Approaching a CSA z246.1 Compliance Program

Comparisons with Other Programs

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Introduction

- Developed with the contributions from industry experts throughout Canada
- CSA z246.1 is in its fourth edition since 2009.
  - Introduces cybersecurity measures through a Security Management Program (SMP).
  - Continues to focus on the pipeline, natural gas, hydrocarbons, petrochemical, oil & gas, oil sands, and petroleum and natural gas wells in Canada.
  - Requires security risks to be managed using risk-based and performance-based management processes.
  - Note where the requirements state “shall” versus “should”.
  - Enforceable in Alberta in May 2025 by AER under Alberta Legislation 08/2024.
  - Enforceable in BC since August 2023 by BCER.
- The organization subject to CSA z246.1:21 chooses how to develop and implement its SMP.
- Violations could result in notices of non-compliance, public letters, or suspension of the approved licenses
- BCER may request the licensee to engage a third-party review of their SMP.

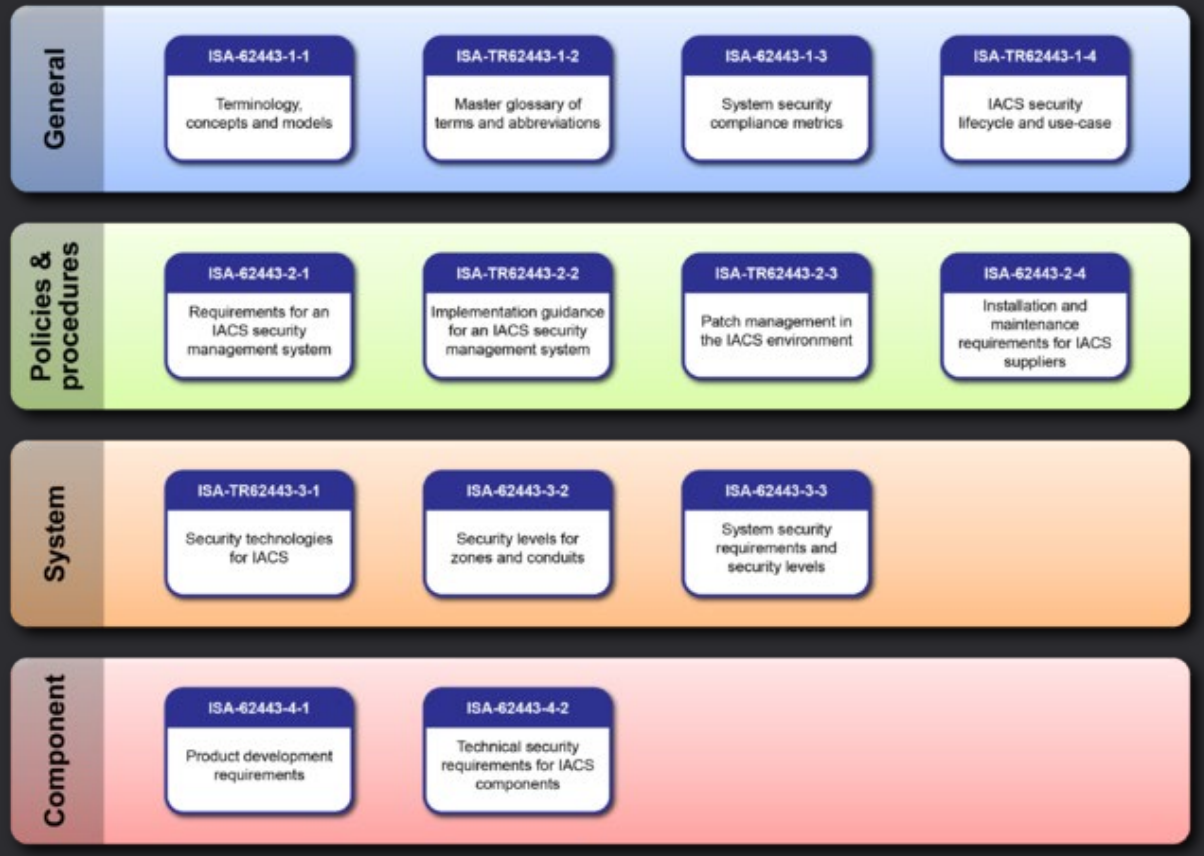
ISO/IEC 27001 Comparison

- Plan Do Check Act cycle
- Risk-based management processes
  - Natural alignment with ISO 31000 which is applicable to operational and cybersecurity risks
  - ISO/IEC 27002 Information Security (IS) Controls as a guide for IS risk response
- Performance-based management processes
- People Process Technology (PPT) focus on:
  - Information Security Management
  - Cybersecurity
  - Personnel Security
  - Physical Security Measures
  - Security Incident Management
  - Monitor and Review

NIST CSF v2.0 Comparison

- Preferred standard for cyber security capabilities in North America.
- NIST CSF v2.0 is a voluntary standard and an organization is unable to be certified.
  - Focuses on the 6 tiers: Govern, Identify, Protect, Detect, Respond, Recover.
  - Aligns naturally with NIST RMF and NIST SP 800-53.
  - Does not directly support physical security, monitoring and review, and other sub-requirements like competence and communication requirements. Requires other NIST standards or special publications to address gaps in NIST CSF.
- Risk-based management process alignment with NIST RMF.
- Performance-based management process alignment with NIST SP 800-55.

ISA/IEC 62443 Comparison



- Preferred standard for cyber security in OT environments.
- Incorporates a structured approach with proven standards developed over decades.
- Aligns with many of the CSA z246.1 requirements
- Incorporates Maturity Levels and Security Levels
- Engineering-focused approach
- Performance-based security standard
- Globally accepted standard

Comparison with CSA z246.1

- Other standards and frameworks can be compared but the purpose of this presentation will focus on the mentioned.
- Each standard or framework holds its own pros and cons which may go beyond the scope of CSA z246.1 or be short of the full requirements.
- Mapping comparisons shown below will vary with your organization. As each standard or framework is interpreted or implemented with unique requirements, consider the following as a guide.

CSA z246.1 Requirements	ISO/IEC 27001	NIST CSF v2.0	ISA/IEC 62443
Security Management Program	Clause 4: Context of the Organization Clause 5: Leadership	Govern	ISA-62443-2-1
Security Risk Management	Clause 6: Planning	Identify	ISA-62443-3-2
Information Security Management	Clause 5: Leadership	Protect	ISA-62443-3-3
Cybersecurity	Annex A8: Technological	Protect & Detect	ISA-TR62443-3-1
Personnel Security	Annex A6: People	Protect	ISA-62443-2-1
Physical Security Measures	Annex A7: Physical	Protect	ISA-62443-3-3
Security Incident Management	Annex A5: Organization	Respond & Recover	ISA-62443-2-1
Monitoring and Review	Clause 9: Performance Evaluation Clause 10: Improvement	Detect	ISA-62443-2-1

Implementation Approach

- Any standard or framework should work. Where one is not fully matched with CSA z246.1, customizations will be required.
- Secure senior management support.
- Align with your enterprise goals .
- Practice documentation for your SMP and decisions.
- Consider a common program for all regions if possible.
    - Multiple programs may get confusing and over-allocated costs.
- Try to generate evidence that will convince the auditor you've completed the right decisions.
- Use the right terminology.
- Leverage existing controls if possible, don't reinvent the wheel.
- Convergence between IT and OT departments may be required depending upon your organization's structure and business requirements.

Dependencies

- Apply your Business Impact Analysis (BIA) and Business Continuity Plan (BCP) to your CSA z246.1 program.
- Integrate your risk management framework.
- Consolidate your risk management processes where possible.
- Update your policies to govern priorities and resources for your SMP.
- Identify and categorize your critical processes.
    - Associate interested parties, internal and external.
    - Identify impacted systems and cyber assets.

Risk Management

- Any risk management process is acceptable
- Considerations:
  - Risk processes are to be applied to people, process, and technology in CSA z246.1. Examples: personnel, physical security, cybersecurity.
  - Leverage what works in your organization to introduce less change.
  - Use ISO 31000 / ISO/IEC 27005 if a new reference point is required.
- Options
  - Practice a dedicated risk process for the z246.1.
  - Integrate with OT risk management processes.
  - Integrate with ERM.

External Relationship Impacts

- *Section 4.5 External Relationships*

  The operator should establish external relationships that

  a) *Include contracts and agreements with security partners and third parties that address the organization's security processes; and*

  b) *Ensure other security partners and third-party processes are aligned with the operator's SMP, where applicable*

- This requirement may vary with each permit holder and their relationship with each external relationship. Considerations include, but are not limited to:
  - The roles and responsibilities for vendors or suppliers to the permit holder's critical processes
  - Response to risk assessments may bring into scope an external relationship with strategic or critical partners
  - Requirements from any contracts or agreements
  - Requirements from the SMP

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