

## Survey –

### Inherently Safer Design and Process Hazard Analysis

We would like to understand the current industry best practices for incorporating inherently safer design (ISD) within process hazard analysis (PHA). The objective of this survey is to collect information about the current state of PHA and applications of ISD in practical settings. This survey is a component of thesis work being completed by Kayleigh Rayner Brown under the supervision of Dr. Paul Amyotte (Dalhousie University) and Dr. Faisal Khan (Memorial University of Newfoundland).

Any identifying information will be kept confidential.

Please complete and return to Kayleigh at [kayleigh.brown@dal.ca](mailto:kayleigh.brown@dal.ca)

#### Guidewords and Definitions:

**Inherently safer design (ISD)** - An approach to process safety that focusses on the elimination of hazards, rather than reliance on safety equipment.

Based on four principles/guidewords: minimization, substitution, moderation and simplification (CCPS, 2009)

**Process hazard analysis (PHA)** - Hazard evaluation methods that help identify and analyze dangers associated with processes. May also be called process hazard review, hazard assessment, hazard study, hazard identification and review analysis, etc.

Analysis methods include: Safety Review, Checklist, What-If, Failure Modes and Effects Analysis (FMEA), Hazard and Operability Analysis (HAZOP), Fault Tree, Event Tree, etc. (CCPS, 2008)

#### **References**

CCPS. (2008). *Guidelines for Hazard Evaluation Procedures, 3rd ed.* New York, N.Y.: Center for Chemical Process Safety.

CCPS. (2009). *Inherently Safer Chemical Processes: A Life Cycle Approach, 2nd ed.* New York, N.Y.: Center for Chemical Process Safety.

<b>Contact information (optional)</b>	
<b>1. What barriers exist in your organization for explicitly considering or incorporating ISD?</b>	
<b>2. Does your organization have a protocol for explicitly considering ISD? (yes/no)</b>	
<b>a. If yes, what protocol is used for considering ISD?</b>	
<b>b. How has this protocol led to successful incorporation of ISD?</b>	
<b>c. Are there any challenges associated with this existing ISD protocol?</b>	
<b>3. How does your organization complete PHA?</b>	
<b>a. Is ISD incorporated into PHA? (yes/no)</b>	
<b>b. If yes, how is ISD incorporated into PHA?</b>	
<b>c. Are there any challenges with this existing PHA protocol?</b>	
<b>Is there another contact in your organization that could complete this survey?</b>	