Default Price Quality Path
Annual Compliance Statement

For the assessment period ending 31 March 2012

Pursuant to
Electricity Distribution Services Default Price-Quality Path Determination 2010
(consolidating all amendments as of 22 March 2012)

DS5001

13 June 2012

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1 COMPLIANCE WITH THE PRICE PATH

1.1 Compliance with the Price Path (Clause 11.1(a))

Unison complies with the price path at the assessment date, 31 March 2012, as specified in the Electricity Distribution Services Default Price-Quality Path Determination 2010 (consolidating all amendments as of 22 March 2012).

1.2 Allowable Notional Revenue (Clause 8.4)

The notional revenue (NRt) of a Non-exempt EDB at any time during the Assessment Period must not exceed the allowable notional revenue (Rt) for the Assessment Period.

Compliance is demonstrated in the following tables. The first table demonstrates that notional revenue derived using posted price at the end of the Assessment Period is less than the allowable notional revenue. The second table demonstrates that the maximum notional revenue during the Assessment Period does not exceed the allowable notional revenue illustrating that at no time during the Assessment Period is the price path breached.

Test: $\frac{NR_{2012}}{R_{2012}} \leq 1$

NR_{2012}: $ 81,526,818

R_{2012}: $ 81,530,598

Result: 0.99995 < 1

Result: Price path is not breached

Test: $\frac{NR_{Max}}{R_{2012}} \leq 1$

NR_{Max}: $ 81,526,818

R_{2012}: $ 81,530,598

Result: 0.99995 < 1

Result: Price path is not breached

Supporting evidence is provided in Appendices A, B and C.

2 ASSESSMENT WITH THE QUALITY STANDARDS

2.1 Compliance with Quality Standards (Clause 11.1(a))

Unison complies with all requirements of the quality standards at the assessment date 31 March 2012, as specified in the Electricity Distribution Services Default Price-Quality Path Determination 2010 (consolidating all amendments as of 22 March 2012).

2.2 2012 Reliability Assessment (9.1(a))

Clause 9.1(a) requires compliance with Clause 9.2: A Non-exempt EDB's Assessed Values for an Assessment Period must not exceed its Reliability Limits for that Assessment Period.

Compliance is demonstrated in the following tables. The first table demonstrates non-compliance with the SAIDI limit and the second table compliance with the SAIFI limit.

Test: $\frac{SAIDI_{Assess\ 2012}}{SAIDI_{Limit}} \leq 1$

SAIDI $_{Assess\ 2012}$	160.6705	
SAIDI $_{Limit}$	147.8587	
	1.0866	> 1
Clause 9.1(a) Result:	*Exceeds Limit*	

Test: $\frac{SAIFI_{Assess\ 2012}}{SAIFI_{Limit}} \leq 1$

SAIFI $_{Assess\ 2012}$	2.6162	
SAIFI $_{Limit}$	2.7013	
	0.9685	< 1
Clause 9.1(a) Result:	*Does not Exceed Limit*	

2.3 Prior Period Reliability Assessment (9.1(b))

Clause 9.1.(b) requires: compliance with annual reliability assessments for the two immediately preceding extant Assessment Periods.

$SAIDI_{Assess\ 2011}$	127.4921	$SAIFI_{Assess\ 2011}$	1.83
$SAIDI_{Limit}$	147.8587	$SAIFI_{Limit}$	2.70
0.8623	< 1	0.6769	< 1
	Does not Exceed Limit		*Does not Exceed Limit*

2.4 Compliance Summary

Clause 9.1 A Non-exempt EDB must, in respect of each Assessment Period, either:

(a) comply with the annual reliability assessment specified in clause 9.2; or

(b) have complied with those annual reliability assessments for the two immediately preceding extant Assessments Periods.

	SAIDI	SAIFI	Compliance
Compliance with 9.1(a)	Exceeds Limit	Does not Exceed Limit	*Does not Comply*
or			
Compliance with 9.1(b)	Does not Exceed Limit	Does not Exceed Limit	*Complies*
Clause 9.1 Result:	***Complies with Quality Standard***		

3 DISCLAIMER

The information presented in this Annual Compliance Statement has been prepared solely for the purpose of complying with the requirements of the Electricity Distribution Services Default Price-Quality Path Determination 2010 (consolidating all amendments as of 22 March 2012). This statement has not been prepared for any other purpose and Unison Networks Limited expressly disclaims any liability to any other party who may rely on this statement for any other purpose.

4 CERTIFICATION OF ANNUAL COMPLIANCE STATEMENT

We, John Palairet and Phil Hocquard, being Directors of Unison Networks Limited certify that, having made all reasonable enquiry, to the best of our knowledge and belief, the attached Annual Compliance Statement of Unison Networks Limited, and related information, prepared for the purposes of the *Electricity Distribution Services Default Price-Quality Path Determination 2010* are true and accurate.

John Palairet
Director
Unison Networks Limited

13 June 2012

Phil Hocquard
Director
Unison Networks Limited

13 June 2012

5 AUDITOR'S REPORT

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Independent Auditors' Report

to the readers of the Annual Compliance Statement of Unison Networks Limited for the assessment period ended on 31 March 2012

The Auditor-General is the auditor of Unison Networks Limited (the Company). The Auditor-General has appointed me, Pip Cameron, using the staff and resources of PricewaterhouseCoopers, to provide an opinion, on her behalf, on Unison Networks Limited's Annual Compliance Statement for the assessment period ended on 31 March 2012 on pages 3 to 5 and 10 to 24 regarding compliance with the Commerce Act (Electricity Distribution Default Price-Quality Path) Determination 2010.

We have audited the Annual Compliance Statement in respect of the default price-quality path prepared by Unison Networks Limited for the assessment period ended on 31 March 2012 and dated 13 June 2012 for the purposes of clause 11 of the Commerce Act (Electricity Distribution Default Price-Quality Path) Determination 2010 ("the Determination").

Directors' Responsibilities

The Directors of Unison Networks Limited are responsible for the preparation of the Annual Compliance Statement in accordance with the Determination and for such internal control as the Directors determine is necessary to enable the preparation of an Annual Compliance Statement that is free from material misstatement, whether due to fraud or error.

Auditor's Responsibilities

Our responsibility is to express an opinion on the Annual Compliance Statement based on our audit. We conducted our audit in accordance with the New Zealand Institute of Chartered Accountants Standard on Assurance Engagements 3100: *Compliance Engagements*. This standard requires that we comply with ethical and quality control requirements and plan and perform the audit to obtain reasonable assurance about whether the Annual Compliance Statement has been prepared in accordance with the Determination and is free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the Annual Compliance Statement. The procedures selected depend on the auditor's judgement, including the assessment of the risks of material misstatement of the Annual Compliance Statement, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation of the Annual Compliance Statement in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control.

In relation to the price path set out in clause 8 of the Determination, our audit included examination, on a test basis, of evidence relevant to the amounts and disclosures contained on pages 3 and 10 to 18 of the Annual Compliance Statement.

In relation to the SAIDI and SAIFI statistics for the Reference Period and the Assessment Period ended on 31 March 2012, including the calculation of the Reliability Limits and the Assessed Values, which are relevant to the quality standards set out in clause 9 of the Determination, our audit included examination, on a test basis, of evidence relevant to the amounts and disclosures contained on pages 4 to 5 and 19 to 24 of the Annual Compliance Statement.

PricewaterhouseCoopers, 188 Quay Street, Private Bag 92162, Auckland 1142, New Zealand
T: +64 (9) 355 8000, F: +64 (9) 355 8026, www.pwc.com/nz

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Independent Auditors' Report
Unison Networks Limited

Our audit also included assessment of the significant estimates and judgments, if any, made by the Company in the preparation of the Annual Compliance Statement and whether adequate information has been disclosed in accordance with clause 11.1(b) of the Determination.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Limitations and Use of this Independent Auditor's Report

This independent auditor's report has been prepared solely for the Directors of Unison Networks Limited and the Commissioners of the New Zealand Commerce Commission in accordance with the Determination. We disclaim any assumption of responsibility for any reliance on this report to any persons or users other than the Directors of Unison Networks Limited and the Commissioners, or for any purpose other than that for which it was prepared.

Because of the inherent limitations in evidence gathering procedures, it is possible that fraud, error or non-compliance may occur and not be detected. As the procedures performed for this engagement are not performed continuously throughout the assessment period and the procedures performed in respect of the Company's compliance with the Determination are undertaken on a test basis, our engagement cannot be relied on to detect all instances where the Company may not have complied with the Determination. Our opinion has been formed on the above basis.

Independence

We have no relationship with, or interests in the Company, other than the provision of other professional advisory services. We are not aware of any relationships between our firm and Unison Networks Limited that, in our professional judgment, may reasonably be thought to impair our independence.

Opinion

In our opinion, the Annual Compliance Statement of Unison Networks Limited for the Assessment Period ended on 31 March 2012, has been prepared, in all material respects, in accordance with the Determination.

Our audit was completed on 13 June 2012 and our opinion is expressed as at that date.

Pip Cameron
On behalf of the Auditor-General
Auckland, New Zealand

PricewaterhouseCoopers

PricewaterhouseCoopers

APPENDIX A - PRICE PATH COMPLIANCE CALCULATIONS (Clause 11.1 (b) (i))

Clause 8.4

Notional Revenue for the year ending March 2012			
Term	Description	Value $	
$P_{2012} * Q_{2010}$	Prices at 31 March 2012 multiplied by 31 March 2010 Base Quantities	110,392,536	Supported by P*Q schedules presented in Appendix B
K_{2012}	Transmission Charges for year ending 31 March 2012	23,508,939	
	Avoided Transmission Charges for year ending 31 March 2012	4,575,159	
	Rates for year ending 31 March 2012	287,100	
	Electricity Authority Levies for year ending 31 March 2012	291,555	
	Commerce Act Levies for year ending 31 March 2012 + 1/5 of Commerce Act Levies for year ending 31 March 2010	202,965	
NR_{2012}	Notional Revenue for the year ending 31 March 2012	81,526,818	

Maximum Notional Revenue for the year ending March 2012			
Term	Description	Value $	
$P_{Max} * Q_{2010}$	Maximum Prices between 1 April 2011 and 31 March 2012 multiplied by 31 March 2010 Base Quantities	110,392,536	Supported by P*Q schedules presented in Appendix B
K_{2012}	Transmission Charges for year ending 31 March 2012	23,508,939	
	Avoided Transmission Charges for year ending 31 March 2012	4,575,159	
	Rates for year ending 31 March 2012	287,100	
	Electricity Authority Levies for year ending 31 March 2012	291,555	
	Commerce Act Levies for year ending 31 March 2012 + 1/5 of Commerce Act Levies for year ending 31 March 2010	202,965	
NR_{Max}	Notional Revenue for the year ending 31 March 2012	81,526,818	

Clause 8.5

Allowable Notional Revenue 2012			
Term	Description	Value $	
$P_{2011}*Q_{2010}$	Prices at 31 March 2011 multiplied by 31 March 2010 Base Quantities	107,430,916	Supported by P*Q schedules presented in Appendix B
K_{2011}	Transmission Charges for year ending 31 March 2011	23,366,164	
	Avoided Transmission Charges for 2011	3,261,034	
	Rates for year ending 31 March 2011	254,669	
	Electricity Authority Levies for year ending 31 March 2011	241,950	
	Commerce Act Levies for year ending 31 March 2011 + 1/5 of Commerce Act Levies for year ending 31 March 2010	278,223	
Under Recovery	Under recovery relative to allowable revenue in year to 31 March 2011	74,936	
X	X Factor	-	
$(1 + \Delta CPI_{2011})$	Average change in Consumer Price Index	1.0178	
R_{2012}	Allowable Notional Revenue under the CPI-X Price Path for the year ending 31 March 2012	81,530,598	

ΔCPI_{2012}			
Numerator		Denominator	
$CPI_{Dec2009}$	1093	$CPI_{Dec2008}$	1072
$CPI_{Mar2010}$	1097	$CPI_{Mar2009}$	1075
$CPI_{Jun2010}$	1099	$CPI_{Jun2009}$	1081
$CPI_{Sep2010}$	1111	$CPI_{Sep2009}$	1095
Total	4400	Total	4323
ΔCPI_{2012}	1.78%		

APPENDIX B - PRICE AND QUANTITY SCHEDULES (Clause 11.1(b)(i))

Tariff Code	Net Quantity	Units	2010-11 Price	2011-12 Price	Quantity * 2010-11 Price	Quantity * 2011-12 Price
Unknown	-				$ -	$ -
F-H-L40-T010	-	$/day			$ -	$ -
E-R-I60-DMND	-	$/kW/month			$ -	$ -
E-H-I60-DMND	-	$/kW/month			$ -	$ -
E-H-S20-TAIC	-	$/kWh			$ -	$ -
E-R-S20-TAIC	-	$/kWh			$ -	$ -
E-R-S24-TAIC	-	$/kWh			$ -	$ -
E-R-S22-TAIC	-	$/kWh			$ -	$ -
E-H-S22-TAIC	-	$/kWh			$ -	$ -
E-R-S26-TAIC	-	$/kWh			$ -	$ -
E-H-S26-TAIC	-	$/kWh			$ -	$ -
E-H-S24-TAIC	-	$/kWh			$ -	$ -
E-R-I60	-	$/kWh			$ -	$ -
E-R-L40-TAIC	-	$/kWh			$ -	$ -
E-H-I60	-	$/kWh			$ -	$ -
E-H-L40-TAIC	-	$/kWh			$ -	$ -
E-R-S24-CTUN	1,433.00	$/kWh	$ 0.0131	$ 0.0131	$ 18.77	$ 18.63
E-H-M11-CTUN	1,643.00	$/kWh	$ 0.0381	$ 0.0230	$ 62.60	$ 37.79
E-R-S11-CTUN	1,531.00	$/kWh	$ 0.0239	$ 0.0239	$ 36.59	$ 35.21
F-R-S11	15.32	$/day	$ 0.1500	$ 15.0000	$ 838.55	$ 83,855.00
E-H-S22-CTRL	-	$/kWh	$ 0.0265	$ 0.0265	$ -	$ -
E-R-S22-NITE	-	$/kWh	$ 0.0131	$ 0.0131	$ -	$ -
E-R-S24-CTRL	3,018.00	$/kWh	$ 0.0236	$ 0.0236	$ 71.22	$ 69.41
F-H-S11	5.08	$/day	$ 0.1500	$ 0.1500	$ 277.95	$ 277.95
E-R-S24-CTUD	5,252.00	$/kWh	$ 0.0636	$ 0.0636	$ 334.03	$ 330.88
E-R-S11-CTUD	4,237.00	$/kWh	$ 0.1650	$ 0.1650	$ 699.11	$ 699.11
E-H-S22-NITE	-	$/kWh	$ 0.0147	$ 0.0147	$ -	$ -
E-H-S20-NITE	-	$/kWh	$ 0.0147	$ 0.0147	$ -	$ -
E-H-T3P-24UC	21,887.00	$/kWh	$ 0.0731	$ 0.0750	$ 1,599.94	$ 1,641.53
E-R-S11-24UC	17,424.00	$/kWh	$ 0.1331	$ 0.1331	$ 2,319.13	$ 2,317.39
F-H-T3P	2.83	$/day	$ 2.0000	$ 2.0000	$ 2,064.00	$ 2,064.00
E-H-S22-CTUN	41,808.00	$/kWh	$ 0.0147	$ 0.0147	$ 614.58	$ 585.31
F-R-T3P	4.71	$/day	$ 2.0000	$ 2.0000	$ 3,437.68	$ 3,437.68
E-H-S11-24UC	29,019.00	$/kWh	$ 0.1415	$ 0.1415	$ 4,106.19	$ 4,091.68
E-H-M12-CTUN	89,765.00	$/kWh	$ 0.0125	$ 0.0150	$ 1,122.06	$ 1,346.48
E-R-M11-CTUN	344,805.00	$/kWh	$ 0.0378	$ 0.0220	$ 13,033.63	$ 7,585.71
E-H-S20-CTRL	1,437.00	$/kWh	$ 0.0265	$ 0.0265	$ 38.08	$ 37.36
E-H-T1P-24UC	63,419.00	$/kWh	$ 0.0878	$ 0.1000	$ 5,568.19	$ 6,341.90
E-H-M11-CTUD	55,172.00	$/kWh	$ 0.1124	$ 0.1130	$ 6,201.33	$ 6,234.44
E-R-S22-CTUN	31,024.00	$/kWh	$ 0.0131	$ 0.0131	$ 406.41	$ 403.31
E-R-T1P-24UC	108,507.00	$/kWh	$ 0.0878	$ 0.1000	$ 9,526.91	$ 10,850.70

E-H-M11-NITE	262,476.00	$/kWh	$	0.0381	$	0.0230	$	10,000.34	$ 6,036.95
E-R-S20-NITE	17,968.00	$/kWh	$	0.0131	$	0.0131	$	235.38	$ 233.58
E-R-S22-CTRL	36,599.00	$/kWh	$	0.0236	$	0.0236	$	863.74	$ 841.78
E-H-M12-NITE	1,270,855.00	$/kWh	$	0.0125	$	0.0150	$	15,885.69	$ 19,062.83
E-H-S20-CTUN	5,054.00	$/kWh	$	0.0147	$	0.0147	$	74.29	$ 70.76
F-R-T1P	71.68	$/day	$	0.7000	$	0.7500	$	18,314.09	$ 19,622.24
E-R-S20-KVAR	-	$/Kvar/month	$	7.1726	$	7.1726	$	-	$ -
E-R-T3P-24UC	317,584.00	$/kWh	$	0.0731	$	0.0750	$	23,215.39	$ 23,818.80
E-H-S20-KVAR	-	$/Kvar/month	$	7.1726	$	7.1726	$	-	$ -
E-R-U01	266,152.44	$/kWh	$	0.1017	$	0.1050	$	27,067.70	$ 27,946.01
E-R-M12-CTUN	2,199,800.00	$/kWh	$	0.0120	$	0.0140	$	26,397.60	$ 30,797.20
F-H-T1P	113.82	$/day	$	0.7000	$	0.7500	$	29,080.68	$ 31,157.87
F-R-L40-T100	7.00	$/day	$	11.1100	$	11.5000	$	28,386.05	$ 29,382.50
E-H-S20-SOPD	-	$/kW/month	$	2.7310	$	2.7310	$	-	$ -
E-R-S24-KVAR	97.45	$/Kvar/month	$	7.1726	$	7.1726	$	698.95	$ 698.89
E-R-M11-NITE	810,322.00	$/kWh	$	0.0378	$	0.0220	$	30,630.17	$ 17,827.08
E-H-S22-CTUD	41,476.00	$/kWh	$	0.0713	$	0.0713	$	2,957.24	$ 2,944.80
E-R-S20-SOPD	26.94	$/kW/month	$	2.8657	$	2.8657	$	77.20	$ 77.18
F-H-L40-T150	6.00	$/day	$	14.8100	$	15.0000	$	32,433.90	$ 32,850.00
E-R-S26-KVAR	552.55	$/Kvar/month	$	7.1726	$	7.1726	$	3,963.20	$ 3,962.86
E-H-S26-KVAR	-	$/Kvar/month	$	7.1726	$	7.1726	$	-	$ -
E-R-S20-DMND	58.98	$/kW/month	$	1.7150	$	1.7150	$	101.15	$ 101.15
E-H-S20-DMND	-	$/kW/month	$	1.9600	$	1.9600	$	-	$ -
E-R-S22-KVAR	39.00	$/Kvar/month	$	7.1726	$	7.1726	$	279.73	$ 279.71
F-R-L40-T075	14.00	$/day	$	10.0000	$	10.5000	$	51,100.00	$ 53,655.00
E-H-U01	574,711.06	$/kWh	$	0.0931	$	0.0960	$	53,505.60	$ 55,172.26
E-H-S22-KVAR	18.00	$/Kvar/month	$	7.1726	$	7.1726	$	129.11	$ 129.10
F-H-L40-T100	13.27	$/day	$	11.1100	$	11.5000	$	53,816.84	$ 55,706.00
E-R-S20-CTUN	24,807.00	$/kWh	$	0.0131	$	0.0131	$	324.97	$ 322.49
E-R-I60-KVAR	8,875.44	$/Kvar/month	$	7.1726	$	7.2000	$	63,659.98	$ 63,903.17
E-R-S20-WOPD	31.00	$/kW/month	$	10.8079	$	10.8079	$	335.04	$ 335.02
F-R-L40-T020	5.17	$/day	$	5.7000	$	5.7500	$	10,750.20	$ 10,844.50
E-R-S20-CTRL	37,969.00	$/kWh	$	0.0236	$	0.0236	$	896.07	$ 873.29
E-H-M12-CTUD	186,068.00	$/kWh	$	0.0868	$	0.0790	$	16,150.70	$ 14,699.37
E-H-S20-WOPD	-	$/kW/month	$	10.1219	$	10.1219	$	-	$ -
E-R-S24-SOPD	1,120.02	$/kW/month	$	2.8657	$	2.8657	$	3,209.64	$ 3,208.86
E-R-M12-NITE	4,535,048.00	$/kWh	$	0.0120	$	0.0140	$	54,420.58	$ 63,490.67
E-R-M11-CTUD	622,375.00	$/kWh	$	0.1098	$	0.1070	$	68,336.78	$ 66,594.13
E-R-S22-SOPD	152.00	$/kW/month	$	2.8657	$	2.8657	$	435.59	$ 435.48
E-R-S22-CTUD	105,641.00	$/kWh	$	0.0636	$	0.0636	$	6,718.77	$ 6,655.38
E-R-S26-SOPD	1,567.74	$/kW/month	$	2.8657	$	2.8657	$	4,492.67	$ 4,491.58
E-H-L40-24UC	404,242.00	$/kWh	$	0.0478	$	0.0470	$	19,322.77	$ 18,999.37
E-H-S24-24UC	392,459.00	$/kWh	$	0.0560	$	0.0560	$	21,977.70	$ 21,977.70
F-R-L40-T030	14.89	$/day	$	6.5500	$	6.7500	$	35,592.70	$ 36,679.50
E-R-S24-DMND	1,213.64	$/kW/month	$	1.7150	$	1.7150	$	2,081.39	$ 2,081.39

E-H-S24-KVAR	173.06	$/Kvar/month	$	7.1726	$	7.1726	$	1,241.29	$	1,241.19
F-H-L40-T075	28.53	$/day	$	10.0000	$	10.5000	$	104,120.00	$	109,326.00
E-H-S22-SOPD	117.00	$/kW/month	$	2.7310	$	2.7310	$	319.53	$	319.53
E-H-S26-SOPD	-	$/kW/month	$	2.7310	$	2.7310	$	-	$	-
F-H-L40-T030	6.27	$/day	$	6.5500	$	6.7500	$	14,986.40	$	15,444.00
E-R-L40-24UC	497,509.00	$/kWh	$	0.0541	$	0.0540	$	26,915.24	$	26,865.49
E-R-S26-DMND	2,596.56	$/kW/month	$	1.7150	$	1.7150	$	4,453.10	$	4,453.10
E-R-S22-DMND	361.00	$/kW/month	$	1.7150	$	1.7150	$	619.11	$	619.11
F-H-L40-T020	2.37	$/day	$	5.7000	$	5.7500	$	4,929.74	$	4,972.99
F-H-L40-T050	44.81	$/day	$	8.4000	$	8.7500	$	137,383.88	$	143,108.21
E-R-S24-WOPD	6.00	$/kW/month	$	10.8079	$	10.8079	$	64.85	$	64.84
E-H-M11-CTRL	2,951,252.00	$/kWh	$	0.0534	$	0.0550	$	157,596.86	$	162,318.86
E-R-U02	1,536,997.04	$/kWh	$	0.1017	$	0.1050	$	156,312.60	$	161,384.69
E-H-M12-CTRL	5,860,300.00	$/kWh	$	0.0278	$	0.0380	$	162,916.34	$	222,691.40
E-H-S26-DMND	-	$/kW/month	$	1.9600	$	1.9600	$	-	$	-
E-H-S22-DMND	418.00	$/kW/month	$	1.9600	$	1.9600	$	819.28	$	819.28
F-R-L40-T050	57.19	$/day	$	8.4000	$	8.7500	$	175,356.15	$	182,662.65
E-R-S24-24UC	230,427.00	$/kWh	$	0.0500	$	0.0500	$	11,521.35	$	11,521.35
E-R-M11-CTRL	3,229,151.00	$/kWh	$	0.0526	$	0.0520	$	169,853.34	$	167,915.85
E-R-S26-WOPD	894.00	$/kW/month	$	10.8079	$	10.8079	$	9,662.26	$	9,661.46
E-R-S22-WOPD	174.00	$/kW/month	$	10.8079	$	10.8079	$	1,880.57	$	1,880.42
F-R-S26	2.59	$/day	$	29.2100	$	29.2100	$	27,639.39	$	27,639.39
E-H-S20-CTUD	24,232.00	$/kWh	$	0.0713	$	0.0713	$	1,727.74	$	1,720.47
E-H-S24-SOPD	525.42	$/kW/month	$	2.7310	$	2.7310	$	1,434.92	$	1,434.92
E-H-I60-KVAR	31,472.99	$/Kvar/month	$	7.1726	$	7.2000	$	225,743.19	$	226,605.55
F-H-S26	-	$/day	$	29.9700	$	29.9700	$	-	$	-
E-R-L40-KVAR	29,783.84	$/Kvar/month	$	7.1726	$	7.2000	$	213,627.57	$	214,443.65
E-H-S26-WOPD	-	$/kW/month	$	10.1219	$	10.1219	$	-	$	-
E-H-S22-WOPD	252.00	$/kW/month	$	10.1219	$	10.1219	$	2,550.72	$	2,550.49
E-H-S24-DMND	1,467.22	$/kW/month	$	1.9600	$	1.9600	$	2,875.75	$	2,875.75
E-H-L40-KVAR	32,891.68	$/Kvar/month	$	7.1726	$	7.2000	$	235,918.86	$	236,820.09
E-R-U03	3,529,772.00	$/kWh	$	0.1017	$	0.1050	$	358,977.81	$	370,626.06
E-H-U02	4,173,524.43	$/kWh	$	0.0931	$	0.0960	$	388,555.12	$	400,658.35
E-R-M12-CTUD	4,144,396.00	$/kWh	$	0.0840	$	0.0740	$	348,129.26	$	306,685.30
E-H-U03	4,405,978.00	$/kWh	$	0.0931	$	0.0960	$	410,196.55	$	422,973.89
F-R-S24	3.20	$/day	$	19.4700	$	19.4700	$	22,760.28	$	22,760.28
E-R-L40-SOPD	157,967.28	$/kW/month	$	2.5104	$	2.5000	$	396,561.06	$	394,918.20
F-R-M11	9,817.20	$/day	$	0.1500	$	0.1500	$	537,491.55	$	537,491.55
E-H-S24-WOPD	148.00	$/kW/month	$	10.1219	$	10.1219	$	1,498.04	$	1,497.91
E-H-L40-SOPD	200,370.76	$/kW/month	$	2.2850	$	2.3000	$	457,847.19	$	460,852.75
F-R-S22	8.76	$/day	$	9.7350	$	9.7350	$	31,141.63	$	31,141.63
E-H-S22-24UC	644,508.00	$/kWh	$	0.0560	$	0.0560	$	36,092.45	$	36,092.45
E-R-S22-24UC	953,704.00	$/kWh	$	0.0500	$	0.0500	$	47,685.20	$	47,685.20
F-H-S24	4.02	$/day	$	19.9800	$	19.9800	$	29,310.25	$	29,310.25
E-R-M12-CTRL	18,893,115.00	$/kWh	$	0.0268	$	0.0350	$	506,335.48	$	661,259.03

E-R-S20-CTUD	155,711.00	$/kWh	$	0.0636	$	0.0636	$	9,903.22	$ 9,809.79
F-H-S22	10.97	$/day	$	9.9900	$	9.9900	$	40,005.47	$ 40,005.47
F-R-L40	72.47	$/day	$	21.9500	$	22.0000	$	580,631.85	$ 581,954.48
E-H-L40-DMND	355,481.30	$/kW/month	$	2.2705	$	2.3000	$	807,120.29	$ 817,606.99
F-H-M11	15,830.15	$/day	$	0.1500	$	0.1500	$	866,700.90	$ 866,700.90
E-H-M11-24UC	10,682,406.00	$/kWh	$	0.0951	$	0.1070	$	1,015,896.81	$ 1,143,017.44
E-R-L40-DMND	285,049.08	$/kW/month	$	3.0227	$	3.0000	$	861,617.85	$ 855,147.24
F-H-L40	98.75	$/day	$	20.1700	$	20.4500	$	726,970.64	$ 737,062.45
E-R-L40-WOPD	117,732.00	$/kW/month	$	8.3965	$	8.4000	$	988,536.74	$ 988,948.80
E-R-M11-24UC	13,015,775.00	$/kWh	$	0.0930	$	0.1020	$	1,210,467.08	$ 1,327,609.05
E-H-L40-WOPD	142,973.82	$/kW/month	$	8.0891	$	8.0000	$	1,156,529.53	$ 1,143,790.56
F-H-S20	86.13	$/day	$	1.9980	$	1.9980	$	62,808.85	$ 62,808.85
F-R-S20	118.33	$/day	$	1.9470	$	1.9470	$	84,093.75	$ 84,093.75
E-R-M11-AICO	38,161,038.00	$/kWh	$	0.0809	$	0.0820	$	3,087,227.97	$ 3,129,205.12
E-H-M12-24UC	43,289,647.00	$/kWh	$	0.0695	$	0.0750	$	3,008,630.47	$ 3,246,723.53
E-H-S20-24UC	1,251,381.00	$/kWh	$	0.0560	$	0.0560	$	70,077.34	$ 70,077.34
E-R-S20-24UC	2,291,302.00	$/kWh	$	0.0500	$	0.0500	$	114,565.10	$ 114,565.10
E-H-M11-AICO	71,284,172.00	$/kWh	$	0.0825	$	0.0860	$	5,880,944.19	$ 6,130,438.79
E-R-M12-24UC	75,588,485.00	$/kWh	$	0.0672	$	0.0700	$	5,079,546.19	$ 5,291,193.95
E-R-M12-AICO	129,907,232.00	$/kWh	$	0.0551	$	0.0560	$	7,157,888.48	$ 7,274,804.99
F-R-M12	29,657.46	$/day	$	0.7160	$	0.7200	$	7,750,680.77	$ 7,793,980.67
F-H-M12	36,054.83	$/day	$	0.7120	$	0.7200	$	9,369,929.59	$ 9,475,209.70
E-H-M12-AICO	267,955,125.00	$/kWh	$	0.0569	$	0.0600	$	15,246,646.61	$ 16,077,307.50
E-H-DNR-24UC	19,220.00	$/kWh	$	0.0546	$	0.0590	$	1,049.41	$ 1,133.98
E-H-DNR-AICO	97,845.00	$/kWh	$	0.0447	$	0.0470	$	4,373.67	$ 4,598.72
E-H-DNR-CTRL	7,950.00	$/kWh	$	0.0218	$	0.0290	$	173.31	$ 230.55
E-H-MC-24UC	93,362,631.00	$/kWh	$	0.0560	$	0.0620	$	5,228,307.34	$ 5,788,483.12
E-H-MC-CTRL	212,048.00	$/kWh	$	0.0265	$	0.0305	$	5,619.27	$ 6,573.49
E-H-MC-CTUD	3,411,325.00	$/kWh	$	0.0713	$	0.0655	$	243,227.47	$ 225,147.45
E-H-MC-CTUN	1,837,378.00	$/kWh	$	0.0147	$	0.0134	$	27,009.46	$ 25,723.29
E-H-MC-DMND	372,874.94	$/kW/month	$	1.9600	$	2.0000	$	730,834.88	$ 745,749.88
E-H-MC-KVAR	47,950.61	$/Kvar/month	$	7.1726	$	7.2000	$	343,930.52	$ 345,244.37
E-H-MC-NITE	163,916.00	$/kWh	$	0.0147	$	0.0134	$	2,409.57	$ 2,294.82
E-H-MC-SOPD	198,927.04	$/kW/month	$	2.7310	$	2.7000	$	543,269.75	$ 537,103.01
E-H-MC-TAIC	110,946,440.00	$/kWh	$	-	$	-	$	-	$ -
E-H-MC-WOPD	154,105.64	$/kW/month	$	10.1219	$	9.0000	$	1,559,841.88	$ 1,386,950.76
E-H-NDH-24UC	13,522,586.00	$/kWh	$	0.0695	$	0.0750	$	939,819.73	$ 1,014,193.95
E-H-NDH-AICO	37,902,460.00	$/kWh	$	0.0569	$	0.0600	$	2,156,649.97	$ 2,274,147.60
E-H-NDH-CTRL	159,068.00	$/kWh	$	0.0278	$	0.0375	$	4,422.09	$ 6,044.58
E-H-NDH-CTUD	560,744.00	$/kWh	$	0.0868	$	0.0793	$	48,672.58	$ 44,859.52
E-H-NDH-CTUN	289,291.00	$/kWh	$	0.0125	$	0.0150	$	3,616.14	$ 4,339.37
E-H-NDH-NITE	54,803.00	$/kWh	$	0.0125	$	0.0150	$	685.04	$ 822.05

E-H-NDL-24UC	1,165,349.00	$/kWh	$	0.0546	$	0.0588	$	63,628.06	$	68,755.59
E-H-NDL-AICO	3,730,212.00	$/kWh	$	0.0447	$	0.0470	$	166,740.48	$	175,319.96
E-H-NDL-CTRL	8,320.00	$/kWh	$	0.0218	$	0.0294	$	181.38	$	249.60
E-H-NDL-CTUD	43,780.00	$/kWh	$	0.0682	$	0.0621	$	2,985.80	$	2,758.14
E-H-NDL-CTUN	14,670.00	$/kWh	$	0.0098	$	0.0118	$	143.77	$	176.04
E-H-NDL-NITE	4,610.00	$/kWh	$	0.0098	$	0.0118	$	45.18	$	55.32
E-R-DNR-24UC	116,198.00	$/kWh	$	0.0535	$	0.0540	$	6,216.59	$	6,390.89
E-R-DNR-AICO	88,515.00	$/kWh	$	0.0439	$	0.0432	$	3,885.81	$	3,894.66
E-R-DNR-CTRL	23,817.00	$/kWh	$	0.0214	$	0.0270	$	509.68	$	666.88
E-R-DNR-NITE	3,043.00	$/kWh	$	0.0096	$	0.0108	$	29.21	$	33.47
E-R-MC-24UC	105,885,258.00	$/kWh	$	0.0500	$	0.0520	$	5,294,262.90	$	5,506,033.42
E-R-MC-CTRL	3,375,184.00	$/kWh	$	0.0236	$	0.0256	$	79,654.34	$	87,754.78
E-R-MC-CTUD	12,413,637.00	$/kWh	$	0.0636	$	0.0550	$	789,507.31	$	682,750.04
E-R-MC-CTUN	6,933,861.00	$/kWh	$	0.0131	$	0.0112	$	90,833.58	$	83,206.33
E-R-MC-DMND	208,803.84	$/kW/month	$	1.7150	$	1.7000	$	358,098.59	$	354,966.53
E-R-MC-KVAR	25,272.17	$/Kvar/month	$	7.1726	$	7.2000	$	181,267.19	$	181,959.65
E-R-MC-NITE	1,054,605.00	$/kWh	$	0.0131	$	0.0112	$	13,815.33	$	12,655.26
E-R-MC-SOPD	115,637.12	$/kW/month	$	2.8657	$	3.1000	$	331,381.29	$	358,475.07
E-R-MC-TAIC	72,800,573.00	$/kWh	$	-	$	-	$	-	$	-
E-R-MC-WOPD	84,704.00	$/kW/month	$	10.8079	$	10.0000	$	915,472.36	$	847,040.00
E-R-NDH-24UC	9,192,056.00	$/kWh	$	0.0672	$	0.0700	$	617,706.16	$	643,443.92
E-R-NDH-AICO	1,313,825.00	$/kWh	$	0.0551	$	0.0560	$	72,391.76	$	73,574.20
E-R-NDH-CTRL	548,746.00	$/kWh	$	0.0268	$	0.0350	$	14,706.39	$	19,206.11
E-R-NDH-CTUD	657,498.00	$/kWh	$	0.0840	$	0.0740	$	55,229.83	$	48,654.85
E-R-NDH-CTUN	328,394.00	$/kWh	$	0.0120	$	0.0140	$	3,940.73	$	4,597.52
E-R-NDH-NITE	117,378.00	$/kWh	$	0.0120	$	0.0140	$	1,408.54	$	1,643.29
E-R-NDL-24UC	1,938,452.00	$/kWh	$	0.0535	$	0.0540	$	103,707.18	$	106,614.86
E-R-NDL-AICO	228,672.00	$/kWh	$	0.0439	$	0.0432	$	10,038.70	$	10,061.57
E-R-NDL-CTRL	63,991.00	$/kWh	$	0.0214	$	0.0270	$	1,369.41	$	1,791.75
E-R-NDL-CTUD	12,368.00	$/kWh	$	0.0669	$	0.0571	$	827.42	$	717.34
E-R-NDL-CTUN	10,292.00	$/kWh	$	0.0096	$	0.0108	$	98.80	$	113.21
E-R-NDL-NITE	- 716.00	$/kWh	$	0.0096	$	0.0108	-$	6.87	-$	7.88
F-H-DNR	14.00	$/day	$	0.9800	$	1.0000	$	5,008.21	$	5,110.42
F-H-MC1	1,848.29	$/day	$	1.9980	$	2.0000	$	1,347,904.75	$	1,349,254.00
F-H-MC2	192.90	$/day	$	9.9900	$	9.7000	$	703,384.50	$	682,965.93
F-H-MC3	288.39	$/day	$	19.9800	$	19.5000	$	2,103,160.46	$	2,052,634.08
F-H-MC4	25.00	$/day	$	29.9700	$	29.0000	$	273,476.25	$	264,625.00
F-H-NDH	3,912.45	$/day	$	0.7120	$	0.7200	$	1,016,766.61	$	1,028,190.95
F-H-NDL	1,811.14	$/day	$	0.9800	$	1.0000	$	647,843.80	$	661,065.11
F-R-DNR	35.56	$/day	$	0.9618	$	1.0000	$	12,483.32	$	12,979.13
F-R-MC1	3,593.02	$/day	$	1.9470	$	2.0000	$	2,553,397.91	$	2,622,904.89
F-R-MC2	175.17	$/day	$	9.7350	$	9.7000	$	622,412.83	$	620,175.08
F-R-MC3	159.09	$/day	$	19.4700	$	19.5000	$	1,130,580.74	$	1,132,322.78
F-R-MC4	17.00	$/day	$	29.2050	$	29.0000	$	181,217.03	$	179,945.00
F-R-NDH	570.04	$/day	$	0.7160	$	0.7200	$	148,974.46	$	149,806.72

F-R-NDL	861.29	$/day	$ 0.9618	$ 1.0000	$ 302,361.03	$ 314,369.96
F-H-I60-003	365	$/day	$ 305.6800	$ -	$ 111,573.20	$ -
F-H-I60-007	365	$/day	$ 353.7500	$ 353.7500	$ 129,118.75	$ 129,118.75
F-H-I60-008	365	$/day	$ 540.5600	$ 540.5600	$ 197,304.40	$ 197,304.40
F-H-I60-009	365	$/day	$ 557.5800	$ 557.5800	$ 203,516.70	$ 203,516.70
F-H-I60-010	365	$/day	$ 547.1200	$ 547.1200	$ 199,698.80	$ 199,698.80
F-H-I60-011	365	$/day	$ 594.7100	$ 342.0400	$ 217,069.15	$ 124,844.60
F-H-I60-012	365	$/day	$ 803.4400	$ 803.4400	$ 293,255.60	$ 293,255.60
F-H-I60-013	365	$/day	$ 801.2000	$ 938.1900	$ 292,438.00	$ 342,439.35
F-H-I60-014	365	$/day	$ 1,101.6100	$ 1,101.6100	$ 402,087.65	$ 402,087.65
F-H-I60-015	365	$/day	$ 704.0400	$ 704.0400	$ 256,974.60	$ 256,974.60
F-H-I60-016	365	$/day	$ 564.4600	$ 564.4600	$ 206,027.90	$ 206,027.90
F-H-I60-017	365	$/day	$ 1,171.2500	$ 1,171.2500	$ 427,506.25	$ 427,506.25
F-H-I60-021	365	$/day	$ 276.0800	$ 276.0800	$ 100,769.20	$ 100,769.20
F-R-I60-001	365	$/day	$ 969.4000	$ 969.4000	$ 353,831.00	$ 353,831.00
F-R-I60-002	365	$/day	$ 931.9000	$ 931.9000	$ 340,143.50	$ 340,143.50
F-R-I60-003	365	$/day	$ 695.5400	$ 695.5400	$ 253,872.10	$ 253,872.10
					$107,430,916	**$ 110,392,536**

APPENDIX C - PASS THROUGH COSTS (Clause 11.1(b)(ii))

Pass Through Costs for year ending March 2012				
K $_{2012}$	Actual ($)	Forecast ($)	Variance ($)	Variance (%)
Transmission	23,508,939	23,571,601	(62,662)	(.27)%
Avoided Transmission	4,575,159	4,426,227	148,933	3.26%
Rates	287,100	263,737	23,363	8.14%
Electricity Authority Levies	291,555	230,300	61,256	21.01%
Commerce Act Levies	202,965	226,594	(23,629)	(11.64)%
Total Pass Through Costs	28,865,718	28,718,458	147,260	.51%

Explanations for variances:

- Transmission – In October 2011 Unison purchased the Ohaaki substation and 33kV transmission line from Transpower. This purchase resulted in a reduction in Unison's connection and interconnection charges for the remainder of the year. This reduction in charges was not included in the original forecast as at the time of the forecast it was not known if and when Unison would acquire the assets. Unison also received three one-off invoices from Transpower which were not forecast.
- Avoided Transmission - The forecast was based on indicative calculations of avoided transmission payments. The final calculations came through after the tariff calculations were finalised. The purchase of the Ohaaki assets also increased Unison's avoided transmission pass through costs from October 2011.
- Rates - Rotorua District Council rates increased on 1 July 2011 above expectations.
- EA Levies – EA levies are determined subsequent to annual price-setting. The forecast was based on the 2010-11 charges, which proved to be an under-estimate.
- Commerce Act levies variance – Commerce Act levies are determined subsequent to annual price-setting. The budget was based on an expected decrease in levies from July 2011. The actual decrease in levies as at July 2011 was greater than forecast.

APPENDIX D – QUALITY STANDARD COMPLIANCE CALCULATIONS (Clause 11.1(b)(iv))

Reliability Data (Before Normalisation)

Year	SAIDI (Interruption Duration)			SAIFI (Interruption Frequency)		
	Class B	Class C	Total	Class B	Class C	Total
2005	25.27	130.03	155.31	0.16	3.05	3.21
2006	26.57	105.55	132.13	0.17	2.65	2.82
2007	33.38	105.28	138.66	0.23	1.92	2.15
2008	39.16	78.64	117.80	0.29	1.74	2.02
2009	50.88	78.37	129.24	0.25	1.82	2.07
	Reference Period Total SAIDI		**673.13**	Reference Period Total SAIFI		**12.27**
	Reference Period Average SAIDI		**134.63**	Reference Period Average SAIFI		**2.45**
2011	25.70	102.28	127.98	0.18	1.64	1.83
2012	28.45	220.79	249.24	0.21	2.41	2.62

Reliability Limit Calculations (using Reference Period Dataset)

SAIDI Boundary Calculations

α_{SAIDI}	-1.9882	The average of the natural logarithm (ln) of each daily SAIDI Value in the non-zero data set
β_{SAIDI}	1.8124	The standard deviation of the natural logarithm (ln) of each daily SAIDI Value in the non-zero data set
$B_{SAIDI} = e^{(\alpha SAIDI + 2.5 * \beta SAIDI)}$	12.7143	SAIDI Boundary Value

SAIFI Boundary Calculations

α_{SAIFI}	-6.1668	The average of the natural logarithm (ln) of each daily SAIFI Value in the non-zero data set
β_{SAIFI}	2.0087	The standard deviation of the natural logarithm (ln) of each daily SAIFI Value in the non-zero data set
$B_{SAIFI} = e^{(\alpha SAIFI + 2.5 * \beta SAIFI)}$	0.3182	SAIFI Boundary Value

Event Days exceeding SAIDI Boundary Value within the Reference Dataset

Date	Pre-Normalised SAIDI	Pre-Normalised SAIFI	Normalised SAIDI	Normalised SAIFI
18-Oct-04	21.4116	0.0705	12.7143	0.0705
22-Jun-06	13.0557	0.0334	12.7143	0.0334
			-	-
			-	-
			-	-
			-	-
			-	-
			-	-
			-	-
			-	-

SAIDI Limit

μ_{SAIDI}	132.8183	The average annual SAIDI Value in the Normalised Reference Dataset
σ_{SAIDI}	15.0404	The standard deviation of daily SAIDI Values in the Normalised Reference Dataset multiplied by $\sqrt{365}$
$SAIDI_{Limit} = \mu_{SAIDI} + \sigma_{SAIDI}$	147.8587	SAIDI Limit Value

SAIFI Limit

μ_{SAIFI}	2.4533	The average annual SAIFI Value in the Normalised Reference Dataset
σ_{SAIFI}	0.2479	The standard deviation of daily SAIFI Values in the Normalised Reference Dataset multiplied by $\sqrt{365}$
$SAIFI_{Limit} = \mu_{SAIFI} + \sigma_{SAIFI}$	2.7013	SAIFI Limit Value

Reliability Assessment Calculations (2012 Assessment Period)

Event Days exceeding SAIDI Boundary Value within the 2012 Assessment Dataset

Date	Pre-Normalised SAIDI	Pre-Normalised SAIFI	Normalised SAIDI	Normalised SAIFI
26-Apr-11	68.7580	0.2315	12.7143	0.2315
27-Apr-11	17.1063	0.0450	12.7143	0.0450
19-Mar-12	15.8396	0.0882	12.7143	0.0882
20-Mar-12	37.7242	0.2254	12.7143	0.2254
			-	-
			-	-
			-	-
			-	-
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Assessed SAIDI Value 2012

$SAIDI_{2012}$	160.6705	The sum of daily SAIDI Values in the 1 April 2011 - 31 March 2012 Normalised Assessment Dataset

Assessed SAIFI Value 2012

$SAIFI_{2012}$	2.6162	The sum of daily SAIFI Values in the 1 April 2011 - 31 March 2012 Normalised Assessment Dataset

Prior Period Assessed Values

Assessed SAIDI Value 2011

$SAIDI_{2011}$	127.4921	The sum of daily SAIDI Values in the 1 April 2010 - 31 March 2011 Normalised Assessment Dataset

Assessed SAIFI Value 2011

$SAIFI_{2011}$	1.8284	The sum of daily SAIFI Values in the 1 April 2010 - 31 March 2011 Normalised Assessment Dataset

APPENDIX E – POLICIES AND PROCEDURES FOR RECORDING SAIDI AND SAIFI (Clause 11.1(b)(v))

Outage Data Capture Process

The capture of outage data uses the following data sources and utilities.

Data	Source
1) Numbers of ICPs attached to 11kv/400v transformers	- Activa
2) Transformers connected between Isolation Points	- GIS
3) Real time data.	- RealFlex Scada

The data from SCADA is accurate within the abilities of operators and field staff to report and record each manual event. The logging of SCADA connected devices is automatic.

SCADA Timing

Automatically recorded SCADA data is time stamped at the RTU which are time corrected to the master station each half hour.

Utilities

Excel Spreadsheets

Data from 1 and 2 above are compiled into spreadsheets by Control Centre Staff. Each operator is responsible for a number of Zone Substation feeders.

These are updated automatically via Activa each time a spread sheet is opened and validated six monthly, using GIS generated maps of each feeder and WASP for lists of ICPs per 11kv/400 Substation.

Each Zone sub has an Excel work book assigned to it with a separate work sheet for each 11kv feeder and one work sheet for a summation page for the total Zone Substation.

Each feeder spreadsheet is constructed in a format that allows the summation of kVA and total number of ICPs between isolation points to be calculated in dedicated cells.

These cells are in turn summated outwards from the feeder source so that the total kVA and total ICPs beyond all switches in series is shown.

The grand total for each feeder is linked to the Zone substation totals page as a ready source of this information.

RealFlex SCADA

Unisons two SCADA systems have been designed to capture real-time data.

In both the Hawke's Bay Network ("HBN") and Rotorua/Taupo (Centralines) Systems all Zone Sub 33kv and 11kv CBs are linked by RTUs that report automatically and time stamp all changes of state of devices directly to the SCADA Daily Log File.

The exception is Atiamuri Zone Sub which has no SCADA link to Unison.

On the SCADA systems, each Zone Substation and 11kv Feeder is represented by a schematic picture, a SCADA tile, or series of SCADA tiles if the feeder is extensive in the real world.

The SCADA Event Search tool is used to search and print a report for each unplanned outage.

The resulting report is used to compile data from the Excel feeder spreadsheets, in preparation for entry into the Faults database.

HBN and Rotorua/Taupo SCADA

Selected System switching devices in the field have a pseudo point defined in the SCADA database. Each point has an identifier name that closely relates to the real world switch number. It also contains a code that links it to its parent feeder.

As field operators complete operational items, they report this to the Control Centre operator who in turn manually sets the field device's pseudo point on the appropriate SCADA tile.

This action is automatically recorded and time stamped in the SCADA Daily Log File.

By using the SCADA Events search tool with appropriate text strings an extract of all events relating to an unplanned outage can be printed for analysis and for compilation of the an Outage Report.

Faults Access Database

All Unplanned and Planned Outages are processed from their initiation to completion using Access modules contained in the Faults database.

Each unplanned or planned outage has a unique identifier, the Sheet Number / Record Number.

A summary of general details for each unplanned and planned Outage is recorded by the operator.

For planned outages, the Switching Update form is used to collate all relevant data entered on the Switching Instruction.

Times of power off, power restored and ICPs affected, are entered in the database from the data entered on the Switching Instruction.

All ICP data comes from the Excel spreadsheets referred to above.

Supply Off and Supply Restored times are annotated on the Switching Instruction in real time.

At the end of the process the calculator checks that the total number of ICPs restored is correct before final calculations are made.

The record cannot be saved until both values are equal.

Only the final, calculated data is held in the table 'Datafile'.

All the incremental step values are held in a common table, 'Outage Calculator'.
Both tables are linked using the Sheet No field of the Datafile record.

For unplanned outages, the Network Update Form is used to collate all relevant data.

The details of ICPs restored, are taken from the Excel spreadsheets.

The times of restoration or interruption, are taken from an extract of the SCADA Daily Log File.

The operator enters the total number of ICPs affected, calculated from the Excel spreadsheets, time of Supply Fail, and time of Total Restoration of Supply.

In the case of faults where sequential restorations and further interruptions to supply occur, the elapsed times, interruption times, ICPs and feeder amps restored or interrupted at each step, are entered in a custom built calculator.

At the end of the process the calculator checks that the total number of ICPs restored is correct before final calculations are made.

The record cannot be saved until both values are equal.

Only the final, calculated data is held in the table 'Datafile'. All the incremental step values are held in a common table, 'Outage Calculator'. Both tables are linked using the Sheet Number field of the Datafile record.

CLARIFICATION

Clarification of any matter referred to in this document should be directed to:

General Manager Business Assurance
Unison Networks Ltd
PO Box 555
1101 Omahu Rd
Hastings
Ph (06) 873 9300
Fax (06) 873 9311