VICTOREEN

VICTOREEN, INC.

May 31, 1985

U.S. Nuclear Regulatory Commission
Region III
799 Roosevelt Road
Glen Ellyn, IL 60137

REFERENCE: Mail Control Number 78677
NRC License 34-00486-10

Gentlemen:

In response to telephone conversations between Mr. George McCann (NRC) and Mr. Stanley Kawecki (Victoreen, Inc.), the following is submitted in support of Victoreen's application for a Broad Scope B License.

1) Description of training requirements for users of radioactive materials.
2) Statement of Victoreen's requirements for a bioassay program.
3) Methodology for leak testing of sources.
4) Clarifications on calibration service provided to NRC licenses.
5) Clarifications on maintenance, use and safety interlocks for the Cobalt-60 irradiation facility.
6) Amended Radiological Protection Procedure for Radioisotopes.

Two copies of this response are included in this package.

Sincerely,

VICTOREEN, INC.

JUN 3 1985

RECEIVED
JUN 03 1985
REGION III

Stanley J. Kawecki
Radiation Safety Officer

SJK:m
Enclosures

10101 Woodland Avenue Cleveland, OH 44104 216/795-8200 TWX 810/421-8287
A Subsidiary of Sheller-Globe Corporation

DESCRIPTION OF TRAINING FOR USERS OF RADIOACTIVE MATERIAL

DOCUMENTATION OF TRAINING:

The Radiation Safety Office shall maintain records on the training and qualifications of all users. A qualification evaluation form shall be on file.This form will contain at a minimum, the educational background, description of previous experiences, listing of training courses attended (both within Victoreen and outside independent courses), results of tests, and a biannual rev'ew. The RSO will have the authority to approve Class 1 users. Class 2 users qualification forms shall be submitted to the Radiation Advisory Committee for approval, after approval by the RSO.

The Radiation Safety Office shall maintain a current listing of Class 2 sources and facilities and those Class 2 users authorized to use such.

The Radiation Safety Office shall maintain a list of Class 2 users who have been authorized by the Radiation Advisory Committee to conduct training on Class 2 sources and facilities.

TESTING OF CLASS 2 USERS:

The Radiation Advisory Committee shall develope a written test on the use of Class 2 sources and facilities. This test shall encompass areas of general concern to all Class 2 sources. For each facility, a separate test shall cover such topics as operation of the facility, the interlocks and safeguards, and specific emergency procedures.

The tests shall be supplemented by written evaluation of the trainee's operation of the facility by the trainer who shall observe the actual operation of the facility.

AUTHORIZED TRAINERS:

The Radiation Advisory Committee shall designate authorized Class 2 users to perform training on the specified Class 2 sources and facilities. As a minimum, these trainers shall have at least one years experience on operating the facility. The RSO shall submit the proposed trainer's qualification form and his recommendations to the Radiation Advisory Committee for review. The RAC shall review the trainers qualifications on a biannual basis.

LENGTH OF TRAINING:

Specific training periods are dependent upon the complexity of the facility. The outline of training will entail: specified number of hours in lecture and study of written materials; actual hands-on operational training on the equipment itself; independent operation of the equipment while under the direct supervision of an authorized user; and a review of training by the RSO.

Minimum time requirements for each of these steps shall be determined by the RAC for each of the facilities. The determination of minimum requiremnets will be based heavily on the experiences of existing users who have worked extensively with the equipment at Victoreen.

QUALIFICATION EVALUATION

1. Basis of Certification for _____

A) Education:

1.) Grade School _____years

2.) High School _____years

3.) College _____years

4.) Post Graduate _____years

5.) List other education _____

_____

_____

_____

B) Experience (specify number of years)

C) Training (specify type of training

Evaluation By _____ Date _____

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PHONE: (216) 795-8200 ▪ TWX (810) 421-8287

PERSONNEL TRAINING RECORDS

NAME: _____ DEPT: _____ JOB TITLE: _____

ACTIVITIES TRAINED TO PERFORM	TRAINED BY	DATE	METHOD OF TRAINING	STATUS ACCEPT/REJECT

CLARIFICATION ON REQUIREMENT FOR BIOASSAY PROGRAM

At the present time, Victoreen Inc. does not have a requirement for the use of unsealed forms of Iodine-129, Iodine-131, or Hydrogen-3 in quantities exceeding the bioassay requirement levels established in Regulatory Guide 8.20.

In the event that such a requirement arises, Victoreen Inc. will submit a bioassay program to the NRC for inclusion in our license prior to the initiation of such work.

The submitted bioassay program shall be in accordance with the established guidelines at the time of the submission, and with Victoreen's Radiological Protection Procedure for Radioisotopes.

METHODOLOGY FOR LEAK TESTING OF SOURCES

Cotton swabs are used to wipe for removable contamination on sources. These swabs are then measured for the presence of the radioactive material. At present, Victoreen utilizes an end window GM tube in a lead shield. The GM tube is connected to a scaler/counter. The sensitivity and count rate efficiency for the system is determined through the use of gamma and beta reference disk sources. These sources are identified as the 844 series Victoreen part numbers.

Using the reference disk sources, efficiencies for the different energies are determined in units of CPM/uCi. The end window GM has proven to be sensitive enough to resolve 0.005 microcuries.

CRITERIA FOR THE CALIBRATION OF RADIATION MEASURING EQUIPMENT

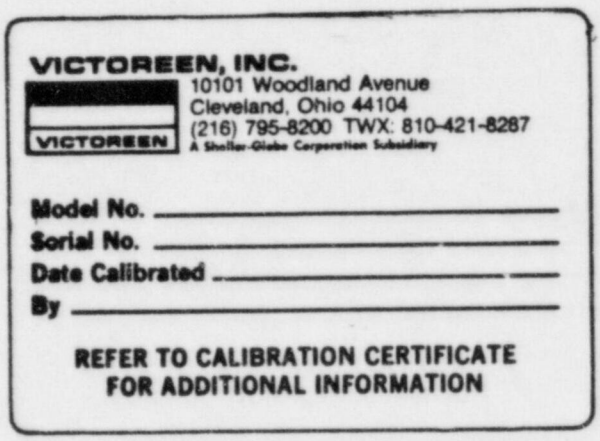
Victoreen Inc. calibrates radiation detection equipment with an accuracy consistent with the specifications of the equipment under test. This calibration may be an internal adjustment which causes the instrument to read correctly or it may be the issuance of a multiplicative numerical factor on a certificate, commonly refered to as a correction factor. Correction factors are generally issued to high quality instruments and ion chambers with an accuracy of 3%. Equipment which receives internal adjustments are generally portable survey meters and are calibrated with an accuracy of 10%. No equipment is calibrated or issued unless it meets it's specifications.

Recommended calibration frequency for Victoreen Inc. equipment is one (1) year. Certain applications and regulations may require more frequent calibrations.

CALIBRATION SERVICE

FORMS AND CERTIFICATES

The attached forms and certificates are samples of those typically supplied with the equipment upon return to the customer. Copies of the completed forms and certificates are not maintained at VICTOREEN, INC., as the original data and calculations are maintained in bound books. In the event that a replacement certificate has to be issued, the results are obtained from the data books.



SAMPLE OF CALIBRATION INFORMATION TAG
WHICH IS AFFIXED TO SURVEY METERS

SAMPLE OF CALIBRATION DATA FOR SURVEY METERS

SINGLE POINT CALIBRATION

Model No.	Serial No.	Date Calibrated	Calibration Technique	Recommended Date For Recalibration

Register No. _____ Calibration Lab.

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5713178

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SAMPLE OF QUARTZ FIBER ELECTROMETER CALIBRATION - NEW UNITS

MODEL 570 CONDENSER R-METER

VOLTAGE SENSITIVITY

SERIAL NUMBER_____

DATE_____

CALIBRATED BY_____

VOLTAGE CHANGE BETWEEN MAJOR SCALE DIVISIONS

(Percentage of Fullscale)

0 - 20	_____
20 - 40	_____
40 - 60	_____
60 - 80	_____
80 - 100	_____
SUM	_____

Voltage change between zero and fullscale should be between 248 and 252 volts.

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SAMPLE OF QUARTZ FIBER ELECTROMETER CALIBRATION - REPAIR UNITS

MODEL 570 CONDENSER R-METER

VOLTAGE SENSITIVITY

VICTOREEN REPAIR #_____
CUSTOMER PO#_____
SERIAL #_____
DATE_____
CALIBRATED BY_____

VOLTAGE CHANGE BETWEEN MAJOR SCALE DIVISIONS

(PERCENTAGE OF FULLSCALE)

	AS FOUND
0 - 20	
20 - 40	
40 - 60	
60 - 80	
80 - 100	
SUM	

	AS LEFT
0 - 20	
20 - 40	
40 - 60	
60 - 80	
80 - 100	
SUM	

VOLTAGE CHANGE BETWEEN ZERO AND FULLSCALE SHOULD BE
BETWEEN 248 and 252 VOLTS

Serial No. _____

VICTOREEN

Date _____

MODEL 500 ELECTROMETER TEST DATA

Checked by _____

I. Readout Performance

A. Zero Voltage Checks

Range 3 _____ Range 2 _____ Range 1 _____

B. Voltmeter calibration and linearity check

Range	Voltage In	500 Reading
2	-1.9900V	_____
3	-19.900V	_____
1	-0.1990V	_____

II. Electrometer Performance

A. Leakage Test

Zero Offset	Rate Reading after 30s	Exposure (1) Start	Reading (2) after 600s	(1000) $\frac{(2)-(1)}{600}$
_____	___ ± ___ R/min	_____ nc	_____ nc	_____ pA

ACCEPT IF < ±0.003pA

B. Current (Rate) Calibration

Input Current = $\frac{\text{Input Voltage } 10.000\text{V}}{\text{Input Resistance } 5.0334 \times 10^{12}\ \Omega}$ = _____ pA

1. 500 Current (pA) reading _____ pA.

2. 500 Range (3.3cc, R/min) reading _____ R/min.
(2. should be 0.060 times 1.)

C. Charge (Exposure) Calibration

Input Charge = (net Input Voltage 1.900V) x Input Capacitance 10 nF)
= 19.000 nc

500 charge (nc) reading _____ nc

D. Feedback Capacitor Decay Time Constant.

1. 500 reading (100 seconds after charging) at start _____ nc.

2. 500 reading 600 seconds after start reading _____ nc.
Time Constant = 600 ÷ ln (2)/(1) = _____ sec. ACCEPT IF > 10^6 sec.

E. Feedback Capacitor Soakage after 10 sec. short. MEASURED ON 3RD RANGE.
Capacitor charged to 20 volts: ACCEPT IF CHANGE IS < .05nc.
500 reading after 0 sec _____ nc.
500 reading after 20 sec _____ nc.
500 reading after 60 sec _____ nc.

The equipment used for calibrating the Model 500 is referenceable to NBS traceable standards by intercomparison techniques.

JN/cdb

10/15/82

SAMPLE OF MODEL ELECTROMETER CALIBRATION

VICTOREEN, INC.

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SURVEY METER CALIBRATION REPORT

Customer _____ Mfgr. _____

Model _____

Register No. _____ Repair No. _____ Serial _____

Source	Instrument Orientation	Scale	Field (mR/hr)	Reading (mR/hr)	% Error*	Remarks

SAMPLE OF CALIBRATION DATA FOR SURVEY METERS
TWO POINTS PER RANGE READINGS IN mR/h

Radiation levels are based on standards whose calibrations are traceable to N.B.S.

*% Error = $\frac{\text{Reading-Field}}{\text{Field}}$ x 100

By: _____ Date: _____

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SURVEY METER CALIBRATION REPORT

Customer _____ Mfgr. _____

Model _____

Register No. _____ Repair No. _____ Serial _____

Source	Instrument Orientation	Scale	Field (R/hr)	Reading (R/hr)	% Error*	Remarks

SAMPLE OF CALIBRATION DATA FOR SURVEY METERS
TWO POINTS PER RANGE READINGS IN R/h

Radiation levels are based on standards whose calibrations are traceable to N.B.S.

*% Error = $\frac{\text{Readirg-Field}}{\text{Field}}$ x 100

By: _____ Date: _____

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SURVEY METER CALIBRATION REPORT

Customer _____ Mfgr. _____

Model _____

Register No. _____ Repair No. _____ Serial _____

Source	Instrument Orientation	Scale	Field (As Listed)	Reading (As Listed)	% Error*	Remarks

SAMPLE OF CALIBRATION DATA FOR SURVEY METERS
TWO POINTS PER RANGE READINGS IN R/h and mR/h

Radiation levels are based on standards whose calibrations are traceable to N.B.S.

*% Error = $\frac{\text{Reading-Field}}{\text{Field}} \times 100$

By: _____ Date: _____

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SURVEY METER CALIBRATION REPORT

Customer _____

_____ Model No._____

Serial No._____

Register No._____ Repair No._____

AS FOUND

RANGE	FIELD	READING	NOTES

AS LEFT

RANGE	FIELD	READING	NOTES

SAMPLE OF CALIBRATION DATA FOR SURVEY METERS
SPECIAL REQUESTS FOR AS FOUND AND AS LEFT

_____
CALIBRATOR

_____
DATE

4/19/83 CDB

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RESPONSE TEST DATA

To:_____ Date:_____

Victoreen #_____ Serial #_____ Model #_____

Customers P.O.#_____

SAMPLE OF CALIBRATION DATA FOR CAVITY IONIZATION CHAMBERS

X-RAY TECHNIQUE
(Moderately Filtered X-Rays)

Technique	KVCP	Total Filtration		Kev Eff.	hvl	
		mm Al	mm Cu		mm Cu	mm Al
H	60	4	0	32	0.09	2.8
I	76	4	0	34.5	0.11	3.4
J**	100	5	0	42	0.20	5.1
K	150	5	0.25	64	0.66	10
L	200	5	0.5	84	1.3	13
M**	250	5	1.0	111	2.2	16
M1	250	5	3.2	140	3.2	18
Cs 137*	___	___	___	660	___	___
Co 60*	___	___	___	1250	___	___

Correction factors for these techniques are obtained by intercomparison with instruments whose calibrations are traceable to the US National Bureau of Standards. We believe they agree with these standards to an uncertainty of less than ± 2%. Use of the instrument at a temperature other than 22° C or pressure other than 760 mm Hg requires the response be corrected for air density per attached table.

Model and Serial No.	Correction Factor (multiplier) for Technique ( )	( )	( )	( )	( )

*Standard Points for High Energy Chambers and Probes
**Standard Points
Data Taken By_____
Victoreen Production Lab

Checked by_____

The response of any instrument might be altered by shock or other external conditions. For this reason, Victoreen cannot guarantee a correction factor after it has left our premises.

Form: 9064B-1-78

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RESPONSE TEST DATA

To:_____ Date:_____

Victoreen #_____ Serial #_____ Model #_____

Customers P.O.#_____

X-RAY TECHNIQUE
(Lightly Filtered X-Rays)

Technique	KVCP	Total Filtration mm Be	Total Filtration mm Al	hvl mm Al	Distance cm
A	10	1	0	.024	25
B**	15	1	0	.035	25
C	20	1	0	.07	50
D*	20	1	0.5	.20	50
E**	30	1	0.5	.33	50
F**	50	1	1.0	.90	50
Other	___	____	____	____	____

Correction factors for these techniques are obtained by intercomparison with instruments whose calibration are traceable to the US National Bureau of Standards. We believe they agree with these standards to an uncertainty of less than ± 2%. Use of the instrument at a temperature other than 22° C or pressure other than 760 mm Hg requires the response be corrected for air density per attached table.

Model and Serial No.	Correction Factor (multiplier) for Technique ( )	( )	( )	( )	( )
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

*Unavailable with Model 651 Chambers
**Standard Points

Data Taken By_____
Victoreen Production Lab

Checked by_____

The response of any instrument might be altered by shock or other external conditions. For this reason, Vicotreen cannot guarantee a correction factor after it has left our premises.

Form: 9065B-1-78

SAMPLE OF CALIBRATION DATA FOR CAVITY IONIZATION CHAMBERS

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RESPONSE TEST DATA

SAMPLE OF CALIBRATION DATA FOR CAVITY IONIZATION CHAMBERS

To: _____ Date: _____

Victoreen # _____ Serial # _____ Model # _____

Customers P.O.# _____

X-RAY TECHNIQUE
(Heavily Filtered X-Rays)

Technique	Total Filtration (mm) KVCP	Al	Cu	Pb	Sn	Kev Eff.	hvl mm Cu	hvl mm Al
N**	50	4	0	.12	0	40	.16	4.4
O	100	4	0	.53	0	70	.72	11.2
P**	150	4	4	0	1.5	120	2.1	16.8
Q	200	4	.6	.7	4	170	4.1	19.5
R	250	4	.6	2.7	1	215	5.4	21.5
Cs 137	___	—	—	—	___	662	___	___

Correction factors for these techniques are obtained by intercomparison with instruments whose calibrations are traceable to the US National Bureau of Standards. We believe they agree with these standards to an uncertainty of less than ± 2%. Use of the instrument at a temperature other than 22° C or pressure other than 760 mm Hg requires the response be corrected for air density per attached table.

Model and Serial No.	Correction Factor (multiplier) For Technique ( )	( )	( )	( )	( )
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

**Standard Points

Data Taken By _____
Victoreen Production Lab

Checked by _____

The response of any instrument might be altered by shock or other external conditions. For this reason, Victoreen cannot guarantee a correction factor after it has left our premises.

Form: 9143B-1-78

VICTOREEN, INC.
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AIR DENSITY CORRECTION TABLE

This instrument is calibrated in International Roentgens corrected to 0°C when used at 22°C and 760 mm mercury (Hg) barometric pressure. For temperatures other than 22°C and pressures other than 760 mm Hg, multiply the scale reading by the factor obtained from the following table.

Inches	Mm.	F. 60.8 C. 16	64.4 18	68.0 20	71.6 22	75.2 24	78.8 26	82.4 28	86.0 30	89.6 32	93.2 34	96.8 36	100.4 38	104.0 40
19.68	500	1.489	1.499	1.509	1.520	1.530	1.541	1.551	1.561	1.571	1.582	1.592	1.602	1.613
20.08	510	1.460	1.469	1.479	1.490	1.499	1.510	1.520	1.530	1.540	1.551	1.561	1.571	1.581
20.47	520	1.431	1.441	1.451	1.461	1.471	1.481	1.491	1.500	1.510	1.520	1.530	1.540	1.550
20.87	530	1.405	1.414	1.424	1.434	1.444	1.453	1.463	1.473	1.482	1.492	1.502	1.512	1.521
21.26	540	1.378	1.388	1.397	1.407	1.416	1.426	1.435	1.445	1.454	1.464	1.474	1.483	1.493
21.65	550	1.354	1.363	1.373	1.382	1.391	1.401	1.410	1.419	1.429	1.438	1.448	1.457	1.466
22.05	560	1.329	1.338	1.348	1.357	1.366	1.375	1.384	1.394	1.403	1.413	1.421	1.431	1.439
22.44	570	1.306	1.315	1.324	1.333	1.342	1.351	1.360	1.369	1.378	1.387	1.396	1.405	1.414
22.83	580	1.283	1.292	1.301	1.310	1.319	1.328	1.337	1.345	1.354	1.363	1.372	1.381	1.389
23.23	590	1.262	1.270	1.279	1.288	1.297	1.305	1.314	1.323	1.331	1.340	1.349	1.358	1.366
23.62	600	1.241	1.249	1.258	1.267	1.275	1.284	1.293	1.301	1.309	1.318	1.327	1.336	1.344
24.02	610	1.220	1.229	1.237	1.246	1.254	1.263	1.271	1.279	1.288	1.297	1.305	1.314	1.322
24.41	620	1.200	1.208	1.217	1.225	1.233	1.242	1.249	1.258	1.266	1.275	1.283	1.292	1.299
24.80	630	1.181	1.189	1.198	1.206	1.214	1.222	1.230	1.239	1.247	1.255	1.263	1.271	1.279
25.20	640	1.164	1.171	1.180	1.188	1.196	1.204	1.212	1.220	1.228	1.236	1.244	1.252	1.260
25.59	650	1.145	1.153	1.161	1.169	1.177	1.185	1.193	1.201	1.208	1.216	1.224	1.232	1.240
25.98	660	1.127	1.135	1.143	1.151	1.159	1.167	1.174	1.182	1.189	1.198	1.206	1.213	1.221
26.38	670	1.111	1.119	1.126	1.134	1.142	1.149	1.157	1.165	1.172	1.180	1.188	1.195	1.203
26.77	680	1.095	1.103	1.110	1.118	1.125	1.133	1.141	1.148	1.156	1.163	1.171	1.179	1.186
27.16	690	1.078	1.086	1.093	1.101	1.108	1.116	1.123	1.131	1.138	1.146	1.153	1.161	1.168
27.56	700	1.064	1.071	1.079	1.086	1.093	1.101	1.108	1.115	1.123	1.130	1.137	1.145	1.152
27.95	710	1.048	1.055	1.063	1.070	1.077	1.084	1.092	1.098	1.106	1.113	1.121	1.128	1.135
28.35	720	1.033	1.041	1.048	1.055	1.062	1.069	1.076	1.083	1.091	1.098	1.105	1.112	1.119
28.54	725	1.027	1.034	1.041	1.048	1.055	1.062	1.069	1.076	1.083	1.091	1.098	1.105	1.112
28.74	730	1.019	1.027	1.034	1.041	1.048	1.055	1.062	1.069	1.076	1.083	1.090	1.097	1.105
28.94	735	1.013	1.019	1.027	1.034	1.041	1.048	1.055	1.062	1.069	1.076	1.083	1.090	1.097
29.13	740	1.006	1.013	1.020	1.027	1.034	1.041	1.048	1.055	1.062	1.069	1.075	1.083	1.089
29.33	745	.999	1.006	1.013	1.020	1.027	1.034	1.040	1.048	1.054	1.061	1.068	1.075	1.082
29.53	750	.992	.999	1.006	1.013	1.020	1.027	1.033	1.040	1.047	1.054	1.061	1.068	1.075
29.72	755	.986	.993	1.000	1.007	1.014	1.021	1.027	1.034	1.041	1.048	1.055	1.062	1.068
29.92	760	.980	.986	.993	1.000	1.007	1.014	1.020	1.027	1.034	1.041	1.047	1.054	1.061
30.12	765	.972	.979	.986	.993	.999	1.006	1.013	1.020	1.026	1.033	1.040	1.047	1.054
30.31	770	.967	.973	.980	.987	.994	1.000	1.007	1.014	1.020	1.027	1.034	1.041	1.047
30.51	775	.961	.968	.974	.981	.987	.994	1.001	1.007	1.014	1.021	1.027	1.034	1.041
30.71	780	.954	.961	.967	.974	.980	.987	.994	1.000	1.007	1.014	1.020	1.027	1.033
30.90	785	.948	.955	.961	.968	.974	.981	.988	.994	1.001	1.007	1.014	1.021	1.027
31.10	790	.942	.949	.955	.962	.968	.975	.981	.988	.994	1.001	1.008	1.014	1.021

SAMPLE OF SUPPLEMENTAL SHEET PROVIDED FOR DETERMINATION OF AIR DENSITY

OPERATION OF COBALT-60 IRRADIATION FACILITY

The following clarifications are provided to the usage instructions originally submitted.

A) Both doors to the facility can be unlocked from inside the room by the throwing of the deadbolt lock bar. This also causes the source to close.

B) The prestart alarm activates for a five second period before the source rotates to a position which will result in a field in excess of 100 mR/h. The maximum distance to the scram button is about eleven (11) feet.

C) In addition to dosimeter badges, operators of the Cobalt-60 facility shall wear pocket alarming dosimeters. These pocket dosimeters will perform the intended function of surveying upon entry into the actual Cobalt-60 room without encumbering the operator.

D) In lieu of providing a physical barrier to the ceiling, Victoreen shall institute administrative procedures to prevent access over the existing walls. Signs shall be posted at the tops of the walls Victoreen wishes to have this system primarily for the reason that a failure of the source to rotate to the fully closed position will effectively bar admission to the room via the access doors. In order to enter the room to close the source, access will have to be over the walls. Existing procedures forbid any nonroutine access without the presence of the RSO.

MAINTENANCE AND REPAIR OF EQUIPMENT

The following guidelines are applied:

ROUTINE MAINTENANCE - is defined as mechanical and housekeeping work to keep the equipment in a clean operating state. This form of maintenance does not involve operating the source. The maximum exposure expected would be that from contact with the housing surface of the equipment. The majority of the mechanical mechanisms on the equipment are located outside of the shielding and are easily accessible. This work may be performed by technician level employees under the supervision of the supervisor or the RSO.

REPAIR - The majority of repairs encountered are performed on the mechanisms located outside of the shielding of the equipment. This would entail such service as repair or replacement of solenoid valves, switches or wiring. This work may be performed by technician level employees under the supervision of the supervisor or the RSO.

REPAIR OF SOURCE OPERATING MECHANISM - Any work performed on the external components of the equipment which affects the physical operation of the source or its shielding must be performed under the supervision of the RSO. The RSO will institute proper safeguards for the performance of the work. Survey and monitoring devices will be available during the actual work. The RSO will conduct the final operational check of the equipment after work before releasing it for use.

REPAIR AND MAINTENANCE OF INTERNAL MECHANISM AND SOURCE - Shall be performed by the manufacturer of the equipment or an independent service group which is authorized to perform such work. The RSO will be available during the work to ensure proper precautions and safeguards are used by the service.

CORRECTIONS TO

RADIOLOGICAL PROTECTION PROCEDURE FOR RADIOISOTOPES

1. An amended section I.A.1. is attached. This references the correct part of 10 CFR.

2. An amended section III.A. is attached. This contains an additional subsection 3. which covers the use of finger ring dosimeters for personnel monitoring.

3. An amended section III.B. is attached. The primary changes are in the contamination alarm levels and the addition of a table outlining frequency of surveys.

   The criteria for contamination levels was derived from Regulatory Guide 8.21, table 2.

   The criteria for survey frequency was derived from Regulatory Guide 8.21, table 1.

VICTOREEN

VICTOREEN, INC.

RADIOLOGICAL PROTECTION PROCEDURES

FOR RADIOISOTOPES

(Effective June 1, 1985)

This Copy Issued To _____

10101 Woodland Avenue Cleveland, OH 44104 216/795-8200 TWX 810/421-8287
A Subsidiary of Sheller-Globe Corporation

RADIOLOGICAL PROTECTION PROCEDURE FOR RADIOISOTOPES

These procedures are established to guide and educate VICTOREEN, INC. employees who are engaged in, supervise, or plan to initiate radiation work, or are authorized to enter areas or rooms where radioactive materials are used or stored. Their further pu pose is to assure compliance with the provisions of Title 10, Code of Federal Regulations, Parts 19, 20, 21, 30, 32 and 33. These stated requirements in these procedures are intended to be consistent with the best use of radioisotopes while insuring the maximum safety to all persons at, or in the vicinity of, the place of use or storage. Any individual having questions on any aspect of these procedures is urged to contact the Radiological Safety Officer or any member of Radiation Advisory Committee.

I. Administrative Control

A. Definitions:

1. CLASS I LEVEL OF RADIOACTIVE MATERIAL: Sealed sources up to 10 times the exempt quantities listed in Appendix B, Title 10, CFR, Part 30.
2. CLASS II LEVEL OF RADIOACTIVE MATERIAL: Sealed sources larger that Class I quantities; all unsealed sources.
3. PRODUCTION SOURCES: Sources of radioactive material which are incorporated in and distributed in commercial products.
4. NON-PRODUCTION SOURCES: Sources used for research and development, or in support of production of commercial products.

B. Approval

Any individual desiring to initiate radiation work shall present to the Radiation Safety Officer (RSO) or the Radiation Advisory Committee (RAC): 1) documents describing his training and experience using radioisotopes; 2) describe the radiation use he wishes to apply, the location of work, routine safety measures to be followed, and analysis of the impact of any unusual occurrence that may result in the release of radioisotopes or the inadvertent exposure of personnel. If in the judgment of the RSO or the RAC, the individual is qualified and his radioisotope use is of such a nature as not to affect his own safety and the safety of others, approval to proceed will be granted. The RSO may approve Class I radioisotope use; approval by the RAC is required for Class II radioisotope use.

C. Procurement of Radioisotopes

Any purchase of radioisotopes requires the approval of the RSO. The purchase requisition shall be completed in the normal manner and forward it to the RSO for approval. The Purchasing Department shall not purchase radioisotopes without written approval from the RSO.

When radioactive materials are received, the Receiving Clerk will notify the RSO promptly in order that radiation surveys and contamination tests can be made in accordance with

Title 10, CFR, Part 20.205. The Receiving Clerk will also contact the user to obtain delivery instructions after the test have been completed. If the user is not available to receive and sign for the shipment, the RSO will provide delivery instructions.

The Receiving Clerk shall visually inspect each package of radioisotopes for signs of damage or leakage. If a package shows signs of leakage, the delivery truck shall be held, if possible, in order that a survey can be made to evaluate contamination of the truck.

When packages of radioactive material are opened, the RSO or the user shall:

1. Don protective gloves.
2. Verify the material received agrees with the packing slip and the purchase order.
3. Destroy any radiation warning signs on the package.

D. Responsibilities

Each radioisotope user shall be responsible for following the regulations set forth in Title 10, Code of Federal Regulations, Part 20, "Standards for Protection Against Radiation," as well as these procedures.

The user shall be directly responsible for the security of the radioisotopes under his control. The immediate supervisor of each radioisotope user shall be responsible for seeing that

the radiation work under his guidance is performed in a safe manner and that those procedures are maintained. The responsibilities of the RAC does not in any way abrogate the responsibility of the line supervision in the safety aspects of the use of radioisotopes.

E. Reports

Each radioisotope user shall immediately notify RSO of any incident involving radioisotopes controlled by him which may have caused or threatens to cause internal or external exposures in excess of the permissible limits, loss of operation of his facility, or damage to property. The user shall also report the loss or accidental release at radioisotopes immediately to the RSO.

II. Operating Procedures

A. Storage of Radioisotopes

1. Radioisotopes located in unrestricted areas shall be secured against unauthorized removal from the place of use or storage.
2. Sources containing greater than exempt quantities of radioisotopes shall not be moved to another area unless:
   a. The movement or relocation is part of an approved procedure, and
   b. Personnel in the receiving location are informed of the transfer; or
   c. Specific approval has been granted by the RSO.

3. Radioisotopes which are no longer being used or used at a frequency of less than once per month shall be returned to the RSO for storage.

4. A record of the location of each source under a user's control shall be maintained . The record should show all pertinent information of source activities including receipt, transfer, and where applicable, radioactive decay.

B. Disposal of Radioactive Waste

No user shall dispose of radioactive material except:

1. By transfer to radioactive waste storage area for shipment to an authorized recipient, or
2. By release into the sanitary sewage system in accordance with Title 10, CFR, Part 20.303, when authorized in writing by the RSO, or
3. By gaseous release to the atmosphere in accordance with Title 10, CFR, Part 20.106, when authorized in writing by the RSO.

C. Radiation Signs and Labels

1. Radiation signs, labels, and tags shall be used in accordance with the provisions of Section 20.203 and 20.204, Title 10, CFR, Part 20. The most frequently used signs are as follows:

2. A "Caution Radiation Area" sign shall be posted on the door to each area or room accessible to personnel in which there exists radiation originating in whole or part within licensed material at such levels that a major portion of the body could receive in any one hour a dose in excess of 5 millirem, or in any 5 consecutive days a dose in excess of 100 millirems.
3. A "Caution High Radiation Area" sign shall be posted on the door to each area or room accessible to personnel in which there exists radiation originating in whole or part within licensed material at such levels that a major portion of the body could receive in any one hour a dose in excess of 100 millirems.
4. A "Caution Radioactive Materials" sign shall be posted on the door to each area or room containing radioactive material in an amount exceeding 10 times the quantity specified in Appendix C, Title 10, CFR, Part 20.
5. Each source, or source container, shall have affixed to it a "Caution Radioactive Materials" tag. The tag shall contain information describing the kind and quantity of the radioactive material.
6. All radiation signs, labels, and tags shall be removed immediately following the elimination of the cause for displaying the radiation information.

D. Personnel Protection

The fundamental purposes of protective measures in the handling of radioactive materials are to prevent deposition of radioactive materials in the body by ingestion, inhalation, or absorption through an open cut or through the intact skin, and to reduce external radiation exposure to as low a level as is reasonably achievable. All persons engaged in radiation work are expected to be familiar with the basic rules and measures for protecting themselves and others as prescribed by the RSO or RAC and to observe those rules and measures in all details.

III. Surveys, Tests and Inventories

A. Personnel Monitoring

1. A radiation dosimeter shall be worn by any individual who enters a radiation area (as defined in Title 10, CFR, Part 20) or works in an area where it has been determined by the RSO or the RAC that personnel monitoring is required. Records showing the radiation exposures of all individuals subject to personnel monitoring shall be maintained by the RSO.

2. Persons working with unsealed radioactive material may be required to submit samples for bioassay. The RAC will determine when and at what frequency bioassay will be required. In making the determination, the RAC will consider:

a. The total amount of radioactivity involved.

If this amount exceeds 10% of the quantities given in Table 1 of Regulatory Guide 8.20 (Rev. 1, 1979), a Bioassay program will be initiated.

b. The Bioassay program will follow the criteria established in Regulatory Guide 8.20 for the Baseline, Routine, and Emergency Bioassay.

All records of bioassay results shall be maintained by the RSO.

A finger ring dosimeter shall be worn by any individual who handles unsealed sources or unshielded sealed sources whose activity is greater than 100 times exempt quantities as listed in 10 CFR 30, Appendix B. Records showing the radiation exposure shall be maintained by the Radiation Safety Office.

B. Surveys

1. Radiation surveys (as defined in Section 20.201, Title 10, CFR, Part 20) shall be made as necessary to insure that radiation dose rates in areas where radioactive materials are used or stored remain as low as reasonably achievable. A record of these surveys shall be maintained by the RSO.

In areas where unsealed sources of radioactive materials are handled, contamination surveys will be conducted monthly. Decontamination will be implemented if removable alpha contamination exceeds 22000 alpha d/m/100

cm^2 or removable beta contamination exceeds 220000 beta d/m/100 cm^2.

Exceptions to this are 1) equipment routine used in the handling and processing of unsealed sources of radioactive material, and 2) fume hoods. Equipment and hoods will be so labeled and when no longer needed or prior to removal will be decontaminated to the above levels.

Where and when decontamination is required will be by or under the direction of the RSO. The RSO shall perscribe protective equipment, decontamination materials waste. The perscribed steps will be governed by the type and magnitude of contamination.

The RSO shall make walk through surveys of all areas where radioactive materials are used or stored no less frequently than monthly.

SCHEDULE OF SURVEYS

Type of Survey	Criteria for Survey	Minimum Frequency
Walk through	Observational viewing of equipment, source handling, monitoring and documentation.	Monthly
Radiation	Compliance with ALARA conditions for external radiation levels.	Yearly OR after repair, maintenance or alternations to operating mechanism or shielding.
Contamination	Removable contamination as defined in III B.1. a) ^{63}Nickel Plating b) source fabrication facility	a) Monthly b) Upon completion of each process.

2. Where applicable, survey meters and other monitoring equipment shall be assigned to the user by the RSO. Meters shall be calibrated at least every six months and after electronic maintenance. Each meter scale shall be calibrated at two point separated by 50% of full-scale. The meter shall be considered to be in calibration if the observed reading is within 10% of known exposure. The calibration source shall be traceable to the National Bureau of Standards. Sufficient instruments will be calibrated to support all activities involving radiation and to cover any credible emergency. Calibration records shall be maintained by the RSO.

C. Sealed Sources

1. Each sealed alpha-emitting source of 10 microcuries or greater shall be tested for leakage and contamination at least once every three months; beta-gamma emitting sources of 100 microcuries or greater shall be tested at intervals of no more than six months. Beta-gamma sources in storage will not be leak tested while in storage but will be leak tested upon removal from storage and prior to use if six months has lapsed since the last leak test. Results of the leak test shall be maintained by the RSO.

Leak testing procedures will vary depending on the source curie content, and configuration , but in general will consist of wiping the source surface or surfaces which comes in close proximity or contact with the source with a moistened cotton swab or filter paper. Analysis of leak test wipes shall utilize appropriate counting equipment so that .005 microcuries of activity can be detected.

2. If there is at any time reason to suspect that leaking of radioactive material has occurred, the RSO will be notified at once.

D. Radioactive Source Inventory

The RSO shall maintain an inventory of all sources of radioactive material. For non-production sources, a log of location and responsible user shall be maintained. Production source inventory will be under the control of production control and will be part of the routine stock part inventory system.

The RSO shall conduct a physical inventory of all sources no less frequently than every six months.

The RSO shall maintain a log of all sources distributed as exempt or generally licensed sources in accordance with Title 10, CFR, Parts 32.16 and 32.52.

IV. Emergency Procedures

A. General

1. In the event of an incident involving radioactive material, notify one or all of the following:

   Stanley Kawecki, Radiation Safety Officer, Ext. 227 (Home 521-8051)

   Barbara Kapsar, Alternate Radiation Safety Officer, Ext. 259

   Arthur Lucas, Chairman Radiation Advisory Committee, Ext. 396

2. In the event of a radiation incident in which outside assistance is required, the RSO or the Chairman of the RAC will contact the appropriate authorities.

B. Fires

In the event of a fire in a room in which radioactive material is used or stored:

1. The fire director shall be informed of the presence of any radioactive material in the fire area.
2. The radioactive material should be removed from the fire area when possible.
3. Only emergency response personnel are permitted to enter the fire area until the RSO declares the area safe.

C. Accidents and Explosions

In the event of an accident or explosion in which a potentially hazardous amount of radioactive material is released:

1. No attempt shall be made to clear up the released material.
2. All windows should be closed, fans and air-conditioning units should be switched off, and everyone should leave the room. Spread of contamination can be minimized by remaining in a nearby safe area.
3. All doors shall be locked, and entrance to the contaminated area shall be prohibited until the RSO has approved re-entry.

D. Posting

A copy of these emergency procedures shall be conspicuously posted in each room or area where radioactive materials are used or stored.

V. Training

All employees who work with or around radioactive sources shall receive radiation protection training in accordance with Title 10, CFR, Part 19. All training material shall be approved by the RAC.

A. Topics covered shall include:

1. Radiation characteristics
2. Basic radiation protection
3. Biological effects of ionizing radiation

4. Nuclear Regulatory Commission rules and regulations
5. Applicable company rules and regulations
6. Exposure limits
7. Meaning of radiation signs
8. Methods of monitoring for radiation

B. In addition to the above Class II, radioisotope users shall receive additional training covering items unique to the radioactive sources being used. Examples of items covered as applicable include:

1. Safety features of high level calibrators
2. Operation of radiation survey meters
3. Laboratory techniques of handling unsealed sources of radioactive material.
4. Technique of minimizing the volume of radioactive waste and procedures to assure that chemical and physical waste are in acceptable forms

C. Refresher training shall be conducted no less frequently than once every two years.

D. The RSO shall maintain records of employee training.

VI. Duties and Responsibilities of the Radiation Advisory Committee

The RAC, which reports directly to the president, was established to provide management review and technical support to the radiation protection program. Although its functions are similar, the committee is not the committee described in Title 10, CFR, Part 33.13(C)(1).

Members of the RAC are:

Arthur C. Lucas, Chairman

Morgan Cox, Certified Health Physicist

Stanley J. Kawecki, Radiation Safety Officer

Barbara M. Kapsar, Alternate Radiation Safety Officer

A. Duties and Responsibilities

1. The committee shall review and approve, in advance, purchase and use of Class II level radioactive materials.
2. The committee shall be responsible for complying with the provisions of Sections 20.206, 20.402, 20.403, and 21.21, Title 10, CFR, Parts 20 and 21.
3. The committee must approve any change in the Radiation Protection Procedure.
4. The committee shall be responsible to assure that each employee who works with or around radioactive materials has, in the committee's judgment, sufficient qualifications to perform the work.
5. The committee shall review and approve all operating procedures for radioactive material use to ensure that the radiation exposure of each employee is kept as low as reasonably achievable.
6. The committee shall conduct semi-annual review of radioactive waste disposal activities.

VII Radiation Safety Officer

A. The RSO is appointed by the president and is a member of, and directly responsible to, the Radiation Advisory Committee. The alternate Radiation Safety Officer, also appointed by the president, assumes responsibility in the absence of the RSO. In the event that both of these individuals are absent, the chairman of the RAC will designate a knowledgeable individual to act as the RSO.

The RSO has the authority to investigate and advise on all matters of radiation safety. If he is aware of any activity involving radioactive material which, in his judgment, is not in the best radiation safety practice, he is required to report this to the responsible supervisor. If immediate corrective action is not taken, the RSO must report the fact to the RAC.

B. Specific responsibilities of the Radiation Safety Officer

1. Be responsible for instructing employees regarding radiation protection, policies, practices and procedures.
2. Assure that operating procedures for the use of radioactive source are properly carried out.
3. Investigate each case of excessive or abnormal exposure to determine the cause and take steps to prevent its reoccurrence.
4. Approve Class I uses of radioactive material.

5. Assure that personnel monitoring devices are used where needed and maintain record of results.
6. Assure that suitable caution signs and labels are in place when and where required.
7. Approve the purchase of all radioactive materials.
8. Maintain inventory of radioactive materials.
9. Conduct radiation surveys and assure that periodic leak tests are made and that records of them are maintained.
10. Assure that all shields, containers and radiation safety devices are maintained in satisfactory condition.
11. Conduct the radioactive waste consolidation activities and disposal including maintaining appropriate DOT and NRC regulations and licenses of waste disposal vendors and maintain records of waste disposals.

(1)

CONVERSATION RECORD

TIME: 2:10 pm | DATE: 9 April 1985

TYPE: ☐ VISIT ☐ CONFERENCE ☐ TELEPHONE ☐ INCOMING ☐ OUTGOING

Location of Visit/Conference:

ROUTING	
NAME/SYMBOL	INT

NAME OF PERSON(S) CONTACTED OR IN CONTACT WITH YOU: Stanley Kawecki, Radiation Safety Officer

ORGANIZATION (Office, dept., bureau, etc.): Victoreen, Inc Cleveland, Ohio

TELEPHONE NO: (216) 795 8200

SUBJECT: C/N 78229 & 78453

SUMMARY

1) training of calibrator operators
   a) who will be trainer
   b) length of didactic training, need better discussion of topic in basic areas
   c) need to address testing of competence
   d) provision for period of supervised OJT prior to granting of user status
2) training of user(s) of minimum criteria, use 33.15(b)(1&2)
3) will training be provided prior to assuming duties?

ACTION REQUIRED: will respond within 30 days

NAME OF PERSON DOCUMENTING CONVERSATION	SIGNATURE	DATE

ACTION TAKEN

SIGNATURE	TITLE	DATE

(2)

CONVERSATION RECORD

TIME	DATE

TYPE: ☐ VISIT ☐ CONFERENCE ☐ TELEPHONE ☐ INCOMING ☐ OUTGOING

Location of Visit/Conference:

NAME OF PERSON(S) CONTACTED OR IN CONTACT WITH YOU	ORGANIZATION (Office, dept., bureau, etc.)	TELEPHONE NO.

SUBJECT

ROUTING	
NAME/SYMBOL	INT

SUMMARY

4) Under "Administrative Controls," Page 1 of Radiation Safety Program - reference should be Appd B Part 30 not Part 31

5) Who is the Repair and Calibration Supervisor? this persons appears to hold responsible position Training and Experience, responsibility

6) No real description of discussion of need for bioassay. Who will do this bioassay commercial, in-house (prsn, equipment ect) Action points, ALARA Considerations) 8.20 & H^3 guides

ACTION REQUIRED

NAME OF PERSON DOCUMENTING CONVERSATION	SIGNATURE	DATE

ACTION TAKEN

SIGNATURE	TITLE	DATE

3

CONVERSATION RECORD

TIME	DATE

TYPE: ☐ VISIT ☐ CONFERENCE ☐ TELEPHONE ☐ INCOMING ☐ OUTGOING

Location of Visit/Conference:

NAME OF PERSON(S) CONTACTED OR IN CONTACT WITH YOU	ORGANIZATION (Office, dept., bureau, etc.)	TELEPHONE NO.

SUBJECT

ROUTING	
NAME/SYMBOL	INT

SUMMARY

7) Surveys

a) frequency fixed at monthly may not be acceptable for all cases of use, should take ~~n~~ levels of activity into consideration when assigning frequency of surveys

b) regarding Statement 5 under Rules for Powder or Liquid Forms of Radioactive Materials. Will individual users maintain records of surveys?

c) action and decon limits should be expanded, e.g. 8.23 Table 2

d) surveys of storage and high & medium level labs should be surveyed weekly

e) describe ventilation and uses of gaseous materials

ACTION REQUIRED

NAME OF PERSON DOCUMENTING CONVERSATION	SIGNATURE	DATE

ACTION TAKEN

SIGNATURE	TITLE	DATE

3a

CONVERSATION RECORD

TIME	DATE

TYPE

☐ VISIT ☐ CONFERENCE ☐ TELEPHONE ☐ INCOMING ☐ OUTGOING

Location of Visit/Conference:

NAME OF PERSON(S) CONTACTED OR IN CONTACT WITH YOU	ORGANIZATION (Office, dept., bureau, etc.)	TELEPHONE NO.
	Dictaveen	

ROUTING	
NAME/SYMBOL	INT

SUBJECT

SUMMARY

Instrument Calibration

a) describe procedures step-by-step in calibrating instruments

b) submit copy of calibration data and certificates provided to clients

c) standards of acceptance ±10%, warning statements charts etc provided if greater than ±10% <±20%

ACTION REQUIRED

NAME OF PERSON DOCUMENTING CONVERSATION	SIGNATURE	DATE

ACTION TAKEN

SIGNATURE	TITLE	DATE

(3)

CONVERSATION RECORD

TIME | DATE

TYPE
☐ VISIT ☐ CONFERENCE ☐ TELEPHONE
☐ INCOMING ☐ OUTGOING

Location of Visit/Conference:

NAME OF PERSON(S) CONTACTED OR IN CONTACT WITH YOU	ORGANIZATION (Office, dept., bureau, etc.)	TELEPHONE NO.

SUBJECT

ROUTING

NAME/SYMBOL	INT

SUMMARY

Intended use Ca^{252} 0.22 μCi, Pu^{239} 2.0 μCi, Am^{241} sealed 20 mCi, Kr^{85} 20 mCi Sr^{90} sealed 30 mCi, Cesium 137 Sealed 100 mCi, Co^{60} 100 mCi sealed — will not be authorized under man. and distribution, ~~on any other~~ any written now could fabricate, manufacture 100 mCi sources, need standards and testing standards etc, ANSI, custom review listing with Bagget etc

Demonstrations Not clear yet with HQ what has been licensed as exempt sources, also some of the Sr^{90} sources inferred to as exempt exist, they will need to clarify.

ACTION REQUIRED

NAME OF PERSON DOCUMENTING CONVERSATION	SIGNATURE	DATE

ACTION TAKEN

SIGNATURE	TITLE	DATE

(4)

CONVERSATION RECORD

TIME	DATE

TYPE ☐ VISIT ☐ CONFERENCE ☐ TELEPHONE ☐ INCOMING ☐ OUTGOING

Location of Visit/Conference:

NAME OF PERSON(S) CONTACTED OR IN CONTACT WITH YOU	ORGANIZATION (Office, dept., bureau, etc.)	TELEPHONE NO.

ROUTING

NAME/SYMBOL	INT

SUBJECT

SUMMARY

20.203 Requirements for calibration rooms

a) Frequency of safety system audits and checks

b) can doors be opened from inside for emergency exit 20.203(6);

c) how long does alarm sound, is there sufficient time to scram unit and/or leave room? 20.203(6) IV

d) describe survey upon entry into room 20.203(6) VI?

e) survey and check of area to assure clear 20.203(6) V

f) do both doors with access to area have same

g) warning systems, lights, alarms etc 20.203(6);

h) describe administrative procedure to prevent intrusion over wall

i) will there be any maintenance and repair involving removal of sources, shielding safety mechanisms?

talk to Bruce

ACTION REQUIRED

NAME OF PERSON DOCUMENTING CONVERSATION	SIGNATURE	DATE

ACTION TAKEN

SIGNATURE	TITLE	DATE

(6)

CONVERSATION RECORD

TIME | DATE

TYPE

☐ VISIT ☐ CONFERENCE ☐ TELEPHONE

☐ INCOMING ☐ OUTGOING

Location of Visit/Conference:

NAME OF PERSON(S) CONTACTED OR IN CONTACT WITH YOU	ORGANIZATION (Office, dept., bureau, etc.) Victoreen, Inc	TELEPHONE NO.

SUBJECT

ROUTING	
NAME/SYMBOL	INT

SUMMARY

a) Victoreen cant ~~redistribute~~ exempt quantities sources manufactured by New England Nuclear until they obtain a license to distribute exempt sources

b) must submit fee for TLD reader and dosimeter calibrator, will have to wait until HQ straightens out applications

ACTION REQUIRED

NAME OF PERSON DOCUMENTING CONVERSATION	SIGNATURE	DATE

ACTION TAKEN

SIGNATURE	TITLE	DATE

CONVERSATION RECORD

TIME | DATE

TYPE
☐ VISIT ☐ CONFERENCE ☐ TELEPHONE
☐ INCOMING ☐ OUTGOING

Location of Visit/Conference:

NAME OF PERSON(S) CONTACTED OR IN CONTACT WITH YOU	ORGANIZATION (Office, dept., bureau, etc.)	TELEPHONE NO.

SUBJECT

ROUTING	
NAME/SYMBOL	INT

SUMMARY

Leak ~~Test~~ Testing – analytical equipment

Personnel Monitoring
add commitment to provide ring badges to personnel who may handle mCi levels of material

Description of facilities where sealed sources are loaded, specify by who, set of facility handling tool, protective barrier, equipment availble

Disamed ~~agr~~ if true – source relocated must amend license.

ACTION REQUIRED

NAME OF PERSON DOCUMENTING CONVERSATION | SIGNATURE | DATE

ACTION TAKEN

SIGNATURE | TITLE | DATE