

**CALIBRATION RECORDS
FOR INSTRUMENTS USED FOR
RADIOLOGICAL SURVEYS**

JUNE 27, 2000

VOLUME 6 OF 7

**WESTINGHOUSE ELECTRIC CORPORATION
BLAIRSVILLE, PA**

**CALIBRATION RECORDS
FOR INSTRUMENTS USED FOR
RADIOLOGICAL SURVEYS**

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CALIBRATION RECORDS
FOR INSTRUMENTS USED FOR
RADIOLOGICAL SURVEYS

Purpose

The Westinghouse Blairsville Site utilized nuclear materials during the period of the mid to late 1950's to the early part of the 1960's. Work was performed both under licenses with the atomic Energy Commission and for the Bettis Atomic Power Laboratory. Although all work ceased during the 1960's, subsequent radiological surveys and investigations, starting in 1993, established that some residual radioactivity, primarily in underground piping and subsurface soil contamination, existed on the site. During the period of 1993 through the present, additional remediation work and radiological surveys have been conducted to establish that the site can be released for unrestricted use. This series of reports documents the results of the final status radiological surveys subsequent to the various remediation efforts.

Scope

This report compiles information on the calibration of the radiological survey instruments, which were used to measure the radiation levels presented in the other reports issued for this project. In each report, which documents a final radiological survey, the data sheets that record the measured radiation levels also provide specific information with respect to the specific instrument used to make the measurement. This report provides the necessary information to establish the entire calibration history of each specific instrument. These instruments have been used for the Westinghouse sites at Blairsville, Cheswick, and Forest Hills (now Viacom, Inc.). Therefore these calibration records are applicable to all these sites.

Discussion

All instruments used for radiological surveys on this project were calibrated on a frequency depending on the specific instrument. The calibration history for every instrument used on the project is summarized in appendix A, which cover the years 1993 through 1999. These summaries also provide a reference to a "Code Number." Included with this report in Appendix B are sheets labeled "Code Number 1" through "Code Number 70." Each of these "codes" incorporates the calibration records as appropriate for the specific instrument.

The certification sheets for each of the source standards used by the project to calibrate the instruments for conversion of CPM to DPM are included in Appendix C. Other calibrations were performed at other licensed operations as noted by the calibration records and no information on Source Certification is provided here.

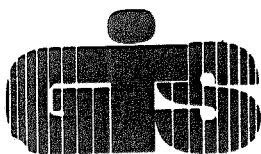
**CALIBRATION RECORDS
FOR INSTRUMENTS USED FOR
RADIOLOGICAL SURVEYS**

List of Volume Contents

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CODE NUMBER 26

REPORT #001



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 724/733-1900 Fax: 724/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Eberline</u>
Customer Address: <u>PO Box 3700</u>	Model <u>RM-14</u> Serial Number <u>4469</u>
<u>Pittsburgh, PA 15230</u>	External Probe(s) <u>HP210AL</u> Serial # _____
Customer P.O.# _____	Calibration Method <u>¹³⁷Pulsar s/n 301</u>
Work Order # <u>I-99-03-208</u>	<u>⁹⁹Cs s/n 10263 200mCi</u>
	<u>Tc s/n S1256</u>

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	100 CPM	Reset	100 CPM	All Calibrations Btn. + & - 10%
2		200	Mechanical Zero	200	
3		400	↓	395	Battery: OK
4	X10	1K		1K	Mechanical Zero: OK
5		2K		2K	
		4K		3.95K	Reset: OK
8					
9	X100	10K		10K	Response: OK
10		20K		20K	
11		40K		39.5K	Audio: OK
12					Alarm: OK
13					⁹⁹ Tc Efficiency = 12.6%
14				1 mR/hr ≈ 3.1K CPM in ¹³⁷ Cs field	
15					
16					
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>William Owens</u>	I certify that the above information is correct. Administrative Coordinator	
Calibration Date: <u>03-24-99</u> (Signed)		Date: <u>03-24-99</u>
Next Calibration Due: <u>06-24-99</u>		



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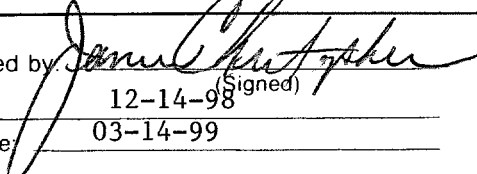
CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	Westinghouse	Instrument Manufacturer:	Eberline
Customer Address:	PO Box 3700 Pittsburgh, PA 15230	Model:	RM-14
		Serial Number:	4469
		External Probe(s):	HP210A
Customer P.O.#:	MB-14027-S	Calibration Method:	137Cs s/n 120935
Work Order #:	I-98-12-210		99Cs s/n 10263 200mCi
			Tc s/n S1256

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2		200	200	200	
3		400	400	400	Battery: OK
4					
5	X10	1K	1K	1K	Mechanical Zero: OK
6		2K	2K	2K	
7		4K	4K	4K	Reset: OK
8					
9	X100	10K	10K	10K	Response: OK
10		20K	20K	20K	
11		40K	40K	40K	Speaker: OK
12					
13					Alarm: OK
14					
15					High Voltage = 906 Volts
16					99Tc Efficiency = 12.6%
17					
18					1 mR/hr = 3.1K CPM in ¹³⁷ Cs field
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: 	I certify that the above information is correct:
Calibration Date: 12-14-98 (Signed)	12-14-98
Next Calibration Due: 03-14-99	Administrative Coordinator Date



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CALIBRATION CERTIFICATE

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CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	<u>Westinghouse</u>	Instrument Manufacturer	<u>Eberline</u>
Customer Address:	<u>PO Box 3700</u> <u>Pittsburgh, PA 15230</u>	Model	<u>RM-14</u> Serial Number <u>4469</u>
Customer P.O.#	<u>MB-14027-S</u>	External Probe(s)	<u>HP210A</u> Serial # _____
Work Order #	<u>I-98-07-210</u>	Calibration Method	<u>99</u> Pulser s/n 101500 <u>137</u> Tc s/n S1256 Cs s/n 10263 200mCi

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2		200	200	200	
3		400	400	400	Battery: OK
4					
5	X10	1K	1K	1K	Mechanical Zero: OK
6		2K	2K	2K	
7		4K	4K	4K	Reset: OK
8					
9	X100	10K	10K	10K	Response: OK
10		20K	20K	20K	
11		40K	39K	39K	Audio: Ok
12					
13					Alarm: OK
14					
15					<u>99</u> Tc Efficiency = 12.6%
16					
17					1 mR/hr \approx 3.1K CPM in ¹³⁷ Cs field
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument)

Instrument Calibrated by: James Christopher
 Calibration Date: 08-04-98
 Next Calibration Due: 11-04-98

I certify that the above information is correct:
[Signature]
 Administrative Coordinator Date 08-04-98



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CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer: <u>Eberline</u>	Model: <u>RM-14</u>	Serial Number: <u>4469</u>
Customer Address: <u>PO Box 3700</u>	External Probe(s): <u>HP210</u>	Serial #: _____	
<u>Pittsburgh, PA 15230</u>	Calibration Method: <u>¹³⁷Cs s/n 10263 200mCi</u>		
Customer P.O.#: <u>MB-14027-S</u>			
Work Order #: <u>I-98-03-210</u>			
			<u>⁹⁹Tc s/n S1256</u>

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 X1	100 CPM	105 CPM	100 CPM	All Calibrations Btn. + & - 10%
2	200	205	200	
3	400	405	395	Battery: OK
4				
5 X10	1K	1.5K	1K	Mechanical Zero: OK
6	2K	2.3K	2K	
7	4K	4.4K	3.9K	Reset: OK
8				
9 X100	10K	11K	10K	Response: OK
10	20K	22K	20K	
11	40K	44K	39K	Audio: OK
12				
13				Alarm: OK
14				
15				⁹⁹ Tc Efficiency = 12.6%
16				
17				1 mR/hr = 3.2K CPM in ¹³⁷ Cs field
18				
19				
20				
21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>William Owens</u> Calibration Date: <u>04-03-98</u> (Signed) Next Calibration Due: <u>07-03-98</u>	I certify that the above information is correct: <u>Theresa M. De...</u> <u>04-03-98</u> Administrative Coordinator Date
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GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	Westinghouse	Instrument Manufacturer	Eberline
Customer Address:	PO Box 3700 Pittsburgh, PA 15230	Model	RM-14 Serial Number 4469
Customer P.O.#	MB-14027-S	External Probe(s)	HP210A1 Serial #
Work Order #	I-97-11-208	Calibration Method	⁹⁹ Pulser s/n 101500 ¹³⁷ Tc s/n S1256 ¹³⁷ Cs s/n 10263 200mCi

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2	200	200	200	
3	400	400	400	Battery: OK
4 X10	1K	1K	1K	Mechanical Zero: OK
5	2K	2K	2K	
6	4K	4K	4K	Response: OK
7				
8 X100	10K	10.5K	10.5K	Reset: OK
9	20K	21K	21K	
10	40K	42K	42K	Alarm: OK
11				
12				Speaker: OK
13				
14				Test Pulse = 3.6K CPM
15				
16				1 mR/hr = 3.4K CPM in ¹³⁷ Cs field
17				⁹⁹ Tc Efficiency = 13.3%
18				
19				
20				
21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by:	I certify that the above information is correct:
Calibration Date: 12-01-97 (Signed)	12-01-97
Next Calibration Due: 03-01-98	Administrative Coordinator Date



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CALIBRATION CERTIFICATE

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CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	<u>Westinghouse</u>	Instrument Manufacturer	<u>Eberline</u>
Customer Address:	<u>P.O. Box 3700</u> <u>Pittsburgh, PA 15230</u>	Model	<u>RM-14</u> Serial Number <u>4469</u>
Customer P.O.#	<u>MB-14027-S</u>	External Probe(s)	<u>HP210</u> Serial # _____
Work Order #	<u>I-97-06-210</u>	Calibration Method	<u>137</u> Pulser s/n 301 <u>99</u> Cs s/n 10263 200mCi Tc s/n S1256

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2		200	205	205	
3		400	405	405	Battery: OK
4	X10	1K	1.1K	1K	Mechanical Zero: OK
5		2K	2.1K	2K	
6		4K	4.25K	3.9K	Reset: OK
7					
8	X100	10K	10.5K	10K	Response: OK
9		20K	21.5K	20K	
10		40K	42K	39.5K	Audio: OK
11					
12					Alarm: OK
13					
14					1 mR/hr = 3.3K CPM in ¹³⁷ Cs field
15					
16					⁹⁹ Tc Efficiency = 13.3%
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>William Owens</u> (Signed)	I certify that the above information is correct:
Calibration Date: <u>07-16-97</u>	<u>William Owens</u> <u>07-16-97</u>
Next Calibration Due: <u>10-16-97</u>	Administrative Coordinator Date



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CALIBRATION CERTIFICATE

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CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	Westinghouse	Instrument Manufacturer	Eberline
Customer Address:	P.O. Box 3700 Pittsburgh, PA 15230	Model	RM-14
		Serial Number	4469
		External Probe(s)	HP210
Customer P.O.#	MB-14027-S	Calibration Method	137Pulser s/n 318
Work Order #	I-96-12-210		99Cs s/n 10263 200mCi
			Tc s/n S1256

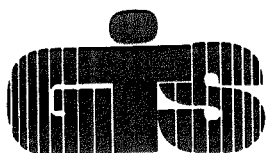
INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	100 CPM	80 CPM	100 CPM	All Calibrations Btn. + & - 10%
2		200	160	200	
3		400	320	395	Battery: OK
4					
5	X10	1K	1K	1K	Mechanical Zero: OK
6		2K	2K	2K	
7		4K	3.9K	3.9K	Response: OK
8					
9	X100	10K	10K	10K	Reset: OK
10		20K	20K	20K	
11		40K	39.5K	39.5K	Audio: OK
12					
13					1 mR/hr @ 3.3K CPM in ¹³⁷ Cs field
14					⁹⁹ Tc Efficiency = 13.3%
15					
16					
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by:	<u>William Owens</u>	I certify that the above information is correct:	
	(Signed)		
Calibration Date:	01-09-97		01-09-97
Next Calibration Due:	04-09-97	Administrative Coordinator	Date



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 2045 Route 286
 Pittsburgh, PA 15239-2839
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CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Eberline</u>	Model <u>RM-14</u>	Serial Number <u>4469</u>
Customer Address: <u>P.O. Box 3700</u>	External Probe(s) <u>HP210</u>	Serial # _____	
<u>Pittsburgh, PA 15230</u>	Calibration Method _____	<u>Pulser s/n 301</u>	
Customer P.O.# <u>MB-14027-S</u>		<u>¹³⁷Cs s/n 10263 200mCi</u>	
Work Order # <u>I-96-08-210</u>		<u>⁹⁹Tc s/n S1256</u>	

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	100 CPM	105 CPM	105 CPM	All Calibrations Btn. + & - 10%
2		200	205	205	
3		400	400	400	Battery: OK
4					
5	X10	1K	1.1K	1K	Mechanical Zero: OK
6		2K	2.2K	2K	
7		4K	4.15K	3.9K	Reset: OK
8					
9	X100	10K	10.5K	10.5K	Response: OK
10		20K	20.5K	20.5K	
11		40K	39.5K	39.5K	Audio: OK
12					⁹⁹ Tc Efficiency = 13.3%
13					
14					1 mR/hr ≈ 3.2K CPM in ¹³⁷ Cs field
15					
16					
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>William Owens</u> (Signed)	I certify that the above information is correct:
Calibration Date: <u>08-30-96</u>	<u>Theresa M. Owens</u> 08-30-96
Next Calibration Due: <u>11-30-96</u>	Administrative Coordinator Date



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CALIBRATION CERTIFICATE

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CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name: <u>Westinghouse</u>		Instrument Manufacturer <u>Eberline</u>	
Customer Address: <u>P.O. Box 3700</u>		Model <u>RM-20-1</u> Serial Number <u>1986</u>	
	<u>Pittsburgh, PA 15230</u>	External Probe(s) <u>AC-3-7</u> Serial # _____	
Customer P.O.# <u>MB-14027-S</u>		Calibration Method <u>Pulser s/n 101500</u>	
Work Order # <u>I-97-04-209</u>		<u>230Th s/n 11623</u>	

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2		200	205	205	
3		400	410	410	Mechanical Zero: OK
4					AC Only
5	X10	1K	1K	1K	Reset: OK
6		2K	2K	2K	Audio: OK
7		4K	4.05K	4.05K	Alarm: OK
8					HV = 1270Volts
9	X100	10K	10K	10K	
10		20K	20.5K	20.5K	Check source \cong 24K CPM
11		40K	41K	41K	
12					²³⁰ Th Efficiency = 12.6%
13	X1K	100K	100K	100K	
14		200K	200K	200K	
15		400K	400K	400K	
16					
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u> (Signed)	I certify that the above information is correct:
Calibration Date: <u>04-09-97</u>	<u>[Signature]</u> <u>04-09-97</u>
Next Calibration Due: <u>07-09-97</u>	Administrative Coordinator Date



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CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Eberline</u>
Customer Address: <u>P.O. Box 3700</u>	Model <u>RM-20-1</u> Serial Number <u>1986</u>
<u>Pittsburgh, PA 15230</u>	External Probe(s) <u>AC-3-7</u> Serial # _____
Customer P.O.# <u>MB-14027-S</u>	Calibration Method <u>230</u> <u>Pulser s/n 318</u>
Work Order # <u>I-96-12-210</u>	<u>Th s/n 11623</u>

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2		200	200	200	
3		400	410	410	Battery: N/A
4					
5	X10	1K	1K	1K	Mechanical Zero: OK
6		2K	2K	2K	
7		4K	4.05K	4.05K	Reset: OK
8					
9	X100	10K	10K	10K	Audio: OK
10		20K	20.5K	20.5K	
11		40K	41.5K	41.5K	Alarm: OK
12					
13	X1K	100K	100K	100K	Check source reads \approx 23K CPM
14		200K	200K	200K	230Th Efficiency = 12.6%
15		400K	400K	400K	
16					
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>William Owens</u>	I certify that the above information is correct:
Calibration Date: <u>01-09-97</u> (Signed)	<u>William Owens</u> 01-09-97
Next Calibration Due: <u>04-09-97</u>	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

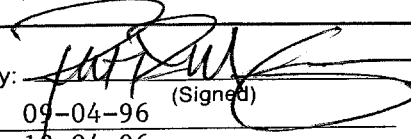
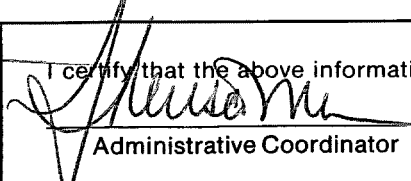
CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	<u>Westinghouse</u>	Instrument Manufacturer	<u>Eberline</u>
Customer Address:	<u>P.O. Box 3700</u> <u>Pittsburgh, PA 15230</u>	Model	<u>RM-20-1</u> Serial Number <u>1986</u>
Customer P.O.#	<u>MB-14027-S</u>	External Probe(s)	<u>AC-3-7</u> Serial # _____
Work Order #	<u>I-96-08-210</u>	Calibration Method	<u>230</u> <u>Pulser s/n 101500</u> <u>Th s/n 11623</u>

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2		200	195	195	
3		400	400	400	Battery: N/A
4					
5	X10	1K	1K	1K	Mechanical Zero: OK
6		2K	1.95K	1.95K	
7		4K	4K	4K	Reset: OK
8					
9	X100	10K	10K	10K	Alarm: OK
10		20K	19.5K	19.5K	
11		40K	40K	40K	Speaker: OK
12					
13	X1K	100K	100K	100K	High Voltage = 1268 Volts
14		200K	195K	195K	
15		400K	400K	400K	²³⁰ Th Efficiency = 12.1%
16					
17					Check source ²³⁹ Pu → 23K CPM
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by:		I certify that the above information is correct:	
Calibration Date:	<u>09-04-96</u> (Signed)	Administrative Coordinator	<u>09-04-96</u> Date
Next Calibration Due:	<u>12-04-96</u>		



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	<u>Westinghouse</u>	Instrument Manufacturer	<u>Eberline</u>
Customer Address:	<u>P.O. Box 3700</u>	Model	<u>RM-20-1</u> Serial Number <u>1986</u>
	<u>Pittsburgh, PA 15230</u>	External Probe(s)	<u>AC-3-7</u> Serial # _____
Customer P.O.#	<u>MB-14027-S</u>	Calibration Method	<u>230</u> <u>Pulser s/n 101500</u>
Work Order #	<u>I-96-06-209</u>		<u>Th s/n 11623</u>

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2		200	195	195	
3		400	400	400	Battery: N/A
4					
5	X10	1K	1K	1K	Mechanical Zero: OK
6		2K	1.95K	1.95K	
7		4K	4K	4K	Audio: OK
8					
9	X100	10K	10K	10K	Alarm: OK
10		20K	19.5K	19.5K	
11		40K	40K	40K	high Voltage = 1275 Volts
12					
13	X1K	100K	100K	100K	Check source reads \approx 23K CPM
14		200K	195K	195K	
15		400K	400K	400K	²³⁰ Th Efficiency = 12.1%
16					
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u> (Signed)	I certify that the above information is correct: <u>[Signature]</u> Administrative Coordinator
Calibration Date: <u>05-30-96</u>	<u>05-30-96</u> Date
Next Calibration Due: <u>08-30-96</u>	



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Eberline</u>
Customer Address: <u>P.O. Box 3700</u>	Model <u>RM-14</u> Serial Number <u>4469</u>
<u>Pittsburgh, PA 15230</u>	External Probe(s) <u>HP210AL</u> Serial # _____
Customer P.O.# <u>MB-14027-S</u>	Calibration Method <u>137Cs</u> Pulser s/n <u>120935</u>
Work Order # <u>I-96-03-210</u>	<u>200mCi</u> Cs s/n <u>10263</u>

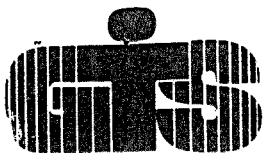
INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2	200	200	200	
3	400	400	400	Battery: OK
4 X10	1K	1K	1K	Mechanical Zero: OK
5	2K	2K	2K	
6	4K	4K	4K	Response: OK
7				
8 X100	10K	10K	10K	Reset: OK
9	20K	20K	20K	
10	40K	40K	40K	Alarm: OK
11				
12				Speaker: OK
13				
14				Test Pulse = 3.6K CPM
15				
16				1 mR/hr \approx 3.2K CPM in ¹³⁷ Cs field
17				
18				
19				
20				
21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u> (Signed)	I certify that the above information is correct: <u>[Signature]</u>
Calibration Date: <u>03-11-96</u>	<u>03-11-96</u>
Next Calibration Due: <u>06-11-96</u>	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Hastingshouse</u>	Instrument Manufacturer <u>Eberline</u>
Customer Address: <u>P.O. Box 3700</u>	Model <u>31-14</u> Serial Number <u>4469</u>
<u>Pittsburgh, PA 15221</u>	External Probe(s) <u>HP210AL</u> Serial # _____
Customer P.O.# <u>NY-14027-8</u>	Calibration Method <u>Pulsor s/n 798</u>
Work Order # <u>I-95-11-210</u>	<u>Cs s/n 10263 200mCi</u>

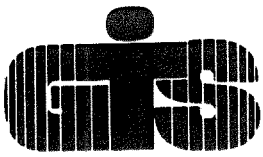
INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 X1	100 CPM	100 CPM	100 CPM	All Calibrations Btm. + & - 10%
2	200	200	200	Battery: OK
3	400	400	400	
4 X10	1K	1.1K	1K	Mechanical Zero: OK
5	2K	2.2K	2K	Response: OK
6	4K	4.4K	4K	
7				
8 X100	10K	10.5K	10K	Reset: OK
9	20K	21K	20K	
10	40K	42K	40K	Alarm: OK
11				
12				Test Pulse = 3.5K CPM
13				
14				Speaker: OK
15				
16				1 mR/hr = 3.3K CPM in ¹³⁷ Cs field
17				
18				
19				
20				
21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u>	I certify that the above information is correct:
Calibration Date: <u>12-05-95</u> (Signed)	<u>[Signature]</u> 12-05-95
Next Calibration Due: <u>03-05-96</u>	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Eberline</u>
Customer Address: <u>P.O. Box 3700</u>	Model <u>RM-14</u> Serial Number <u>4469</u>
<u>Pittsburgh, PA 15230</u>	External Probe(s) _____ Serial # _____
Customer P.O.# <u>MB-14027-S</u>	Calibration Method <u>¹³⁷Pulser s/n 101500</u>
Work Order # <u>I-95-08-211</u>	<u>Cs s/n 10263 200mCi</u>

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2	200	200	200	
3	400	400	400	Battery Check: OK
4				
5 X10	1K	1K	1K	Mechanical Zero: OK
6	2K	2K	2K	
7	4K	4K	4K	Response: OK
8				
9 X100	10K	10K	10K	Reset: OK
10	20K	20K	20K	
11	40K	40K	40K	Speaker: OK
12				
13				Test Pulse = 3.6K CPM
14				
15				Alarm: OK
16				
17				1 mR/hr = 3.5K CPM in ¹³⁷ Cs field
18				
19				
20				
21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u> (Signed)	I certify that the above information is correct: <u>[Signature]</u>
Calibration Date: <u>08-24-95</u>	<u>08-24-95</u>
Next Calibration Due: <u>11-24-95</u>	Administrative Coordinator <u>[Signature]</u> Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	Westinghouse	Instrument Manufacturer	Eberline
Customer Address:	P.O. Box 3700 Pittsburgh, PA 15230	Model	RM-14 Serial Number 4469
Customer P.O.#	MB-14027-S	External Probe(s)	HP210AL Serial #
Work Order #	I-95-05-220	Calibration Method	¹³⁷ Pulser s/n 101500 Cs s/n 10263 200mCi

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 X1	100 CPM	110 CPM	100 CPM	All Calibrations btn. + & - 10%
2	200	220	200	
3	400	440	400	Battery: OK
4 X10	1K	1.1K	1K	Mechanical Zero: OK
5	2K	2.2K	2K	
6	4K	4.4K	4K	Response: OK
7				
8 X100	10K	10.5K	10K	Reset: OK
9	20K	21K	20K	
10	40K	42K	40K	Speaker: OK
11				
12				Alarm: OK
13				
14				Test Pulser = 3.6K CPM
15				
16				1 mR/hr ≈ 3.5K CPM in ¹³⁷ Cs field
17				
18				
19				
20				
21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by:		I certify that the above information is correct:	
Calibration Date:	05-16-95 (Signed)		05-16-95
Next Calibration Due:	08-16-95	Administrative Coordinator	Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer: <u>Eberline</u>	Model: <u>RM-14</u>	Serial Number: <u>4469</u>
Customer Address: <u>P.O. Box 3700</u>	External Probe(s): <u>HP210</u>	Serial #: _____	
<u>Pittsburgh, PA 15230</u>			
Customer P.O.#: <u>MB-14027-S</u>	Calibration Method: _____	<u>¹³⁷Pulser s/n 101500</u>	
Work Order #: <u>I-94-11-218</u>		<u>Cs s/n 10263 200mCi</u>	

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 X1	100 CPM	105 CPM	105 CPM	All Calibrations Btn. + & - 10%
2	200	215	215	
3	400	420	420	Battery Check: OK
4 X10	1K	1.05K	1.05K	Mechanical Zero: OK
5	2K	2.15K	2.15K	
6	4K	4.2K	4.2K	Response: OK
7				
8 X100	10K	10K	10K	Reset: OK
9	20K	20.5K	20.5K	
10	40K	40K	40K	Alarm: OK
11				
12				Speaker: OK
13				
14				1 mR/hr = 3.5K CPM in ¹³⁷ Cs field
15				
16				
17				
18				
19				
20				
21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: [Signature]
 Calibration Date: 11-29-94 (Signed)
 Next Calibration Due: 02-28-95

I certify that the above information is correct:
[Signature]
 Administrative Coordinator
 Date: 11-29-94



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	<u>Westinghouse</u>	Instrument Manufacturer	<u>Eberline</u>
Customer Address:	<u>Avenue A & West Street</u> <u>Pittsburgh, PA 15221</u>	Model	<u>RM-14</u> Serial Number <u>4469</u>
Customer P.O.#	<u>MB-14027-S</u>	External Probe(s)	<u>HP210</u> Serial # _____
Work Order #	<u>I-94-06-231</u>	Calibration Method	<u>¹³⁷Pulser s/n 301</u> <u>Cs s/n 10263 200mCi</u>

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2		200	200	200	
3		400	400	400	Battery Check: OK
4					
5	X10	1K	1K	1K	Mechanical Zero: OK
6		2K	2K	2K	
7		4K	3.9K	3.9K	Alarm: OK
8					
9	X100	10K	10K	10K	Audio: OK
10		20K	20K	29K	
11		40K	39K	39K	Reset: OK
12					
13					Response: OK
14					
15					1 mR/hr = 3500 CPM in ¹³⁷ Cs field
16					
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>James Christopher</u> (Signed)	I certify that the above information is correct:
Calibration Date: <u>06-28-94</u>	<u>Theresa DeBar</u> 06-28-94
Next Calibration Due: <u>09-28-94</u>	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Eberline</u>	Model <u>RM-14</u>	Serial Number <u>4469</u>
Customer Address: <u>Avenue A & West Street</u>	External Probe(s) <u>HP210</u>	Serial # _____	
<u>Pittsburgh, PA 15221</u>			
Customer P.O.# <u>MB-14027-S</u>	Calibration Method _____	<u>¹³⁷Pulser s/n 318</u>	
Work Order # <u>I-94-03-209</u>		<u>Cs s/n 10263 200mCi</u>	

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	100 CPM	Initial	100 CPM	All Calibrations Btn. + & - 10%
2		200	Calibration	205	
3		400		400	Battery Check: OK
4					
5	X10	1K		1.05K	Mechanical Zero: OK
6		2K		2.15K	
7		4K		4.2K	Response: OK
8					
9	X100	10K		10.5K	Audio: OK
10		20K		21K	
11		40K		40.5K	Test Pulse = 3.8K CPM
12					
13					Alarm: OK
14					
15					1 mR/hr = 3.7K CPM in ¹³⁷ Cs field
16					
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u> (Signed)	Verify that the above information is correct: <u>[Signature]</u>
Calibration Date: <u>03-07-94</u>	<u>03-07-94</u>
Next Calibration Due: <u>06-07-94</u>	Administrative Coordinator _____ Date _____



HEALTH PHYSICS inc.

2986 Industrial Blvd. — Bethel Park, Pa. 15102 — Phone 412 — 835-9555 — Fax No. 412 — 835-9559

CERTIFICATE OF CALIBRATION

SHIPPING ADDRESS	BILLING ADDRESS (If Different)
<u>WEC</u> <u>Ave "A" + WEST ST.</u> <u>PITTSBURGH PA 15730</u>	<u>SME</u>

CONTACT: L. SMITH PHONE: () DATE: 11/23/13 P.O.# MA 89320-85

Receiving Comments:

Instrument Received: Within Toler. $\pm 10\%$ $\pm 10-20\%$ Out Toler. Requires Repair

Mfg. Inst. EGORLINE Model # RM-14 Serial # 1169
 Detector " " Model # HP-210AC Serial # EXTP006-1

CALIBRATION REPAIR SALE LOAN By: [Signature]

scale	source	reading	scale	source	reading	scale	source	reading
	mR/hr cpm			mR/hr cpm			mR/hr cpm	
<u>X1</u>	100	101	<u>X10</u>	1000	1000	<u>X100</u>	10000	10000
	400	400		4000	4000		40000	40000

Calibration Source: GAMMA ALPHA BETA ELECTRONIC OTHER

Description: ra-226 cs-137 pu-239 sr-90 mp-1

RESPONSE GRAPH N/A

PROBE EFFICIENCIES

Alpha _____ % Beta _____ %

Check Source Reading N/A

Battery Check Reading 350 cpm

Detector Angle PERPENDICULAR

Corrections N/A $\pm 10\%$ ELECTRONIC

TEMP/HUMIDITY 69.7°F / 33 %

Maintenance & Comments BATT OK AUDIO OK ALARM OK

HVT OK

COUNT RATE EFF = 3900 cpm/mR/hr

CALIBRATION		<u>10.00</u>	QA Dept. <u>[Signature]</u>	Warranty	
LABOR			Shipping <u>UPS</u>	Date	<u>11/23/13</u>
MATERIALS			Pick-Up	Date	<u>/ /</u>
&			This Certificate Expires In <u>3 Months</u>		
SALES			Re-Calibrate On Or Before <u>2/23/14</u>		
SHIPPING	<u>UPS</u>	<u>DUANT 1317</u>	Job ID #		

NOTICE: Applied Health Physics, Inc. certifies that the above instrument has been calibrated by standards traceable to the National Institute of Standards and Technology under Nuclear Regulatory Commission License #37-09135-01 and PA State License #PA-0228. This calibration system conforms to the requirements of NRC regulation 10-CFR-34, 10-CFR-35, MIL-STD 45662A and ANSI-STD N323-1978.



HEALTH PHYSICS inc.

2986 Industrial Blvd. - Bethel Park, Pa. 15102 - Phone 412 - 835-9555 - Fax No. 412 - 835-9559

CERTIFICATE OF CALIBRATION

SHIPPING ADDRESS	BILLING ADDRESS (If Different)
W E C Ave. A & West St. Pgh., PA 15112	SAME

CONTACT: J. Flanigan PHONE: () - - - - DATE: 4/13/93 P.O.# MA 8932005

Receiving Comments: Calibration

Instrument Received:	<input checked="" type="checkbox"/> Within Toler. $\pm 10\%$	<input type="checkbox"/> $\pm 10-20\%$	<input type="checkbox"/> Out Toler.	<input type="checkbox"/> Requires Repair
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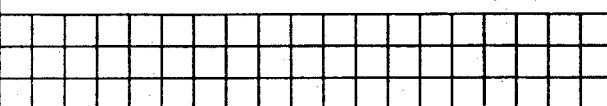
Mfg. Inst. Fabline Model # RM-14 Serial # 4169
 Detector " Model # HP-3107L Serial # P106M

<input checked="" type="checkbox"/> CALIBRATION	<input type="checkbox"/> REPAIR	<input type="checkbox"/> SALE	<input type="checkbox"/> LOAN By: <u>J. Douglas</u>
---	---------------------------------	-------------------------------	---

scale	source	reading	scale	source	reading	scale	source	reading
	mR/hr cpm			mR/hr cpm			mR/hr cpm	
<u>X1</u>	100	100	<u>X10</u>	1000	1010	<u>X100</u>	10000	10000
	400	405		10000	4050		40000	39700
\oplus Eff \approx 3900 rpm/mR/hr RA-306 Gamma \oplus								

Calibration Source:	<input checked="" type="checkbox"/> GAMMA	<input type="checkbox"/> ALPHA	<input type="checkbox"/> BETA	<input checked="" type="checkbox"/> ELECTRONIC	<input type="checkbox"/> OTHER
---------------------	---	--------------------------------	-------------------------------	--	--------------------------------

Description: ra-226 cs-137 pu-239 sr-90 mp-1/500

RESPONSE GRAPH <u>N/A</u>  TEMP/HUMIDITY <u>73.7°F / 35%</u>	PROBE EFFICIENCIES <u>N/A</u> Alpha _____ % Beta _____ % Check Source Reading <u>N/A</u> Battery Check Reading <u>360 cpm</u> Detector Angle <u>perpendicular</u> Corrections <u>N/A \pm 10%</u> Electronic
---	---

Maintenance & Comments Charged Battery OK, HV-OK.

CALIBRATION <u>Contract</u>	<u>40.00</u>	QA Dept. <u>SW</u>	Warranty _____
LABOR _____		Shipping <u>UPS</u>	Date <u>4/13/93</u>
MATERIALS _____		Pick-Up _____	Date <u>1-1</u>
& _____		This Certificate Expires In <u>9 Months</u>	
SALES _____		Re-Calibrate On Or Before <u>7/13/93</u>	
SHIPPING <u>UPS</u>	<u>(4) Units 14.00</u>	Job ID # <u>52125</u>	

NOTICE: Applied Health Physics, Inc. certifies that the above instrument has been calibrated by standards traceable to the National Institute of Standards and Technology under Nuclear Regulatory Commission License #37-09135-01 and PA State License #PA-0228. This calibration system conforms to the requirements of NRC regulation 10-CFR-34, 10-CFR-35, MIL-STD 45662A and ANSI-STD N323-1978.



HEALTH PHYSICS inc.

MA89328

2986 Industrial Blvd. — Bethel Park, Pa. 15102 — Phone 412 — 835-9555 — Fax No. 412 — 835-9559

CERTIFICATE OF CALIBRATION

SHIPPING ADDRESS				BILLING ADDRESS (If Different)																																			
W. E. C. Forest Hills Site Ave. A & West St. Pgh, PA 15112				TIME																																			
CONTACT: <u>J. Flanagan</u> PHONE: (—) <u>374-4151</u> DATE: <u>1/12/93</u> P.O.# <u>MA8932855</u>																																							
Receiving Comments: <u>Calibration.</u>																																							
Instrument Received:		<input checked="" type="checkbox"/> Within Toler. ±10%	<input type="checkbox"/> ±10-20%	<input type="checkbox"/> Out Toler.	<input type="checkbox"/> Requires Repair																																		
Mfg. Inst.	<u>Eberline</u>	Model #	<u>RM-114</u>	Serial #	<u>4469</u>																																		
Detector	<u>11</u>	Model #	<u>HP-210</u>	Serial #	<u>PWGM</u>																																		
<input checked="" type="checkbox"/> CALIBRATION	<input type="checkbox"/> REPAIR	<input type="checkbox"/> SALE	LOAN By: <u>J. Douglas</u>																																				
scale	source	reading	scale	source	reading	scale	source	reading																															
	mR/hr cpm			mR/hr cpm			mR/hr cpm																																
<u>X1</u>	100 400	100 1104	<u>X10</u>	1000 4100	1000 4080	<u>X100</u>	10000 41000	10000 41000																															
	Eff ≈	3900	cpm/mR/HR	RA-226	Gamma																																		
Calibration Source:		<input checked="" type="checkbox"/> GAMMA	<input type="checkbox"/> ALPHA	<input type="checkbox"/> BETA	<input checked="" type="checkbox"/> ELECTRONIC	<input type="checkbox"/> OTHER																																	
Description:		<input checked="" type="checkbox"/> ra-226	<input type="checkbox"/> cs-137	<input type="checkbox"/> pu-239	<input type="checkbox"/> sr-90	<input checked="" type="checkbox"/> mp-1/500																																	
RESPONSE GRAPH <u>N/A</u>				PROBE EFFICIENCIES																																			
<table border="1" style="width:100%; height: 40px;"> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> </table>																																				Alpha _____ & Beta _____			
Check Source Reading <u>N/A</u>				Battery Check Reading <u>260 cpm</u>																																			
Detector Angle <u>perpendicular</u>				Corrections <u>N/A ± 10% / EXPT. 1</u>																																			
TEMP/HUMIDITY <u>70.5°F / 33%</u>																																							
Maintenance & Comments <u>Charged Battery OK, HV-OK.</u>																																							
CALIBRATION <u>Contract</u>				Total Inspected & Calibrated																																			
LABOR				QA Dept. <u>UPS</u> Warranty _____																																			
MATERIALS				Shipping <u>UPS</u> Date <u>1/12/93</u>																																			
&				Pick-Up _____ Date <u>1/12/93</u>																																			
SALES				This Certificate Expires In <u>6 Months</u>																																			
SHIPPING <u>UPS</u>				Re-Calibrate On Or Before <u>7/12/93</u>																																			
				Job ID # <u>51963</u>																																			

UPS
1-13-93

NOTICE: Applied Health Physics, Inc. certifies that the above instrument has been calibrated by standards traceable to the National Institute of Standards and Technology under Nuclear Regulatory Commission License #37-09135-01 and PA State License #PA-0228. This calibration system conforms to the requirements of NRC regulation 10-CFR-34, 10-CFR-35, MIL-STD 45662A and ANSI-STD N323-1978.

CODE NUMBER 27

REPORT #001



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 724/733-1900 Fax: 724/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	Westinghouse	Instrument Manufacturer	Eberline
Customer Address:	PO Box 3700 Pittsburgh, PA 15239	Model	RM-20-1
		Serial Number	1986
		External Probe(s)	AC-3-7
Customer P.O.#	MB-14027-S	Calibration Method	230 Pulser s/n 120935
Work Order #	I-98-09-208		Th s/n 11623

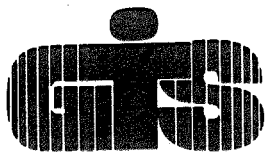
INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2		200	200	200	
3		400	400	400	Battery: N/A AC ONLY
4					
5	X10	1K	1K	1K	Mechanical Zero: OK
6		2K	2K	2K	
7		4K	4K	4K	Reset: OK
8					
9	X100	10K	10K	10K	Alarm: OK
10		20K	20K	20K	
11		40K	40K	40K	Audio: OK
12					
13	X1K	100K	100K	100K	High Voltage = 1272 Volts
14		200K	200K	200K	
15		400K	400K	400K	230 Th Efficiency = 11.5%
16					
17					Check source reads = 23K CPM
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>William Ore</u> (Signed)	certify that the above information is correct:
Calibration Date: <u>10-26-98</u>	<u>10-26-98</u>
Next Calibration Due: <u>01-26-99</u>	Administrative Coordinator <u>[Signature]</u> Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 724/733-1900 Fax: 724/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Eberline</u>	Model <u>RM-20-1</u>	Serial Number <u>1986</u>
Customer Address: <u>PO Box 3700</u>	External Probe(s) <u>AC-3-7</u>	Serial # _____	
<u>Pittsburgh, PA 15230</u>			
Customer P.O.# <u>MB-14027-S</u>	Calibration Method <u>230</u>	<u>Pulser s/n 101500</u>	
Work Order # <u>I-98-06-209</u>		<u>Th s/n 11623</u>	

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 <u>X1</u>	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2	200	200	200	
3	400	405	405	
4				Battery: N/A (AC only)
5 <u>X10</u>	1K	1K	1K	
6	2K	2K	2K	
7	4K	4K	4K	Reset: OK
8				Speaker: OK
9 <u>X100</u>	10K	10K	10K	
10	20K	20.5K	20.5K	
11	40K	41K	41K	Alarm: OK
12				High Voltage = 1272 Volts
13 <u>X1K</u>	100K	100K	100K	
14	200K	200K	200K	
15	400K	400K	400K	²³⁰ Th Efficiency = 11.5%
16				check source reads = 22K CPM
17				
18				
19				
20				
21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u>	I certify that the above information is correct:
Calibration Date: <u>06-10-98</u> (Signed)	<u>[Signature]</u> 06-10-98
Next Calibration Due: <u>10-10-98</u>	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 724/733-1900 Fax: 724/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	Westinghouse	Instrument Manufacturer	Eberline
Customer Address:	PO Box 3700 Pittsburgh, PA 15230	Model	RM-20-1
		Serial Number	1986
		External Probe(s)	AC-3-7
Customer P.O.#	MB-14027-S	Serial #	
Work Order #	I-98-03-210	Calibration Method	230 Pulser s/n 301 Th s/n 11623

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2		200	200	200	
3		400	405	405	Battery: N/A AC Only
4					
5	X10	1K	1K	1K	Mechanical Zero: OK
6		2K	2K	2K	
7		4K	4K	4K	Reset: OK
8					
9	X100	10K	10K	10K	Audio: OK
10		20K	20K	20K	
11		40K	42K	42K	Alarm: OK
12					
13	X1K	100K	100K	100K	230 Th Efficiency = 11.5%
14		200K	200K	200K	
15		400K	400K	400K	Check source reads 26K CPM
16					
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by:	<i>William Owen</i> (Signed)	Certify that the above information is correct:	
Calibration Date:	04-03-98	<i>[Signature]</i>	04-03-98
Next Calibration Due:	07-03-98	Administrative Coordinator	Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

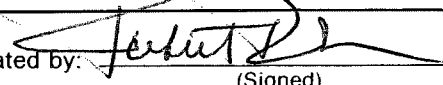
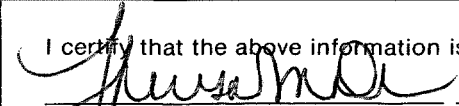
CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	Westinghouse	Instrument Manufacturer	Eberline
Customer Address:	PO Box 3700	Model	RM-20-1
	Pittsburgh, PA 15230	Serial Number	1986
		External Probe(s)	AC-3-7
Customer P.O.#	MB-14027-S	Serial #	
Work Order #	I-97-11-208	Calibration Method	230 Pulser s/n 101500
			Th s/n 11623

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2		200	200	200	
3		400	410	410	
4	X10	1K	1K	1K	Mechanical Zero: OK
5		2K	2K	2K	
6		4K	4.05K	4.05K	
7	X100	10K	10K	10K	Reset: OK
8		20K	20K	20K	
9		40K	41K	41K	
10	X1K	100K	100K	100K	High Voltage = 1270 Volts
11		200K	200K	200K	
12		400K	400K	400K	
13		100K	100K	100K	Speaker: OK
14		200K	200K	200K	
15		400K	400K	400K	
16					Check source reads = 26K CPM 230 Th Efficiency = 12.1%
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: 	I certify that the above information is correct:
Calibration Date: 12-01-97 (Signed)	 12-01-97
Next Calibration Due: 06-01-98	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Eberline</u>
Customer Address: <u>P.O. Box 3700</u> <u>Pittsburgh, PA 15230</u>	Model <u>RM-20-1</u> Serial Number <u>1986</u>
Customer P.O.# <u>MB-14027-S</u>	External Probe(s) <u>AC-3-7</u> Serial # _____
Work Order # <u>I-96-01-210</u>	Calibration Method <u>230</u> Pulser s/n <u>318</u> Th s/n <u>11623</u>

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2		200	200	200	
3		400	400	400	Battery: N/A AC Only
4					
5	X10	1K	1K	1K	Mechanical Zero: OK
6		2K	2K	2K	
7		4K	4K	4K	Reset: OK
8					
9	X100	10K	10K	10K	Audio: OK
10		20K	20K	20K	
11		40K	40K	40K	Alarm: OK
12					
13	X1K	100K	100K	100K	⁹⁹ Tc Efficiency = 12.1%
14		200K	200K	200K	
15		400K	400K	400K	Check source reads ~ 25K CPM on contact
16					
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>William Owens</u> (Signed)	I certify that the above information is correct:
Calibration Date: <u>01-24-96</u>	<u>Theresa Miller</u> 01-24-96
Next Calibration Due: <u>04-24-96</u>	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Eberline</u>	Model <u>RM-20</u>	Serial Number <u>1986</u>
Customer Address: <u>P.O. Box 3700</u>	External Probe(s) <u>AC-3-7</u>	Serial # _____	
<u>Pittsburgh, PA 15230</u>			
Customer P.O.# <u>MB-14027-S</u>	Calibration Method <u>230</u>	<u>Pulser s/n 101500</u>	
Work Order # <u>I-95-09-210</u>		<u>Th s/n 11623</u>	

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2		200	200	200	
3		400	400	400	
4	X10	1K	1K	1K	Battery: AC ONLY
5		2K	2K	2K	
6		4K	4K	4K	
7	X100	10K	10K	10K	Mechanical Zero: OK
8		20K	20K	20K	
9		40K	40K	40K	
10	X1K	100K	100K	100K	Reset: OK
11		200K	200K	200K	
12		400K	400K	400K	
13					Alarm: OK
14					
15					
16					Speaker: OK
17					
18					
19					High Voltage = 1275 Volts
20					
21					
22					230 Th Efficiency = 12.1%
23					
					239Pu Check Source reads ~ 25K CPM

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u>	I certify that the above information is correct:
Calibration Date: <u>09-27-95</u> (Signed)	<u>[Signature]</u> 09-27-95
Next Calibration Due: <u>12-27-95</u>	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	<u>Westinghouse</u>	Instrument Manufacturer	<u>Eberline</u>
Customer Address:	<u>P.O. Box 3700</u> <u>Pittsburgh, PA 15230</u>	Model	<u>RM-20-1</u> Serial Number <u>1986</u>
Customer P.O.#	<u>MB-14027-S</u>	External Probe(s)	<u>AC-3-7</u> Serial # _____
Work Order #	<u>I-95-06-208</u>	Calibration Method	<u>230</u> Pulser s/n 101500 Th s/n 11623

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2		200	200	200	
3		400	400	400	Mechanical Zero: OK
4					
5	X10	1K	1K	1K	AC Only - No Battery
6		2K	1.95K	1.95K	
7		4K	4K	4K	Alarm: OK
8					
9	X100	10K	10K	10K	Reset: OK
10		20K	20K	20K	
11		40K	40.5K	40.5K	Speaker: OK
12					
13	X1K	100K	100K	100K	High Voltage = 1275 Volts
14		200K	195K	195K	²³⁰ Th Efficiency = 12.6%
15		400K	400K	400K	²³⁹ Pu Check source ≈ 23K CPM
16					
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u> (Signed)	I certify that the above information is correct:
Calibration Date: <u>06-05-95</u>	<u>[Signature]</u> 06-05-95
Next Calibration Due: <u>09-05-95</u>	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	<u>Westinghouse</u>	Instrument Manufacturer	<u>Eberline</u>
Customer Address:	<u>P.O. Box 3700</u> <u>Pittsburgh, PA 15230</u>	Model	<u>RM-20-1</u> Serial Number <u>1986</u>
Customer P.O.#	<u>MB-14027-S</u>	External Probe(s)	<u>AC-3</u> Serial # _____
Work Order #	<u>I-94-12-225</u>	Calibration Method	<u>230</u> Pulser s/n 318 Th s/n 11623

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	100 CPM	95 CPM	100 CPM	All Calibrations Btn. + & - 10%
2		200	190	200	
3		400	390	400	Battery Check: N/A
4					
5	X10	1K	1K	1K	Mechanical Zero: OK
6		2K	2K	2K	
7		4K	4K	4K	Audio: OK
8					
9	X100	10K	10K	10K	Reset: OK
10		20K	20K	20K	
11		40K	40K	40K	High Voltage = 1280 Volts
12					
13	X1K	100K	100K	100K	²³⁰ Th Efficiency = 12.6%
14		200K	200K	200K	
15		400K	400K	400K	Check source reads = 25K CPM
16					
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>William Owens</u> (Signed)	I certify that the above information is correct:
Calibration Date: <u>01-09-95</u>	<u>Maria M. DePas</u> 01-09-95
Next Calibration Due: <u>04-09-95</u>	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	<u>Westinghouse</u>	Instrument Manufacturer	<u>Eberline</u>
Customer Address:	<u>Avenue A & West Street</u> <u>Pittsburgh, PA 15221</u>	Model	<u>RM-20</u> Serial Number <u>1986</u>
Customer P.O.#	<u>MB-14027-S</u>	External Probe(s)	<u>AC-3</u> Serial # _____
Work Order #	<u>I-94-08-218</u>	Calibration Method	<u>230</u> <u>Pulser s/n 101500</u> <u>Th s/n 11623</u>

INSTRUMENT CALIBRATION INFORMATION

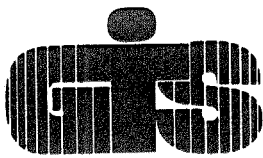
	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	100 CPM	95 CPM	95 CPM	All Calibrations Btn. + & - 10%
2		200	192	192	
3		400	390	390	Mechanical Zero: OK
4					
5	X10	1K	950	950	Speaker: OK
6		2K	1.92K	1.92K	
7		4K	3.9K	3.9K	Alarm: OK
8					
9	X100	10K	10K	10K	Reset: OK
10		20K	20K	20K	
11		40K	40.5K	40.5K	High Voltage = 1275 Volts
12					
13	X1K	100K	98K	98K	
14		200K	195K	195K	
15		400K	400K	400K	
16					
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: [Signature]
 Calibration Date: 08-16-94 (Signed)
 Next Calibration Due: 11-16-94

I certify that the above information is correct:
[Signature] 08-16-94
 Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	<u>Westinghouse</u>	Instrument Manufacturer	<u>Eberline</u>
Customer Address:	<u>Avenue A & West Street</u> <u>Pittsburgh, PA 15221</u>	Model	<u>RM-20</u> Serial Number <u>1986</u>
Customer P.O.#	<u>MB-14027-S</u>	External Probe(s)	<u>AC-3</u> Serial # _____
Work Order #	<u>I-94-05-222</u>	Calibration Method	<u>230</u> Pulser s/n 101500 Th s/n 11623

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	100 CPM	95 CPM	95 CPM	All Calibrations Btn. + & - 10%
2		200	190	190	
3		400	390	390	Battery Check: N?A
4	X10	1K	950	950	Mechanical Zero: OK
5		2K	1.9K	1.9K	
6		4K	3.95K	3.95K	Speaker: OK
7					
8	X100	10K	10K	10K	Alarm: OK
9		20K	20K	20K	
10		40K	40K	40K	Reset: OK
11					
12	X1K	100K	95K	95K	Check source = 23K CPM
13		200K	190K	190K	
14		400K	400K	400K	²³⁰ Th Efficiency = 13.2%
15					
16					
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u> Calibration Date: <u>05-11-94</u> (Signed) Next Calibration Due: <u>08-11-94</u>	I certify that the above information is correct: <u>[Signature]</u> Administrative Coordinator Date: <u>05-11-94</u>
---	---



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

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This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse Electric</u>	Instrument Manufacturer <u>Eberline</u>
Customer Address: <u>Avenue A & West Street</u> <u>Pittsburgh, PA 15221</u>	Model <u>RM-20-1</u> Serial Number <u>1986</u>
Customer P.O.# <u>MB-14016-H</u>	External Probe(s) <u>AC-3</u> Serial # _____
Work Order # <u>I-94-01-224</u>	Calibration Method _____ <u>230</u> Pulser s/n 318 Th s/n 11623
	Electrostatic s/n ES-17225

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	100 CPM	95 CPM	95 CPM	All Calibrations Btn. + & - 10%
2		200	190	190	
3		400	390	390	Battery Check: N/A AC Only
4					
5	X10	1K	950	950	Mechanical Zero: OK
6		2K	1.9K	1.9K	
7		4K	3.95K	3.95K	Reset: OK
8					
9	X100	10K	10K	10K	Audio: OK
10		20K	20K	20K	
11		40K	41K	41K	Alarm: OK
12					
13	X1K	100K	95K	95K	High Voltage = 1280 Volts
14		200K	190K	140K	
15		400K	398K	398K	²³⁰ Th Efficiency = 13.2%
16					
17					Check source reads = 23K CPM
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u> (Signed)	I certify that the above information is correct:
Calibration Date: <u>01-31-94</u>	<u>[Signature]</u> <u>01-31-94</u>
Next Calibration Due: <u>04-30-94</u>	Administrative Coordinator Date



HEALTH PHYSICS inc.

2986 Industrial Blvd. — Bethel Park, Pa. 15102 — Phone 412 — 835-9555 — Fax No. 412 — 835-9559

CERTIFICATE OF CALIBRATION

SHIPPING ADDRESS				BILLING ADDRESS (If Different)				
WFC 104 "A" West St. Pgh, PA 15017				CAME				
CONTACT: <u>L. Smith</u> PHONE: (---) --- DATE: <u>10/8/93</u> P.O.# <u>MA 29328-5</u>								
Receiving Comments: <u>Calibration.</u>								
Instrument Received:		<input checked="" type="checkbox"/> Within Toler. $\pm 10\%$	<input type="checkbox"/> $\pm 10-20\%$	<input type="checkbox"/> Out Toler.	<input type="checkbox"/> Requires Repair			
Mfg. Inst.	<u>Fiberline</u>	Model #	<u>KM-20-1</u>	Serial #	<u>1926</u>			
Detector	<u>"</u>	Model #	<u>AC-3</u>	Serial #	<u>107680</u>			
<input checked="" type="checkbox"/> CALIBRATION	REPAIR		SALE		LOAN By: <u>J. Douglas</u>			
scale	source	reading	scale	source	reading	scale	source	reading
	mR/hr <u>cpm</u>			mR/hr <u>cpm</u>			mR/hr	
<u>X1</u>	100	98	<u>X100</u>	10000	9995			
	400	392		40000	40000			
<u>X10</u>	1000	995	<u>X1000</u>	100000	99995			
	4000	3995		400000	400000			
Calibration Source:		<input type="checkbox"/> GAMMA	<input checked="" type="checkbox"/> ALPHA	<input type="checkbox"/> BETA	<input checked="" type="checkbox"/> ELECTRONIC	OTHER		
Description:		<input type="checkbox"/> ra-226	<input type="checkbox"/> cs-137	<input checked="" type="checkbox"/> pu-239	<input type="checkbox"/> sr-90	<input checked="" type="checkbox"/> mp-1(500)		
RESPONSE GRAPH <u>N/A</u>				Ave. Here to TCS PROBE EFFICIENCIES <u>37%</u> <input checked="" type="checkbox"/> Alpha <u>31</u> % <input type="checkbox"/> Beta <u>---</u> % Check Source Reading <u>15000 cpm</u> Battery Check Reading <u>N/A</u> Detector Angle <u>perpendicular</u> Corrections <u>N/A $\pm 10\%$ Electronic</u>				
TEMP/HUMIDITY <u>76.1°F / 37%</u>								
Maintenance & Comments <u>No Battery operation, Audio-OK, Alarm-OK, HV set @ 1250 IS = 2 mV, MESH window on AC-3 has black repair spots / No light leak.</u>								
<u>Tested, Inspected & Calibrated</u>								
CALIBRATION	<u>contact</u>		<u>40.00</u>	QA Dept.	<u>---</u>	Warranty	<u>---</u>	
LABOR				Shipping	<u>UPS</u>	Date	<u>10/8/93</u>	
MATERIALS				Pick-Up	<u>---</u>	Date	<u>---</u>	
&				This Certificate Expires In <u>3</u> Months				
SALES				Re-Calibrate On Or Before <u>1/8/94</u>				
SHIPPING	<u>UPS</u>	<u>10 units</u>	<u>11.39</u>	Job ID #	<u>52579</u>			

Rec 10-13-93
 UPS 186-596
 13#

NOTICE: Applied Health Physics, Inc. certifies that the above instrument has been calibrated by standards traceable to the National Institute of Standards and Technology under Nuclear Regulatory Commission License #37-09135-01 and PA State License #PA-0228. This calibration system conforms to the requirements of NRC regulation 10-CFR-34, 10-CFR-35, MIL-STD 45662A and ANSI-STD N323-1978.

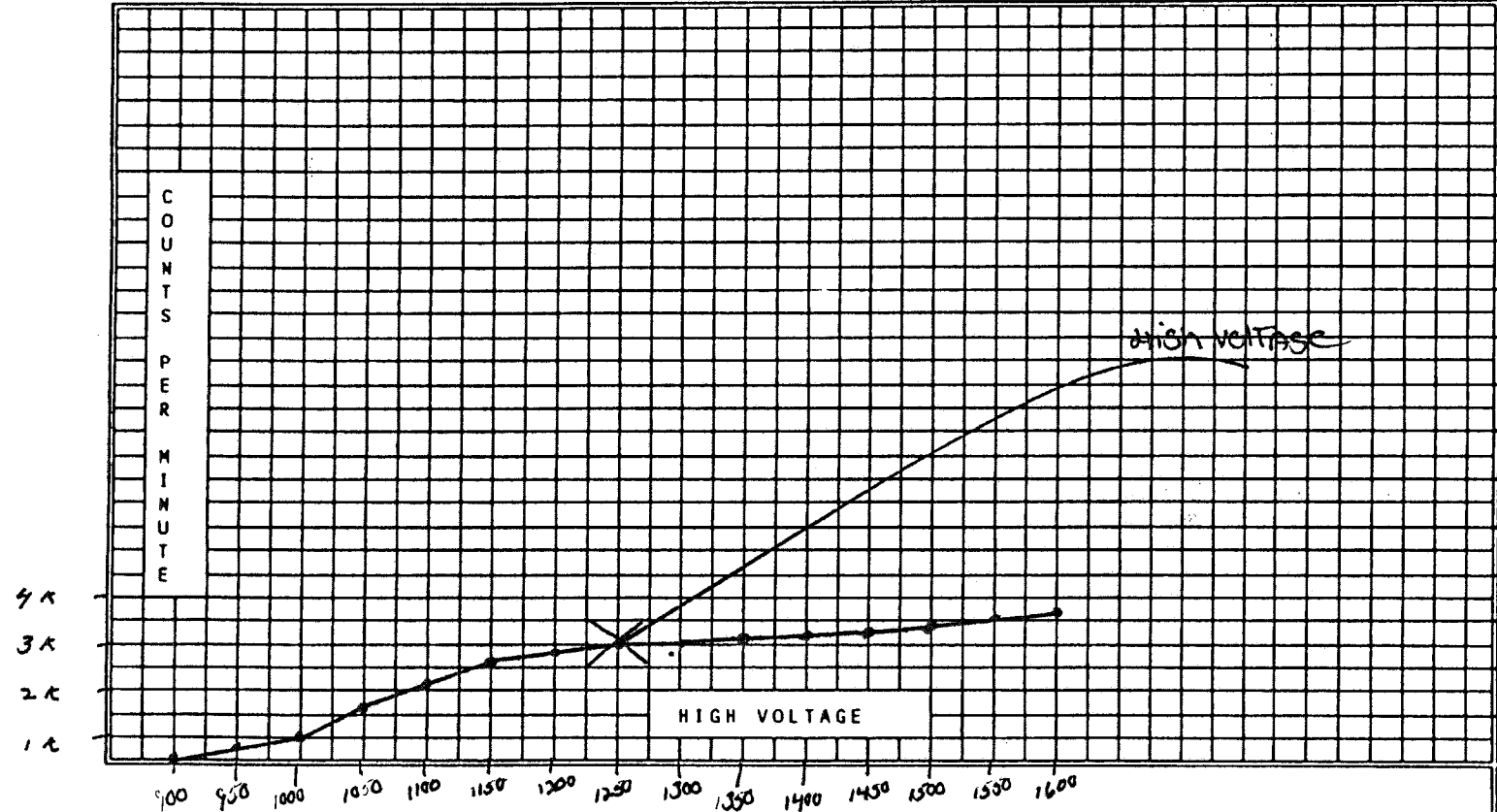
=====
 H&S FORM !
 ! #1106 !
 ! LRD - 5/88 !
 =====

 * COUNTRATE METER CALIBRATION *
 * HP PROCEDURE 12 *



CALIBRATED BY L. SMITH

INSTRUMENT MODEL : <input type="checkbox"/> RM-14 <input type="checkbox"/> RM-15 <input type="checkbox"/> RM-19 <input checked="" type="checkbox"/> RM-20-1			PROBE : <input type="checkbox"/> HP-177C <input type="checkbox"/> HP-260 <input type="checkbox"/> HP-240 <input checked="" type="checkbox"/> AC-3		
LOCATION <u>LARSC</u>	SERIAL NO. <u>1986</u>	CAP. NO.	WINDOW : <input type="checkbox"/> 1.5 mg/cm ² <input type="checkbox"/> 7 mg/cm ² <input type="checkbox"/> 30 mg/cm ²		
SOURCE NUMBER & ACTIVITY : <input checked="" type="checkbox"/> Pu 239 NO. _____ DPM <input checked="" type="checkbox"/> Pu 239 NO. <u>5308</u> DPM <input type="checkbox"/> Cs 137 NO. 84-15 _____ DPM			<input type="checkbox"/> OTHER		
<input type="checkbox"/> Cs 137 NO. 234 9.78 mCi			<input type="checkbox"/> Sr 90 NO. 9129 13,200 DPM <input type="checkbox"/> Bi 210 2.63*10 ⁻⁵ mCi		



HV	CTS	HV	CTS
900	0		
950	400		
1000	1000		
1050	1700		
1100	2300		
1150	2700		
1200	2800		
1250	3000		
1300	3000		
1350	3200		
1400	3100		
1450	3100		
1500	3400		
1550	3500		
1600	3600		

ANNUAL PLATEAU DATA

QUARTERS	DATE	HV	1st SOURCE NO. / CTS	2nd SOURCE NO. / CTS	SCALE
1st	10-12-92	1250	7345 - 200	7346 - 22,500	x10/x100
2nd	1-12-93	1250	7345 - 200	7346 - 22,000	x10/x100
3rd	4-11-93	1250	7345 - 200	7346 - 22,500	x10/x100
4th	7-19-93	1250	7345 - 200	7346 21,500	x10/x100

DATE	10-12-92
SOURCE NO.	5308
OPERATING VOLTS	1250
INSTRU. BKG.	LS cpm
ALARM SET POINT	100 cpm

CODE NUMBER 28

REPORT #001



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 724/733-1900 Fax: 724/327-8189

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CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Eberline</u>
Customer Address: <u>PO Box 3700</u> <u>Pittsburgh, PA 15230</u>	Model <u>RM-20-1</u> Serial Number <u>1987</u>
Customer P.O.# <u>MB-14027-S</u>	External Probe(s) <u>AC-3-7</u> Serial # _____
Work Order # <u>I-98-04-208</u>	Calibration Method <u>230</u> <u>Pulser s/n 101500</u> <u>Th s/n 11623</u>

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2	200	200	200	
3	400	405	405	Battery: N/A (AC Only)
4 X10	1K	1K	1K	Mechanical Zero: OK
5	2K	2K	2K	
6	4K	4.05K	4.05K	Reset: OK
7				
8 X100	10K	10K	10K	Speaker: OK
9	20K	20K	20K	
10	40K	40.5K	40.5K	Alarm: OK
11				
12 X1K	100K	100K	100K	High Voltage = 1132 Volts
13	200K	200K	200K	
14	400K	405K	405K	²³⁰ Th Efficiency = 10.9%
15				
16				
17				
18				
19				
20				
21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u> (Signed)	I certify that the above information is correct:
Calibration Date: <u>05-11-98</u>	<u>[Signature]</u> 05-11-98
Next Calibration Due: <u>08-11-98</u>	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Eberline</u>
Customer Address: <u>PO Box 3700</u> <u>Pittsburgh, PA 15230</u>	Model <u>RM-20-1</u> Serial Number <u>1987</u>
Customer P.O.# <u>MB-14027-S</u>	External Probe(s) <u>AC-3-7</u> Serial # _____
Work Order # <u>I-98-01-208</u>	Calibration Method <u>230</u> <u>Pulser s/n 101500</u> <u>Th s/n 11623</u>

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 <u>X1</u>	<u>100 CPM</u>	<u>100 CPM</u>	<u>100 CPM</u>	<u>All Calibrations Btn. + & - 10%</u>
2	<u>200</u>	<u>200</u>	<u>200</u>	
3	<u>400</u>	<u>410</u>	<u>410</u>	
4				<u>Battery: AC Only</u>
5 <u>X10</u>	<u>1K</u>	<u>1K</u>	<u>1K</u>	
6	<u>2K</u>	<u>2K</u>	<u>2K</u>	
7	<u>4K</u>	<u>4.05K</u>	<u>4.05K</u>	<u>Reset: OK</u>
8				<u>Audio: OK</u>
9 <u>X100</u>	<u>10K</u>	<u>10K</u>	<u>10K</u>	
10	<u>20K</u>	<u>20K</u>	<u>20K</u>	
11	<u>40K</u>	<u>40.5K</u>	<u>40.5K</u>	<u>HV = 1133 Volts</u>
12				<u>Alarm: OK</u>
13 <u>X1K</u>	<u>100K</u>	<u>100K</u>	<u>100K</u>	
14	<u>200K</u>	<u>200K</u>	<u>200K</u>	
15	<u>400K</u>	<u>400K</u>	<u>400K</u>	<u>230</u> <u>Th Efficiency = 10.6%</u>
16				
17				
18				
19				
20				
21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u> (Signed)	I certify that the above information is correct:
Calibration Date: <u>01-26-98</u>	<u>[Signature]</u> <u>01-26-98</u>
Next Calibration Due: <u>04-26-98</u>	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Eberline</u>
Customer Address: <u>P.O. Box 3700</u>	Model <u>RM-20-1</u> Serial Number <u>1987</u>
<u>Pittsburgh, PA 15230</u>	External Probe(s) <u>AC-3-7</u> Serial # _____
Customer P.O.# <u>MB-14027-S</u>	Calibration Method <u>230</u> <u>Pulser s/n 301</u>
Work Order # <u>I-97-09-210</u>	<u>Th s/n 11623</u>

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2		200	200	200	
3		400	405	405	Battery: N/A AC Only
4	X10	1K	1K	1K	Mechanical Zero: OK
5		2K	2K	2K	
6		4K	4K	4K	Reset: OK
7					
8	X100	10K	10K	10K	Alarm: OK
9		20K	20K	20K	
10		40K	40K	40K	Audio: OK
11					
12	X1K	100K	100K	100K	²³⁰ Th Efficiency = 10.1%
13		200K	200K	200K	
14		400K	400K	400K	
15					
16					
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>William Owen</u> (Signed)	I certify that the above information is correct: <u>William Owen</u>
Calibration Date: <u>09-22-97</u>	<u>09-22-97</u>
Next Calibration Due: <u>12-22-97</u>	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Eberline</u>
Customer Address: <u>P.O. Box 3700</u>	Model <u>RM-20-1</u> Serial Number <u>1987</u>
<u>Pittsburgh, PA 15230</u>	External Probe(s) <u>AC-3-7</u> Serial # _____
Customer P.O.# <u>MB-14027-S</u>	Calibration Method <u>230</u> Pulser s/n 101500
Work Order # <u>I-97-03-209</u>	Th s/n 11623

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2		200	200	200	
3		400	405	405	Battery: N/A AC Only
4					
5	X10	1K	1K	1K	Mechanical Zero: OK
6		2K	2K	2K	
7		4K	4K	4K	Audio: OK
8					
9	X100	10K	10K	10K	Reset: OK
10		20K	20K	20K	
11		40K	40K	40K	Alarm: OK
12					
13	X1K	100K	100K	100K	High Voltage = 1135 Volts
14		200K	200K	200K	
15		400K	400K	400K	²³⁰ Th Efficiency = 12.1%
16					
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: [Signature]
 Calibration Date: 03-04-97 (Signed)
 Next Calibration Due: 06-04-97

I certify that the above information is correct:
[Signature]
 Administrative Coordinator
 Date 03-04-97



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	<u>Westinghouse</u>	Instrument Manufacturer	<u>Eberline</u>
Customer Address:	<u>P.O. Box 3700</u> <u>Pittsburgh, PA 15230</u>	Model	<u>RM-20-1</u> Serial Number <u>1987</u>
Customer P.O.#	<u>MB-14027-S</u>	External Probe(s)	<u>AC-3-7</u> Serial # _____
Work Order #	<u>I-96-08-210</u>	Calibration Method	<u>230</u> Pulser s/n 101500 Th s/n 11623

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2		200	200	200	
3		400	400	400	
4	X10	1K	1K	1K	Battery: N/A
5		2K	2K	2K	
6		4K	4K	4K	
7	X100	10K	10K	10K	Mechanical Zero: OK
8		20K	20K	20K	
9		40K	40K	40K	
10	X1K	100K	100K	100K	Reset: OK
11		200K	200K	200K	
12		400K	400K	400K	
13					Alarm: OK
14					
15					
16					Speaker: OK
17					
18					
19					High Voltage = 1132 Volts
20					
21					
22					230 Th Efficiency = 12.1%
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u>	I certify that the above information is correct:
Calibration Date: <u>09-04-96</u> (Signed)	<u>[Signature]</u> 09-04-96
Next Calibration Due: <u>12-04-96</u>	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Eberline</u>
Customer Address: <u>P.O. Box 3700</u>	Model <u>RM-20-1</u> Serial Number <u>1987</u>
<u>Pittsburgh, PA 15230</u>	External Probe(s) <u>AC-3-7</u> Serial # _____
Customer P.O.# <u>MB-14027-S</u>	Calibration Method <u>230</u> Pulser s/n <u>101500</u>
Work Order # <u>I-96-06-209</u>	<u>Th s/n 11623</u>

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2		200	200	200	
3		400	410	405	Battery: N/A
4	X10	1K	1K	1K	Mechanical Zero: OK
5		2K	2K	2K	
6		4K	4K	4K	Reset: OK
7					
8	X100	10K	10K	10K	Audio: OK
9		20K	20K	20K	
10		40K	40K	40K	Alarm: OK
11					
12	X1K	100K	100K	100K	High Voltage = 1138 Volts
13		200K	200K	200K	
14		400K	400K	400K	²³⁰ Th Efficiency = 12.9%
15					
16					
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u>	I certify that the above information is correct:
Calibration Date: <u>05-30-96</u> (signed)	<u>[Signature]</u> 05-30-96
Next Calibration Due: <u>08-30-96</u>	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

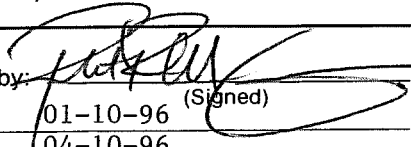
CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	Westinghouse	Instrument Manufacturer	Eberline
Customer Address:	P.O. Box 3700	Model	RM-20-1 Serial Number 1987
	Pittsburgh, PA 15230	External Probe(s)	AC-3-7 Serial #
Customer P.O.#	MB-14027-S	Calibration Method	230 Pulser s/n 298 & 12093
Work Order #	I-95-12-208		Th s/n 11623

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2		200	200	200	
3		400	405	405	Battery: AC Only
4					
5	X10	1K	1K	1K	Mechanical Zero: OK
6		2K	2K	2K	
7		4K	4K	4K	Alarm: OK
8					
9	X100	10K	10K	10K	Reset: OK
10		20K	20K	20K	
11		40K	40K	40K	Speaker: OK
12					
13	X1K	100K	100K	100K	High Voltage = 1135 Volts
14		200K	200K	200K	
15		400K	400K	400K	230 Th Efficiency = 12.9%
16					
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: 	I certify that the above information is correct:
Calibration Date: 01-10-96 (Signed)	01-10-96
Next Calibration Due: 04-10-96	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	<u>Westinghouse</u>	Instrument Manufacturer	<u>Eberline</u>
Customer Address:	<u>P.O. Box 3700</u> <u>Pittsburgh, PA 15230</u>	Model	<u>RM-20</u> Serial Number <u>1987</u>
Customer P.O.#	<u>MB-14027-S</u>	External Probe(s)	<u>AC-3-7</u> Serial # _____
Work Order #	<u>I-95-09-210</u>	Calibration Method	<u>230</u> Pulser s/n 101500 Th s/n 11623

INSTRUMENT CALIBRATION INFORMATION

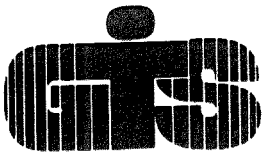
	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2		200	200	200	
3		400	400	400	
4	X10	1K	1K	1K	Battery: AC ONLY
5		2K	2K	2K	
6		4K	4K	4K	
7	X100	10K	10K	10K	Mechanical Zero: OK
8		20K	20K	20K	
9		40K	40K	40K	
10	X1K	100K	100K	100K	Reset: OK
11		200K	200K	200K	
12		400K	400K	400K	
13					Alarm: OK
14					
15					
16					Speaker: OK
17					
18					
19					High Voltage = 1138 Volts
20					
21					
22					230 Th Efficiency = 12.9%
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: [Signature]
 Calibration Date: 09-27-95 (Signed)
 Next Calibration Due: 12-27-95

I certify that the above information is correct:
[Signature] 09-27-95
 Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	<u>Westinghouse</u>	Instrument Manufacturer	<u>Eberline</u>
Customer Address:	<u>P.O. Box 3700</u> <u>Pittsburgh, PA 15230</u>	Model	<u>RM-20-1</u> Serial Number <u>1987</u>
Customer P.O.#	<u>MB-14027-S</u>	External Probe(s)	<u>AC-3-7</u> Serial # _____
Work Order #	<u>I-95-06-208</u>	Calibration Method	<u>230</u> <u>Pulser s/n 101500</u> <u>Th s/n 11623</u>

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2		200	200	200	
3		400	405	405	Mechanical Zero: OK
4	X10	1K	1K	1K	AC only, no battery
5		2K	2K	2K	
6		4K	4K	4K	Alarm: OK
7					
8	X100	10K	10K	10K	Reset: OK
9		20K	20K	20K	
10		40K	40K	40K	Speaker: OK
11					
12	X1K	100K	100K	100K	High Voltage = 1138 Volts
13		200K	200K	200K	
14		400K	400K	400K	²³⁰ Th Efficiency = 12.9%
15					
16					
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u> (Signed)	I certify that the above information is correct:
Calibration Date: <u>06-05-95</u>	<u>[Signature]</u> <u>06-05-95</u>
Next Calibration Due: <u>09-05-95</u>	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	<u>Westinghouse</u>	Instrument Manufacturer	<u>Eberline</u>
Customer Address:	<u>Avenue A & West Street</u> <u>Pittsburgh, PA 15221</u>	Model	<u>RM-20-1</u> Serial Number <u>1987</u>
Customer P.O.#	<u>MB-14027-S</u>	External Probe(s)	<u>AC-3</u> Serial # _____
Work Order #	<u>I-94-08-218</u>	Calibration Method	<u>230</u> <u>Pulser s/n 101500</u> <u>Th s/n 11623</u>

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2		200	200	200	
3		400	400	400	Mechanical Zero: OK
4					
5	X10	1K	1K	1K	Reset: OK
6		2K	2K	2K	
7		4K	4K	4K	Audio: OK
8					
9	X100	10K	10K	10K	Alarm: OK
10		20K	20K	20K	
11		40K	40K	40K	High Voltage = 1135 Volts
12					
13	X1K	100K	100K	100K	²³⁰ Th Efficiency = 13.2%
14		200K	200K	200K	
15		400K	400K	400K	
16					
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u> (Signed)	I certify that the above information is correct:
Calibration Date: <u>08-26-94</u>	<u>[Signature]</u> <u>08-26-94</u>
Next Calibration Due: <u>11-26-94</u>	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Eberline</u>
Customer Address: <u>Avenue A & West Street</u>	Model <u>RM-20</u> Serial Number <u>1987</u>
<u>Pittsburgh, PA 15221</u>	External Probe(s) <u>AC-3</u> Serial # _____
Customer P.O.# <u>MB-14027-S</u>	Calibration Method <u>230</u> <u>Pulser s/n 298</u>
Work Order # <u>I-94-05-222</u>	<u>Th s/n 11623</u>

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2		200	200	200	
3		400	400	400	Battery Check: N/A
4					
5	X10	1K	1K	1K	Mechanical Zero: OK
6		2K	2K	2K	
7		4K	4K	4K	Reset: OK
8					
9	X100	10K	10K	10K	Audio: OK
10		20K	20K	20K	
11		40K	40K	40K	Alarm: OK
12					
13	X1K	100K	100K	100K	²³⁰ Th Efficiency = 13.2%
14		200K	200K	200K	
15		400K	400K	400K	
16					
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>James Christopher</u> (Signed)	I certify that the above information is correct:
Calibration Date: <u>05-11-94</u>	<u>Sharon DeBar</u> 05-11-94
Next Calibration Due: <u>08-11-94</u>	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

#28

This Certificate will be accompanied by Calibration Charts or Readings where applicable

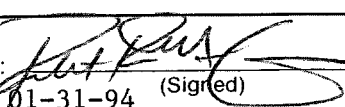
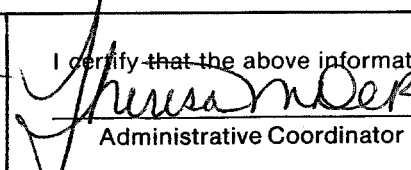
CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	Westinghouse Electric	Instrument Manufacturer	Eberline
Customer Address:	Avenue A & West Street Pittsburgh, PA 15221	Model	RM-20 Serial Number 1987
Customer P.O.#	MB-14016-H	External Probe(s)	AC-3 Serial #
Work Order #	I-94-01-224	Calibration Method	230 Pulser s/n 318 Th s/n 11623 Electrostatic s/n ES-17225

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment	
		Before Calib.	After Calib.		
1 X1	100 CPM	Adjusted	100 CPM	All Calibrations Btn. + & - 10%	
2	200	Mechanical	200		
3	400	Zero	400	Battery Check: N/A AC Only	
4 X10	1K		1K	Mechanical Zero: OK	
5	2K		2K		
6	4K		4K	Audio: OK	
7					
8 X100	10K		10K	Alarm: OK	
9	20K		20K		
10	40K		40K	High Voltage = 1250 Volts	
11					
12 X1K	100K		100K	230 Th Efficiency = 13.2%	
13	200K		200K		
14	400K		400K		
15					
16					
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: 	I certify that the above information is correct:
Calibration Date: 01-31-94 (Signed)	 01-31-94
Next Calibration Due: 04-30-94	Administrative Coordinator Date

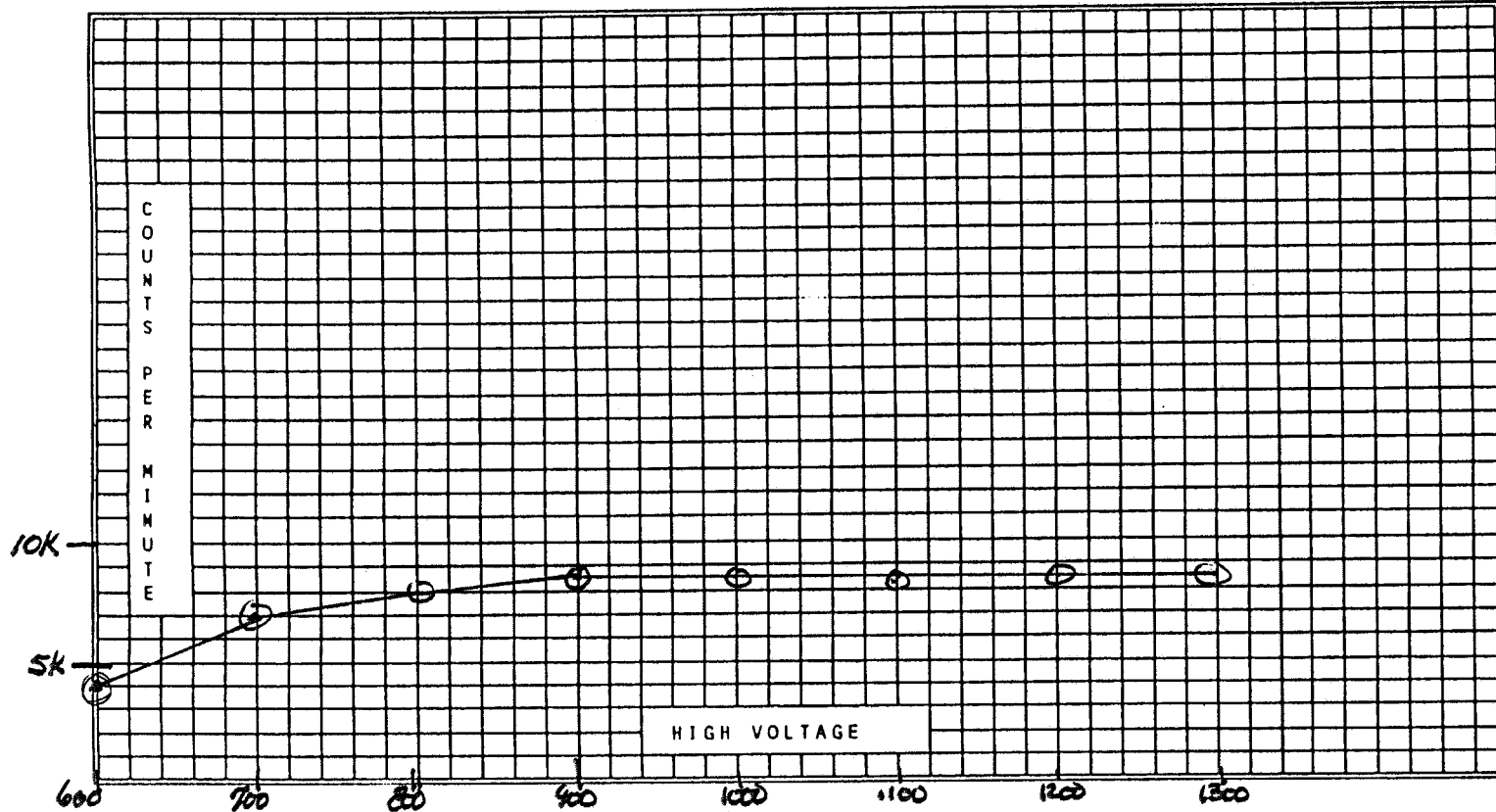


=====
 ! INCS FORM !
 ! #1106 !
 ! LRD - 5/88 !
 =====

 * COUNTRATE METER CALIBRATION *
 * HP PROCEDURE 12 *

CALIBRATED BY *D. Shaffer*

INSTRUMENT MODEL : <input type="checkbox"/> RM-14 <input type="checkbox"/> RM-15 <input type="checkbox"/> RM-19 <input checked="" type="checkbox"/> RM-20-1			PROBE : <input type="checkbox"/> HP-177C <input checked="" type="checkbox"/> HP-260 <input type="checkbox"/> HP-240 <input type="checkbox"/> AC-3		
LOCATION <i>LARGE</i>	SERIAL NO. <i>1987</i>	CAP. NO.	WINDOW : <input type="checkbox"/> 1.5 mg/cm ² <input type="checkbox"/> 7 mg/cm ² <input type="checkbox"/> 30 mg/cm ²		
SOURCE NUMBER & ACTIVITY : <input type="checkbox"/> Pu 239 NO. 243 37,400 DPM <input type="checkbox"/> Pu 239 NO. 242 5750 DPM <input type="checkbox"/> Cs 137 NO. 84-15 DPM					
<input checked="" type="checkbox"/> OTHER <i>Cs137 84.9 31738 DPM</i> <input type="checkbox"/> Cs 137 NO. 234 9.78 mCi <input type="checkbox"/> Sr 90 NO. 9129 13,200 DPM			<input type="checkbox"/> Bi 210 2.63*10 ⁻⁵ mCi		



HV	CTS	HV	CTS
600	4000		
700	7000		
800	8000		
900	8500		
1000	8500		
1100	8500		
1200	8500		
1300	8500		

CHECKERS	DATE	HV	1 st SOURCE NO. / CTS	2 nd SOURCE NO. / CTS	SCALE	
	1 st	<i>2/2/93</i>	<i>900</i>	<i>763/84 :</i>	<i>764/84 :</i>	<i>X10/X100</i>
	2 nd		<i>900</i>	<i>763/84 :</i>	<i>764/84 :</i>	<i>X10/X100</i>
	3 rd					
	4 th					

ANNUAL PLATEAU DATA	
DATE	<i>2/2/93</i>
SOURCE NO.	<i>84-9</i>
OPERATING VOLTS	<i>900</i>
INSTRU. BKG.	<i>40-60</i>
ALARM SET POINT	<i>400</i>

CODE NUMBER 29

REPORT #001



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

#29

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer: <u>DCA</u>	Model: <u>3032-2</u>	Serial Number: <u>190-884</u>
Customer Address: <u>P.O. Box 3700</u>	External Probe(s): <u>X</u>	Serial #: _____	
<u>Pittsburgh, PA 15221</u>	Calibration Method: <u>137Cs s/n 10263 200mCi</u>		
Customer P.O.#: <u>MB-14027-S</u>			
Work Order #: <u>I-96-06-209</u>			
			<u>137Cs s/n 20020 400Ci</u>

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	INTERNAL				All Calibrations Btn. + & - 10%
2	X1	2 mR/hr	2 mR/hr	2 mR/hr	
3		5	5	5	Battery: OK
4		20	18	18	
5					Mechanical Zero: OK
6	X100	200	200	200	
7		500	490	490	Audio: OK
8		2,000	1,900	1,900	
9					
10	EXTERNAL	1 mR/hr	1.8K CPM	1.8K CPM	
11	For Info				
12	only				
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u>	I certify that the above information is correct:
Calibration Date: <u>07-01-96</u> (Signed)	<u>[Signature]</u> 07-01-96
Next Calibration Due: <u>10-01-96</u>	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

H29

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse Electric Corp.</u>	Instrument Manufacturer <u>DCA</u>
Customer Address: <u>Avenue A & West Street</u> <u>Pittsburgh, PA 15221</u>	Model <u>3032-2</u> Serial Number <u>190-884</u>
Customer P.O.# <u>MB-14016-H</u>	External Probe(s) <u>EWGM</u> Serial # _____
Work Order # <u>I-94-01-224</u>	Calibration Method <u>137Cs s/n 10263 200mC</u> <u>Pulser s/n 318</u>

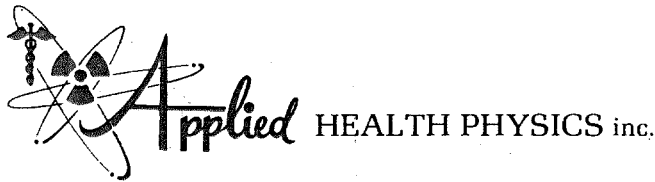
INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 INTERNAL				All Calibrations Btn. + & - 10%
2 XI	2 mR/hr	2 mR/hr	2 mR/hr	
3	5	5	5	Battery Check: OK
4	20	20	20	
5				Mechanical Zero: OK
6 X100	200	210	210	
7	500	500	500	Audio: OK
8	1,000	920	920	
9				
10 EXTERNAL				
11 XI	200 CPM	220 CPM	220 CPM	External Tube
12	400	420	420	1 mR/hr \approx 1.7K CPM in ¹³⁷ Cs field
13	1K	1K	1K	
14				
15 X100	20K	22K	22K	
16	40K	42K	42K	
17	100K	100K	100K	
18				
19				
20				
21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u>	I certify that the above information is correct:
Calibration Date: <u>01-31-94</u> (Signed)	<u>[Signature]</u> <u>01-31-94</u>
Next Calibration Due: <u>04-30-94</u>	Administrative Coordinator Date



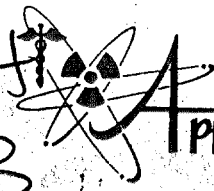
2986 Industrial Blvd. — Bethel Park, Pa. 15102 — Phone 412 — 835-9555 — Fax No. 412 — 835-9559

CERTIFICATE OF CALIBRATION

SHIPPING ADDRESS					BILLING ADDRESS (If Different)																																												
NESTINGHOUSE ELEC. CO. CO. CO.																																																	
ENERGY CENTER																																																	
NORTHERN PIKE ROAD																																																	
PUNTSVILLE, PA. 15140																																																	
CONTACT <u>LARRY MITCH</u> PHONE: ()					DATE: <u>10/25/93</u>		P.O.# <u>1149328-5</u>																																										
Receiving Comments: <u>LOOSE WIRE ON PROBE</u>																																																	
Instrument Received:		Within Toler. $\pm 10\%$		$\pm 10-20\%$		Out Toler.		<input checked="" type="checkbox"/> Requires Repair																																									
Mfg. Inst. <u>INSTRUMETER</u>			Model # <u>3032-Z</u>		Serial # <u>110-889</u>																																												
Detector			Model #		Serial # <u>INTO CAT 6M</u>																																												
<input checked="" type="checkbox"/> CALIBRATION		<input checked="" type="checkbox"/> REPAIR		SALE		LOAN By: <u>[Signature]</u>																																											
scale	source	reading	scale	source	reading	scale	source	reading																																									
<u>20</u> <u>6M</u>	mR/hr		<u>EXT</u> <u>6M</u>	mR/hr	<u>CPM</u>		mR/hr																																										
<u>XI</u>	<u>2</u>	<u>2.2</u>	<u>XI</u>	<u>14</u>	<u>800</u>																																												
	<u>9.2</u>	<u>9.0</u>																																															
<u>7100</u>	<u>196</u>	<u>200</u>	<u>XI</u>	<u>4</u>	<u>75000</u>																																												
	<u>800</u>	<u>796</u>																																															
Calibration Source:		<input checked="" type="checkbox"/> GAMMA		<input type="checkbox"/> ALPHA		<input type="checkbox"/> BETA		<input type="checkbox"/> ELECTRONIC		<input type="checkbox"/> OTHER																																							
Description:		<input checked="" type="checkbox"/> ra-226		<input type="checkbox"/> cs-137		<input type="checkbox"/> pu-239		<input type="checkbox"/> sr-90		<input type="checkbox"/> mp-1																																							
RESPONSE GRAPH <u>N/A</u>					PROBE EFFICIENCIES																																												
<table border="1" style="width: 100%; height: 40px;"> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> </table>																																													Alpha _____ % Beta _____ %				
Check Source Reading <u>N/A</u>																																																	
Battery Check Reading <u>50-RING</u>																																																	
Detector Angle <u>PERPENDICULAR</u>																																																	
Corrections <u>N/A $\pm 10\%$ TO 12 RING</u>																																																	
TEMP/HUMIDITY <u>70.9°F / 16 %</u>																																																	
Maintenance & Comments <u>REPAIRED ① 9V, 4V-OK AUDIO-OK</u>																																																	
<u>REPAIRED LOOSE WIRE ON EXT-6M</u>																																																	
CALIBRATION				<u>40.00</u>		QA Dept. <u>[Signature]</u>		Warranty																																									
LABOR		<u>1/4 HR</u>		<u>40.00/HR</u>		<u>30.00</u>		Shipping <u>UPS</u> Date <u>10/27/93</u>																																									
MATERIALS		<u>① 9V</u>		<u>3.00 EA</u>		<u>3.00</u>		Pick-Up _____ Date <u>3/1/1</u>																																									
&								This Certificate Expires In _____ Months																																									
SALES								Re-Calibrate On Or Before <u>1/77/94</u>																																									
SHIPPING		<u>UPS</u>		<u>① UNIT</u>		<u>7.00</u>		Job ID #																																									

NOTICE: Applied Health Physics, Inc. certifies that the above instrument has been calibrated by standards traceable to the National Institute of Standards and Technology under Nuclear Regulatory Commission License #37-09135-01 and PA State License #PA-0228. This calibration system conforms to the requirements of NRC regulation 10-CFR-34, 10-CFR-35, MIL-STD 45662A and ANSI-STD N323-1978.

L. SMITH
 RAD-LAB



Applied HEALTH PHYSICS inc.

2986 Industrial Blvd. — Bethel Park, Pa. 15102 — Phone 412 — 835-9555 — Fax No. 412 — 835-9559

UPS
 7-27-93
 2#

CERTIFICATE OF CALIBRATION

SHIPPING ADDRESS	BILLING ADDRESS (If Different)
Westinghouse Corp. Ave. "A" & West St. Pgh., PA 15112	SAME

CONTACT: L. Smith PHONE: () — DATE: 7/20/93 P.O.# MA 89328-S

Receiving Comments: Calibration.

Instrument Received: Within Toler. $\pm 10\%$ $\pm 10-20\%$ Out Toler. Requires Repair

Mfg. Inst. Dosimeter Model # 3032-2 Serial # 190-884
 Detector Int & Ext GM Model # _____ Serial # _____

CALIBRATION REPAIR SALE LOAN By: J. Douglas

scale	source	reading	scale	source	reading	scale	source	reading
<u>Int GM</u>	<u>mR/hr</u>	<u>mR/h</u>	<u>Ext GM</u>	<u>mR/hr</u>	<u>CPM</u>		<u>mR/hr</u>	
<u>X1</u>	<u>2</u>	<u>2.1</u>	<u>X1</u>	<u>.4</u>	<u>800</u>			
	<u>9.2</u>	<u>9.4</u>						
<u>X100</u>	<u>196</u>	<u>195</u>	<u>X100</u>	<u>4</u>	<u>75000</u>			
	<u>800</u>	<u>790</u>						

JUL 22 1993

Calibration Source: GAMMA ALPHA BETA ELECTRONIC OTHER

Description: ra-226 cs-137 pu-239 sr-90 mp-1

RESPONSE GRAPH N/A

PROBE EFFICIENCIES N/A

Alpha _____ & Beta _____ %
 Check Source Reading N/A
 Battery Check Reading 50+ mR/hr
 Detector Angle Perpendicular
 Corrections N/A ± 1090 to 1-R/HR

TEMP/HUMIDITY 72.00F / 47%

Maintenance & Comments Battery OK, HV-OK, Audio-OK, PPM-OK.

Tested, Inspected & Calibrated

CALIBRATION	Contract	#	40.00	QA Dept.	<u>JW</u>	Warranty	
LABOR				Shipping	<u>UPS</u>	Date	<u>7/20/93</u>
MATERIALS				Pick-Up		Date	<u>7/1/93</u>
&				This Certificate Expires In <u>3</u> Months			
SALES		#		Re-Calibrate On Or Before <u>10/20/93</u>			
SHIPPING	<u>UPS</u>	<u>1 Unit</u>	<u>4.50</u>	Job ID # <u>52385</u>			

NOTICE: Applied Health Physics, Inc. certifies that the above instrument has been calibrated by standards traceable to the National Institute of Standards and Technology under Nuclear Regulatory Commission License #37-09135-01 and PA State License #PA-0228. This calibration system conforms to the requirements of NRC regulation 10-CFR-34, 10-CFR-35, MIL-STD 45662A and ANSI-STD N323-1978.

~~MA89328S~~



HEALTH PHYSICS inc.

X4651

MA89328S

2986 Industrial Blvd. — Bethel Park, Pa. 15102 — Phone 412 — 835-9555 — Fax No. 412 — 835-9559

CERTIFICATE OF CALIBRATION

SHIPPING ADDRESS	BILLING ADDRESS (If Different)
112 E C Ave. A & West St. Pgh, PA 15112	SAME

Put in
LAB

CONTACT: J. Flanigan PHONE: () — DATE: 4/13/93 P.O.# MA8932855

Receiving Comments: Calibration.

Instrument Received:	<input checked="" type="checkbox"/> Within Toler. ±10%	<input type="checkbox"/> ±10-20%	<input type="checkbox"/> Out Toler.	<input type="checkbox"/> Requires Repair
----------------------	--	----------------------------------	-------------------------------------	--

Mfg. Inst. Disimeter 200 Model # 3032-2 Serial # 190-204
 Detector Int & Ext Dets Model # _____ Serial # _____

<input checked="" type="checkbox"/> CALIBRATION	<input type="checkbox"/> REPAIR	<input type="checkbox"/> SALE	<input type="checkbox"/> LOAN By: <u>J. Douglas</u>
---	---------------------------------	-------------------------------	---

scale	source	reading	scale	source	reading	scale	source	reading
<u>Ext. Det.</u>	<u>mR/hr</u>	<u>mR/hr</u>	<u>Ext. Det.</u>	<u>mR/hr</u>	<u>CPI</u>		<u>mR/hr</u>	
	<u>2</u>	<u>2.2</u>						
<u>XL</u>	<u>9.2</u>	<u>9.9</u>	<u>XL</u>	<u>.4</u>	<u>750</u>			
<u>X100</u>	<u>196</u>	<u>199</u>	<u>X100</u>	<u>40</u>	<u>75000</u>			
	<u>200</u>	<u>770</u>						

UPS
4-14-93
21#
6092 75 77386

Calibration Source:	<input checked="" type="checkbox"/> GAMMA	<input type="checkbox"/> ALPHA	<input type="checkbox"/> BETA	<input type="checkbox"/> ELECTRONIC	<input type="checkbox"/> OTHER
Description:	<input checked="" type="checkbox"/> ra-226	<input type="checkbox"/> cs-137	<input type="checkbox"/> pu-239	<input type="checkbox"/> sr-90	<input type="checkbox"/> mp-1

RESPONSE GRAPH <u>N/A</u>	PROBE EFFICIENCIES <u>N/A</u>
	Alpha _____ % Beta _____ %
	Check Source Reading <u>N/A</u>
	Battery Check Reading <u>50+ mR/hr</u>
	Detector Angle <u>Perpendicular</u>
	Corrections <u>N/A ± 10% to 1- R/hr</u>

Maintenance & Comments Battery OK, HV-OK, Audio-OK, ppm-OK

CALIBRATION <u>Contract</u>		40.00		QA Dept. <u>JD</u>	Warranty _____
LABOR				Shipping <u>UPS</u>	Date <u>4/13/93</u>
MATERIALS				Pick-Up _____	Date <u>1/1</u>
&				This Certificate Expires In <u>3</u> Months	
SALES				Re-Calibrate On Or Before <u>7/13/93</u>	
SHIPPING <u>UPS</u>				Job ID # <u>52185</u>	

NOTICE: Applied Health Physics, Inc. certifies that the above instrument has been calibrated by standards traceable to the National Institute of Standards and Technology under Nuclear Regulatory Commission License #37-09135-01 and PA State License #PA-0228. This calibration system conforms to the requirements of NRC regulation 10-CFR-34, 10-CFR-35, MIL-STD 45662A and ANSI-STD N323-1978.



HEALTH PHYSICS inc.

2986 Industrial Blvd. — Bethel Park, Pa. 15102 — Phone 412 — 835-9555 — Fax No. 412 — 835-9559

CERTIFICATE OF CALIBRATION

SHIPPING ADDRESS	BILLING ADDRESS (If Different)
W. E. C. Forest Hills Site Ave. A & West St.	SAME

CONTACT: J. Flanigan PHONE: (412) 374-4451 DATE: 1/12/93 P.O.# AA2930853

Receiving Comments: Calibration.

Instrument Received: Within Toler. $\pm 10\%$ $\pm 10-20\%$ Out Toler. Requires Repair

Mfg. Inst. Dosimeter Model # 3022-2 Serial # 190-284
 Detector Tot/Ext GM Model # _____ Serial # _____

CALIBRATION REPAIR SALE LOAN By: J. Douglas

scale	source	reading	scale	source	reading	scale	source	reading
<u>INT GM</u>	<u>mR/hr</u>	<u>mR/hr</u>	<u>EXT GM</u>	<u>mR/hr</u>	<u>4M</u>		<u>mR/hr</u>	
<u>X1</u>	<u>2</u>	<u>2.1</u>	<u>X1</u>	<u>.4</u>	<u>790</u>			
	<u>9.2</u>	<u>9.6</u>		<u>40</u>	<u>7600</u>			
<u>X100</u>	<u>196</u>	<u>190</u>	<u>X100</u>					
	<u>200</u>	<u>780</u>						

Calibration Source: GAMMA ALPHA BETA ELECTRONIC OTHER

Description: ra-226 cs-137 pu-239 sr-90 mp-1

RESPONSE GRAPH <u>N/A</u>	PROBE EFFICIENCIES <u>N/A</u>
	Alpha _____ % Beta _____ %
	Check Source Reading <u>N/A</u>
	Battery Check Reading <u>50 mR/hr</u>
	Detector Angle <u>Perpendicular</u>
	Corrections <u>N/A $\pm 10\%$</u>
TEMP/HUMIDITY <u>70.5°F / 33 %</u>	

Maintenance & Comments Battery OK, HV-OK, MPM-OK.

CALIBRATION <u>Contract</u>		40.00	QA Dept. <u>JG</u> Warranty _____
LABOR			Shipping <u>UPS</u> Date <u>1/12/93</u>
MATERIALS			Pick-Up _____ Date <u>1/1</u>
&			This Certificate Expires In <u>6 Months</u>
SALES			Re-Calibrate On Or Before <u>7/12/93</u>
SHIPPING <u>UPS</u>			Job ID # <u>51963</u>

NOTICE: Applied Health Physics, Inc. certifies that the above instrument has been calibrated by standards traceable to the National Institute of Standards and Technology under Nuclear Regulatory Commission License #37-09135-01 and PA State License #PA-0228. This calibration system conforms to the requirements of NRC regulation 10-CFR-34, 10-CFR-35, MIL-STD 45662A and ANSI-STD N323-1978.



HEALTH PHYSICS inc.

2986 Industrial Blvd. — Bethel Park, Pa. 15102 — Phone 412 — 835-9555 — Fax No. 412 — 835-9559

CERTIFICATE OF CALIBRATION

SHIPPING ADDRESS	BILLING ADDRESS (If Different)
Westinghouse Corp. Forest Hills Cmp Ave. A & West St. Pgh, PA 15112	SAME

CONTACT: Jim Flunigan PHONE: () DATE: 9/28/92 P.O.# 54-05026-11

Receiving Comments: Calibration.

Instrument Received: Within Toler. ±10% ±10-20% Out Toler. Requires Repair

Mfg. Inst. Dosimeter Model # 3032-2 Serial # 190-884
 Detector Int/Ext GM's Model # _____ Serial # _____

CALIBRATION REPAIR SALE LOAN By: J. Douglas

scale	source	reading	scale	source	reading	scale	source	reading
<u>Ra-226</u>	<u>mR/hr</u>	<u>mR/hr</u>	<u>Elect</u>	<u>mR/hr</u>	<u>cpm</u>	<u>Ra-226</u>	<u>mR/hr</u>	<u>cpm</u>
<u>XI</u>	<u>2</u>	<u>2.1</u>	<u>XI</u>	<u>200</u>	<u>200</u>	<u>XI</u>	<u>.4</u>	<u>200</u>
	<u>9.2</u>	<u>9.6</u>		<u>1000</u>	<u>1050</u>		<u>40</u>	<u>77000</u>
<u>X100</u>	<u>196</u>	<u>190</u>	<u>X100</u>	<u>20000</u>	<u>20000</u>	<u>X100</u>		
	<u>800</u>	<u>795</u>		<u>100000</u>	<u>100500</u>			
<u>Int</u>			<u>Elect</u>			<u>Ext</u>		
<u>GM</u>						<u>GM</u>		

Calibration Source: GAMMA ALPHA BETA ELECTRONIC OTHER
 Description: ra-226 cs-137 pu-239 sr-90 mp-1/100

RESPONSE GRAPH <u>N/A</u> TEMP/HUMIDITY <u>75.4 °F / 47 %</u>	PROBE EFFICIENCIES <u>N/A</u> Alpha _____ % Beta _____ % Check Source Reading <u>N/A</u> Battery Check Reading <u>50 mR/hr</u> Detector Angle <u>Perpendicular</u> Corrections <u>N/A ± 10%</u>
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Maintenance & Comments Battery OK, HV-OK, Audio-OK.

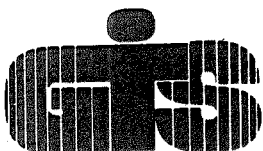
Tested, Inspected & Calibrated

CALIBRATION <u>Contract</u>	40.00	QA Dept. <u>JSD</u>	Warranty _____
LABOR _____		Shipping <u>UPS</u>	Date <u>9/28/92</u>
MATERIALS _____		Pick-Up _____	Date <u>1/1</u>
& _____		This Certificate Expires In <u>6</u> Months	
SALES _____		Re-Calibrate On Or Before <u>3/28/93</u>	
SHIPPING <u>UPS</u>		Job ID # <u>51758</u>	

NOTICE: Applied Health Physics, Inc. certifies that the above instrument has been calibrated by standards traceable to the National Institute of Standards and Technology under Nuclear Regulatory Commission License #37-09135-01 and PA State License #PA-0228. This calibration system conforms to the requirements of NRC regulation 10-CFR-34, 10-CFR-35, MIL-STD 45662A and ANSI-STD N323-1978.

CODE NUMBER 30

REPORT #001



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 724/733-1900 Fax: 724/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Eberline</u>
Customer Address: <u>PO Box 3700</u>	Model <u>RM-14</u> Serial Number <u>7588</u>
<u>Pittsburgh, PA 15230</u>	External Probe(s) <u>HP210AL</u> Serial # _____
Customer P.O.# _____	Calibration Method <u>137Cs s/n 10263 200mCi</u>
Work Order # <u>I-99-03-208</u>	<u>99Tc s/n S1256</u>

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2	200	200	200	
3	400	395	395	Battery: OK
4 X10	1K	1K	1K	Mechanical Zero: OK
5	2K	2K	2K	
6	4K	3.95K	3.95K	Response: OK
7				
8 X100	10K	10K	10K	Reset: OK
9	20K	20K	20K	
10	40K	39K	39K	Audio: OK
11				
12				Alarm: OK
13				
14				⁹⁹ Tc Efficiency = 11.2%
15				
16				1 mR/hr <input checked="" type="checkbox"/> 3.1K CPM in ¹³⁷ Cs field
17				
18				
19				
20				
21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>William Owens</u> (Signed)	I certify that the above information is correct:
Calibration Date: <u>03-24-99</u>	<u>William Owens</u>
Next Calibration Due: <u>06-24-99</u>	Administrative Coordinator
	Date: <u>03-24-99</u>



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 724/733-1900 Fax: 724/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Eberline</u>	Model <u>RM-14</u>	Serial Number <u>7588</u>
Customer Address: <u>PO Box 3700</u>	External Probe(s) <u>HP210A</u>	Serial # _____	
<u>Pittsburgh, PA 15230</u>			
Customer P.O.# <u>MB-14027-S</u>	Calibration Method <u>137Cs s/n 101500</u>		
Work Order # <u>I-98-12-208</u>	<u>99Tc s/n 10263 200mCi</u>		
	<u>Tc s/n S1256</u>		

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2	200	200	200	Battery: OK
3	400	400	400	
4				
5 X10	1K	1K	1K	Mechanical Zero: OK
6	2K	2K	2K	
7	4K	4K	4K	Response: OK
8				
9 X100	10K	10K	10K	Reset: OK
10	20K	20K	20K	
11	40K	40K	40K	Speaker: OK
12				
13				Alarm: OK
14				
15				1 mR/hr = 3.1K CPM in ¹³⁷ Cs field
16				⁹⁹ Tc Efficiency = 10.5%
17				
18				
19				
20				
21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u> (Signed)	I certify that the above information is correct:
Calibration Date: <u>12-17-98</u>	<u>12-17-98</u>
Next Calibration Due: <u>03-17-99</u>	Administrative Coordinator <u>[Signature]</u> Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 724/733-1900 Fax: 724/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

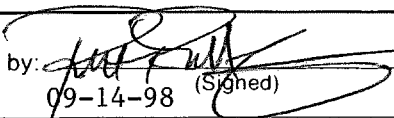
CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	Westinghouse	Instrument Manufacturer	Eberline
Customer Address:	PO Box 3700 Pittsburgh, PA 15230	Model	RM-14
		Serial Number	7588
		External Probe(s)	HP210A ⁹⁹ Serial # _____
Customer P.O.#	MB-14027-S	Calibration Method	¹³⁷ Pulser s/n 101500
Work Order #	I-98-09-208		⁹⁹ Cs s/n 10263 200mCi
			Tc s/n S1256

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2		200	200	200	
3		400	400	400	Battery: OK
4					
5	X10	1K	1K	1K	Mechanical Zero: OK
6		2K	2K	2K	
7		4K	4.05K	4.05K	Response: OK
8					
9	X100	10K	10K	10K	Reset: OK
10		20K	20K	20K	
11		40K	40K	40K	Speaker: OK
12					
13					Alarm: OK
14					
15					⁹⁹ Tc Efficiency = 10.6%
16					
17					1 mR/hr ≈ 3.2K CPM in ¹³⁷ Cs field
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: 	I certify that the above information is correct:
Calibration Date: 09-14-98 (Signed)	09-14-98
Next Calibration Due: 12-14-98	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 724/733-1900 Fax: 724/327-8189

39

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Eberline</u>
Customer Address: <u>PO Box 3700</u>	Model <u>RM-14</u> Serial Number <u>7588</u>
<u>Pittsburgh, PA 15230</u>	External Probe(s) <u>HP210A1</u> Serial # _____
Customer P.O.# <u>MB-14027-S</u>	Calibration Method <u>137Cs s/n 101500</u>
Work Order # <u>I-98-04-208</u>	<u>99Cs s/n 10263 200mCi</u>
	<u>Tc s/n S1256</u>

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2	200	200	200	Battery: OK
3	400	400	400	
4				
5 X10	1K	1K	1K	Mechanical Zero: OK
6	2K	2K	2K	Response: OK
7	4K	4K	4K	
8				
9 X100	10K	10K	10K	Reset: OK
10	20K	20K	20K	Speaker: OK
11	40K	40K	40K	Alarm: OK
12				
13				Test Pulse = 3.6K CPM
14				⁹⁹ Tc Efficiency = 10.7%
15				1 mR/hr ≈ 3.2K CPM in ¹³⁷ Cs field
16				
17				
18				
19				
20				
21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u> (Signed)	I certify that the above information is correct:
Calibration Date: <u>05-11-98</u>	<u>05-11-98</u>
Next Calibration Due: <u>08-11-98</u>	Administrative Coordinator <u>[Signature]</u> Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Eberline</u>	Model <u>RM-14</u>	Serial Number <u>7588</u>
Customer Address: <u>PO Box 3700</u>	External Probe(s) <u>HP210AL</u>	Serial # _____	
<u>Pittsburgh, PA 15230</u>			
Customer P.O.# <u>MB-14027-S</u>	Calibration Method <u>99</u>	Pulser s/n <u>101500</u>	
Work Order # <u>I-98-01-208</u>		<u>137</u> Tc s/n <u>S1256</u>	
		Cs s/n <u>20020</u>	<u>400Ci</u>

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2		200	200	200	
3		400	400	400	Battery: OK
4					
5	X10	1K	1K	1K	Mechanical Zero: OK
6		2K	2K	2K	
7		4K	4K	4K	Response: OK
8					
9	X100	10K	10K	10K	Reset: OK
10		20K	20K	20K	
11		40K	40K	40K	Audio: OK
12					
13					Alarm: OK
14					
15					1 mR/hr = 3.1K CPM in ¹³⁷ Cs field
16					⁹⁹ Tc Efficiency = 10.5%
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u>	I certify that the above information is correct:
Calibration Date: <u>01-26-98</u> (Signed)	<u>[Signature]</u> 01-26-98
Next Calibration Due: <u>04-26-98</u>	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Eberline</u>
Customer Address: <u>P.O. Box 3700</u>	Model <u>RM-14</u> Serial Number <u>7588</u>
<u>Pittsburgh, PA 15230</u>	External Probe(s) <u>HP210AL</u> Serial # _____
Customer P.O.# <u>MB-14027-S</u>	Calibration Method <u>137</u> Pulser s/n 301
Work Order # <u>I-97-07-209</u>	<u>99</u> Cs s/n 10263 200mCi
	<u>99</u> Tc s/n S1256

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2		200	200	200	
3		400	400	400	Battery: OK
4					
5	X10	1K	1K	1K	Mechanical Zero: OK
6		2K	2K	2K	
7		4K	4.05K	4.05K	Reset: OK
8					
9	X100	10K	10K	10K	Alarm: OK
10		20K	20K	20K	
11		40K	39.5K	39.5K	Response: OK
12					
13					Audio: OK
14					
15					⁹⁹ Tc Efficiency = 10.9%
16					
17					1 mR/hr \checkmark 3.1K CPM in ¹³⁷ Cs field
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>William Owens</u>	I certify that the above information is correct:
Calibration Date: <u>08-20-97</u> (Signed)	<u>William Owens</u> 08-20-97
Next Calibration Due: <u>11-20-97</u>	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Eberline</u>
Customer Address: <u>P.O.Box 3700</u> <u>Pittsburgh, PA 15230</u>	Model <u>RM-14</u> Serial Number <u>7588</u>
Customer P.O.# <u>I-97-04-209</u>	External Probe(s) <u>HP-210A</u> Serial # _____
Work Order # <u>MB-14027-S</u>	Calibration Method <u>Pulsar s/n 101500</u> <u>¹³⁷Cs s/n 10263 200mCi</u> <u>⁹⁹Tc s-1256</u>

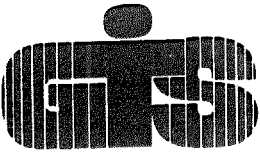
INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2		200	200	200	
3		400	400	400	
4					Mechanical Zero: OK
5	X10	1K	1K	1K	Battery: OK
6		2K	2K	2K	
7		4K	4K	4K	
8					Response: OK
9	X100	10K	10K	10K	Reset: OK
10		20K	20K	20K	
11		40K	40K	40K	
12					Audio: OK
13					Test Pulse = 3.6K CPM
14					Alarm: OK
15					⁹⁹ Tc Efficiency = 10.8%
16					1 mR/hr ≈ 3K CPM in ¹³⁷ Cs field
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u> (Signed)	I certify that the above information is correct:
Calibration Date: <u>04-14-97</u>	<u>[Signature]</u> <u>04-14-97</u>
Next Calibration Due: <u>07-14-97</u>	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Eberline</u>
Customer Address: <u>P.O. Box 3700</u>	Model <u>RM-14</u> Serial Number <u>7588</u>
<u>Pittsburgh, PA 15230</u>	External Probe(s) <u>HP210</u> Serial # _____
Customer P.O.# <u>MB-14027-S</u>	Calibration Method <u>137Cs s/n 318</u>
Work Order # <u>I-96-12-210</u>	<u>99Cs s/n 10263 200mCi</u>
	<u>Tc s/n S1256</u>

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2		200	200	200	
3		400	390	390	Battery: OK
4					
5	X10	1K	1K	1K	Mechanical Zero: OK
6		2K	2K	2K	
7		4K	3.9K	3.9K	Response: OK
8					
9	X100	10K	10K	10K	Reset: OK
10		20K	20K	20K	
11		40K	39K	39K	Audio: OK
12					
13					1 mR/hr = 3.1K CPM in ¹³⁷ Cs field
14					⁹⁹ Tc Efficiency = 10.5%
15					
16					
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>William Owens</u>	I certify that the above information is correct:
Calibration Date: <u>01-09-97</u> (Signed)	<u>[Signature]</u> <u>01-09-97</u>
Next Calibration Due: <u>04-09-97</u>	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Eberline</u>	Model <u>RM-14</u>	Serial Number <u>7588</u>
Customer Address: <u>P.O. Box 3700</u>	External Probe(s) <u>HP210AL</u>	Serial # _____	
<u>Pittsburgh, PA 15221</u>			
Customer P.O.# <u>MB-14027-S</u>	Calibration Method <u>137Cs s/n 101500</u>		
Work Order # <u>I-96-09-210</u>	<u>99Tc s/n 10263 200mCi</u>		
	<u>99Tc s/n S1256</u>		

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2		200	200	200	
3		400	400	400	Battery: OK
4					
5	X10	1K	1K	1K	Mechanical Zero: OK
6		2K	2K	2K	
7		4K	4K	4K	Response: OK
8					
9	X100	10K	10K	10K	Reset: OK
10		20K	20K	20K	
11		40K	40K	40K	Speaker: OK
12					
13					Alarm: OK
14					
15					Test Pulse = 3.6K CPM
16					1 mR/hr \approx 3.2K CPM in ¹³⁷ Cs field
17					
18					⁹⁹ Tc Efficiency = 10.9%
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: [Signature]
 Calibration Date: 09-10-96 (Signed)
 Next Calibration Due: 12-10-96

I certify that the above information is correct:
[Signature] 09-10-96
 Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Eberline</u>
Customer Address: <u>P.O. Box 3700</u> <u>Pittsburgh, PA 15230</u>	Model <u>RM-14</u> Serial Number <u>7588</u>
Customer P.O.# <u>MB-14027-S</u>	External Probe(s) <u>HP210AL</u> Serial # _____
Work Order # <u>I-96-06-209</u>	Calibration Method <u>99</u> <u>Pulser s/n 101500</u>
	<u>137</u> <u>Tc s/n S1256</u>
	<u>137</u> <u>Cs s/n 10263 200mCi</u>

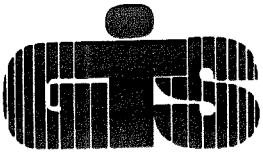
INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2		200	200	200	Battery: OK
3		400	400	400	Mechanical Zero: OK
4	X10	1K	1K	1K	Response: OK
5		2K	2K	2K	Reset: OK
6		4K	4K	4K	Speaker: OK
7	X100	10K	10K	10K	Alarm: OK
8		20K	20K	20K	Test Pulse = 3.6K CPM
9		40K	40K	40K	1 mR/hr \approx 3.2K CPM in ¹³⁷ Cs field
10					⁹⁹ Tc Efficiency = 10.9%
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u> Calibration Date: <u>05-30-96</u> (Signed) Next Calibration Due: <u>08-30-96</u>	I certify that the above information is correct: <u>[Signature]</u> <u>05-30-96</u> Administrative Coordinator Date
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GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Eberline</u>	Model <u>RM-14</u>	Serial Number <u>7588</u>
Customer Address: <u>P.O. Box 3700</u>	External Probe(s) <u>HP210AL</u>	Serial # _____	
<u>Pittsburgh, PA 15230</u>			
Customer P.O.# <u>MB-14027-S</u>	Calibration Method <u>99</u>	<u>Pulser s/n 298</u>	
Work Order # <u>I-95-12-208</u>		<u>137</u>	<u>Tc s/n S1256</u>
			<u>200mCi</u>

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2	200	200	200	
3	400	400	400	Battery: OK
4 X10	1K	1K	1K	Mechanical Zero: OK
5	2K	2K	2K	
6	4K	3.9K	3.9K	Response: OK
7				
8 X100	10K	10K	10K	Reset: OK
9	20K	20K	20K	
10	40K	40K	40K	Audio: OK
11				
12				Alarm: OK
13				
14				Teset Pulse: 3.5K CPM
15				
16				1 mR/hr \approx 3.1K CPM in ¹³⁷ Cs field
17				
18				⁹⁹ Tc Efficiency = 10.9%
19				
20				
21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u>	I certify that the above information is correct:
Calibration Date: <u>01-10-96</u> (Signed)	<u>[Signature]</u>
Next Calibration Due: <u>04-10-96</u>	Administrative Coordinator
	Date <u>01-10-96</u>



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer: <u>Eberline</u>	Model: <u>RM-14</u>	Serial Number: <u>7588</u>
Customer Address: <u>P.O. Box 3700</u>	External Probe(s): _____	Serial #: _____	
<u>Pittsburgh, PA 15230</u>			
Customer P.O.#: <u>MB-14027-S</u>	Calibration Method: <u>137Pulser s/n 101500</u>	<u>99Cs s/n 10263 200mCi</u>	
Work Order #: <u>I-95-09-210</u>		<u>99Tc s/n S1256</u>	

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2		200	200	200	
3		400	400	400	
4	X10	1K	1K	1K	Mechanical Zero: OK
5		2K	2K	2K	
6		4K	4K	4K	
7	X100	10K	10K	10K	Response: OK
8		20K	20K	20K	
9		40K	40K	40K	
10					Reset: OK
11					Alarm: OK
12					Speaker: OK
13					Test Pulse = 3.6K CPM
14					1 mR/hr \approx 3.1K CPM in ¹³⁷ Cs field
15					⁹⁹ Tc Efficiency = 11.2%
16					
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u> (Signed)	I certify that the above information is correct:
Calibration Date: <u>09-27-95</u>	<u>[Signature]</u> 09-27-95
Next Calibration Due: <u>12-27-95</u>	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

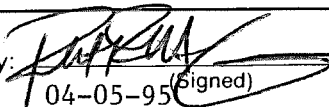
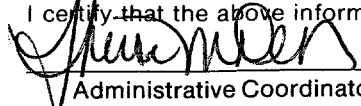
CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	Westinghouse	Instrument Manufacturer	Eberline
Customer Address:	P.O. Box 3700 Pittsburgh, PA 15230	Model	RM-14 Serial Number 7588
Customer P.O.#	MB-14027-S	External Probe(s)	HP210 Serial # _____
Work Order #	I-95-03-213	Calibration Method	⁹⁹ Pulser s/n 101500 ¹³⁷ Tc s/n S1256 Cs s/n 10263 200mCi

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	100 CPM	Adjust	100 CPM	All Calibrations Btn. + & - 10%
2		200	Mechanical	200	
3		400	Zero	400	Battery Check: OK
4			↓		
5	X10	1K		1K	Mechanical Zero: OK
6		2K		2K	
7		4K		4K	Response: OK
8					
9	X100	10K		10K	Reset: OK
10		20K		20K	
11		40K		40K	Speaker: OK
12					Alarm: OK
13					Test Pulse = 3.6K CPM
14				1 mR/hr \approx 3.3K CPM in ¹³⁷ Cs field	
15				⁹⁹ Tc Efficiency = 10.9%	
16					
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: 	I certify that the above information is correct:
Calibration Date: 04-05-95 (Signed)	
Next Calibration Due: 07-05-95	Administrative Coordinator
	Date: 04-05-95



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Eberline</u>
Customer Address: <u>P.O. Box 3700</u> <u>Pittsburgh, PA 15230</u>	Model <u>RM-14</u> Serial Number <u>7588</u>
Customer P.O.# <u>MB-14027-S</u>	External Probe(s) <u>HP210</u> Serial # _____
Work Order # <u>I-94-11-218</u>	Calibration Method <u>137</u> <u>Pulser s/n 101500</u> <u>99</u> <u>Cs s/n 10263 200mCi</u> <u>Tc s/n S1256</u>

INSTRUMENT CALIBRATION INFORMATION

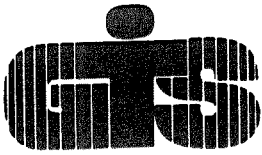
	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2		200	200	200	
3		400	400	400	Battery Check: OK
4					
5	X10	1K	1K	1K	Mechanical Zero: OK
6		2K	2K	2K	
7		4K	4K	4K	Response: OK
8					
9	X100	10K	10K	10K	Reset: OK
10		20K	20K	20K	
11		40K	40K	40K	Alarm: OK
12					
13					1 mR/hr = 3.5K CPM in ¹³⁷ Cs field
14					⁹⁹ Tc Efficiency = 10.9%
15					
16					Speaker: OK
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: [Signature]
 Calibration Date: 11-29-94 (Signed)
 Next Calibration Due: 02-28-95

I certify that the above information is correct:
[Signature] 11-29-94
 Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

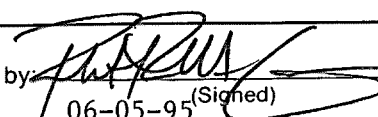
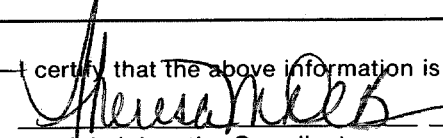
CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	Westinghouse	Instrument Manufacturer	Eberline
Customer Address:	P.O. Box 3700 Pittsburgh, PA 15230	Model	RM-14
		Serial Number	7588
		External Probe(s)	HP210AL Serial # _____
Customer P.O.#	MB-14027-S	Calibration Method	⁹⁹ Pulsar s/n 101500
Work Order #	I-95-06-208		¹³⁷ Tc s/n S1256
			¹³⁷ Cs s/n 10263 200mCi

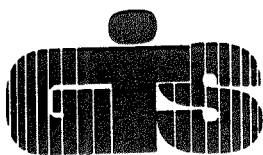
INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2		200	200	200	
3		400	400	400	Battery Check: OK
4	X10	1K	1K	1K	Mechanical zero: OK
5		2K	2K	2K	
6		4K	4K	4K	Response: OK
7					
8	X100	10K	10K	10K	Reset: OK
9		20K	20K	20K	
10		40K	40K	40K	Speaker: OK
11					
12					Alarm: OK
13					
14					Test Pulse = 3.6K CPM
15					
16					1 mR/hr \approx 3.2K CPM in ¹³⁷ Cs field
17					
18					⁹⁹ Tc Efficiency = 11.2%
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: 	I certify that the above information is correct:
Calibration Date: 06-05-95 (Signed)	 06-05-95
Next Calibration Due: 09-05-95	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

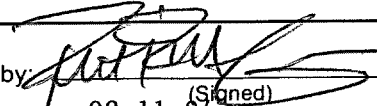
CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	Westinghouse	Instrument Manufacturer	Eberline
Customer Address:	Avenue A & West Street Pittsburgh, PA 15221	Model	RM-14
		Serial Number	7588
		External Probe(s)	HP210
Customer P.O.#	MB-14027-S	Serial #	
Work Order #	I-94-08-218	Calibration Method	⁹⁹ Pulser s/n 101500
			¹³⁷ Tc s/n S1256
			Cs s/n 10263 200mCi

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2		200	200	200	
3		400	405	405	Battery Check: OK
4	X10	1K	1K	1K	Mechanical Zero: OK
5		2K	2K	2K	
6		4K	4.05K	4.05K	Response: OK
7					
8	X100	10K	10K	10K	Reset: OK
9		20K	20K	20K	
10		40K	40.5K	40.5K	Alarm: OK
11					
12					Audio: OK
13					
14					⁹⁹ Tc Efficiency = 11.0%
15					
16					1 mR/hr = 3.3K CPM in ¹³⁷ Cs field
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: 	I certify that the above information is correct:
Calibration Date: 08-11-94	08-11-94
Next Calibration Due: 11-11-94	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
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CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	<u>Westinghouse</u>	Instrument Manufacturer	<u>Eberline</u>
Customer Address:	<u>Avenue A & West Street</u> <u>Pittsburgh, PA 15221</u>	Model	<u>RM-14</u> Serial Number <u>7588</u>
Customer P.O.#	<u>MB-14027-S</u>	External Probe(s)	<u>HP210</u> Serial # _____
Work Order #	<u>I-94-05-222</u>	Calibration Method	<u>137</u> Pulser s/n 298 <u>99</u> Cs s/n 10263 200mCi Tc s/n 1256

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2		200	200	200	
3		400	400	400	Battery Check: OK
4					
5	X10	1K	1K	1K	Mechanical Zero: OK
6		2K	2K	2K	
7		4K	4K	4K	Audio: OK
8					
9	X100	10K	10K	10K	Alarm: OK
10		20K	20K	20K	
11		40K	40K	40K	Response: OK
12					
13					Reset: OK
14					⁹⁹ Tc Efficiency = 11.9%
15					
16					1 mR/hr = 3.4K CPM in ¹³⁷ Cs field
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>James Christopher</u> (Signed)	certify that the above information is correct:
Calibration Date: <u>05-11-94</u>	<u>Sharon DeBor</u> 05-11-94
Next Calibration Due: <u>08-11-94</u>	Administrative Coordinator Date



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CALIBRATION CERTIFICATE

#30

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name: <u>Westinghouse Electric</u>	Instrument Manufacturer: <u>Eberline</u>	Model: <u>RM-14</u>	Serial Number: <u>7588</u>
Customer Address: <u>Avenue A & West Street</u>	External Probe(s): <u>HP210A1</u>	Serial #: _____	
<u>Pittsburgh, PA 15221</u>			
Customer P.O.#: <u>MB-14016-H</u>	Calibration Method: <u>99</u>	<u>Pulser s/n 318</u>	
Work Order #: <u>I-94-01-224</u>		<u>137</u>	<u>Tc s/n S1256</u>
			<u>Cs s/n 10263 200mCi</u>

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 X1	100 CPM	Replaced Meter Movement	100 CPM	All Calibrations Btn. + & - 10%
2	200		200	
3	400		400	Battery Check: OK
4 X10	1K		1K	Mechanical Zero: OK
5	2K		2K	
6	4K		4K	Audio: OK
7				
8 X100	10K		10K	Reset: OK
9	20K		20K	
10	40K		40K	Alarm: OK
11				
12			3.6K CPM Test Pulse = 3.6K CPM	
13			1 mR/hr = 3.4K CPM in ¹³⁷ Cs field	
14			⁹⁹ Tc Efficiency = 11.2%	
15				
16				
17				
18				
19				
20				
21				
22				
23				

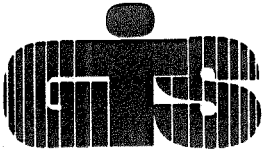
STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u> (Signed)	I certify that the above information is correct: <u>[Signature]</u>
Calibration Date: <u>01-31-94</u>	<u>01-31-94</u>
Next Calibration Due: <u>04-30-94</u>	Administrative Coordinator <u>[Signature]</u> Date

CODE NUMBER 31

REPORT #001



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Eberline</u>
Customer Address: <u>P.O. Box 3700</u>	Model <u>ESP-2</u> Serial Number <u>1522</u>
<u>Pittsburgh, PA 15230</u>	External Probe(s) <u>AC-3-7</u> Serial # <u>7A #2</u>
Customer P.O.# <u>MB-14027-S</u>	Calibration Method <u>239</u> Pulser s/n <u>120935</u>
Work Order # <u>I-96-03-210</u>	Pu s/n <u>11623</u>

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 N/A	200 CPM	2.00 + 02 CPM	2.00 + 02 CPM	All Calibrations Btn. + & - 10%
2	800	8.00 + 02	8.00 + 02	DT = 6.63 - 08
3				CC = 1.00 + 00
4	2K	2.00 + 03	2.00 + 03	
5	8K	8.00 + 03	8.00 + 03	Input Sensitivity <u>10mV</u>
6				
7	20K	2.00 + 04	2.00 + 04	High Voltage = 798 Volts
8	80K	8.01 + 04	8.01 + 04	
9				
10	200K	2.01 + 05	2.01 + 05	<u>239</u> Pu Efficiency = 17.8%
11	800K	8.04 + 05	8.04 + 05	
12				
13	2M	2.01 + 06	2.01 + 06	
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u>	I certify that the above information is correct:
Calibration Date: <u>03-11-96</u> (Signed)	<u>[Signature]</u> 03-11-96
Next Calibration Due: <u>06-11-96</u>	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

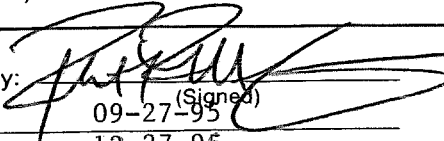
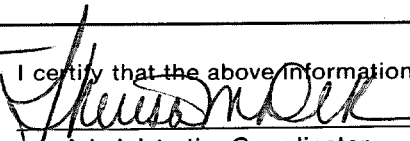
CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	Westinghouse	Instrument Manufacturer	Eberline
Customer Address:	P.O. Box 3700 Pittsburgh, PA 15230	Model	ESP-2
		Serial Number	1522
		External Probe(s)	AC-3-7
		Serial #	7A (#2)
Customer P.O.#	MB-14027-S	Calibration Method	239 Pulser s/n 101500
Work Order #	I-95-09-210		Pu s/n 7649

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	N/A	200 CPM	2.00 + 02 CPM	2.00 + 02 CPM	All Calibrations Btn. + & - 10%
2		800	8.00 + 02	8.00 + 02	Battery: OK
3					
4		2K	2.00 + 03	2.00 + 03	Reset: OK
5		8K	8.00 + 03	8.00 + 03	
6					
7		20K	2.00 + 04	2.00 + 04	Ligth: OK
8		80K	8.00 + 04	8.00 + 04	
9					Speaker: OK
10		200K	2.00 + 05	2.00 + 05	
11		800K	8.00 + 05	8.00 + 05	DT = 6.63 - 08
12					CC = 1.00 + 00
13		2M	2.00 + 06	2.00 + 06	
14					Input Sensitivity ≈ 10mV
15					
16					High Voltage = 798 Volts
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by:		I certify that the above information is correct:	
Calibration Date:	09-27-95 (Signed)	Administrative Coordinator	09-27-95
Next Calibration Due:	12-27-95	Date	



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CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Eberline</u>
Customer Address: <u>P.O. Box 3700</u>	Model <u>ESP-2</u> Serial Number <u>01522</u>
<u>Pittsburgh, PA 15230</u>	External Probe(s) <u>AC-7</u> Serial # <u>7A</u>
Customer P.O.# <u>MB-14027-S</u>	Calibration Method <u>239</u> <u>Pusler s/n 101500</u>
Work Order # <u>I-95-05-220</u>	<u>Pu s/n 7649</u>

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	N/A	200 CPM	200 CPM	200 CPM	All Calibrations Btn. + & - 10%
2		800	803	803	DT = 6.63 - 08
3		2K	2.01K	2.01K	CC = 1.00 + 00
4		8K	8.03K	8.03K	High Voltage = 795 Volts
5		20K	20K	20K	Input Sensitivity ≈ 10mV
6		80K	80.4K	80.4K	Alarm: OK
7		200K	201K	201K	
8		800K	804K	804K	
9		2M	2.01M	2.01M	²³⁹ Pu Efficiency = 18.3%
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u>	I certify that the above information is correct:
Calibration Date: <u>05-16-95</u> (Signed)	<u>[Signature]</u> <u>05-16-95</u>
Next Calibration Due: <u>08-16-95</u>	Administrative Coordinator <u>[Signature]</u> Date



GTS Instrument Services
 2045 Route 286
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CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	<u>Westinghouse</u>	Instrument Manufacturer	<u>Eberline</u>
Customer Address:	<u>Avenue A & West Street</u> <u>Pittsburgh, PA 15221</u>	Model	<u>ESP-2</u> Serial Number <u>01522</u>
Customer P.O.#	<u>MB-14027-S</u>	External Probe(s)	<u>AC-3</u> Serial # <u>7A</u>
Work Order #	<u>I-94-10-218</u>	Calibration Method	<u>239</u> <u>Pulser s/n 101500</u> <u>Pu s/n 7649</u>

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	N/A	200 CPM	Replace	200 CPM	All Calibrations Btn. + & - 10%
2		400	Phosphour &	800	DT = 6.63 - 08
3			Mylar		
4		2K	↓	2K	CC = 1.00 + 00
5		8K		8K	High Voltage = 800 Volts
6					Input Sensitivity = 10 mV
7		20K		20K	²³⁹ Pu Efficiency = 18.3%
8		80K		80K	
9					
10		200K		200K	
11		800K		800K	
12					
13		2 M		2 M	
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by:	<u>[Signature]</u> (Signed)	I certify that the above information is correct:	<u>[Signature]</u>
Calibration Date:	<u>11-09-94</u>	Administrative Coordinator	<u>11-09-94</u> Date
Next Calibration Due:	<u>02-09-95</u>		



GTS Instrument Services
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CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Eberline</u>
Customer Address: <u>Avenue A & West Street</u>	Model <u>ESP-2</u> Serial Number <u>01522</u>
<u>Pittsburgh, PA 15221</u>	External Probe(s) <u>AC-3</u> Serial # _____
Customer P.O.# <u>MB-14027-S</u>	Calibration Method _____
Work Order # <u>I-94-08-218</u>	<u>239</u> Pulser s/n 101500 Pu s/n 7649

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 N/A	200 CPM	200 CPM	200 CPM	All Calibrations Btn. + & - 10%
2	800	800	800	DT = 6.63 - 08
3	2K	2K	2K	CC = 1.00 + 00
4	8K	8K	8K	High Voltage = 795 Volts
5	20K	20K	20K	Input Sensitivity = 10 mV
6	80K	80K	80K	²³⁹ Pu Efficiency = 18.8%
7	200K	200K	200K	
8	800K	801K	801K	
9	2M	2M	2M	
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u> (Signed)	I certify that the above information is correct: <u>[Signature]</u>
Calibration Date: <u>08-11-94</u>	<u>08-11-94</u>
Next Calibration Due: <u>11-11-94</u>	Administrative Coordinator _____ Date _____



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Eberline</u>
Customer Address: <u>Avenue A & West Street</u> <u>Pittsburgh, PA 15221</u>	Model <u>ESP-2</u> Serial Number <u>01522</u>
Customer P.O.# <u>MB-14027-S</u>	External Probe(s) <u>AC-3</u> Serial # <u>7A</u>
Work Order # <u>I-94-04-227</u>	Calibration Method <u>239 Pulser s/n 101500</u> <u>Pu s/n 7649</u>

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 N/A	200 CPM	Initial	200 CPM	All Calibrations Btn. + & - 10%
2	800	Calibration	800	DT = 6.63 - 08
3		with this probe		
4	2K	↓	2K	CC = 1.00 + 00
5	8K		8K	HV = 800 Volts
6				Input sensitivity = 10 mV
7	20K		20K	239 Pu Efficiency = 19.1%
8	80K		80K	
9				
10	200K		200K	
11	800K		801K	
12				
13	2M		2.01 M	
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u> (Signed)	I certify that the above information is correct: <u>[Signature]</u> Administrative Coordinator
Calibration Date: <u>05-03-94</u>	<u>05-03-94</u> Date
Next Calibration Due: <u>08-03-94</u>	

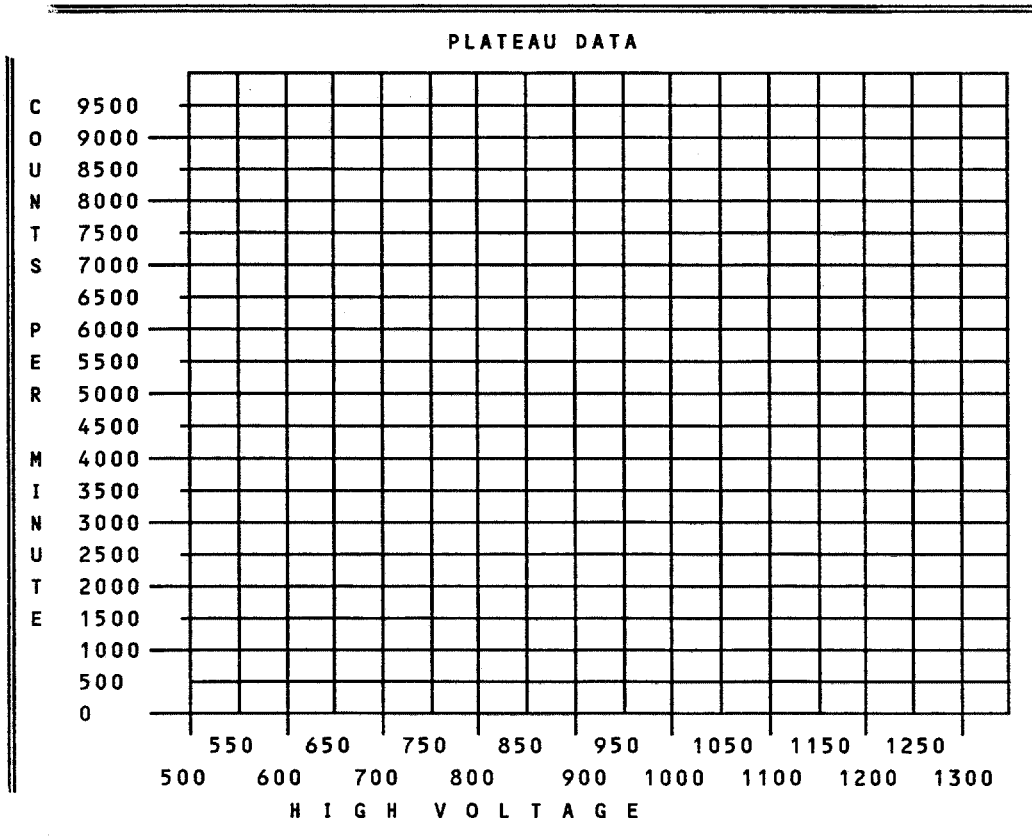
ESP-2 S/N: <i>1522</i>	CODE #: <i>31</i>	DATE: <i>1-24-94</i>
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ALPHA EFFICIENCY DATA (Net cpm / dpm = Eff)(Correction Factor = 1 / Eff)

PROBE #	SOURCE #	ACTIVITY	TOTAL CTS	TIME	GROSS CPM	BKG. CPM	NET CPM
7-A	5308	31283 dpm	<i>21600</i>	<i>5 min</i>	<i>4320</i>	<i>0</i>	<i>4320</i>
	7346	230974 dpm	<i>153000</i>	<i>5 min</i>	<i>30600</i>	<i>0</i>	<i>30600</i>
7-B	5308	31283 dpm		min			
	7346	230974 dpm		min			

NET CPM	EFF	C.F.	AVG. EFF	AVG. C.F.
<i>4320</i>	<i>20%</i>	<i>5.0</i>	<i>20%</i>	<i>5.0</i>
<i>30600</i>	<i>20%</i>	<i>5.0</i>		

PLATEAU DATA		
H. V.	7-A COUNTS	7-B COUNTS
500		
550		
600		
650		
700		
750		
800	<i>N/A</i>	
850	<i>A</i>	
900		
950		
1000		
1050		
1100		
1150		
1200		
1250		
1300		



CALIBRATED BY:	<i>Sory St</i>
SIGNATURE:	<i>Sory St</i>



HEALTH PHYSICS inc.

2986 Industrial Blvd. — Bethel Park, Pa. 15102 — Phone 412 — 835-9555 — Fax No. 412 — 835-9559

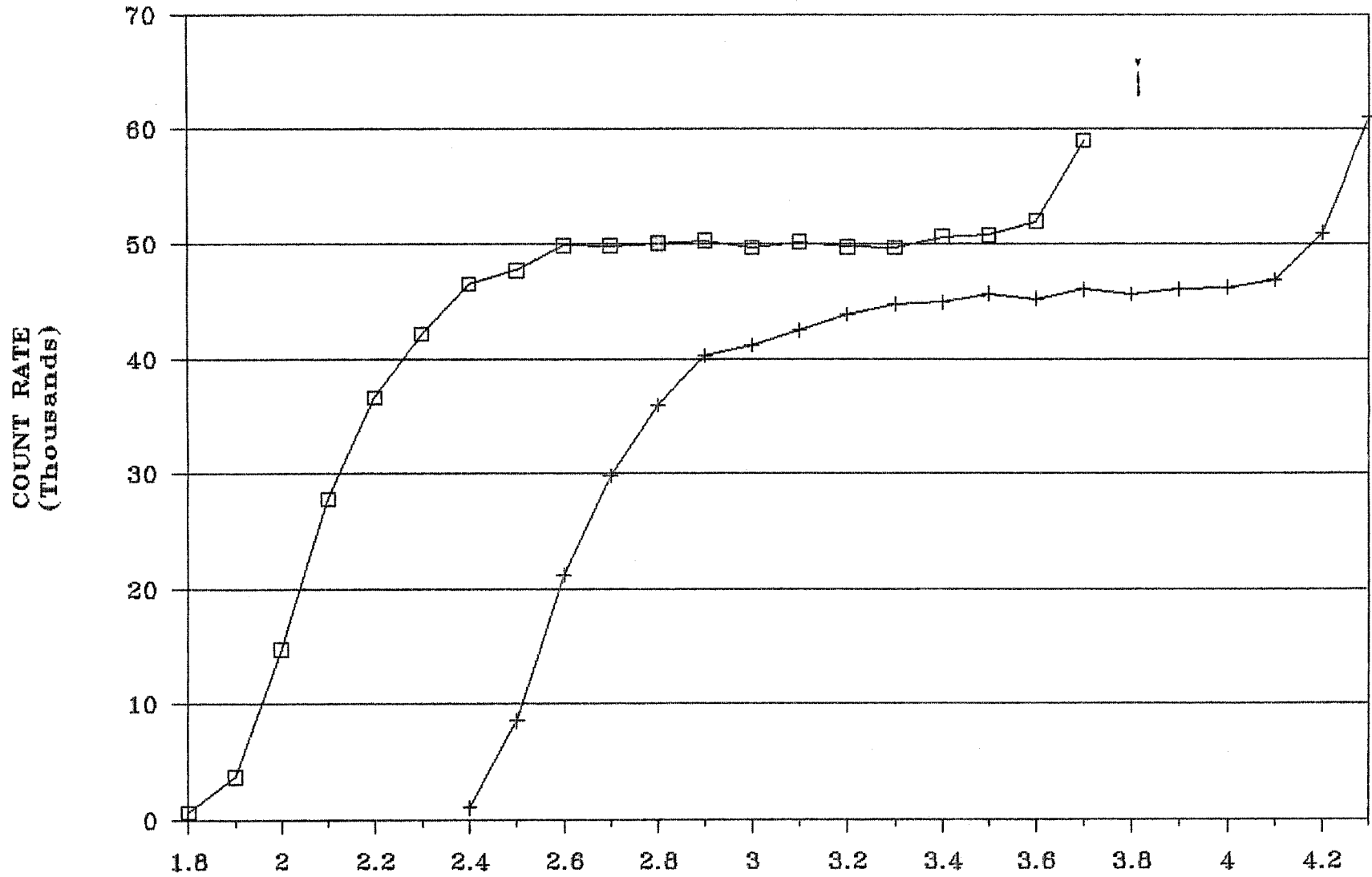
CERTIFICATE OF CALIBRATION

SHIPPING ADDRESS				BILLING ADDRESS (If Different)																																																							
Westinghouse (RAD), Attn. "A" & West St. Pgh., PA 15112				SAME																																																							
CONTACT: <u>L. Smith</u> PHONE: (—) <u>229-3674</u> DATE: <u>9/13/98</u> P.O.# <u>MA29228</u>																																																											
Receiving Comments: <u>Repair Fuses of (2) AC-3 / Sale of (2) PW6MS / Sale of (1) Cable E100 to MHV.</u>																																																											
Instrument Received:		<input type="checkbox"/> Within Toler. $\pm 10\%$		<input type="checkbox"/> $\pm 10-20\%$		<input type="checkbox"/> Out Toler. <input checked="" type="checkbox"/> Requires Repair																																																					
Mfg. Inst. <u>LOME / E100</u>		Model # <u>2900 / ESP-1</u>		Serial # <u>25004 / 506</u>																																																							
Detector <u>Edwin</u>		Model # <u>AC-3</u>		Serial # <u>7A & 7B</u>																																																							
<input checked="" type="checkbox"/> CALIBRATION		<input checked="" type="checkbox"/> REPAIR		<input checked="" type="checkbox"/> SALE		LOAN By: <u>J. Douglas</u>																																																					
scale	source	reading	scale	source	reading	scale	source	reading																																																			
<u>7A</u>	mR/hr	<u>3870</u>	<u>7B</u>	mR/hr	<u>3550</u>		mR/hr																																																				
	IS \approx	<u>2mV</u>		IS \approx	<u>2mV</u>																																																						
	HV \approx	<u>700</u>		HV \approx	<u>880</u>																																																						
<u>see: Platform Data</u>																																																											
Calibration Source:		<input type="checkbox"/> GAMMA		<input checked="" type="checkbox"/> ALPHA		<input type="checkbox"/> BETA		<input checked="" type="checkbox"/> ELECTRONIC		<input type="checkbox"/> OTHER																																																	
Description:		<input type="checkbox"/> ra-226		<input type="checkbox"/> cs-137		<input checked="" type="checkbox"/> pu-239		<input type="checkbox"/> sr-90		<input checked="" type="checkbox"/> mp-1(500)																																																	
RESPONSE GRAPH <u>N/A</u>						PROBE EFFICIENCIES <u>OTT</u>																																																					
<table border="1" style="width:100%; height: 40px;"> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </table>																																																						<input checked="" type="checkbox"/> Alpha \approx <u>38/35</u> % & Beta <u> </u> %					
Check Source Reading <u>N/A</u>																																																											
Battery Check Reading <u>N/A</u>																																																											
Detector Angle <u>Perpendicular</u>																																																											
Corrections <u>N/A \pm 10% Elect.</u>																																																											
TEMP/HUMIDITY <u>69.4 °F / 41 %</u>																																																											
Maintenance & Comments <u>Required (2) AC-3 with (1) AC3FK, Sale (2) Nicot/067 GMS # 72937/# 17736, Sale (1) Cable CA-12-60</u>																																																											
<u>Tested, Inspected & Calibrated</u>																																																											
CALIBRATION		<u>(2) Probes</u>		<u>20.00M</u>		<u>40.00</u>		QA Dept. <u>JW</u>		Warranty <u>90 DAYS</u>																																																	
LABOR		<u>(1) HR</u>		<u>40.00HR</u>		<u>40.00</u>		Shipping <u>UPS</u>		Date <u>9/13/98</u>																																																	
MATERIALS		<u>(2) AC3FK</u>		<u>62.50</u>		<u>125.00</u>		Pick-Up <u> </u>		Date <u> </u>																																																	
&		<u>(2) Nicot/067 GMS</u>		<u>270.00</u>		<u> </u>		This Certificate Expires In <u>3</u> Months																																																			
SALES		<u>(1) CA-12-60 Cable</u>		<u>62.50</u>		<u> </u>		Re-Calibrate On Or Before <u>12/13/98</u>																																																			
SHIPPING		<u>UPS</u>		<u>50 units</u>		<u>\$ 8.83</u>		Job ID # <u>52503</u>																																																			

NOTICE: Applied Health Physics, Inc. certifies that the above instrument has been calibrated by standards traceable to the National Institute of Standards and Technology under Nuclear Regulatory Commission License #37-09135-01 and PA State License #PA-0228. This calibration system conforms to the requirements of NRC regulation 10-CFR-34, 10-CFR-35, MIL-STD 45662A and ANSI-STD N323-1978.

WEC 9/13/93

AC-3 PROBES



□ S# 7A + S# 7B
700 Volts 800 Volts

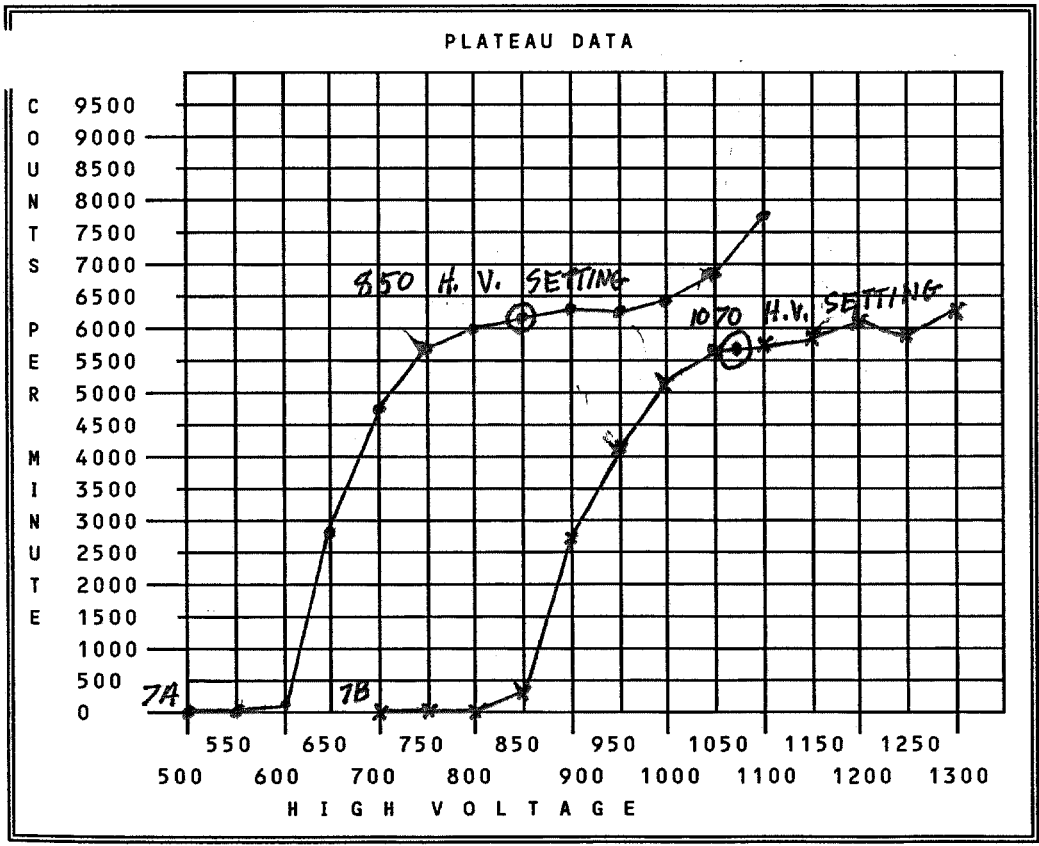
(a) 2mV IS

ESP-2 S/N: 1522	CODE #: 31432	DATE: 9-15-93
-----------------	---------------	---------------

ALPHA EFFICIENCY DATA (Net cpm / dpm = Eff)(Correction Factor = 1 / Eff)							
PROBE #	SOURCE #	ACTIVITY	TOTAL CTS	TIME	GROSS CPM	BKG. CPM	NET CPM
7-A	5308	31283 dpm	30700	5 min	6190	6.6	6133.4
	7346	230974 dpm	222000	5 min	44400	6.6	44393.4
7-B	5308	31283 dpm	28500	5 min	5700	2	5698
	7346	230974 dpm	207000	5 min	41400	2	41398

NET CPM	EFF	C.F.	AVG. EFF	AVG. C.F.
6133.4	19.6%	5.1	19.4%	5.2
44393.4	19.2%	5.2		
5698	18.2%	5.5	18.1%	5.6
41398	17.9%	5.6		

PLATEAU DATA		
H. V.	7-A COUNTS	7-B COUNTS
500	0	
550	0	
600	5	
650	2930	
700	4760	0
750	5680	0
800	6000	0
850	6090	360
900	6370	2700
950	6300	4070
1000	6490	5090
1050	6840	5570
1100	7620	5790
1150		5960
1200		6020
1250		5950
1300		6210



CALIBRATED BY: Todd Brautigam
SIGNATURE: *Todd Brautigam*

CODE NUMBER 32

REPORT #001



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 724/733-1900 Fax: 724/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Ludlum</u>
Customer Address: <u>PO Box 3700</u>	Model <u>2221</u> Serial Number <u>125429</u>
<u>Pittsburgh, PA 15230</u>	External Probe(s) <u>44-2</u> Serial # <u>112262</u>
Customer P.O.# _____	Calibration Method <u>137</u> <u>Pulser s/n 101500</u>
Work Order # <u>I-99-03-208</u>	<u>Cs s/n 10263 200mCi</u>

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2		200	200	200	
3		400	400	400	Battery: OK
4	X10	1K	1K	1K	Mechanical Zero: OK
5		2K	2K	2K	
		4K	4K	4K	Response: OK
8	X100	10K	10K	10K	Zero: OK
9		20K	20K	20K	
10		40K	40K	40K	Audio: OK
12	X1K	100K	100K	100K	Lamp: OK
13		200K	200K	200K	
14		400K	400K	400K	High Voltage = 735 Volts
15	LOG	400	400	400	Threshold = 100 = 10mV
16		4K	4K	4K	
17		40K	40K	40K	Window = OUT
18		400K	380K	380K	1 mR/hr <input checked="" type="checkbox"/> 219K CPM in ¹³⁷ Cs field
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u> (Signed)	I certify that the above information is correct: <u>[Signature]</u>
Calibration Date: <u>03-24-99</u>	<u>03-24-99</u>
Next Calibration Due: <u>06-24-99</u>	Administrative Coordinator <u>[Signature]</u> Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 724/733-1900 Fax: 724/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	<u>Westinghouse</u>	Instrument Manufacturer	<u>Ludlum</u>
Customer Address:	<u>PO Box 3700</u>	Model	<u>2221</u> Serial Number <u>125429</u>
	<u>Pittsburgh, PA 15230</u>	External Probe(s)	<u>44-2</u> Serial # <u>112262</u>
Customer P.O.#	_____	Calibration Method	<u>Pulser s/n 101500</u>
Work Order #	<u>I-99-03-208</u>		

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	DIGITAL RATE	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2		200	200	200	
3		400	400	400	
4		1K	1,000	1,000	
5		2K	2,000	2,000	
		4K	4,001	4,001	
		10K	10,017	10,017	
8		20K	20,064	20,064	
9		40K	40,118	40,118	
10		100K	100,118	100,118	
11		200K	200,616	200,616	
12		400K	401,463	401,463	
13					
14	SCALER				
15	0.1 MIN	40K	4,012	4,012	
16	0.2	40K	8,025	8,025	
17	0.5	40K	20,066	20,066	
18	1	40K	40,127	40,127	
19	2	40K	80,222	80,222	
20	5	40K	200,575	200,575	
21	10	40K	400,754	400,754	
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u>	(I certify that the above information is correct: <u>[Signature]</u>)
Calibration Date: <u>03-24-99</u> (Signed)	<u>03-24-99</u>
Next Calibration Due: <u>06-24-99</u>	Administrative Coordinator <u>[Signature]</u> Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 724/733-1900 Fax: 724/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	Westinghouse	Instrument Manufacturer	Ludlum
Customer Address:	PO Box 3700 Pittsburgh, PA 15230	Model	2221
		Serial Number	125429
		External Probe(s)	44-2
		Serial #	112262
Customer P.O.#	MB-14027-S	Calibration Method	137 Pulsers s/n 120935
Work Order #	I-98-11-208		Cs s/n 10263 200mCi

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	RATEMETER				All Calibrations Btn. + & - 10%
2	X1	100 CPM	100 CPM	100 CPM	
3		200	200	200	Battery: OK
4		400	400	400	
5					Mechanical Zero: OK
6	X10	1K	1K	1K	
7		2K	2K	2K	Reset: OK
8		4K	4K	4K	
9					Response: OK
10	X100	10K	10K	10K	
11		20K	20K	20K	Audio: OK
12		40K	40K	40K	
13					Window: OUT
14	X1K	100K	100K	100K	
15		200K	200K	200K	High Voltage = 739 Volts
16		400K	400K	400K	
17					Input Sensitivity = 10mV
18	LOG	400	400	400	
19		4K	4K	4K	Threshold = 100 = 10mV
20		40K	40K	40K	
21		400K	380K	380K	1 mR/hr = 221K CPM in ¹³⁷ Cs field
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>William Owen</u>	I certify that the above information is correct:
Calibration Date: <u>01-11-99</u> (Signed)	<u>[Signature]</u>
Next Calibration Due: <u>04-11-99</u>	Administrative Coordinator <u>[Signature]</u>
	Date <u>01-11-99</u>



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 724/733-1900 Fax: 724/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	Westinghouse	Instrument Manufacturer	Ludlum
Customer Address:	PO Box 3700 Pittsburgh, PA 15230	Model	2221
		Serial Number	125429
		External Probe(s)	44-2
		Serial #	112262
Customer P.O.#	MB-14027-S	Calibration Method	Pulser s/n 120935
Work Order #	I-98-11-208		

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 DIGITAL RATE	100 CPM	102 CPM	102 CPM	All Calibrations Btn. + & - 10%
2	200	202	202	
3	400	400	400	
4	1K	1,001	1,001	
5	2K	2,001	2,001	
	4K	4,012	4,012	
7	10K	9,988	9,988	
8	20K	20,006	20,006	
9	40K	40,049	40,049	
10	100K	99,993	99,993	
11	200K	200,274	200,274	
12	400K	400,518	400,518	
13				
14 SCALER				
15 0.1 MIN	40K	4,009	4,009	
16 0.2	40K	8,017	8,017	
17 0.5	40K	20,046	20,046	
18 1	40K	40,093	40,093	
19 2	40K	80,194	80,194	
20 5	40K	200,501	200,501	
21 10	40K	401,028	401,028	
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by:	<i>William Owens</i> (Signed)	I certify that the above information is correct:	
Calibration Date:	01-11-99	<i>William Owens</i> Administrative Coordinator	01-11-99
Next Calibration Due:	04-11-99		Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 724/733-1900 Fax: 724/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	<u>Westinghouse</u>	Instrument Manufacturer	<u>Ludlum</u>
Customer Address:	<u>PO Box 3700</u> <u>Pittsburgh, PA 15230</u>	Model	<u>2221</u> Serial Number <u>125429</u>
Customer P.O.#	<u>MB-14027-S</u>	External Probe(s)	<u>44-2</u> Serial # <u>112262</u>
Work Order #	<u>I-98-07-210</u>	Calibration Method	<u>137</u> <u>Pulser s/n 301</u> <u>Cs s/n 10263 200mCi</u>

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2		200	200	200	
3		400	400	400	Battery: OK
4					
5	X10	1K	1K	1K	Mechanical Zero: OK
6		2K	2K	2K	
7		4K	4K	4K	Response: OK
8					
9	X100	10K	10K	10K	Zero: OK
10		20K	20K	20K	
11		40K	40K	40K	Audio: OK
12					
13	X1K	100K	100K	100K	Lamp: OK
14		200K	200K	200K	
15		400K	400K	400K	Window: OUT
16					
17	SCALER				High Voltage = 730 Volts
18	0.1	40K	3,999 CPM	3,999 CPM	
19	0.2	40K	7,998	7,998	1 mR/hr \approx 222K CPM in ¹³⁷ Cs field
20	0.5	40K	19,996	19,996	
21	1	40K	39,991	39,991	
22	2	40K	79,982	79,982	
23	5	40K	199,955	199,955	
	10	40K	399,910	399,910	

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>James Christie</u> (signed)	I certify that the above information is correct:
Calibration Date: <u>08-04-98</u>	<u>08-04-98</u>
Next Calibration Due: <u>11-04-98</u>	Administrative Coordinator <u>[Signature]</u> Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 724/733-1900 Fax: 724/327-8189

CALIBRATION CERTIFICATE

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CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Ludlum</u>
Customer Address: <u>PO Box 3700</u>	Model <u>2221</u> Serial Number <u>125429</u>
<u>Pittsburgh, PA 15230</u>	External Probe(s) <u>44-2</u> Serial # <u>112262</u>
Customer P.O.# <u>MB-14027-S</u>	Calibration Method <u>Pulser s/n 301</u>
Work Order # <u>I-98-07-210</u>	

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 DIGITAL RATE	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2 X1	200	198	198	
3	400	398	398	
4				
5 X10	1K	996	996	
6	2K	2,000	2,000	
7	4K	3,998	3,998	
8				
9 X100	10K	9,995	9,995	
10	20K	19,995	19,995	
11	40K	39,989	39,989	
12				
13 X1K	100K	99,976	99,976	
14	200K	199,957	199,957	
15	400K	399,910	399,910	
16				
17 LOG	400	400	400	
18	4K	4K	4K	
19	40K	40K	40K	
20	400K	370K	370K	
21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u><i>James Christopher</i></u> (Signed)	I certify that the above information is correct:
Calibration Date: <u>08-04-98</u>	<u>08-04-98</u>
Next Calibration Due: <u>11-04-98</u>	<u>Administrative Coordinator</u> Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 724/733-1900 Fax: 724/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	<u>Westinghouse</u>	Instrument Manufacturer	<u>Ludlum</u>
Customer Address:	<u>PO Box 3700</u> <u>Pittsburgh, PA 15230</u>	Model	<u>2221</u> Serial Number <u>125429</u>
Customer P.O.#	<u>MB-14027-S</u>	External Probe(s)	<u>44-2</u> Serial # <u>112262</u>
Work Order #	<u>I-98-04-208</u>	Calibration Method	<u>137</u> Pulser s/n 101500 Cs s/n 10263 200mCi

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2		200	200	200	
3		400	400	400	Battery: OK
4	X10	1K	1K	1K	Mechanical Zero: OK
5		2K	2K	2K	
6		4K	4K	4K	Response: OK
7					
8	X100	10K	10K	10K	Zero: OK
9		20K	20K	20K	
10		40K	40K	40K	Audio: OK
11					
12	X1K	100K	100K	100K	Lamp: OK
13		200K	200K	200K	
14		400K	400K	400K	High Voltage = 735 Volts
15					
16	LOG	400	400	400	Threshold = 100 = 10mV
17		4K	4K	4K	
18		40K	40K	40K	Window: OUT
19		400K	400K	400K	
20					1 mR/hr \leq 222K CPM in ¹³⁷ Cs field
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u> (Signed)	I certify that the above information is correct: <u>[Signature]</u> Administrative Coordinator
Calibration Date: <u>04-23-98</u>	<u>04-23-98</u>
Next Calibration Due: <u>07-23-98</u>	Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 724/733-1900 Fax: 724/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Ludlum</u>	Model <u>2221</u>	Serial Number <u>125429</u>
Customer Address: <u>PO Box 3700</u>	External Probe(s) <u>44-2</u>	Serial # <u>112262</u>	
<u>Pittsburgh, PA 15230</u>	Calibration Method <u>Pulser s/n 101500</u>		
Customer P.O.# <u>MB-14027-S</u>			
Work Order # <u>I-98-04-208</u>			

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 DIGITAL RATE	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2	200	200	200	
3	400	400	400	
4	1K	1,000	1,000	
5	2K	2,000	2,000	
6	4K	4,000	4,000	
7	10K	10,010	10,010	
8	20K	20,025	20,025	
9	40K	40,075	40,075	
10	100K	100,150	100,150	
11	200K	200,220	200,220	
12	400K	400,850	400,850	
13				
14 SCALER				
15 0.1 MIN	40K	4,006	4,006	
16 0.2	40K	8,011	8,011	
17 0.5	40K	20,028	20,028	
18 1	40K	40,059	40,059	
19 2	40K	80,123	80,123	
20 5	40K	200,335	200,335	
21 10	40K	400,746	400,746	
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u>	I certify that the above information is correct:
Calibration Date: <u>04-23-98</u> (Signed)	<u>[Signature]</u> 04-23-98
Next Calibration Due: <u>07-23-98</u>	Administrative Coordinator Date



GTS Instrument Services
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CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

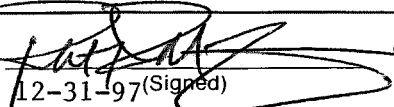
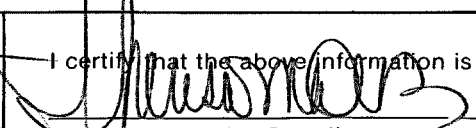
CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	<u>Westinghouse</u>	Instrument Manufacturer	<u>Ludlum</u>
Customer Address:	<u>PO Box 3700</u>	Model	<u>2221</u> Serial Number <u>125429</u>
	<u>Pittsburgh, PA 15230</u>	External Probe(s)	<u>44-2</u> Serial # <u>112262</u>
Customer P.O.#	<u>MB-14027-S</u>	Calibration Method	<u>Pulser s/n 101500</u>
Work Order #	<u>I-97-12-208</u>		

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	DIGITAL	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2	RATE	200	200	200	
3		400	400	400	
4		1K	1,000	1,000	
5		2K	2,000	2,000	
6		4K	4,000	4,000	
7		10K	10,011	10,011	
8		20K	20,032	20,032	
9		40K	40,041	40,041	
10		100K	100,178	100,178	
11		200K	200,285	200,285	
12		400K	400,338	400,338	
13					
14	SCALER				
15	0.1 MIN	40K	4,000	4,000	
16	0.2 MIN	40K	8,001	8,001	
17	0.5	40K	20,006	20,006	
18	1	40K	40,021	40,021	
19	2	40K	80,072	80,072	
20	5	40K	200,197	200,197	
21	10	40K	400,475	400,475	
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by:		I certify that the above information is correct:	
Calibration Date:	<u>12-31-97</u> (Signed)	Administrative Coordinator	<u>12-31-97</u>
Next Calibration Due:	<u>03-31-98</u>	Date	



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CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

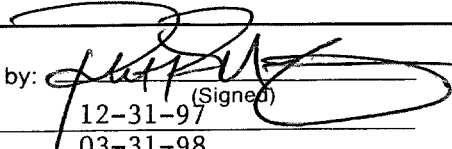
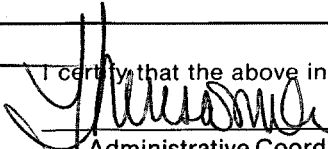
CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	<u>Westinghouse</u>	Instrument Manufacturer	<u>Ludlum</u>
Customer Address:	<u>PO Box 3700</u> <u>Pittsburgh, PA 15230</u>	Model	<u>2221</u> Serial Number <u>125429</u>
Customer P.O.#	<u>MB-14027-S</u>	External Probe(s)	<u>44-2</u> Serial # <u>112262</u>
Work Order #	<u>I-97-12-208</u>	Calibration Method	<u>137</u> Pulser s/n 101500 Cs s/n 10263 200mCi

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2		200	200	200	
3		400	400	400	Battery: OK
4	X10	1K	1K	1K	Mechanical Zero: OK
5		2K	2K	2K	
6		4K	4K	4K	Response: OK
7					
8	X100	10K	10K	10K	Zero: OK
9		20K	20K	20K	
10		40K	40K	40K	Audio: OK
11					
12					Lamp: OK
13	X1K	100K	100K	100K	
14		200K	200K	200K	High Voltage = 735 Volts
15		400K	400K	400K	
16					Threshold = 100 = 10mV
17	LOG	400	400	400	
18		4K	4K	4K	Window = OUT
19		40K	40K	40K	
20		400K	400K	400K	1 mR/hr = 221K CPM in ¹³⁷ Cs field
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by:	 (Signed)	I certify that the above information is correct:	
Calibration Date:	<u>12-31-97</u>	Administrative Coordinator	<u>12-31-97</u>
Next Calibration Due:	<u>03-31-98</u>	Date	



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CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

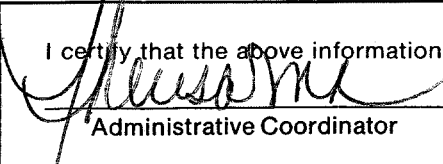
CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	<u>Westinghouse</u>	Instrument Manufacturer	<u>Ludlum</u>
Customer Address:	<u>P.O. Box 3700</u>	Model	<u>2221</u>
	<u>Pittsburgh, PA 15230</u>	Serial Number	<u>I25429</u>
		External Probe(s)	<u>44-2</u> Serial # <u>I12262</u>
Customer P.O.#	<u>MB-14027-S</u>	Calibration Method	<u>Pulser s/n I01500</u>
Work Order #	<u>I-97-07-209</u>		

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	DIGITAL	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2	RATE	200	201	201	
3		400	401	401	
4		1K	998	998	
5		2K	2,001	2,001	
6		4K	4,002	4,002	
7		10K	10,006	10,006	
8		20K	20,009	20,009	
9		40K	40,002	40,002	
10		100K	99,994	9,994	
11		200K	199,969	199,969	
12		400K	399,925	399,925	
13					
14	SCALER				
15	0.1 MIN	40K	3,999	3,999	
16	0.2	40K	7,998	7,998	
17	0.5	40K	19,996	19,996	
18	1	40K	39,991	39,991	
19	2	40K	79,983	79,983	
20	5	40K	199,956	199,956	
21	10	40K	399,912	399,912	
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>William Owen</u>	I certify that the above information is correct: 	
Calibration Date: <u>08-20-97</u> (Signed)		<u>08-20-97</u>
Next Calibration Due: <u>11-20-97</u>		Administrative Coordinator Date



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CALIBRATION CERTIFICATE

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CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	Westinghouse	Instrument Manufacturer	Ludlum
Customer Address:	P.O. Box 3700	Model	2221
	Pittsburgh, PA 15230	Serial Number	125429
		External Probe(s)	44-10
Customer P.O.#	MB-14027-S	Serial #	112262
Work Order #	I-97-07-209	Calibration Method	137 Pulsar s/n 101500
			Cs s/n 10263 200mCi

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 RATEMETER				All Calibrations Btn. + & - 10%
2 X1	100 CPM	100 CPM	100 CPM	Battery: OK
3	200	200	200	
4	400	400	400	Mechanical Zero: OK
5				
6 X10	1K	1K	1K	Reset: OK
7	2K	2K	2K	
8	4K	4K	4K	Response: OK
9				
10 X100	10K	10K	10K	Audio: OK
11	20K	20K	20K	
12	40K	40K	40K	Window: OUT
13				
14 X1K	100K	100K	100K	High Voltage = 734
15	200K	200K	200K	
16	400K	400K	400K	Input Sensitivity = 24mV
17				
18 LOG	400	400	400	Threshold = 100 = 24mV
19	4K	4K	4K	
20	40K	40K	40K	1 mR/hr = 212K CPM facing source
21	400K	380K	380K	in ¹³⁷ Cs field
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: William Owens
 Calibration Date: 08-20-97 (Signed)
 Next Calibration Due: 11-20-97

I certify that the above information is correct:
William Owens 08-20-97
 Administrative Coordinator Date



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CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Ludlum</u>
Customer Address: <u>P.O. Box 3700</u> <u>Pittsburgh, PA 15230</u>	Model <u>2221</u> Serial Number <u>125429</u>
Customer P.O.# <u>MB-14027-S</u>	External Probe(s) <u>44-2</u> Serial # <u>112262</u>
Work Order # <u>I-97-03-209</u>	Calibration Method <u>Pulser s/n 318</u> <u>Pulser s/n 101500</u> <u>¹³⁷Cs s/n 10263</u>

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2		200	200	200	
3		400	400	400	Mechanical Zero: OK
4					
5	X10	1K	1K	1K	Battery: OK
6		2K	2K	2K	
7		4K	4K	4K	Response: OK
8					
9	X100	10K	10K	10K	Zero: OK
10		20K	20K	20K	
11		40K	40K	40K	Audio: OK
12					
13	X1K	100K	100K	100K	Lamp: OK
14		200K	200K	200K	
15		400K	400K	400K	High Voltage = 734 Volts
16					
17	LOG	400	400	400	Thres = 100 \approx 10 mV
18		4K	4K	4K	
19		40K	40K	40K	Window: OUT
20		400K	380K	380K	1 mR/hr ¹³⁷ Cs \approx 220 KCPM
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: William Owens
 (Signed)
 Calibration Date: 03-31-97
 Next Calibration Due: 07-01-97

I certify that the above information is correct:
Tim Lawton 03-31-97
 Administrative Coordinator Date



GTS Instrument Services
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 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Ludlum</u>
Customer Address: <u>P.O. Box 3700</u> <u>Pittsburgh, PA 15230</u>	Model <u>2221</u> Serial Number <u>125429</u>
Customer P.O.# <u>MB-14027-S</u>	External Probe(s) <u>44-2</u> Serial # <u>112262</u>
Work Order # <u>I-97-03-209</u>	Calibration Method <u>Pulser s/n 318</u>

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 <u>Digital</u>	<u>100 CPM</u>	<u>100 CPM</u>	<u>100 CPM</u>	<u>All Calibrations Btn. + & - 10%</u>
2 <u>Rate</u>	<u>200</u>	<u>200</u>	<u>200</u>	
3	<u>400</u>	<u>398</u>	<u>398</u>	
4	<u>1K</u>	<u>1,001</u>	<u>1,001</u>	
5	<u>2K</u>	<u>2,001</u>	<u>2,001</u>	
6	<u>4K</u>	<u>4,012</u>	<u>4,012</u>	
7	<u>10K</u>	<u>10,007</u>	<u>10,007</u>	
8	<u>20K</u>	<u>20,005</u>	<u>20,005</u>	
9	<u>40K</u>	<u>39,987</u>	<u>39,987</u>	
10	<u>100K</u>	<u>99,982</u>	<u>99,982</u>	
11	<u>200K</u>	<u>199,968</u>	<u>199,968</u>	
12	<u>400K</u>	<u>399,918</u>	<u>399,918</u>	
13				
14 <u>Scaler</u>				
15 <u>0.1 min</u>	<u>40K CPM</u>	<u>3,999</u>	<u>3,999</u>	
16 <u>0.2</u>	<u>40K</u>	<u>7,998</u>	<u>7,998</u>	
17 <u>0.5</u>	<u>40K</u>	<u>19,996</u>	<u>19,996</u>	
18 <u>1</u>	<u>40K</u>	<u>39,991</u>	<u>39,991</u>	
19 <u>2</u>	<u>40K</u>	<u>79,982</u>	<u>79,982</u>	
20 <u>5</u>	<u>40K</u>	<u>199,956</u>	<u>199,956</u>	
21 <u>10</u>	<u>40K</u>	<u>399,912</u>	<u>399,912</u>	
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>William Owen</u> (Signed)	I certify that the above information is correct:
Calibration Date: <u>03-31-97</u>	<u>Tim Lowen</u> <u>03-31-97</u>
Next Calibration Due: <u>07-01-97</u>	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
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CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable


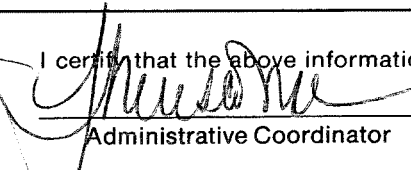
CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	Westinghouse	Instrument Manufacturer	Ludlum
Customer Address:	1000 Cheswick Avenue Cheswick, PA 15024	Model	2221
		Serial Number	125429
		External Probe(s)	⁴⁴⁻² Serial # 112262
Customer P.O.#		Calibration Method	¹³⁷ Pulser s/n 101500
Work Order #	I-96-11-208		Cs s/n 10263 200mCi

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2		200	200	200	
3		400	400	400	Battery: OK
4					
5	X10	1K	1K	1K	Mechanical Zero: OK
6		2K	2K	2K	
7		4K	4L	4K	Response: OK
8					
9	X100	10K	10K	10K	Zero: OK
10		20K	20K	20K	
11		40K	40K	40K	Audio: OK
12					
13	X1K	100K	100K	100K	Lamp: OK
14		200K	200K	200K	
15		400K	400K	400K	High Voltage = 725 Volts
16					
17	LOG	400	400	400	Threshold = 100 = 10mV
18		4K	4K	4K	
19		40K	40K	40K	Window = OUT
20		400K	380K	380K	1 mR/hr \approx 219K CPM in ¹³⁷ Cs field
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by:		I certify that the above information is correct:	
	(Signed)		
Calibration Date:	11-04-96	Administrative Coordinator	11-04-96
Next Calibration Due:	02-04-97		Date



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CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Ludlum</u>
Customer Address: <u>1000 Cheswick Avenue</u>	Model <u>2221</u> Serial Number <u>125429</u>
<u>Cheswick, PA 15024</u>	External Probe(s) <u>44-2</u> Serial # <u>112262</u>
Customer P.O.# _____	Calibration Method <u>Pulser s/n 101500</u>
Work Order # <u>I-96-11-208</u>	

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 DIGITAL RATE	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2	200	200	200	
3	400	400	400	
4	1K	1,000	1,000	
5	2K	2,000	2,000	
6	4K	4,000	4,000	
7	10K	10,011	10,011	
8	20K	20,026	20,026	
9	40K	40,055	40,055	
10	100K	100,075	100,075	
11	200K	200,089	200,089	
12	400K	400,111	400,111	
13				
14 SCALER				
15 0.1 MIN	40K	4,001	4,001	
16 0.2	40K	8,001	8,001	
17 0.5	40K	20,005	20,005	
18 1	40K	40,011	40,011	
19 2	40K	80,028	80,028	
20 5	40K	200,084	200,084	
21 10	40K	400,177	400,177	
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u> (Signed)	I certify that the above information is correct:
Calibration Date: <u>11-04-96</u>	<u>[Signature]</u> 11-04-96
Next Calibration Due: <u>02-04-97</u>	Administrative Coordinator Date



GTS Instrument Services
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CALIBRATION CERTIFICATE

CODE 32

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Ludlum</u>
Customer Address: <u>P.O. Box 3700</u>	Model <u>2221</u> Serial Number <u>125429</u>
<u>Pittsburgh, PA 15230</u>	External Probe(s) <u>44-2</u> Serial # <u>112262</u>
Customer P.O.# <u>MB-14027-S</u>	Calibration Method <u>¹³⁷Pulser s/n 101500</u>
Work Order # <u>I-96-08-209</u>	<u>Cs s/n 10263 200mCi</u>

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2	200	200	200	
3	400	400	400	Battery: OK
4				
5 X10	1K	1K	1K	Mechanical Zero: OK
	2K	2K	2K	
	4K	4K	4K	Response: OK
8				
9 X100	10K	10K	10K	Zero: OK
10	20K	20K	20K	
11	40K	40K	40K	Audio: OK
12				
13 X1K	100K	100K	100K	Lamp: OK
14	200K	200K	200K	
15	400K	400K	400K	High Voltage = 730 Volts
16				
17 LOG	400	400	400	Threshold = 100 \approx 10mV
18	4K	4K	4K	
19	40K	40K	40K	Window = OUT
20	400K	380K	380K	1 mR/hr = 214K CPM in ¹³⁷ Cs field
21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u> Calibration Date: <u>08-05-96</u> Next Calibration Due: <u>11-05-96</u>	I certify that the above information is correct: <u>[Signature]</u> 08-05-96 Administrative Coordinator Date
--	--



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

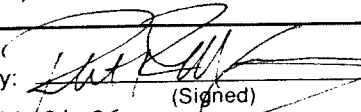
CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	Westinghouse	Instrument Manufacturer	Ludlum
Customer Address:	1000 Cheswick Avenue Cheswick, PA 15024	Model	2221
		Serial Number	125429
		External Probe(s)	44-2
		Serial #	112262
Customer P.O.#		Calibration Method	¹³⁷ Pulsar s/n 101500
Work Order #	I-96-11-208		Cs s/n 10263 200mCi

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2		200	200	200	
3		400	400	400	Battery: OK
4	X10	1K	1K	1K	Mechanical Zero: OK
5		2K	2K	2K	
6		4K	4L	4K	Response: OK
7					
8	X100	10K	10K	10K	Zero: OK
9		20K	20K	20K	
10		40K	40K	40K	Audio: OK
11					
12	X1K	100K	100K	100K	Lamp: OK
13		200K	200K	200K	
14		400K	400K	400K	High Voltage = 725 Volts
15					
16	LOG	400	400	400	Threshold = 100 = 10mV
17		4K	4K	4K	
18		40K	40K	40K	Window = OUT
19		400K	380K	380K	
20					1 mR/hr \approx 219K CPM in ¹³⁷ Cs field
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by:  (Signed)	I certify that the above information is correct:
Calibration Date: 11-04-96	11-04-96
Next Calibration Due: 02-04-97	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Ludlum</u>
Customer Address: <u>1000 Cheswick Avenue</u> <u>Cheswick, PA 15024</u>	Model <u>2221</u> Serial Number <u>125429</u>
Customer P.O.# _____	External Probe(s) <u>44-2</u> Serial # <u>112262</u>
Work Order # <u>I-96-11-208</u>	Calibration Method <u>Pulser s/n 101500</u>

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 DIGITAL RATE	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2	200	200	200	
3	400	400	400	
4	1K	1,000	1,000	
5	2K	2,000	2,000	
6	4K	4,000	4,000	
7	10K	10,011	10,011	
8	20K	20,026	20,026	
9	40K	40,055	40,055	
10	100K	100,075	100,075	
11	200K	200,089	200,089	
12	400K	400,111	400,111	
13				
14 SCALER				
15 0.1 MIN	40K	4,001	4,001	
16 0.2	40K	8,001	8,001	
17 0.5	40K	20,005	20,005	
18 1	40K	40,011	40,011	
19 2	40K	80,028	80,028	
20 5	40K	200,084	200,084	
21 10	40K	400,177	400,177	
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u> (Signed)	I certify that the above information is correct: <u>[Signature]</u>
Calibration Date: <u>11-04-96</u>	<u>11-04-96</u> Date
Next Calibration Due: <u>02-04-97</u>	Administrative Coordinator



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

CODE 32

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	<u>Westinghouse</u>	Instrument Manufacturer	<u>Ludlum</u>
Customer Address:	<u>P.O. Box 3700</u> <u>Pittsburgh, PA 15230</u>	Model	<u>2221</u> Serial Number <u>125429</u>
Customer P.O.#	<u>MB-14027-S</u>	External Probe(s)	<u>44-2</u> Serial # <u>112262</u>
Work Order #	<u>I-96-08-209</u>	Calibration Method	<u>137 Pulser s/n 101500</u> <u>Cs s/n 10263 200mCi</u>

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2	200	200	200	Battery: OK
3	400	400	400	
4				
5 X10	1K	1K	1K	Mechanical Zero: OK
	2K	2K	2K	
	4K	4K	4K	Response: OK
8				
9 X100	10K	10K	10K	Zero: OK
10	20K	20K	20K	
11	40K	40K	40K	Audio: OK
12				
13 X1K	100K	100K	100K	Lamp: OK
14	200K	200K	200K	
15	400K	400K	400K	High Voltage = 730 Volts
16				
17 LOG	400	400	400	Threshold = 100 μ 10mV
18	4K	4K	4K	
19	40K	40K	40K	Window = OUT
20	400K	380K	380K	1 mR/hr \approx 214K CPM in ¹³⁷ Cs field
21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u> (Signed)	I certify that the above information is correct: <u>[Signature]</u> Administrative Coordinator
Calibration Date: <u>08-05-96</u>	<u>08-05-96</u>
Next Calibration Due: <u>11-05-96</u>	Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	<u>Westinghouse</u>	Instrument Manufacturer	<u>Ludlum</u>
Customer Address:	<u>P.O. Box 3700</u>	Model	<u>2221</u> Serial Number <u>125429</u>
	<u>Pittsburgh, PA 15230</u>	External Probe(s)	<u>44-2</u> Serial # <u>112262</u>
Customer P.O.#	<u>MB-14027-S</u>	Calibration Method	<u>Pulser s/n 101500</u>
Work Order #	<u>I-96-08-209</u>		

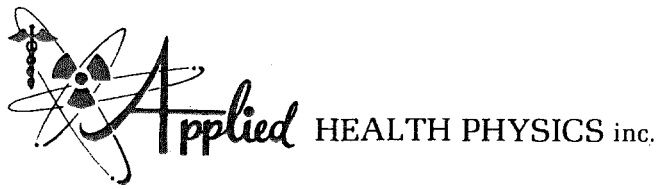
INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 DIGITAL RATE	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2	200	200	200	
3	400	400	400	
4	1K	1,000	1,000	
5	2K	2,000	2,000	
6	4K	4,000	4,000	
7	10K	10,002	10,002	
8	20K	20,007	20,007	
9	40K	40,006	40,006	
10	100K	100,012	100,012	
11	200K	200,040	200,040	
12	400K	400,041	400,041	
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u>	I certify that the above information is correct:
Calibration Date: <u>08-05-96</u> (Signed)	<u>[Signature]</u> 08-05-96
Next Calibration Due: <u>11-05-96</u>	Administrative Coordinator Date



2986 Industrial Blvd. — Bethel Park, Pa. 15102 — Phone 412 — 835-9555 — Fax No. 412 — 835-9559

CERTIFICATE OF CALIBRATION

SHIPPING ADDRESS	BILLING ADDRESS (If Different)
Washington (B&D), Ave "A" & West St, Pgh., PA 15112	SAME

CONTACT: Larry Smith PHONE: (—) 724-2674 DATE: 9/30/93 P.O.# MA893285

Receiving Comments: Calibration, Sale @ Probes / (1) 5-6' cable

Instrument Received: Within Toler. $\pm 10\%$ $\pm 10-20\%$ Out Toler. Requires Repair

Mfg. Inst. Iudlum Model # 2221 Serial # 91943
 Detector 11 Model # 44-3 Serial # 6555

CALIBRATION REPAIR SALE LOAN By: J. Douglas

scale	source	reading	scale	source	reading	scale	source	reading
	mR/hr C ₁₀₀	0.00		mR/hr C ₁₀₀	0.00		mR/hr C ₁₀₀	0.00
<u>X1</u>	100 400	99 410	<u>X100</u>	10000 40000	9927 39951	<u>Log</u>	200 3000 20100 200000	199 1993 19998 199930
<u>X10</u>	1000 4000	993 3994	<u>X1000</u>	100000 400000	99265 39968	<u>EFF</u> 44-3	1mR/A 219nd	21K 400

Calibration Source: GAMMA ALPHA BETA ELECTRONIC OTHER

Description: ra-226 cs-137 pu-239 sr-90 mp-1

RESPONSE GRAPH <u>N/A</u>	PROBE EFFICIENCIES <u>N/A</u>
	Alpha _____ % Beta _____ %
	Check Source Reading <u>N/A</u>
	Battery Check Reading <u>6.0 Volts</u>
	Detector Angle <u>Parallel</u>
	Corrections <u>N/A ± 10% Electronic</u>
TEMP/HUMIDITY <u>72.0°F / 53 %</u>	

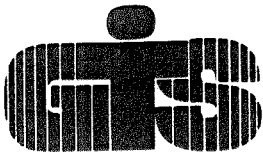
Maintenance & Comments: Replaced 4 Diodes, HV-OK @ 900volts, 7A ≈ 100, IS ≈ 4mV, W/V out, Audio OK, Timer-OK, OTHER Probe # 44-2 40' No shipped 1-2 weeks. Tested, Inspected & Calibrated

CALIBRATION	<u>Contract</u>	<u>Cal</u>	<u>40.00</u>	QA Dept.	<u>J.D.</u>	Warranty	<u>90 DAYS</u>
LABOR				Shipping	<u>UPS</u>	Date	<u>9/30/93</u>
MATERIALS	<u>(1) 5-6' Cable</u>	<u>Calib</u>	<u>35.00</u>	Pick-Up		Date	<u>—/—/—</u>
&	<u>(1) 44-3 AM</u>	<u>AM</u>	<u>242.00</u>	This Certificate Expires In <u>3 Months</u>			
SALES				Re-Calibrate On Or Before <u>12/30/93</u>			
SHIPPING	<u>UPS</u>	<u>(1) Unit</u>	<u>#12.14</u>	Job ID # <u>52545</u>			

NOTICE: Applied Health Physics, Inc. certifies that the above instrument has been calibrated by standards traceable to the National Institute of Standards and Technology under Nuclear Regulatory Commission License #37-09135-01 and PA State License #PA-0228. This calibration system conforms to the requirements of NRC regulation 10-CFR-34, 10-CFR-35, MIL-STD 45662A and ANSI-STD N323-1978.

CODE NUMBER 33

REPORT #001



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Ludlum</u>	Model <u>2221</u>	Serial Number <u>91943</u>
Customer Address: <u>P.O. Box 3700</u>	External Probe(s) <u>44-2</u>	Serial # <u>112262</u>	
<u>Pittsburgh, PA 15230</u>			
Customer P.O.# <u>MB-14027-S</u>	Calibration Method <u>137Cs s/n 10263 200mCi</u>		
Work Order # <u>I-96-05-208</u>			<u>Electrostatic s/n ES-8295</u>

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	DIGITAL RATE				All Calibrations Btn. + & - 10%
2	X1	100 CPM	100 CPM	100 CPM	
3		200	198	198	
4		400	399	399	
5					
6	X10	1K	1,000	1,000	
7		2K	2,000	2,000	
8		4K	4,000	4,000	
9					
10	X100	10K	9,999	9,999	
11		20K	19,998	19,998	
12		40K	39,998	39,998	
13					
14	X1K	100K	100,000	100,000	
15		200K	200,005	200,005	
16		400K	399,993	399,993	
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>James Van Dyke</u> (Signed)	I certify that the above information is correct: <u>Heena Marber</u> Administrative Coordinator
Calibration Date: <u>05-28-96</u>	<u>05-28-96</u> Date
Next Calibration Due: <u>08-28-96</u>	



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	<u>Westinghouse</u>	Instrument Manufacturer	<u>Ludlum</u>
Customer Address:	<u>P.O. Box 3700</u> <u>Pittsburgh, PA 15230</u>	Model	<u>2221</u> Serial Number <u>91943</u>
Customer P.O.#	<u>MB-14027-S</u>	External Probe(s)	<u>44-2</u> Serial # <u>112262</u>
Work Order #	<u>I-96-05-208</u>	Calibration Method	<u>Pulser s/n 298</u> <u>137 Electrostatic ES-8295</u> <u>Cs s/n 10263 200mCi</u>

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	RATEMETER				All Calibrations Btn. + & - 10%
2	X1	100 CPM	100 CPM	100 CPM	
3		200	200	200	Battery: OK
4		400	400	400	
5					Mechanical Zero: OK
6	X10	1K	1K	1K	
7		2K	2K	2K	Response: OK
8		4K	4K	4K	
9					Zero: OK
10	X100	10K	10K	10K	
11		20K	20K	20K	Window: OUT
12		40K	40K	40K	
13					Audio: OK
14	X1K	100K	100K	100K	
15		200K	200K	200K	Lamp: OK
16		400K	400K	400K	
17					High Voltage: 730 Volts
18	LOG	400	400	400	
19		4K	4K	4K	Threshold = 100 ≈ 10mV
20		40K	38K	38K	
21		400K	390K	390K	1 mR/hr ≈ 217K CPM in ¹³⁷ Cs field
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>James C. [Signature]</u> (Signed)	I certify that the above information is correct:
Calibration Date: <u>05-28-96</u>	<u>[Signature]</u> 05-28-96
Next Calibration Due: <u>08-28-96</u>	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
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CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Ludlum</u>	Model <u>2221</u>	Serial Number <u>91943</u>
Customer Address: <u>P.O. Box 3700</u> <u>Pittsburgh, PA 15230</u>	External Probe(s) <u>44-2</u>	Serial # <u>112262</u>	
Customer P.O.# <u>MB-14027-S</u>	Calibration Method <u>137-Pulser s/n 120935</u>	<u>Cs s/n 10263</u>	<u>200mCi</u>
Work Order # <u>I-96-01-210</u>			

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2		200	200	200	
3		400	400	400	Battery: OK
4	X10	1K	1K	1K	Mechanical Zero: OK
5		2K	2K	2K	
6		4K	3.95K	3.95K	Response: OK
7					
8	X10	10K	10K	10K	Zero: OK
9		20K	20K	20K	
10		40K	39.5K	39.5K	Window - OUT
11					
12	X100	100K	100K	100K	Audio: OK
13		200K	200K	200K	
14		400K	395K	395K	Lamp: OK
15					
16	LOG	400	400	400	High Voltage = 731 Volts
17		4K	4K	4K	
18		40K	40K	40K	Threshold = 100 μ 10mV
19		400K	400K	400K	1 mR/hr = 221K CPM in ¹³⁷ Cs field
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>William Owens</u> (Signed)	I certify that the above information is correct:
Calibration Date: <u>01-24-96</u>	<u>01-24-96</u>
Next Calibration Due: <u>04-24-96</u>	Administrative Coordinator _____ Date _____



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
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CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	<u>Westinghouse</u>	Instrument Manufacturer	<u>Ludlum</u>
Customer Address:	<u>P.O. Box 3700</u>	Model	<u>2221</u> Serial Number <u>91943</u>
	<u>Pittsburgh, PA 15230</u>	External Probe(s)	<u>44-2</u> Serial # <u>112262</u>
Customer P.O.#	<u>MB-14027-S</u>	Calibration Method	<u>137</u> Pulser s/n 101500
Work Order #	<u>I-95-09-210</u>		<u>Cs s/n 10263 200mCi</u>

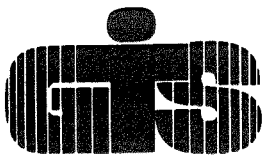
INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2		200	200	200	
3		400	400	400	Battery: OK
4	X10	1K	1K	1K	Mechanical Zero: OK
5		2K	2K	2K	
6		4K	4K	4K	Response: OK
7					
8	X100	10K	10K	10K	Zero: OK
9		20K	20K	20K	
10		40K	40K	40K	Window: OUT
11					
12	X1K	100K	100K	100K	Audio: OK
13		200K	200K	200K	
14		400K	400K	400K	Lamp: OK
15					
16	LOG	400	400	400	High Voltage = 739 Volts
17		4K	4K	4K	
18		40K	40K	40K	Threshold = 100 \approx 10mV
19		400K	400K	400K	1 mR/hr \approx 227K CPM in ¹³⁷ Cs field
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u> (Signed)	I certify that the above information is correct:
Calibration Date: <u>09-27-95</u>	<u>[Signature]</u> 09-27-95
Next Calibration Due: <u>12-27-95</u>	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Ludlum</u>
Customer Address: <u>P.O. Box 3700</u>	Model <u>2221</u> Serial Number <u>91943</u>
<u>Pittsburgh, PA 15230</u>	External Probe(s) <u>44-2</u> Serial # <u>112262</u>
Customer P.O.# <u>MB-14027-S</u>	Calibration Method <u>Pulser s/n 101500</u>
Work Order # <u>I-95-09-210</u>	

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	DIGITAL RATE	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2		200	200	200	
3		400	400	400	
4		1K	1,000	1,000	
5		2K	2,000	2,000	
6		4K	4,000	4,000	
7		10K	9,968	9,960	
8		20K	19,988	19,988	
9		40K	39,984	39,984	
10		100K	96,600	99,600	
11		200K	199,799	199,799	
12		400K	399,880	399,880	
13					
14	SCALER				
15	0.1 MIN	40K	4,001	4,001	
16					
17	0.2	40K	8,000	8,000	
18					
19	0.5	40K	20,006	20,006	
20					
21	1	40K	40,014	40,014	
22	2	40K	80,051	80,051	
23	5	40K	200,135	200,135	
	10	40K	400,286	400,286	

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u>	I certify that the above information is correct:
Calibration Date: <u>09-27-95</u> (Signed)	<u>[Signature]</u> <u>09-27-95</u>
Next Calibration Due: <u>12-27-95</u>	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Ludlum</u>	Model <u>2221</u>	Serial Number <u>91943</u>
Customer Address: <u>P.O. Box 3700</u>	External Probe(s) <u>44-2</u>	Serial # <u>112262</u>	
<u>Pittsburgh, PA 15230</u>			
Customer P.O.# <u>MB-14027-S</u>	Calibration Method <u>137Cs s/n 10263 200mCi</u>		
Work Order # <u>I-95-06-211</u>			

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2		200	200	200	
3		400	400	400	Battery: OK
4	X10	1K	1K	1K	Mechanical Zero: OK
5		2K	2K	2K	
6		4K	4K	4K	Response: OK
7					
8	X100	10K	10K	10K	Threshold = 100 \approx 10mV
9		20K	20K	20K	
10		40K	40K	40K	Window: OUT
11					
12	X1K	100K	100K	100K	Audio: OK
13		200K	200K	200K	
14		400K	400K	400K	Lamp: OK
15					
16	LOG	400	400	400	1 mR/hr \approx 226K CPM in ¹³⁷ Cs field
17		4K	4K	4K	
18		40K	40K	40K	High Voltage = 740 Volts
19		400K	400K	400K	
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u> (Signed)	I certify that the above information is correct:
Calibration Date: <u>06-01-95</u>	<u>[Signature]</u>
Next Calibration Due: <u>09-01-95</u>	Administrative Coordinator <u>06-01-95</u> Date



GTS Instrument Services
 2045 Route 286
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 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	<u>Westinghouse</u>	Instrument Manufacturer	<u>Ludlum</u>
Customer Address:	<u>P.O. Box 3700</u> <u>Pittsburgh, PA 15230</u>	Model	<u>2221</u> Serial Number <u>91943</u>
Customer P.O.#	<u>I-95-06-211</u>	External Probe(s)	<u>44-2</u> Serial # <u>112262</u>
Work Order #	<u>MB-14027-S</u>	Calibration Method	<u>Pulser s/n 101500</u>

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	DIGITAL RATE	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2		200	200	200	
3		400	400	400	
4		1K	1,004	1,004	
5		2K	2,006	2,006	
6		4K	4,008	4,008	
7		10K	10,031	10,031	
8		20K	20,053	20,053	
9		40K	40,121	40,121	
10		100K	100,025	100,025	
11		200K	200,561	200,561	
12		400K	401,246	401,246	
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u> (Signed)	I certify that the above information is correct:
Calibration Date: <u>06-01-95</u>	<u>[Signature]</u> 06-01-95
Next Calibration Due: <u>09-01-95</u>	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Ludlum</u>
Customer Address: <u>P.O. Box 3700</u>	Model <u>2221</u> Serial Number <u>91943</u>
<u>Pittsburgh, PA 15230</u>	External Probe(s) <u>44-2</u> Serial # <u>112262</u>
Customer P.O.# <u>MB-14027-S</u>	Calibration Method <u>Pulser s/n 101500</u>
Work Order # <u>I-95-06-211</u>	

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	SCALER				All Calibrations Btn. + & - 10%
2	0.1 MIN	40K CPM	4,010 CPM	4,010 CPM	
3					
4	0.2	40K	8,023	8k023	
5					
6	0.5	40K	20,065	20,065	
7					
8	1	40K	40,138	40,138	
9					
10	2	40K	80,232	80,232	
11					
12	5	40K	200,607	200,607	
13					
14	10	40K	401,289	401,289	
15					
16					
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u>	I certify that the above information is correct:
Calibration Date: <u>06-01-95</u> (Signed)	<u>[Signature]</u> 06-01-95
Next Calibration Due: <u>09-01-95</u>	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
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 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	<u>Westinghouse</u>	Instrument Manufacturer	<u>Ludlum</u>
Customer Address:	<u>P.O. Box 3700</u> <u>Pittsburgh, PA 15230</u>	Model	<u>2221</u> Serial Number <u>91943</u>
Customer P.O.#	<u>MB-14027-S</u>	External Probe(s)	<u>44-2</u> Serial # <u>112262</u>
Work Order #	<u>I-95-02-212</u>	Calibration Method	<u>137</u> Pulser s/n 298 Cs s/n 10263 200mCi Pulser s/n 101500

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 RATE METER				All Calibrations Btn. + & - 10%
2 X1	100 CPM	100 CPM	100 CPM	
3	200	200	200	Battery Check: OK
4	400	400	400	
5				Mechanical Zero: OK
6 X10	1K	1K	1K	
7	2K	2K	2K	Response: OK
8	4K	4K	4K	
9				Zero: OK
10 X100	10K	10K	10K	
11	20K	20K	20K	Audio: OK
12	40K	40K	40K	
13				Lamp: OK
14 X1K	100K	100K	100K	
15	200K	200K	200K	Window: OUT
16	400K	400K	400K	
17				High Voltage = 750 Volts
18 LOG	400	400	400	
19	4K	4K	4K	Threshold = 233 = 10mV
20	40K	40K	40K	
21	400K	380K	380K	1 mR/hr = 235K CPM in ¹³⁷ Cs field
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by:	<u>James Christopher</u> (Signed)	I certify that the above information is correct:	
Calibration Date:	<u>02-27-95</u>	<u>James M. DeBar</u>	<u>02-27-95</u>
Next Calibration Due:	<u>05-27-95</u>	Administrative Coordinator	Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Ludlum</u>
Customer Address: <u>P.O. Box 3700</u>	Model <u>2221</u> Serial Number <u>91943</u>
<u>Pittsburgh, PA 15230</u>	External Probe(s) <u>44-2</u> Serial # <u>112262</u>
Customer P.O.# <u>MB-14027-S</u>	Calibration Method <u>Pulser s/n 101500</u>
Work Order # <u>I-95-02-212</u>	

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	DIGITAL RATE				All Calibrations Btn. + & - 10%
2	X1	100 CPM	100 CPM	100 CPM	
3		200	200	200	
4		400	400	400	
5					
6	X10	1K	1,000	1,000	
7		2K	1,995	1,995	
8		4K	3,998	3,998	
9					
10	X100	10K	10,000	10,000	
11		20K	20,000	20,000	
12		40K	40,001	40,001	
13					
14	X1K	100K	100,002	100,002	
15		200K	200,009	200,009	
16		400K	400,018	400,018	
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>James Christopher</u> (Signed)	I certify that the above information is correct:
Calibration Date: <u>02-27-95</u>	<u>James M. DeBor</u> 02-27-95
Next Calibration Due: <u>05-27-95</u>	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
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CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	<u>Westinghouse</u>	Instrument Manufacturer	<u>Ludlum</u>
Customer Address:	<u>P.O. Box 3700</u> <u>Pittsburgh, PA 15230</u>	Model	<u>2221</u> Serial Number <u>91943</u>
Customer P.O.#	<u>MB-14027-S</u>	External Probe(s)	<u>44-2</u> Serial # <u>112262</u>
Work Order #	<u>I-95-02-212</u>	Calibration Method	<u>Pulser s/n 101500</u>

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	SCALER MIN				All Calibrations Btn. + & - 10%
2	0.1 MIN	40K CPM	4,001 CPM	4,001 CPM	
3					
4	0.2	40K	8,001	8,001	
5					
6	0.5	40K	20,002	20,002	
7					
8	1	40K	40,002	40,002	
9					
10	2	40K	80,004	80,004	
11					
12	5	40K	200,013	200,013	
13					
14	10	40K	400,023	400,023	
15					
16					
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>James Christopher</u> (Signed)	I certify that the above information is correct:
Calibration Date: <u>02-27-95</u>	<u>Theresa M. DeBar</u> <u>02-27-95</u>
Next Calibration Due: <u>05-27-95</u>	Administrative Coordinator Date



GTS Instrument Services
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CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	<u>Westinghouse</u>	Instrument Manufacturer	<u>Ludlum</u>
Customer Address:	<u>Avenue A & West Street</u> <u>Pittsburgh, PA 15221</u>	Model	<u>2221</u> Serial Number <u>91943</u>
Customer P.O.#	<u>MB-14027-S</u>	External Probe(s)	<u>44-2</u> Serial # <u>112262</u>
Work Order #	<u>I-94-11-218</u>	Calibration Method	<u>137</u> Pulser s/n 101500 Cs s/n 10263 200mCi

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2		200	200	200	
3		400	400	400	Battery Check: OK
4					
5	X10	1K	1K	1K	Mechanical Zero: OK
6		2K	2K	2K	
7		4K	4K	4K	Response: OK
8					
9	X100	10K	10K	10K	Zero: OK
10		20K	20K	20K	
11		40K	40K	40K	Audio: OK
12					
13	X1K	100K	100K	100K	Lamp: OK
14		200K	200K	200K	
15		400K	400K	400K	High Voltage = 760 Volts
16					
17	LOG	400	400	400	Threshold = 232 = 10 mV
18		4K	4K	4K	
19		40K	40K	40K	Window = OUT
20		400K	400K	400K	1 mR/hr = 195K CPM in ¹³⁷ Cs field
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by:	<u>[Signature]</u> (Signed)	I certify that the above information is correct:	<u>[Signature]</u>
Calibration Date:	<u>11-09-94</u>	Administrative Coordinator	<u>11-09-94</u>
Next Calibration Due:	<u>02-09-95</u>	Date	



GTS Instrument Services
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CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Ludlum</u>
Customer Address: <u>Avenue A & West Street</u> <u>Pittsburgh, PA 15221</u>	Model <u>2221</u> Serial Number <u>91943</u>
Customer P.O.# <u>MB-14027-S</u>	External Probe(s) <u>44-2</u> Serial # <u>112262</u>
Work Order # <u>I-94-11-218</u>	Calibration Method <u>Pulser s/n 101500</u>

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 SCALER				All Calibrations Btn. + & - 10%
2 0.1 MIN	40K CPM	3,995 CPM	3,995 CPM	
3				
4 0.2	40K	7,991	7,991	
5				
6 0.5	40K	19,976	19,976	
7				
8 1	40K	39,954	39,954	
9				
10 2	40K	79,914	79,914	
11				
12 5	40K	199,799	199,799	
13				
14 10	40K	399,669	399,669	
15				
16				
17				
18				
19				
20				
21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u> (Signed)	I certify that the above information is correct:
Calibration Date: <u>11-09-94</u>	<u>[Signature]</u> <u>11-09-94</u>
Next Calibration Due: <u>02-09-95</u>	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
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CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Ludlum</u>
Customer Address: <u>Avenue A & West Street</u>	Model <u>2221</u> Serial Number <u>91943</u>
<u>Pittsburgh, PA 15221</u>	External Probe(s) <u>44-2</u> Serial # <u>112262</u>
Customer P.O.# <u>MB-14027-S</u>	Calibration Method <u>Pulser s/n 101500</u>
Work Order # <u>I-94-11-218</u>	

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	DIGITAL	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2		200	200	200	
3		400	400	400	
4		1K	1,000	1,000	
5		2K	2,000	2,000	
6		4K	3,997	3,997	
7		10K	9,939	9,939	
8		20K	19,966	19,966	
9		40K	39,960	39,960	
10		100K	99,399	99,399	
11		200K	199,580	199,580	
12		400K	399,640	399,640	
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u> (Signed)	I certify that the above information is correct:
Calibration Date: <u>11-09-94</u>	<u>[Signature]</u> <u>11-09-94</u>
Next Calibration Due: <u>02-09-95</u>	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
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CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Ludlum</u>
Customer Address: <u>Avenue A & West Street</u> <u>Pittsburgh, PA 15230</u>	Model <u>2221</u> Serial Number <u>91943</u>
Customer P.O.# <u>MB-14027-S</u>	External Probe(s) <u>44-2</u> Serial # <u>112262</u>
Work Order # <u>I-94-08-213</u>	Calibration Method <u>137Pulser s/n 301</u> <u>Cs s/n 10263 200mCi</u> <u>Electrostatic s/n ES-8295</u>

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	RATEMETER				All Calibrations Btn. + & - 10%
2	XI	100 CPM	100 CPM	100 CPM	
3		200	200	200	Battery Check: OK
4		400	400	400	
5					Mechanical Zero: OK
6	X10	1K	1K	1K	
7		2K	2K	2K	response: OK
8		4K	4K	4K	
9					Reset: OK
10	X100	10K	10K	10K	
11		20K	20K	20K	Audio: OK
12		40K	40K	40K	
13					Lamp: OK
14	X1K	100K	100K	100K	
15		200K	200K	200K	High Voltage = 760 Volts
16		400K	400K	400K	
17					Threshold = 230
18	LOG	400	400	400	INput Sensitivity = 10 mV
19		4K	4K	4K	
20		40K	38K	38K	Window = OUT
21		400K	390K	390K	
22					1 mR/hr = 200K CPM in ¹³⁷ Cs field
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>James Christopher</u> (Signed)	I certify that the above information is correct: <u>[Signature]</u>
Calibration Date: <u>08-04-94</u>	<u>08-04-94</u>
Next Calibration Due: <u>11-04-94</u>	Administrative Coordinator <u>[Signature]</u> Date



GTS Instrument Services
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 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	<u>Westinghouse</u>	Instrument Manufacturer	<u>Ludlum</u>
Customer Address:	<u>Avenue A & West Street</u> <u>Pittsburgh, PA 15230</u>	Model	<u>2221</u> Serial Number <u>91943</u>
Customer P.O.#	<u>MB-14027-S</u>	External Probe(s)	<u>44-2</u> Serial # <u>112262</u>
Work Order #	<u>I-94-08-213</u>	Calibration Method	<u>Pulser s/n 301</u>

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	DIGITAL RATE				All Calibrations Btn. + & - 10%
2	X1	100 CPM	100 CPM	100 CPM	
3		200	200	200	
4		400	400	400	
5					
6	X10	1K	1,000	1,000	
7		2K	2,000	2,000	
8		4K	4,000	4,000	
9					
10	X100	10K	10,000	10,000	
11		20K	19,996	19,996	
12		40K	40,000	40,000	
13					
14	X1K	100K	100,000	100,000	
15		200K	200,014	200,014	
16		400K	400,027	400,027	
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by:	<u>James Christopher</u> (Signed)	I certify that the above information is correct:	
Calibration Date:	<u>08-04-94</u>		<u>08-04-94</u>
Next Calibration Due:	<u>11-04-94</u>	<u>[Signature]</u> Administrative Coordinator	Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Ludlum</u>	Model <u>2221</u>	Serial Number <u>91943</u>
Customer Address: <u>Avenue A & West Street</u>	External Probe(s) <u>44-2</u>	Serial # <u>112262</u>	
<u>Pittsburgh, PA 15230</u>	Calibration Method <u>Pulser s/n 301</u>		
Customer P.O.# <u>MB-14027-S</u>			
Work Order # <u>I-94-08-213</u>			

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	SCALER MIN				All Calibrations Btn. + & - 10%
2	0.1	40K CPM	4,001 CPM	4,001 CPM	
3					
4	0.2	40K	8,000	8,000	
5					
6	0.5	40K	20,001	20,001	
7					
8	1	40K	40,002	40,002	
9					
10	2	40K	80,005	80,005	
11					
12	5	40K	200,013	200,013	
13					
14	10	40K	400,025	400,025	
15					
16					
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>James Christopher</u> (Signed)	I certify that the above information is correct:
Calibration Date: <u>08-04-94</u>	<u>[Signature]</u> <u>08-04-94</u>
Next Calibration Due: <u>11-04-95</u>	Administrative Coordinator <u>[Signature]</u> Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	<u>Westinghouse</u>	Instrument Manufacturer	<u>Ludlum</u>
Customer Address:	<u>Avenue A & West Street</u> <u>Pittsburgh, PA 15221</u>	Model	<u>2221</u> Serial Number <u>91943</u>
Customer P.O.#	<u>MB-14027-S</u>	External Probe(s)	<u>44-2</u> Serial # <u>112262</u>
Work Order #	<u>I-94-04-216</u>	Calibration Method	<u>137</u> Pulser s/n 301 Cs s/n 10263 200mCi Electrostatic s/n ES-8295

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 RATEMETER				All Calibrations Btn. + & - 10%
2 X1	100 CPM	100 CPM	100 CPM	
3	200	200	200	Battery Check: OK
4	400	400	400	
5				Mechanical Zero: OK
6 X10	1K	1K	1K	
7	2K	2K	2K	Response: OK
8	4K	4K	4K	
9				Audio: OK
10 X100	10K	10K	10K	
11	20K	20K	20K	Lamp: OK
12	40K	40K	40K	
13				Window = OUT
14 X1K	100K	100K	100K	
15	200K	200K	200K	
16	400K	400K	400K	Threshold = 230
17				
18 LOG	400	410	410	Input Sensitivity = 10mV
19	4K	4K	4K	
20	40K	38K	38K	High Voltage = 820 Volts
21	400K	390K	390K	
22				1 mR/hr = 198K CPM in ¹³⁷ Cs field
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument)

Instrument Calibrated by: <u>James Christopho</u> (Signed)	I certify that the above information is correct: <u>Meresa M. B.</u>
Calibration Date: <u>04-18-94</u>	<u>04-18-94</u>
Next Calibration Due: <u>07-18-94</u>	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	<u>Westinghouse Electric</u>	Instrument Manufacturer	<u>Ludlum</u>
Customer Address:	<u>Avenue A & West Street</u> <u>Pittsburgh, PA 15221</u>	Model	<u>2221</u> Serial Number <u>91943</u>
Customer P.O.#	<u>MB-14027-S</u>	External Probe(s)	<u>44-2</u> Serial # <u>112262</u>
Work Order #	<u>I-94-04-216</u>	Calibration Method	<u>Pulser s/n 301</u>

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	SCALER MIN				All Calibrations Btn. + & - 10%
2	0.1 MIN	40K CPM	4,000 CPM	4,000 CPM	
3					
4	0.2	40K	8,001	8,001	
5					
6	0.5	40K	20,001	20,001	
7					
8	1	40K	40,002	40,002	
9					
10	2	40K	80,005	80,005	
11					
12	5	40K	200,012	200,012	
13					
14	10	40K	400,026	400,026	
15					
16					
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by:	<u>James Christoph</u> (Signed)	I certify that the above information is correct:	
Calibration Date:	<u>04-18-94</u>	<u>Meresa M. DeB</u>	<u>04-18-94</u>
Next Calibration Due:	<u>07-18-94</u>	Administrative Coordinator	Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Ludlum</u>
Customer Address: <u>Avenue A & West Street</u> <u>Pittsburgh, PA 15221</u>	Model <u>2221</u> Serial Number <u>91943</u>
Customer P.O. # <u>MB-14027-S</u>	External Probe(s) <u>44-2</u> Serial # <u>112262</u>
Work Order # <u>I-94-04-216</u>	Calibration Method <u>Pulser s/n 301</u>

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 DIGITAL RATE				All Calibrations Btn. + & - 10%
2 X1	100 CPM	100 CPM	100 CPM	
3	200	201	201	
4	400	398	398	
5				
6 X10	1K	998	998	
7	2K	2,000	2,000	
8	4K	3,998	3,998	
9				
10 X100	10K	9,999	9,999	
11	20K	19,998	19,998	
12	40K	40,003	40,003	
13				
14 X1K	100K	100,008	100,008	
15	200K	200,006	200,006	
16	400K	400,023	400,023	
17				
18				
19				
20				
21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>James Christophe</u> (Signed)	I certify that the above information is correct: <u>Meresa M. DeBa</u>
Calibration Date: <u>04-18-94</u>	<u>04-18-94</u>
Next Calibration Due: <u>07-18-94</u>	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

33

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	<u>Westinghouse</u>	Instrument Manufacturer	<u>Ludlum</u>
Customer Address:	<u>Avenue A & West Street</u> <u>Pittsburgh, PA 15221</u>	Model	<u>2221</u> Serial Number <u>91943</u>
Customer P.O.#	<u>MB-14016-H</u>	External Probe(s)	<u>44-2</u> Serial # <u>106177</u>
Work Order #	<u>I-94-01-224</u>	Calibration Method	<u>Pulser s/n 101500</u>

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	DISPLAY				All Calibrations Btn. + & - 10%
2		100 CPM	100 CPM	100 CPM	
3		200	200	200	
4		400	400	400	
5		1K	1,000	1,000	
6		2K	2,007	2,007	
7		4K	4,017	4,017	
8		10K	9,949	9,949	
9		20K	19,978	19,978	
10		40K	40,167	40,167	
11		100K	99,480	99,480	
12		200K	199,743	199,743	
13		400K	401,595	401,595	
14					
15	SCALER				
16	0.1 MIN	20K CPM	2,000	2,000	
17	0.2	20K	4,001	4,001	
18	0.5	20K	10,004	10,004	
19	1	20K	20,010	20,010	
20	2	20K	40,022	40,022	
21	5	20K	100,010	100,010	
22	10	20K	199,648	199,648	
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u> (Signed)	I certify that the above information is correct: <u>[Signature]</u>
Calibration Date: <u>01-31-94</u>	<u>01-31-94</u>
Next Calibration Due: <u>04-30-94</u>	Administrative Coordinator <u>[Signature]</u> Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Ludlum</u>	Model <u>2221</u>	Serial Number <u>91943</u>
Customer Address: <u>Avenue A & West Street</u> <u>Pittsburgh, PA 15221</u>	External Probe(s) <u>44-2</u>	Serial # <u>106177</u>	
Customer P.O.# <u>MB-14016-H</u>	Calibration Method <u>137Cs</u>	<u>Pulser s/n 101500</u>	<u>200mCi</u>
Work Order # <u>I-94-01-224</u>			

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2		200	205	205	
3		400	405	405	Mechanical Zero: OK
4					
5	X10	1K	1K	1K	Battery Check: OK
6		2K	2.05K	2.05K	
7		4K	4.05K	4.05K	Audio: OK
8					
9	X100	10K	10K	10K	Response: OK
10		20K	20.5K	20.5K	
11		40K	40.5K	40.5K	Zero: OK
12					
13	X1K	100K	100K	100K	Lamp: OK
14		200K	205K	205K	
15		400K	405K	405K	Threshold = 230
16					
17	LOG	400	440	440	Input Sensitivity = 10 mV
18		4K	4.4K	4.4K	
19		40K	44K	44K	Window: OUT
20		400K	440K	440K	
21					High Voltage = 900 Volts
22					
23					1 mR/hr = 206K CPM in ¹³⁷ Cs field

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u> (Signed)	I certify that the above information is correct:
Calibration Date: <u>01-31-94</u>	<u>[Signature]</u> <u>01-31-94</u>
Next Calibration Due: <u>04-30-94</u>	Administrative Coordinator Date



HEALTH PHYSICS inc.

2986 Industrial Blvd. — Bethel Park, Pa. 15102 — Phone 412 — 835-9555 — Fax No. 412 — 835-9559

CERTIFICATE OF CALIBRATION

SHIPPING ADDRESS	BILLING ADDRESS (If Different)
WEC Ave. "A" & West St. 19th, PA 15112	SAME

CONTACT: L. Smith PHONE: (—) 29-674 DATE: 10/14/93 P.O.# MA89328-5

Receiving Comments: Calibration

Instrument Received: Within Toler. ±10% ±10-20% Out Toler. Requires Repair

Mfg. Inst. Ludlum Model # 3521 Serial # 91743
 Detector " Model # 111-2 Serial # 106177

CALIBRATION REPAIR SALE LOAN By: J. Douglas

scale	source	reading	scale	source	reading	scale	source	reading
	mR/hr cpm	cpm		mR/hr cpm	cpm		mR/hr cpm	cpm
<u>X1</u>	100	92	<u>X100</u>	1000	9853	<u>Log</u>	500	199
	400	692		40000	39679		5000	1789
<u>X10</u>	1000	787	<u>X1000</u>	100000	90476		20000	17797
	4000	3967		400000	397146	200000	179062	

Calibration Source: GAMMA ALPHA BETA ELECTRONIC OTHER

Description: ra-226 cs-137 pu-239 sr-90 mp-1(500)

RESPONSE GRAPH <u>N/A</u>	PROBE EFFICIENCIES <u>N/A</u>
	Alpha _____ % Beta _____ %
	Check Source Reading <u>N/A</u>
	Battery Check Reading <u>6.1</u> volts
	Detector Angle <u>Parallel</u>
	Corrections <u>N/A ± 10% Elect.</u>
TEMP/HUMIDITY <u>72.0°F / 39 %</u>	

Maintenance & Comments: replaced (4) D cells, HV-OK @ 900, Th = 100, J5=4AV, Audio-OK, Timer-OK, Win-out.

Tested, Inspected & Calibrated

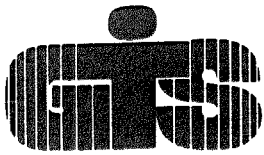
CALIBRATION <u>Contract</u>	—	110.00	QA Dept. <u>SA</u>	Warranty _____
LABOR <u>Arch CMC</u>	Mgt	20.00	Shipping <u>UPS</u>	Date <u>10/14/93</u>
MATERIALS <u>(4) D cells</u>	T. org	4.00	Pick-Up _____	Date <u>1/1</u>
&			This Certificate Expires In <u>3</u> Months	
SALES _____			Re-Calibrate On Or Before <u>1/14/94</u>	
SHIPPING <u>UPS</u>	Unit	1.00	Job ID # <u>52525</u>	

Rec 10-15-93
 UPS 186596

NOTICE: Applied Health Physics, Inc. certifies that the above instrument has been calibrated by standards traceable to the National Institute of Standards and Technology under Nuclear Regulatory Commission License #37-09135-01 and PA State License #PA-0228. This calibration system conforms to the requirements of NRC regulation 10-CFR-34, 10-CFR-35, MIL-STD 45662A and ANSI-STD N323-1978.

CODE NUMBER 34

REPORT #001



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 724/733-1900 Fax: 724/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer: <u>Radeco</u>	Model: <u>HD-29A</u>	Serial Number: <u>1944</u>
Customer Address: <u>PO Box 3700</u>	External Probe(s): _____	Serial #: _____	
<u>Pittsburgh, PA 15230</u>			
Customer P.O.#: <u>MB-14027-S</u>	Calibration Method: <u>Kurz Model 505-9A-02-B</u>	s/n: <u>MDI 1176K</u>	
Work Order #: <u>I-98-12-208</u>			

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	N/A	2 CFM	2 CFM	2 CFM	All Calibrations Btn. + & - 10%
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>William Owens</u> (Signed)	I certify that the above information is correct:
Calibration Date: <u>12-17-98</u>	<u>William Owens</u> 12-17-98
Next Calibration Due: <u>06-17-99</u>	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 724/733-1900 Fax: 724/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Radeco</u>
Customer Address: <u>PO Box 3700</u>	Model <u>HD-29A</u> Serial Number <u>1944</u>
<u>Pittsburgh, PA 15230</u>	External Probe(s) _____ Serial # _____
Customer P.O.# <u>MB-14027-S</u>	Calibration Method <u>Kurz Model 505-8 s/n ME-2764</u>
Work Order # <u>I-98-06-209</u>	

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 N/A	2 CFM	2.5 CFM	2 CFM	All Calibrations Btn. + & - 10%
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>William Owens</u> (Signed)	I certify that the above information is correct:
Calibration Date: <u>06-09-98</u>	<u>Musa Miller</u> 06-09-98
Next Calibration Due: <u>12-09-98</u>	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Radeco</u>
Customer Address: <u>PO Box 3700</u>	Model <u>HD-29A</u> Serial Number <u>1944</u>
<u>Pittsburgh, PA 15230</u>	External Probe(s) _____ Serial # _____
Customer P.O.# <u>MB-14027-S</u>	Calibration Method <u>Kurz Model 505-9A-02-B</u>
Work Order # <u>I-97-11-208</u>	<u>s/n MDI1176K</u>
	<u>Gra Lab Timer s/n 001</u>

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 N/A	2 CFM	2 CFM	2 CFM	All Calibrations Btn. + & - 10%
2				Calibrated with Gelman 47mm A/E
3				Glass Fiber Filter Paper
4				Timer: OK
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u>	I certify that the above information is correct:
Calibration Date: <u>12-04-97</u> (Signed)	<u>[Signature]</u> 12-04-97
Next Calibration Due: <u>06-04-98</u>	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Radeco</u>
Customer Address: <u>P.O. Box 3700</u> <u>Pittsburgh, PA 15230</u>	Model <u>HD-29A</u> Serial Number <u>1944</u>
Customer P.O.# <u>MB-14027-S</u>	External Probe(s) _____ Serial # _____
Work Order # <u>I-97-03-209</u>	Calibration Method <u>Kurz 505-8</u> <u>ME 2764</u> <u>GRA-LAB Timer 001</u>

INSTRUMENT CALIBRATION INFORMATION

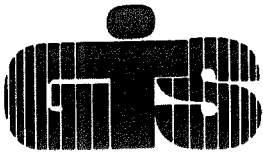
	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	<u>N/A</u>	<u>2 CFM</u>	<u>Regulator</u>	<u>2 CFM</u>	<u>All Calibrations Btn. + & - 10%</u>
2			<u>Stuck-Flow</u>		
3			<u>meter stuck</u>		<u>Calibrated with customer supplied</u>
4					<u>Filter paper.</u>
5					
6					<u>Timer: OK</u>
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: William Owen
 (Signed)
 Calibration Date: 04-01-97
 Next Calibration Due: 10-01-97

I certify that the above information is correct:
Tim Lowm 04-01-97
 Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Radeco</u>
Customer Address: <u>P.O. Box 3700</u>	Model <u>HD-29A</u> Serial Number <u>1944</u>
<u>Pittsburgh, PA 15230</u>	External Probe(s) _____ Serial # _____
Customer P.O.# <u>MB-14027-S</u>	Calibration Method <u>Kurz Model 505-8 s/n ME-2764</u>
Work Order # <u>I-95-12-210</u>	

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	N/A	2 CFM	1.8 CFM	2 CFM	All Calibrations Btn. + & - 10%
2					
3					calibrated with customer filter
4					paper
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>William Owens</u> (Signed)	I certify that the above information is correct:
Calibration Date: <u>12-19-95</u>	<u>William Owens</u> 12-19-95
Next Calibration Due: <u>06-19-96</u>	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Radeco</u>
Customer Address: <u>P.O. Box 3700</u>	Model <u>HD-29A</u> Serial Number <u>1944</u>
<u>Pittsburgh, PA 15230</u>	External Probe(s) _____ Serial # _____
Customer P.O.# <u>MB-14027-S</u>	Calibration Method <u>Kurz Model 505-8 s/n ME-2764</u>
Work Order # <u>I-95-04-220</u>	_____

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 N/A	2 CFM	1.9 CFM	2 CFM	All Calibrations Btn. + & - 10%
2				Calibrated with customer supplied filter paper
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
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21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>William Owens</u>	I certify that the above information is correct:
Calibration Date: <u>05-16-95</u> (Signed)	<u>[Signature]</u> 05-16-95
Next Calibration Due: <u>11-16-95</u>	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Radeco</u>
Customer Address: <u>1000 Cheswick Avenue</u> <u>Cheswick, PA 15024</u>	Model <u>HD-29A</u> Serial Number <u>1944</u>
Customer P.O.# <u>MB-14027-S</u>	External Probe(s) _____ Serial # _____
Work Order # <u>I-96-07-208</u>	Calibration Method <u>Kurz Model 505-8 s/n ME-2764</u>

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	N/A	2 CFM	2.4 CFM	2 CFM	All Calibrations Btn. + & - 10%
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>William Owen</u> 07-11-96 (Signed)	I certify that the above information is correct: <u>William Owen</u>
Calibration Date: _____	Administrative Coordinator
Next Calibration Due: <u>11-01-97</u>	Date <u>07-11-96</u>



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westhingham</u>	Instrument Manufacturer <u>Radeco</u>
Customer Address: <u>P.O. Box 3700</u>	Model <u>HD-29A</u> Serial Number <u>1944</u>
<u>Pittsburgh, PA 15230</u>	External Probe(s) _____ Serial # _____
Customer P.O.# <u>MB-14027-S</u>	Calibration Method <u>Kurz Model 505-8 s/n ME-276</u>
Work Order # <u>I-94-12-219</u>	

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 N/A	2 CFM	2 CFM	2 CFM	All Calibrations Btn. + & - 10%
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u> (Signed)	I certify that the above information is correct:
Calibration Date: <u>12-20-94</u>	<u>12-20-94</u>
Next Calibration Due: <u>06-20-95</u>	<u>[Signature]</u> Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Radeco</u>
Customer Address: <u>Avenue A & West Street</u> <u>Pittsburgh, PA 15221</u>	Model <u>HD-29A</u> Serial Number <u>1944</u>
Customer P.O.# <u>MB-14027-S</u>	External Probe(s) _____ Serial # _____
Work Order # <u>I-94-05-222</u>	Calibration Method <u>Kurz Model 505-8 s/n ME-2764</u>

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	N/A	2 CFM	2 CFM	2 CFM	All Calibrations Btn. + & - 10% calibrated with customer supplied filter paper
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>William Owens</u> (Signed)	I certify that the above information is correct:
Calibration Date: <u>05-11-94</u>	<u>James Webb</u> <u>05-11-94</u>
Next Calibration Due: <u>11-11-94</u>	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse Electric Corp.</u>	Instrument Manufacturer <u>Radeco</u>
Customer Address: <u>1 West Street</u>	Model <u>HD-29A</u> Serial Number <u>1944</u>
<u>East Pittsburgh, PA 15112</u>	External Probe(s) _____ Serial # _____
Customer P.O.# <u>MB14016H</u>	Calibration Method <u>Kurz Model 505-8 s/n ME-2764</u>
Work Order # <u>I-93-10-241</u>	

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	N/A	2 CFM	2.4 CFM	2 CFM	All Calibrations Btn. + & - 10%
2					2 CFM = 16.5" Hg
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u> (Signed)	I certify that the above information is correct: <u>[Signature]</u>
Calibration Date: <u>10-19-93</u>	<u>10-19-93</u>
Next Calibration Due: <u>04-19-94</u>	Administrative Coordinator Date

CODE NUMBER 35

REPORT #001

**CALIBRATION RECORDS
FOR INSTRUMENTS USED FOR
RADIOLOGICAL SURVEYS**

JUNE 27, 2000

VOLUME 7 OF 7

**WESTINGHOUSE ELECTRIC CORPORATION
BLAIRSVILLE, PA**

**CALIBRATION RECORDS
FOR INSTRUMENTS USED FOR
RADIOLOGICAL SURVEYS**

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Appendix B - Certificates of Calibration for Source Standards	
Appendix C - Calibration Records for Radiological Survey Instruments	

CALIBRATION RECORDS
FOR INSTRUMENTS USED FOR
RADIOLOGICAL SURVEYS

Purpose

The Westinghouse Blairsville Site utilized nuclear materials during the period of the mid to late 1950's to the early part of the 1960's. Work was performed both under licenses with the atomic Energy Commission and for the Bettis Atomic Power Laboratory. Although all work ceased during the 1960's, subsequent radiological surveys and investigations, starting in 1993, established that some residual radioactivity, primarily in underground piping and subsurface soil contamination, existed on the site. During the period of 1993 through the present, additional remediation work and radiological surveys have been conducted to establish that the site can be released for unrestricted use. This series of reports documents the results of the final status radiological surveys subsequent to the various remediation efforts.

Scope

This report compiles information on the calibration of the radiological survey instruments, which were used to measure the radiation levels presented in the other reports issued for this project. In each report, which documents a final radiological survey, the data sheets that record the measured radiation levels also provide specific information with respect to the specific instrument used to make the measurement. This report provides the necessary information to establish the entire calibration history of each specific instrument. These instruments have been used for the Westinghouse sites at Blairsville, Cheswick, and Forest Hills (now Viacom, Inc.). Therefore these calibration records are applicable to all these sites.

Discussion

All instruments used for radiological surveys on this project were calibrated on a frequency depending on the specific instrument. The calibration history for every instrument used on the project is summarized in appendix A, which cover the years 1993 through 1999. These summaries also provide a reference to a "Code Number." Included with this report in Appendix B are sheets labeled "Code Number 1" through "Code Number 70." Each of these "codes" incorporates the calibration records as appropriate for the specific instrument.

The certification sheets for each of the source standards used by the project to calibrate the instruments for conversion of CPM to DPM are included in Appendix C. Other calibrations were performed at other licensed operations as noted by the calibration records and no information on Source Certification is provided here.

**CALIBRATION RECORDS
FOR INSTRUMENTS USED FOR
RADIOLOGICAL SURVEYS**

List of Volume Contents

1. Appendix A: Instrument Calibration Summary Sheets
 Appendix B: Certificates of Calibration for Source Standards
2. Appendix C: Instrument Codes 1 to 3
3. Appendix C: Instrument Codes 4 to 8
4. Appendix C: Instrument Codes 9 to 14
5. Appendix C: Instrument Codes 15 to 25
6. Appendix C: Instrument Codes 26 to 36
7. Appendix C: Instrument Codes 37 to 70

CODE NUMBER 36

REPORT #001



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 724/733-1900 Fax: 724/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	<u>Westinghouse</u>	Instrument Manufacturer	<u>Radeco</u>
Customer Address:	<u>PO Box 3700</u> <u>Pittsburgh, PA 15230</u>	Model	<u>H-809 V1</u> Serial Number <u>6994</u>
Customer P.O.#	<u>MB-14027-S</u>	External Probe(s)	Serial # _____
Work Order #	<u>I-98-12-208</u>	Calibration Method	<u>Kurz Model 505-9A-02-B</u> <u>s/n MDI 1176K</u>

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	<u>VARIABLE</u>	<u>1 CFM</u>	<u>1 CFM</u>	<u>1 CFM</u>	<u>All Calibrations Btn. + & - 10%</u>
2		<u>2</u>	<u>2</u>	<u>2</u>	
3		<u>3</u>	<u>3</u>	<u>3</u>	
4		<u>4</u>	<u>4</u>	<u>4</u>	
5		<u>4.9</u>	<u>4.9</u>	<u>4.9</u>	
6					
7					
8					
9	<u>HIGH</u>				
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by:	<u>William Owens</u> (Signed)	I certify that the above information is correct:	
Calibration Date:	<u>12-17-98</u>	<u>William Owens</u>	<u>12-17-98</u>
Next Calibration Due:	<u>06-17-99</u>	Administrative Coordinator	Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Radeco</u>
Customer Address: <u>PO Box 3700</u>	Model <u>H-809 V1</u> Serial Number <u>6994</u>
<u>Pittsburgh, PA 15230</u>	External Probe(s) _____ Serial # _____
Customer P.O.# <u>MB-14027-S</u>	Calibration Method <u>Kurz Model 505-9A-02-8</u>
Work Order # <u>I-97-11-208</u>	<u>s/n MDI1176K</u>

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 VARIABLE	1 CFM	1 CFM	1 CFM	All Calibrations Btn. + & - 10%
2				
3	2	2	2	
4				
5	3	3.2	3.2	
6				
7 HIGH	5.1	5.1	5.1	
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument)

Instrument Calibrated by: <u>Jenel Christap</u> (Signed)	I certify that the above information is correct:
Calibration Date: <u>12-04-97</u>	<u>Heuson</u> 12-04-97
Next Calibration Due: <u>06-04-98</u>	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Radeco</u>
Customer Address: <u>P.O. Box 3700</u> <u>Pittsburgh, PA 15230</u>	Model <u>H809V1</u> Serial Number <u>6994</u>
Customer P.O.# <u>MB-14027-S</u>	External Probe(s) _____ Serial # _____
Work Order # <u>I-97-03-209</u>	Calibration Method <u>Kurz 505-9A-02-B</u> <u>MDI 1176K</u>

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 Variable	1 CFM	1 CFM	1 CFM	All Calibrations Btn. + & - 10%
2				
3	2	2	2	
4				
5	3	3	3	
6				
7				
8				
9 High	5.1	5.1	5.1	
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>William Owen</u> (Signed)	I certify that the above information is correct:
Calibration Date: <u>04-01-97</u>	<u>Tim Lewin</u> <u>04-01-97</u>
Next Calibration Due: <u>10-01-97</u>	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	<u>Westinghouse</u>	Instrument Manufacturer	<u>Radeco</u>
Customer Address:	<u>P.O. Box 3700</u> <u>Pittsburgh, PA 15230</u>	Model	<u>H-809 V1</u> Serial Number <u>6994</u>
Customer P.O.#	<u>MB-14027-S</u>	External Probe(s)	Serial # _____
Work Order #	<u>I-96-07-209</u>	Calibration Method	<u>Kurz Model 505-8 s/n ME-2764</u>

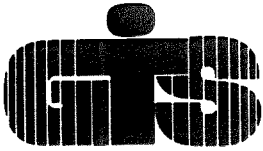
INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	VARIABLE	1 CFM	Replace Eye Bolt	1 CFM	All Calibrations Btn. + & - 10%
2		2	↓	2	Calibrated with 47mm A/E Filter paper, no charcoal or other filter media used
3		3		3	
4		3		3	
5		3		3	
6		3		3	
7	HIGH	4.7		4.7	
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>William Owens</u> (Signed)	I certify that the above information is correct:
Calibration Date: <u>07-23-96</u>	<u>William Owens</u> <u>07-23-96</u>
Next Calibration Due: <u>01-23-97</u>	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	<u>Westinghouse</u>	Instrument Manufacturer	<u>Radeco</u>
Customer Address:	<u>P.O. Box 3700</u> <u>Pittsburgh, PA 15221</u>	Model	<u>H-809 V1</u> Serial Number <u>6994</u>
Customer P.O.#	<u>MB-14027-S</u>	External Probe(s)	Serial # _____
Work Order #	<u>I-95-11-210</u>	Calibration Method	<u>Kurz Model 505-8 s/n ME-2764</u>

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	<u>N/A</u>	<u>1 CFM</u>	<u>1 CFM</u>	<u>1 CFM</u>	<u>All Calibrations Btn. + & - 10%</u>
2					
3		<u>2</u>	<u>1.9</u>	<u>2</u>	<u>Calibrated with customer supplied</u>
4					<u>filter paper</u>
5		<u>3</u>	<u>2.9</u>	<u>3</u>	
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u> (Signed)	I certify that the above information is correct:
Calibration Date: <u>12-05-95</u>	<u>12-05-95</u>
Next Calibration Due: <u>06-05-96</u>	Administrative Coordinator <u>[Signature]</u> Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Radeco</u>
Customer Address: <u>P.O. Box 3700</u>	Model <u>H-809 V1</u> Serial Number <u>6994</u>
<u>Pittsburgh, PA 15230</u>	External Probe(s) _____ Serial # _____
Customer P.O.# <u>MB-14027-S</u>	Calibration Method <u>Kurz Model 505-8 s/n ME-2764</u>
Work Order # <u>I-95-05-220</u>	

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 <u>N/A</u>	<u>1 CFM</u>	<u>1 CFM</u>	<u>1 CFM</u>	<u>All Calibrations Btn. + & - 10%</u>
2 _____	<u>2</u>	<u>2</u>	<u>2</u>	<u>Calibrated with customer supplied</u>
3 _____	<u>3</u>	<u>3</u>	<u>3</u>	<u>filter paper</u>
4 _____				
5 _____				
6 _____				
7 _____				
8 _____				
9 _____				
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14 _____				
15 _____				
16 _____				
17 _____				
18 _____				
19 _____				
20 _____				
21 _____				
22 _____				
23 _____				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>William Owens</u> (Signed)	I certify that the above information is correct:
Calibration Date: <u>05-16-95</u>	<u>William Owens</u> <u>05-16-95</u>
Next Calibration Due: <u>11-16-95</u>	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Radeco</u>
Customer Address: <u>Avenue A & West Street</u> <u>Pittsbrgh, PA 15221</u>	Model <u>H-809 VI</u> Serial Number <u>6994</u>
Customer P.O.# <u>MP-14027-S</u>	External Probe(s) _____ Serial # _____
Work Order # <u>I-94-07-223</u>	Calibration Method <u>Kurz Model 505-8 s/n ME-2764</u>

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 N/A	1 CFM	1 CFM	1 CFM	All Calibrations Btn. + & - 10%
2	2	2	2	
3	3	3	3	
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
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STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>William Owens</u> (Signed)	I certify that the above information is correct:
Calibration Date: <u>07-25-94</u>	<u>William Owens</u> 07-25-94
Next Calibration Due: <u>01-25-95</u>	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse Electric Corp.</u>	Instrument Manufacturer <u>Radeco</u>
Customer Address: <u>Forest Hill Site</u>	Model <u>H-809 VI</u> Serial Number <u>6994</u>
<u>Avenue A & West Street</u>	External Probe(s) _____ Serial # _____
<u>Pittsburgh, PA 15221</u>	Calibration Method <u>Kurz Model 505-8 s/n ME-276</u>
Customer P.O.# <u>MB-14016-H</u>	
Work Order # <u>I-94-01-219</u>	

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 N/A	1 CFM	INITIAL	1 CFM	All Calibrations Btn. + & - 10%
2	2	CALIBRATION	2	
3	3	↓	3	
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
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23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>William Owens</u> (Signed)	I certify that the above information is correct: <u>Maura Moll</u>
Calibration Date: <u>01-13-94</u>	<u>01-13-94</u>
Next Calibration Due: <u>07-13-94</u>	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse Electric</u>	Instrument Manufacturer <u>Radeco</u>
Customer Address: <u>Forest Hills Site</u>	Model <u>H-809 V1</u> Serial Number <u>6992</u>
<u>Pittsburgh, PA 15221</u>	External Probe(s) _____ Serial # _____
Customer P.O.# <u>BM-14016-H</u>	Calibration Method <u>Kurz Model 505-8 s/n ME-2764</u>
Work Order # <u>I-94-01-224</u>	_____

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 N/A	1 CFM	< 1 CFM	1 CFM	All Calibrations Btn. + & - 10%
2	2	1.5	2	
3	3	2.5	3	
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
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STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: William Owens
 Calibration Date: 01-24-94 (Signed)
 Next Calibration Due: 07-24-94

I certify that the above information is correct:
Theresa M. DeBa 01-24-94
 Administrative Coordinator Date

CODE NUMBER 37

REPORT #001



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse Electric Corp.</u>	Instrument Manufacturer <u>Radeco</u>
Customer Address: <u>Avenue A & West Street</u>	Model <u>H-809 V1</u> Serial Number <u>6996</u>
<u>Pittsburgh, PA 15221</u>	External Probe(s) _____ Serial # _____
Customer P.O.# <u>MB-14016-H</u>	Calibration Method <u>Kurz Model 505-8 s/n ME-2764</u>
Work Order # <u>I-94-01-224</u>	

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 <u>N/A</u>	<u>1 CFM</u>	<u>< 1 CFM</u>	<u>1 CFM</u>	<u>All Calibrations Btn. + & - 10%</u>
2	<u>2</u>	<u>< 1</u>	<u>2</u>	
3	<u>3</u>	<u>1.5</u>	<u>3</u>	
4				
5				
6				
7				
8				
9				
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23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>William Owens</u>	I certify that the above information is correct:
Calibration Date: <u>01-24-94</u> (Signed)	<u>Heena M. DeB...</u> 01-24-94
Next Calibration Due: <u>07-24-94</u>	Administrative Coordinator Date

CODE NUMBER 38

REPORT #001



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 724/733-1900 Fax: 724/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	<u>Westinghouse</u>	Instrument Manufacturer	<u>Radeco</u>
Customer Address:	<u>PO Box 3700</u> <u>Pittsburgh, PA 15230</u>	Model	<u>H-809 V1</u> Serial Number <u>6997</u>
Customer P.O.#	<u>MB-14027-S</u>	External Probe(s)	Serial # _____
Work Order #	<u>I-98-12-208</u>	Calibration Method	<u>Kurz Model 505-9A-02-B</u> <u>s/n MDI1176K</u>

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	VARIABLE	1 CFM	1 CFM	1 CFM	All Calibrations Btn. + & - 10%
2					
3		2	2	2	
4					
5		3	3	3	
6					
7		4	4	4	
8					
9	HIGH	4.7	4.7	4.7	
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by:	<u>William Owens</u> (Signed)	I certify that the above information is correct:	<u>[Signature]</u>
Calibration Date:	<u>12-17-98</u>	Administrative Coordinator	<u>12-17-98</u>
Next Calibration Due:	<u>06-17-99</u>	Date	



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 724/733-1900 Fax: 724/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Radeco</u>
Customer Address: <u>PO Box 3700</u>	Model <u>H-809 V1</u> Serial Number <u>6997</u>
<u>Pittsburgh, PA 15230</u>	External Probe(s) _____ Serial # _____
Customer P.O.# <u>MB-14027-S</u>	Calibration Method <u>Kurz Model 505-9A-02-B</u>
Work Order # <u>I-98-02-208</u>	<u>s/n MDI1176K</u>

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 VARIABLE	1 CFM	1 CFM	1 CFM	All Calibrations Btn. + & - 10%
2	2	2	2	
3	3	3	3	
4	3			
5	5.4	5.4	5.4	
6 HIGH				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>William Owen</u> (Signed)	I certify that the above information is correct:
Calibration Date: <u>02-12-98</u>	<u>[Signature]</u> <u>02-12-98</u> Administrative Coordinator Date
Next Calibration Due: <u>08-12-98</u>	



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	<u>Westinghouse</u>	Instrument Manufacturer	<u>Radeco</u>
Customer Address:	<u>P.O. Box 3700</u> <u>Pittsburgh, PA 15230</u>	Model	<u>H-809 V1</u> Serial Number <u>6997</u>
Customer P.O.#	<u>MB-14027-S</u>	External Probe(s)	Serial # _____
Work Order #	<u>I-96-07-209</u>	Calibration Method	<u>Kurz Model 505-8 s/n ME-276</u>

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	VARIABLE	1 CFM	1 CFM	1 CFM	All Calibrations Btn. + & - 10%
2		2	2	2	Calibrated with 47mm A/E Filter paper, no other charcoal or other filter media used
3		3	3	3	
4					
5					
6					
7	HIGH	4.3	4.3	4.3	
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: William Owens
 Calibration Date: 07-23-96 (Signed)
 Next Calibration Due: 01-23-97

I certify that the above information is correct:
[Signature] 07-23-96
 Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Radeco</u>
Customer Address: <u>P.O. Box 3700</u> <u>Pittsburgh, PA 15221</u>	Model <u>H-809 V1</u> Serial Number <u>6997</u>
Customer P.O.# <u>MB-14027-S</u>	External Probe(s) _____ Serial # _____
Work Order # <u>I-95-11-210</u>	Calibration Method <u>Kurz Model 505-8 s/n ME-2764</u>

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	N/A	1 CFM	1 CFM	1 CFM	All Calibrations Btn. + & - 10%
2		2	2	2	
3		3	3	3	
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: [Signature]
 Calibration Date: 12-05-95
 Next Calibration Due: 06-05-96

I certify that the above information is correct:
[Signature]
 Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Radeco</u>
Customer Address: <u>P.O. Box 3700</u>	Model <u>H-809 VI</u> Serial Number <u>6997</u>
<u>Pittsburgh, PA 15230</u>	External Probe(s) _____ Serial # _____
Customer P.O.# <u>MB-14027-S</u>	Calibration Method <u>Kurz Model 505-8 s/n ME-2764</u>
Work Order # <u>I-95-05-220</u>	_____

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 <u>N/A</u>	<u>1 CFM</u>	<u>< 1 CFM</u>	<u>1 CFM</u>	<u>All Calibrations Btn. + & - 10%</u>
2 _____	<u>2</u>	<u>1.8</u>	<u>2</u>	<u>Calibrated with customer supplied</u>
3 _____	<u>3</u>	<u>2.8</u>	<u>3</u>	<u>supplied filter paper</u>
4 _____	_____	_____	_____	_____
5 _____	_____	_____	_____	_____
6 _____	_____	_____	_____	_____
7 _____	_____	_____	_____	_____
8 _____	_____	_____	_____	_____
9 _____	_____	_____	_____	_____
10 _____	_____	_____	_____	_____
11 _____	_____	_____	_____	_____
12 _____	_____	_____	_____	_____
13 _____	_____	_____	_____	_____
14 _____	_____	_____	_____	_____
15 _____	_____	_____	_____	_____
16 _____	_____	_____	_____	_____
17 _____	_____	_____	_____	_____
18 _____	_____	_____	_____	_____
19 _____	_____	_____	_____	_____
20 _____	_____	_____	_____	_____
21 _____	_____	_____	_____	_____
22 _____	_____	_____	_____	_____
23 _____	_____	_____	_____	_____

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>William Owens</u> (Signed)	I certify that the above information is correct:
Calibration Date: <u>05-16-95</u>	<u>Steve McEles</u> <u>05-16-95</u>
Next Calibration Due: <u>11-16-95</u>	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Radeco</u>
Customer Address: <u>Avenue A & West Street</u>	Model <u>H-809 V1</u> Serial Number <u>6997</u>
<u>Pittsburgh, PA 15221</u>	External Probe(s) _____ Serial # _____
Customer P.O.# <u>MB-14027-S</u>	Calibration Method <u>Kurz Model 505-8 s/n ME-2764</u>
Work Order # <u>I-94-07-223</u>	

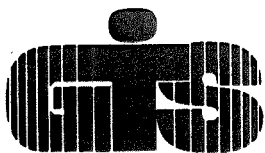
INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 N/A	1 CFM	1 CFM	1 CFM	All Calibrations Btn. + & - 10%
2	2	2	2	
3	3	3	3	
4				
5				
6				
7				
8				
9				
10				
11				
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STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>William Owens</u> (Signed)	I certify that the above information is correct: <u>[Signature]</u>
Calibration Date: <u>07-25-94</u>	<u>07-25-94</u>
Next Calibration Due: <u>01-25-95</u>	Administrative Coordinator <u>[Signature]</u> Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse Electric Corp</u>	Instrument Manufacturer <u>Radeco</u>
Customer Address: <u>Avenue A & West Street</u> <u>Pittsburgh, PA 15221</u>	Model <u>H-809 V1</u> Serial Number <u>6997</u>
Customer P.O.# <u>MB-14016-H</u>	External Probe(s) _____ Serial # _____
Work Order # <u>I-94-01-219</u>	Calibration Method <u>Kurz Model 505-8 s/n ME-276</u>

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 N/A	1 CFM	Repair	1 CFM	All Calibrations btn. + & - 10%
2	2	Broken Flow	2	
3	3	Tube	3	
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
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23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>William Owens</u> <small>(Signed)</small> Calibration Date: <u>01-13-94</u> Next Calibration Due: <u>07-13-94</u>	I certify that the above information is correct: <u>[Signature]</u> <u>01-13-94</u> Administrative Coordinator Date
---	---

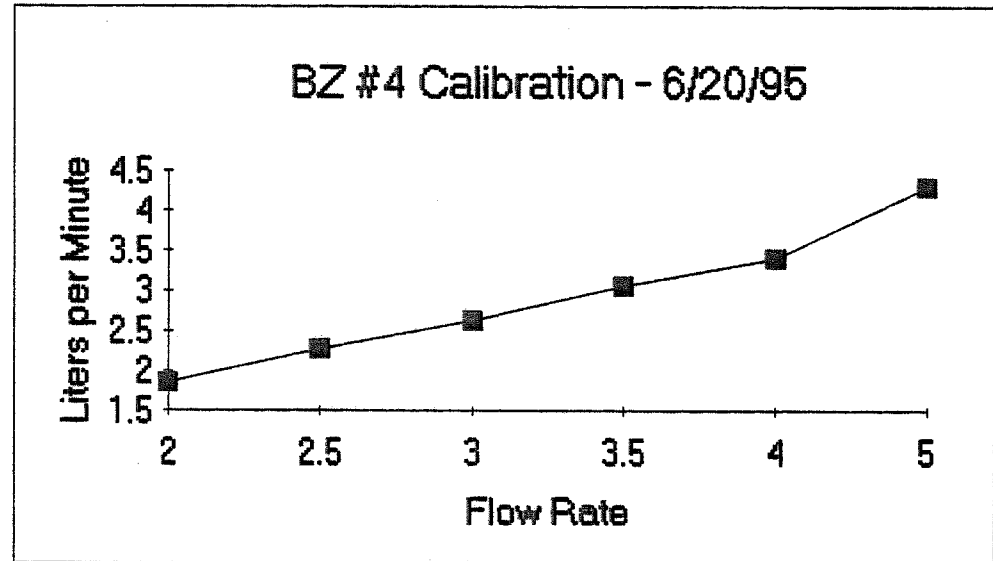
CODE NUMBER 39

REPORT #001

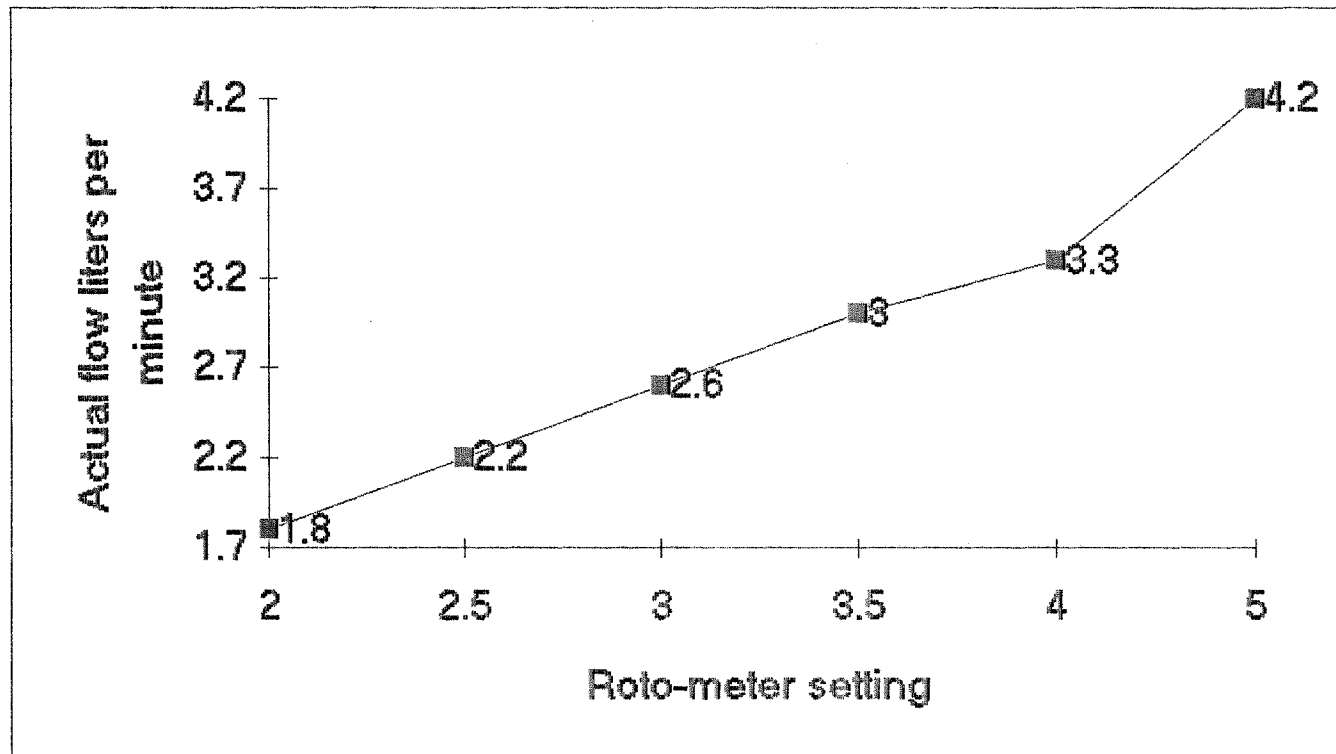
Breathing Zone Air Sampler Calibrations

BZ #4

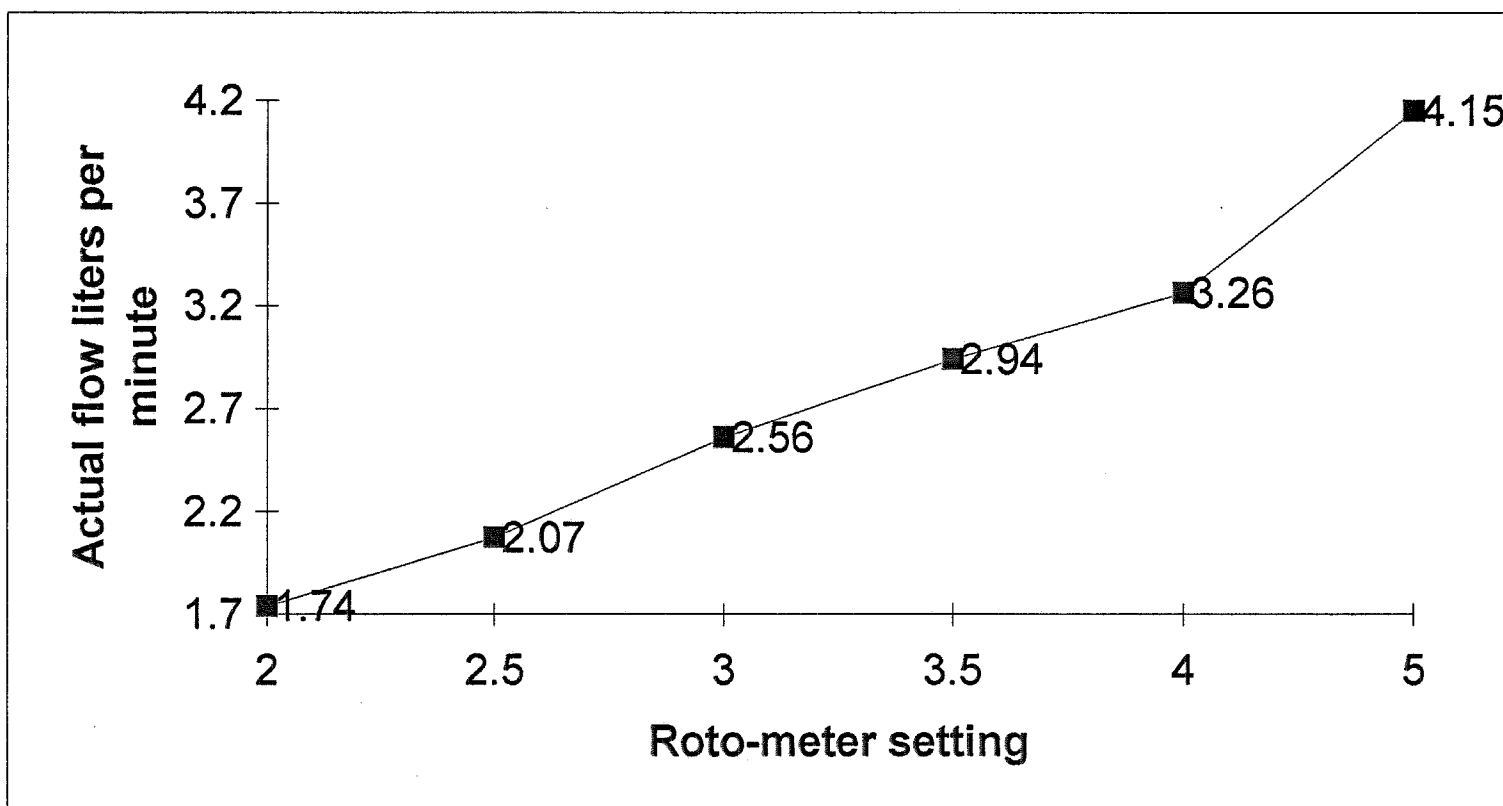
Flow	LPM
2	1.86
2.5	2.28
3	2.63
3.5	3.06
4	3.4
5	4.3



Calibration Date: 8/30/94 BZ Sampler #4
Rotameter setting 2 2.5 3 3.5 4 5
Actual flow LPM 1.8 2.2 2.6 3 3.3 4.2



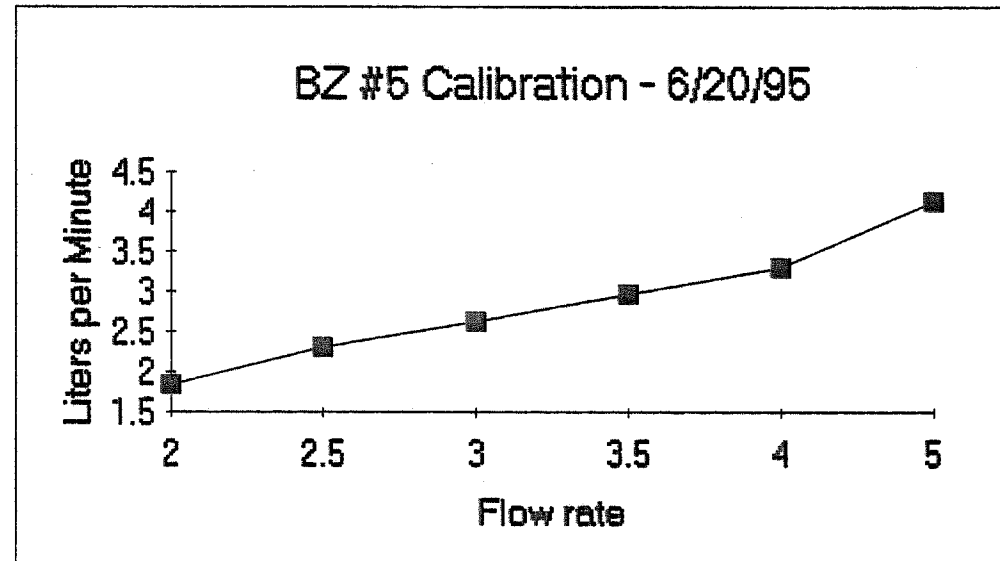
Calibration Date:	1/18/94						BZ Sampler #4					
Rotameter setting	2	2.5	3	3.5	4	5						
Actual flow LPM	1.74	2.07	2.56	2.94	3.26	4.15						



Breathing Zone Air Sampler Calibrations

BZ #5

Flow	LPM
2	1.84
2.5	2.31
3	2.63
3.5	2.97
4	3.3
5	4.14



CODE NUMBER 40

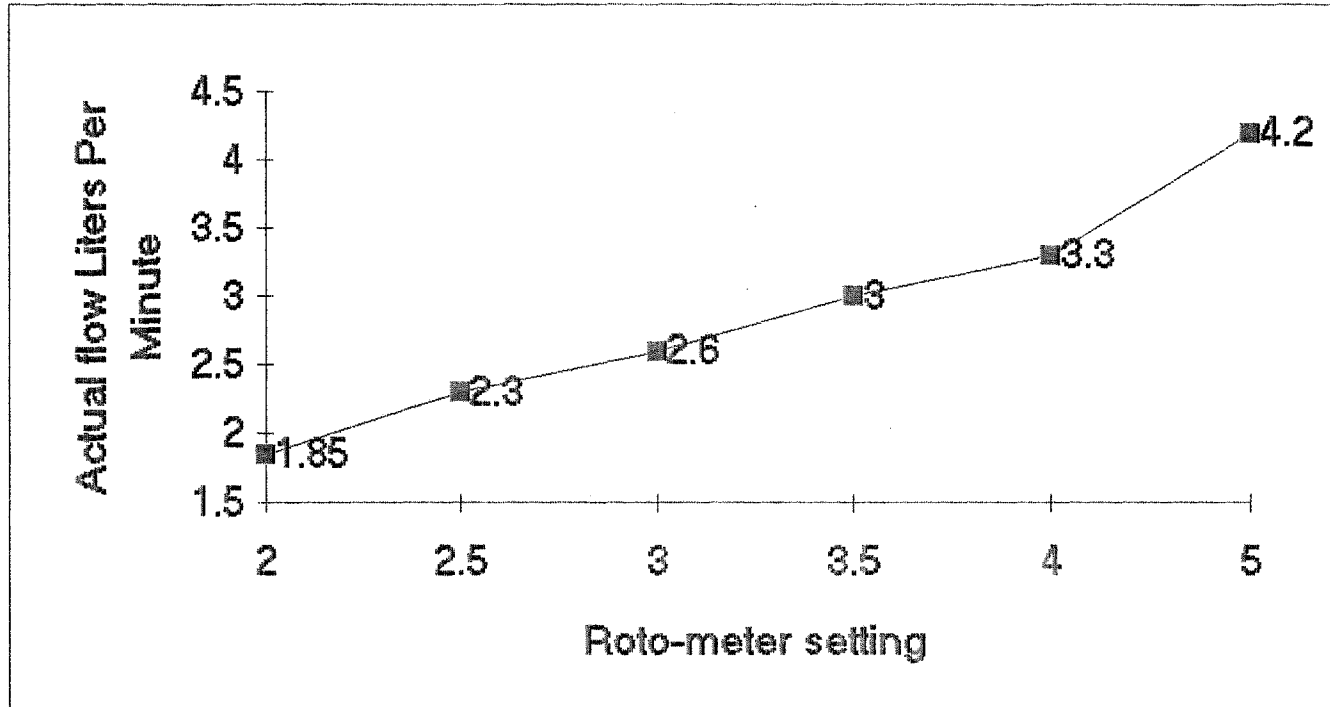
REPORT #001

Calibration Date: 8/30/94

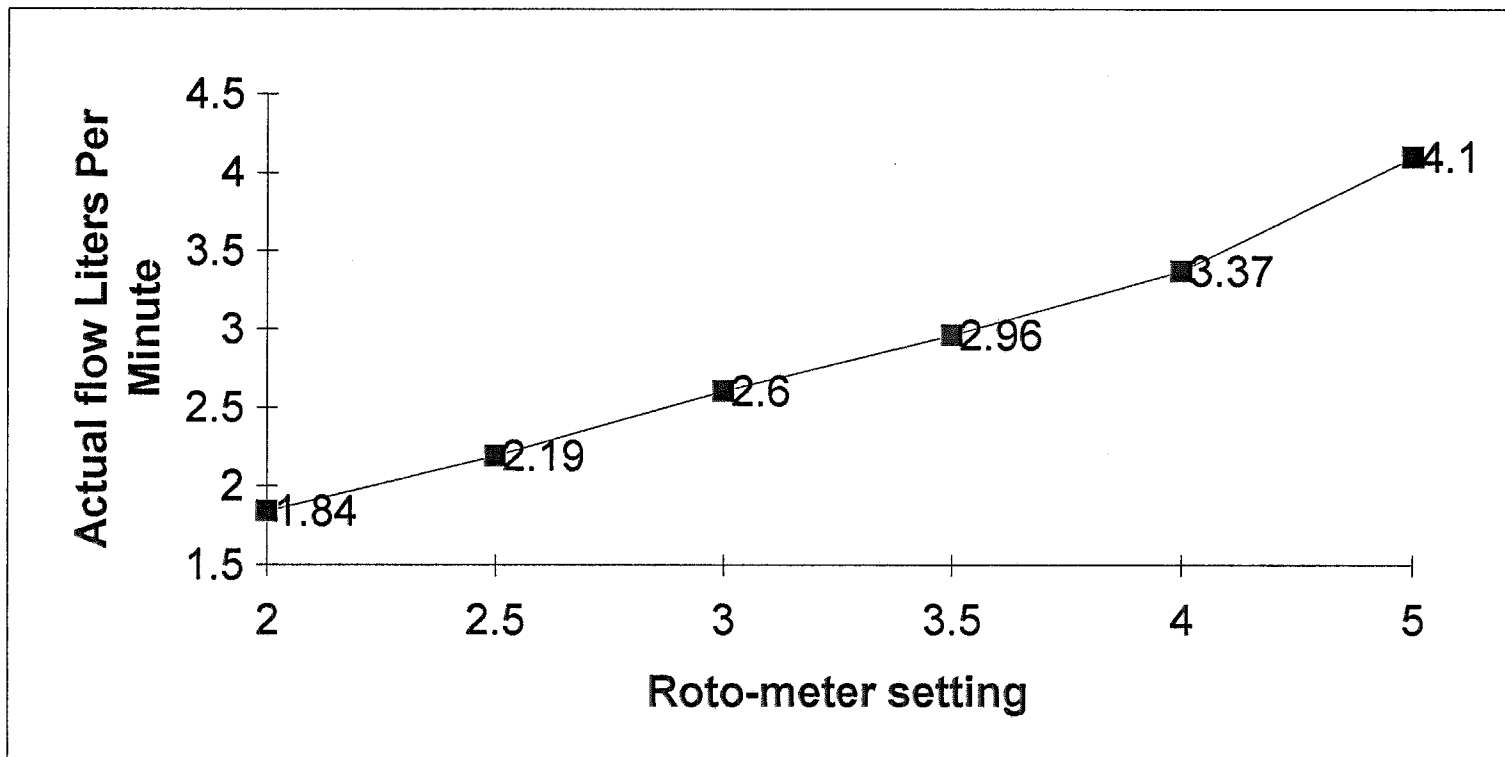
BZ Sampler #5

Rotameter setting 2 2.5 3 3.5 4 5

Actual flow LPM 1.85 2.3 2.6 3 3.3 4.2



Calibration Date:	1/18/94						BZ Sampler #5					
Rotameter setting	2	2.5	3	3.5	4	5						
Actual flow LPM	1.84	2.19	2.6	2.96	3.37	4.1						



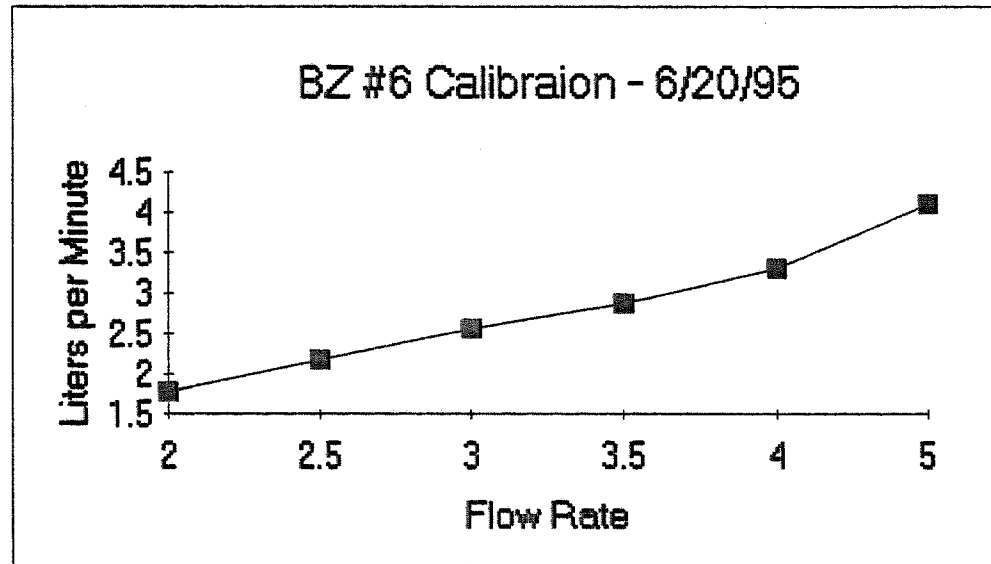
CODE NUMBER 41

REPORT #001

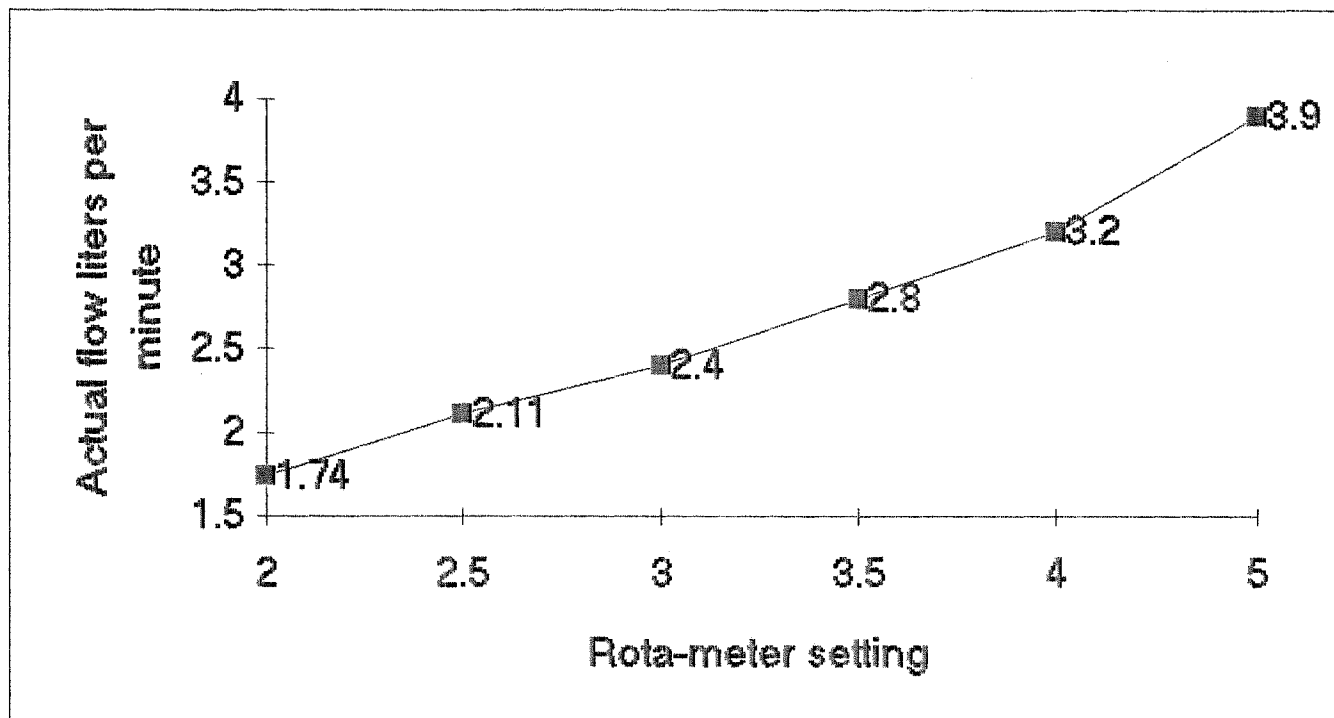
Breathing Zone Air Sampler Calibrations

BZ #6

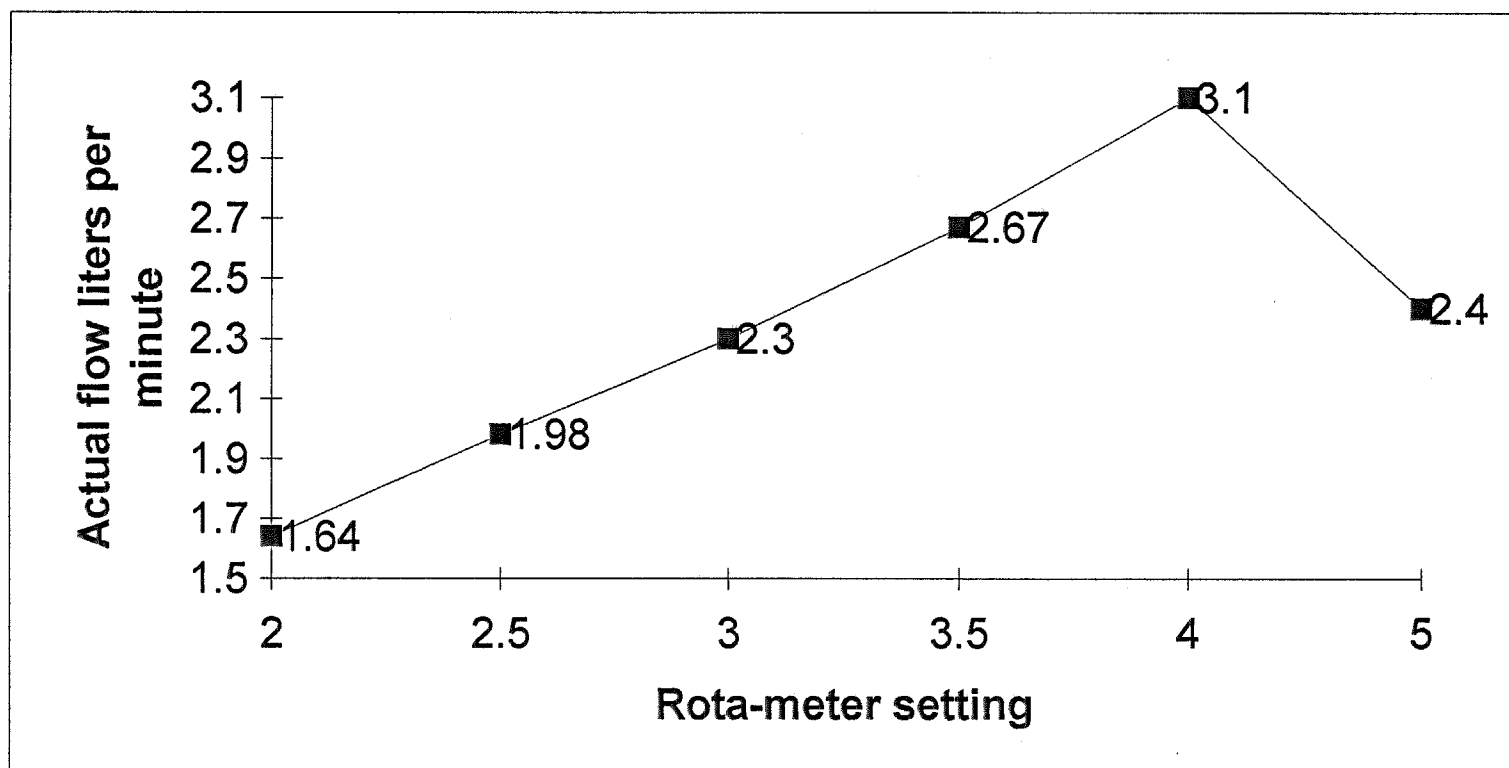
Flow	LPM
2	1.78
2.5	2.18
3	2.56
3.5	2.87
4	3.3
5	4.1



Calibration Date: 8/30/94 BZ Sampler #6
Rotameter setting 2 2.5 3 3.5 4 5
Actual flow LPM 1.74 2.11 2.4 2.8 3.2 3.9



Calibration Date:	1/18/94	BZ Sampler #6				
Rotameter setting	2	2.5	3	3.5	4	5
Actual flow LPM	1.64	1.98	2.3	2.67	3.1	2.4



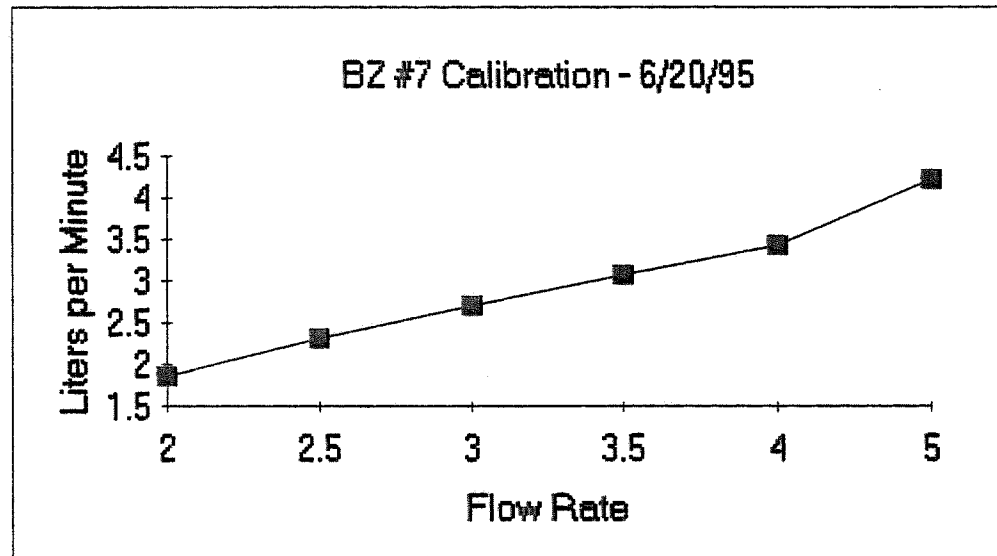
CODE NUMBER 42

REPORT #001

Breathing Zone Air Sampler Calibrations

BZ #7

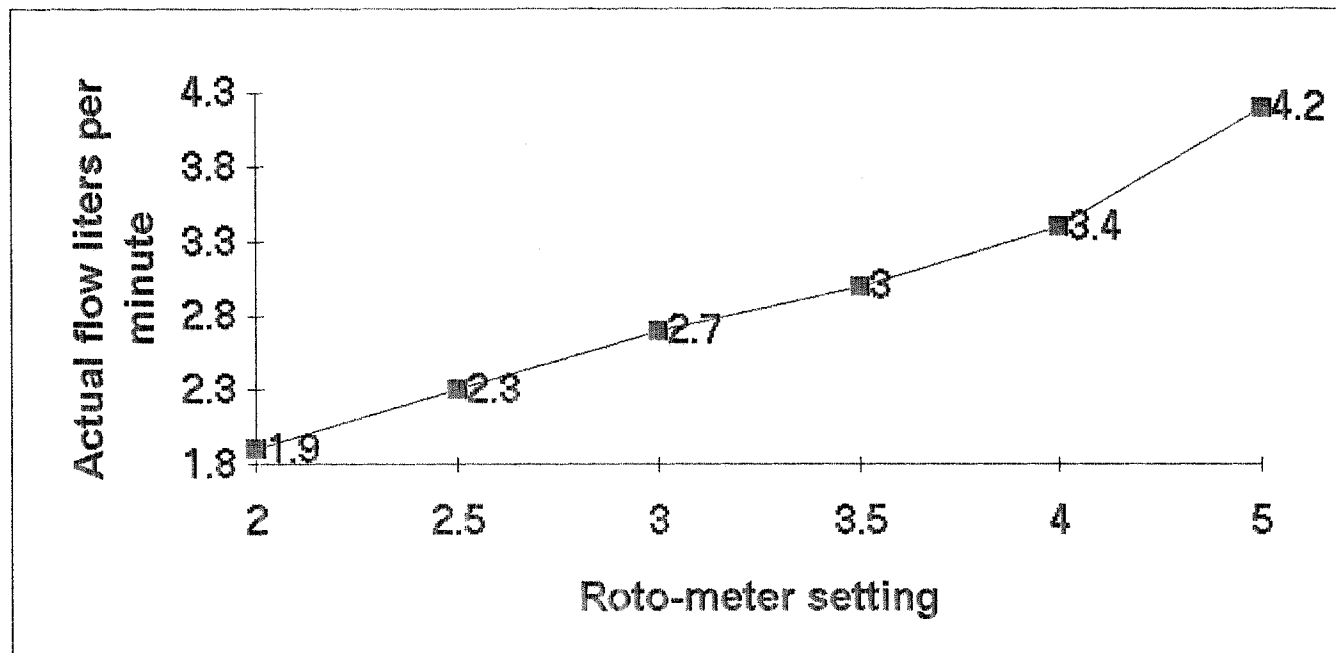
Flow	LPM
2	1.86
2.5	2.31
3	2.7
3.5	3.07
4	3.43
5	4.22



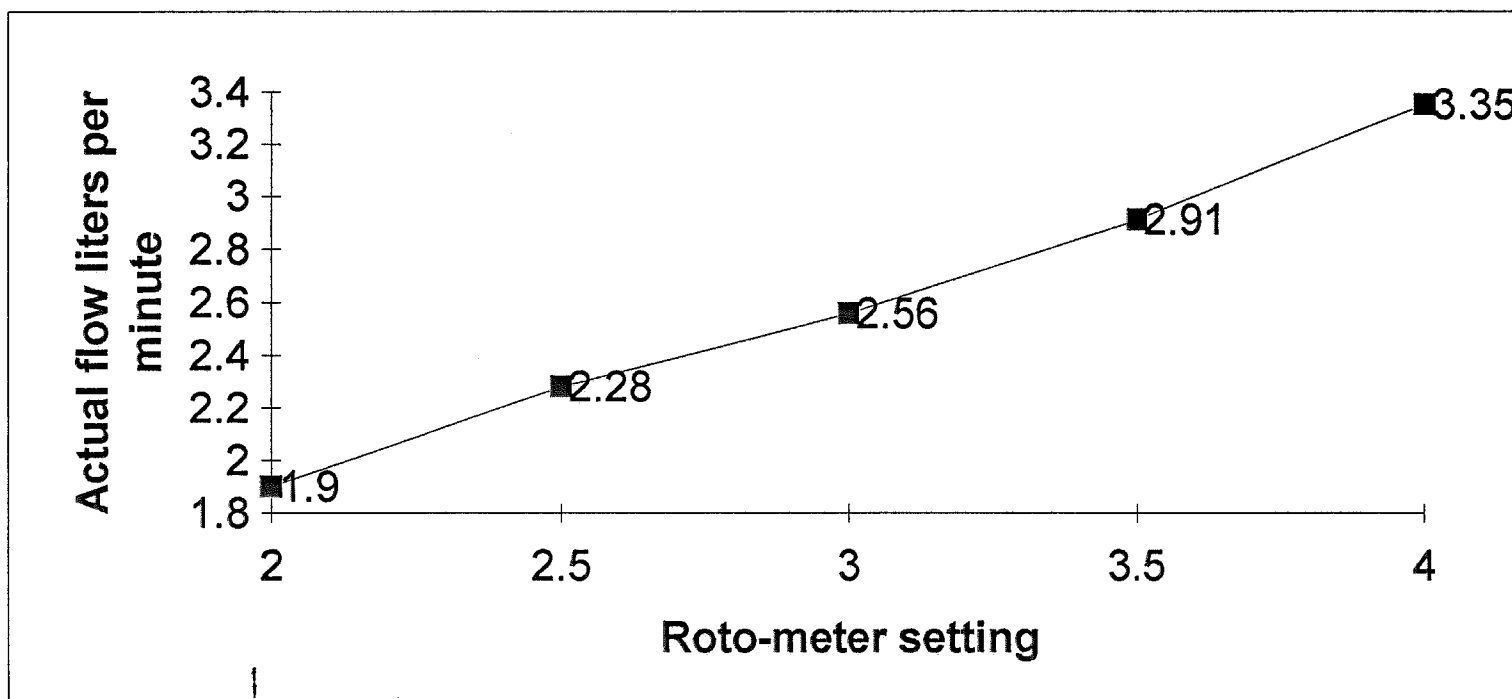
CODE NUMBER 43

REPORT #001

Calibration Date:	8/30/94	BZ Sampler #8				
Rotameter setting	2	2.5	3	3.5	4	5
Actual flow LPM	1.9	2.3	2.7	3	3.4	4.2



Calibration Date: 1/18/94 BZ Sampler #8
Rotameter setting 2 2.5 3 3.5 4
Actual flow LPM 1.9 2.28 2.56 2.91 3.35



CODE NUMBER 44

REPORT #001

INSTRUMENT: (E-520)	Serial Number: 4195	Code Number: 44
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SOURCE INFORMATION

CHECK IF USED	SOURCE NUMBERS	ACTIVITY (DPM)	SOURCE TYPE
✓	761/84	162	TC-99
✓	762/84	1310	TC-99
✓	763/84	18700	TC-99
✓	764/84	146000	TC-99

BETA CALIBRATION

SOURCE NUMBER	ACTIVITY DPM	INST. RANGE	TOLERANCE	READING GROSS CPM	BKG. CPM	READING NET CPM	EFFICIENCY
761/84	162	X.01	$\pm 10\%$	60	30	30	18.5
762/84	1310	X.1	$\pm 10\%$	220	30	190	14.5
763/84	18700	X.1	$\pm 10\%$	5000	30	4970	26.6
764/84	146000	X.10	$\pm 10\%$	55000	30	54970	37.7

COMMENTS:

EFFICIENCY 24.3 %
CF: 4.11

CALIBRATED BY: Larry Smith	SIGNATURE: 	DATE: 3-25-99
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INSTRUMENT: (E-520)	Serial Number: 4195	Code Number: 44
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SOURCE INFORMATION

CHECK IF USED	SOURCE NUMBERS	ACTIVITY (DPM)	SOURCE TYPE
✓	761/84	162	TC-99
✓	762/84	1310	TC-99
✓	763/84	18700	TC-99
✓	764/84	146000	TC-99

BETA CALIBRATION

SOURCE NUMBER	ACTIVITY DPM	INST. RANGE	TOLERANCE	READING GROSS CPM	BKG. CPM	READING NET CPM	EFFICIENCY
761/84	162	X.01	$\pm 10\%$	60	30	30	18.5
762/84	1310	X.1	$\pm 10\%$	300	30	270	20.6
763/84	18700	X 1	$\pm 10\%$	5000	30	4970	26.5
764/84	146000	X 10	$\pm 10\%$	60000	30	59,970	41.1

COMMENTS: *Avg. EFF: 26.7%*

CALIBRATED BY: <i>Larry Smith</i>	SIGNATURE: <i>Jay Smith</i>	DATE: 12-21-98
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INSTRUMENT: (E-520)	Serial Number: 4195	Code Number: 44
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SOURCE INFORMATION

CHECK IF USED	SOURCE NUMBERS	ACTIVITY (DPM)	SOURCE TYPE
✓	761/84	162	TC-99
✓	762/84	1310	TC-99
✓	763/84	18700	TC-99
✓	764/84	146000	TC-99

BETA CALIBRATION

SOURCE NUMBER	ACTIVITY DPM	INST. RANGE	TOLERANCE	READING GROSS CPM	BKG. CPM	READING NET CPM	EFFICIENCY
761	162	X.01	±10%	50	30	20	12.3%
762	1310	X.1	±10%	350	30	320	24.4%
763	18700	X 1	±10%	5000	30	4970	26.6%
764	146000	X 10	±10%	60000	30	59970	41%

COMMENTS:

AUG EFF 26%

CF = 3.85

CALIBRATED BY: Larry J. MTA	SIGNATURE: 	DATE: 9-14-98
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INSTRUMENT: (E-520)	Serial Number: 4195	Code Number: 44
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SOURCE INFORMATION

CHECK IF USED	SOURCE NUMBERS	ACTIVITY (DPM)	SOURCE TYPE
	761/84	162	TC-99
	762/84	1310	TC-99
	763/84	18700	TC-99
	764/84	146000	TC-99

BETA CALIBRATION

SOURCE NUMBER	ACTIVITY DPM	INST. RANGE	TOLERANCE	READING GROSS CPM	BKG. CPM	READING NET CPM	EFFICIENCY
761/84	161.9	x.01	± 10	70	40	30	18.5%
762/84	1309.9	x.1	± 10	370	40	330	25.2%
763/84	18699	x 1.0	± 10	5800	40	5760	30.8%
764/84	145994	x 10	± 10	62,000	40	61,960	42.4%

COMMENTS: AVG. EFF. = 29.2%
C.F. = 3.4

CALIBRATED BY: CARMEN VERGARI	SIGNATURE: Carmen Vergari	DATE: 5/12/98
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INSTRUMENT: (E-520)	Serial Number: 4195	Code Number: 44
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SOURCE INFORMATION

CHECK IF USED	SOURCE NUMBERS	ACTIVITY (DPM)	SOURCE TYPE
✓	761/84	162	TC-99
✓	762/84	1310	TC-99
✓	763/84	18700	TC-99
✓	764/84	146000	TC-99

BETA CALIBRATION

SOURCE NUMBER	ACTIVITY DPM	INST. RANGE	TOLERANCE	READING GROSS CPM	BKG. CPM	READING NET CPM	EFFICIENCY
761/84	161.9	x.01	± 10	70	40	30	18.5%
762/84	1309.9	x.10	± 10	350	40	310	23.7%
763/84	18699	x1.0	± 10	6000	40	5960	32.1%
764/84	145994	x10	± 10	60,000	40	59,960	41.1%

COMMENTS: AVG. EFF. = 28.8%
C.F. = 3.5

CALIBRATED BY: C. VERGARI	SIGNATURE: <i>Carmel Vergari</i>	DATE: 1/28/90
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CODE NUMBER 45

REPORT #001



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Eberline</u>
Customer Address: <u>P.O. Box 3700</u> <u>Pittsburgh, PA 15230</u>	Model <u>MP-2</u> Serial Number <u>125</u>
Customer P.O.# <u>MB-14027-S</u>	External Probe(s) _____ Serial # _____
Work Order # <u>I-96-03-210</u>	Calibration Method <u>O-Scope s/n H703906</u>

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	3 mV	1 mV	1.09 mV	1 mV	Instrument was intercompared to O-Scope which is NIST traceable, Biard was used as a readout for frequency
2		2	2.10	2	
3					
4	10 mV	2	2.18	2.08	
5		8	8.04	7.56	Battery: OK
6					
7	30 mV	10	10.5	10.2	Mechanical Zero: OK
8		20	20.2	19.0	
9					
10	100 mV	20	21.6	20.8	
11		80	80.6	75.6	
12					
13	0.3 V	0.1 V	0.105 V	0.102 V	
14		0.2	0.202	0.193	
15					
16	1	0.2	0.218	0.208	
17		0.8	0.820	0.785	
18					
19	3	1	1.128	1.070	
20		2	2.066	1.974	
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u> Calibration Date: <u>03-08-96</u> Next Calibration Due: <u>03-08-97</u>	(Signed)	I certify that the above information is correct: <u>[Signature]</u> Administrative Coordinator Date <u>03-08-96</u>
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GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Eberline</u>
Customer Address: <u>P.O. Box 3700</u>	Model <u>MP-2</u> Serial Number <u>125</u>
<u>Pittsburgh, PA 15230</u>	External Probe(s) _____ Serial # _____
Customer P.O.# <u>MB-14027-S</u>	Calibration Method <u>Baird s/n 150</u>
Work Order # <u>I-96-03-210</u>	

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 X0.1	1.6 CPM	16 CPM	16 CPM	10 Minute Count
2				
3 X1	2	2	2	1 Minute Counts
4	4	4	4	
5	16	16	16	
6 X10	20	20	20	
7	40	40	40	
8	160	160	160	
9 X100	200	200	200	
10	400	400	400	
11	1.6K	1,599	1,599	
12 X1K	2K	1,999	1,999	
13	4K	3,999	3,999	
14	16K	15,995	15,995	
15 X10K	20K	19,995	19,995	
16	40K	39,988	39,988	
17	160K	159,966	159,966	
18 X100K	200K	199,953	199,953	
19	400K	399,925	399,925	
20	800K	799,728	799,728	
21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u>	I certify that the above information is correct:
Calibration Date: <u>03-08-96</u> (Signed)	<u>[Signature]</u> 03-08-96
Next Calibration Due: <u>03-08-97</u>	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	<u>Westinghouse</u>	Instrument Manufacturer	<u>Eberline</u>
Customer Address:	<u>Avenue A & West Street</u> <u>Pittsburgh, PA 15221</u>	Model	<u>MP-2</u> Serial Number <u>125</u>
Customer P.O.#	<u>MB-14027-S</u>	External Probe(s)	Serial # _____
Work Order #	<u>I-49-06-231</u>	Calibration Method	<u>Pulser s/n 301</u> <u>Scope 465 s/n B275338</u> <u>Baird s/n 150</u>

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 3 mV	1 mV		1 mV	This instrument was intercompared to a MP-1 and Scope which are both NIST traceable; the Baird was used as a readout for frequency
2	2		2	
3				
4 10 mV	2		2	
5	8		8	
6				
7 30 mV	10		10	
8	20		20	
9				
10 100 mV	20		20	
11	80		77	
12				
13 0.3 V	100		102	
14	200		200	
15				
16 1 V	200		210	
17	800		780	
18				
19 3 V	1,000		1,050	
20	2,000		2,000	
21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>James Chutech</u> (Signed)	I certify that the above information is correct:
Calibration Date: <u>06-28-94</u>	<u>Theresa DeBard</u> <u>06-28-94</u>
Next Calibration Due: <u>06-28-95</u>	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Eberline</u>
Customer Address: <u>Avenue A & West Street</u> <u>Pittsburgh, PA 15221</u>	Model <u>MP-2</u> Serial Number <u>125</u>
Customer P.O.# <u>MB-14027-S</u>	External Probe(s) _____ Serial # _____
Work Order # <u>I-94-06-231</u>	Calibration Method <u>Pulser s/n 301</u>

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 X0.1	1.6 CPM		1.6 CPM	10 Minute Count
2				
3 X1	2		2	1 Minute Counts
4	4		4	
5	16		16	
6 X10	20		20	
7	40		40	
8	160		160	
9 X100	200		200	
10	400		400	
11	1,600		1,600	
12				
13 X1K	2K		2,000	
14	4K		4,001	
15	16K		16,004	
16 X10K	20K		20,001	
17	40K		40,010	
18	160K		160,021	
19 X100K	200K		200,021	
20	400K		400,038	
21	800K		800,090	
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>James Christy</u> (Signed)	I certify that the above information is correct:
Calibration Date: <u>06-28-94</u>	<u>Sharon DeBus</u> 06-28-94
Next Calibration Due: <u>06-28-95</u>	Administrative Coordinator Date

CODE NUMBER 46

REPORT #001



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Eberline</u>
Customer Address: <u>P.O. Box 3700</u> <u>Pittsburgh, PA 15230</u>	Model <u>MS-1</u> Serial Number <u>173</u>
Customer P.O.# <u>MB-14027-S</u>	External Probe(s) _____ Serial # _____
Work Order # <u>I-96-03-210</u>	Calibration Method <u>137</u> <u>Pulser s/n 120935</u> <u>Cs s/n 53015</u>

INSTRUMENT CALIBRATION INFORMATION

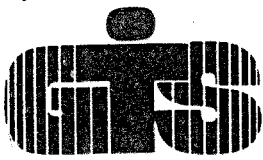
Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 0.1 MIN	40K CPM	4,000 CPM	4,000 CPM	All Calibrations Btn. + & - 10%
2				
3 1 MIN	40K	40,110	40,110	Test: OFF
4				
5 10 MIN	40K	400,835	400,835	Window: OUT
6				
7				Threshold \neq 10 mV = 3.54 on dial
8				
9				High Voltage = 1200 Volts
10				7.88 on dial
11				
12				CHI Squared performed to insure
13				stability of SPA-3 probe
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: [Signature]
 Calibration Date: 03-11-96
 Next Calibration Due: 06-11-96

I certify that the above information is correct:
[Signature] 03-11-96
 Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Eberline</u>
Customer Address: <u>P.O. 3700</u>	Model <u>ES-1</u> Serial Number <u>173</u>
<u>Pittsburgh, PA 15221</u>	External Probe(s) <u>SPA-3</u> Serial # _____
Customer P.O.# <u>83-14027-5</u>	Calibration Method <u>Pulsar s/n 298 & 120935</u>
Work Order # <u>I-95-11-210</u>	<u>Ca s/n 32015</u>

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	0.1 MIN	40K CPM	3,998 CPM	3,948 CPM	All Calibrations Btn. + & - 10%
2					
3	1 MIN	40K	39,988	39,988	Test: OFF
4					
5	10 MIN	40K	399,947	399,947	Window: OUT
6					
7					Threshold = 10mV = 5.34 on dial
8					
9					High Voltage = 1200 Volts
10					7.88 on dial
11					
12					see attached sheet for additional
13					information
14					
15					CHI performed to insure stability
16					of SPA-3 probe
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u>	I certify that the above information is correct:
Calibration Date: <u>12-05-95</u> (Signed)	<u>[Signature]</u> 12-05-95
Next Calibration Due: <u>03-05-96</u>	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

ELECTRONIC CALIBRATION

Electronic Calibration

- | | | | |
|--------------------|--------------|------------------|----------|
| 1. Test Instrument | <u>SEE</u> | 5. Time Base | <u>7</u> |
| 2. Pulse Rate | <u>CAL</u> | 6. Counting Time | <u>7</u> |
| 3. Amplitude | <u>CENT.</u> | 7. High Voltage | <u>7</u> |
| 4. Time Period | <u>L</u> | 8. Counts | <u>7</u> |

Background Determination

- | | | | |
|---------------------|---------------------|-------------------|--|
| 9. Instrument Model | <u>MS-1 / SPA-3</u> | 15. Time Period | <u>N/A</u> |
| 10. Serial Number | <u>173</u> | 16. Time Base | <u>7</u> |
| 11. Location | <u>Pitt PA</u> | 17. Counting Time | <u>7</u> |
| 12. Date | <u>12-5-85</u> | 18. Purge Time | <u>N/A</u> |
| 13. Time | <u>0830</u> | 19. Radiation | <input type="checkbox"/> Alpha <input type="checkbox"/> Beta |
| 14. Test By | <u>RRM</u> | 20. Background | <u>N/A @ 1200 v</u>
<u>7.88 ON DIAC</u> |

Efficiency Determination

- | | | | |
|-------------------|-------------------------------|--|---|
| 21. Source & S/N | <u>Cs¹³⁷ 93015</u> | 26. Average Count Rate | $\left(\frac{\text{sum total A}}{10} \right) = \underline{1329.3}$ CPM |
| 22. Source DPM | <u>N/A</u> | 27. 2σ (2 $\sqrt{\text{average count rate}}$) | = <u>72.9</u> |
| 23. Time Base | <u>1</u> | 28. Chi Square Number $\left(\frac{\text{sum total C}}{\text{line 26}} \right)$ | = <u>16.6</u> |
| 24. Time Period | <u>X1</u> | 29. Chi Square Fit (2-22) | = <input checked="" type="checkbox"/> Yes |
| 25. Counting Time | <u>1 MIN</u> | 30. If "NO" Contact Foreman Net | <input type="checkbox"/> No |

Trial #	CPM (A)	Difference from Ave. Count (B)	Difference Squared (C)
1	1393	63.7	4057.7
2	1363	33.7	1135.7
3	1310	19.3	372.5
4	1344	14.7	216.1
5	1262	67.3	4529.3
6	1390	60.7	3684.5
7	1300	79.3	6288.5

30. Count Rate (line 26-line 20) N/A
31. Efficiency:
 $\frac{\text{Net CPM (line 30)}}{\text{Source DPM (line 22)}} \times 100 = \underline{N/A}$

Trial #	CPM	Difference	Difference Squared	TOTALS
8	1274	55.3	3058.1	A <u>1329</u>
9	1374	44.7	1998.1	B <u>n/a</u>
10	1792	47.2	2227.7	



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Eberline</u>
Customer Address: <u>P.O. Box 3700</u>	Model <u>MS-1</u> Serial Number <u>173</u>
<u>Pittsburgh, PA 15230</u>	External Probe(s) <u>SPA-3</u> Serial # _____
Customer P.O.# <u>MB-14027-S</u>	Calibration Method <u>137</u> <u>Pulser s/n 101500</u>
Work Order # <u>I-95-08-211</u>	<u>Cs s/n S3015</u>

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	0.1 MIN	40K CPM	4,002 CPM	4,002 CPM	All Calibrations Btn. + & - 10%
2					
3	1	40K	40,041	40,041	Test: OFF
4					
5	10	40K	400,484	400,484	Window: OUT
6					
7					Threshold = 10mV = 6.10 on dial
8					
9					High Voltage = 1200 Volts = 7.84 on dial
10					
11					CHI Performed to insure stability of SPA-3 Probe
12					
13					See attached sheet for additional information
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u>	I certify that the above information is correct:
Calibration Date: <u>08-24-95</u> (Signed)	<u>[Signature]</u> 08-24-95
Next Calibration Due: <u>11-24-95</u>	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Eberline</u>
Customer Address: <u>P.O. Box 3700</u>	Model <u>MS-1</u> Serial Number <u>173</u>
<u>Pittsburgh, PA 15230</u>	External Probe(s) <u>SPA-3</u> Serial # _____
Customer P.O.# <u>MB-14027-S</u>	Calibration Method <u>137</u> Pulser s/n <u>101500</u>
Work Order # <u>I-95-05-220</u>	<u>Cs</u> s/n <u>S3015</u>

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 0.1 MIN	40K CPM	4,007 CPM	4,007 CPM	All Calibrations Btn. + & - 10%
2				
3 1 MIN	40K	40,103	40,103	Window: OUT
4				
5 10 MIN	40K	401,527	401,527	Test: OFF
6				
7				Threshold \approx 10mV = 5.80 on dial
8				
9				High Voltage = 1200 Volts
10				7.94 on dial
11				
12				See attached sheet for additional information
13				
14				
15				CHI performed to ensure stability of SPA-3 probe
16				
17				
18				
19				
20				
21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: [Signature]
 Calibration Date: 05-16-95 (Signed)
 Next Calibration Due: 08-16-95

I certify that the above information is correct:
[Signature] 05-16-95
 Administrative Coordinator Date



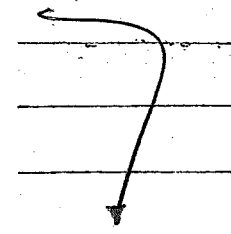
GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

ELECTRONIC CALIBRATION

Electronic Calibration

- 1. Test Instrument SEE
- 2. Pulse Rate CAL
- 3. Amplitude CENT
- 4. Time Period L

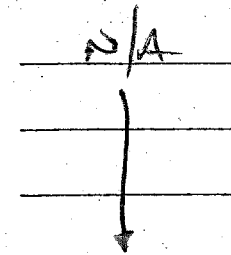
- 5. Time Base
- 6. Counting Time
- 7. High Voltage
- 8. Counts



Background Determination

- 9. Instrument Model MS-1/SRA-3
- 10. Serial Number 173
- 11. Location Penn PA
- 12. Date 5-16-95
- 13. Time 1335
- 14. Test By RPM

- 15. Time Period N/A
- 16. Time Base
- 17. Counting Time
- 18. Purge Time
- 19. Radiation Type of Alpha Beta
- 20. Background N/A @ 1200 V = 7.94 ON DIAL



Efficiency Determination

- 21. Source & S/N G137 53015
- 22. Source DPM N/A
- 23. Time Base
- 24. Time Period
- 25. Counting Time

- 26. Average Count Rate $\left(\frac{\text{sum total A}}{10} \right) = 1109.8$ CPM
- 27. 2σ (2 $\sqrt{\text{average count rate}}$) = 66.6
- 28. Chi Square Number $\left(\frac{\text{sum total C}}{\text{line 26}} \right) = 11.7$
- 29. Chi Square Fit (2-22) = Yes

If "NO" Contact Foreman No Net

- 30. Count Rate (line 26-line 20) N/A
- 31. Efficiency:

Net CPM (line 30) / Source DPM (line 22) x 100 = N/A

Trial #	CPM (A)	Difference from Ave. Count (B)	Difference Squared (C)
1	1089	20.8	432.6
2	1121	11.2	125.4
3	1132	22.2	492.8
4	1148	38.2	1459.2
5	1060	49.8	2480.0
6	1125	15.2	231.0
7	1147	37.2	1383.8

Trial #	CPM (A)	Difference (B)	Squared (C)	TOTALS
8	1152	42.2	1780.8	A 11098
9	1068	41.8	1747.2	B n/a
10	1086	53.8	2894.4	C 13027



GTS Instrument Services
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 Pittsburgh, PA 15239-2839
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CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Eberline</u>
Customer Address: <u>P.O. Box 3700</u> <u>Pittsburgh, PA 15230</u>	Model <u>MS-1</u> Serial Number <u>173</u>
Customer P.O.# <u>MB-14027-S</u>	External Probe(s) <u>SPA-3</u> Serial # _____
Work Order # <u>I-94-12-219</u>	Calibration Method <u>137</u> <u>Pulser s/n 101500</u> <u>Cs s/n S3015</u>

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	0.1 mIN	40K CPM	3,997 CPM	3,997 CPM	All Calibrations Btn. + & - 10%
2	1 MIN	40K	39,956	39,956	Window: OUT
3	10 MIN	40K	399,647	399,647	Threshold = 10mV = 5.40 on dial
4					High Voltage = 1200 Volts
5					= 7.86 on dial
6					see attached sheet for additional
7					information
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u>	I certify that the above information is correct:
Calibration Date: <u>12-19-94</u> (Signed)	<u>[Signature]</u>
Next Calibration Due: <u>03-19-95</u>	Administrative Coordinator
	Date <u>12-19-94</u>

MS 2 / SPA 3 8/10/93

¹³⁷Cs check source

Window of 0.4

Threshold of 4.85

High Voltage Peak @ 7.86

12/20/94

John J. ...

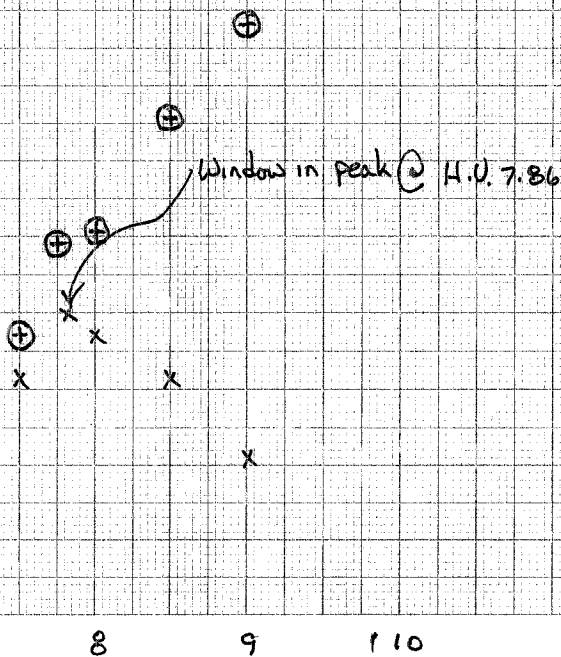
⊕ gross counts x 1000

x window in counts x 10,000

10
9
8
7
6
5
4
3
2
1

0 1 2 3 4 5 6 7 8 9 10

High Voltage





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CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Eberline</u>	Model <u>MS-1</u>	Serial Number <u>173</u>
Customer Address: <u>Avenue A & West Street</u> <u>Pittsburgh, PA 15221</u>	External Probe(s) <u>SPA-3</u>	Serial # _____	
Customer P.O.# <u>MB-14027-S</u>	Calibration Method <u>137</u>	<u>Pulser s/n 101500</u>	
Work Order # <u>I-94-08-218</u>		<u>Cs s/n S3015</u>	

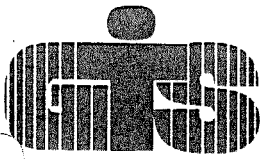
INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	0.1 MIN	40K CPM	Initial Calibration	3,995 CPM	All Calibrations Btn. + & - 10%
2					
3	1	40K	↓	39,994	Window: OUT
4	10	40K		400,026	Threshold = 5 = 10mV
5					
6					
7					High Voltage = 1200 Volts
8					3.43 on dial
9					
10					See attached sheet for additional data
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u> 08-18-94 (Signed)	I certify that the above information is correct: <u>[Signature]</u> 08-18-94
Calibration Date: <u>08-18-94</u>	Administrative Coordinator
Next Calibration Due: <u>11-18-94</u>	Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

ELECTRONIC CALIBRATION

Electronic Calibration

- 1. Test Instrument SEE
- 2. Pulse Rate CAL
- 3. Amplitude CENT
- 4. Time Period 6
- 5. Time Base 7
- 6. Counting Time 7
- 7. High Voltage 7
- 8. Counts 7

Background Determination

- 9. Instrument Model MS-1 MS-2/SMA
- 10. Serial Number 173 / 173
- 11. Location PA 47A
- 12. Date 8-18-94
- 13. Time 1530
- 14. Test By RRM
- 15. Time Period x 10
- 16. Time Base 1
- 17. Counting Time 10min
- 18. Purge Time N/A
- 19. Radiation N/A Alpha N/A Beta
- 20. Background N/A @ 1200V

Efficiency Determination

- 21. Source & S/N Cs-137 #3015
- 22. Source DPM _____
- 23. Time Base 1
- 24. Time Period x 1
- 25. Counting Time 1min
- 26. Average Count Rate $\left(\frac{\text{sum total A}}{10} \right) = 1212.7$ CPM
- 27. 2σ (2 $\sqrt{\text{average count rate}}$) = 69.6
- 28. Chi Square Number $\left(\frac{\text{sum total C}}{\text{line 26}} \right) = 10.3$
- 29. Chi Square Fit (2-22) = Yes

If "NO" Contact Foreman No

30. Count Rate (line 26-line 20) _____

31. Efficiency:

Net CPM (line 30)
 Source DPM (line 22) X 100= _____

Trial #	CPM (A)	Difference from Ave. Count (B)	Difference Squared (C)
1	1183	29.7	882.1
2	1187	25.7	660.5
3	1240	27.3	745.3
	1235	22.3	497.3
5	1211	1.7	2.9
6	1202	10.7	114.5
7	1144	68.7	4719.7

8	1204	8.7	75.7
9	1272	59.3	3516.5
10	1249	36.3	1317.7

TOTALS:

A 1212.7

B n/a

C

MS-1 Mini-Scaler Calibration

High Voltage	Source Count
1.1	0
1.2	0
1.3	0
1.4	0
1.5	0
1.6	0
1.7	0
1.8	0
1.9	0
2	0
2.1	0
2.2	0
2.3	0
2.4	0
2.5	0
2.6	0
2.7	2
2.8	16
2.9	450
3	623
3.1	1235
3.2	2305
3.3	47109
3.4	13404
3.5	8758
3.6	11780
3.7	10974
3.8	10168
3.9	9362
4	8556
Threshold:	5
Window:	0.2
Count Time:	.5 Min.
Source #:	C5663

(8 uCi Cs-137 Source)

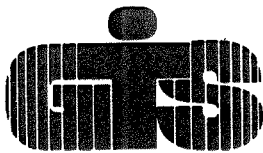
Threshold	Source Gross Count	Source PHA Count	Bkg Gross Count	Bkg PHA Count
0.5	N/A	132055	N/A	
0.75	N/A	128084	N/A	
1	N/A	124869	N/A	
1.25	N/A	128373	N/A	
1.5	N/A	128786	N/A	
1.75	N/A	124019	N/A	
2	N/A	113649	N/A	
2.25	N/A	105139	N/A	
2.5	N/A	98328	N/A	
2.75	N/A	90182	N/A	
3	N/A	79966	N/A	
3.25	N/A	71549	N/A	
3.5	N/A	66373	N/A	
3.75	N/A	74474	N/A	
4	N/A	121997	N/A	
4.25	N/A	178311	N/A	
4.5	N/A	189689	N/A	
4.75	N/A	172664	N/A	
5	N/A	111943	N/A	
5.25	N/A	46757	N/A	
5.5	N/A	15505	N/A	
5.75	N/A	9066	N/A	
6	N/A	6725	N/A	
6.25	N/A	5598	N/A	
6.5	N/A	4532	N/A	
6.75	N/A	3863	N/A	
7	N/A	3228	N/A	
7.25	N/A	2779	N/A	
7.5	N/A	2491	N/A	
7.75	N/A	2058	N/A	
8	N/A	1689	N/A	
8.25	N/A	1320	N/A	
8.5	N/A	1025	N/A	
8.75	N/A	887	N/A	
9	N/A	687	N/A	
9.25	N/A	581	N/A	
9.5	N/A	432	N/A	
9.75	N/A	283	N/A	
10	N/A	134	N/A	

Final PHA Settings
High Voltage = 3.3
Threshold setting = 4.85
Window = .4

Final Gross Settings
High Voltage = 3.43
Threshold setting = 5
Window Out

CODE NUMBER 47

REPORT #001



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 724/733-1900 Fax: 724/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	Westinghouse	Instrument Manufacturer	Eberline
Customer Address:	PO Box 3700	Model	RM-14
	Pittsburgh, PA 15230	Serial Number	3248
		External Probe(s)	Serial #
Customer P.O.#	MB-14027-S	Calibration Method	Pulser s/n 120935
Work Order #	I-99-02-208		

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2	200	200	200	
3	400	395	395	Battery: OK
4				
5 X10	1K	1K	1K	Mechanical Zero: OK
6	2K	2K	2K	
7	4K	3.9K	3.9K	Reset: OK
8				
9 X100	10K	10K	10K	Response: OK
10	20K	20K	20K	
11	40K	39.5K	39.5K	Audio: OK
12				
13				Alarm: OK
14				
15				Electronic Calibration Only
16				
17				
18				
19				
20				
21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>William Owen</u>	I certify that the above information is correct:
Calibration Date: <u>03-16-99</u> (Signed)	<u>William Owen</u>
Next Calibration Due: <u>06-16-99</u>	Administrative Coordinator
	Date: <u>03-16-99</u>



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 724/733-1900 Fax: 724/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	<u>Westinghouse</u>	Instrument Manufacturer	<u>Eberline</u>
Customer Address:	<u>PO Box 3700</u> <u>Pittsburgh, PA 15230</u>	Model	<u>RM-14</u> Serial Number <u>3248</u>
Customer P.O.#	<u>MB-14027-S</u>	External Probe(s)	Serial # _____
Work Order #	<u>I-98-09-210</u>	Calibration Method	<u>Pulser s/n 298</u>

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2	200	200	200	
3	400	395	395	Battery: OK
4 X10	1K	1K	1K	Mechanical Zero: OK
5	2K	2K	2K	
6	4K	3.95K	3.95K	Reset: OK
7				
8 X100	10K	10K	10K	Response: OK
9	20K	20K	20K	
10	40K	39.5K	39.5K	Audio: OK
11				
12				Alarm: OK
13				
14				Electronic Calibration only
15				
16				
17				
18				
19				
20				
21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>William Owen</u> (Signed)	I certify that the above information is correct:
Calibration Date: <u>10-28-98</u>	<u>William Owen</u> <u>10-28-98</u>
Next Calibration Due: <u>01-28-99</u>	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 724/733-1900 Fax: 724/327-8189

CALIBRATION CERTIFICATE

#47

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Eberline</u>
Customer Address: <u>PO Box 3700</u>	Model <u>RM-14</u> Serial Number <u>3248</u>
<u>Pittsburgh, PA 15230</u>	External Probe(s) <u>44-9</u> Serial # <u>033031</u>
Customer P.O.# <u>MB-14027-S</u>	Calibration Method <u>137</u> <u>Pulser s/n 101500</u>
Work Order # <u>I-98-05-210</u>	<u>99</u> <u>Cs s/n 10263 200mCi</u>
	<u>Tc s/n S1256</u>

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2	200	200	200	
3	400	400	400	Battery: OK
4				
5 X10	1K	1K	1K	Mechanical Zero: OK
6	2K	1.95K	1.95K	
7	4K	3.9K	3.9K	Response: OK
8				
9 X100	10K	10K	10K	Reset: OK
10	20K	19.5K	19.5K	
11	40K	39K	39K	Alarm: OK
12				
13				Speaker: OK
14				
15				1 mR/hr \approx 3K CPM in ¹³⁷ Cs field
16				
17				⁹⁹ Tc Efficiency = 10.5%
18				
19				
20				
21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u> (Signed)	I certify that the above information is correct: <u>[Signature]</u>
Calibration Date: <u>05-29-98</u>	<u>05-29-98</u>
Next Calibration Due: <u>08-29-98</u>	Administrative Coordinator <u>[Signature]</u> Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	<u>Westinghouse</u>	Instrument Manufacturer	<u>Ludlum</u>
Customer Address:	<u>PO Box 3700</u>	Model	<u>RM-14</u>
	<u>Pittsburgh, PA 15230</u>	Serial Number	<u>3248</u>
		External Probe(s)	<u>44-9</u> Serial # <u>033031</u>
Customer P.O.#	<u>MB-14027-S</u>	Calibration Method	<u>137</u> Pulser s/n 101500
Work Order #	<u>I-98-01-208</u>		<u>99</u> Cs s/n 10263 200mCi
			Tc s/n S1256

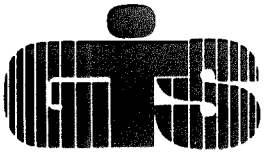
INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2		200	200	200	
3		400	400	400	Battery: OK
4					
5	X10	1K	1K	1K	Mechanical Zero: OK
6		2K	2K	2K	
7		4K	4K	4K	Response: OK
8					
9	X100	10K	10K	10K	Reset: OK
10		20K	20K	20K	
11		40K	40K	40K	Audio: OK
12					
13					Alarm: OK
14					
15					Test Pulse = 3.6K CPM
16					1 mR/hr = 3K CPM in ¹³⁷ Cs field
17					
18					⁹⁹ Tc Efficiency = 10.3%
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by:	<u>[Signature]</u> (Signed)	I certify that the above information is correct:	<u>[Signature]</u>
Calibration Date:	<u>01-26-98</u>		<u>01-26-98</u>
Next Calibration Due:	<u>07-26-98</u>	Administrative Coordinator	Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	<u>Westinghouse</u>	Instrument Manufacturer	<u>Ludlum</u>
Customer Address:	<u>P.O. Box 3700</u> <u>Pittsburgh, PA 15230</u>	Model	<u>RM-14</u> Serial Number <u>3248</u>
Customer P.O.#	<u>MB-14027-S</u>	External Probe(s)	<u>44-9</u> Serial # <u>033031</u>
Work Order #	<u>I-97-09-210</u>	Calibration Method	<u>137</u> Pulser s/n 301 <u>99</u> Cs s/n 10263 200mCi Tc s/n S1256

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2	200	200	200	
3	400	395	395	Battery: OK
4				
5 X10	1K	1K	1K	Mechanical Zero: OK
6	2K	2K	2K	
7	4K	3.9K	3.9K	Reset: OK
8				
9 X100	10K	10K	10K	Response: OK
10	20K	20K	20K	
11	40K	39K	39K	Audio: OK
12				
13				Alarm: OK
14				
15				1 mR/hr \approx 3K CPM in ¹³⁷ Cs field
16				⁹⁹ Tc Efficiency = 11.2%
17				
18				
19				
20				
21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>William Owens</u>	I certify that the above information is correct: Administrative Coordinator
Calibration Date: <u>09-22-97</u> (Signed)	
Next Calibration Due: <u>12-22-97</u>	
	Date <u>09-22-97</u>



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Ludlum</u>	Model <u>RM-14</u>	Serial Number <u>3248</u>
Customer Address: <u>P.O. Box 3700</u>	External Probe(s) <u>44-9</u>	Serial # <u>033031</u>	
<u>Pittsburgh, PA 15230</u>	Calibration Method <u>99</u>	Pulser s/n <u>101500</u>	
Customer P.O.# <u>MB-14027-S</u>	Work Order # <u>I-97-05-209</u>	<u>137</u> Tc s/n <u>S1256</u>	
		Cs s/n <u>10263</u>	<u>200mCi</u>

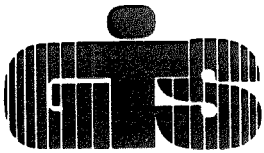
INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2		200	200	200	
3		400	400	400	Battery: OK
4					
5	X10	1K	1K	1K	Mechanical Zero: OK
6		2K	2K	2K	
7		4K	4K	4K	Response: OK
8					
9	X100	10K	10K	10K	Reset: OK
10		20K	20K	20K	
11		40K	40K	40K	Speaker: OK
12					
13					Alarm: OK
14					
15					Test Pulse = 3.5K CPM
16					1 mR/hr \approx 3K CPM in ¹³⁷ Cs field
17					
18					⁹⁹ Tc Efficiency = 10.9%
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u>	I certify that the above information is correct:
Calibration Date: <u>05-20-97</u> (Signed)	<u>[Signature]</u> 05-20-97
Next Calibration Due: <u>08-20-97</u>	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	<u>Westinghouse</u>	Instrument Manufacturer	<u>Eberline</u>
Customer Address:	<u>P.O. Box 3700</u> <u>Pittsburgh, PA 15230</u>	Model	<u>RM-14</u> Serial Number <u>3248</u>
Customer P.O.#	<u>MB-14027-S</u>	External Probe(s)	<u>44-9</u> Serial # <u>033031</u>
Work Order #	<u>I-97-02-209</u>	Calibration Method	<u>137</u> Pulser s/n 101500 <u>99</u> Cs s/n 10263 200mCi <u>99</u> Tc s/n S1256

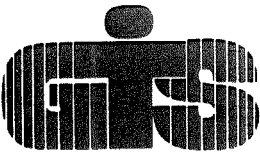
INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2		200	200	200	Battery: OK
3		400	400	400	
4	X10	1K	1K	1K	Mechanical Zero: OK
5		2K	2K	2K	Response: OK
6		4K	4K	4K	
7					
8	X100	10K	10K	10K	Reset: OK
9		20K	20K	20K	Audio: OK
10		40K	40K	40K	Alarm: OK
11					Test Pulse \approx 3.5K CPM
12					1 mR/hr \approx 3K CPM in ¹³⁷ Cs field
13					⁹⁹ Tc Efficiency = 10.9%
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u> (Signed)	I certify that the above information is correct:
Calibration Date: <u>02-03-97</u>	<u>[Signature]</u> 02-03-97
Next Calibration Due: <u>05-03-97</u>	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
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CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

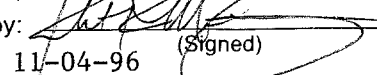
CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	Westinghouse	Instrument Manufacturer	Eberline
Customer Address:	P.O. Box 3700 Pittsburgh, PA 15230	Model	RM-14
		Serial Number	3248
		External Probe(s)	44-9
		Serial #	033031
Customer P.O.#	MB-14027-S	Calibration Method	⁹⁹ Pulser s/n 101500
Work Order #	I-96-10-208		¹³⁷ Tc s/n S1256
			¹³⁷ Cs s/n 10263 200mCi

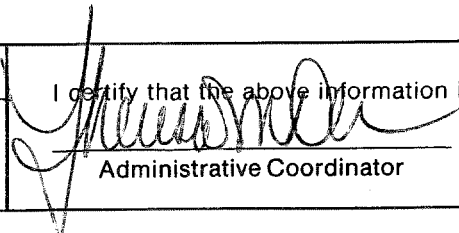
INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2		200	200	200	
3		400	400	400	Battery: OK
4					
5	X10	1K	1K	1K	Mechanical Zero: OK
6		2K	2K	2K	
7		4K	4K	4K	Response: OK
8					
9	X100	10K	10K	10K	Reset: OK
10		20K	20K	20K	
11		40K	40K	40K	Speaker: OK
12					
13					Alarm: OK
14					
15					Test Pulse = 3.55K CPM
16					1 mR/hr \approx 3K CPM in ¹³⁷ Cs field
17					
18					⁹⁹ Tc Efficiency = 11.1%
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: 
 Calibration Date: 11-04-96 (Signed)
 Next Calibration Due: 02-04-97

I certify that the above information is correct:

 Administrative Coordinator 11-04-96
 Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

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This Certificate will be accompanied by Calibration Charts or Readings where applicable

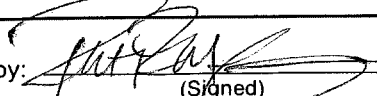
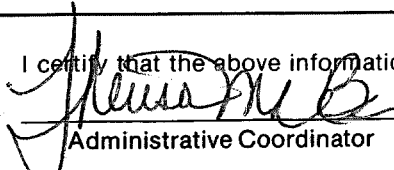
CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	Westinghouse	Instrument Manufacturer	Eberline
Customer Address:	P.O. Box 3700 Pittsburgh, PA 15221	Model	RM-14 Serial Number 3248
Customer P.O.#	MB-14027-S	External Probe(s)	44-9 Serial # 033031
Work Order #	I-96-06-209	Calibration Method	99 Pulser s/n 120935 137 Tc s/n S1256 Cs s/n 10263 200mCi

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2		200	200	200	Battery: OK
3		400	400	400	
4					
5	X10	1K	1K	1K	Mechanical Zero: OK
6		2K	2K	2K	
7		4K	4K	4K	Response: OK
8					
9	X100	10K	10K	10K	Reset: OK
10		20K	20K	20K	
11		40K	40K	40K	Speaker: OK
12					
13					Alarm: OK
14					
15					Test Pulse \approx 3.6K CPM
16					99 Tc Efficiency = 10.9%
17					
18					1 mR/hr = 3K CPM in ¹³⁷ Cs field
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: 	I certify that the above information is correct:
Calibration Date: 07-01-96 (Signed)	
Next Calibration Due: 10-01-96	Administrative Coordinator 07-01-96 Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
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CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	<u>Westinghouse</u>	Instrument Manufacturer	<u>Eberline</u>
Customer Address:	<u>P.O. Box 3700</u> <u>Pittsburgh, PA 15230</u>	Model	<u>RM-14</u> Serial Number <u>3248</u>
Customer P.O.#	<u>MB-14027-S</u>	External Probe(s)	<u>44-9</u> Serial # <u>033031</u>
Work Order #	<u>I-96-03-210</u>	Calibration Method	<u>99</u> Pulser s/n 120935 <u>137</u> Tc s/n S1256 Cs s/n 10263 200mCi

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2		200	200	200	
3		400	400	400	Battery: OK
4					
5	X10	1K	1K	1K	Mechanical Zero: OK
6		2K	2K	2K	
7		4K	4K	4K	Response: OK
8					
9	X100	10K	10K	10K	Reset: OK
10		20K	20K	20K	
11		40K	40K	40K	Speaker: OK
12					
13					Alarm: OK
14					
15					Test Pulse = 3.55K CPM
16					⁹⁹ Tc Efficiency = 11.6%
17					
18					1 mR/hr ≈ 3K CPM in ¹³⁷ Cs field
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u>	I certify that the above information is correct:
Calibration Date: <u>03-08-96</u> (signed)	<u>[Signature]</u> 03-08-96
Next Calibration Due: <u>06-08-96</u>	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	Westinghouse	Instrument Manufacturer	Eberline
Customer Address:	P.O. Box 3700 Pittsburgh, PA 15230	Model	RM-14
		Serial Number	3248
		External Probe(s)	44-9
Customer P.O.#	MB-14027-S	Serial #	033031
Work Order #	I-95-10-209	Calibration Method	137 Pulsar s/n 101500
			99 Cs s/n 10263 200mCi
			Tc s/n S1256

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2		200	200	200	
3		400	400	400	Battery: OK
4					
5	X10	1K	1K	1K	Mechanical Zero: OK
6		2K	2K	2K	
7		4K	4K	4K	Response: OK
8					
9	X100	10K	10K	10K	Reset: OK
10		20K	20K	20K	
11		40K	40K	40K	Alarm: OK
12					
13					Test Pulse = 3.6K CPM
14					
15					Speaker: OK
16					99 Tc Efficiency = 11.6%
17					
18					1 mR/hr ≈ 3K CPM in 137 Cs field
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by:	I certify that the above information is correct:
Calibration Date: 10-24-95 (Signed)	10-24-95
Next Calibration Due: 01-24-96	Administrative Coordinator Date



GTS Instrument Services
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 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

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CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	Westinghouse	Instrument Manufacturer	Eberline
Customer Address:	P.O. Box 3700 Pittsburgh, PA 15230	Model	RM-14
		Serial Number	3248
		External Probe(s)	44-9
		Serial #	033031
Customer P.O.#	MB-14027-S	Calibration Method	¹³⁷ Pusler s/n 101500
Work Order #	I-95-06-208		⁹⁹ Cs s/n 10263 200mCi
			⁹⁹ Tc s/n S1256

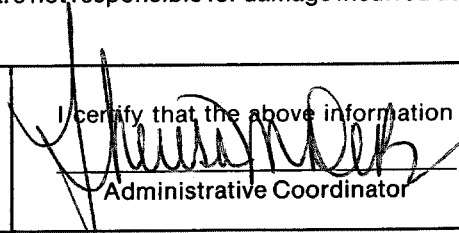
INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 X1	100 CPM	New Probe	100 CPM	All Calibrations Btn. + & - 10%
2	200	Initial Cal	200	
3	400		400	Battery Check: OK
4 X10	1K		1K	Mechanical zero: OK
5	2K		2K	
6	4K		4K	Response: OK
7				
8 X100	10K		10K	Reset: OK
9	20K		20K	
10	40K		40K	Speaker: OK
11				
12				Alarm: OK
13				
14				Test Pulse = 3.6K CPM
15				
16				1 mR/hr \approx 3.3K CPM in ¹³⁷ Cs field
17				
18				⁹⁹ Tc Efficiency = 11.7%
19				
20				
21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: _____ (Signed)
 Calibration Date: 06-05-95
 Next Calibration Due: 09-95-95

I certify that the above information is correct:

 Administrative Coordinator
 Date: 06-05-95

CODE NUMBER 48

REPORT #001

ESP-2 S/N:	1578	INSTRUMENT CODE:	48	DATE:	9/18/97
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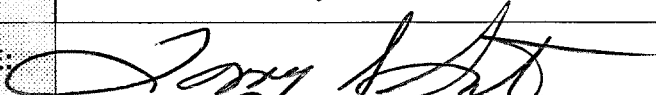
ALPHA / BETA:	ALPHA
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EFFICIENCY DATA: (Net cpm / dpm = Efficiency) (Correction Factor = 1 / Efficiency)						
SOURCE #	ACTIVITY dpm	TOTAL COUNTS	TIME (in minutes)	GROSS CPM (Total / # min)	BKG cpm (Total / # min)	NET cpm
5308	31280	34400	5	6880	2	6878
	BACKGROUND	10	5			

NET cpm	EFFICIENCY	CORRECTION FACTOR	AVERAGE EFFICIENCY	AVERAGE CORRECTION FACTOR
6878	22%	4.55	22%	4.55

HIGH VOLTAGE:	1100
---------------	------

GAS DECAY CALIBRATION WITH 100 cm2 PROBE					
ELAPSED TIME (in hours)	COUNTS	PERCENT (of original count)	ELAPSED TIME (in hours)	COUNTS	PERCENT (of original count)
INITIAL	6720	-	3 HOURS	6800	101.2%
1 HOUR	6720	100%	3.5 HOURS	6750	100.4%
1.5 HOURS	6790	101.4%	4 HOURS	6740	100.3%
2 HOURS	6680	99.4%	4.5 HOURS	6760	100.6%
2.5 HOURS	6710	99.9%	5 HOURS	6760	100.6%

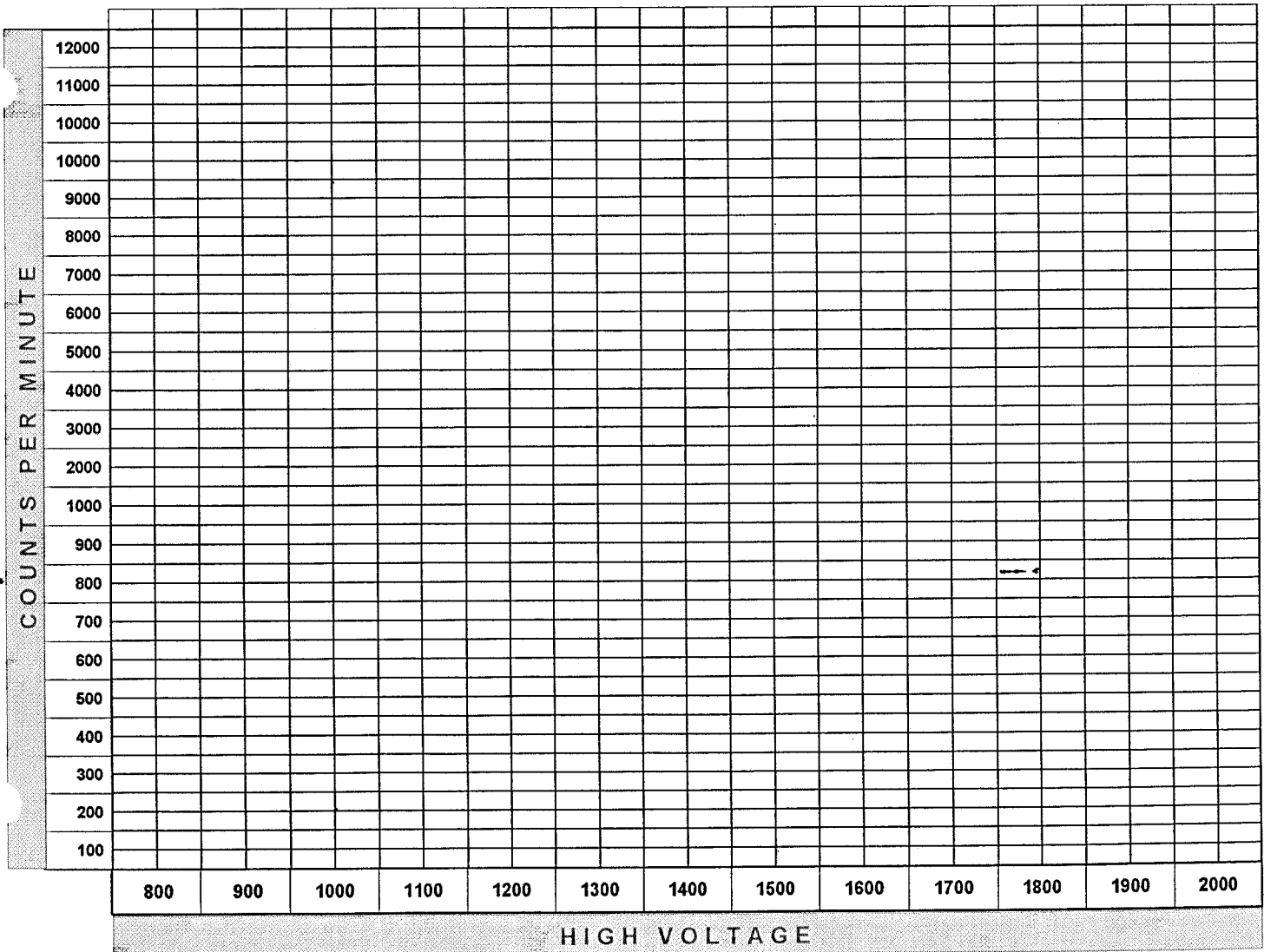
CALIBRATED BY:	Larry J. Smith
SIGNATURE:	

DATE:	9/18/97
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COMMENTS:	Calibrated with Ludlum 43-68 probe
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ALPHA / BETA:	ALPHA
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HIGH VOLTAGE	COUNTS	HIGH VOLTAGE	COUNTS	HIGH VOLTAGE	COUNTS
850	0	1250	7100	1650	-
900	2490	1300	7120	1700	-
950	5190	1350	7120	1750	-
1000	6550	1400	7120	1800	-
1050	6860	1450	7300	1850	-
1100	6770	1500	7360	1900	-
1150	6790	1550	-	1950	-
1200	6820	1600	-	2000	-





GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	<u>Westinghouse</u>	Instrument Manufacturer	<u>Eberline</u>
Customer Address:	<u>P.O. Box 3700</u>	Model	<u>ESP</u> Serial Number <u>01578</u>
	<u>Pittsburgh, PA 15235</u>	External Probe(s)	Serial # _____
Customer P.O.#	<u>MB-14027-S</u>	Calibration Method	<u>Pulser s/n 101500</u>
Work Order #	<u>I-97-08-209</u>		

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	RATEMETER	200 CPM	2.00 + 02 CPM	2.00 + 02 CPM	All Calibrations Btn. + & - 10%
2		800	8.00 + 02	8.00 + 02	
3		2K	2.00 + 03	2.00 + 03	Battery: OK
4		8K	8.00 + 03	8.00 + 03	
5		20K	2.00 + 04	2.00 + 04	Reset: OK
6		80K	8.00 + 04	8.00 + 04	
7		200K	2.01 + 05	2.01 + 05	Light: OK
8		800K	8.10 + 05	8.10 + 05	Speaker: OK
9	SCALER	200	2.00 + 02	2.00 + 02	
10	INTEGRATED	2K	2.00 + 03	2.00 + 03	Alarm @ 1.00 + 06
11	1 MIN COUNTS	20K	2.00 + 04	2.00 + 04	
12		200K	2.01 + 05	2.01 + 05	High Voltage = 1150 Volts
13		2M	2.07 + 06	2.07 + 06	
14					DT = 9.98 - 07
15					CC = 1.00 + 00
16					
17					Electronic Calibration only
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>William Owens</u>	I certify that the above information is correct:
Calibration Date: <u>08-20-97</u> (Signed)	<u>[Signature]</u> <u>08-20-97</u>
Next Calibration Due: <u>11-20-97</u>	Administrative Coordinator Date

ESP-2 S/N:	1578	INSTRUMENT CODE:	48	DATE:	5/7/97
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ALPHA / BETA:	ALPHA
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EFFICIENCY DATA: (Net cpm / dpm = Efficiency) (Correction Factor = 1 / Efficiency)

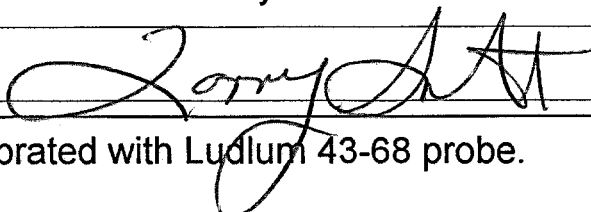
SOURCE #	ACTIVITY dpm	TOTAL COUNTS	TIME (in minutes)	GROSS CPM (Total / # min)	BKG cpm (Total / # min)	NET cpm
5308	31300	35600	5	7120	1	7119
	BACKGROUND	6	5			

NET cpm	EFFICIENCY	CORRECTION FACTOR	AVERAGE EFFICIENCY	AVERAGE CORRECTION FACTOR
7119	22.7%	4.4	22.7%	4.4

HIGH VOLTAGE:	1100
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GAS DECAY CALIBRATION WITH 100 cm2 PROBE

ELAPSED TIME (in hours)	COUNTS	PERCENT (of original count)	ELAPSED TIME (in hours)	COUNTS	PERCENT (of original count)
INITIAL	7100	-	3 HOURS	7130	100.9%
1 HOUR	7210	101.5%	3.5 HOURS	7100	100%
1.5 HOURS	7141	100.6%	4 HOURS	7100	100%
2 HOURS	7160	100.8%	4.5 HOURS	7020	98.9%
2.5 HOURS	7170	100.9%	5 HOURS	6890	97%

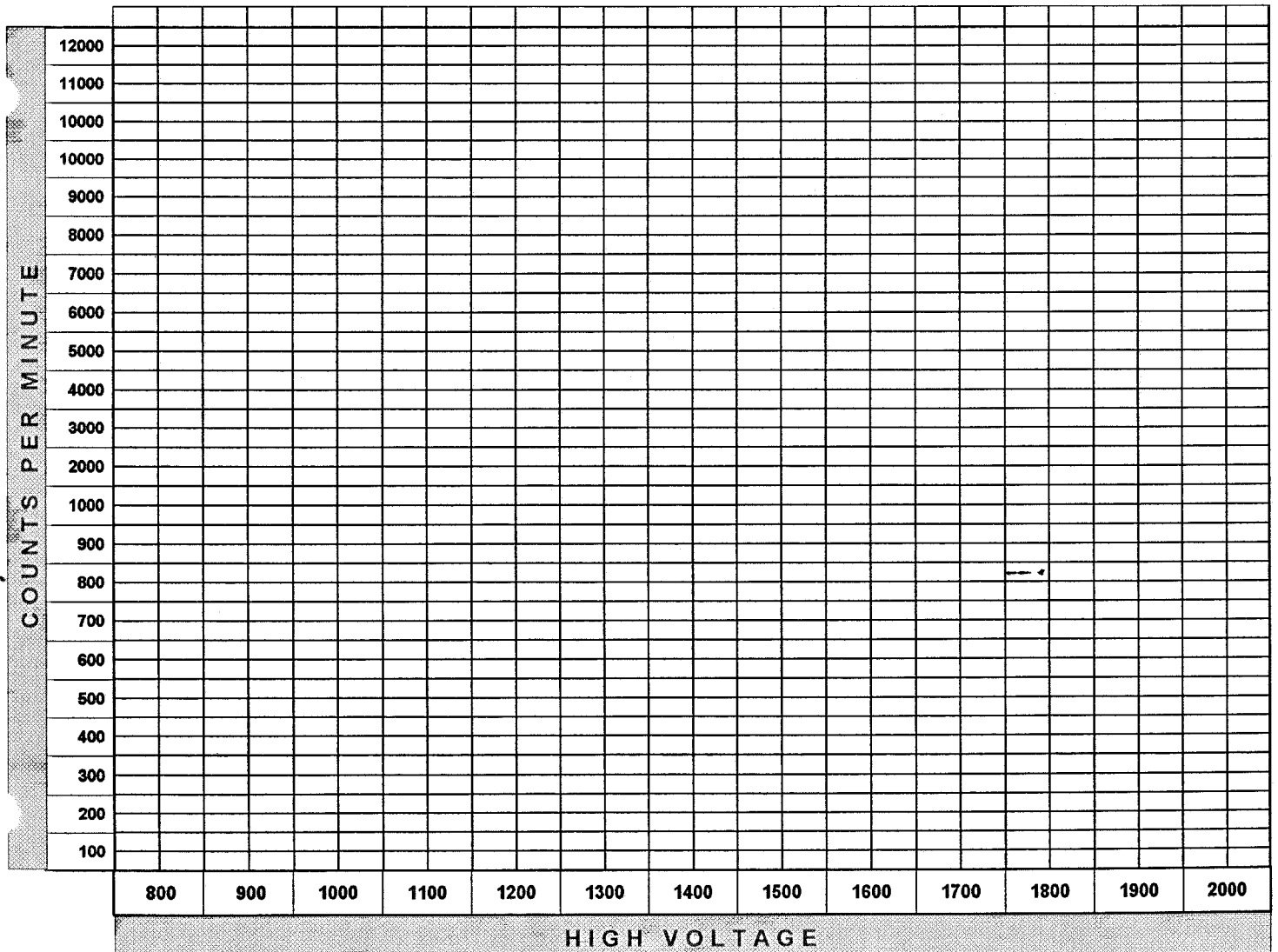
CALIBRATED BY:	Larry Smith
SIGNATURE:	

DATE:	5/7/97
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COMMENTS:	Calibrated with Ludlum 43-68 probe.
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ALPHA / BETA:	ALPHA
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HIGH VOLTAGE	COUNTS	HIGH VOLTAGE	COUNTS	HIGH VOLTAGE	COUNTS
850	1	1250	7490	1650	-
900	2670	1300	7390	1700	-
950	5450	1350	7510	1750	-
1000	6970	1400	7590	1800	-
1050	7130	1450	7700	1850	-
1100	7120	1500	7950	1900	-
1150	7310	1550	-	1950	-
1200	7420	1600	-	2000	-



ESP-2 S/N:	1578	INSTRUMENT CODE:	48	DATE:	2/5/97
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ALPHA / BETA:	ALPHA
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EFFICIENCY DATA: (Net cpm / dpm = Efficiency) (Correction Factor = 1 / Efficiency)						
SOURCE #	ACTIVITY dpm	TOTAL COUNTS	TIME (in minutes)	GROSS CPM (Total / # min)	BKG cpm (Total / # min)	NET cpm
5308	31300	35500	5	7100	3.6	7096
	BACKGROUND	18	5			

NET cpm	EFFICIENCY	CORRECTION FACTOR	AVERAGE EFFICIENCY	AVERAGE CORRECTION FACTOR
7096	22.6%	4.4	22.6%	4.4

HIGH VOLTAGE:	1100
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GAS DECAY CALIBRATION WITH 100 cm2 PROBE					
ELAPSED TIME (in hours)	COUNTS	PERCENT (of original count)	ELAPSED TIME (in hours)	COUNTS	PERCENT (of original count)
INITIAL	7160	---	3 HOURS	7120	99.4%
1 HOUR	7190	100.4%	3.5 HOURS	7100	99.2%
1.5 HOURS	6990	97.6%	4 HOURS	7080	98.9%
2 HOURS	7000	97.8%	4.5 HOURS	7000	97.8%
2.5 HOURS	7040	98.3%	5 HOURS	6880	96.1%

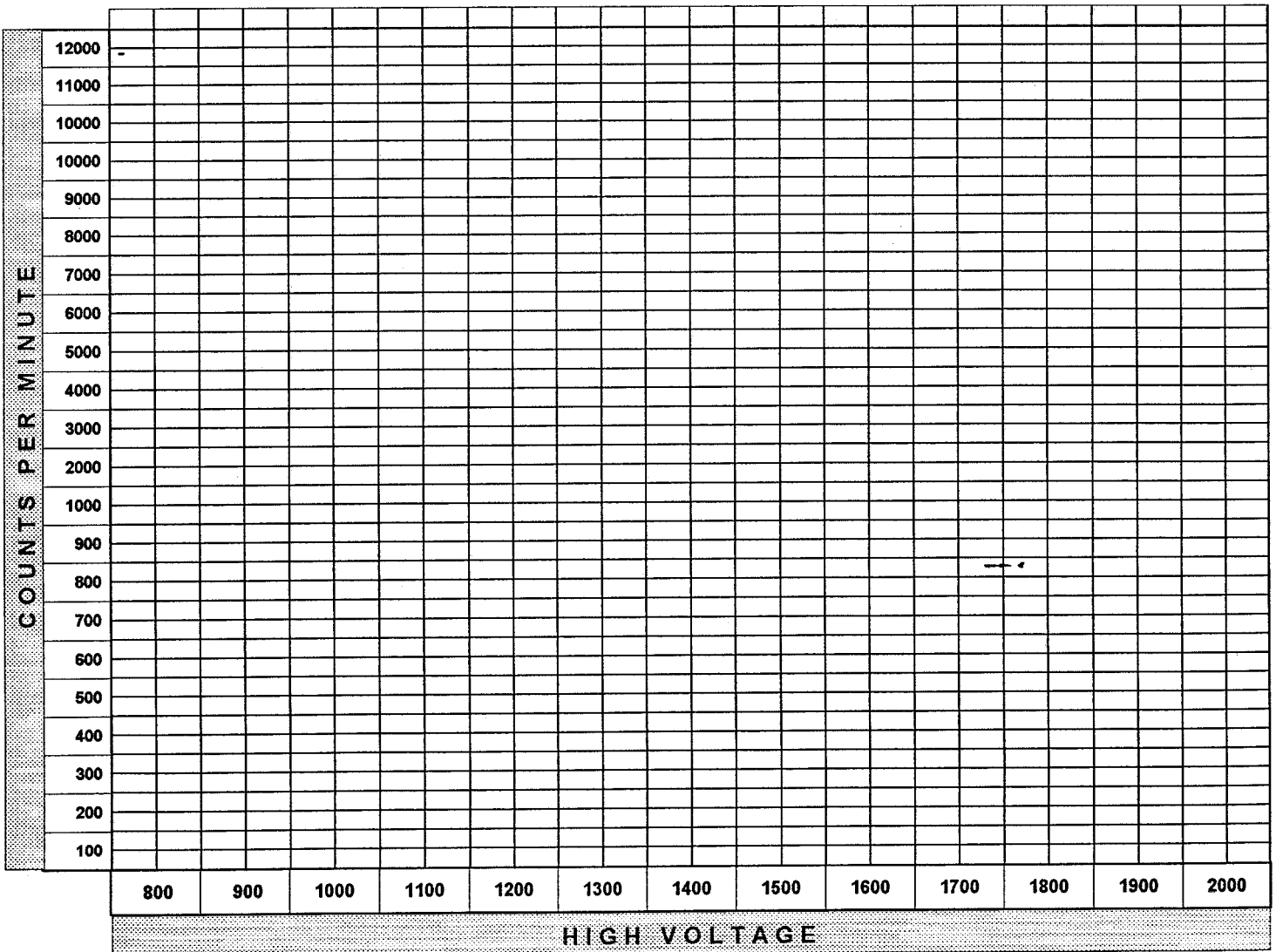
CALIBRATED BY:	Carmen Vergari
SIGNATURE:	<i>Carmen Vergari</i>

DATE:	2/5/97
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COMMENTS:	Calibrated with Ludlum 43-68 probe and short cable.
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ALPHA / BETA:	ALPHA
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HIGH VOLTAGE	COUNTS	HIGH VOLTAGE	COUNTS	HIGH VOLTAGE	COUNTS
850	1	1250	7510	1650	-
900	2710	1300	7410	1700	-
950	5390	1350	7410	1750	-
1000	6780	1400	7450	1800	-
1050	6960	1450	7650	1850	-
1100	7180	1500	7770	1900	-
1150	7340	1550	-	1950	-
1200	7350	1600	-	2000	-



ESP-2 S/N:	1578	INSTRUMENT CODE:	48	DATE:	8/29/96
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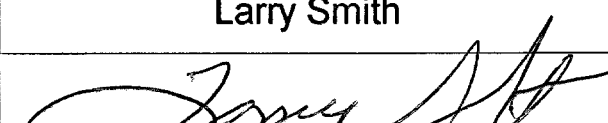
ALPHA / BETA:	ALPHA
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EFFICIENCY DATA: (Net cpm / dpm = Efficiency) (Correction Factor = 1 / Efficiency)						
SOURCE #	ACTIVITY dpm	TOTAL COUNTS	TIME (in minutes)	GROSS CPM (Total / # min)	BKG cpm (Total / # min)	NET cpm
5308	31300	35000	5	7000	1	6999
	BACKGROUND	6	5			

NET cpm	EFFICIENCY	CORRECTION FACTOR	AVERAGE EFFICIENCY	AVERAGE CORRECTION FACTOR
6999	22.4%	4.46	22.4%	4.46

HIGH VOLTAGE:	1100
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GAS DECAY CALIBRATION WITH 100 cm2 PROBE					
ELAPSED TIME (in hours)	COUNTS	PERCENT (of original count)	ELAPSED TIME (in hours)	COUNTS	PERCENT (of original count)
INITIAL	7100	-	3 HOURS	7000	98.6%
1 HOUR	7050	99.3%	3.5 HOURS	7010	98.7%
1.5 HOURS	7020	98.9%	4 HOURS	6950	97.9%
2 HOURS	6990	98.5%	4.5 HOURS	6920	97.5%
2.5 HOURS	7080	99.7%	5 HOURS	6930	97.6%

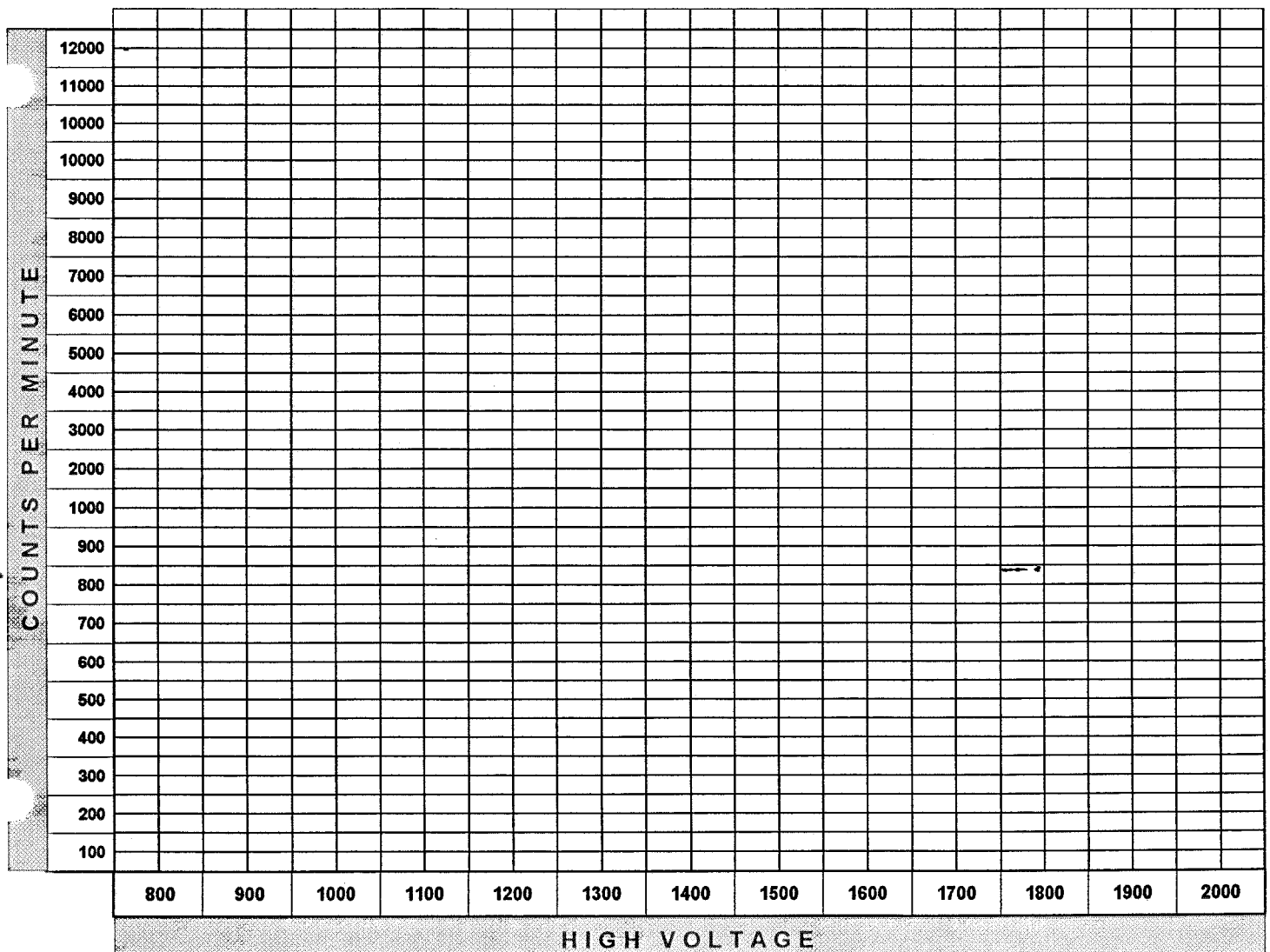
CALIBRATED BY:	Larry Smith
SIGNATURE:	

DATE:	8/29/96
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COMMENTS:	Calibrated with Ludlum 43-68 probe
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ALPHA / BETA: ALPHA

HIGH VOLTAGE	COUNTS	HIGH VOLTAGE	COUNTS	HIGH VOLTAGE	COUNTS
850	1	1250	7120	1650	-
900	1490	1300	7300	1700	-
950	4390	1350	7250	1750	-
1000	6450	1400	7490	1800	-
1050	6870	1450	7420	1850	-
1100	7100	1500	7610	1900	-
1150	7100	1550	7680	1950	-
1200	7090	1600	8850	2000	-



ESP-2 S/N:	1578	INSTRUMENT CODE:	48	DATE:	12/12/95
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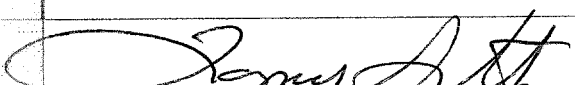
ALPHA / BETA:	ALPHA
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EFFICIENCY DATA: (Net cpm / dpm = Efficiency) (Correction Factor = 1 / Efficiency)						
SOURCE #	ACTIVITY dpm	TOTAL COUNTS	TIME (in minutes)	GROSS CPM (Total / # min)	BKG cpm (Total / # min)	NET cpm
7346	230965	250000	5	50000	.8	49999
	BACKGROUND	4	5			

NET cpm	EFFICIENCY	CORRECTION FACTOR	AVERAGE EFFICIENCY	AVERAGE CORRECTION FACTOR
49999	21.6	4.6	21.6%	4.6

HIGH VOLTAGE:	1350
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GAS DECAY CALIBRATION WITH 100 cm2 PROBE					
ELASPED TIME (in hours)	COUNTS	PERCENT (of original count)	ELASPED TIME (in hours)	COUNTS	PERCENT (of original count)
INITIAL	50100		3 HOURS	49200	98.2%
1 HOUR	50100	100%	3.5 HOURS	49400	98.6%
1.5 HOURS	49600	99%	4 HOURS	48900	97.6%
2 HOURS	49400	98.6%	4.5 HOURS	49000	97.8%
2.5 HOURS	49700	99.2%	5 HOURS	48500	96.8%

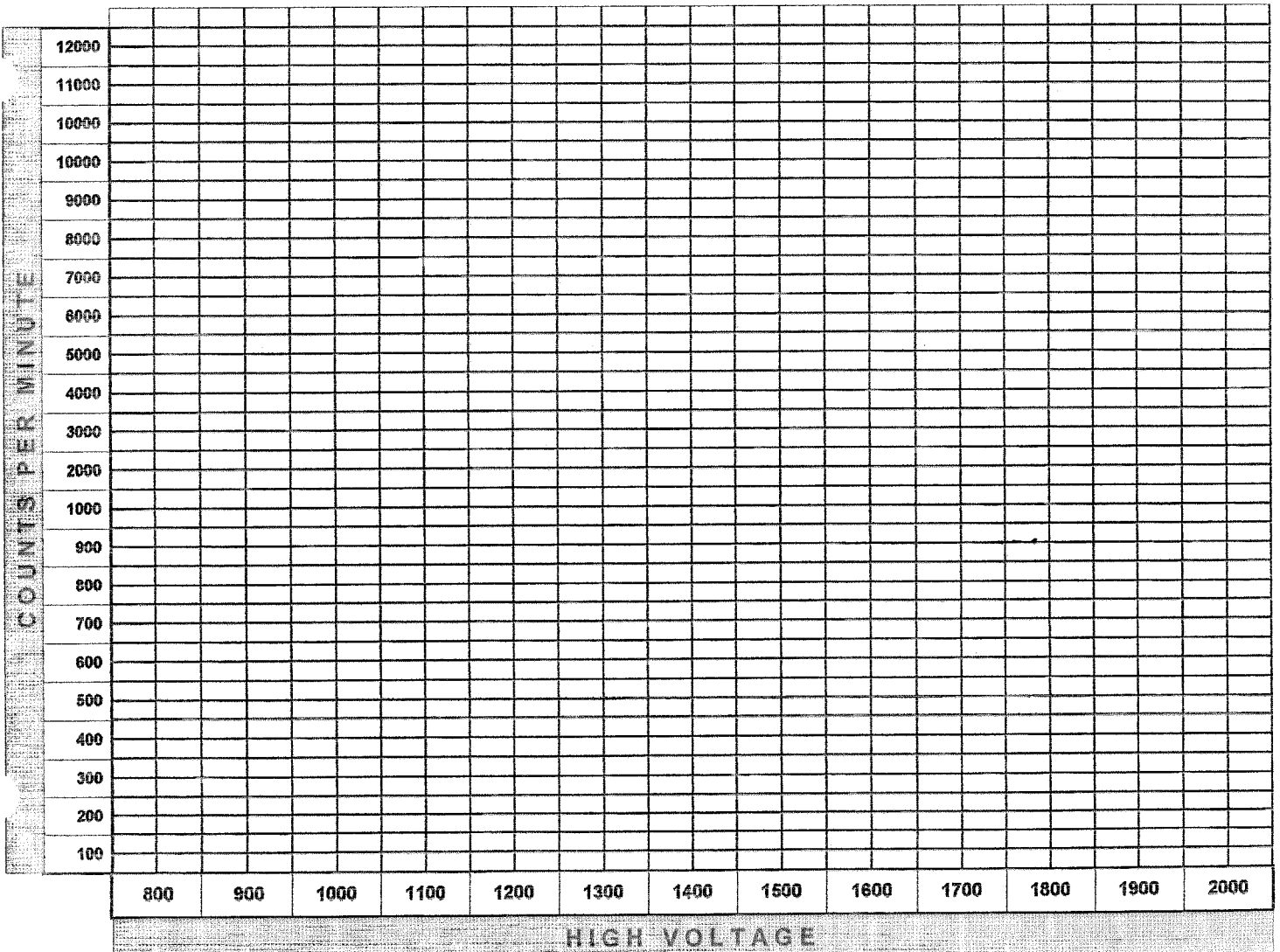
CALIBRATED BY:	Larry Smith
SIGNATURE:	

DATE:	12/12/95
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COMMENTS:	Calibrated with Eberline HP-100A probe
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ALPHA / BETA:	ALPHA
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HIGH VOLTAGE	COUNTS	HIGH VOLTAGE	COUNTS	HIGH VOLTAGE	COUNTS
850	0	1250	24700	1650	-
900	0	1300	44300	1700	-
950	0	1350	50100	1750	-
1000	0	1400	57900	1800	-
1050	0	1450	59200	1850	-
1100	0	1500	59600	1900	-
1150	8	1550	-	1950	-
1200	185	1600	-	2000	-





GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

RENTAL EQUIPMENT

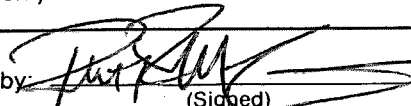
CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	GTS INSTRUMENT SERVICES, INC.	Instrument Manufacturer	Eberline
Customer Address:	2045 Rt. 286 Pittsburgh, PA 15239	Model	ESP-2 Serial Number 1578 (141)
Customer P.O.#	MB-14027-S	External Probe(s)	Serial #
Work Order #	I-95-12-210	Calibration Method	Pulser s/n 120935

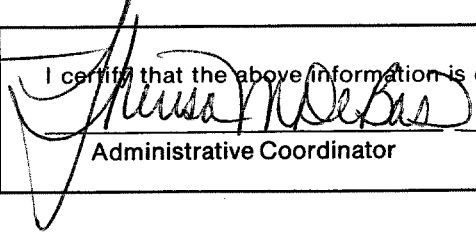
INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 N/A	200 CPM		2.00 + 02 CPM	All Calibrations Btn. + & - 10%
2	800		8.00 + 02	
3	2K		2.00 + 03	Calibrated on #1
4	8K		8.00 + 03	
5	20K		2.00 + 04	Battery: OK
6	80K		8.00 + 04	
7	200K		2.01 + 05	Reset: OK
8	800K		8.10 + 05	
9	2M		2.06 + 06	Light: OK
10				
11 SCALER	200		2.00 + 02	Speaker: OK
12 1 MIN COUNTS	2K		2.00 + 03	
13	20K		2.00 + 04	DT = 1.00 - 06
14	200K		2.01 + 05	CC = 1.00 + 00
15	2M		2.06 + 06	
16				High Voltage Check: OK
17				
18				
19				
20				
21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: 
 Calibration Date: 12-07-95
 Next Calibration Due: 06-07-96

I certify that the above information is correct:

 Administrative Coordinator Date 12-07-95

ESP-2 S/N:	1578	INSTRUMENT CODE:	48	DATE:	6/1/95
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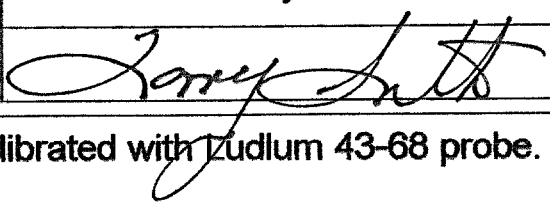
ALPHA / BETA:	ALPHA
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EFFICIENCY DATA: (Net cpm / dpm = Efficiency) (Correction Factor = 1 / Efficiency)						
SOURCE #	ACTIVITY dpm	TOTAL COUNTS	TIME (in minutes)	GROSS CPM (Total / # min)	BKG cpm (Total / # min)	NET cpm
7346	230965	211000	5	42200	.2	42200
	BACKGROUND	1	5			

NET cpm	EFFICIENCY	CORRECTION FACTOR	AVERAGE EFFICIENCY	AVERAGE CORRECTION FACTOR
42200	18.3	5.5	18.3%	5.5

HIGH VOLTAGE:	1350
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GAS DECAY CALIBRATION WITH 100 cm2 PROBE					
ELAPSED TIME (in hours)	COUNTS	PERCENT (of original count)	ELAPSED TIME (in hours)	COUNTS	PERCENT (of original count)
INITIAL	46100	---	3 HOURS	43400	94.1%
1 HOUR	45500	98.7%	3.5 HOURS	43700	94.8%
1.5 HOURS	45100	97.8%	4 HOURS	43600	94.6%
2 HOURS	44500	96.5%	4.5 HOURS	42300	91.8%
2.5 HOURS	43800	95%	5 HOURS	42000	91.1%

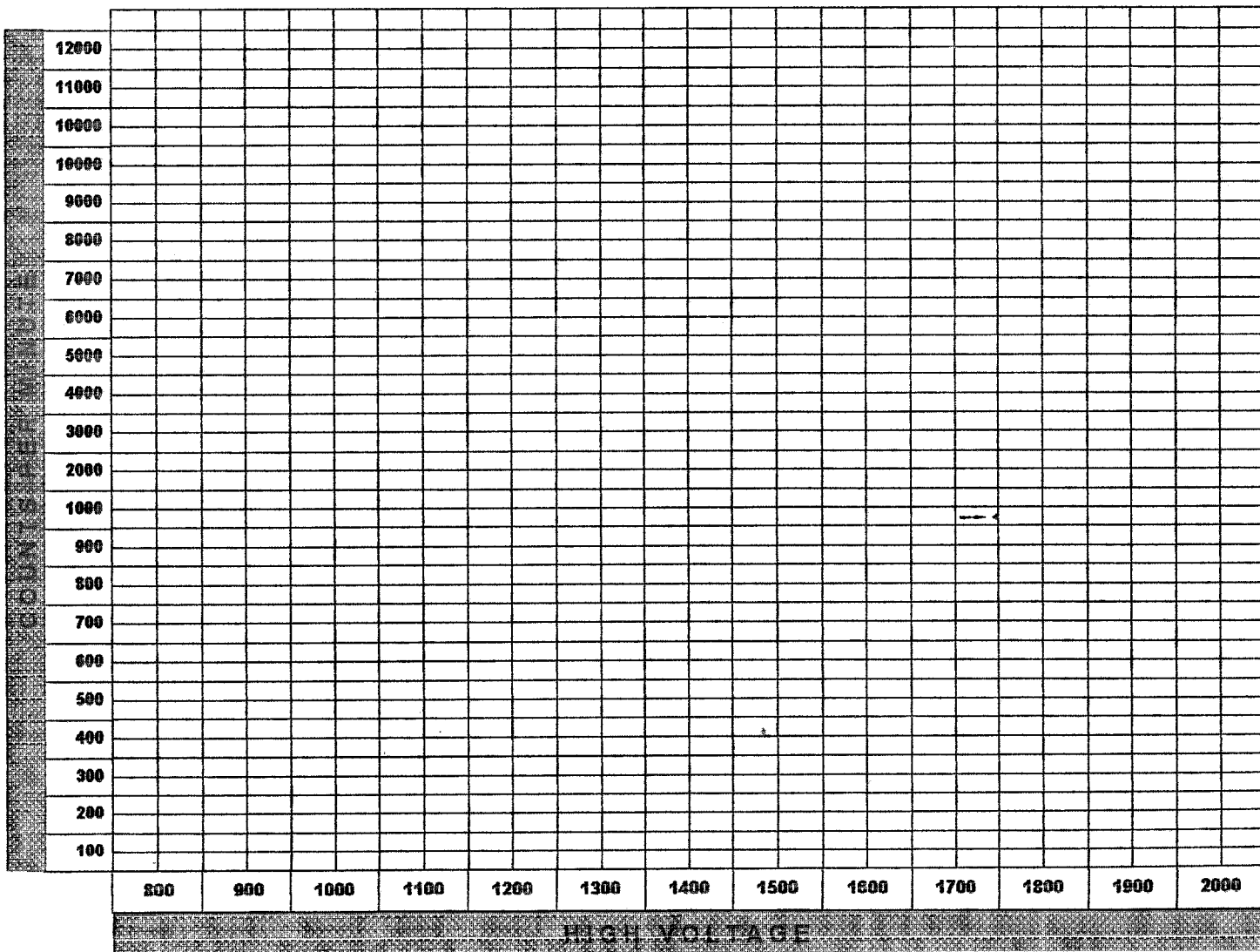
CALIBRATED BY:	Larry Smith
SIGNATURE:	

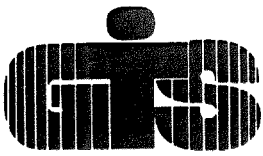
DATE:	6/1/95
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COMMENTS:	Calibrated with Ludlum 43-68 probe.
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ALPHA / BETA: **BETA**

HIGH VOLTAGE	COUNTS	HIGH VOLTAGE	COUNTS	HIGH VOLTAGE	COUNTS
850	0	1250	33400	1650	---
900	0	1300	39600	1700	---
950	0	1350	44800	1750	---
1000	0	1400	45900	1800	---
1050	0	1450	47300	1850	---
1100	52	1500	47400	1900	---
1150	16100	1550	---	1950	---
1200	30700	1600	---	2000	---





GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>GTS INSTRUMENT SERVICES</u>	Instrument Manufacturer <u>Eberline</u>
Customer Address: <u>2045 Rt. 286</u>	Model <u>ESP-2</u> Serial Number <u>1578 (141)</u>
<u>Pittsburgh, PA 15239</u>	External Probe(s) _____ Serial # _____
Customer P.O.# <u>MB-14027-S</u>	Calibration Method <u>Pulser s/n 101500</u>
Work Order # <u>I-95-05-209</u>	

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 N/A	200 CPM		2.00 + 02 CPM	All Calibrations Btn. + & - 10%
2	800		8.01 + 02	Battery: OK
3				
4	2K		2.00 + 03	Reset: OK
5	8K		8.02 + 03	
6				
7	20K		2.01 + 04	Audio: OK
8	80K		8.04 + 04	Light: OK
9				
10	200K		2.01 + 05	
11	800K		8.05 + 05	DT = 1.00 = 07
12				CC = 1.00 + 00
13	2M		2.02 + 06	
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u>	I certify that the above information is correct:
Calibration Date: <u>05-25-95</u> (Signed)	<u>[Signature]</u> <u>05-25-95</u>
Next Calibration Due: <u>11-25-95</u>	Administrative Coordinator Date

CODE NUMBER 49

REPORT #001

ESP-2 S/N:	1641	INSTRUMENT CODE	49	DATE:	6/1/95
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ALPHA / BETA:	BETA
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EFFICIENCY DATA: (Net cpm / dpm = Efficiency) (Correction Factor = 1 / Efficiency)

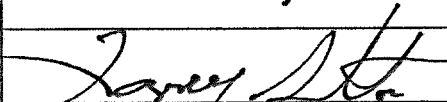
SOURCE #	ACTIVITY dpm	TOTAL COUNTS	TIME (in minutes)	GROSS CPM (Total / 5 min)	BKG cpm (Total / 5 min)	NET cpm
763/84	18699	30200	5	6040	260	5780
	BACKGROUND	1300	5			

NET cpm	EFFICIENCY	CORRECTION FACTOR	AVERAGE EFFICIENCY	AVERAGE CORRECTION FACTOR
5780	30.9%	3.2	30.9%	3.2

HIGH VOLTAGE	1770
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GAS DECAY CALIBRATION WITH 100 cm2 PROBE

ELAPSED TIME (in hours)	COUNTS	PERCENT (of original count)	ELAPSED TIME (in hours)	COUNTS	PERCENT (of original count)
INITIAL	6310	---	3 HOURS	6320	100%
1 HOUR	6380	101%	3.5 HOURS	6370	101%
1.5 HOURS	6470	102.5%	4 HOURS	6410	101.5%
2 HOURS	6240	98.9%	4.5 HOURS	6280	99.5%
2.5 HOURS	6350	100.6%	5 HOURS	6270	99.5%

CALIBRATED BY:	Larry Smith
SIGNATURE:	

DATE:	6/1/95
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COMMENTS: Calibrated with Ludlum 43-68 probe



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>GTS INSTRUMENT SERVICES</u>	Instrument Manufacturer <u>Eberline</u>
Customer Address: <u>2045 Rt. 286</u>	Model <u>ESP-2</u> Serial Number <u>1641 (14C)</u>
<u>Pittsburghf, PA 15239</u>	External Probe(s) _____ Serial # _____
Customer P.O.# <u>MB-14027-S</u>	Calibration Method <u>Pulser s/n 101500</u>
Work Order # <u>I-95-05-209</u>	

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 N/A	200 CPM		2.00 + 02 CPM	All Calibrations Btn. + & - 10%
2	800		8.00 + 02	Battery: OK
3				
4	2K		2.00 + 03	Audio: OK
5	8K		8.03 + 03	
6				
7	20K		2.00 + 04	Light: OK
8	80K		8.04 + 04	
9				Reset: OK
10	200K		2.01 + 05	
11	800K		8.05 + 05	DT = 1.00 - 07
12				
13	2M		2.01 + 06	CC = 1.00 + 00
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u> (Signed)	I certify that the above information is correct: <u>[Signature]</u>
Calibration Date: <u>05-25-95</u>	<u>05-25-95</u>
Next Calibration Due: <u>11-25-95</u>	Administrative Coordinator Date

CODE NUMBER 50

No Instrument

REPORT #001

CODE NUMBER 51

REPORT #001



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>GTS Instrument Services</u>	Instrument Manufacturer <u>Bicron</u>
Customer Address: <u>2045 Route 286</u>	Model <u>Micro Rem</u> Serial Number <u>142</u>
<u>Pittsburgh, PA 15239-2839</u>	External Probe(s) _____ Serial # _____
Customer P.O.# <u>MB-14027-S</u>	Calibration Method <u>¹³⁷Cs s/n 10263</u>
Work Order # <u>I-97-03-209</u>	_____

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 <u>X0.1</u>	<u>.015 mR/hr</u>	<u>15 mR/hr</u>	<u>15 mR/hr</u>	<u>All Calibrations Btn. + & - 10%</u>
2 _____	_____	_____	_____	_____
3 <u>X1</u>	<u>0.05</u>	<u>50</u>	<u>50</u>	<u>Mechanical Zero: OK</u>
4 _____	<u>0.1</u>	<u>100</u>	<u>100</u>	_____
5 _____	<u>0.15</u>	<u>155</u>	<u>155</u>	<u>Battery: OK</u>
6 _____	_____	_____	_____	_____
7 <u>X10</u>	<u>0.5</u>	<u>500</u>	<u>500</u>	_____
8 _____	<u>1</u>	<u>1,000</u>	<u>1,000</u>	_____
9 _____	<u>1.5</u>	<u>1,600</u>	<u>1,600</u>	_____
10 _____	_____	_____	_____	_____
11 <u>X100</u>	<u>5</u>	<u>4,800</u>	<u>4,800</u>	_____
12 _____	<u>10</u>	<u>10,000</u>	<u>10,000</u>	_____
13 _____	<u>15</u>	<u>15,800</u>	<u>15,800</u>	_____
14 _____	_____	_____	_____	_____
15 <u>X1000</u>	<u>50</u>	<u>50,000</u>	<u>50,000</u>	_____
16 _____	<u>100</u>	<u>100,000</u>	<u>100,000</u>	_____
17 _____	<u>150</u>	<u>154,000</u>	<u>154,000</u>	_____
18 _____	_____	_____	_____	_____
19 _____	_____	_____	_____	_____
20 _____	_____	_____	_____	_____
21 _____	_____	_____	_____	_____
22 _____	_____	_____	_____	_____
23 _____	_____	_____	_____	_____

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>James Christy</u> (Signed)	I certify that the above information is correct: <u>Tim Lawton</u> 04-01-97 Administrative Coordinator Date
Calibration Date: <u>04-01-97</u>	
Next Calibration Due: <u>07-01-97</u>	



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION

INSTRUMENT INFORMATION

RENTAL EQUIPMENT

Customer Name: GTS INSTRUMENT SERVICES
 Customer Address: 2045 Rt. 286
Pittsburgh, PA 15239
 Customer P.O.# BEBZ524601
 Work Order # I-96-12-210

Instrument Manufacturer Bicron
 Model Micro Rem Serial Number 142
 External Probe(s) _____ Serial # _____
 Calibration Method ¹³⁷Cs s/n 10263 200mCi

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 X0.1	0.015 mR/hr	8 uR/hr	15 uR/hr	All Calibrations Btn. + & - 10%
2				
3 X1	0.05	40	50	Battery: OK
4	0.1	80	105	
5	0.15	125	155	Mechanical Zero: OK
6				
7 X10	0.5	500	500	
8	1	1,050	1,050	
9	1.5	1,600	1,600	
10				
11 X100	5	4,700	4,700	
12	10	10,200	10,200	
13	15	15,700	15,700	
14				
15 X1000	50	48,000	48,000	
16	100	100,000	100,000	
17	150	152,000	152,000	
18				
19				
20				
21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: William Owen
 (Signed)
 Calibration Date: 01-02-97
 Next Calibration Due: 04-02-97

I certify that the above information is correct:
[Signature]
 Administrative Coordinator
 Date 01-02-97



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION

GTS INSTRUMENTS - RENTAL EQUIPMENT
 Customer Name: Westinghouse
 Customer Address: P.O. Box 3700
Pittsburgh, PA 15230
 Customer P.O.# MB-14027-S
 Work Order # I-96-08-210

INSTRUMENT INFORMATION

Instrument Manufacturer Bicron
 Model Micro Rem Serial Number 142
 External Probe(s) _____ Serial # _____
 Calibration Method 137Cs s/n 10263 200mCi

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X0.1	0.015 mR/hr	15 uR/hr	15 uR/hr	All Calibrations Btn. + & - 10%
2					
3	X1	0.05	55	55	Battery: OK
4		0.1	100	100	
5		0.15	148	145	Mechanical Zero: OK
6					
7	X10	0.5	450	500	High Voltage: OK
8		1	920	1,000	
9		1.5	1,400	1,500	
10					
11	X100	5	5,000	5,000	
12		10	10,200	10,200	
13		15	15,500	15,500	
14					
15	X1000	50	50,000	50,000	
16		100	100,000	100,000	
17		150	150,000	150,000	
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: [Signature]
 (Signed)
 Calibration Date: 09-04-96
 Next Calibration Due: 12-04-96

I certify that the above information is correct:
[Signature]
 Administrative Coordinator
 Date 09-04-96



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
RENTAL EQUIPMENT Customer Name: <u>GTS INSTRUMENT SERVICES</u> Customer Address: <u>2045 Rt. 286</u> <u>Pittsburgh, PA 15239</u> Customer P.O.# _____ Work Order # <u>I-96-05-209</u>	Instrument Manufacturer <u>Bicron</u> Model <u>Micro Rem</u> Serial Number <u>142</u> External Probe(s) _____ Serial # _____ Calibration Method <u>137 Cs s/n 10263</u> <u>200mCi</u>

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 X0.1	0.015 mR/hr		15 uR/hr	All Calibrations Btn. + & - 10%
2				
3 X1	0.05		50	Battery: OK
4	0.1		100	
5	0.15		148	Mechanical Zero: OK
6				
7 X10	0.5		480	
8	1		1,050	
9	1.5		1,500	
10				
11 X100	5		4,800	
12	10		10,500	
13	15		16,000	
14				
15 X1000	50		50,000	
16	100		102,000	
17	150		155,000	
18				
19				
20				
21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>William Owens</u> (Signed) Calibration Date: <u>05-22-96</u> Next Calibration Due: <u>08-22-96</u>	I certify that the above information is correct: <u>William Owens</u> <u>05-22-96</u> Administrative Coordinator Date
--	---



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	<u>Westinghouse</u>	Instrument Manufacturer	<u>Bicron</u>
Customer Address:	<u>P.O. Box 3700</u> <u>Pittsburgh, PA 15230</u>	Model	<u>Micro Res</u> Serial Number <u>142</u>
Customer P.O.#	<u>MB-14027-S</u>	External Probe(s)	Serial # _____
Work Order #	<u>I-95-12-208</u>	Calibration Method	<u>137 Cs</u> s/n <u>10263</u> <u>200mCi</u>

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X0.1	0.015 mR/hr	15 uR/hr	15 uR/hr	All Calibrations Btn. + & - 10%
2					
3	X1	0.05	52	50	Battery: OK
4		0.1	105	100	
5		0.15	158	150	Mechanical Zero: OK
6					
7	X10	0.5	500	500	High Voltage: OK
8		1	1,000	1,000	
9		1.5	1,500	1,500	
10					
11	X100	5	4,500	4,800	
12		10	9,000	10,200	
13		15	14,000	15,800	
14					
15	X1000	50	48,000	48,000	
16		100	98,000	98,000	
17		150	150,000	150,000	
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by:		I certify that the above information is correct:	
Calibration Date:	<u>01-11-96</u> (Signed)	Administrative Coordinator	<u>01-11-96</u>
Next Calibration Due:	<u>04-11-96</u>	Date	



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION

INSTRUMENT INFORMATION

RENTAL EQUIPMENT

Customer Name: GTS INSTRUMENT SERVICES
 Customer Address: 2045 Rt. 286
Pittsburgh, PA 15239
 Customer P.O.# MB-14027-S
 Work Order # I-95-09-210

Instrument Manufacturer Bicron
 Model Micro Rem Serial Number 142
 External Probe(s) _____ Serial # _____
 Calibration Method 137Cs s/n 10263 200mCi

INSTRUMENT CALIBRATION INFORMATION

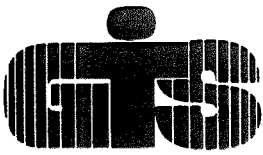
	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X0.1	0.015 mR/hr	15 uR/hr	15 uR/hr	All Calibrations Btn. + & - 10%
2	XI	0.05	48	50	Battery Check: OK
3		0.10	95	100	
4		0.15	140	150	Batteries: OK
5	X10	0.5	480	500	High Voltage: OK
6		1	950	1,000	
7		1.5	1,400	1,500	
8	X100	5	4,800	4,800	
9		10	9,800	9,800	
10		15	14,800	14,800	
11	X1000	50	50,000	50,000	
12		100	100,000	100,000	
13		150	150,000	150,000	
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: [Signature]
 Calibration Date: 09-20-95 (Signed)
 Next Calibration Due: 12-20-95

I certify that the above information is correct:
[Signature] Administrative Coordinator
 09-20-95 Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

451

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION

INSTRUMENT INFORMATION

Customer Name: GTS INSTRUMENT SERVICES, INC.
 Customer Address: 2045 Rt. 286
Pittsburgh, PA 15239
 Customer P.O.# MB-14027-S
 Work Order # I-95-06-208

Instrument Manufacturer Bicron
 Model Micro Rem Serial Number 142
 External Probe(s) _____ Serial # _____
 Calibration Method 137Cs s/n 10263 200mC:

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X0.1	0.015 mR/hr		15 uR/hr	All Calibrations Btn. + & - 10%
2					
3	X1	0.05		50	Battery: OK
4		0.10		100	
5		0.15		150	Mechanical Zero: OK
6					
7	X10	0.5		480	High Voltage: OK
8		1		1,000	
9		1.5		1,500	
10					
11	X100	5		5,000	
12		10		10,000	
13		15		15,000	
14					
15	X1000	50		50,000	
16		100		100,000	
17		150		152,000	
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: [Signature]
 Calibration Date: 06-14-95 (Signed)
 Next Calibration Due: 12-14-95

I certify that the above information is correct:
[Signature] Administrative Coordinator
 Date 06-14-95

CODE NUMBER 52

REPORT #001



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 724/733-1900 Fax: 724/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

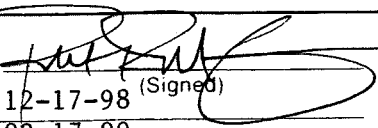
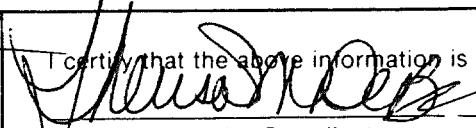
CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	Westinghouse	Instrument Manufacturer:	Eberline
Customer Address:	PO Box 3700 Pittsburgh, PA 15230	Model:	E-140
		Serial Number:	1487
		External Probe(s):	HP177C
Customer P.O.#:	MB-14027-S	Calibration Method:	137 Cs s/n 10263 200mCi
Work Order #:	I-98-12-208		

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 X1	0.1 mR/hr	0.1 mR/hr	0.1 mR/hr	All Calibrations Btn. + & - 10%
2	0.2	0.2	0.2	
3	0.4	0.4	0.4	Battery: OK
4				
5 X10	1	1	1	Mechanical Zero: OK
6	2	1.9	1.9	
7	4	4	4	Response: OK
8				
9 X100	10	10	10	Reset: OK
10	20	20	20	
11	40	39	39	Speaker: OK
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by:		I certify that the above information is correct:	
Calibration Date:	12-17-98 (Signed)	Administrative Coordinator	12-17-98
Next Calibration Due:	03-17-99		Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 724/733-1900 Fax: 724/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

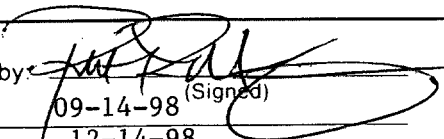
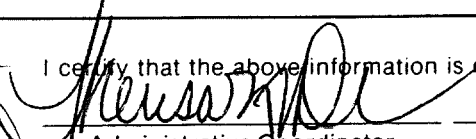
CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	Westinghouse	Instrument Manufacturer:	Eberline
Customer Address:	PO Box 3700	Model:	E-140
	Pittsburgh, PA 15230	Serial Number:	1487
		External Probe(s):	HP177C
Customer P.O.#:	MB-14027-S	Serial #:	
Work Order #:	I-98-09-208	Calibration Method:	¹³⁷ Cs s/n 10263 200mCi

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 X1	0.1 mR/hr	0.1 mR/hr	0.1 mR/hr	All Calibrations Btn. + & - 10%
2	0.2	0.2	0.2	
3	0.4	0.4	0.4	Battery: OK
4				
5 X10	1	1	1	Mechanical Zero: OK
6	2	2	2	
7	4	4	4	Response: OK
8				
9 X100	10	10	10	Reset: OK
10	20	20.5	20.5	
11	40	38	38	Speaker: OK
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: 	I certify that the above information is correct:
Calibration Date: 09-14-98 (Signed)	
Next Calibration Due: 12-14-98	Administrative Coordinator
	Date: 09-14-98



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 724/733-1900 Fax: 724/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

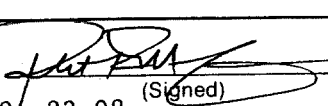
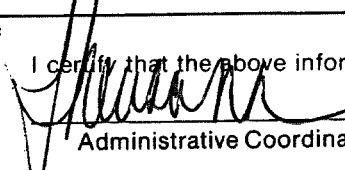
CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	Westinghouse	Instrument Manufacturer	Eberline
Customer Address:	PO Box 3700 Pittsburgh, PA 15235	Model	E-140
		Serial Number	1487
		External Probe(s)	HP-177C
Customer P.O.#	MB-14027-S	Serial #	
Work Order #	I-98-04-208	Calibration Method	¹³⁷ Cs s/n 10263 200mCi

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 X1	0.1 mR/hr	0.1 mR/hr	0.1 mR/hr	All Calibrations Btn. + & - 10%
2	0.2	0.2	0.2	Battery: OK
3	0.4	0.4	0.4	
4 X10	1	1	1	Mechanical Zero: OK
5	2	2	2	
6	4	3.9	3.9	Response: OK
7				
8 X100	10	10	10	Reset: OK
9	20	20	20	
10	40	38	38	Speaker: OK
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by:		I certify that the above information is correct:	
Calibration Date:	04-23-98 (Signed)		04-23-98
Next Calibration Due:	07-23-98	Administrative Coordinator	Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Eberline</u>
Customer Address: <u>PO Box 3700</u>	Model <u>E-140</u> Serial Number <u>1487</u>
<u>Pittsburgh, PA 15230</u>	External Probe(s) <u>X</u> Serial # _____
Customer P.O.# <u>MB-14027-S</u>	Calibration Method <u>¹³⁷Cs s/n 10263 200mCi</u>
Work Order # <u>I-97-12-209</u>	

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 <u>X1</u>	<u>0.1 mR/hr</u>	<u>0.1 mR/hr</u>	<u>0.1 mR/hr</u>	<u>All Calibrations Btn. + & - 10%</u>
2	<u>0.2</u>	<u>0.2</u>	<u>0.2</u>	
3	<u>0.4</u>	<u>0.4</u>	<u>0.4</u>	<u>Battery: OK</u>
4				
5 <u>X10</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>Mechanical Zero: OK</u>
6	<u>2</u>	<u>2</u>	<u>2</u>	
7	<u>4</u>	<u>4</u>	<u>4</u>	<u>Reset: OK</u>
8				
9 <u>X100</u>	<u>10</u>	<u>10</u>	<u>10</u>	<u>Response: OK</u>
10	<u>20</u>	<u>20</u>	<u>20</u>	
11	<u>40</u>	<u>40</u>	<u>40</u>	<u>Audio: OK</u>
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u> (Signed)	I certify that the above information is correct: <u>[Signature]</u>
Calibration Date: <u>01-05-98</u>	<u>01-05-98</u>
Next Calibration Due: <u>04-05-98</u>	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	Westinghouse	Instrument Manufacturer	Eberline
Customer Address:	P.O. Box 3700	Model	E-140
	Pittsburgh, PA 15230	Serial Number	1487
		External Probe(s)	X Serial #
Customer P.O.#	MB-14027-S	Calibration Method	¹³⁷ Cs s/n 10263 200mCi
Work Order #	I-97-06-209		

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	0.1 mR/hr	0.1 mR/hr	0.1 mR/hr	All Calibrations Btn. + & - 10%
2		0.2	0.2	0.2	
3		0.4	0.4	0.4	Battery: OK
4	X10	1	1	1	Mechanical Zero: OK
5		2	2	2	
6		4	4	4	Reset: OK
7					
8	X100	10	10.5	10.5	Response: OK
9		20	21	21	
10		40	39	39	Audio: OK
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>William Over</u> (Signed)	I certify that the above information is correct:
Calibration Date: <u>07-01-97</u>	<u>James Ma</u> <u>07-01-97</u>
Next Calibration Due: <u>10-01-97</u>	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

#52

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	<u>Westinghouse</u>	Instrument Manufacturer	<u>Eberline</u>
Customer Address:	<u>P.O. Box 3700</u> <u>Pittsburgh, PA 15230</u>	Model	<u>E-140</u> Serial Number <u>1487</u>
Customer P.O.#	<u>MB-14027-S</u>	External Probe(s)	<u>HP177C</u> Serial # _____
Work Order #	<u>I-97-03-209</u>	Calibration Method	<u>¹³⁷Cs</u> s/n <u>10263</u> <u>200mCi</u>

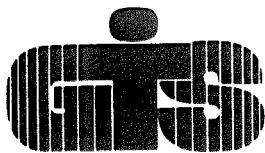
INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 X1	0.1 mR/hr	0.09 mR/hr	0.1 mR/hr	All Calibrations Btn. + & - 10%
2	0.2	0.18	0.2	
3	0.4	0.36	0.4	Battery: OK
4				
5 X10	1	1	1	Mechanical Zero: OK
6	2	2	2	
7	4	4	4	Response: OK
8				
9 X100	10	10	10	Reset: OK
10	20	20	20	
11	40	38	38	Speaker: OK
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u> (Signed)	I certify that the above information is correct:
Calibration Date: <u>03-04-97</u>	<u>[Signature]</u> <u>03-04-97</u>
Next Calibration Due: <u>06-04-97</u>	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	<u>Westinghouse</u>	Instrument Manufacturer	<u>Eberline</u>
Customer Address:	<u>P.O. Box 3700</u> <u>Pittsburgh, PA 15239</u>	Model	<u>E-140</u> Serial Number <u>1487</u>
Customer P.O.#	<u>MB-14027-S</u>	External Probe(s)	<u>HP177G</u> Serial # _____
Work Order #	<u>I-96-07-209</u>	Calibration Method	<u>137</u> Cs s/n 10263 <u>200mCi</u>

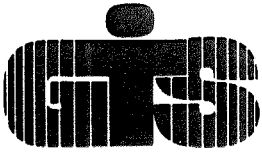
INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	0.1 mR/hr	0.12 mR/hr	0.1 mR/hr	All Calibrations Btn. + & - 10%
2		0.2	0.24	0.2	
3		0.4	0.46	0.38	Battery: OK
4	X10	1	1	1	Mechanical Zero: OK
5		2	2	2	
6		4	3.9	3.9	Response: OK
7	X100	10	11	11	Reset: OK
8		20	21	21	
9		40	39	39	Audio: OK
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u>	I certify that the above information is correct:
Calibration Date: <u>07-22-96</u> (Signed)	<u>[Signature]</u> 07-22-96
Next Calibration Due: <u>10-22-96</u>	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name: <u>Westinghouse</u>		Instrument Manufacturer <u>Eberline</u>	
Customer Address: <u>P.O. Box 3700</u>		Model <u>E-140</u> Serial Number <u>1487</u>	
<u>Pittsburgh, PA 15230</u>		External Probe(s) <u>HP177C</u> Serial # _____	
Customer P.O.# <u>MB-14027-S</u>		Calibration Method _____ ¹³⁷ Cs s/n 10263 200mC:	
Work Order # <u>I-96-03-209</u>			

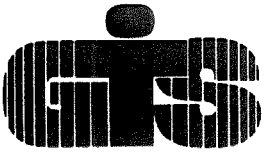
INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 X1	0.1 mR/hr	Repaired	0.1 mR/hr	All Calibrations Btn. + & - 10%
2	0.2	High Voltage	0.2	
3	0.4		0.4	Battery: OK
4				
5 X10	1		1	Mechanical Zero: OK
6	2		2	
7	4		4	Response: OK
8				
9 X100	10		10	Reset: OK
10	20		21	
11	40		40	Speaker: OK
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u> (Signed)	I certify that the above information is correct:
Calibration Date: <u>03-27-96</u>	<u>03-27-96</u>
Next Calibration Due: <u>06-27-96</u>	Administrative Coordinator _____ Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Eberline</u>
Customer Address: <u>P.O. Box 3700</u>	Model <u>E-140</u> Serial Number <u>1487</u>
<u>Pittsburgh, PA 15230</u>	External Probe(s) <u>HP-177C</u> Serial # _____
Customer P.O.# <u>MB-14027-S</u>	Calibration Method <u>137Cs s/n 10263 200mCi</u>
Work Order # <u>I-95-10-209</u>	

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	0.1 mR/hr	Initial	0.1 mR/hr	All Calibrations Btn. + & - 10%
2		0.2	Calibration	0.2	
3		0.4		0.4	
4	X10	1	↓	1	Mechanical Zero: OK
5		2		2	
6		4		4	
7	X100	10		10	Reset: OK
8		20		20	
9		40	40		
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u> (Signed)	I certify that the above information is correct:
Calibration Date: <u>10-24-95</u>	<u>10-24-95</u>
Next Calibration Due: <u>01-24-96</u>	Administrative Coordinator <u>[Signature]</u> Date

CODE NUMBER 53

REPORT #001



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 724/733-1900 Fax: 724/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

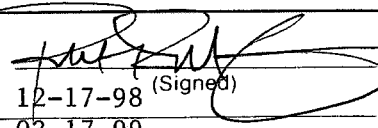
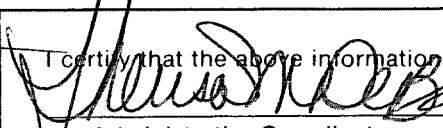
CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	Westinghouse	Instrument Manufacturer:	Eberline
Customer Address:	PO Box 3700	Model:	E-140
	Pittsburgh, PA 15230	Serial Number:	1487
		External Probe(s):	HP177C
Customer P.O.#:	MB-14027-S	Calibration Method:	137 Cs s/n 10263 200mCi
Work Order #:	I-98-12-208		

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 X1	0.1 mR/hr	0.1 mR/hr	0.1 mR/hr	All Calibrations Btn. + & - 10%
2	0.2	0.2	0.2	
3	0.4	0.4	0.4	Battery: OK
4				
5 X10	1	1	1	Mechanical Zero: OK
6	2	1.9	1.9	
7	4	4	4	Response: OK
8				
9 X100	10	10	10	Reset: OK
10	20	20	20	
11	40	39	39	Speaker: OK
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by:		I certify that the above information is correct.	
Calibration Date:	12-17-98 (Signed)	Administrative Coordinator	12-17-98
Next Calibration Due:	03-17-99		Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 724/733-1900 Fax: 724/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

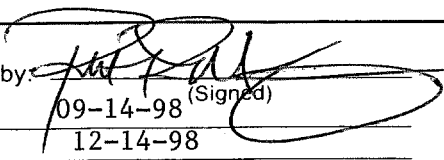
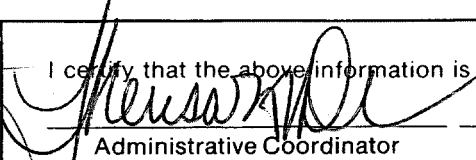
CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	<u>Westinghouse</u>	Instrument Manufacturer	<u>Eberline</u>
Customer Address:	<u>PO Box 3700</u>	Model	<u>E-140</u>
	<u>Pittsburgh, PA 15230</u>	Serial Number	<u>1487</u>
		External Probe(s)	<u>HP177C</u> Serial # _____
Customer P.O.#	<u>MB-14027-S</u>	Calibration Method	<u>¹³⁷Cs s/n 10263 200mCi</u>
Work Order #	<u>I-98-09-208</u>		

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	0.1 mR/hr	0.1 mR/hr	0.1 mR/hr	All Calibrations Btn. + & - 10%
2		0.2	0.2	0.2	
3		0.4	0.4	0.4	Battery: OK
4					
5	X10	1	1	1	Mechanical Zero: OK
6		2	2	2	
7		4	4	4	Response: OK
8					
9	X100	10	10	10	Reset: OK
10		20	20.5	20.5	
11		40	38	38	Speaker: OK
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by:		I certify that the above information is correct:	
Calibration Date:	<u>09-14-98</u> (Signed)	Administrative Coordinator	<u>09-14-98</u>
Next Calibration Due:	<u>12-14-98</u>	Date	



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
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CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	<u>Westinghouse</u>	Instrument Manufacturer	<u>Eberline</u>
Customer Address:	<u>PO Box 3700</u> <u>Pittsburgh, PA 15235</u>	Model	<u>E-140</u> Serial Number <u>1487</u>
Customer P.O.#	<u>MB-14027-S</u>	External Probe(s)	<u>HP-177C</u> Serial # _____
Work Order #	<u>I-98-04-208</u>	Calibration Method	<u>¹³⁷Cs</u> s/n <u>10263</u> <u>200mCi</u>

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 <u>X1</u>	<u>0.1 mR/hr</u>	<u>0.1 mR/hr</u>	<u>0.1 mR/hr</u>	<u>All Calibrations Btn. + & - 10%</u>
2	<u>0.2</u>	<u>0.2</u>	<u>0.2</u>	<u>Battery: OK</u>
3	<u>0.4</u>	<u>0.4</u>	<u>0.4</u>	
4 <u>X10</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>Mechanical Zero: OK</u>
5	<u>2</u>	<u>2</u>	<u>2</u>	
6	<u>4</u>	<u>3.9</u>	<u>3.9</u>	<u>Response: OK</u>
7				
8 <u>X100</u>	<u>10</u>	<u>10</u>	<u>10</u>	<u>Reset: OK</u>
9	<u>20</u>	<u>20</u>	<u>20</u>	
10	<u>40</u>	<u>38</u>	<u>38</u>	<u>Speaker: OK</u>
11				
12				
13				
14				
15				
16				
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18				
19				
20				
21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by:	<u>[Signature]</u> (Signed)	I certify that the above information is correct:	<u>[Signature]</u>
Calibration Date:	<u>04-23-98</u>	Administrative Coordinator	<u>04-23-98</u>
Next Calibration Due:	<u>07-23-98</u>	Date	



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	Westinghouse	Instrument Manufacturer	Eberline
Customer Address:	PO Box 3700 Pittsburgh, PA 15230	Model	E-140
		Serial Number	1487
		External Probe(s)	X Serial #
Customer P.O.#	MB-14027-S	Calibration Method	¹³⁷ Cs s/n 10263 200mCi
Work Order #	I-97-12-209		

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 X1	0.1 mR/hr	0.1 mR/hr	0.1 mR/hr	All Calibrations Btn. + & - 10%
2	0.2	0.2	0.2	
3	0.4	0.4	0.4	Battery: OK
4				
5 X10	1	1	1	Mechanical Zero: OK
6	2	2	2	
7	4	4	4	Reset: OK
8				
9 X100	10	10	10	Response: OK
10	20	20	20	
11	40	40	40	Audio: OK
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by:	I certify that the above information is correct:
Calibration Date: 01-05-98 (Signed)	01-05-98
Next Calibration Due: 04-05-98	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

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CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Eberline</u>
Customer Address: <u>Specialty Metals Plant</u>	Model <u>PAC-4G-3</u> Serial Number <u>4105</u>
<u>RD #4</u>	External Probe(s) <u>AC-21</u> Serial # _____
<u>Blairsville, PA 15717</u>	
Customer P.O.# <u>MB-14027-S</u>	Calibration Method <u>²³⁹Pu s/n 6925, 7648, 7649</u>
Work Order # <u>I-97-03-209</u>	<u>7650</u>

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1	240 CPM	250 CPM	250 CPM	All Calibrations Btn. + & - 10%
2				
3	4,340	4,500	4,500	Battery: OK
4				
5	25,800	27,000	27,000	Mechanical Zero: OK
6				
7	467,600	450,000	450,000	Calibrated with AC-21 Probe ONLY.
8				
9				
10				
11				
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23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>William Owens</u> (Signed)	I certify that the above information is correct:
Calibration Date: <u>04-17-97</u>	<u>Tim Law</u> <u>04-17-97</u>
Next Calibration Due: <u>07-17-97</u>	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CODE
53

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Eberline</u>
Customer Address: <u>P.O. Box 3700</u>	Model <u>PAC-4G-3</u> Serial Number <u>4105</u>
<u>Pittsburgh, PA 15230</u>	External Probe(s) <u>AC-21</u> Serial # _____
Customer P.O.# <u>MB-14027-S</u>	Calibration Method <u>239</u> Pu s/n <u>6925, 7648,</u>
Work Order # <u>I-96-08-210</u>	<u>7649, 7650</u>
	Pulser s/n <u>101500</u>

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 Lin Log				All Calibrations Btn. + & - 10%
2 BLACK	240 CPM	Initial	250 CPM	
3	4,340	Calibration	4,400	Battery: OK
4		↓		
5 RED	25,860		26,000	Mechanical Zero: OK
6	467,600		470,000	HV (21) = 1650 Volts
7				Input Sensitivity \approx 2mV
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u>	I certify that the above information is correct:
Calibration Date: <u>09-04-96</u> (Signed)	<u>[Signature]</u> 09-04-96
Next Calibration Due: <u>12-04-96</u>	Administrative Coordinator Date

CODE NUMBER 54

REPORT #001



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 724/733-1900 Fax: 724/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Eberline</u>
Customer Address: <u>PO Box 3700</u>	Model <u>E-140</u> Serial Number <u>1333</u>
<u>Pittsburgh, PA 15230</u>	External Probe(s) <u>HP270</u> Serial # _____
Customer P.O.# _____	Calibration Method <u>¹³⁷Cs s/n 10263 200mCi</u>
Work Order # <u>I-99-02-210</u>	

INSTRUMENT CALIBRATION INFORMATION

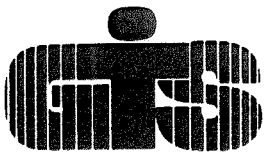
Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 X1	0.1 mR/hr	0.1 mR/hr	0.1 mR/hr	All Calibrations Btn. + & - 10%
2	0.2	0.2	0.2	
3	0.4	0.38	0.38	Battery: OK
4				
5 X10	1	1	1	Mechanical Zero: OK
	2	2	2	
7	4	4.1	4.1	Response: OK
8				
9 X100	10	10	10	Reset: OK
10	20	20	20	
11	40	38	38	
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: William Owen
 Calibration Date: 02-24-99 (Signed)
 Next Calibration Due: 05-24-99

I certify that the above information is correct:
[Signature]
 Administrative Coordinator Date: 02-24-99



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 724/733-1900 Fax: 724/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	<u>Westinghouse</u>	Instrument Manufacturer	<u>Eberline</u>
Customer Address:	<u>PO Box 3700</u>	Model	<u>E-140</u> Serial Number <u>1333</u>
	<u>Pittsburgh, PA 15230</u>	External Probe(s)	<u>HP270</u> Serial # _____
Customer P.O.#	<u>MB-14027-S</u>	Calibration Method	<u>137 Cs</u> s/n <u>10263</u> <u>200mC</u>
Work Order #	<u>I-98-10-208</u>		

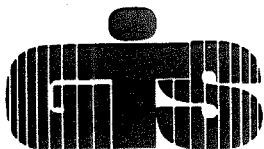
INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	0.1 mR/hr	0.1 mR/hr	0.1 mR/hr	All Calibrations Btn. + & - 10%
2		0.2	0.2	0.2	
3		0.4	0.38	0.38	Battery: OK
4					
5	X10	1	1	1	Response: OK
6		2	2	2	
7		4	4	4	Mechanical Zero: OK
8					
9	X100	10	9	10	Reset: OK
10		20	18	20	
11		40	35	39	
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by:		I certify that the above information is correct:	
Calibration Date:	<u>10-29-98</u> (Signed)		<u>10-29-98</u>
Next Calibration Due:	<u>01-29-99</u>	Administrative Coordinator	Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 724/733-1900 Fax: 724/327-8189

CALIBRATION CERTIFICATE

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This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer: <u>Eberline</u>
Customer Address: <u>PO Box 3700</u> <u>Pittsburgh, PA 15230</u>	Model: <u>E-140</u> Serial Number: <u>1333</u>
Customer P.O.#: <u>MB-14027-S</u>	External Probe(s): <u>HP270</u> Serial #: _____
Work Order #: <u>I-98-05-210</u>	Calibration Method: <u>137Cs</u> s/n <u>10263</u> 200mCi

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 X1	0.1 mR/hr	0.12 mR/hr	0.1 mR/hr	All Calibrations Btn. + & - 10%
2	0.2	0.24	0.2	
3	0.4	0.48	0.4	Battery: OK
4				
5 X10	1	1.1	1	Mechanical Zero: OK
6	2	2.2	2	
7	4	4.4	4	Response: OK
8				
9 X100	10	12	10	Reset: OK
10	20	23	19.5	
11	40	43	36	
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u> (Signed)	I certify that the above information is correct: <u>[Signature]</u>
Calibration Date: <u>05-29-98</u>	<u>05-29-98</u>
Next Calibration Due: <u>08-29-98</u>	Administrative Coordinator <u>[Signature]</u> Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

54

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Eberline</u>
Customer Address: <u>Specialty Metals Plant</u>	Model <u>E-140</u> Serial Number <u>1333</u>
<u>RD #4</u>	External Probe(s) <u>HP270</u> Serial # _____
<u>Blairsville, PA 15717</u>	Calibration Method <u>¹³⁷Cs s/n 10263</u>
Customer P.O.# <u>MB-14027-S</u>	
Work Order # <u>I-97-03-209</u>	

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 <u>X1</u>	<u>0.1 mR/hr</u>	<u>0.1 mR/hr</u>	<u>0.1 mR/hr</u>	<u>All Calibrations Btn. + & - 10%</u>
2	<u>0.2</u>	<u>0.2</u>	<u>0.2</u>	
3	<u>0.4</u>	<u>0.38</u>	<u>0.38</u>	<u>Mechanical Zero: OK</u>
4				
5 <u>X10</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>Battery: OK</u>
6	<u>2</u>	<u>2</u>	<u>2</u>	
7	<u>4</u>	<u>4</u>	<u>4</u>	<u>Reset: OK</u>
8				
9 <u>X100</u>	<u>10</u>	<u>10</u>	<u>10</u>	<u>Response: OK</u>
10	<u>20</u>	<u>20.5</u>	<u>20.5</u>	
11	<u>40</u>	<u>39</u>	<u>39</u>	
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>William Owens</u> (Signed)	I certify that the above information is correct: <u>Tim Lowm</u>
Calibration Date: <u>04-17-97</u>	<u>04-17-97</u> Date
Next Calibration Due: <u>07-17-97</u>	Administrative Coordinator



GTS Instrument Services
 2045 Route 286
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CODE
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CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name: <u>Westinghouse</u>		Instrument Manufacturer <u>Eberline</u>	
Customer Address: <u>P.O. Box 3700</u>		Model <u>E-140</u> Serial Number <u>1333</u>	
<u>Pittsburgh, PA 15230</u>		External Probe(s) <u>HP270</u> Serial # _____	
Customer P.O.# <u>MB-14027-S</u>		Calibration Method <u>137 Cs s/n 10263 200mCi</u>	
Work Order # <u>I-96-08-210</u>			

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	0.1 mR/hr	Initial	0.1 mR/hr	All Calibrations Btn. + & - 10%
2		0.2	Calibration	0.2	
3		0.4		0.4	
4	X10	1	↓	1	Mechanical Zero: OK
5		2		2	
6		4		4	
7					
8	X100	10		10.5	Reset: OK
9		20	20.5		
10		40	39.5		
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u>	I certify that the above information is correct:
Calibration Date: <u>09-04-96</u> (Signed)	<u>[Signature]</u> 09-04-96
Next Calibration Due: <u>12-04-96</u>	Administrative Coordinator Date

CODE NUMBER 55

No Instrument

REPORT #001

CODE NUMBER 56

REPORT #001



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

COPE
#56

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Eberline</u>
Customer Address: <u>P.O. Box 3700</u>	Model <u>PAC-4S</u> Serial Number <u>4034</u>
<u>Pittsburgh, PA 15221</u>	External Probe(s) <u>AC-3-7</u> Serial # <u>7A</u>
Customer P.O.# <u>MB-14027-S</u>	Calibration Method <u>239</u> Pulser s/n <u>101500</u>
Work Order # <u>I-96-09-209</u>	<u>Pu s/n 7648/7649/7650</u> w/ SAP-1 Attenuator

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 BLACK	1,650 CPM	Initial	1,600 CPM	All Calibrations Btn. + & - 10%
2	9,804	Calibration	10K	
3		↓		Battery: OK
4 RED	177,688		180K	
5	467,600		450K	Mechanical Zero: OK
6				Input Sensitivity \leq 10mV
7				High Voltage = 735 Volts
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u> (Signed)	I certify that the above information is correct:
Calibration Date: <u>09-24-96</u>	<u>09-24-96</u>
Next Calibration Due: <u>12-24-96</u>	Administrative Coordinator <u>[Signature]</u> Date

CODE NUMBER 57

REPORT #001



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CODE # 57

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Eberline</u>
Customer Address: <u>P.O. Box 3700</u> <u>Pittsburgh, PA 15221</u>	Model <u>RM-14</u> Serial Number <u>137</u>
Customer P.O.# <u>MB-14027-S</u>	External Probe(s) _____ Serial # <u>082919</u>
Work Order # <u>I-96-09-209</u>	Calibration Method <u>137</u> <u>Pulser s/n 101500</u>
	<u>99</u> <u>Cs s/n 10263 200mCi</u>
	<u>Tc s/n S1256</u>

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	100 CPM	Initial	100 CPM	All Calibrations Btn. + & - 10%
2		200	Calibration	200	
3		400		400	Battery: N/A
4	X10	1K	↓	1K	Mechanical Zero: OK
5		2K		2K	
6		4K		4K	Response: OK
7					
8	X100	10K		10K	Reset: OK
9		20K		20K	
10		40K		40K	Audio: OK
11					
12					Alarm: OK
13					Test Pulse: N/A
14					
15					
16					
17				1 mR/hr \approx 3.1K CPM in ¹³⁷ Cs field	
18				⁹⁹ Tc Efficiency = 11.2%	
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u> (Signed)	I certify that the above information is correct:
Calibration Date: <u>09-24-96</u>	<u>09-24-96</u>
Next Calibration Due: <u>12-24-96</u>	Administrative Coordinator <u>[Signature]</u> Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

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CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Eberline</u>
Customer Address: <u>P.O. Box 3700</u>	Model <u>RM-14</u> Serial Number <u>137</u>
<u>Pittsburgh, PA 15230</u>	External Probe(s) _____ Serial # _____
Customer P.O.# <u>MB-14027-S</u>	Calibration Method <u>Pulser s/n 120935</u>
Work Order # <u>I-97-03-209</u>	

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2	200	200	200	
3	400	395	395	Battery: AC ONLY
4				
5 X10	1K	1K	1K	Mechanical Zero: OK
6	2K	2K	2K	
7	4K	4K	4K	Reset: OK
8				
9 X100	10K	10K	10K	Response: OK
10	20K	20K	20K	
11	40K	39.5K	39.5K	Audio: OK
12				
13				High Voltage = 913 Volts
14				
15				Alarm: OK
16				
17				Pulser Calibration only
18				
19				
20				
21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>William Owens</u> (Signed)	I certify that the above information is correct:
Calibration Date: <u>03-25-97</u>	<u>Tom Lowm</u> <u>03-25-97</u>
Next Calibration Due: <u>06-25-97</u>	Administrative Coordinator Date

CODE NUMBER 58

REPORT #001



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

#58

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Eberline</u>
Customer Address: <u>P.O. Box 3700</u>	Model <u>RM-14</u> Serial Number <u>247</u>
<u>Pittsburgh, PA 15230</u>	External Probe(s) _____ Serial # _____
Customer P.O.# <u>MB-14027-S</u>	Calibration Method _____ Pulser s/n <u>I20935</u>
Work Order # <u>I-97-03-209</u>	

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2	200	200	200	
3	400	395	395	Battery: OK
4 X10	1K	1K	1K	Mechanical Zero: OK
5	2K	2K	2K	
6	4K	4K	4K	Reset: OK
7				
8 X100	10K	10K	10K	Response: OK
9	20K	20K	20K	
10	40K	39.5K	39.5K	Audio: OK
11				
12				Alarm: OK
13				
14				High Voltage = 900 Volts
15				
16				Pulser Calibration only
17				
18				
19				
20				
21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>William Owens</u>	I certify that the above information is correct:
Calibration Date: <u>03-25-97</u> (Signed)	<u>Tom Lawton</u> <u>03-25-97</u>
Next Calibration Due: <u>06-25-97</u>	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

COOE #58

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Eberline</u>
Customer Address: <u>P.O. Box 3700</u> <u>Pittsburgh, PA 15221</u>	Model <u>RM-14</u> Serial Number <u>247</u>
Customer P.O.# <u>MB-14027-S</u>	External Probe(s) <u>44-9</u> Serial # <u>092873</u>
Work Order # <u>I-96-09-209</u>	Calibration Method <u>¹³⁷Pulsar s/n 101500</u> <u>⁹⁹Cs s/n 10263 200mCi</u> <u>Tc s/n S1256</u>

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 <u>X1</u>	<u>100 CPM</u>	Initial Calibration ↓	<u>100 CPM</u>	<u>All Calibrations Btn. + & - 10%</u>
2	<u>200</u>		<u>200</u>	<u>Battery: OK</u>
3	<u>400</u>		<u>400</u>	<u>Mechanical Zero: OK</u>
4				
5 <u>X10</u>	<u>1K</u>		<u>1K</u>	<u>Response: OK</u>
6	<u>2K</u>		<u>2K</u>	<u>Reset: OK</u>
7	<u>4K</u>		<u>4K</u>	<u>Audio: OK</u>
8				<u>Alarm: OK</u>
9 <u>X100</u>	<u>10K</u>		<u>10K</u>	<u>Test Pulse = 3.55K</u>
10	<u>20K</u>		<u>20K</u>	<u>⁹⁹Tc Efficiency = 10.6%</u>
11	<u>40K</u>		<u>40K</u>	<u>1 mR/hr ≈ 3K CPM in ¹³⁷Cs field</u>
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u> (Signed)	I certify that the above information is correct: <u>[Signature]</u> Administrative Coordinator
Calibration Date: <u>09-24-96</u>	<u>09-24-96</u> Date
Next Calibration Due: <u>12-24-96</u>	

CODE NUMBER 59

REPORT #001



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

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This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Eberline</u>
Customer Address: <u>Specialty Metals Plant</u>	Model <u>E-530</u> Serial Number <u>210</u>
<u>RD #4</u>	External Probe(s) <u>44-38</u> Serial # <u>028828</u>
<u>Blairsville, PA 15717</u>	Calibration Method <u>¹³⁷Cs s/n 10263</u>
Customer P.O.# <u>MB-14027-S</u>	
Work Order # <u>I-97-03-209</u>	

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X.01	0.05 mR/hr	0.055 mR/hr	0.055 mR/hr	All Calibrations Btn. + & - 10%
2		0.1	0.1	0.1	
3		0.15	0.14	0.14	Battery: OK
4					
5	X0.1	0.5	0.45	0.5	Mechanical Zero: OK
6		1	0.95	1	
7		1.5	1.3	1.4	Reset: OK
8					
9	X1.0	5	4.8	5	Response: OK
10		10	9	10	
11		15	13.5	15	
12					
13	X10	50	50	55	
14		100	92	98	
15		150	128	135	
16					
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>William Owens</u> (Signed)	I certify that the above information is correct:
Calibration Date: <u>04-17-97</u>	<u>Tim Lawson</u> <u>04-17-97</u>
Next Calibration Due: <u>07-17-97</u>	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CODE # 59

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

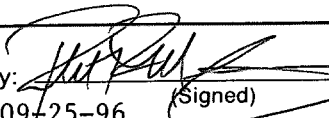
CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	Westinghouse	Instrument Manufacturer	Eberline
Customer Address:	P.O. Box 3700 Pittsburgh, PA 15221	Model	E-530
		Serial Number	210
		External Probe(s)	44-38
Customer P.O.#	MB-14027-S	Serial #	028828
Work Order #	I-96-09-209	Calibration Method	137 Cs s/n 10263 200mCi

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 X0.1	0.05 mR/hr	Initial Calibration ↓	0.05 mR/hr	All Calibrations Btn. + & - 10%
2	0.1		0.1	
3	0.15		0.15	Battery: OK
4 X1	0.5		0.5	Mechanical Zero: OK
5	1		1	
6	1.5		1.5	Response: OK
7				
8				
9 X1	5		5	Reset: OK
10	10		10	
11	15		15	
12				
13 X10	50		55	
14	100		100	
15	150		138	
16				
17				
18				
19				
20				
21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: 	I certify that the above information is correct:
Calibration Date: 09-25-96	09-25-96
Next Calibration Due: 12-25-96	Administrative Coordinator Date

CODE NUMBER 60

REPORT #001



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CODE 460

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	<u>Westinghouse</u>	Instrument Manufacturer	<u>Eberline</u>
Customer Address:	<u>P.O. Box 3700</u> <u>Pittsburgh, PA 15221</u>	Model	<u>ESP-1</u> Serial Number <u>275</u>
Customer P.O.#	<u>MB-14027-S</u>	External Probe(s)	<u>HP270</u> Serial # _____
Work Order #	<u>I-96-09-209</u>	Calibration Method	<u>137</u> <u>Pulser s/n 101500</u> <u>Cs s/n 10263 200mCi</u>

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	N/A	1 mR/hr	Initial Calibration	1.03 mR/hr	All Calibrations Btn. + & - 10%
2		10	↓	10.3	Battery: OK
3		150		145	Reset: OK
4		250		241	Light: OK
5		750		743	Speaker: OK
6		1,500		1,490	DT = 1.00 - 04
7					CC = 7.70 + 07
8					High Voltage = 900 Volts
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u> (Signed)	I certify that the above information is correct:
Calibration Date: <u>09-25-96</u>	<u>[Signature]</u> <u>09-25-96</u>
Next Calibration Due: <u>12-25-96</u>	Administrative Coordinator Date

CODE NUMBER 61

REPORT #001



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CODE # 61

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Eberline</u>
Customer Address: <u>P.O. Box 3700</u>	Model <u>ESP-1</u> Serial Number <u>276</u>
<u>Pittsburgh, PA 15221</u>	External Probe(s) <u>43-68</u> Serial # <u>094759</u>
Customer P.O.# <u>MB-14027-S</u>	Calibration Method <u>230</u> <u>Pulser s/n 101500</u>
Work Order # <u>I-96-09-209</u>	<u>Th s/n 11623</u>

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment	
		Before Calib.	After Calib.		
1 RATE	200 CPM	Initial	2.00 + 02 CPM	All Calibrations Btn. + & - 10%	
2	800	Calibration	8.00 + 02		
3	2K	↓	2.00 + 03	Battery: OK	
4	8K		8.00 + 03		
5	20K		2.00 + 04	Reset: OK	
6	80K		8.00 + 04		
7	200K		2.00 + 05	Light: OK	
8	800K		8.00 + 05		
9	2M		2.01 + 06	Speaker: OK	
10					
11 SCALER	200			1.99 + 02	DT = 2.00 - 07
12 1 MIN COUNTS	2K			1.99 + 03	CC = 1.00 + 00
13	20K		1.99 + 04	High Voltage = 1300 Volts	
14	200K		1.99 + 05	Input Sensitivity \approx 4mV	
15	2M		1.99 + 06	²³⁰ Th Efficiency = 16.7%	
16					
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u> (Signed)	I certify that the above information is correct:
Calibration Date: <u>09-25-96</u>	<u>[Signature]</u> 09-25-96
Next Calibration Due: <u>12-25-96</u>	Administrative Coordinator Date

CODE NUMBER 62

REPORT #001



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 724/733-1900 Fax: 724/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	<u>Westinghouse</u>	Instrument Manufacturer	<u>Eberline</u>
Customer Address:	<u>PO Box 3700</u>	Model	<u>RM-14</u> Serial Number <u>936</u>
	<u>Pittsburgh, PA 15230</u>	External Probe(s)	Serial # _____
Customer P.O.#	<u>MB-14027-S</u>	Calibration Method	<u>Pulser s/n 120935</u>
Work Order #	<u>I-99-02-208</u>		

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2		200	200	200	
3		400	400	400	
4	X10	1K	1K	1K	Battery: N/A AC Only
5		2K	2K	2K	
6		4K	4K	4K	
8	X100	10K	10K	10K	Mechanical Zero: OK
9		20K	20K	20K	
10		40K	39.5K	39.5K	
11					Reset: OK
12					Response: OK
13					Audio: OK
14					Alarm: OK
15					Electronic Calibration only
16					
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>William Owens</u> (Signed)	I certify that the above information is correct:
Calibration Date: <u>03-16-99</u>	<u>03-16-99</u>
Next Calibration Due: <u>06-16-99</u>	Administrative Coordinator _____ Date _____



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 724/733-1900 Fax: 724/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	Westinghouse	Instrument Manufacturer	Eberline
Customer Address:	PO Box 3700 Pittsburgh, PA 15230	Model	RM-14
		Serial Number	936
		External Probe(s)	Serial #
Customer P.O. #	MB-14027-S	Calibration Method	Pulser s/n 298
Work Order #	I-98-09-210		

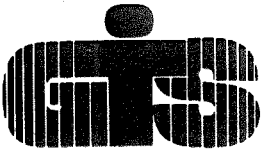
INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2		200	200	200	
3		400	410	410	Battery: N/A AC ONLY
4	X10	1K	1K	1K	Mechanical Zero: OK
5		2K	2K	2K	
6		4K	4.1K	4.1K	Reset: OK
7					
8	X100	10K	10K	10K	Response: OK
9		20K	20K	20K	
10		40K	40.5K	40.5K	Audio: OK
11					
12					Alarm: OK
13					
14					Electronic Calibration only
15					
16					
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>William Owen</u>	I certify that the above information is correct:
Calibration Date: <u>10-28-98</u> (Signed)	<u>William Owen</u> 10-28-98
Next Calibration Due: <u>01-28-99</u>	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 724/733-1900 Fax: 724/327-8189

CALIBRATION CERTIFICATE

#62

This Certificate will be accompanied by Calibration Charts or Readings where applicable

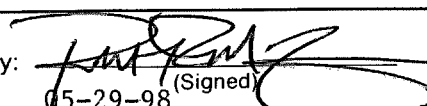
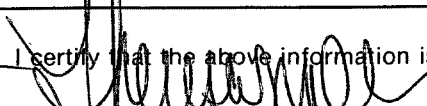
CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	Westinghouse	Instrument Manufacturer	Eberline
Customer Address:	PO Box 3700 Pittsburgh, PA 15230	Model	RM-14
		Serial Number	936
		External Probe(s)	44-9
		Serial #	082915
Customer P.O.#	MB-14027-S	Calibration Method	⁹⁹ Pulser s/n 101500
Work Order #	I-98-05-210		¹³⁷ Tc s/n S1256
			Cs s/n 10263 200mCi

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2	200	200	200	Battery: OK
3	400	410	410	
4				
5 X10	1K	1K	1K	Mechanical Zero: OK
6	2K	2K	2K	
7	4K	4.1K	4.1K	Response: OK
8				
9 X100	10K	10K	10K	Reset: OK
10	20K	20K	20K	
11	40K	41K	41K	Speaker: OK
12				
13				Alarm: OK
14				
15				1 mR/hr \approx 3.2K CPM in ¹³⁷ Cs field
16				⁹⁹ Tc Efficiency = 10.2%
17				
18				
19				
20				
21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: 	I certify that the above information is correct: 
Calibration Date: 05-29-98 (Signed)	05-29-98
Next Calibration Due: 08-29-98	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

#62

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	<u>Westinghouse</u>	Instrument Manufacturer	<u>Eberline</u>
Customer Address:	<u>P.O. Box 3700</u> <u>Pittsburgh, PA 15230</u>	Model	<u>RM-14</u> Serial Number <u>936</u>
Customer P.O.#	<u>MB-14027-S</u>	External Probe(s)	Serial # _____
Work Order #	<u>I-97-03-209</u>	Calibration Method	<u>Pulser s/n 120935</u>

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 X1	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2	200	200	200	
3	400	400	400	Battery: AC ONLY
4				
5 X10	1K	1K	1K	Mechanical Zero: OK
6	2K	2K	2K	
7	4K	4.05K	4.05K	Reset: OK
8				
9 X100	10K	10K	10K	Response: OK
10	20K	20K	20K	
11	40K	40.5K	40.5K	Audio: OK
12				
13				High Voltage = 904 Volts
14				
15				Alarm: OK
16				
17				Pulser calibration only
18				
19				
20				
21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>William Owens</u> (Signed)	I certify that the above information is correct:
Calibration Date: <u>03-25-97</u>	<u>William Owens</u> 03-25-97
Next Calibration Due: <u>06-25-97</u>	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CODE #62

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Eberline</u>
Customer Address: <u>P.O. Box 3700</u>	Model <u>RM-14</u> Serial Number <u>936</u>
<u>Pittsburgh, PA 15230</u>	External Probe(s) <u>44-9</u> Serial # <u>082915</u>
Customer P.O.# <u>MB-14027-S</u>	Calibration Method <u>137Pulsar s/n 101500</u>
Work Order # <u>I-96-09-209</u>	<u>99Cs s/n 10263 200mCi</u>
	<u>Tc s/n S1256</u>

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 X1	100 CPM		100 CPM	All Calibrations Btn. + & - 10%
2	200		200	
3	400		400	Battery: N/A
4 X10	1K		1K	Mecanical Zero: OK
5	2K		2K	
6	4K		4K	Response: OK
7				
8 X100	10K		10K	Reset: OK
9	20K		20K	
10	40K		40K	Speaker: OK
11				
12				Alarm: OK
13				Test Pulse \approx 3.6K CPM
14				1 mR/hr \approx 3.1K CPM in ¹³⁷ Cs field
15				⁹⁹ Tc Efficiency = 10.6%
16				
17				
18				
19				
20				
21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u> (Signed)	I certify that the above information is correct: <u>[Signature]</u> Administrative Coordinator
Calibration Date: <u>09-30-96</u>	<u>09-30-96</u> Date
Next Calibration Due: <u>03-30-97</u>	

CODE NUMBER 63

REPORT #001



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

CODE # 63

This Certificate will be accompanied by Calibration Charts or Readings where applicable

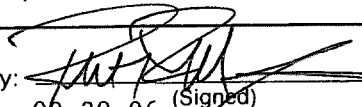
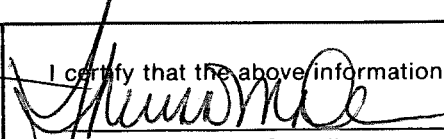
CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	Westinghouse	Instrument Manufacturer	Eberline
Customer Address:	P.O. Box 3700 Pittsburgh, PA 15230	Model	ASP-1
		Serial Number	420
		External Probe(s)	HP270
Customer P.O.#	MB-14027-S	Serial #	
Work Order #	I-96-09-209	Calibration Method	¹³⁷ Cs s/n 10263 200mCi ¹³⁷ Cs s/n 20020 400Ci Pulser s/n 101500

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X0.1	0.02 mR/hr		0.022 mR/hr	All Calibrations Btn. + & - 10%
2		0.05		0.055	
3		0.075		0.08	
4					Battery: OK
5	X1	0.2		0.19	Mechanical Zero:
6		0.5		0.5	
7		0.75		0.72	
8					Response: OK
9	X10	2		2	Reset: OK
10		5		5.1	
11		7.5		7.4	
12					Audio: OK
13	X100	20		20	Light: OK
14		50		49	
15		75		70	
16					High Voltage = 900 Volts
17	X1K	200		180	Input Sensitivity ≈ 10mV
18		500		500	
19		750		720	
20					DT = 100uSec
21	X10K	2 R/hr		1,800	Cal Switch 3: OPEN 4: OPEN
22					
23					
					Standard Current = .68
					NOT Calibrated in Integrated

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by:		I certify that the above information is correct:	
Calibration Date:	09-30-96 (Signed)		09-30-96
Next Calibration Due:	03-30-97	Administrative Coordinator	Date

CODE NUMBER 64

REPORT #001



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

64

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Eberline</u>
Customer Address: <u>Specialty Metals Plant</u>	Model <u>PAC-45</u> Serial Number <u>4035</u>
<u>RD #4</u>	External Probe(s) <u>AC-3</u> Serial # <u>7A</u>
<u>Blairsville, PA 15717</u>	Calibration Method <u>²³⁹Pu s/n 6925, 7648, 7649</u>
Customer P.O.# <u>MB-14027-S</u>	<u>7650</u>
Work Order # <u>I-97-03-209</u>	

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1	240 CPM	250 CPM	250 CPM	All Calibrations Btn. + & - 10%
2				
3	4,340	4,500	4,500	Battery: OK
4				
5	25,800	18,000	25,000	Mechanical Zero: OK
6				
7	467,600	140,000	450,000	
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				

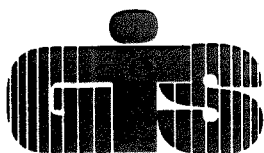
STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>William Owen</u> (Signed)	I certify that the above information is correct:
Calibration Date: <u>04-17-97</u>	<u>Tim Lawton</u> <u>04-17-97</u>
Next Calibration Due: <u>07-17-97</u>	Administrative Coordinator Date

CODE NUMBER 65

REPORT #001



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION

RENTAL EQUIPMENT
 Customer Name: GTS INSTRUMENT SERVICES
 Customer Address: 2045 Rt. 286
Pittsburgh, PA 15239
 Customer P.O.# MB-14027-S
 Work Order # I-97-09-209

INSTRUMENT INFORMATION

Instrument Manufacturer Ludlum
 Model 2221 Serial Number 102049 (233)
 External Probe(s) 44-2 Serial # 141639 (165)
 Calibration Method 137 Pulser s/n 120935
Cs s/n 10263 200mCi

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 RATEMETER				All Calibrations Btn. + & - 10%
2 X1	100 CPM	Reset	100 CPM	
3	200	Mechanical Zero	200	Battery: OK
4	400		400	
5				Mechanical Zero: OK
6 X10	1K		1K	
7	2K		2K	Reset: OK
8	4K		3.9K	
9				Response: OK
10 X10	10K		10K	
11	20K		20K	Audio: OK
12	40K		39K	
13				Window = OUT
14 X1K	100K		100K	
15	200K		200K	High Voltage = 697 Volts
16	400K		390K	
17				Input Sensitivity = 10mV
18 LOG	400		400	
19	4K		4K	Threshold = 101 = 10mV
20	40K		39K	
21	400K		390K	0.1 mR/hr \leq 225K CPM in ¹³⁷ Cs field
22				facing source
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: [Signature]
 Calibration Date: 10-02-97 (Signed)
 Next Calibration Due: 01-02-98

I certify that the above information is correct:
[Signature] 10-02-97
 Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION

INSTRUMENT INFORMATION

IDENTIFYING EQUIPMENT

Customer Name: Westinghouse
 Customer Address: P.O. Box 3700
Pittsburgh, PA 15230
 Customer P.O.# MB-14027-S
 Work Order # I-97-09-209

Instrument Manufacturer Ludlum
 Model 2221 Serial Number 102049 (233)
 External Probe(s) 44-2 Serial # 141639 (165)
 Calibration Method Pulser s/n 120935

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 DIGITAL RATE	100 CPM	Reset	100 CPM	All Calibrations Btn. + & - 10%
2	200	Mechanical Zero	195	
3	400		397	
4	1K		994	
5	2K		1,996	
6	4K		3,955	
7	10K		9,980	
8	20K		19,970	
9	40K		39,792	
10	100K		99,795	
11	200K		200,175	
12	400K		399,273	
13				
14 SCALER				
15 0.1 MIN	40K		3,990	
16 0.2	40K		8,003	
17 0.5	40K		20,008	
18 1	40K		40,020	
19 2	40K		80,047	
20 5	40K		200,135	
21 10	40K		400,337	
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by John Chutech
 Calibration Date: 10-02-97 (Signed)
 Next Calibration Due 01-02-98

I certify that the above information is correct:
Administrative Coordinator 10-02-97
 Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	GTS INSTRUMENT SERVICES	Instrument Manufacturer:	Ludlum
Customer Address:	2045 Rt. 286	Model:	2221
	Pittsburgh, PA 15239	Serial Number:	102049 (233)
		External Probe(s):	44-2 Serial # 141639 (465)
Customer P.O.#:	MB-14027-S	Calibration Method:	137 Pulsar s/n 101500
Work Order #:	I-97-06-210		Cs s/n 10263 200mCi

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 X1	100 CPM		100 CPM	All Calibrations btn. + & - 10%
2	200		200	
3	400		400	Battery: OK
4 X10	1K		1K	Mechanical Zero: OK
5	2K		2K	
6	4K		4K	Response: OK
7				
8 X100	10K		10K	Zero: OK
9	20K		20K	
10	40K		40K	Audio: OK
11				
12 X1K	100K		100K	Lamp: OK
13	200K		200K	
14	400K		400K	High Voltage = 700 Volts
15				
16 LOG	400		400	Threshold = 100 μ 10mV
17	4K		4K	
18	40K		40K	Window = OUT
19	400K		400K	
20				1 mR/hr = 212K CPM in ¹³⁷ Cs field
21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by:		I certify that the above information is correct:	
Calibration Date:	06-10-97 (Signed)		06-10-97
Next Calibration Due:	09-10-97	Administrative Coordinator	Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

65

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION

INSTRUMENT INFORMATION

RENTAL EQUIPMENT

Customer Name: GTS INSTRUMENT SERVICES
 Customer Address: 2045 Rt. 286
Pittsburgh, PA 15239
 Customer P.O.# MB-14027-S
 Work Order # I-97-06-210

Instrument Manufacturer Ludlum
 Model 2221 Serial Number 102049 (233)
 External Probe(s) 44-2 Serial # I41639 (465)
 Calibration Method Pulser s/n I01500

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 DIGITAL RATE	100 CPM		100 CPM	All Calibrations Btn. + & - 10%
2	200		200	
3	400		400	
4	1K		1,000	
5	2K		2,001	
6	4K		4,004	
7	10K		10,019	
8	20K		20,027	
9	40K		40,053	
10	100K		100,038	
11	200K		200,158	
12	400K		400,565	
13				
14 SCALER				
15 0.1 MIN	40K		4,003	
16 0.2	40K		8,008	
17 0.5	40K		20,033	
18 1	40K		40,081	
19 2	40K		80,208	
20 5	40K		200,360	
21 10	40K		400,816	
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u>	I certify that the above information is correct:
Calibration Date: <u>06-10-97 (Signed)</u>	<u>[Signature]</u> 06-10-97
Next Calibration Due: <u>09-10-97</u>	Administrative Coordinator Date

CODE NUMBER 66

REPORT #001



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 724/733-1900 Fax: 724/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

RENTAL EQUIPMENT

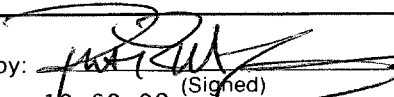
CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	GTS INSTRUMENT SERVICES	Instrument Manufacturer	Bicron
Customer Address:	2045 Rt. 286 Pittsburgh, PA 15239	Model	Micro Rem
		Serial Number	B698G (430)
		External Probe(s)	Serial #
Customer P.O.#	MB-14027-S	Calibration Method	¹³⁷ Cs s/n 10263 200mCi
Work Order #	1-98-10-208		

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X0.1	0.015 mR/hr	13 uRem/hr	15 uRem/hr	All Calibrations Btn. + & - 10%
2					
3	X1	0.05	45	50	Battery: OK
4		0.1	90	100	
5		0.15	135	150	Mechanical Zero: OK
6					
7	X10	0.5	520	520	High Voltage: OK
8		1	1,050	1,050	
9		1.5	1,580	1,580	
10					
11	X100	5	5,000	5,000	
12		10	10,000	10,000	
13		15	15,000	15,000	
14					
15	X1000	50	50,000	50,000	
16		100	100,000	100,000	
17		150	150,000	150,000	
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: 	I certify that the above information is correct:
Calibration Date: 10-29-98 (Signed)	10-29-98
Next Calibration Due: 01-29-99	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 724/733-1900 Fax: 724/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION

INSTRUMENT INFORMATION

IDENTIFYING EQUIPMENT

Customer Name: GTS INSTRUMENT SERVICES
 Customer Address: 2045 Rt. 286
Pittsburgh, PA 15239
 Customer P.O.# MB-14027-S
 Work Order # I-98-05-209

Instrument Manufacturer Bicron
 Model Micro Rem Serial Number B698G (430)
 External Probe(s) Serial #
 Calibration Method ¹³⁷Cs s/n 10263 200mCi

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 X0.1	0.015 mR/hr	15 mRem/hr	15 mRem/hr	All Calibrations Btn. + & - 10%
2				
3 X1	0.05	50	50	Battery: OK
4	0.1	100	100	
5	0.15	145	145	Mechanical Zero: OK
6				
7 X10	0.5	550	550	High Voltage: OK
8	1	1,000	1,000	
9	1.5	1,500	1,500	
10				
11 X100	5	5,000	5,000	
12	10	10,000	10,000	
13	15	15,000	15,000	
14				
15 X1000	50	48,000	50,000	
16	100	93,000	100,000	
17	150	140,000	150,000	
18				
19				
20				
21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u> (Signed)	I certify that the above information is correct:
Calibration Date: <u>06-10-98</u>	<u>[Signature]</u> <u>06-10-98</u>
Next Calibration Due: <u>09-10-98</u>	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 724/733-1900 Fax: 724/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION

INSTRUMENT INFORMATION

RENTAL EQUIPMENT

Customer Name: Westinghouse/GTS INSTRUMENT
 Customer Address: PO Box 3700
Pittsburgh, PA 15230
 Customer P.O.# MB-14027-S
 Work Order # I-98-02-208

Instrument Manufacturer Bicron
 Model Micro Rem Serial Number B698G (430)
 External Probe(s) Serial #

 Calibration Method _____ ¹³⁷Cs s/n 10263 200mCi

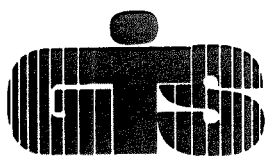
INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 X0.1	0.015 mR/hr	15 uR/hr	15 uR/hr	All Calibrations Btn. + & - 10%
2				
3 X1	0.05	50	50	Battery: OK
4	0.1	98	98	
5	0.15	145	145	Mechanical Zero: OK
6				
7 X10	0.5	520	520	High Voltage: OK
8	1	1,000	1,000	
9	1.5	1,500	1,500	
10				
11 X100	5	5,000	5,000	
12	10	10,000	10,000	
13	15	15,000	15,000	
14				
15 X1000	50	50,000	50,000	
16	100	97,000	97,000	
17	150	140,000	140,000	
18				
19				
20				
21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u> 02-13-98 (Signed)	I certify that the above information is correct: <u>[Signature]</u> Administrative Coordinator
Calibration Date: <u>02-13-98</u>	02-13-98
Next Calibration Due: <u>05-13-98</u>	Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	<u>Westinghouse</u>	Instrument Manufacturer	<u>Bicron</u>
Customer Address:	<u>P.O. Box 3700</u> <u>Pittsburgh, PA 15230</u>	Model	<u>Micro Rem</u> Serial Number <u>B698G (430)</u>
Customer P.O.#	<u>MB-14027-S</u>	External Probe(s)	Serial # _____
Work Order #	<u>I-97-10-209</u>	Calibration Method	<u>¹³⁷Cs</u> s/n <u>10263</u> <u>200mCi</u>

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X0.1	0.015 mR/hr	13 uR/hr	15 uR/hr	All Calibrations Btn. + & - 10%
2	X1	0.05	55	50	Battery: OK
3		0.1	105	97	
4		0.15	155	145	
5	X10	0.5	500	500	Mechanical Zero: OK
6		1	1,000	1,000	
7		1.5	1,500	1,500	
8	X100	5	5,000	5,000	
9		10	10,000	10,000	
10		15	15,000	15,000	
11	X1000	50	52,000	50,000	
12		100	102,000	98,000	
13		150	153,000	145,000	
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>[Signature]</u>	Certify that the above information is correct: <u>[Signature]</u>
Calibration Date: <u>11-03-97</u> (Signed)	<u>11-03-97</u>
Next Calibration Due: <u>02-03-98</u>	Administrative Coordinator _____ Date _____



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

RENTAL EQUIPMENT

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	GTS INSTRUMENT SERVICES	Instrument Manufacturer	Bicron
Customer Address:	2045 Rt. 286	Model	Micro Rem
	Pittsburgh, PA 15239	Serial Number	B698G (430)
Customer P.O.#	MB-14027-S	External Probe(s)	Serial #
Work Order #	I-97-06-209	Calibration Method	¹³⁷ Cs s/n 10263 200mC:

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X0.1	0.015 mR/hr		15 uR/hr	All Calibrations Btn. + & - 10%
2	XI	0.05		50	Battery: OK
3		0.1		100	
4		0.15		145	
5					
6	X10	0.5		500	
7		1		1,000	
8		1.5		1,500	
9	X100	5		5,000	
10		10		10,000	
11		15		14,800	
12	X1000	50		50,000	
13		100		100,000	
14		150		148,000	
15					
16					
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by <u>William Owen</u>	I certify that the above information is correct:
Calibration Date: <u>07-01-97</u> (Signed)	<u>[Signature]</u> 07-01-97
Next Calibration Due: <u>10-01-97</u>	Administrative Coordinator Date

CODE NUMBER 67

REPORT #001

**IH & S Form # 203
Forest Hills Site**

**Manual Lab Counter
(Chi Square)**

035U CALA^u

COUNTER S/N: 999		INSTRUMENT CODE: 67	
SOURCE USED: (Check one)	<input type="checkbox"/> Cs 137 # 84-9 <input type="checkbox"/> Pu 239 # 5308	<input type="checkbox"/> Tc-99 # 763/84 <input type="checkbox"/> Pu 239 #7346	<input type="checkbox"/> Tc 99 # 764/84 <input type="checkbox"/> Tc99 #767/84
DATE OF SOURCE DECAY:		ACTIVITY DPM: 84475	

CHECK SOURCE CHI SQUARE DATA (2 minute counts)	
2508	2491
2510	2499
2482	2439
2584	2510
2490	2523
TOTAL / 10: (average)	25036
Sq. Root of average: (Sigma)	50
3 Sigma:	150
Average + 3 Sigma:	N/A
Average - 3 Sigma:	N/A

EFFICIENCY DATA:	
MINUTE COUNT: 10	24931
GROSS CPM (Count/min)	2493
NET CPM (Gross count - Bgk.)	2340
EFFICIENCY (Net CPM/DPM)	2.77
CORR. FACTOR (1/Eff.)	36.1

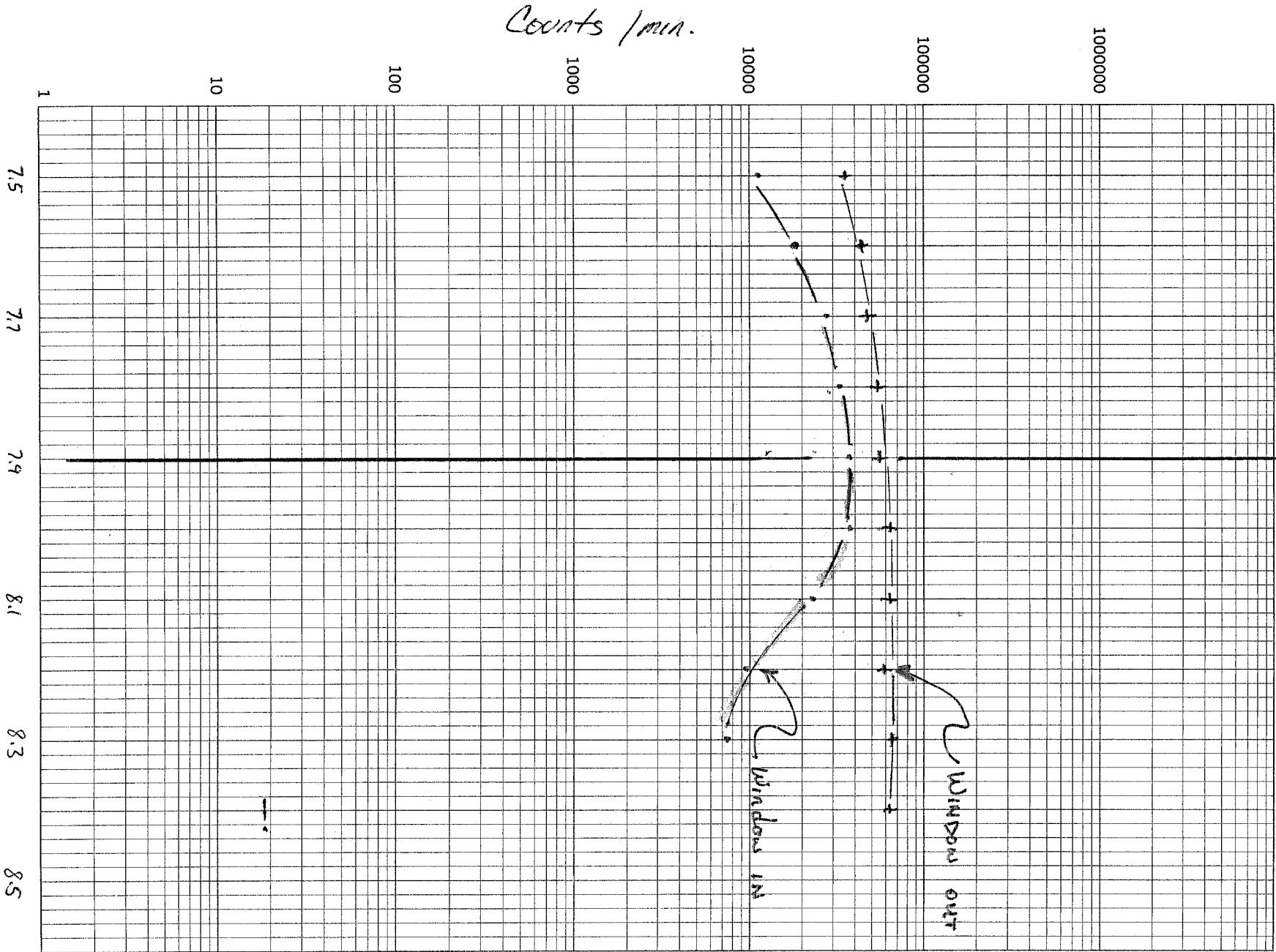
BACKGROUND DATA:	
TOTAL COUNTS:	1529
COUNT TIME:	10 Minutes
COUNTS PER MINUTE:	153

CALIBRATED BY VENDER: General Technical (Electronical calibration only) Services, Inc.	
ELECTRONIC CALIBRATION DATE:	5-20-98

SOURCE EFFICIENCY AND CHI SQUARE BY:	NAME: John Shoemaker SIGNATURE: <i>John Shoemaker</i>
CALIBRATION DATE:	5-20-98
CALIBRATION DUE:	8-20-98

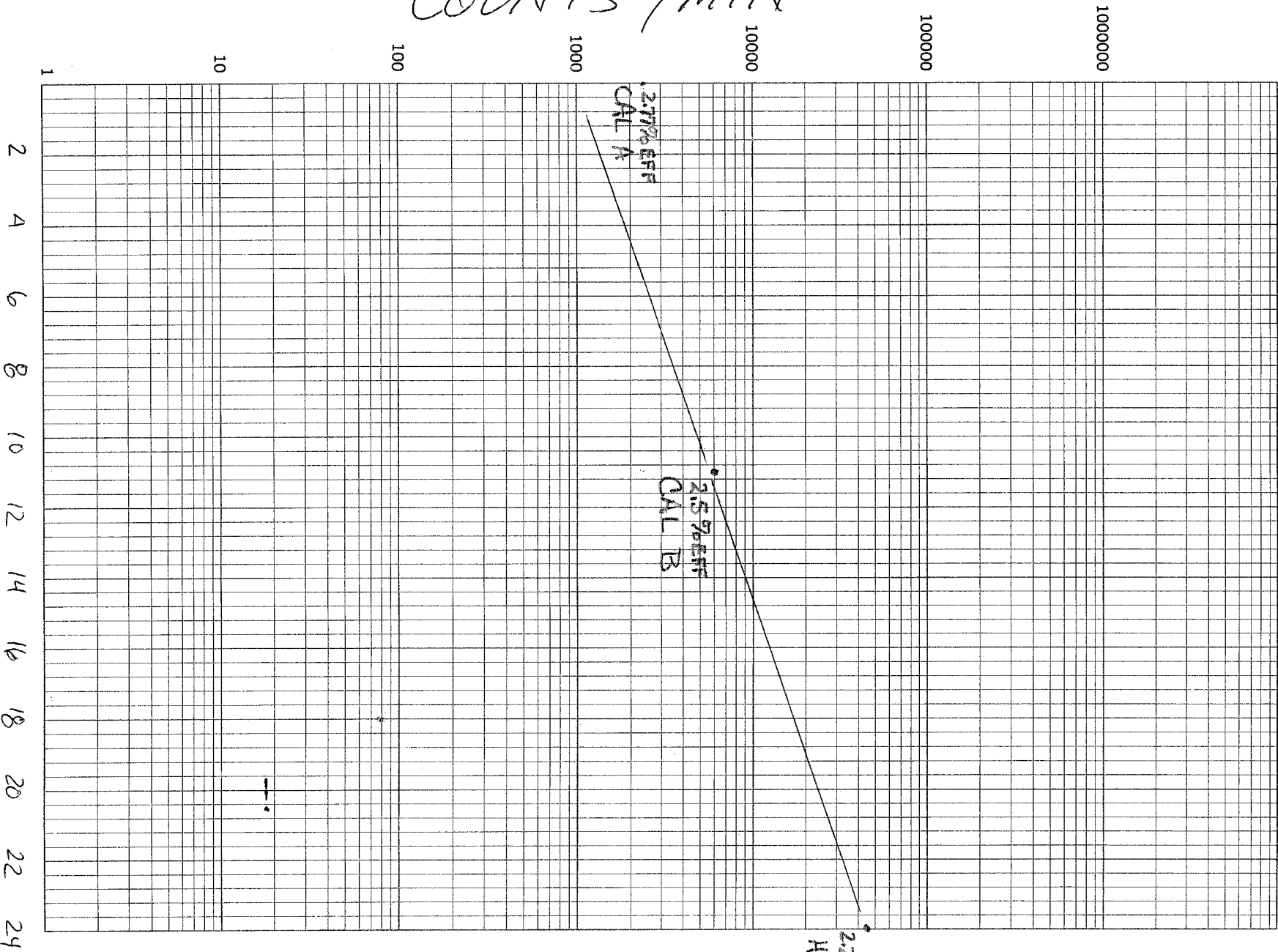
Threshold 1.0
Window 2.0
MODEL MS-2 #999

DATE 5-20-98
John Sheen



High Voltage

COUNTS / MIN



Threshold 1.0
Window 2.0
High Voltage 7.9
MODEL MS-2 #999

DATE 5-20-98
John Shewmaker

% DEAD TIME.



Nuclear Services Division
 COTA - Analytical Laboratory
 Waltz Mill Site
 (412) 722-5217, 5219

ANALYSIS REPORT

16137

RECEIVED 9-18-96
 REPORTED 9-20-96

Originator A J Nardi

Company/Div. WESBU Environmental & Regulatory Services

RESULTS OF ANALYSIS
 pCi/gram +/- 2 sigma @ sample date: 9-18-96

Analytical Service #	Sample Identification	Cs137	Tl208	Bi212	Bi214	Pb212	Pb214	Ra226	Ra228/Ac228	Th228	U235	Other	U238
96-1076	CAL-A	1.03 ±0.54	1.74 ±0.30	5.78 ±4.82	-	5.02 ±1.31	-	0.944 ±0.91	6.18 ±3.50	5.00 ±1.63	783 ±6		1029 ±165
96-1077	CAL-B	7.29 ±1.72	5.79 ±1.69	26.7 ±15.2	-	20.8 ±2.6	-	1.96 ±1.58	-	16.6 ±4.9	5944 ±18		7165 ±460
96-1078	CAL-C	0.532 ±0.32	-	-	-	0.826 ±0.62	-	1.55 ±0.87	-	1.53 ±0.91	-		-

Remarks: BLAIRSVILLE

Procedures: A-524

Analyst: WTF

Page 1 of 1

COP
JMS
5-20-96

Approved: *J. Berlin*

MS-2, S/N 999

Eff. 2.77%

Bkg. 153 cpm

Threshold 1.0

Window 2.0

H. Voltage 7.9

¹³⁷Cs, window in 1.1%

¹³⁷Cs, window out 3.4%

²³⁵U, window in 2.77%

²³⁵U, window out 2.87%

Bkg. window in 153.9 cpm

Bkg. window out 501.2 cpm

NCPM * CF 16.26 / Wt. Grams =

PCi/gram in each sample.

CODE NUMBER 68

REPORT #001



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 724/733-1900 Fax: 724/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION

INSTRUMENT INFORMATION

INTERNAL EQUIPMENT

Customer Name: GTS INSTRUMENT SERVICES
 Customer Address: 2045 Rt. 286
Pittsburgh, PA 15239
 Customer P.O.# MB-14027-S
 Work Order # I-98-12-208

Instrument Manufacturer Eberline
 Model RAS-1 Serial Number 0885 (244)
 External Probe(s) _____ Serial # _____
 Calibration Method Kurz Model 505-8 s/n ME-2764

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 N/A	1 CFM	1 CFM	1 CFM	All Calibrations Btn. + & - 10%
2				28 LPM = 1 CFM
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
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18				
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21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: William Owens (Signed)
 Calibration Date: 12-17-98
 Next Calibration Due: 06-17-99

I certify that the above information is correct:
[Signature]
 Administrative Coordinator
 Date: 12-17-98



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	<u>Westinghouse</u>	Instrument Manufacturer	<u>Eberline</u>
Customer Address:	<u>P.O. Box 3700</u> <u>Pittsburgh, PA 15230</u>	Model	<u>RAS-1</u> Serial Number <u>0885 (244)</u>
Customer P.O.#	<u>MB-14027-S</u>	External Probe(s)	Serial # _____
Work Order #	<u>I-97-09-210</u>	Calibration Method	<u>Kurz Model 505-8 s/n ME-2764</u>

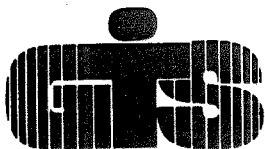
INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	<u>N/A</u>	<u>1 CFM</u>	<u>1.1 CFM</u>	<u>1 CFM</u>	<u>All Calibrations Btn. + & - 10%</u>
2					<u>30 LPM ≈ 1 CFM</u>
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>William Owens</u> (Signed)	I certify that the above information is correct:
Calibration Date: <u>09-22-97</u>	<u>09-22-97</u>
Next Calibration Due: <u>12-22-97</u>	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 724/733-1900 Fax: 724/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

RENTAL EQUIPMENT

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	GTS INSTRUMENT SERVICES	Instrument Manufacturer:	Eberline
Customer Address:	2045 Rt. 286 Pittsburgh, PA 15239	Model:	RAS-1
		Serial Number:	0885 (244)
		External Probe(s):	Serial # _____
Customer P.O.#:	MB-14027-S	Calibration Method:	Kurz Model 505-8 s/n ME-276
Work Order #:	I-98-04-208		

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 N/A	1 CFM	1.2 CFM	1 CFM	All Calibrations Btn. + & - 10%
2				30 LPM \approx 1 CFM
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>William Owens</u> (Signed)	I certify that the above information is correct: <u>[Signature]</u>
Calibration Date: <u>05-06-98</u>	<u>05-06-98</u>
Next Calibration Due: <u>11-06-98</u>	Administrative Coordinator <u>[Signature]</u> Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION

INSTRUMENT INFORMATION

RENTAL EQUIPMENT

Customer Name: GTS INSTRUMENT SERVICES
 Customer Address: 2045 Rt. 286
Pittsburgh, PA 15239
 Customer P.O.# MB-14027-S
 Work Order # I-97-09-210

Instrument Manufacturer Eberline
 Model RAS-1 Serial Number 0885 (244)
 External Probe(s) _____ Serial # _____
 Calibration Method Kurz Model 505-8 s/n ME-2764

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 N/A	1 CFM	1.1 CFM	1 CFM	All Calibrations Btn. + & - 10%
2				30 LPM \approx 1 CFM
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
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23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: William Owens
 Calibration Date: 09-22-97 (Signed)
 Next Calibration Due: 03-22-98

I certify that the above information is correct:
Heidi Miller 09-22-97
 Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION

INSTRUMENT INFORMATION

RENTAL EQUIPMENT

Customer Name: GTS INSTRUMENT SERVICES
 Customer Address: 2045 Rt. 286
Pittsburgh, PA 15239
 Customer P.O.# BEBZ524601
 Work Order # I-96-07-209

Instrument Manufacturer Eberline
 Model RAS-1 Serial Number 0885 (244)
 External Probe(s) _____ Serial # _____
 Calibration Method Kurz Model 505-B s/n ME-2704

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 <u>N/A</u>	<u>1 CFM</u>		<u>1 CFM</u>	<u>All Calibrations Btn. + & - 10%</u>
2				<u>30 LPM = 2 CFM</u>
3				
4				<u>Calibrated with 47mm A/E Filter</u>
5				<u>paper, no charcoal or other</u>
6				<u>filter media used</u>
7				
8				
9				
10				
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STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: William Owen
 Calibration Date: 07-23-96 (Signed)
 Next Calibration Due: 01-23-97

I certify that the above information is correct:
Marissa M. Brown 07-23-96
 Administrative Coordinator Date

CODE NUMBER 69

REPORT #001



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 724/733-1900 Fax: 724/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
RENTAL EQUIPMENT			
Customer Name:	GTS INSTRUMENT SERVICES	Instrument Manufacturer	Eberline
Customer Address:	2045 Rt. 286 Pittsburgh, PA 15239	Model	R0-2
		Serial Number	3644 (474)
		External Probe(s)	Serial #
Customer P.O.#		Calibration Method	¹³⁷ Cs s/n 10263 200mCi
Work Order #	I-98-12-210		¹³⁷ Cs s/n 20020 400Ci
			Depleted Uranium s/n 013

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	5 mR/hr	1 mR/hr		1 mR/hr	All Calibrations Btn. + & - 10%
2		2		2	
3		4		4	Battery: OK
4					
5	50	10		10	Mechanical Zero: OK
6		20		20	
7		40		40	Beta Factor = 3.8
8					
9	500	100		100	
10		200		200	
11		400		400	
12					
13	5000	1 R/hr		1,000	
14		2		2,100	
15		4		4,100	
16					
17					
18					
19					
20					
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by:	I certify that the above information is correct:
Calibration Date: 12-04-98 (Signed)	
Next Calibration Due: 06-04-99	Administrative Coordinator
	Date: 12-04-98

CODE NUMBER 70

REPORT #001



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 724/733-1900 Fax: 724/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION	INSTRUMENT INFORMATION
Customer Name: <u>Westinghouse</u>	Instrument Manufacturer <u>Ludlum</u>
Customer Address: <u>PO Box 3700</u>	Model <u>2221</u> Serial Number <u>99136 (225)</u>
<u>Pittsburgh, PA 15230</u>	External Probe(s) <u>44-2</u> Serial # <u>141639 (406)</u>
Customer P.O.# _____	Calibration Method <u>Pulser s/n 120935</u>
Work Order # <u>I-99-02-210</u>	

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 DIGITAL RATE	100 CPM	100 CPM	100 CPM	All Calibrations Btn. + & - 10%
2	200	201	201	
3	400	402	402	
4	1K	1,001	1,001	
5	2K	2,001	2,001	
	4K	4,003	4,003	
7	10K	10,006	10,006	
8	20K	20,006	20,026	
9	40K	40,089	40,087	
10	100K	100,009	100,009	
11	200K	200,009	200,009	
12	400K	401,003	401,003	
13				
14 SCALER				
15 0.1 MIN	40K	4,006	4.006	
16 0.2	40K	8,012	8,012	
17 0.5	40K	20,031	20,031	
18 1	40K	40,065	40,065	
19 2	40K	80,132	80,132	
20 5	40K	200,342	200,342	
21 10	40K	400,714	400,714	
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>William Owens</u>	I certify that the above information is correct:
(Signed)	
Calibration Date: <u>02-23-99</u>	<u>02-23-99</u>
Next Calibration Due: <u>08-23-99</u>	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 724/733-1900 Fax: 724/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
RENTAL EQUIPMENT			
Customer Name:	GTS INSTRUMENT SERVICES	Instrument Manufacturer	Ludlum
Customer Address:	2045 Rt. 286 Pittsburgh, PA 15239	Model	2221
		Serial Number	99136 (225)
		External Probe(s)	44-2
		Serial #	141639 (406)
Customer P.O.#	MB-14027-6	Calibration Method	¹³⁷ Pulser s/n 101500
Work Order #	I-98-08-210		Cs s/n 10263 200mCi

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	X1	100 CPM		100 CPM	All Calibrations Btn. + & - 10%
2		200		200	
3		400		400	Mechanical Zero: OK
4					
5	X10	1K		1K	Battery: OK
6		2K		2K	
7		4K		4K	Response: OK
8					
9	X100	10K		10K	Zero: OK
10		20K		20K	
11		40K		40K	Audio: OK
12					
13	X1K	100K		100K	Lamp: OK
14		200K		200K	
15		400K		400K	High Voltage = 700 Volts
16					
17	LOG	400		400	Threshold = 100 = 10mV
18		4K		4K	
19		40K		40K	Window - OUT
20		400K		400K	1 mR/hr \approx 218K CPM in ¹³⁷ Cs field
21					
22					
23					

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by:		I certify that the above information is correct:	
Calibration Date:	08-20-98 (Signed)		08-20-98
Next Calibration Due:	02-20-99	Administrative Coordinator	Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 724/733-1900 Fax: 724/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	GTS INSTRUMENT SERVICES	Instrument Manufacturer	Ludlum
Customer Address:	2045 Rt. 286 Pittsburgh, PA 15239	Model	2221
		Serial Number	99136 (225)
		External Probe(s)	44-2
		Serial #	141639 (406)
Customer P.O.#	MB-14027-6	Calibration Method	Pusler s/n 101500
Work Order #	I-98-08-210		

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 DIGITAL RATE	100 CPM		100 CPM	All Calibrations Btn. + & - 10%
2	200		200	
3	400		400	
4	1K		1,000	
5	2K		2,000	
6	4K		4,000	
7	10K		10,003	
8	20K		20,010	
9	40K		40,036	
10	100K		100,078	
11	200K		200,162	
12	400K		400,350	
13				
14 SCALER				
15 0.1 MIN	40K		4,000	
16 0.2	40K		8,001	
17 0.5	40K		20,011	
18 1	40K		40,036	
19 2	40K		80,076	
20 5	40K		200,234	
21 10	40K		400,495	
22				
23				

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by:		I certify that the above information is correct:	
Calibration Date:	08-20-98 (Signed)		08-20-98
Next Calibration Due:	02-20-99	Administrative Coordinator	Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
RENTAL EQUIPMENT			
Customer Name:	<u>GTS INSTRUMENT SERVICES</u>	Instrument Manufacturer	<u>Eberline</u>
Customer Address:	<u>2045 Rt. 286</u>	Model	<u>RAS-1</u> Serial Number <u>0885 (244)</u>
	<u>Pittsburgh, PA 15239</u>	External Probe(s)	Serial # _____
Customer P.O.#	<u>MB-14027-S</u>	Calibration Method	<u>Kurz Model 505-8 s/n ME-2764</u>
Work Order #	<u>I-97-09-210</u>		

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	N/A	1 CFM	1.1 CFM	1 CFM	All Calibrations Btn. + & - 10%
2					30 LPM \neq 1 CFM
3					
4					
5					
6					
7					
8					
9					
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STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>William Owens</u>	I certify that the above information is correct: <u>William Owens</u> Administrative Coordinator
Calibration Date: <u>09-22-97</u> (Signed)	
Next Calibration Due: <u>03-22-98</u>	
	Date <u>09-22-97</u>



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
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CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	<u>Westinghouse</u>	Instrument Manufacturer	<u>Eberline</u>
Customer Address:	<u>P.O. Box 3700</u> <u>Pittsburgh, PA 15230</u>	Model	<u>RAS-1</u> Serial Number <u>0885 (244)</u>
Customer P.O.#	<u>MB-14027-S</u>	External Probe(s)	Serial # _____
Work Order #	<u>I-97-09-210</u>	Calibration Method	<u>Kurz Model 505-8 s/n ME-2764</u>

INSTRUMENT CALIBRATION INFORMATION

	Instrument Range	Calibration Standard Value	Instrument Response		Comment
			Before Calib.	After Calib.	
1	<u>N/A</u>	<u>1 CFM</u>	<u>1.1 CFM</u>	<u>1 CFM</u>	<u>All Calibrations Btn. + & - 10%</u>
2					<u>30 LPM ≈ 1 CFM</u>
3					
4					
5					
6					
7					
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STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: <u>William Owens</u> (Signed)	I certify that the above information is correct: <u>[Signature]</u>
Calibration Date: <u>09-22-97</u>	<u>09-22-97</u>
Next Calibration Due: <u>12-22-97</u>	Administrative Coordinator Date



GTS Instrument Services
 2045 Route 286
 Pittsburgh, PA 15239-2839
 412/733-1900 Fax: 412/327-8189

CALIBRATION CERTIFICATE

This Certificate will be accompanied by Calibration Charts or Readings where applicable

CUSTOMER INFORMATION		INSTRUMENT INFORMATION	
Customer Name:	<u>Westinghouse</u>	Instrument Manufacturer:	<u>Radeco</u>
Customer Address:	<u>P.O. Box 3700</u> <u>Pittsburgh, PA 15230</u>	Model:	<u>HD-29A</u> Serial Number <u>1944</u>
Customer P.O.#:	<u>MB-14027-S</u>	External Probe(s):	Serial # _____
Work Order #:	<u>I-97-03-209</u>	Calibration Method:	<u>Kurz 505-8</u> <u>ME 2764</u> <u>GRA-LAB Timer 001</u>

INSTRUMENT CALIBRATION INFORMATION

Instrument Range	Calibration Standard Value	Instrument Response		Comment
		Before Calib.	After Calib.	
1 <u>N/A</u>	<u>2 CFM</u>	<u>Regulator</u>	<u>2 CFM</u>	<u>All Calibrations Btn. + & - 10%</u>
2 _____	_____	<u>Stuck-Flow</u>	_____	<u>Calibrated with customer supplied</u>
3 _____	_____	<u>meter stuck</u>	_____	<u>Filter paper.</u>
4 _____	_____	_____	_____	<u>Timer: OK</u>
5 _____	_____	_____	_____	_____
6 _____	_____	_____	_____	_____
7 _____	_____	_____	_____	_____
8 _____	_____	_____	_____	_____
9 _____	_____	_____	_____	_____
10 _____	_____	_____	_____	_____
11 _____	_____	_____	_____	_____
12 _____	_____	_____	_____	_____
13 _____	_____	_____	_____	_____
14 _____	_____	_____	_____	_____
15 _____	_____	_____	_____	_____
16 _____	_____	_____	_____	_____
17 _____	_____	_____	_____	_____
18 _____	_____	_____	_____	_____
19 _____	_____	_____	_____	_____
20 _____	_____	_____	_____	_____
21 _____	_____	_____	_____	_____
22 _____	_____	_____	_____	_____
23 _____	_____	_____	_____	_____

STATEMENT OF CERTIFICATION

We Certify that the instrument listed above was calibrated and inspected prior to shipment and that it met all of the Manufacturers published operating specifications. We further certify that our Calibration Measurements are traceable to the National Institute of Standards and Technology (We are not responsible for damage incurred during shipment or use of this instrument).

Instrument Calibrated by: William Owens
 (Signed)
 Calibration Date: 04-01-97
 Next Calibration Due: 10-01-97

I certify that the above information is correct:
Tim Larson 04-01-97
 Administrative Coordinator Date