

Overview

A consultant engineer with extensive experience in reliability analysis within the nuclear, rail and process industries. Detailed knowledge of reliability concepts and application of these concepts to real world situations. An expert in developing and peer reviewing reliability studies of equipment in the process industries. Demonstrated analytical abilities in the application of event and fault tree techniques, simulation, risk ranking, Failure Mode Effect and Criticality Analysis, Hazard and Operability (HAZOP) studies. Experienced in developing appropriate models of processes to support reliability improvements within those operations.

Professional Affiliations and Qualifications

Member of The Institution of Engineers Australia

Master of Engineering Science – Reliability Engineering (UNSW 1983)

Bachelor of Engineering in Electrical Engineering with 1st Class Honours (NSWIT 1975)

Diploma in Technology (Electrical Engineering) with Distinction (NSWIT 1974)

Career Summary

November 2002 to present – Independent Contractor

Undertaking projects in the nuclear, process and infrastructure industry.

Recent projects include:

- Provision of expert reliability engineering evidence in the Arbitration between Anaconda Operations Pty Ltd and Fluor Australia Pty Ltd regarding the performance of the Murrin Murrin nickel cobalt facility. The evidence involved reviewing reliability estimates and historical data to determine what plant reliability could be achieved in the future. (10 Month full-time project.)
- Development and presentation of a 1-day training course on Reliability Engineering in Operating Plants to be held in conjunction with a SIRF Industrial Maintenance Roundtable - Condition Monitoring National Forum.
- Peer review of the Safety Analysis Report for Australia's replacement research reactor currently being constructed at Lucas Heights near Sydney.
- Representative of the IEAust on the Australian Standards' committee reviewing IEC Dependability Standards.

May 1969 to November 2002– Australian Science & Technology Organisation

Manager, Safety & Reliability Section

Responsible for managing, supervising and mentoring a team of 10-14 professional officers providing in-house and commercial services.

Significant projects and tasks included:

- Preparation of accident analysis reports to support ANSTO's application for a licence to operate its nuclear facilities
- Undertook quantitative analysis of the reliability of the HIFAR research reactor's safety systems
- Reliability analysis of a wellhead shutdown system on Goodwyn 'A' Offshore platform for Woodside Offshore Petroleum Pty Ltd
- Provided advice on the producer's risk associated with reliability penalties in the development of a new train carriage for use in Sydney
- Peer review of the hazard and risk component of Second Sydney Airport Draft Environmental Impact Statement
- Preparation and presentation of specialised reliability training for Alcoa W.A. Operations
- Assessment of Malabar sewage treatment plant risk and reliability associated with sludge processing
- Represented Australia in the preparation of an international nuclear safety and equipment maintenance standard at the International Atomic Energy Agency headquarters in Vienna
- Development of an environmental risk evaluation and prioritization of proposals for risk reduction in CityRail
- Assessment of safety of a flare-tip handling package for Woodside Offshore Petroleum Pty Ltd
- Comparative assessment of the reliability of alternative systems for fire suppression
- Reliability and maintainability assessment report on the design of Tuen Mun Light Rail Vehicle
- Reliability study to support the SRA coal wagon design process
- Study into the rationalization safety system instrument testing on the Goodwyn 'A' Offshore platform for Woodside Offshore Petroleum Pty Ltd
- NZ Aluminium smelter rectifier reliability assessment

Relevant Technical Publications

- Witt, H. H. (2006), *Evolution of Risk & Reliability Concepts over 50 years*, MESA Sydney Chapter meeting, 29 June 2006., Sydney, Maintenance Engineering Society Australia Website.
- Witt, H. H., and Marshall, P. (2003), *Lost Business Continuity Through Engineering System Failure*, Continuity Forum, 26 February Sydney 2003 Marcus Evans Conferences.
- Witt, H. H. (2001), *Safety & Maintenance Management Principles Explored*, Proceedings of Mainstream 2001, Manly Pacific ParkRoyal Sydney, 19-20 March 2001., Sydney.
- Hutchison, R. B., Brodie, M., Perera, J., Witt, H. H., Ross, K. & Elliott, G. (1997), *Application of an Environmental Risk Ranking System*, *Safety and Reliability Digest*, No. 21, p3-10.
- Hutchison, R. B. & Witt, H. H. (1996), *Sensitivity of an Environmental Risk Ranking System*, *Chemeca 96*, pp 59-64, Vol. 6, September 1996, Sydney Australia.
- Corran, E. & Witt, H. (1995), *Using Generic Reliability Data in Reliability and Risk Analysis*, Proceedings of the Integrated Risk Assessment: Current Practice and New Directions, Newcastle, 1-2 June 1995.
- Hammer, J., Zhaohuan, Li., Witt, H., Winfield, D., Dusek, J. & Tran, H. (1995), *Manual on reliability data collection for research reactor PSAs*, IAEA-TECDOC-636 (March 1995).
- Witt, H. (1994), *Using Risk Management Techniques to Improve Overall Maintenance Management Theory and Practice*, Proceedings of the Maintenance Engineering Society of Australia's ICOMS-94, Darling Harbour Sydney, 1-3 June 1994.
- Witt, H. (1993), *Using Risk Management Techniques to Improve Overall Maintenance Management - A Case Study*, Proceedings of the IIR Public Sector Maintenance Management Conference, Sydney.
- Bastin, S. J., Corran, E. R. & Witt, H. H. (1993), *Application of Reliability Analysis to Offshore Facilities*, Proceedings of the Second Australian International Oil, Gas and Petrochemical Exhibition and Conference, Section V, pp 1-13, Melbourne, 23-26 November 1993.
- Witt, H. (1991), *Using statistical maintenance techniques for tighter control*, Proceedings of the 1991 Maintenance Work Planning and Control Conference, November - Melbourne and Sydney & Proceedings of the 8 th National Maintenance Management Conference, March - Sydney and Melbourne.
- Witt, H. (1990), *Statistical maintenance management*, Proceedings of the 1990 7th National Maintenance Management Conference, July - Melbourne and Sydney.
- Corran, E., Bastin, S. & Witt, H. (1989), *Review of case study: HIFAR probabilistic safety analysis*, Final report on IAEA research agreement 4439/CF.
- Gibson, I. K., McIntyre, P. & Witt, H. (1989), *Aspects of a model to improve the reliability estimates of engineering components*, Reliability '89 proceedings (volume 2).
- Gibson, I. K., McIntyre, P. & Witt, H. (1989), *Addressing the problem of the relevance of reliability data to varied applications*, Sixth EuReDatA conference - reliability data collection and use in risk and availability assessments. Siena, Italy, 14-17 March
- Witt, H. (1986), *IEE Conference Report "Data Collection and Analysis for Reliability Assessment*, UKAEA Systems Reliability Service Quarterly Digest (April).
- Witt, H. (1985), *The difficulty of testing redundancy systems (validation of a reactor containment system)*, Short Note: Reliability Engineering Vol. 13 pp 185-189.