

**Thermo** Gamma-Metrics

# OPERATIONAL PROCEDURE

NO.	SE-04.004
REV	A
DATE	11/29/2000
APVD	F. Brewer
PAGE	1 OF 1

## LEAK/CONTAMINATION TEST CERTIFICATE

- 6-Month Inspection & Source Wipe     Installation     Replenishment     Source Removal  
 Shipping

Customers Name: Reliant Energy Services                      Site: Cheswick Power Plant  
Responsible Person: Bill McGraw                              Test Date: 02-21-02  
Location of Source: Crusher House                          PO: \_\_\_\_\_  
Device: BMA Ser. # 800031

Currently, regulatory agencies define a sealed radiation source as leaking if removable contamination is found to be equal to or greater than 0.005 µCi.

Background Countrate, if applicable N/A CPM

Serial No.	Model No.	Activity µg	Contamination µCi *
<u>Z984</u>	<u>Z 100</u>	<u>3.30</u>	<u>&lt;0.005</u>
<u>Z985</u>	<u>Z 100</u>	<u>3.26</u>	<u>&lt;0.005</u>
<u>Z1514</u>	<u>Z 100</u>	<u>12.82</u>	<u>&lt;0.005</u>
<u>Z1515</u>	<u>Z 100</u>	<u>12.90</u>	<u>&lt;0.005</u>
<u>6141GS</u>	<u>Cs137 X.8</u>	<u>7.52</u>	<u>&lt;0.005</u>
<u>6145GS</u>	<u>Cs137 X.8</u>	<u>7.04</u>	<u>&lt;0.005</u>

Instruments used:

Model <u>Ludlum 177</u>	S/N <u>94778</u>	Cal due <u>05-06-02</u>
Model <u>P G M Pancake Probe</u>	S/N <u>091827</u>	Cal due <u>05-06-02</u>
Model _____	S/N _____	Cal due _____

Certifications:

**Special Form:**     Californium 252 (Cf-252) Cf-Pd cermet or Cf-Pd alloy.  
 Cesium 137 (Cs-137) Cesium Chloride.  
 Other \_\_\_\_\_

**Leak Test:**     The sources listed above have passed the ANSI N5.10-1968 Appendix B Section B2.1 Wipe Test with removable Alpha and Beta/Gamma surface contamination less than 0.005 µCi.

Californium is checked for Alpha and Beta/Gamma contamination; Cesium is checked for Beta/Gamma contamination. For other source material, contact the Radiation Safety Officer.

\* Note:    CPM / (2.22 x 10<sup>6</sup>) = µCi

Test Performed By: Ward, D.    Signature: *[Signature]*    Date: 02/21/02  
Print last name & first initial

**Thermo**Gamma-Metrics

NO. SE-04.004  
 REV A  
 DATE 11/29/2000  
 APVD F. Brewer  
 PAGE 1 OF 1

# OPERATIONAL PROCEDURE

## LEAK/CONTAMINATION TEST CERTIFICATE

- 6-Month Inspection & Source Wipe     Installation     Replenishment     Source Removal  
 Shipping

Customers Name: Orion Power Mid West Company    Site: Cheswick Power Plant  
 Responsible Person: Bill McGraw    Test Date: 08-21-01  
 Location of Source: Crusher House    PO: \_\_\_\_\_  
 Device: BMA Ser. # 800031

Currently, regulatory agencies define a sealed radiation source as leaking if removable contamination is found to be equal to or greater than 0.005  $\mu\text{Ci}$ .

Background Countrate, if applicable N/A CPM

Serial No.	Model No.	Activity $\mu\text{g}$	Contamination $\mu\text{Ci}$ *
<u>Z984</u>	<u>Z 100</u>	<u>3.76</u>	<u>&lt;0.005</u>
<u>Z985</u>	<u>Z 100</u>	<u>3.72</u>	<u>&lt;0.005</u>
<u>Z1514</u>	<u>Z 100</u>	<u>14.62</u>	<u>&lt;0.005</u>
<u>Z1515</u>	<u>Z 100</u>	<u>14.71</u>	<u>&lt;0.005</u>
<u>6141GS</u>	<u>Cs137</u>	<u>7.61</u>	<u>&lt;0.005</u>
<u>6145GS</u>	<u>Cs137</u>	<u>7.12</u>	<u>&lt;0.005</u>

Instruments used:  
 Model Survey M    S/N B 204 D    Cal due 06-29-02  
 Model P G M Pancake Probe    S/N B 651 Q    Cal due 06-29-02  
 Model \_\_\_\_\_    S/N \_\_\_\_\_    Cal due \_\_\_\_\_

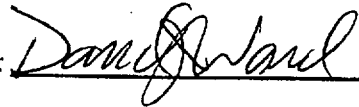
Certifications:

- Special Form:     Californium 252 (Cf-252) Cf-Pd cermet or Cf-Pd alloy.  
 Cesium 137 (Cs-137) Cesium Chloride.  
 Other \_\_\_\_\_

Leak Test:     The sources listed above have passed the ANSI N5.10-1968 Appendix B Section B2.1 Wipe Test with removable Alpha and Beta/Gamma surface contamination less than 0.005  $\mu\text{Ci}$ .

Californium is checked for Alpha and Beta/Gamma contamination; Cesium is checked for Beta/Gamma contamination. For other source material, contact the Radiation Safety Officer.

\* Note:  $\text{CPM} / (2.22 \times 10^6) = \mu\text{Ci}$

Test Performed By: Ward, D.    Signature:     Date: 08/21/01  
 Print last name & first initial

**ThermoGamma-Metrics**

**LEAK TEST CERTIFICATE**

Source Wipe       Source Replenishment       Source Removal       Installation   
 Radiation Survey       Shipping       \_\_\_\_\_ Other

<b>Customer Name:</b> Orion Power	<b>Site:</b> Cheswick Power
<b>RSO:</b> Jim Pfennigwerth	
<b>Location of Source:</b> Crusher House	<b>PO:</b>
<b>Performed By:</b> David J. Ward	<b>Analyzer:</b> 31
	<b>Test Date:</b> 03/12/01

Currently, state and Federally issued radioactive materials licenses define a sealed radiation source as leaking if removable contamination is found to be equal to or greater than 0.005 microcuries.

This is to certify that the following listed and described items have been tested according to American National Standards Institute N5.10-1988 Appendix B Section B2.1, Wipe (Smear) Test. The level(s) of removable contamination observed on the surface of the sources are listed as follows:

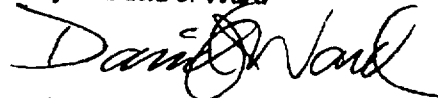
Neutron REM Detector	ION Chamber Survey Meter	Portable Count-rate Meter	Pencake Probe
<b>Manufacturer:</b>	<b>Manufacturer:</b>	<b>Manufacturer:</b> BICRON	<b>Manufacturer:</b> BICRON
<b>Serial #:</b>	<b>Serial #:</b>	<b>Serial #:</b> B204Q	<b>Serial #:</b> B651Q
<b>Model #</b>	<b>Model #</b>	<b>Model #</b> SURVEY M	<b>Model #</b> PGM

**Source Reference Date :** 3/12/01

Californium 252 Source Serial Number	Reference Activity Cf in $\mu$ Ci	Removable Surface Contamination $\mu$ Ci
CF-Z984	4.22	< 0.005
CF-Z985	4.18	< 0.005
CF-Z 1514	16.42	< 0.005
CF-Z 1515	16.52	< 0.005
Cesium 137 Source Serial Number	Reference Activity Cs in mCi	Removable Surface Contamination $\mu$ Ci
6141GS	7.68	< 0.005
6145GS	7.19	< 0.005

Californium is checked for Alpha, Beta and Gamma contamination and Cesium is checked for Beta and Gamma contamination. From the recorded results, there is no indication of leakage from the source(s).

Test Performed by: David J. Ward



Date: 03/12/2001

# ThermoGamma-Metrics

## LEAK TEST CERTIFICATE

Source Wipe     Source Replenishment     Source Removal     Installation   
 Radiation Survey     Shipping     Other

<b>Customer Name:</b> Orion Power	<b>Site:</b> Cheswick Power
<b>RSO:</b> Bill McGraw	
<b>Location of Source:</b>	<b>PO:</b>
<b>Performed By:</b> David J. Ward	<b>Analyzer:</b> 31
	<b>Test Date:</b> 8/8/00

Currently, state and Federally issued radioactive materials licenses define a sealed radiation source as leaking if removable contamination is found to be equal to or greater than 0.005 microcuries.

This is to certify that the following listed and described items have been tested according to American National Standards Institute N5.10-1968 Appendix B Section B2.1, Wipe (Smear) Test. The level(s) of removable contamination observed on the surface of the sources are listed as follows:

Neutron REM Detector	ION Chamber Survey Meter	Portable Countrate Meter	Pancake Probe
<b>Manufacturer:</b>	<b>Manufacturer:</b>	<b>Manufacturer:</b> S. E. INTER.	<b>Manufacturer:</b>
<b>Serial #:</b>	<b>Serial #:</b>	<b>Serial #:</b> 02740	<b>Serial #:</b>
<b>Model #</b>	<b>Model #</b>	<b>Model #</b> MONITOR 5	<b>Model #</b>

**Source Reference Date :** 8/8/00

Californium 252 Source Serial Number	Reference Activity Cf In µg	Removable Surface Contamination DPM
CF-Z501	1.75	○
CF-Z502	1.72	○
CF-Z709	3.36	○
CF-Z710	3.22	○
CF-Z984	4.93	○
CF-Z985	4.88	○
Cesium 137 Source Serial Number	Reference Activity Cs In mCi	Removable Surface Contamination DPM
6141GS	7.79	○
6145GS	7.29	○

Californium is checked for Alpha, Beta and Gamma contamination and Cesium is checked for Beta and Gamma contamination. From the recorded results, there is no indication of leakage from the source(s).

Test Performed by: David J. Ward

*David J. Ward*

Date: 8/8/00

# ThermoGamma-Metrics

## LEAK TEST CERTIFICATE

Source Wipe       Source Replenishment       Source Removal       Installation   
 Radiation Survey       Shipping       Other

<b>Customer Name:</b> Duquesne Power and Light	<b>Site:</b> Cheswick Power
<b>RSO:</b> Jim Pfennigwerth	
<b>Location of Source:</b>	<b>PO:</b>
<b>Performed By:</b> David J. Ward	<b>Analyzer:</b> 31
	<b>Test Date:</b> 2/4/00

Currently, state and Federally issued radioactive materials licenses define a sealed radiation source as leaking if removable contamination is found to be equal to or greater than 0.005 microcuries.

This is to certify that the following listed and described items have been tested according to American National Standards Institute N5.10-1968 Appendix B Section B2.1, Wipe (Smear) Test. The level(s) of removable contamination observed on the surface of the sources are listed as follows:

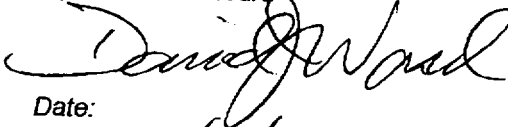
<b>Neutron REM Detector</b>	<b>ION Chamber Survey Meter</b>	<b>Portable Countrate Meter</b>	<b>Pancake Probe</b>
<b>Manufacturer:</b>	<b>Manufacturer:</b>	<b>Manufacturer:</b> S. E. INTER.	<b>Manufacturer:</b>
<b>Serial #:</b>	<b>Serial #:</b>	<b>Serial #:</b> 02740	<b>Serial #:</b>
<b>Model #</b>	<b>Model #</b>	<b>Model #</b> MONITOR 5	<b>Model #</b>

**Source Reference Date :** 2/4/00

<b>Californium 252 Source Serial Number</b>	<b>Reference Activity Cf in µg</b>	<b>Removable Surface Contamination DPM</b>
CF-Z501	2.00	0
CF-Z502	1.96	0
CF-Z709	3.84	0
CF-Z710	3.67	0
CF-Z984	5.63	0
CF-Z985	5.58	0
<b>Cesium 137 Source Serial Number</b>	<b>Reference Activity Cs in mCi</b>	<b>Removable Surface Contamination DPM</b>
6141GS	7.88	0
6145GS	7.38	0

Californium is checked for Alpha, Beta and Gamma contamination and Cesium is checked for Beta and Gamma contamination. From the recorded results, there is no indication of leakage from the source(s).

Test Performed by: David J. Ward

  
 Date: 2/4/00



### LEAK TEST CERTIFICATE

Source Wipe     Source Replenishment     Source Removal     Installation   
 Radiation Survey     Shipping     \_\_\_\_\_ Other

<b>Customer Name:</b> Dugonek Light Co <b>RSO:</b> <b>Location of Source:</b> Crusher BMA <b>Performed By:</b> John Hegky	<b>Site:</b> Chewick Power Plant <b>Chg No.:</b> <b>Analyzer:</b> 3) <b>Test Date:</b> 8-5-99
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Currently, state and Federally issued radioactive materials licenses define a sealed radiation source as leaking if removable contamination is found to be equal to or greater than 0.005 microcuries.

This is to certify that the following listed and described items have been tested according to American National Standards Institute N5.10-1968 Appendix B Section B2.1, Wipe (Smear) Test. The level(s) of removable contamination observed on the surface of the sources are listed as follows:

Neutron REM Detector	ION Chamber Survey Meter	Portable Countrate Meter	Pancake Probe
Manufacturer:	Manufacturer:	Manufacturer: Radiation Alert	Manufacturer:
Serial #:	Serial #:	Serial #: 02866	Serial #:
Model #	Model #	Model # Monitor 5	Model #

Source Reference Date : 8-5-99

Californium 252 Source Serial Number	Reference Activity Cf in µg	Removable Surface Contamination DPM
CF-250)	2.28	0
CF-2709	4.37	0
CF-2984	6.42	0
CF-2502	2.24	0
CF-2710	4.19	0
CF-2985	6.36	0
Cesium 137 Source Serial Number	Reference Activity Cs in mCi	Removable Surface Contamination DPM
614165	2.97	0
614565	7.46	0

Californium is checked for Alpha, Beta and Gamma contamination and Cesium is checked for Beta and Gamma contamination. From the recorded results, there is no indication of leakage from the source(s).

Test Performed By: *John R. Hegky*

Date: 8-5-99

*Copy*



### LEAK TEST CERTIFICATE

Source Wipe     Source Replenishment     Source Removal     Installation   
 Radiation Survey     Shipping     Other

<b>Customer Name:</b> Duquesne Power and Light	<b>Site:</b> Cheswick Power
<b>RSO:</b> Jim Pfennigwerth	
<b>Location of Source:</b>	<b>PO:</b>
<b>Performed By:</b> David J. Ward	<b>Analyzer:</b> 31
	<b>Test Date:</b> 5/5/99

Currently, state and Federally issued radioactive materials licenses define a sealed radiation source as leaking if removable contamination is found to be equal to or greater than 0.005 microcuries.

This is to certify that the following listed and described items have been tested according to American National Standards Institute N5.10-1968 Appendix B Section B2.1, Wipe (Smear) Test. The level(s) of removable contamination observed on the surface of the sources are listed as follows:

Neutron REM Detector	ION Chamber Survey Meter	Portable Count-rate Meter	Pancake Probe
<b>Manufacturer:</b>	<b>Manufacturer:</b>	<b>Manufacturer:</b> S. E. INTER.	<b>Manufacturer:</b>
<b>Serial #:</b>	<b>Serial #:</b>	<b>Serial #:</b> 02740	<b>Serial #:</b>
<b>Model #</b>	<b>Model #</b>	<b>Model #</b> MONITOR 6	<b>Model #</b>

Source Reference Date : 5/5/99

Californium 252 Source Serial Number	Reference Activity Cf in $\mu\text{Ci}$	Removable Surface Contamination DPM
CF-Z501	2.44	○
CF-Z502	2.39	○
CF-Z709	4.67	○
CF-Z710	4.48	○
CF-Z984	6.86	○
CF-Z985	6.79	○
Cesium 137 Source Serial Number	Reference Activity Cs in mCi	Removable Surface Contamination DPM
6141GS	8.02	○
6145GS	7.50	○

Californium is checked for Alpha, Beta and Gamma contamination and Cesium is checked for Beta and Gamma contamination. From the recorded results, there is no indication of leakage from the source(s).

Test Performed by: David J. Ward

*David J. Ward*

Date:

*5/6/99*



### LEAK TEST CERTIFICATE

Source Wipe       Source Replenishment       Source Removal       Installation   
 Radiation Survey       Shipping       Other

Customer Name: Duquesne Light Company      Site: Cheswick Power Station  
 RSO: \_\_\_\_\_      PO: 2037T  
 Location of Source: Duquesne Light      Analyzer: 31  
 Performed By: Larry L. Taylor      Test Date: 5-4-98

Currently, state and Federally issued radioactive materials licenses define a sealed radiation source as leaking if removable contamination is found to be equal to or greater than 0.005 microcuries.

This is to certify that the following listed and described items have been tested according to American National Standards Institute N5.10-1968 Appendix B Section B2.1, Wipe (Smear) Test. The level(s) of removable contamination observed on the surface of the sources are listed as follows:

Neutron REM Detector	ION Chamber Survey Meter	Portable Countrate Meter	Pancake Probe
Manufacturer:	Manufacturer:	Manufacturer: Radiation Alert	Manufacturer:
Serial #:	Serial #:	Serial #: 02281	Serial #:
Model #	Model #	Model # Monitor 5	Model #

Source Reference Date : 5-1-98

Californium 252 Source Serial Number	Reference Activity Cf in µg	Removable Surface Contamination DPM
<u>CF-2 501</u>	<u>3.18</u>	<u>&lt; 0.005 µCi</u>
<u>CF-2 502</u>	<u>3.12</u>	<u>&lt; 0.005 µCi</u>
<u>CF-2 709</u>	<u>6.09</u>	<u>&lt; 0.005 µCi</u>
<u>CF-2 710</u>	<u>5.83</u>	<u>&lt; 0.005 µCi</u>
<u>CF-2 984</u>	<u>8.94</u>	<u>&lt; 0.005 µCi</u>
<u>CF-2 985</u>	<u>8.85</u>	<u>&lt; 0.005 µCi</u>
Cesium 137 Source Serial Number	Reference Activity Cs in mCi	Removable Surface Contamination DPM
<u>614165</u>	<u>8.21</u>	<u>&lt; 0.005 µCi</u>
<u>614565</u>	<u>9.13</u>	<u>&lt; 0.005 µCi</u>

Californium is checked for Alpha, Beta and Gamma contamination and Cesium is checked for Beta and Gamma contamination. From the recorded results, there is no indication of leakage from the source(s).

Test Performed By: Larry L. Taylor  
 Date: 5-4-98