



Professional Profile

Harold W Thomas, P.E., C.F.S.E.

Partner, exida

Fields of Competence

HAZOP

Failure Modes Effects and Diagnostics Analysis

Layer of Protection Analysis

Fault Tree Analysis

Consequence Analysis

Reliability Engineering

Safety Instrumented System Design

Safety Instrumented Design Standards

Mechanical Integrity of Safety Instrumented Systems

Engineering Training

Experience Summary

Mr. Thomas has over 38 years of professional experience. He is widely recognized as an expert in functional process safety analysis, including safety instrumented systems and high availability automation systems. He helped pioneer the use of HAZOP, fault tree analysis, consequence analysis, LOPA, and introduction of the SIS work process while at Air Products. He was formerly an Engineering Associate – Process Safety and Technology Manager for Safety Instrumented Systems at Air Products and Chemicals, Inc. His principle work responsibilities included assisting and mentoring process safety and process control engineers in hazard identification, the use of fault tree analysis, LOPA, SIL assessment, SIL verification, leading new technology hazard reviews, as well as to write standards and procedures to promote high quality and consistent results. He helped institute a managed system of standardized consequence analysis procedures and managed the development of a number of in house tools and models to support both likelihood and consequence analysis. In addition, he was responsible for developing the overall process safety curricula, developing a number of training modules and courses, and providing instruction for courses such as SIL Assessment, SIL Verification, and Fault Tree Analysis. He has served on a number of CCPS committees that have written guideline books, and is an original member of the CCPS Process Equipment Reliability Database initiative. He is a member of the CFSE Governing Board and is a senior member of ISA. He has authored numerous published papers.

Credentials

B.S., Mechanical Engineering,
Bucknell University, 1974

P. E., Commonwealth of
Pennsylvania, 1980

C.F.S.E., 2006

Key Assignments

Co-developed initial basic Hazard and Operability (HAZOP) Course and introduced methodology on a global basis.

Led development of Fault Tree Quantification Classroom Course fully integrated with application software.

Led development of Consequence Analysis Course.

Identified, assessed and implemented third party HAZOP software for use as standard global tool.

Facilitated the initial development of knowledge based HAZOP methodology within major business areas.

Managed development and use of likelihood analysis tools such as fault tree analysis and LOPA.

Established a foundation for consequence analysis procedures for internal use.

Developed a number of acute inhalation probit models for use in consequence analysis.

Established the initial work process, standards and procedures and analysis methods to implement the IEC 61511 lifecycle.

Former Chair - CCPS Process Equipment Reliability Database initiative. Currently their technical consultant

Active participant in ISA S84 committee work.



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Affiliations

International Society for Automation (ISA), Senior Member

AICHE CCPS PERD, Former Chairman, Current Technical Consultant

Selected Publications

Books

Practical SIL Target Selection, Risk Analysis per the IEC 61511 Safety Lifecycle, ISBN-13: 978-1-934977-03-3, 2012

Technical Papers (over 20 published)

2012, 8th Global Process Safety Conference, *Proven in Use (What's the Quality of Your Data?)*

2011, 7th Global Process Safety Conference, *High Demand, Low Demand, and Time at Risk (Important Considerations beyond Basic LOPA)*

2010, 6th Global Process Safety Conference, *Understanding Data Requirements*. Published in Chemical News, Official Journal of the Indian Chemical Council, Vol. VII, September 2010, No. 3.

2008, 4th Global Process Safety Conference, *Safe Management of Unforeseen Delays in Mechanical Integrity Inspection Schedules*. Published in Process Safety Progress, June 2009 issue, Volume 28, No. 2.

2007, 3rd Global Process Safety Conference, *Equipment Safety Manuals - A User's Expectations*

2005, Valve Manufacturer's Association Technical Seminar *Meeting the SIS Standard's Challenge – Users and Manufacturers Working Together*

2001, 35th Annual Loss Prevention Symposium, AIChE 2001 Spring National Meeting, *Establishing a Data Farm to Harvest Quality Information*

1997, CCPS conference, *CCPS Equipment Reliability Database; A Solid Foundation*

1995, Annual Quality Congress, *Quantal Response Analysis of Relief Valve Test Data*

1988, AICHE Spring National Meeting, *A Quantitative Approach to the Use of Programmable Controllers in Safety Circuits*



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