CNSC Outreach
Regulatory Compliance

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Operations Inspection Division
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Outline of Presentation

- Background
- OID Compliance Program
- Performance Results 2013
- 2014 - New Initiatives
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 Inspectors (November 2013)
OID Inspectors (November 2013)
Examples of Inspections of Nuclear Substances

- Industrial Radiography
- Nuclear Medicine
- Transportation of Radioisotopes
- Portable Gauges
- Laboratory Studies
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]

- Radiation protection
- Training and qualification
- Operational procedures
- Packaging and transport
Compliance Inspections

Inspections Performed Annually

Inspections Performed: 1476, 1462, 1579, 1609, 1500, 1544
## Type II Compliance Performance Data - 2013

### Safety and Control Areas

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

Orders Issued

Year

2008 2009 2010 2011 2012 2013

Orders Issued

1 3 4 6 9 14
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

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Orders Issued</th>
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<td>2008</td>
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<td>2012</td>
<td>5</td>
</tr>
<tr>
<td>2013</td>
<td>5</td>
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</table>
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
News
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
- Industrial Radiography
- Logging
- Subsurface zone (frac tracer)

## Medium Risk
- Portable gauges
- Consolidated
- Laboratory studies
- Fixed gauges *(increased inspection frequency)*
- Distribution
- Self Shielded irradiators *(security)*
- Diagnostic/ therapeutic nuclear medicine
- Veterinary nuclear medicine
- Servicing
- Processing

## Low Risk
- 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

Visit our Web site www.nuclearsafety.gc.ca
Canadian Nuclear Safety Commission
Questions?