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ALBERTA MUNICIPAL AFFAIRS

Update of Electrical Power Systems Assessment Estimates

Alberta Municipal Affairs Update of Electrical Power Systems

Project No.: 09E4590

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**ALBERTA MUNICIPAL AFFAIRS
UPDATE OF ELECTRICAL POWER SYSTEMS
ASSESSMENT ESTIMATES**

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UPDATE OF ELECTRICAL POWER SYSTEMS ASSESSMENT ESTIMATES							
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1. GENERAL

The percentage cost differences shown here are for the price differences from June 30, 2008 to June 30, 2009. The June 2008 prices were based on the data calculated in the Update of Electrical Power Systems Assessment Estimate Study for June 2007 to June 2008.

A percentage factor increase for June 30, 2008 to June 30, 2009 has been developed for the following areas and can be seen in Appendix A.

- Electrical Power Distribution Systems (EDS) Underground, Overhead, Urban and Rural - Material
- Street Lighting (ESL) - Material
- Oil and Gas Field Service (EFS) - Material
- Electrical Power Transmission Lines (ET) - Material
- Labour (As a separate item for all models)
- Equipment (As a separate item for all models)

The percentage cost differences were developed using a combination of pricing obtained from suppliers, published union wage rates for the province of Alberta, the Canadian Price Index (CPI) (overall and transportation) for Alberta and the Industrial Product Indexes Catalogue No. 62-011 (Table 2-17). Within each model the main materials (i.e., transformers, poles and wire) were identified and a quote was obtained from suppliers. The suppliers used in the previous study were used wherever possible to maintain price consistency. For the remaining materials within the model, the Alberta CPI and the Industrial Products Indexes were utilized. A weighted average was used to combine the main materials with the remaining items.



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2. LABOUR COSTS

Prior to the 2008 study, the labour increases were obtained from contractors. However, it had been increasingly difficult to obtain their labour rates or a percentage increase for the past year. WorleyParsons has continued with the philosophy to base the yearly labour rate increase on published data from the labour union agreements within the Province of Alberta as developed in the 2008 study. These labour agreements will track closely to the labour rates for all the different models.

The union rates for June 30, 2008 were compared to the June 30, 2009 labour rates to develop the percentage increase for the year. The labour rate was developed using the base labour rates with the following items added:

- Labour Agreement Burdens
- Employment Insurance, Canada Pension Plan and Workers' Compensation Board Burdens
- Overhead

The overall labour cost increase for the year ending June 30, 2009 is 3.2% for all the models.



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3. EQUIPMENT COSTS

The percent decrease for equipment costs is -6.6%, based on the Alberta CPI index for transportation for the period June 2008 to June 2009.



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4. DISTRIBUTION MATERIAL COSTS
(EDS AND OIL AND GAS FIELD SERVICE MODELS)

A single percentage cost increase was provided for all the EDS 10 thru EDS 80 models (underground, overhead Urban and Rural) and the EFS 10 thru EFS 80 models.

The majority of the customer base for the Utilities (over 95%) falls in the EDS 10 models and the EFS 10 model categories. Since the majority of the customers are in the EDS 10 and EFS 10 models the percentage increase for all the models was based on the average of the percentage cost increases for the eight different ESD 10 models (Urban and Rural for each of these categories; Underground, Overhead, Residential and Commercial) only. The major common piece of equipment in these models is the transformers.

To calculate the percentage increase for the EDS 10 models, quotes were requested from two suppliers for the different types of transformers. Both suppliers provided quotes for June 2009. The quotes from the same supplier who provided the quotes for the last several years was the only quote used to maintain consistency from year to year. The quotes from the second supplier did not correspond with previous quotes therefore these quotes were not included to maintain the consistency. The percentage increase for each EDS 10 model was calculated by using the actual transformer costs for June 2009 compared to the transformer cost of June 2008. The Alberta CPI was used to increase the costs of all the remaining items. A weighted average was then calculated for each EDS 10 model, based on the overall costs to determine the percentage increase. Finally, an overall average of all the EDS 10 models was then calculated to determine the percentage increase indicated in Appendix A.

The percentage change for material was determined to be 2.11%



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5. STREET LIGHTING

A separate material percent increase was developed for each of the street lighting models. Supplier quotes were received from two suppliers for the pole, davit, street lighting cable, and luminaire. One of the quotes for the pole and street light was not incorporated in the calculation as the percentage increase did not correspond with the economic environment of the past year and the quote of the second supplier. Two supplier quotes were received for the precast base. One of the quotes for the precast base was not utilized as it represented a 44% premium over the second quote. The Alberta CPI was applied to the miscellaneous items within the model. Percentage increases for the street lighting components were then compared to the June 2008 figures to determine the percentage increase for the period June 30, 2008 to June 30, 2009.

This represents a percentage change on material of 0.47% for ESL 10 and a percent change on material of -7.61% for ESL 20.



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6. TRANSMISSION LINES

6.1 Steel Tower Models ET31, ET40 and ET70

The percentage increase for the steel tower costs for June 2009 are based on information provided by two suppliers and compared to the costs used in June 30, 2008.

Quotes for the conductors were requested from three suppliers. The average of the quotes from the three suppliers was then compared to the June 2008 figures to determine the percentage increase for each conductor for the period June 30, 2008 to June 30, 2009.

The concrete (foundations) costs for June 2009 are based on information from two suppliers to the costs used in June 30, 2008. Concrete costs have decreased -9.1% from June 30, 2008 to June 30, 2009.

Alberta CPI was applied to the remaining items in the model.

To calculate the June 30, 2009 costs, the quoted costs for the conductors and percentage decreases were applied to concrete, steel and the remaining items. This cost was then compared to the June 30, 2008 costs to determine the percentage increase for each model. The average of all the models was then calculated to determine the average overall percentage for Transmission Lines with steel towers.

There is a percentage change on material of -15.67% for the models that have steel towers.

6.2 Wood Pole Models ET10 / ET12 / ET20 / ET21 / ET30 / ET50 / ET51 / ET 60 and ET61

The percentage increase for the wood poles is based on the supplier quotes for poles and conductors and the Alberta CPI being applied to the remaining items in the model. Quotes for the poles were requested from two suppliers and only one supplier responded. Quotes for the conductors were requested from three suppliers and all three responded.

The pole costs from the single supplier were compared to the supplier's quote in 2008 and a percentage increase was calculated and applied to the average pole costs from June 2008. The actual costs for the conductors were used to calculate the June 30, 2009 costs along with the Alberta CPI being applied to the remaining items.



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This cost was then compared to the June 30, 2008 costs to determine the percentage increase for each model. Finally, the average of all the models was then calculated to determine the overall average percentage for Transmission Lines with wood poles.

There is a percentage change on material of -10.2% for the Transmission models with wood poles.

6.3 Underground Transmission Line Models ET80 and ET90

The percentage increase for the underground transmission lines is based on the decrease in conductor costs, decrease in concrete costs, and the remaining components. As conductors are an engineered product it is difficult to obtain pricing. The percent decrease for conductors was therefore based on the wire and cables with insulation over 1000V from the Industrial Product Price Indexes Catalogue No. 62-011 (Table 2-17) from May 2008 to May 2009 (The figure for June 2009 is not currently available and the May 2008 figure was utilized in the 2008 update study). Conductor costs decreased -1.81 % for this period.

The concrete duct banks costs for June 2009 are based on information from two suppliers and compared to the costs used in June 30, 2008. Concrete costs for the duct banks have decrease -9.13% from June 30, 2008 to June 30, 2009. The concrete manhole costs have remained unchanged from June 2008 based on the information received from the single supplier the responded.

The percentage decreases were applied to the June 30, 2008 figure to determine the June 30, 2009 figures and an average cost of the two underground Transmission models was calculated to determine the overall percentage decrease.

There is a percentage change on material of -6.24% for the underground models.



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APPENDIX A: PERCENTAGE COST DIFFERENCE
SUMMARY

June 30, 2008 to June 30, 2009

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JUNE 30, 2008 TO JUNE 30, 2009**

COST MODELS

ELECTRICAL POWER DISTRIBUTION SYSTEMS UNDERGROUND - URBAN

Code/Area	Percentage Increase		
	Material	Labour	Equipment
ALL	2.11%	3.20%	-6.60%

ELECTRICAL POWER DISTRIBUTION SYSTEMS UNDERGROUND - RURAL

Code/Area	Percentage Increase		
	Material	Labour	Equipment
ALL	2.11%	3.20%	-6.60%

ELECTRICAL POWER DISTRIBUTION SYSTEMS OVERHEAD - URBAN

Code/Area	Percentage Increase		
	Material	Labour	Equipment
ALL	2.11%	3.20%	-6.60%

ELECTRICAL POWER DISTRIBUTION SYSTEMS OVERHEAD - RURAL

Code/Area	Percentage Increase		
	Material	Labour	Equipment
ALL	2.11%	3.20%	-6.60%

STREET LIGHTING

Code/Area	Percentage Increase		
	Material	Labour	Equipment
ESL10	0.47%	3.20%	-6.60%
ESL20	-7.61%	3.20%	-6.60%

OIL AND GAS FIELD SERVICES

Code/Area	Percentage Increase		
	Material	Labour	Equipment
ALL	2.11%	3.20%	-6.60%

ELECTRICAL POWER TRANSMISSION LINES

Code/Area	Percentage Increase		
	Material	Labour	Equipment
ET10-1	-10.20%	3.20%	-6.60%
ET11-1	N/A	N/A	N/A
ET12-1	-10.20%	3.20%	-6.60%
ET20-1	-10.20%	3.20%	-6.60%
ET21-1	-10.20%	3.20%	-6.60%
ET30-1	-10.20%	3.20%	-6.60%
ET31-1	-15.67%	3.20%	-6.60%
ET32-2	N/A	N/A	N/A
ET33-1	N/A	N/A	N/A
ET40-1	-15.67%	3.20%	-6.60%
ET41-1	N/A	N/A	N/A
ET50-1	-10.20%	3.20%	-6.60%
ET51-1	-10.20%	3.20%	-6.60%
ET52-1	N/A	N/A	N/A
ET60-1	-10.20%	3.20%	-6.60%
ET61-1	-10.20%	3.20%	-6.60%
ET70-1	-15.67%	3.20%	-6.60%
ET71-1	N/A	N/A	N/A
ET80-1	-6.24%	3.20%	-6.60%
ET90-1	-6.24%	3.20%	-6.60%
ET100-1	N/A	N/A	N/A