

National Energy
Board



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PHMSA Pipeline Class Location Methodology Workshop

Panel #1 – PHMSA-NEB – Class Location vs.
HCA Requirements

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Note

The views, judgments, opinions and recommendations expressed in this session do not necessarily reflect those of the National Energy Board, its Chair or members, nor is the Board obligated to adopt any of them.



Class Location as a measure of consequence of failure

- The basis of this brief presentation relates to how CSA Z662 reliance on Class Location designation to account for consequences of failure
- The Commentary to Z662 suggests that Class Locations do account for consequences (in addition to addressing likelihood of 3rd party hits)
- What could be wrong with that?



Limitations

- Class location rules:
 - Can be creatively misinterpreted (no-one actually “dwelling” there – therefor not a “dwelling unit”)
 - Are inadequate with respect to consequence analysis
- In either event they cannot be relied upon to accurately represent actual consequences of failure
- Class location rules are particularly deficient in the case of concentrations of populations



Location Class 2 population density

- Class 2 in the RBDC annex of Z662 suggests an average of 3.3 people per hectare. That's like 3 people spaced out evenly over two adjacent football fields
- However, in the body of the standard Class 2 can also refer to a cluster of 11 houses – say 2.3 people per house – makes it 25 people

Class designation might not consistently represent failure consequences



Concentrations of people

- Z662 states that a building occupied by 20 or more people in normal use is Class 2
- Class 3 can have 46 houses at 2.3 people per house = 106 people
- A note to the Class Location table in Z662 states that consideration is to be given to making the area Class 3 if it contains buildings with folks of reduced mobility
- What about a high school?



NEB learnings from San Bruno

- Improved hazard identification
- Address valve requirements inadequacy
- Strengthen leak detection regulation
- Prescribe minimum requirements for integrity assessments
- Put explicit emphasis on consequences of failure (Class 1 and 2 allowed to include concentrations of people)



Le panier des crabes

- The NEB requires companies to anticipate and deal with potentially dangerous conditions on every segment of pipeline we regulate.
- The “panier des crabes” initiative is to identify areas where the consequences of failure might be being underestimated – especially in areas that appear to be conforming to class location rules.



The path forward?

- The optimum approach could be to add a QRA check and deal with actual consequences (rather than assumed distributed consequences)
- An interim measure (for Canada) might be to tighten up the class definitions.
- For example, define all locations where occupancy is 20 or more (at some defined frequency) to have to meet the requirements of a Class 3 location



Thank you



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