



Canadian Nuclear
Safety Commission

Commission canadienne
de sûreté nucléaire

CNSC Outreach Regulatory Compliance

Jonathan Schmidt
Central Region Coordinator
Operations Inspection Division
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nuclearsafety.gc.ca

Canada

Outline of Presentation



- ✓ *Background*
- ✓ *OID Compliance Program*
- ✓ *Performance Results 2013*
- ✓ *2014 - New Initiatives*

CNSC Mission

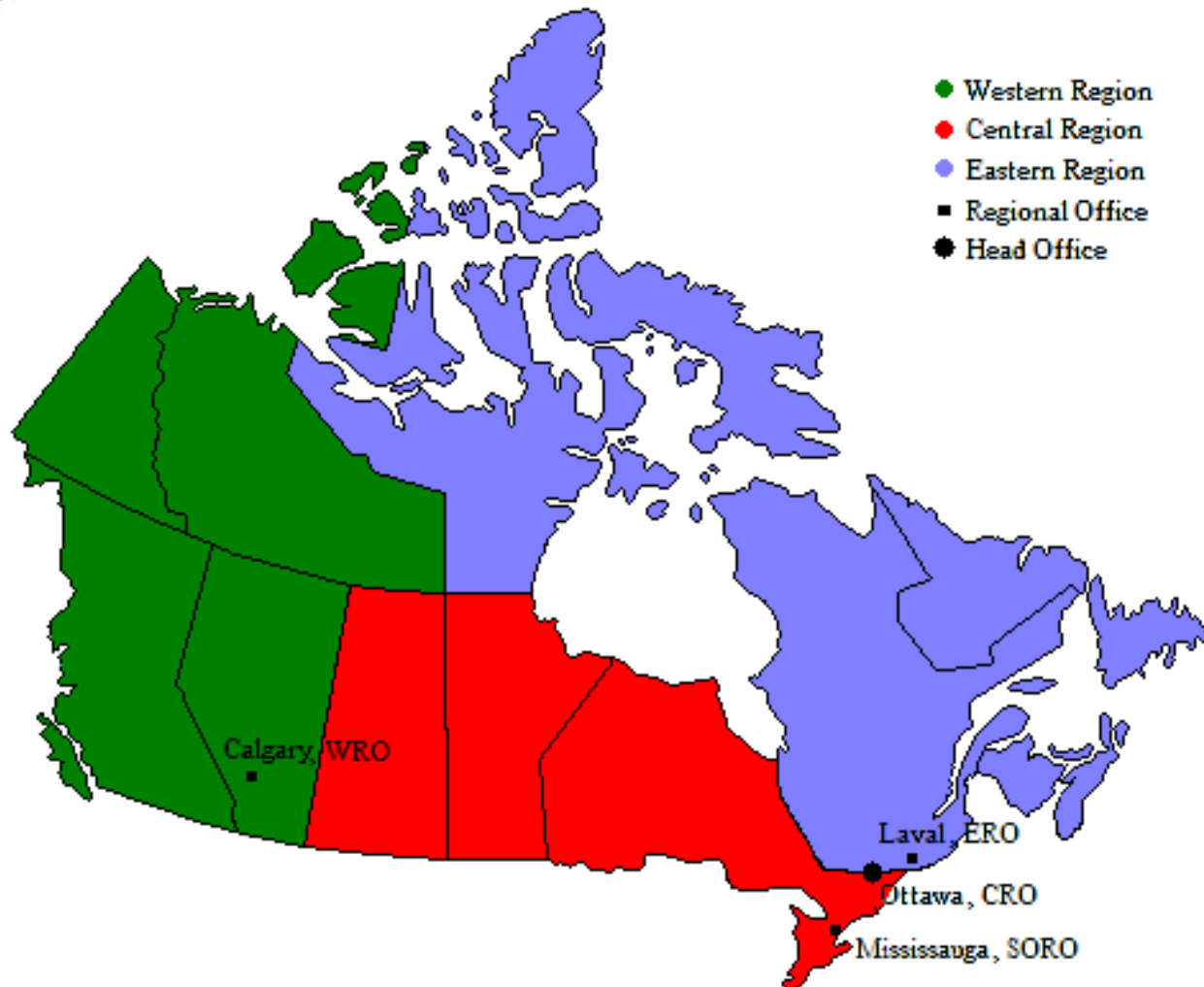


The Canadian Nuclear Safety Commission (CNSC):

“protects the health, safety and security of persons and the environment, and implements Canada's international commitments on the peaceful use of nuclear energy”



OID Staff Locations



OID Inspectors (November 2013)



OID Inspectors (November 2013)



Examples of Inspections of Nuclear Substances



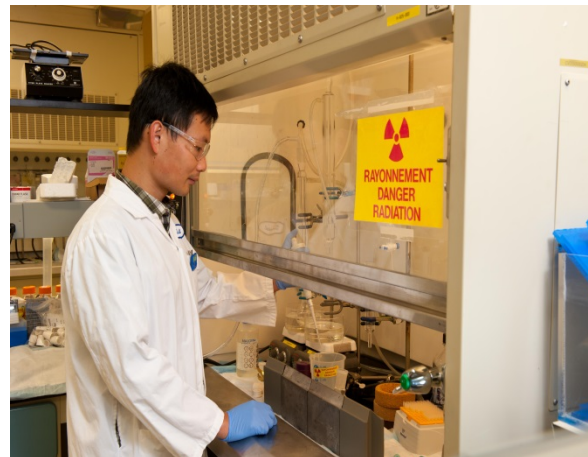
Industrial Radiography



Nuclear Medicine



Transportation of Radioisotopes



Laboratory Studies



Portable Gauges

Verification: Compliance Inspections

- **Type II Inspections**
 - Snapshot of Compliance at the location
 - Planned vs Unannounced
 - Grading assigned
 - Use type specific
 - Worksheets available upon request
- **Type I Inspections**
 - Onsite audit of licensee's programs, processes and practices
- **Desktop Assessments**
 - For consolidated licensees



Verification: Type II Inspections

Based on safety and control area [SCA]

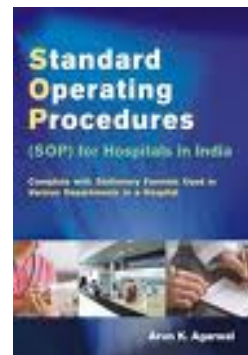


Packaging and transport



Radiation protection

Training and qualification



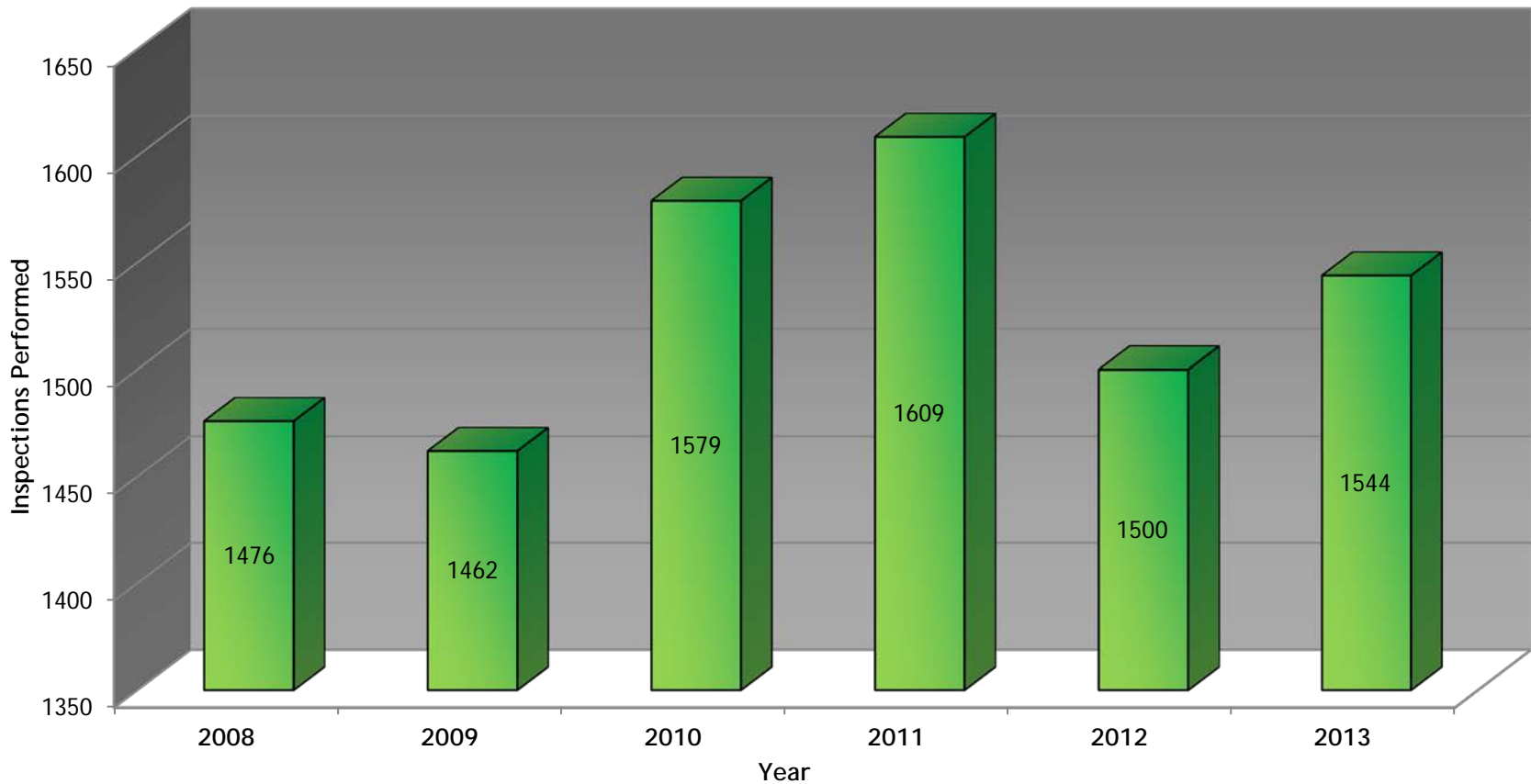
Operational procedures



Compliance Inspections



Inspections Performed Annually



Type II Compliance Performance Data - 2013



Usetypes		Safety and Control Areas																				
		Radiation Protection			Emergencies / Unplanned Events			Training			Operational Procedures			Organization and Management			Security			Packaging and Transport		
		2012	→	2013	2012	→	2013	2012	→	2013	2012	→	2013	2012	→	2013	2012	→	2013	2012	→	2013
811	Portable Gauges	89	↔	90	82	↔	83	95	↔	96	90	↔	87	97	↔	96	97	↔	97	60	↔	60
812	Industrial Radiography	83	↑	89	92	↔	93	93	↔	96	89	↔	91	95	↔	94	84	↔	83	82	↔	84
813	Laboratory Studies	85	↑	95	92	↔	94	100	↓	95	78	↑	95	95	↔	93	100	↔	100	76	↑	91
814	Fixed Gauges	83	↓	76	87	↓	80	94	↓	87	85	↔	81	86	↔	88	96	↔	99	88	↓	75
815	Consolidated Uses	80	↑	88	99	↔	99	95	↔	98	86	↔	90	83	↑	91	99	↓	94	91	↑	98
816	Sealed Source Logging	83	↑	96	97	↔	96	97	↔	98	83	↑	91	97	↔	100	78	↑	89	69	↑	76
822	Basic Servicing	88	↑	93	91	↑	100	98	↔	98	71	↑	93	90	↑	96	95	↑	100	91	↔	89
862	Diagnostic Nuc. Med.	74	↔	77	94	↑	99	92	↔	93	88	↔	91	91	↔	95	96	↔	99	83	↔	84
872	Therapeutic Nuc. Med.	81	↔	81	98	↔	100	100	↔	100	98	↔	94	100	↔	100	100	↔	99	90	↑	100

Portable Gauges - Non-Compliances



- **Packaging and Transport 40.0%**
 - Transport document contains incorrect information, or not signed/dated for each date of transport
 - Type A package not labelled appropriately, or structural integrity compromised
 - Missing or incorrect information on TDG training certificates
 - Workers not issued TDG training certificates
- **Emergencies/Unplanned Events 17.3%**
 - Gauge not labelled with valid emergency contact information
 - Valid contact information not posted near gauge storage areas

Portable Gauges - Non-Compliances

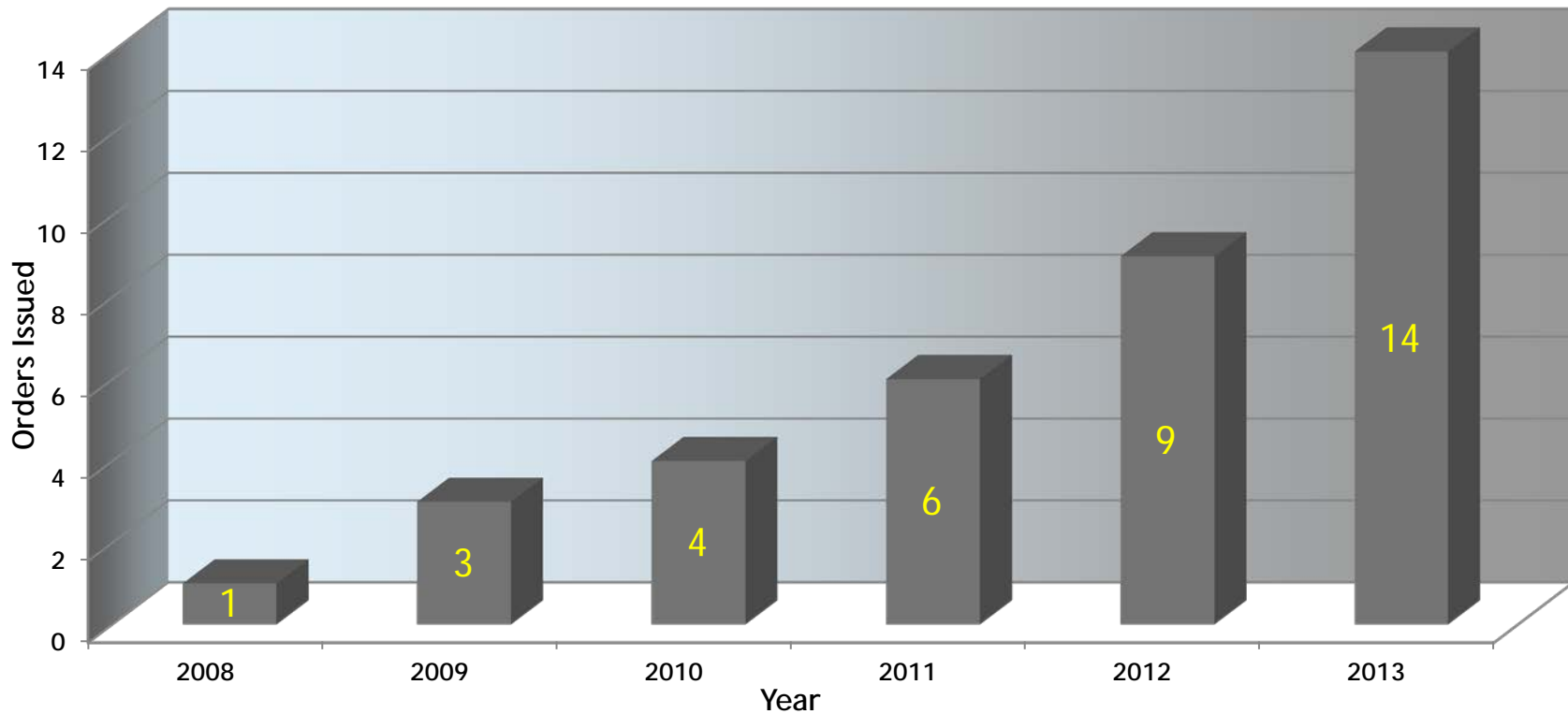
- **Operational procedures 13.3 %**
 - Worker obligations
 - Worker records not adequately maintained
 - Licence not posted/available
 - Leak test overdue
- **Radiation protection 10.5%**
 - Survey meter not calibrated
 - Inadequate RP program/management oversight



Portable Gauges - Orders Issued



Portable Gauge Orders from 2008-13



Industrial Radiography - Non-Compliances

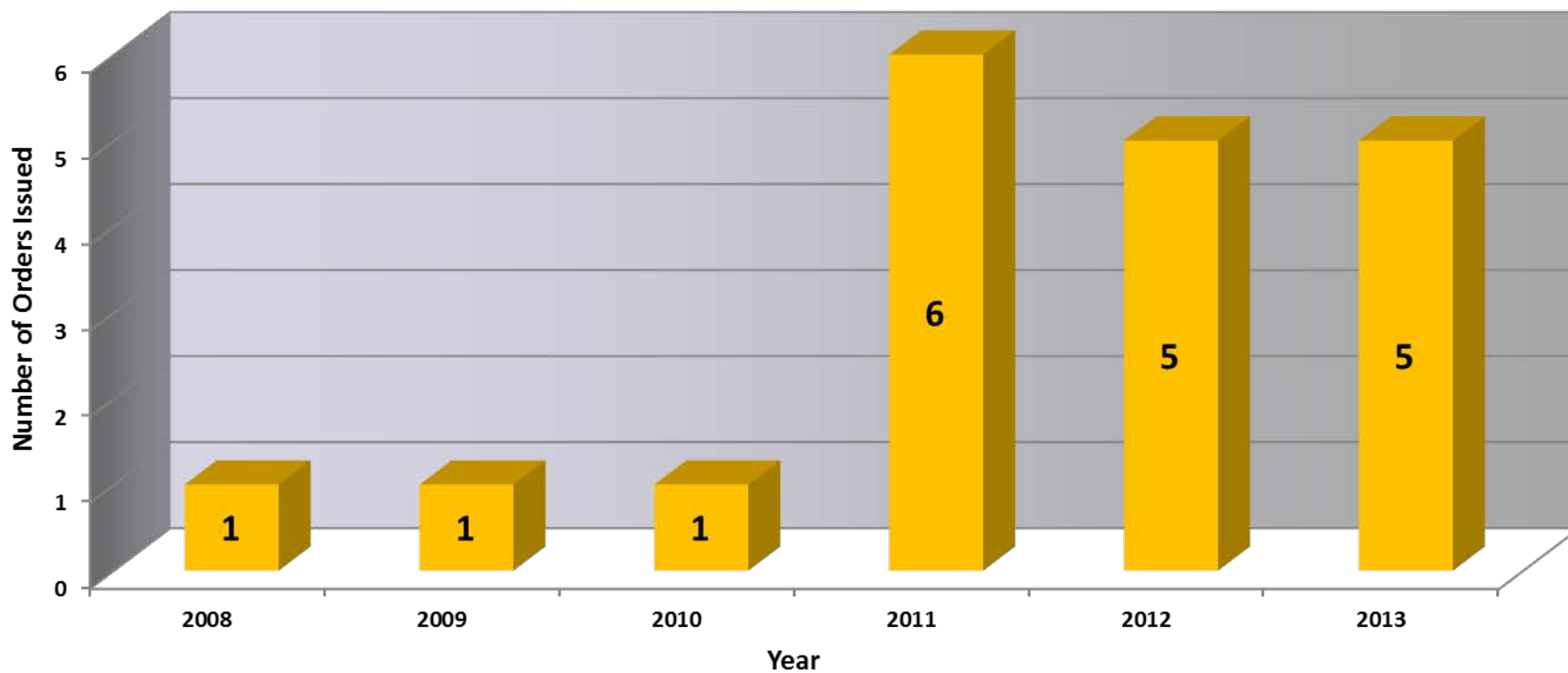
- **Security 17.0%**
 - Security Plans not up-to-date or followed
 - Non-functional darkroom truck alarm
- **Packaging and Transport 16.2 %**
 - Transport document contains incorrect information, or not signed/dated for each date of transport
 - Four Class 7 placards not displayed on vehicle
- **Radiation Protection 10.7%**
 - Obligations of CEDOs are not complied with (ex. - Posting of signs/barriers, functioning emergency equipment, doses limited to non-NEWs)
 - Inadequate RP program/management oversight



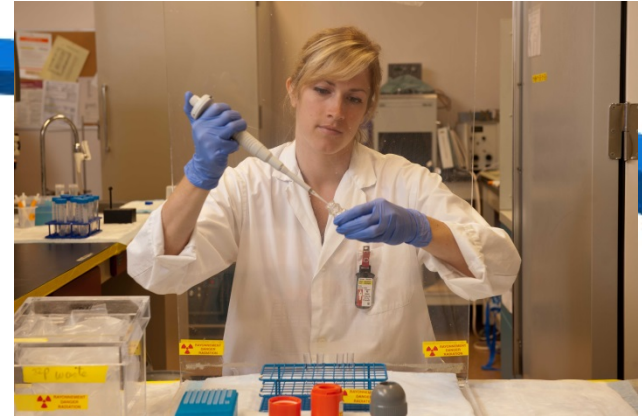
Industrial Radiography - Orders issued



Industrial Radiography Orders from 2008-13

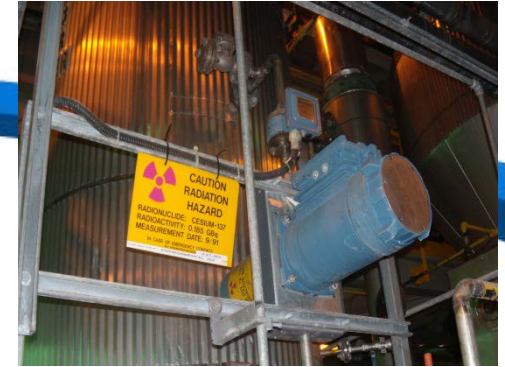


Laboratory Studies - Non-Compliances



- **Packaging and Transport 8.7%**
 - Missing or incorrect information on TDG training certificates
 - Workers not issued TDG training certificates
- **Organization and Management 7.5%**
 - Licence details
- **Training and Qualification 5.3%**
 - Worker training

Fixed Gauges - Non-Compliances



- **Radiation Protection 23.9%**
 - Radiation warning symbol not posted at points of access to gauges
 - Radiation survey meters not calibrated within previous 12 months
- **Emergencies and Unplanned Events 19.7%**
 - Contact details not posted
- **Operational Procedures 18.8%**
 - Worker training records not available
 - CNSC licence not posted in a publically accessible area
 - Records of gauge transfers or receipts not maintained on file

Fixed Gauges - Non-Compliances



- **Packaging and Transport 40.0% (limited applicability)**
 - Transport document contains incorrect information, or not signed/dated for each date of transport
 - Type A package not labelled appropriately, eg II yellow for III Yellow dose rate

Consolidated Desktop Assessment



- CNSC proposed a trial desktop assessment to verify compliance of consolidated licences
- This assessment was sent out to all 65 consolidated licensees in September 2013, 82% of licensees responded with a submission
- From this assessment minor non-compliances in documentation and record keeping were observed
- Licensees that did not submit the assessment or were the largest users were inspected

Consolidated Desktop Assessment



- CNSC staff conducted 23 onsite inspections
- Documentation from the submission provided a good understanding of the licensees programs, identified any health and safety issues and was useful to identify areas of focus for on-site inspections
- To further refine and evaluate the applicability for future use of this approach to compliance assessment a survey has been developed

Consolidated Uses - Non-Compliances



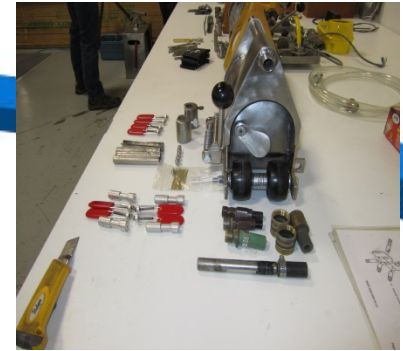
- **Radiation Protection 12.2%**
 - Nuclear substance storage areas accessible to unauthorized users
- **Operational Procedures 10.1%**
 - Worker obligations follow procedures
- **Organization and Management 9.2%**
 - Permits not posted in labs, or posted permits have expired
 - Permits do not authorize user for nuclear substances in their possession
 - Laboratories not classified appropriately

Sealed Source Logging - Non-Compliances



- **Packaging and Transport 23.6%**
 - Transport document contains incorrect information, or not signed/dated for each date of transport
 - Type A package not labelled appropriately, or structural integrity compromised
- **Security 11.3%**
 - Security Plans not up-to-date or followed
 - Non-functional vehicle alarm
- **Operational Procedures 9.1%**
 - Worker records
- **Radiation Protection 3.6%**
 - Sealed source storage areas accessible to unauthorized users (also Security-related)
 - Containers not labelled with radiation warning symbol

Basic Servicing - Non-Compliances



- **Packaging and Transport 11.1%**
 - TDG training certs
- **Radiation Protection 6.8%**
 - Radiation survey meters not available
- **Operational Procedures 6.7%**
 - Servicing records incomplete
 - Workers observed not following safety measures put in place by licensees (i.e. - wearing appropriate dosimetry, following procedures, etc.)
 - Worker training records not available

Diagnostic Nuc. Med. - Non-Compliances



- **Radiation Protection 23.4%**
 - Containers not labelled with radiation warning symbols
 - Contamination limits exceeded
 - Radiation survey meters not calibrated within previous 12 months
- **Packaging and Transport 16.1%**
 - Missing or incorrect information on TDG training certificates
 - Workers not issued TDG training certificates
 - Outgoing packages not checked for contamination
- **Operational Procedures 8.9%**
 - Worker obligations
 - Worker records incomplete
 - Leak testing every 6 months
- **Environmental Protection 6.2%**
 - Disposal records not accurately maintained

Therapeutic Nuc. Med. - Non-Compliances



- **Radiation Protection** **19.2%**
 - Thyroid monitoring not performed within 5 days
 - Radiation survey meters not calibrated within previous 12 months
 - Radiation survey meters not available



New: Security Inspections



- Based on REGDOC 2.12.3 - Security of Nuclear Substances: Sealed Sources, approved by the Commission in May, 2013
- Included in all high risk licensee inspections
- Non-compliances identified will result in a separate inspection report issued to the licensee
- All security related documentation for high risk licensees treated as Confidential.

Risk Ranking Model Updates



High Risk	Medium Risk	Low Risk
<ul style="list-style-type: none">• Industrial Radiography• Logging• Subsurface zone (frac tracer)	<ul style="list-style-type: none">• Portable gauges• Consolidated• Laboratory studies• Fixed gauges (<i>increased inspection frequency</i>)• Distribution• Self Shielded irradiators (<i>security</i>)• Diagnostic/ therapeutic nuclear medicine• Veterinary nuclear medicine• Servicing• Processing	<ul style="list-style-type: none">• XRF Analyzers• Electron capture detectors• Static Eliminators• Low risk sealed sources

Updates on Compliance Effort



Consolidated Licensees

- Evaluating feedback from desktop Assessment-survey to go out
- Spot checks will continue to take place

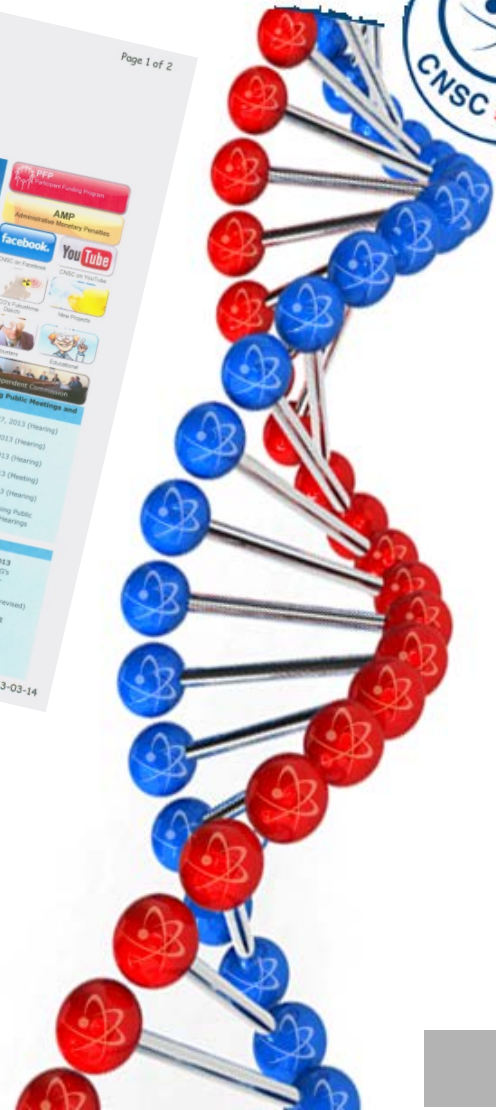
Portable Gauges/Industrial Radiography

- Increased focus on performance based inspections
- Application of risk informed approach to larger licensees

Fixed Gauges

- Increased inspection frequency

The CNSC Will Not Compromise Safety



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Questions?



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