Certification of NDT Personnel:
Current Perspective & Future Outlook

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Presentation Outline

- Introduction and Overview of NDT Personnel Certification in Canada
- NRCan/CGSB Certifying Agency Statistics
- The Strengths and Unique Characteristics of the Canadian NDT Program
- Upcoming Agency Relocation
- Program Goals and Focus Areas
  - Considerations for Candidates
  - CAN-NDT-2010 Guidance Document
  - Other Current Agency Programs
  - Future Programs of Interest
- Summary
Project Success & Quality of NDT

- Support provided by a vigorous, robust, and dependable personnel certification process
NDT Personnel Certification

Certification

- Qualifying Work Experience
- Examinations
- Verification of Visual Acuity
- Acceptable Training
- Code of Conduct
The NRCan/CGSB NDT Personnel Certifying Agency

• A unit of the NRCan - CANMET - Materials Technology Laboratory (MTL)
• CANMET has this responsibility since 1960
• Certifies individuals according to the Canadian General Standards Board (CGSB) Standard CAN/CGSB-48.9712-2006
  – Also complies with International Standard ISO 9712:2005
• High quality of certification
  – Independent assessment of a candidate’s competence
  – Issuance of certification by a federal government agency
  – Well-regarded nationally as well as internationally
• Provides Canada-wide services
  – Unbiased, flexible, and cost-effective
### NDT C.A. – Statistics: New Certificates and Renewals

<table>
<thead>
<tr>
<th>JANUARY 1, 2009 - DECEMBER 31, 2009</th>
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<tbody>
<tr>
<td>Total certified NDT clients: 577</td>
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<td>Certified Level 3 Clients: 29</td>
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<td>Certified Level 2 Clients: 492</td>
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<tr>
<td>Certified Level 1 Clients: 165</td>
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<tr>
<td>Total NDT certificates issued: 686</td>
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<td>Total</td>
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- 21% increase in certified NDT clients and 20% increase in NDT certificates issued compared to 2008.
- UT up 59%, RT down 1%, MT up 14%, PT up 8% and ET down 10%.

- **Certificate Renewals:**
  - For last renewal period, 1609 individuals renewed at least one of their certificates. 214 individuals failed to renew. This is an attrition rate of 11.7%.
  - Note: The attrition rate for the year before (2008) was 15.0%.
The Canadian Program and Implementation: Unique Strengths and Characteristics (1)

- Certifies to broad sectors = more knowledge coverage and more flexibility
  - Enhanced general competency to handle issues encountered in field

- Our practical exam specimens are real-world samples with actual flaws/defects, and with varying degree of difficulty
  - Provides sound and fair basis

- Independent 3\textsuperscript{rd} party certification – credible, portable & transparent

- Uniform implementation across Canada

- Public accountability
Canadian Program and Implementation:
Unique Strengths and Characteristics (2)

• Run by a federal government agency
  – Unbiased
  – Executed without conflicts of interest pertaining to other business priorities

• NRCan offers long-term stability, continuity, and credibility
  – 50-year track record

• Focus and priority on public health, safety and security of Canadians

• In support of multiple industries across Canada

• Part of a broader and leading-edge national materials technology centre (NRCan CANMET MTL)
Relocation of MTL to Hamilton
McMaster Innovation Park
CANMET MTL & NDT C.A. Relocation

• Brand New Building in MIP-Hamilton
  – Substantial completion September 30, 2010
  – Planned for LEED-Platinum Certified
  – NDT C.A. currently scheduled to move in late October, 2010
    • Will occupy portions of Ground & First floors

• Capabilities / Equipment On-Site
  – NDT C.A. capabilities:
    • Support for all current NDT methods
  – MTL Research Areas:
    • Materials assessment in demanding environments
    • Hybrid / complex materials for environment, defence and nuclear energy (including coatings)
    • Advanced steel processing capability
    • Wrought and cast light metals
New Building - Status

- NDT C.A. – improve space optimization
  - More effective & usable space
  - Prominence in front / entrance of building

- Ground Floor

- 1st Floor
Considerations for Candidates Seeking NDT Certification

- Training – Authorized Training Organizations
- Review available resources such as:
  - Examination Guides
    - Reference materials
    - Sample questions
- Importance of Experience and Practical Hands-On Time
  - Training, Experience, Workshop, Apprenticeship, etc.
- Diligence on Self-Study
- Examinations / Common-Errors for Candidates -
  - Read and follow instructions carefully
Document in DRAFT version
  - Will be reviewed by NRCan MTL NDT Advisory Committee before release

Outline of the Guide:
  - General Information
  - The Canadian Standards System
  - The Canadian NDT Certification program
      » Outlining the NRCan/CGSB Rules of Implementation
  - Qualification and Certification
  - Fees
  - Foreign Certification
NDT C.A. Focus Areas - Goals

• Effective implementation of the CGSB Standard
  – Establishing enhanced resources and processes
  – Maintain and improve the level of customer service + transparency
  – Promote active communication with stakeholders
  – Stronger ties with industrial users

• A smooth and successful relocation
  – Minimal delays and interruptions

• Enhanced Quality Management

• Implementation of new programs
  – VT, XRS, & others depending on need & feasibility
Other Current Programs for the Agency

- XRF Program
  - In cooperation with Health Canada, for operators of portable x-ray fluorescence (XRF) analyzers

- CNSC EDO Program
  - For the Canadian Nuclear Safety Commission's Exposure Device Operator

- The examinations for these programs are conducted in the same manner as the NDT certification examinations using the same network of test centres
Emerging NDT techniques & Areas of Interest

• Visual Inspection (VT) Program

• Advanced Ultrasonics - Phased-Array Ultrasonic Inspection (UT-PA) Program

• X-Ray Imaging for Security (XRS) Program

• Quality Management Process
  – NDT C.A. to pursue compliance and accreditation to ISO 17024
Visual Inspection (VT) - Status

• Based upon the usual rules applied to any existing certification scheme operated by NRCan

• The certification program for VT covers four areas
  – Conventional Visual
  – Incoming Inspection
  – Lift Equipment
  – Plant Surveillance

• Significant progress is targeted for the coming months
Phased-Array Ultrasonics (UT-PA)

• UT-PA is becoming more popular and more prominent across the industry

• NRCan is interested in reviewing and potentially preparing for UT-PA

• Planning to proceed with background study to determine how a UT-PA program would be structured
**X-Ray Imaging for Security (XRS)**

- **Users**
  - Canada Border Services Agency (CBSA), Transport Canada (TC) and the Department of National Defence (DND) wish to inspect shipping containers for contraband using X-ray and Gamma-ray based security scanners

- **NRCan** hosted a meeting of several Federal Government departments
  - Outcome: Health Canada and NRCan to work together to develop a program

- **Regulatory Authorities**
  - Health Canada requested NRCan to develop a program for the certification of operators who would be using medium and high energy (<6 Mev) x-ray machines

- Significant progress is targeted for the coming months
Summary

• NDT quality focus for the industry
  – Support through an effective and high quality certification program
    • Implemented by the NRCan/CGSB NDT Certifying Agency
    • Unbiased, Stable, Credible, Covering Broad Sectors, and Well-Recognized

• The Certifying Agency – has plans and resources:
  – To relocate smoothly without disruptions to client services;
    • From Ottawa to Hamilton in late 2010
  – To continually improve customer service and current programs;
    • i.e. CAN-NDT-2010 Guidance Document
  – To explore new programs
    • i.e. VT, UT-PA, XRS, etc.

• Your continued support and input is much appreciated
Acknowledgements & Link

- Dr. Richard Murphy
- Dr. Mac Braid
- Dr. Jennifer Jackman
- Mr. Douglas Cariou

Please check NRCan website for program info & updates
Or Web-Search for “Canada NDT Certification (+ NRCan)”
Thanks!

Discussion / Questions