

Arbor

Fault-tree Analysis Software



Arbor is designed to facilitate complex SIL Verification calculations. Normally, SIL Verification is done in our SIS Lifecycle Management software as defined in *ISA TR84.00.02 Safety Instrumented Functions (SIF) – Safety Integrity Level (SIL Evaluation Techniques Part 2: Determining the SIL of a SIF via Simplified Equations)*. For complex systems, the recommended practice is not sufficient, and a fault-tree should be utilized.

Arbor - Fault Tree Analysis software allows an SIS designer to verify complex system designs quickly and easily for failure modes. Fault-tree results from Arbor are easily linked to Safety Instrumented Functions in our SIS Lifecycle Management software.

Features:

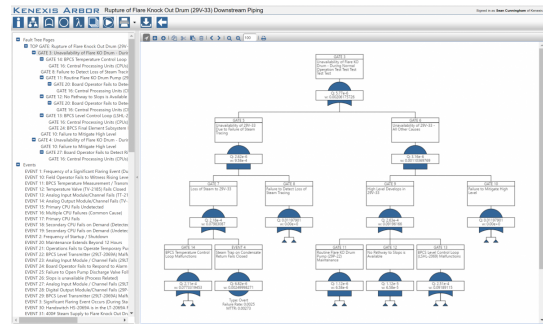
- Quickly Identify Vulnerabilities in the System Design
- Access Instrumentation & Control Equipment Failure Rate Database
- SIS Lifecycle Management Integration for Complex SIL Verification Calculations
- Integral part of our Integrated Safety Suite and our Unified Hazard Assessment
- Quickly Identify Vulnerabilities in the System Design

Quickly Identify Vulnerabilities in System Design

Robust minimum cut set analysis reporting makes it easy for users to quickly identify vulnerabilities in the system design by viewing details of the minimum cut set analysis through a clear and interactive interface. Provides valuable statistical analysis of the system highlighting the details of most significant combinations of events which could result in system failure which streamlines the process of sensitivity analysis and evaluation of alternative designs.

Access I&C Equipment Failure Rate Data

Kenexis extensive database of failure rate data for instrumentation and controls equipment comes with Arbor at no additional cost. Failure data is quickly found, processed, and applied in fault tree analysis, eliminating the time-consuming task of developing failure rate models for your fault trees. Our engineers use this data every day to perform a variety of process safety studies so you can be sure that the data have been well vetted and is always current.



Gate Unavailability: 5.02E-3		Gate Frequency: 1.15E-6	
Cut Set	Number of Events	Unavailability Contribution	Frequency Contribution
Cut Set 1	1	31.98 %	10.76 %
Cut Set 2	2	21.76 %	26.78 %
Cut Set 3	2	21.76 %	3.98E-6
Cut Set 4	2	21.76 %	25.75 %
Cut Set 5	2	3.36 %	3.99 %
Cut Set 6	2	0.00 %	0.00 %
Cut Set 7	2	0.00 %	0.00 %
Cut Set 8	2	0.00 %	0.00 %

Event Title	Event Description	Event Model	Unavailability	Frequency
EVENT 3	LT-001C Fails Dangerous Undetected	Level Transmitter - Current Displacement, 1B	5.03E-3	1.24E-6
EVENT 4	LT-001A Fails Dangerous Undetected	Level Transmitter - Current Displacement, 1B	5.03E-3	1.24E-6
EVENT 5	XY-001 Fails Dangerous Undetected	Control Valve Solenoid (DIT)	3.05E-3	7.67E-7
EVENT 6	Motor Starter Fails Dangerous Undetected	Motor Starter Circuit (DIT)	1.53E-3	3.69E-7
EVENT 7	XY-001 Fails Dangerous Undetected	Control Valve Solenoid (DIT)	3.05E-3	7.67E-7
EVENT 8	Motor Starter Fails Dangerous Undetected	Motor Starter Circuit (DIT)	1.53E-3	3.69E-7

