

RELIABILITY & SECURITY

Workshop - Portland, Oregon



October 29–30, 2024



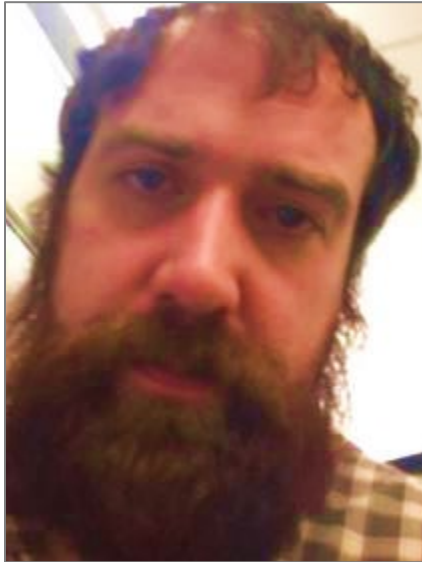
BC Hydro's Approach to Project MRS Compliance

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Introductions:



Alan Le Couteur



Sophie Pilkington

Intent

- Share BC Hydro's approach to project compliance with the WECC Community.
- Demonstrate how NERC compliance controls can be integrated into project practices
- Identify the challenges and lessons learned in implementing a new compliance process

Agenda

- About BC Hydro
- The Teams
- The Problem
- The Solution
 - MRS Applicability Tool Demonstration
- Implementation & Sustainment
- Conclusion

British Columbia Hydro & Power Authority

Introduction to BC Hydro

Generation

- 40 dam sites, 31 hydro facilities, 4 thermal units
- 12,214 MW installed capacity

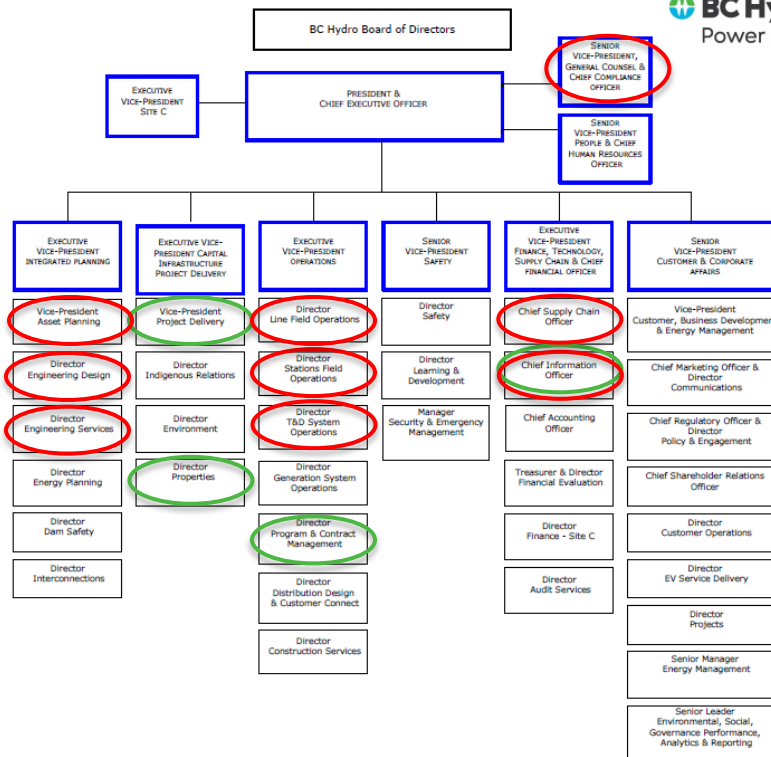
Transmission & Distribution

- Over 300 substations
- Over 80,000 km of transmission and distribution lines
- 325,000 transformers
- 1 million utility poles
- 2.2M residential smart meters



Mica Dam & Generating Station

The Teams



0 Project teams

0 Compliance teams

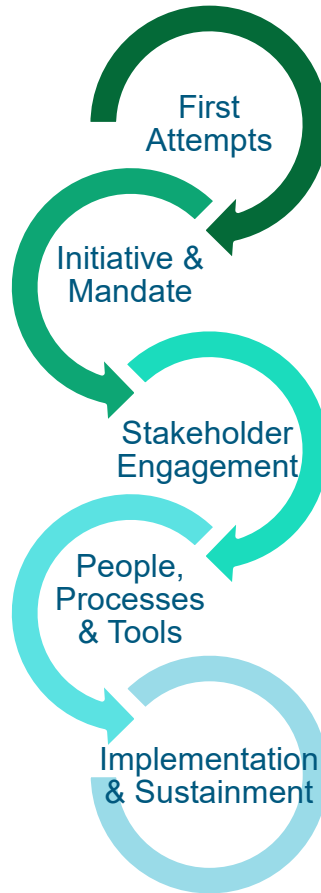
The Problem

Projects causing NERC non-compliances

- Lack of understanding of the Standards by project teams
- Limited documentation and process guidance
- Compliance and project team interface



The Solution



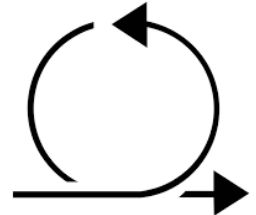
People & Process

MRS Project Sub-Processes



Identifying Standards

- 86 Standards applicable in BC narrowed to 56 potentially impacted by projects
- Universal assessment with off-ramps
- Iterative process
- Project team performs screening
- Notification process
- Documented workflow



MRS Applicability Tool Demonstration



Deliverables

Deliverable

- What to produce
- Who to submit to
- By when



Punchlist

- Assignment
- Status
- Evidence



Implementation

- Pilots and Testing
- Initial Training
- Go-Live: 1 July 2022
- Onboarding in-flight projects



Sustainment

- Process monitoring and assurance
- Continued training program
- Tool sustainment



Conclusion

Before

- Ad hoc system
- One checklist
- 'Figure it out'
- Assumed compliance



After

- Integrated practice
- People, process, tools
- 'We're here to help'
- Embedded controls

Contacts



Alan Le Couteur

Manager, Capital Projects

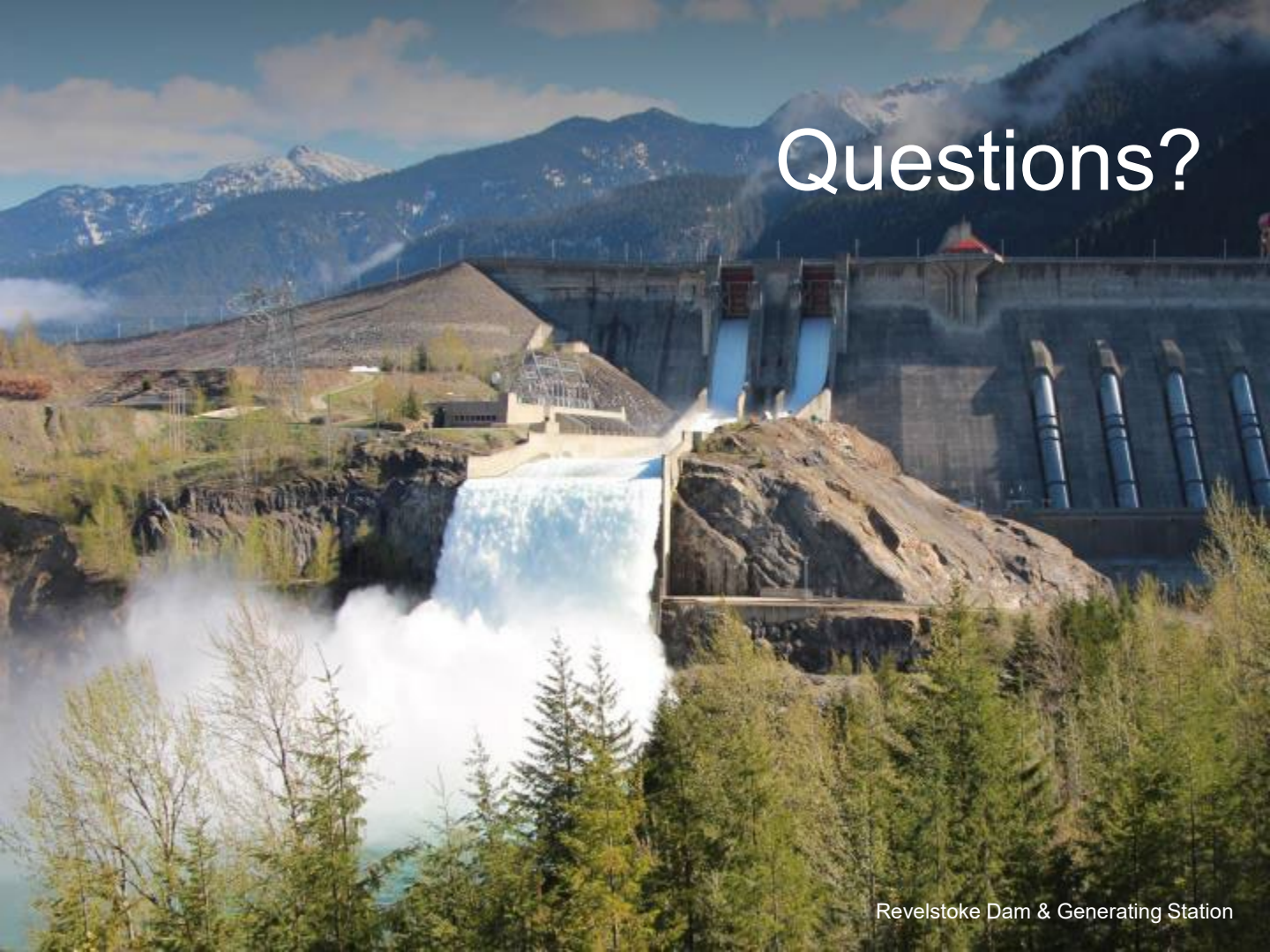
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Sophie Pilkington

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Questions?



Revelstoke Dam & Generating Station



MRS Applicability Tool

45 O&P Standards
11 CIP Standards

Tier 1 Screening Questions

Index	Question	Response
1	Does the project involve changing, modifying upgrading, replacing, adding or removing electrical power or electronic equipment used for operation of electrical infrastructure at generating stations, substations, transmission lines, distribution lines or control centers?	Yes
2	Does the project require access to Physical Security Perimeters (Zones) and/or Electronic Security Perimeters at a Generation Station, Station or Control Centre or to a Bulk Electric System Cyber System Information (BCSI) storage location? Or require electronic access to BCSI?	Yes
3	Does the project involve adding, removing or modifying an electronic device?	Yes

MRS Impacts:

Yes