



CANADIAN PROCESS CONTROL ASSOCIATION



CRN Acquisition Strategy

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Cameron

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- Professional Engineer since 1991
- Consultant: pressure equipment design, safety policy, CRNs
- In-Service Pressure Equipment Inspector

Caveats

- My perspective is influenced by my work at ABSA, and residency in Alberta
- This presentation constitutes my perspective, not necessarily ABSA's, or anyone else's!
- These are general comments. Specific situations require specific consideration!

Topics

- The Canadian Registration System
- CRNs
- Avoid Registration of Fittings?
- Harmonization?
- Is There a Better Way?

Canadian Registration System

Constitution

Provincial Responsibilities

- Property and civil rights within a province
- All matters of a local or private nature within a province

Federal Responsibilities

- Federal Property
- Seacoast
- Shipping
- Indigenous Lands
- Matters that are interprovincial in nature

Canadian Registration System

Constitution

Provincial Responsibilities

- Pressure Equipment Safety

Federal Responsibilities

- Federal Property
- Seacoast
- Shipping
- Indigenous Lands
- Matters that are interprovincial in nature

Canadian Registration System

Constitution

Provincial Responsibilities

Safety Statute

Pressure Equipment
Regulation

CSA B51

ASME Codes

Federal Responsibilities

- Federal Property
- Seacoast
- Shipping
- Indigenous Lands
- Matters that are interprovincial in nature

CRNs

- CRNs = Canadian Registration Numbers
- Assigned to
 - Pressure Fittings
 - Pressure Vessels
 - Boilers
- Like model numbers, are unique

CRNs for Fittings

0



Start with a zero, '0'.

CRNs for Fittings

OC

A letter, from A-H, follows the 'O:

'A' pipe fittings

'B' flanges

'C' valves

'D' expansion joints, flexible connections, hoses

'E' strainers

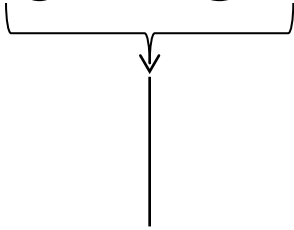
'F' measuring devices

'G' relief devices

'H' everything else

CRNs for Fittings

0C01234.



A number,
up to five digits in length,
precedes a decimal
point.

CRNs for Fittings

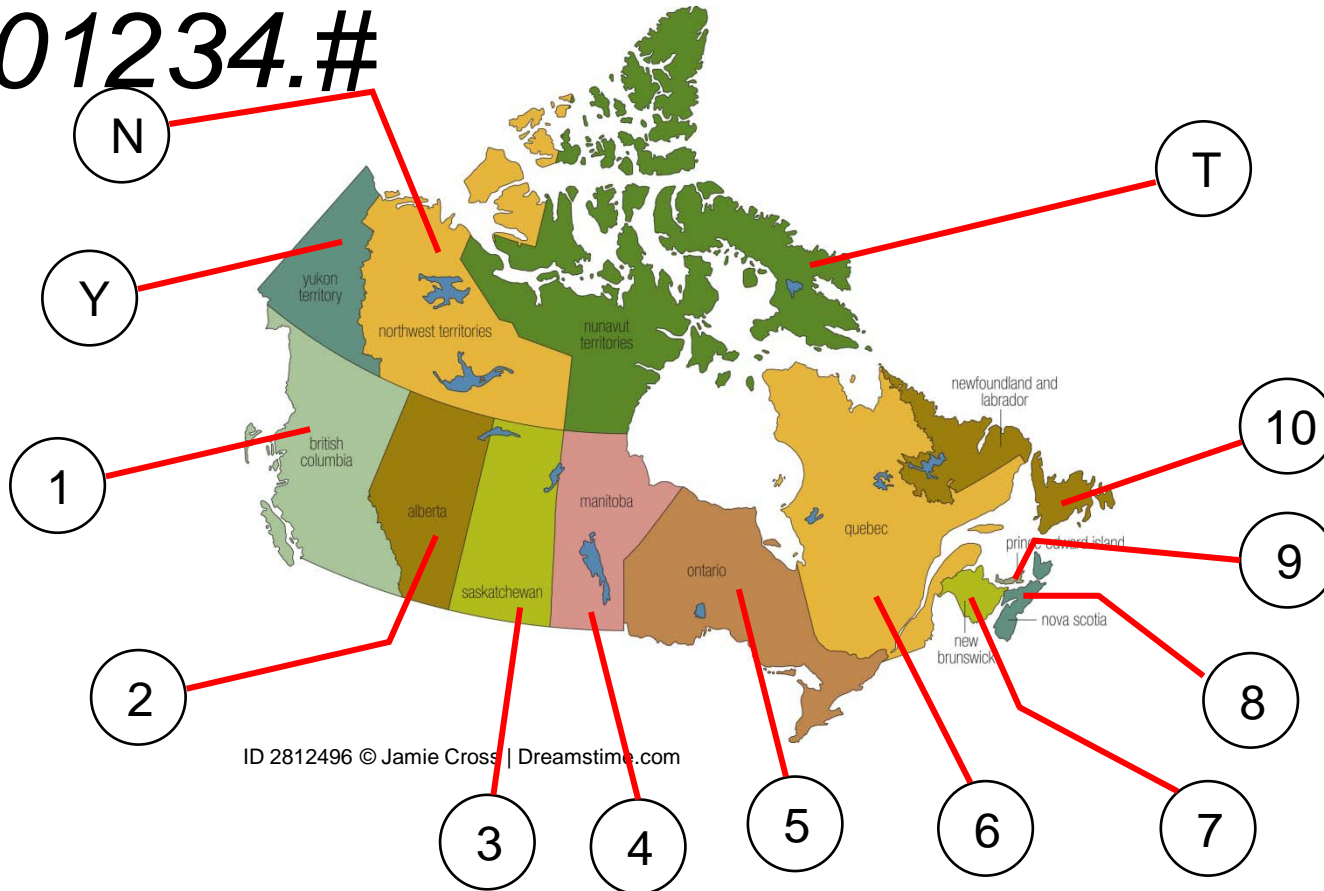
OC01234.2



The number following the decimal point, indicates the province in which the design was first registered.

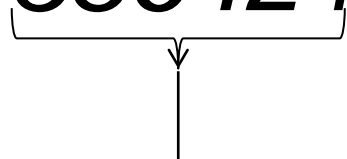
CRNs for Fittings

0C01234.#



CRNs for Fittings

0C01234.2386421



Other numbers, indicate other provinces in which the design was subsequently registered.

CRNs for Fittings

OC01234.2C



A 'C' indicates that registration
is Canada wide.

Avoid Registration of Fittings?

- Some provinces don't require registration, for some fittings:
 - BC and SK generally don't require category 'A', 'B', 'C', and 'G' fittings to be registered.
 - Should confirm for each situation.

Avoid Registration of Fittings?

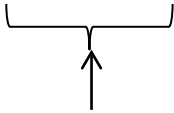
- **What exemptions are allowed?**
 - Depends on what the fittings are attached to.
 - Fittings are potentially exempt from registration if the attached pressure equipment is exempt
 - Pressure vessels and pressure piping systems are exempt from registration if the MAWP < 15 psig
 - CSA B51 Clause 4.2.1, exempts fittings from registration if they are attached to a pressure vessel or boiler that is subject to inspection (but not really!).

Harmonization? Register Once?

- Is it possible to register a fitting once, for all of Canada?

Harmonization? Register Once?

CSA0C01234.



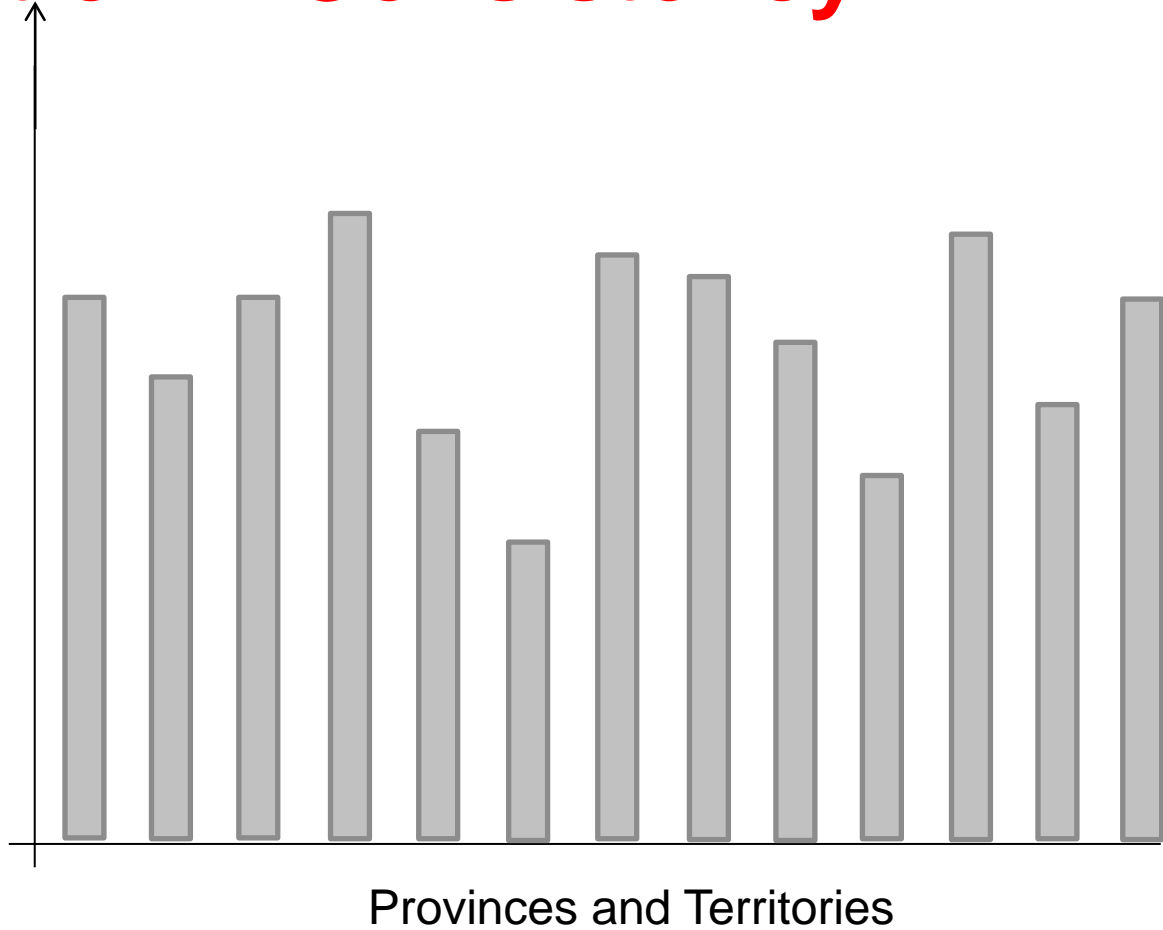
- CSA B51 allows for centrally registered fittings, per Clause 4.3.4.
- They are unusual. Not currently accepted by any provinces other than Saskatchewan and Quebec.
- CSA reportedly did not keep adequate track of what was accepted, expiry dates, part numbers, model numbers, etc. during trial exercise.
- Industry concerns reportedly exist about traceability, and validity of centrally registered fittings.

Harmonization? Consistency?

- Provincial Differences
 - Forms, fees
 - Level of scrutiny, etc.
- Market Barriers
- Increased complexity to registration process

Harmonization? Consistency?

Level of
Design
Scrutiny



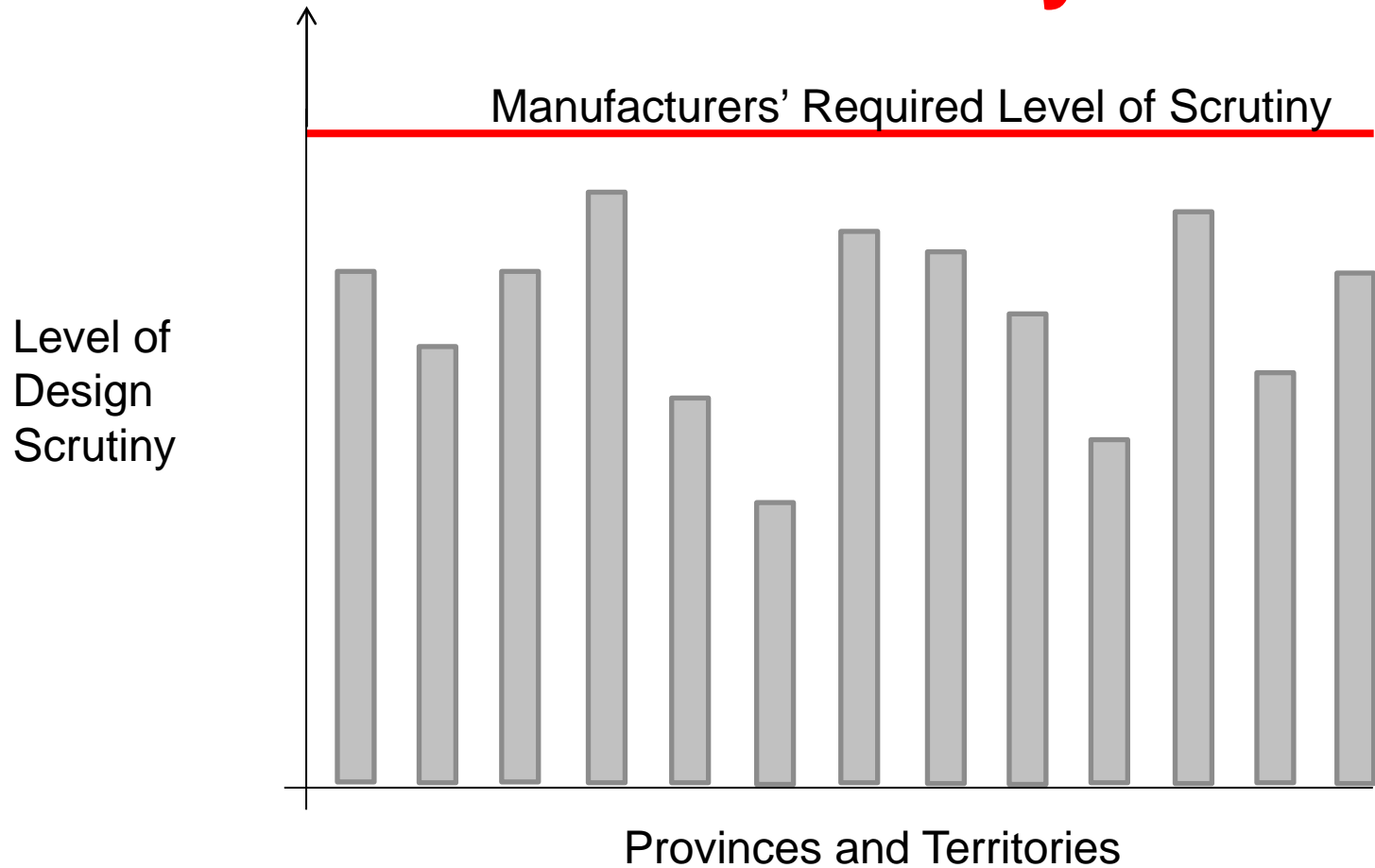
Harmonization? Consistency?

Are the various
Canadian jurisdictions
to be thought of
as obstacles,
a standard to meet?

No.....!



Harmonization? Consistency?



Harmonization? Consistency

Fitting drawings should include, or reference, at a minimum:

- Code of construction
- Material specifications
- Design conditions (MAWP, MAWT, MDMT)
- Corrosion allowance
- All dimensions, including welds
- Test pressure
- Heat treatment
- Impact testing
- Radiography
- Drawing number with revision
- Any CRNs of components

Harmonization? Consistency?

Why should manufacturers be more stringent than regulators?

- Customer service
- End users, customers, expect designs to meet or exceed ALL requirements
- Liability
- Manufacturers are not exempt!
- Regulators are exempt from liability if they act in good faith.

Harmonization? Consistency?

What is good faith?

Regulatory responsibilities with respect to safety are kind of like this....

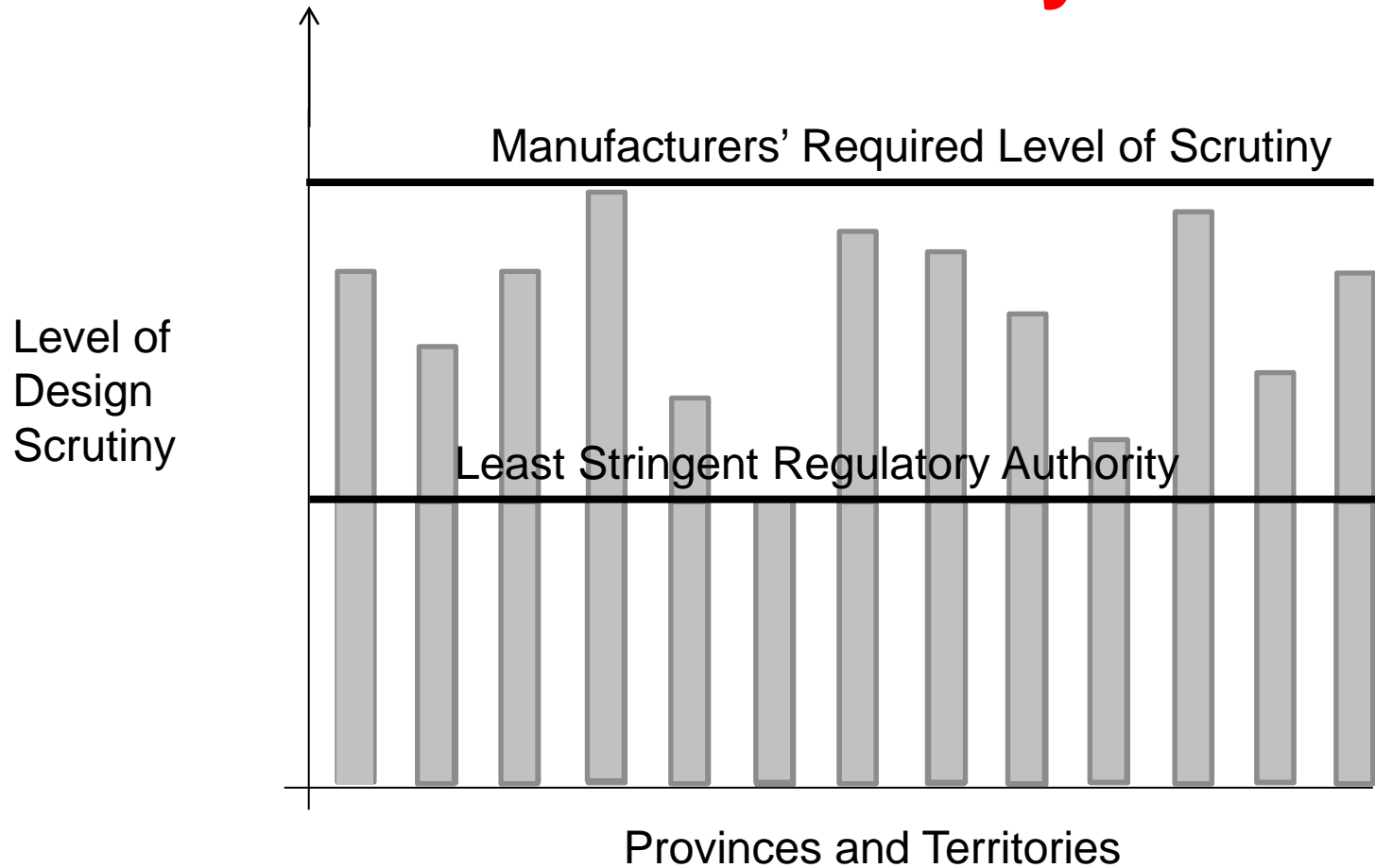
-  for
-  homes.
- Owners (i.e.

Harmonization? Consistency?

Provincial Commonalities

- Responsibility of manufacturer
- CSA B51
- ASME Codes and Referenced Standards
- 15 psig threshold for fittings on piping and vessels

Harmonization? Consistency?



Harmonization? Consistency?

Regulators reducing scrutiny?

- Doesn't reduce responsibility of manufacturer
- Regulators can increase bar again, at any time
- ABSA's March newsletter lists an 'improvement':
"We will accept designs registered by other jurisdictions provided that we receive the proper documentation"
- Volume of ABSA design applications: about 10,500 applications received last year
Is their scrutiny high?

Next Steps

- The CPCA, through its Industrial Relations Committee have set a subcommittee to:
 - Educate the members and industry as a whole on the current status
 - Reach out to industry, certifiers and regulators and work towards easing the process of obtaining CRNs, similar to the electrical industry model
 - Review the scope of product requirements affected by CRN



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THANK YOU

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