
RESUME

Margaret Sprigg

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PERSONAL DETAILS

NAME Margaret Sprigg
ADDRESS 38A Osborne Road NORTH WARRANDYTE VIC 3113
TELEPHONE 0407 556 018
EMAIL ADDRESS msprigg@ninelives.com.au
QUALIFICATIONS BE, Mechanical Engineering, Melbourne University, 1971
Graduate Diploma of Ergonomics, Lincoln Institute of Health Sciences

PROFESSIONAL SUMMARY

Margaret is a Mechanical Engineer who fulfils a technical role as Managing Director of Nine Lives Systems Pty Ltd in safety, ergonomics, occupational health and safety and related business risk assessments. She has 30 years experience in both the private and public sectors across a wide range of industries.

Margaret has also been a Director of a risk engineering consultancy, VRJ Risk Engineers, with both technical and management responsibilities.

She has managed and conducted a wide range of projects including the development and auditing of safety management systems, gas safety and operating plan audits for regulatory compliance, plant safety risk assessments, manual handling and ergonomic risk assessments, machine guarding audits and confined space risk assessments. Margaret has facilitated risk workshops for a range of activities and industries including major events, chemical processes (Hazops), transport related and process equipment.

She has been responsible for the development of software tools designed to facilitate the management of safety and to assist in meeting legislative requirements.

During her employment with the Commonwealth Department of Housing and Construction, she was responsible for the design of air conditioning and ventilation systems and the assessment of human thermal comfort. She was also responsible for the development of procedures for the safe removal of asbestos.

Key Areas of Strength

- Highly motivated and results oriented;
- Innovative;
- Analytical and logical approach to problem solving;
- Ability to work well under pressure and work within and around client requirements;

- Excellent interpersonal and communication skills;
- Planning and organisational abilities;
- Attention to detail;
- Commitment to achieve the highest possible standard in all tasks undertaken.

EMPLOYMENT HISTORY

The following table provides a summary of employment history. Details of major projects that demonstrate specific skills and experience are provided under the following section 'Major Project Experience'.

Position	Employer	Period of Employment	Duties
Managing Director	Nine Lives Systems	2002 - Current	<ul style="list-style-type: none"> ▪ Development of Risk Management Software ▪ Compliance Audit of Safety and Operating Plans for gas network and pipeline operators ▪ Safety Management Systems Auditing ▪ Safety Management Systems development ▪ Risk assessment facilitation
Principal, OHS and Risk	Environmental Resources Management Group	2000 - 2002	<ul style="list-style-type: none"> ▪ Compliance Audit of Safety and Operating Plans for gas network and pipeline operators ▪ Safety Management Systems Auditing ▪ Safety Management Systems development ▪ Risk assessment facilitation
Director	VRJ Risk Engineers Pty Ltd	1994 - 2000	<ul style="list-style-type: none"> ▪ Management of Occupational Health and Safety and Special Projects ▪ Safety Management Systems Auditing ▪ Safety Management Systems development ▪ Risk assessment facilitation

Contract Roles	Various including South Pacific Tyres, Vulcan Industries and Rheem	1982 - 1994	<ul style="list-style-type: none"> ▪ Ergonomic assessments and workplace design ▪ Machine guarding audits and guard design ▪ Safety Management Systems development
Regional Engineer	Department of Productivity, Physical Working Environment	1979 - 1982	<ul style="list-style-type: none"> ▪ Ergonomic assessments and workplace design ▪ OHS advisory service to industry ▪ Noise assessment and control
Technical Secretary	Department of Transport, Office of Road Safety	1977 - 1979	<ul style="list-style-type: none"> ▪ Technical secretary to a number of sub-committees with the responsibility for development of Australian Design Rules (ADRs) and standards. ▪ Assessment of vehicle manufacturer's compliance to ADRs ▪ Preparation of draft standards ▪ Research reviews
Engineer	Department of Housing and Construction	1972 – 1977	<ul style="list-style-type: none"> ▪ Design of building services and ventilation systems ▪ Wind tunnel modelling for siting exhaust and intake locations ▪ Noise control ▪ Asbestos removal standard development ▪ Human thermal comfort assessment

MAJOR PROJECT EXPERIENCE

The following sections provide details of major projects in which Margaret either managed the project or conducted the majority of the work. These projects are not intended to be exhaustive but have been selected for inclusion to demonstrate particular skills and experience. A list of the projects is provided below.

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Project 1 – Power Station Risk Assessment, Queensland

Tools/Skills Used

- Risk Workshop Facilitation
- Quantitative Risk Assessment
- Hazop
- Microsoft Access

Description

As part of its risk management strategy, Tarong Energy wished to identify all of the significant risks that affected its ability to generate power within an existing coal fired power station. The study concentrated on loss of generation and property loss. Risks were first identified through a number of risk workshops where a qualitative, Rapid Risk Ranking was applied to each of the identified risks. Risks identified as Significant and High were then quantified, using the power station's own equipment failure data as well as generic power station failure data.

A Microsoft Access database was developed for recording and tracking the risk assessment process. The database incorporated a quantitative risk calculator for estimating expected normal losses and expected maximum losses for each identified risk event. The calculator also estimated payback periods for selected risk controls. Prioritised Risk Management Plans were developed and documented through the software.

Based on the outcomes of the original risk assessment, a number of Hazops were conducted for specific issues such as fires in pulverising systems and these were also recorded in the database.

Responsibilities and Accomplishments

- Management of project team including external consultants and IT providers;
- Risk assessment workshop facilitation;
- Management of software development;
- Quantitative risk assessment;
- Project documentation

Project 2 – Regulatory Safety and Operating Plan Audits

Tools/Skills Used

- Microsoft Access
- Compliance Auditing

Description

In both NSW and Tasmania, regulatory requirements are in place for gas and other utilities to initiate periodical audits of their Safety and Operating Plans/Safety Cases by independent auditors approved by the relevant Regulator. Nine Lives has conducted a large number of these audits.

There is currently no single set of published criteria for the audit of gas related Safety and Operating Plans. There are however a number of standards and relevant legislation that may or may not apply, depending on whether the pipelines are licensed as distribution networks or transmission pipelines. A set of audit criteria encompassing all of the relevant legislation and standards has been developed in Microsoft access so that the specific set of criteria applicable to the operator under audit may be generated.

Process audits have been conducted against the established audit criteria for Jemena, APA, Tas Gas Networks, Tas Gas Retail, ActewAGL and Woolnorth.

Responsibilities and Accomplishments

- Development of set of audit criteria that is compliant with relevant legislation and standards;
- Audit planning;
- Conducting and reporting audits and, where relevant, leading the audit;
- Monitoring client improvements.

Project 3 – TasGas Regulatory Reporter

Tools/Skills Used

- Compliance Auditing

Description

As part of the Tasmanian Regulatory environment for the distribution and retail of natural gas, the distributor and retailer are required to provide a report to the Regulator, accompanied by a report from an independent Reporter.

The Reporter is required to address the requirements of the Tasmanian Gas Distribution, Gas Retail and Gas Customer Transfer and Reconciliation Codes. In addition, the Reporter was also required to comment on behalf of the Regulator, on the effectiveness of these three Codes.

As a result of the study, a number of changes were made to the Tasmanian Gas Codes.

Responsibilities and Accomplishments

- Audit planning;
- Conducting and reporting audits and, where relevant, leading the audit;
- Commenting on the effectiveness of Codes under a regulatory regime.

Project 4 – Development of Nine Lives Risk Management Database

Tools/Skills Used

- Functional specification development
- Risk quantification
- Costing and budgeting

Description

Based on extensive experience in the areas of risk management and occupational health and safety, a set of user requirements for a risk management database was established. These were translated to functional specifications in consultation with an IT development company, including the quantification of risk.

Responsibilities and Accomplishments

- Project Management;
- Development of functional specification in consultation with clients;
- Software testing.

Project 5 – Brickworks, Safety Management System Implementation, Victoria & NSW

Tools/Skills Used

- Risk Assessment Facilitation
- Nine Lives Risk Manager implementation
- Microsoft Access

Description

Services have been provided to Brickworks and its predecessors over many years. These have included advice and assistance in the development and implementation of the Safety Management System. In addition, the Nine Lives Risk Management database was implemented at a number of locations in Victoria, NSW and WA.

Plant, manual handling and hazardous substances risk assessments were conducted in consultation with operators and recorded directly in the Nine Lives Risk Management database. Reports were generated from the database and the ongoing management of hazards was conducted through hazard reviews.

A training module was developed in the database in consultation with the quality manager in Western Australia. The module was designed to facilitate the establishment of training needs and for the tracking and monitoring of training and competency.

Other services have included the establishment of local MSDS files. These spanned a number of sites and a large number of materials. In order to minimise duplication, a central library of MSDSs was established and a database developed for the management of MSDSs at a site level.

Responsibilities and Accomplishments

- Working with operator and maintenance staff to identify and assess workplace hazards;
- Establishment and documentation of IT system requirements;
- Management of software development
- Plant Risk Assessments
- Manual Handling and Ergonomic Risk Assessments
- Hazardous Substances Risk Assessments
- Documentation of risk assessments
- Development of MSDS database

Project 6– Koppers Arch, Safety Case for Major Hazard Facility, Victoria

Tools/Skills Used

- Safety Case Documentation
- Quantitative Risk Assessment
- Microsoft Access

Description

Koppers Arch was provided with assistance in the development of the risk assessment and related elements of its Safety Case. This included facilitating a Hazop and preparing the Safety Management System documentation relating to risk assessment. A Microsoft Access risk management database was enhanced to manage the specific requirements of the Safety Case. The results of the Hazop as well as workplace hazards were recorded and managed through the database.

A quantitative assessment of the risk of an arsenic acid escape was conducted and recorded in the Safety Case.

The work also involved attendance at Worksafe audits and development of responses to improvements identified during those audits.

Responsibilities and Accomplishments

- Documentation of the risk assessment processes used by the client;
- Hazop facilitation;
- Management of database enhancements;
- Development of a quantitative risk assessment.

Project 7 – State Rail, Dead Man Device Assessment and Design, NSW

Tools/Skills Used

- Biomechanical Analysis
- Microsoft Excel

Description

At the time of the project, train driver alertness was established using two systems - a dead man detection device and a vigilance testing process. During the course of a general rail risk study, the potential for the inadvertent overriding of the dead man foot pedal was identified. The dead man pedal relied on applying a defined pressure to the foot pedal and it was found that the 'dead' weight a person's leg could activate the dead man device.

Subsequently a detailed biomechanical analysis was conducted in order to establish the proportion of the male population that would override the dead man's pedal while incapacitated. The analysis was conducted in relation to the Waterfall accident.

As the result of this study, a concept design for a dead man's pedal was developed and a prototype produced. The system relied on using the human ability to balance rather than the more onerous continuous application of force.

Responsibilities and Accomplishments

- Application of biomechanical principals to quantitative risk assessment;
- Innovative application of human factors to workplace design;
- Translating design principles to a working model.

Project 8 – Exxon Mobil, Equipment Strategy Development

Tools/Skills Used

- Data management – In-house tool
- Workshop planning
- Workshop facilitation

Description

Maintenance strategies for a range of off-shore and on-shore equipment are established through the development of Equipment Strategies for each item of equipment. A two-tiered risk approach was adopted. The first tier was implemented prior to the project and established priorities for the development of Equipment Strategies.

The second tier related to the identified equipment degradation mechanisms for each item of equipment and the control of risk associated with these. Equipment Strategy workshops were facilitated, in which the failure mechanisms relating to equipment maintenance were identified. The associated risk was assessed using a qualitative risk matrix. Existing risk control measures were identified and, where appropriate, these were modified or new controls developed. The mitigated risk was assessed.

The process was recorded in a database developed by Exxon Mobil. A design was also developed for an electronic system for the documentation of the process of approvals and management of change.

Responsibilities and Accomplishments

- Working with operational, maintenance and management personnel to arrive at a consensus;
- Project documentation;
- Specification of administrative tool for the management and recording of the process.