

THESIS Bow-Tie

Helping People Manage Risk

THESIS assists companies/operators in the analysis and management of the hazards and risks to which their business is exposed, and graphically displays and illustrates the relationship between hazards, controls, risk reduction measures and business HSE activities.

THESIS has been successfully applied in a number of industries and business types, including: Oil, Gas, Petrochemical, Defence, Security, Shipping and Rail.

What does THESIS actually do ?

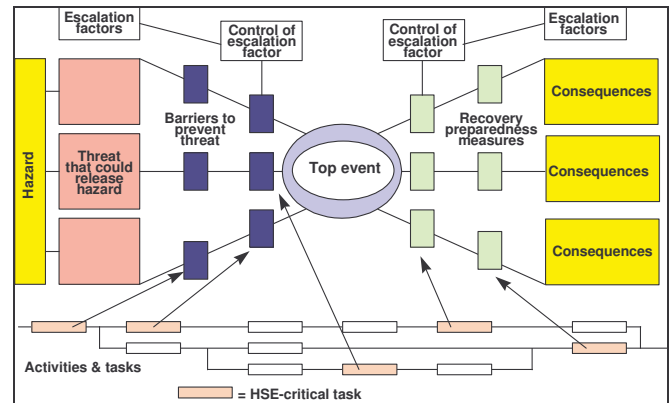
THESIS assists in the analysis and management of hazards and risks, and their controls, by providing a tool which:

- Documents the risk analysis in a systematic manner that makes the control of hazards easier for personnel to understand
- Links the hazards, controls, etc. to safety critical activities and tasks via 'Bow-Ties,' thus ensuring that the controls identified are linked to the company's processes and to individual's responsibilities
- Provides reports which can form part of a Formal Safety Assessment, e.g. HSE Case, and which can be used for communication to those personnel responsible for safety critical tasks
- Provides an essential source of risk management information – a "corporate memory" – to prevent losses occurring or re-occurring
- Documents all areas where shortfalls have been identified and corrective action is required, and assigns responsibilities for completion of the actions Supports audits of HSE Management Systems
- Facilitates a continuous improvement process for risk management
- Promotes visibility and awareness of hazards, risks and HSE Management
- Facilitates management of change and demonstrates compliance

The Bow-Tie Methodology

Bow-Ties are a graphical display of the relationship between the various components that result from the Hazard and Effects Management Process (HEMP).

They depict the relationship between hazards, threats, barriers, escalation factors, controls, consequences, recovery preparedness measures and safety or HSE critical tasks, as illustrated in the figure below.



The advantage of adopting the Bow-Tie approach is that it is an extremely powerful representation of a hazard analysis and is readily understood at all levels in an organisation.

A short history of THESIS

THESIS was originally conceived and developed by Shell (SIEP) in response to a primary need for enhanced Safety Management Systems, identified by Cullen. An agreement between SIEP and ABS Consulting (as EQE International) was signed in 1997, which permits future joint development and licencing of the product to third party businesses. THESIS software has a sustainable track record of world usage with major Oil, Gas, Petrochemical and trading businesses.

THESIS Version 4.0 is the latest release of this market leading tool. THESIS Version 5.0 is due for release Q4 2006.

What are the Benefits and Advantages of THESIS ?

- Fast, low cost and more rigorous analysis of hazards and their controls
- Linkage between a hazard, the threats, barriers, consequences, recovery measures, tasks, people and procedures
- Provides a corporate 'memory,' and can be used for accident investigation

THESIS Bow-Tie

- An excellent facilitation tool to demonstrate compliance to management, the legislator and more importantly to the asset team
- Link to reference documents and is readily updateable
- Can serve to manage and streamline corporate and asset procedures
- Clearly demonstrates personal responsibilities and legislative compliance
- User defined safety/integrity rankings to all components
- Demonstrable track record

Who uses THESIS ?

THESIS has an enviable register of businesses who regularly use the code. A selection of example customers include:-

- Shell (worldwide licencing)
- Total
- Hess
- Aker Kvaerner
- British Gas
- AGIP KCO
- KPO BV
- BOC
- Oman LNG
- Various Shipping Companies
- DNV Consulting
- Atkins Consulting
- CNOOC
- Ecopetrol
- European Commission
- Kraton Polymers
- Lundin
- Nabors Drilling
- Panalpina
- Transocean Drilling
- ZADCO
- Vectra Consulting
- Gasco
- ADMA-OPCO

References can readily be provided upon request.