

Network Quality and Reliability of Supply

Annual Report

2005/6

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Network Quality and Reliability of Supply Report for Ord River Hydro System Year Ending 30 June 2006

Introduction

In accordance with the Electricity Industry (Network Quality and Reliability of Supply) Code 2005 (the Code) the Ord River Dam Hydro Partnership (consisting of Energis Australia Pty Ltd, Pacific Hydro Group Two Pty Ltd and North Western Energy Pty Limited, and hereinafter referred to as "Ord Hydro") publishes the following information as required by Schedule 1 of the Code.

System features

This report relates to a discrete area of the East Kimberley covering the town of Kununurra and the Argyle Diamond Mine. The system is isolated and non redundant so switching of large load blocks can have a significant effect on the system. The system security relies on pre-emptive action that is designed into the dispatch and control system.

The East Kimberley power system is located in a region with an extremely high lightning ground flash density (source: Commonwealth Bureau of Meteorology) and consequently is subject to a high rate of lightning strikes mainly during the wet season months of November through February. The transmission line design incorporates a number of features intended to minimise the impact of this natural phenomena including overhead conductor shielding, continuous counterpoise earthing, extended insulator strings and single pole auto reclosure on line circuit breakers.

The transmission lines covered under this reliability report are the 132 kV lines in the East Kimberley region owned and operated by Ord Hydro. The lines were designed and built solely to meet the contractual delivery of power from the Ord Power Station to Horizon Power and Argyle Diamond Mines Pty Ltd (ADM). Essentially these two transmission lines make up connection assets for supply to the distribution systems operated by Horizon Power and ADM.

The single circuit lines are from:

Ord Power station to Ord Switchyard

Ord switchyard to Argyle Diamond Mine (ADM) and

Ord switchyard to Kununurra.

In March 2005 part of the transmission line between the Ord switchyard and ADM was destroyed by cyclone Ingrid. This caused an outage of 180 hours duration, as the ground was too wet for several days to get heavy equipment into the area requiring repair. Such occurrences are considered as force majeure under both supply contracts and are treated as exclusions in the statistics of this report. Should the line to Kununurra be lost under similar circumstances the back-up diesel at Kununurra operated by Horizon Power ensures that supply continues to their small use customers.

Period of Report

This report covers interruptions that occurred in the current period from 01 July 2005 to 30 June 2006 and the three years preceding this reporting period.

Customer Obligations

Under its Integrated Regional Licence Ord Hydro has no obligations or reporting requirements for small use customers or their associated complaints. Ord Hydro is responsible to Horizon Power and Argyle Diamonds under the existing Power Purchase Agreements and the reliability arrangements therein.

In preparing this report the data associated with interruptions caused by loss of the transmission lines or loss of the generation has been taken into account. Loss of the system due to faults occurring in a customer's area of control are reported on but excluded in the statistics. Where one customer has caused an interruption that has affected the system, and therefore the other customer, the outage of the affected customer has been accounted for in the statistics. Due to the difference in size of the loads, excessive loss of load by one customer can affect the stability of the system requiring emergency generation control and resistive braking to stabilize the remaining generation and load.

The sections of Schedule 1 of the Code relevant to Ord Hydro under its Integrated Regional Licence are Clauses 11, 12 and 13. As there are only two customers in the discrete area the statistics have been presented for the total of the system.

Of the all the incidents recorded (45 in total), 8 have been identified as being caused by faults within a customer area. These incidents have been excluded from the transmission statistics. Ten of the incidents were initiated by lightning strikes to the transmission system and have been included in the transmission statistics.

11 & 12 Data on supply reliability

a)

Average length of interruption of supply to customer premises	Minutes
Year 1 (05-06)	28.8
Year 2 (04-05)	141.8
Year 3 (03-04)	37
Year 4 (02-03)	20.67

b)

Average annual number of interruptions (transmission only) to customer premises	
Year 1 (05-06)	6
Year 2 (04-05)	7
Year 3 (03-04)	4.5
Year 4 (02-03)	1.5

c)

Average percentage of time that electricity has been supplied to customers.	
Year 1 (05-06)	99.94 %
Year 2 (04-05)	99.62 %
Year 3 (03-04)	99.937 %
Year 4 (02-03)	99.988 %

d)

Average total length of all interruptions of supply to customer premises.	Minutes
Year 1 (05-06)	98
Year 2 (04-05) (force majeure exc)	143
Year 3 (03-04)	35
Year 4 (02-03)	21

13 – Average of the four years

01/07/02 - 30/06/2006	
a) Average length of interruption in minutes	73 mins
b) Average number of interruptions	4.625
c) Average percentage of time that electricity has been supplied to customer premises.	99.872 %
d) Average total length of all interruptions of supply to customer premises in minutes.	96 minutes

As mentioned above, the figures for 2004 - 2005 do not include the loss of the Ord switchyard to ADM transmission line during cyclone Ingrid.

14 – Estimates of percentile values

Given that only two customers are connected to the Ord River Hydro power system, it is not practicable or meaningful to calculate percentile values.