



**SARNIA REFINERY  
RADIATION HAZARDS**

Issue Date: 05/31/2019

Revision #:10

**STANDARD**

Document Number:

4000-ZSD-SMSAFESA-008430

Next Review Date: 02/31/2024

Document Owner: Manager, EH&S

Document Contact: Occupational Hygienist

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**SCOPE AND PURPOSE**

This Standard identifies management controls to ensure safe operation of Nuclear Devices at Sarnia Refinery. This Standard replaces S.O. #2.003.

**ROLES AND RESPONSIBILITIES**

**Employees and Contractors** are accountable to this Standard and to follow operating procedures and work practices.

**Leaders** are accountable to ensure compliance to this Standard

**Directors** are accountable to approve, maintain and ensure compliance to this Standard.

**EXCEPTIONS**

There will be no exception to this Standard without the written permission of the Director, Operations and the Director, Maintenance. Approval will be considered only after completion of a formal risk assessment. Our Management of Change process will be employed to document mitigating actions, assign accountabilities and track the abnormal condition. The Management of Change document must be reviewed and approved by the Director, Operations and the Director, Maintenance before permission is granted.

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**RISK CONTROLS**

To minimize radiation hazards, the following actions must be adhered to:

- The RSO has responsibility for keeping records, monitoring, and testing the radiation sources to comply with CNSC regulations.
- Maintenance of the devices must be cleared through the RSO.
- Field-mounted sources are to be locked out by the RSO if work is to be performed inside gauged vessels or on the instrument field assemblies.
- Devices must be operated per manufacturer's instructions only. No modification or tampering is permitted.
- Presence in close proximity to the devices shall be minimized.
- Each device shall be provided with caution signs.

A list of nuclear devices located at the refinery is provided in Appendix A.

**END OF STANDARD**

**CHANGES / UPDATES**

Are any changes/updates required?  YES  NO

Changes/updates required may be written within the procedure itself or in this section.  
All comments **MUST** include operator name and review date (mm/dd/yy).

Name: \_\_\_\_\_ Date: \_\_\_\_\_

**CHANGES/UPDATES ACCEPTED AS IDENTIFIED**

Document Contact Signature: \_\_\_\_\_

Date: \_\_\_\_\_

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<b><u>REVISION LOG</u></b>				
<b>Date</b> (MM/DD/YYYY)	<b>Revision</b>	<b>Section</b>	<b>Comments</b>	<b>Editor</b> (Name)
08/28/2009	Original		Transferred into "Standard" template. Revision #Original. Replaces S.O. #2.003.	
03/08/2010	1	Risk Controls	Update to Nuclear devices in Refinery list.	
06/26/2012	2	All	Updated format, but content was NOT altered.	
07/24/2013	-	Header	Document Owner & Contact Updated, but NO content changed.	L. Lebert
11/22/2013	3	All	During the 2013 Alky TA one of the devices was removed – Alky 1-9-T001 Level Gauge LE19004B. Standard updated.	J. MacKinnon
03/08/2017	4	Risk Controls	Changed references to inspection department to RSO. Removed nuclear devices list (moved to Appendix A)	M. Courteaux
		Appendix A	New – moved nuclear devices info from Risk Controls, reformatted and added additional info to align with annual conformance report requirements	
06/22/2017	5	Appendix A	Updated licence numbers to reflect current licences Added column for Tag#	M. Courteaux

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<b>Date</b> (MM/DD/YYYY)	<b>Revision</b>	<b>Section</b>	<b>Comments</b>	<b>Editor</b> (Name)
09/29/2017	6	Appendix A	Removed 3 nuclear devices from inventory: <ul style="list-style-type: none"><li>• 19V005A - upper and lower</li><li>• 19V007</li></ul> Updated CNSC licence # for level gauges	M. Courteaux
12/20/2017	7	Appendix A	Removed 2 nuclear sources from inventory: <ul style="list-style-type: none"><li>• Texas Nuclear XRF: Fe-55</li><li>• Texax Nuclear XRF: Cd-109</li></ul> Updated CNSC licence # for XRF Analyzers	M. Courteaux
01/19/2018	8			
03/07/2019	9	Appendix A	Updated "Current Activity" numbers for all sources Updated currency date for "Current Activity" numbers	M. Chipman
05/31/2019	10	Appendix A	Revised CNSC License No. for XRF Analyzers	M. Chipman



**APPENDIX A**  
**Sarnia Refinery Sealed Source Inventory**

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Radiation Device			Sealed Source(s) Contained Within the Device						Tag#	Site Location
Manufacturer	Model	Serial Number	Manufacturer	Model	Serial Number	Nuclear Substance	Current Activity*	Activity Units		
<b>Level Gauges</b> (CNSC License No. 16509-1-22.2)										
Ohmart	SHLG-2	74009	N/Av	N/Av	N/Av	Cs-137	75	GBq	LE-12501	12V123 - HCC Disengager: 9 deck, second catwalk, East side
Ohmart Vega	SH-F2	ON03-020-2058	N/Av	N/Av	2822CG	Cs-137	26	GBq	LE-12502	12V111 - HCC Reactor: 6 deck, South side
Ohmart	SH-100	75459	N/Av	N/Av	N/Av	Cs-137	1683	MBq	LE-19014	19T002 - Rerun Column: East side, 10ft up.
Ohmart Vega	SH-F1A	13549226	N/Av	N/Av	95L3CN	Cs-137	0.598	GBq	LE19013	19V006 - NASO Decant Drum
Ohmart Vega	SHLM-C-1	13549225	N/Av	N/Av	0V0583	Cs-137	0.897	GBq	LE19018	19V018 - ASO Washer
<b>XRF Analyzers</b> (CNSC License No. 16509-2-24.0)										
Niton	XL3p800	31962	IPL	XFB-4	07-355	AM-241	1090	MBq	N/A	Inspection Office

\*Current activity as of: February 28, 2019



The following individuals have approved and signed this document.

UserName: Todd Murray (toddmurray)

Title: Mgr EH&S Sarnia Refinery

Date: Monday, 24 June 2019, 07:15 AM Mountain Time

Meaning:

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