Changing Ingrained Processes

Alison Brayman, P. Eng.
In With the New
Creation of Testing and Commissioning Division

- Created in 2015
- From 2 to 15
- Knowledgeable
- Multi-National
Where We Started

Hardware Based Systems (Relays)

Testing up for Interpretation

Testing Inconsistent

Results lost to time
Where We Started
Existing Documentation

- Testing Forms
  Only Certain Tests

- Test Records
  Lacking Information
  Vague Results

- Asset Management
  Incomplete
  Minimum Required
Where We Are Now

Software Based solutions

Auto-Generating Test Forms

Detailed Results Available to Everyone

Asset Management Accurate

CONSISTENCY
Where We Are Now

Current Documentation

Testing Forms
All Tests
Descriptive

Test Records
Centrally Located
Searchable
Comprehensive

Asset Management
Accurate
Why T&C was Created

- Oversight
- Processes updated
- New Equipment
- Documentation
- Focus on Testing
Hiring

Hiring Outside the Railroad

• Knowledge of S&C theory, standards, and practices.
  • P.Eng. / P.E. Sign off.
  • Massive Gap in Knowledge
  • 0 Female Applicants
Hiring

Gender Diversity within Engineering at CP

Number of Employee’s in Engineering: 4238
Number of Women with S & C Training: 21

Gender Diversity Within Engineering

- 4111, 97%
- 127, 3%

Gender Diversity Within S&C

- Male Union: 17, 3%
- Female Union: 4, 1%
- Male Management: 104, 17%
- Female Management: 489, 79%
Updating Processes

- Old to New
- Nothing is Perfect
- If It’s Not Documented It Won’t Be Done
Putting it in Practice

Getting Buy-In

• Experience Often Beats Theory

• Don’t Lead with Something that Can’t Change

• Your Way is Not Always the Right Way
Finding a Place
Integrating Testing and Commissioning

- Requirements
  - System Design
    - Detailed Design
      - Approved Signal Plan
      - Software Breakdown Test Plan
      - Pre-Cutover Test Plan
    - Test & Commissioning Plan
  - Commissioning Test Plan
- Field Integration & Test
  - Integration & Test In Shop
  - Commissioned Into Service
  - Validation
- Verification

T&C Additions to Existing
T&C Oversight
Putting it in Practice
Taking Theory to Reality

- Deadlines

- Good on Paper, Bad in Practice

- Expect the Unexpected

- If a loophole exist, it will be used

- Expect Revisions
Putting it In Practice
Going from the Office to the Field

• Mentoring versus Telling

• Publish and Ignore at Your Own Risk

• Nothing Works for Everyone

• Differing Experience, Differing Roll-Out

• Word of Mouth Critical
Putting it in Practice

Fallout and Hiccups

• Be Ready for When Processes Are Not Followed
• Know Your Processes
• Know The Why
• Not All Things are Negotiations
Putting it in Practice
Mistakes on the Path

• Missed Testing
  • Yo-Yo of Responsibility
  • No Transfer of Knowledge
    • Silos of Information
  • Too Much with Too Little
Putting it in Practice

Building a Culture of Change

• Anyone Can Start Change

• Visibility

• Make Connections
Thank you
alison_brayman@cpr.ca

Alison Brayman
7550 Ogden Dale Road
Calgary, AB T2C 4X9