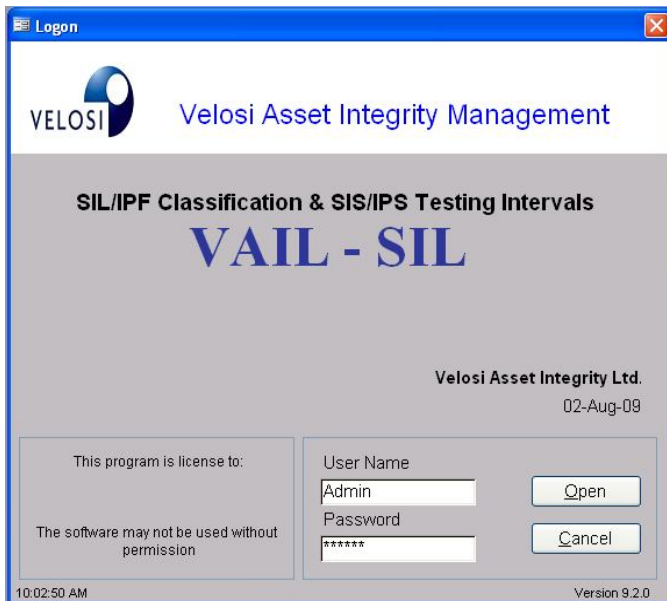


VAIL – SIL

→ Safety Integrity Level

For Safety Critical Systems

VAIL-SIL is a software product which uses facilitates Safety Integrity Level (SIL) as Velosi methodology for safety critical systems. Safety Integrity Level (SIL) is a discrete level for specifying the safety integrity requirements of the safety functions to be allocated to the E/E/PE safety related systems. E/E/PES is a term introduced by IEC61508 standard, which stands for Electrical/Electronics/Programmable Electronics Systems.



Logon overview

VAIL-SIL allows you to quantify the SIL level for safety critical system such as glycol contractor, recycle compressor, production separator, etc. And helping you to identify the safety level of your equipment

METHODOLOGY

Various methodologies are available for assessment of target SILs. VELOSI has implemented three different methodologies i.e.

- 1- Layer of Protection Analysis (LOPA)
- 2- Risk Matrix
- 3- Risk Graph

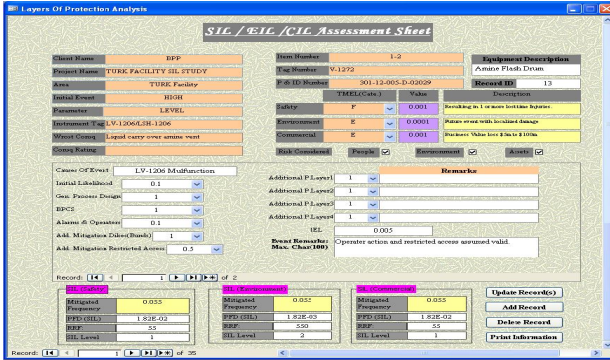
KEY FEATURES

VAIL-SIL is not limited to calculating or finding out target SILs only, it also includes:

- Overall summary of SILs with mutual comparison of all three above mentioned methodologies,
- Target PFD Calculation(s),
- Testing Interval Calculation(s),
- Mean Time Between Failure (MTTR),
- Mean Time To Repair (MTBR),
- Dynamic reporting
- SIL Study Session Team's Record Management and many more...

LAYER OF PROTECTION ANALYSIS

The LOPA method was developed by the American Institute of Chemical Engineers as a tool in assessing the SIL requirements of SIFs (AIChE 1993).



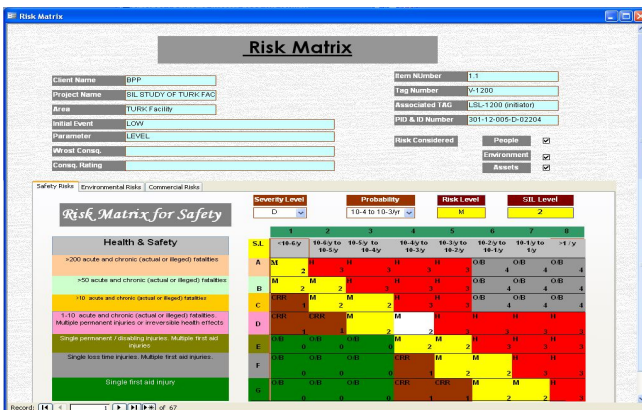
LOPA screen overview

ADVANTAGES

- Can be used both as a relatively coarse filtering tool and for more precise analysis.
- Can be performed as a team exercise, at least for a semi quantitative assessment.
- Facilitates the identification of all relevant risk mitigation measures and taking credit for them in the assessment.

RISK MATRIX

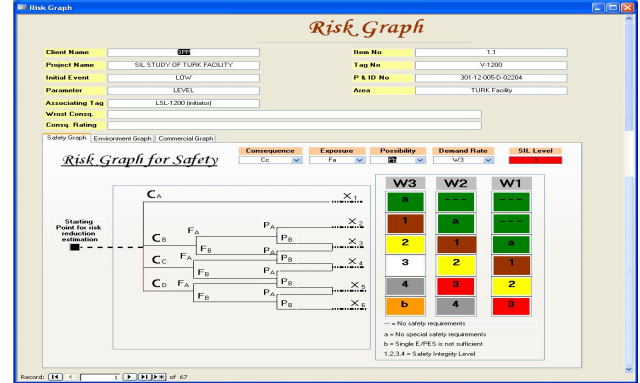
Risk Matrix is a tool used in the Risk Assessment process. It allows the severity of the risk of an event occurring to be determined. The best feature of VAIL-SIL is that it can perceive dynamic changes and can show risk level, SIL level and relevant box selection in matrix as well.



Risk Matrix screen overview

RISK GRAPH

Risk graph methods are widely used for reasons outlined below:



Risk Graph Overview

BENEFITS

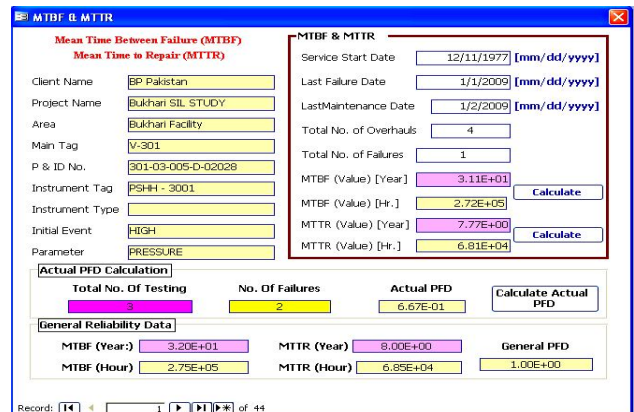
- They are semi-qualitative / semi-quantitative,
- They are normally applied as a team exercise and;
- They do not require a detailed study of relatively minor hazards.

TESTING INTERVAL CALCULATION

IEC-61508 has been implemented in VAIL-SIL to calculate the Testing Interval based on selected PFD and Architecture (Voting). VAIL-SIL also has the feature to find Probability of Failure on Demand which can be categorized as calculated PFD and Actual PFD.

MTTR & MTBF

VAIL SIL has a feature of calculating the Mean Time to Repair and Mean-Time-Between Failure along with General Reliability Data as well.



Testing interval calc. & reliability Data overview

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