

APPENDIX C TFO CAPITAL COST ESTIMATE

Proposal to Provide Services (PPS) - Estimate Summary

Project Name:

RP-05-864 : 58924 Armitage 949S Interconnection

Estimate Prepared by:

Quyen Nguyen (Originally estimated by David Ellinger)

Estimate Date:

31 March, 2010 (Re-estimate by QN, Sept. 29, 2010)

Estimate Accuracy:

+20 / -10 % (2010 Dollars)

Version:

3.00

Line < 7L150, Armitage 949S to Lanfine >

September 29, 2010 - Revised to extend to Lanfine

	System Portion	Customer Portion	TOTAL
Transmission Line Costs			
Material	\$ -	\$ 785,000	\$ 785,000
Labour	\$ -	\$ 1,670,000	\$ 1,670,000
Total-Transmission line	\$ -	\$ 2,455,000	\$ 2,455,000
Substation Facilities Cost			
Material	\$ 413,500	\$ 2,285,626	\$ 2,699,126
Labour	\$ 380,000	\$ 1,716,728	\$ 2,096,728
Total-Substations	\$ 793,500	\$ 4,002,354	\$ 4,795,854
Telecommunication Cost			
Material	\$ -	\$ 410,230	\$ 410,230
Labour	\$ -	\$ 57,785	\$ 57,785
Total-Telecommunication	\$ -	\$ 468,015	\$ 468,015
Owner Costs			
Proposal to Provide Service	\$ -	\$ 100,000	\$ 100,000
Facility Applications	\$ -	\$ 297,855	\$ 297,855
Land Rights - Easements	\$ -	\$ 198,416	\$ 198,416
Land - Damage Claims	\$ -	\$ -	\$ -
Land - Acquisitions	\$ -	\$ -	\$ -
Total - Owner's Cost	\$ -	\$ 596,271	\$ 596,271
Distributed Costs			
Procurement	\$ -	\$ -	\$ -
Project Management	\$ -	\$ 33,000	\$ 33,000
Construction Management	\$ -	\$ 6,000	\$ 6,000
Warehouse/logistics	\$ -	\$ 72,000	\$ 72,000
Project Services	\$ -	\$ 225,000	\$ 225,000
Contingency	\$ -	\$ -	\$ -
Total - Distributed Costs	\$ -	\$ 336,000	\$ 336,000
Total Direct Costs	\$ 793,500	\$ 7,857,640	\$ 8,651,140
Salvage			
Transmission Line Labour	\$ -	\$ -	\$ -
Substation Labour	\$ -	\$ -	\$ -
Land Remediation and Reclamation	\$ -	\$ -	\$ -
Total-Salvage	\$ -	\$ -	\$ -
Other Costs			
INFLATION	\$ 56,610	\$ 590,199	\$ 646,809
ES&G	\$ 15,364	\$ 229,796	\$ 245,160
AFUDC	\$ 16,324	\$ 565,423	\$ 581,747
Total - Other Costs	\$ 88,298	\$ 1,385,418	\$ 1,473,716
Total In-Direct Costs	\$ 88,298	\$ 1,385,418	\$ 1,473,716
TOTAL PROJECT COSTS	\$ 881,798	\$ 9,243,058	\$ 10,124,856

Transmission Line - PPS Estimate

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Services"

Estimating Guidelines: template for guidelines on estimating requirements

	System Portion	Customer Portion	TOTAL
Line < 7L150, Armitage 949S to Lanfine >			
Materials			
Foundations	\$ -	\$ -	\$ -
Structures	\$ -	\$ 450,000	\$ 450,000
Hardware	\$ -	\$ 250,000	\$ 250,000
Conductor	\$ -	\$ 85,000	\$ 85,000
Subtotal-Material	\$ -	\$ 785,000	\$ 785,000
Labour			
Detailed Engineering	\$ -	\$ 262,000	\$ 262,000
Survey	\$ -	\$ 65,000	\$ 65,000
R/W Preparation & Brushing	\$ -	\$ -	\$ -
Construction	\$ -	\$ 1,343,000	\$ 1,343,000
Commissioning	\$ -	\$ -	\$ -
Subtotal-Labour	\$ -	\$ 1,670,000	\$ 1,670,000
Sub Total-Material and Labour			
	\$ -	\$ 2,455,000	\$ 2,455,000
Total - Material Costs			
	\$ -	\$ 785,000	\$ 785,000
Total - Labour Costs			
	\$ -	\$ 1,670,000	\$ 1,670,000
Total - Transmission Line Costs			
	\$ -	\$ 2,455,000	\$ 2,455,000

Substation - PPS Estimate

Project Name:

RP-05-864 : 58924 Armitage 949S Interconnection

Refer to the Notes sheet in this workbook and "Proposal to Provide
Estimating Guidelines: Services"

	System Portion	Customer Portion	TOTAL
< Armitage 949S >			
Materials			
Transformers < 1 x 20/26/33 MVA, 144/6.9 kV LTC >	\$ -	\$ 854,000	\$ 854,000
Transformers < 1 x spare >	\$ -	\$ -	\$ -
Circuit Breakers <1 x 144kV>	\$ -	\$ 70,000	\$ 70,000
Circuit Breakers <Voltage 2>	\$ -	\$ -	\$ -
Capacitor Bank <voltage, rating>	\$ -	\$ -	\$ -
Reactor bank	\$ -	\$ -	\$ -
CTs & PTs <144kV>	\$ -	\$ 50,000	\$ 50,000
Switchyard buswork, switches, structures, foundations, grounding	\$ -	\$ 588,631	\$ 588,631
Control Building	\$ -	\$ 93,500	\$ 93,500
Protection, Control, Metering	\$ -	\$ 141,132	\$ 141,132
SCADA	\$ -	\$ 50,863	\$ 50,863
<misc>	\$ -	\$ -	\$ -
Subtotal - Material	\$ -	\$ 1,848,126	\$ 1,848,126
Labour			
Detailed Engineering	\$ -	\$ 139,333	\$ 139,333
Site preparation & survey	\$ -	\$ -	\$ -
Construction temporary AC service	\$ -	\$ -	\$ -
Construction	\$ -	\$ 1,052,520	\$ 1,052,520
Commissioning	\$ -	\$ 119,875	\$ 119,875
Subtotal - Labor	\$ -	\$ 1,311,728	\$ 1,311,728
Sub Total-Material and Labour	\$ -	\$ 3,169,854	\$ 3,169,854
Substation <Lanfine >			
Materials			
Transformers <number, size, voltage>	\$ -	\$ -	\$ -
Circuit Breakers <12x 144kV>	\$ 70,000	\$ 70,000	\$ 140,000
Circuit Breakers <Voltage 2>	\$ -	\$ -	\$ -
Capacitor Bank <voltage, rating>	\$ -	\$ -	\$ -
Reactor bank	\$ -	\$ -	\$ -
CTs & PTs < 3 x 144kV >	\$ 36,000	\$ 60,000	\$ 96,000
Switchyard buswork, switches, structures, foundations, grounding	\$ 250,000	\$ 250,000	\$ 500,000
Control Building	\$ -	\$ -	\$ -
Protection, Control, Metering	\$ 47,500	\$ 47,500	\$ 95,000
SCADA	\$ 10,000	\$ 10,000	\$ 20,000
<misc>	\$ -	\$ -	\$ -
Subtotal - Material	\$ 413,500	\$ 437,500	\$ 851,000
Labour			
Detailed Engineering	\$ 75,000	\$ 75,000	\$ 150,000
Site preparation & survey	\$ 50,000	\$ 50,000	\$ 100,000
Construction	\$ 225,000	\$ 250,000	\$ 475,000
Commissioning	\$ 30,000	\$ 30,000	\$ 60,000
Subtotal - Labor	\$ 380,000	\$ 405,000	\$ 785,000
Sub Total-Material and Labour	\$ 793,500	\$ 842,500	\$ 1,636,000
Total - Material Costs	\$ 413,500	\$ 2,285,626	\$ 2,699,126
Total - Labour Costs	\$ 380,000	\$ 1,716,728	\$ 2,096,728
Total - Substation Costs	\$ 793,500	\$ 4,002,354	\$ 4,795,854

Telecommunication - PPS Estimate

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Refer to the Notes sheet in this workbook and "Proposal to Provide Estimating Guidelines: Services"

	System Portion	Customer Portion	TOTAL
Telecommunication Site <Armitage>			
Materials			
Tower/Antennae	\$ -	\$ 75,500	\$ 75,500
Telecom & Telecontrol Equipment	\$ -	\$ 114,180	\$ 114,180
Building (If substation building not utilized)	\$ -	\$ -	\$ -
Fibre (km,type)	\$ -	\$ -	\$ -
Video Monitoring	\$ -	\$ -	\$ -
Subtotal - Material	\$ -	\$ 189,680	\$ 189,680
Labour			
Detailed Engineering	\$ -	\$ 13,480	\$ 13,480
Site preparation & survey	\$ -	\$ -	\$ -
Construction	\$ -	\$ 15,000	\$ 15,000
Commissioning	\$ -	\$ -	\$ -
Subtotal - Labor	\$ -	\$ 28,480	\$ 28,480
Sub Total-Material and Labour	\$ -	\$ 218,160	\$ 218,160
Telecommunication Site < Cappon Tower Upgrades >			
Materials			
Tower/Antennae	\$ -	\$ 8,200	\$ 8,200
Radio Equipment	\$ -	\$ 57,000	\$ 57,000
Building (If substation building not utilized)	\$ -	\$ -	\$ -
Fibre (km,type)	\$ -	\$ -	\$ -
<misc>	\$ -	\$ -	\$ -
Subtotal - Material	\$ -	\$ 65,200	\$ 65,200
Labour			
Detailed Engineering	\$ -	\$ 17,080	\$ 17,080
Site preparation & survey	\$ -	\$ -	\$ -
Construction	\$ -	\$ -	\$ -
Commissioning	\$ -	\$ -	\$ -
Subtotal - Labor	\$ -	\$ 17,080	\$ 17,080
Sub Total-Material and Labour	\$ -	\$ 82,280	\$ 82,280
Telecommunication Site < Cappon Tower Rebuild (50% of cost) >			
Materials			
Tower/Antennae	\$ -	\$ 155,350	\$ 155,350
Radio Equipment	\$ -	\$ -	\$ -
Building (If substation building not utilized)	\$ -	\$ -	\$ -
Fibre (km,type)	\$ -	\$ -	\$ -
<misc>	\$ -	\$ -	\$ -
Subtotal - Material	\$ -	\$ 155,350	\$ 155,350
Labour			
Detailed Engineering	\$ -	\$ 12,225	\$ 12,225
Site preparation & survey	\$ -	\$ -	\$ -
Construction	\$ -	\$ -	\$ -
Commissioning	\$ -	\$ -	\$ -
Subtotal - Labor	\$ -	\$ 12,225	\$ 12,225
Sub Total-Material and Labour	\$ -	\$ 167,575	\$ 167,575
Total - Material Costs	\$ -	\$ 410,230	\$ 410,230
Total - Labour Costs	\$ -	\$ 57,785	\$ 57,785
Total - Telecommunication Costs	\$ -	\$ 468,015	\$ 468,015