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*Specialists in Strategic, Enterprise and Project Risk Management*

## ACTIVITIES IN POWER GENERATION, TRANSMISSION AND DISTRIBUTION

Broadleaf has undertaken a range of assignments in the power generation, transmission and distribution sector. Our activities have covered most aspects of risk management, including high-level enterprise risk management (ERM), qualitative and quantitative risk assessments, technical hazard and safety integrity studies and risk management training.

Some of our clients and activities are shown below.

**POWER ALLIANCE**



Power Alliance Western Australia, North Country Reinforcement Project (construction, upgrade and replacement of 300 kV transmission lines), Australia: Quantitative risk analysis of the direct cost estimate for the project, as part of the alliance establishment and price negotiation process; quantitative schedule analysis.

**Eskom**

Electricity generation, transmission and distribution, South Africa: Design, development and implementation ERM processes; extensive risk management training; facilitation of specific risk assessments.

**TRANSPower**

Electricity transmission, New Zealand: Analysis of high-impact low-probability events on a critical section of transmission line, as part of a regulatory approval process

(<http://www.electricitycommission.govt.nz/pdfs/opdev/transmis/gup/naan/May2008/report-TP4.pdf>).

**TRANSPower**

**Downer EDi Engineering**

Electricity transmission, New Zealand: Quantitative cost and schedule risk analysis for the North Island Grid Upgrade Project.

**SP AusNet**  
A member of Singapore Power Group

Electricity transmission, Australia: Design, development and implementation of ERM processes; risk management training.

**AcWA Power INTERNATIONAL**

Leading developer of water and power projects, Saudi Arabia: Facilitation of a workshop to assess the risks associated with a large power project with many international partners.

**INTERGEN**

Power generation, Australia: Development of ERM processes and procedures; ERM training; risk assessment for a joint venture proposal.



Power generation, Australia: Quantitative cost estimate risk analysis and contingency estimation for the Neerabup Gas-Fired Power Project.



Coal-fired power generation, Australia: Assistance with the due diligence of Playford Power Station; qualitative risk assessment; HAZOP and CHAZOP facilitation for power station refurbishment; quantitative assessment of likely outcomes of disputed claims.



Coal-fired power generation, Australia: ERM process design and implementation; risk workshops in each major regional operating division and at corporate level; consolidation of risk management practices in detailed operational areas; operational audit of risk management implementation, including a review of the use of risk management database software.



Hydroelectric electricity generation, Australia: ERM process design and development; facilitation of corporate risk workshops.



Electricity distribution, Australia: Development of practical procedures for assessing risk in new business activities following deregulation; system acquisition risk assessment; risk assessment of the redevelopment of an existing 33/11 kV substation; commercial bidding risks associated with a 220/110 kV sub-station design and construction project, including quantitative risk analysis.



Electricity generation and distribution, Australia: Review of the Black Hat project review process; establishment of Safety Integrity Levels for a burner management system at Torrens Island Power Station.



Sugar mill cogeneration, Australia: Pioneer Cogeneration Project risk assessment and quantitative cost risk modelling.



Electricity distribution, Australia: Risk management training, based on an electricity sub-station and distribution lines.

(Confidential participants)

Potential consortium investor in a power coal mine, Australia: Analysis of business development options.



Industrial power equipment provider, Australia: Risk management training, based on a cogeneration boiler system design and installation project.



Power sector engineering services, Australia: Risk assessment and risk management training associated with fly ash disposal from a coal-fired power station and disposal of the waste in an open-cut mine void for site remediation.

**ALASKA POWER  
AUTHORITY**

Power authority, USA: Construction cost and schedule risk analyses for the Susitna Hydroelectric Project.

**ALBERTA UTILITIES  
CONSORTIUM**

Consortium of utilities companies, Canada: Review of construction cost risk analysis and contingency for a hydroelectric development project.<sup>1</sup>



Alumina refinery, Australia: Project risk analyses of several cogeneration plant installations.



Aluminium smelter, Australia: Analysis of risks to 500 kV transformers and switch gear at a smelter grid connection.



Steel production, Australia: Quantitative risk analysis of the capital cost estimate for a cogeneration plant.



Koniambo Nickel Project, New Caledonia, including a coal fired power station with 2 x 160 MW fluid bed boilers and steam turbines plus 2 x 80 MW diesel-fired combustion turbines: Technical reviews, focused on technical risk, HAZOP studies, technical compliance with contract specifications, interface with the processing plant, system stability (especially under rapid load changes with load shedding) and emergency power generation including black start capability.

Many of the project risk assessments we have conducted, both qualitative and quantitative, have involved generators, substations and power distribution systems. For more information about our widespread involvement with projects and infrastructure, see

[www.Broadleaf.com.au/prm/index.html](http://www.Broadleaf.com.au/prm/index.html) and [www.Broadleaf.com.au/clients/index.html](http://www.Broadleaf.com.au/clients/index.html).

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<sup>1</sup> This project and its outcomes are described in Cooper, DF, DH Macdonald and CB Chapman (1985) Risk analysis of a construction cost estimate. International Journal of Project Management 3(3): 141-149.