCUIT**
- **DEAD TIME COMPENSATION**
- **BUILT-IN AUDIO**
- **UP TO 2000 mR/h**
- **EXCEEDS 10CFR35**

GENERAL: The **SURVEYOR 2000 model** is a portable survey meter designed for gamma/x-ray exposure-rate measurements and alpha, beta, gamma and x-ray count-rate measurements with an appropriate GM probe and calibration.

The instrument combines an internal, energy-compensated GM tube (for the 2000 mR/h range) with a choice of external GM probes to meet or exceed the survey instrument requirements of 10CFR35 for Nuclear Medicine.

Rugged construction and quality components make it durable, and the instrument is easy to service. Span, HV and calibration pots (one for each range) are clearly marked.

The exclusive HV check assures that the detector is operating at its proper high voltage (a safety feature and critical for operation near the "edge" of a GM detector plateau).

The anti-saturation circuit keeps the meter reading off scale when the detector saturates in a high radiation field, providing an added safety margin.

Automatic dead time compensation assures the accuracy of higher exposure rate readings for linear response on all ranges.

A single 9-volt battery powers the instrument. An optional, license-exempt, uranium check source is available for use with the SURVEYOR 2000.

U.S. Patent #4,617,680

Model: SURVEYOR 2000
Specifications

RADIATION DETECTED: Alpha, beta, gamma and x-ray, depending upon external GM probe used; gamma and x-ray with internal detector

DETECTOR: Choice of GM probes, external; GM tube, internal

RANGE: Five linear ranges of

0-0.2 mR/h -------0-240 cpm
0-2 mR/h ---------0-2400 cpm
0-20 mR/h --------0-24000 cpm
0-200 mR/h ------0-240000 cpm
0-2000 mR/h (internal detector)

ACCURACY: Within 10% of reading for ^{137}Cs when calibrated according to NRC Reg. Guide 10.8

ENERGY RESPONSE: ± 20% from 40 keV to 1.2 MeV (internal detector)

HIGH VOLTAGE: Electronically stabilized, factory set at 900 V

HV TEST: Exclusive self-test to verify detector HV power supply

CONNECTOR: MHV

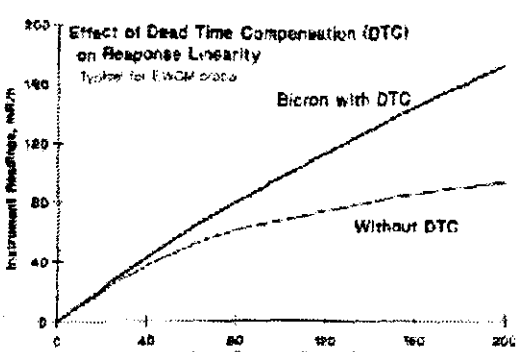
WARMUP TIME: None

SATURATION: Typically >1000 R/h on all ranges (with exclusive anti-saturation circuit) for most GM probes; >5 R/h for pancake GM probes

RESPONSE TIME: Switch-selectable, optimized for each range, 0-90% of final reading as follows:

	Time	
Range	**Fast**	**Slow**
X0.1	6 sec	25 sec
X1	2 sec	6 sec
X10	1 sec	3 sec
X100	<1 sec	1 sec
X1000	<1 sec	1 sec

DEAD TIME COMPENSATION: Exclusive circuitry provides near linear response



TEMPERATURE: Operational from -40° to + 60°C

HUMIDITY: <5% change in reading from 10-95% RH

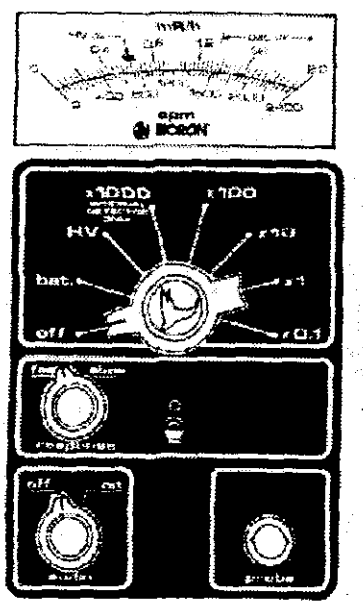
BATTERY COMPLEMENT: Single 9-volt, MN1604 or equal. The second battery clip may be parallel wired or used for storage of spare

BATTERY LIFE: >100 hours or >200 hours with parallel option

CONTROLS: Eight position rotary switch as illustrated; two-position rotary switches for 'response' and 'audio'

DISPLAY: Ruggedized, recessed, high-torque 1 mA meter with 3.35" (8.51cm) scale marked 0-2 mR/h, 0-2400 cpm, 'Bat. ok', 'HV ok'

Meter protected by impact-resistant Lexan® polycarbonate window



GEOTROPISM: Within ± 2% of full scale

SHOCK: 100g per lightweight machine of MIL-STD 202C, method 202B

VIBRATION: 5g in each of three mutually orthogonal axes at one or more frequencies from 10-33Hz

AUDIO: A built-in speaker (with panel mounted on/off switch) provides an audible "click" for each detector pulse. With the speaker off, an audible alarm sounds (if desired) when the meter is > full scale on any range

CONSTRUCTION: Splash proof, shock proof, two piece, all metal case

Scratch resistant laminated control panel and Bicron Kleen Krome® trim on case top

Durable black polyurethane paint on handle and case bottom

Stainless steel probe clip on handle

SIZE: 4.25" x 8" x 6.8" (10.8 x 20.3 x 17.3cm) including handle and probe clip

WEIGHT: 2.2 pounds (1 kg) excluding probe

Typical Energy Response with various GM probes