

## SOFTWARE

## LOPAWorks 3

LOPAWorks<sup>®</sup> is a specialized tool for conducting LOPA studies. It calculates hazard scenario risks and compares them with risk tolerance criteria to determine if any risk reduction is needed. Scenarios may be associated with hazardous events to facilitate compliance with the IEC 61511 / ISA 84 standards for Safety Instrumented Systems (SISs). Overall facility risk estimates may also be determined to allow comparison with facility risk tolerance criteria. Dominant contributors to risk may be identified easily using the software.

## **KEY BENEFITS**

- Improve the efficiency and reduce the time needed to complete LOPA studies
- Simplify the performance of LOPA studies by separating them from PHA studies while preserving their connection
- Enter and display data using a customizable spreadsheet or form, or a combination of both
- Select failure data from an internal database or use your own
- Perform QC checks for each worksheet
- · Perform risk summations automatically
- Link key entries for global updating with their associated data

- Combine risks from multiple processes and their operating modes to allow risk summation for an entire facility
- Determine risks for individual processes, operating modes, hazardous events, hazard types and receptors.
- · Identify dominant contributors to risk
- Make data changes and see the impact on risk immediately
- · Use the ALARP principle for risk tolerance criteria
- Select from standard reports or create your own custom reports
- Import hazard scenarios from PHAWorks RA Edition and PHAWorks (V5 onwards)

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Scenarios			ype	Level
		Overfill tank, TK-104 @ EM	P Ţ 🧟	2 📮
1 Tank level transmitter fails 🔺	Hazardous Event	High level in tank, TK-104.		
and overfill tank, TK-104, with fire and employee impacts. 2 Tank level transmitter fails and overfill tank, TK-104, with fire and property damage. 3 Tank level transmitter fails and overfill tank, TK-104,	Hazard Type	₽ Fire		=
	Events	Item	Туре	Value
		Initiating Event		Frequenc
		Level transmitter, LT TK-104, fails to detect high level	EQP	1×10 <sup>-1</sup>
		Enablers (regular, at-risk factors, and conditional	modifiers)	Value
		Lack of PM on level transmitter LT TK-104	REG	5
with explosion and employee impacts.		Probability of ignition	CM	5×10 <sup>-1</sup>
4 Tank level transmitter fails		Probability of personnel in affected area	CM	5×10 <sup>-1</sup>
and overfill tank, TK-104, with explosion and public impacts. 5 Tank level transmitter fails and overfill tank, TK-104, with explosion and property damage. 6 Tank level transmitter fails		Probability of harm from exposure	CM	1
		Independent Protection Layers		PFD
		High level shutoff for tank, TK-104	® SIF	⊕ 1×10 <sup>-1</sup>
			®HUM	⊕ 1×10 <sup>-1</sup>
		Safeguards (non-IPL)		
		Plant fire brigade	® HUM	
and overfill tank, TK-104,	Summary	Item		Value
with spill and		Frequency of Mitigated Consequence		
environmental impacts.		Risk Tolerance (Scenario)		
7 Tank level indicating controller fails and overfill		Risk Reduction Required	8×10	j-4
		Risk Reduction Factor	1.3×	

Form for conducting LOPA studies

For more information, contact: Shawn Metzler (srm@primatech.com) 614.841.9800 | primatech.com

