



ERSG/Prod/Serv/FS/006/09

SUBJECT:
FTA: RISK ASSESSMENT

OUR SERVICES COVER THE FOLLOWING AREAS:

- Process Hazard Analysis
- Enterprise Risk Management
- Project Management
- RUBI-Software
- Business Continuity Systems
- Process Safety Management
- Risk Training Solutions



FAULT TREE ANALYSIS [FTA]

Risk Management Solutions for Dynamic and Progressive Industry

Introduction

Fault tree analysis techniques were first developed in the early 1960's. Since this time they have been readily adopted by a wide range of engineering disciplines as one of the primary methods of performing reliability and safety analysis.

Fault trees graphically represent the interaction of failures and other events within a system. Basic events at the bottom of the fault tree are linked via logic symbols (known as gates) to one or more TOP events. These TOP events represent identified hazards or system failure modes for which predicted reliability or availability data is required.

Services

ERSG can provide a full FTA Risk Assessment services, using a standard technique.

The ERSG fault tree analysis technique is to evaluate the probability of the top event using analytical or statistical methods. These calculations involve system quantitative reliability and maintainability information, such as failure probability, failure rate, or repair rate. The FTA will provide useful information concerning the likelihood of a failure and the means by which such a failure could occur.

Efforts to improve system safety and reliability can be focused and refined using the results of the FTA.

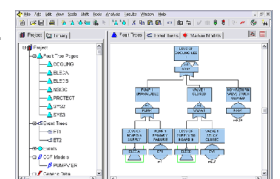
OUR SERVICES COVER THE FOLLOWING METHODS

Methodology

ERSG's approach to fault tree analysis (FTA) is a deductive, top-down method of analysing system design and performance. It involves specifying a top event to analyse (such as a fire), followed by identifying all of the associated elements in the system that could cause that top event to occur.

The method results in a convenient symbolic representation of the combination of events resulting in the occurrence of the top event. Events and gates in FT analysis are represented by symbols. The FTA is generally performed graphically using a logical structure of AND OR gates. Sometimes certain elements, or basic events, may need to occur together in order for that top event to occur.

The events would be arranged under an AND gate, meaning that all of the basic events would need to occur to trigger the top event. If the basic events alone would trigger the top event, then they would be grouped under an OR gate. The entire system as well as human interactions would be analysed when performing a FTA.



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FTA SOFTWARE TOOL

The ERSG Risk Division uses the IsoGraph FTA software for risk assessment. FaultTree+ includes three modules:

Fault Tree Analysis. Allowing you to construct and analyse *fault tree diagrams*.
Event Tree Analysis. *Event trees* allow you to analyse the possible outcomes of an event occurring.

Markov Analysis. Enabling the construction of *Markov models* for components with large interdependencies.

Requirements: 4Mb RAM, 2Mb Hard Disk, Windows®, 98, NT, 2000, XP.

WEBSITE: www.ersgltd.com