

Managing Uncertainty and Risk whilst Designing and Commissioning the Lungga Power Station

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Lungga Power Station



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Lungga Power Station Project Overview

The scope for Northpower included design, procure, build and commission the electrical balance of Honiara's largest power generation station – a 10MW Diesel plant.

Components include:

- 11kV Switchboard
- 415V Main LV Switchboard
- UPS, battery banks and DC systems
- 11/33kV 10/12.5MVA transformer
- Local service transformer and plant ancillaries
- 4x2.5MWe generator sets, with allowance for another two generator sets in the future.

Risk and Uncertainty Through a Project

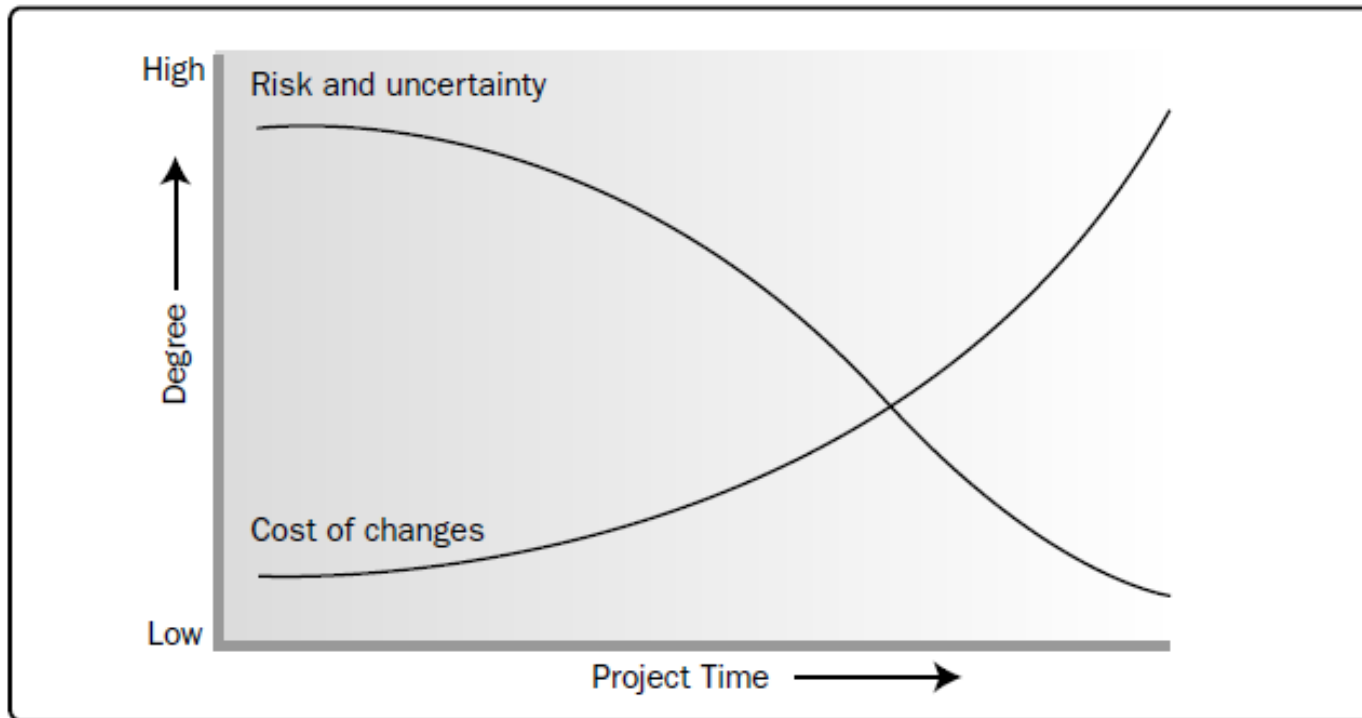


Figure 2-9. Impact of Variable Based on Project Time

Extracted from PMBOK 5th Edition

Key Uncertainties and Risks

- Contract structure – Based on a FIDIC Contract
- Stakeholder management
- Safety by design
- Meeting the employer's requirements
- Integrating into the existing network
- Commissioning activities
- Unexploded ordinance and working in the local environment

Contract Structure

- FIDIC contract
- Timeframe
- Liquidated Damages
- Back-to-back type contract



Stakeholder Management

Stakeholders included:

- MAN Diesel and Turbo Pty Ltd - Head Contractor
- Northpower
- Northpower's subcontractors
- Fletcher Kwaimani JV - Civil contractor
- Solomon Power - Owner
- Jacobs Consulting - Owner's engineer
- Other contractors on site

Safety by Design

- Design life of equipment
- Interlocks versus procedures
- Engineering factors and redundancies
- Standards and guides



Meeting the Employer's Requirements

- 'Belts and braces' requirements
- Intentions and interpretations
- Relevance of FIDIC to the ER's



Integrating into the Existing Network

- Optimal requirements of operation
- Operational training
- Power quality of existing network and effected equipment



Commissioning Activities

- Pre-commissioning activities
- Documentation and approvals
- Procedures for commissioning



Unexploded Ordinance and the Local Environment



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Unexploded Ordnance and the Local Environment



Questions?



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