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ONTARIO ENERGY BOARD

265 rue St-Philippe St., C.P./P.O. Box 370, Alfred, ON K0B 1A0

Tel: 679-4093 / Fax: 679-4939
email: aphydro@hawk.igs.net

January 7, 2005

Ontario Energy Board
P.O. Box 2319, Suite 2601
2300 Yonge Street
Toronto, On
M4P 1E4

Attention: John Zych, Board Secretary

Dear Sir:

Re: Conservation and DSM Program

Hydro 2000 Inc. is applying for a final order of the Board for the cost recovery of the Conservation and DSM Program.

Hydro 2000 Inc. will invest the 3rd installment of the MARR in the amount of \$20,919.35 for a line lost study for the optimization of our distribution system and an ad-bag containing customer energy savings tips pamphlets for improving customer's education with new technology and a free compact fluorescent light.

A line study for the optimization for both distribution area (village of Alfred and Plantagenet) will be performed in 2005. Attach is a quote from Stantec Consulting Ltd., giving scope of work and objectives with a price of \$14,660.00.

A plastic bag (ad-bag) containing information with different tips like Conserve Energy and Save Money from Ontario Energy ministry and Switch and Save and any other information pertinent to savings electricity or efficient ways to use future technology (Smart meters). This ad-bag will be distributed door to door. Presentation to the public through special night meeting will be performed on how to use smart meters technology and to conserved energy.

A compact fluorescent light package containing 2 lights will be inserted and given with the ad-bag.

EB-2004-0501

OEB BOARD SECRETARY	
File No:	SubFile: 1
Panel	
Licensing	AF-ZC-SM
Other	
00/04	MH

The cost for each ad-bag is \$9.00 per customer and Hydro 2000 Inc. has 1150 customers. The ad bag promotion is \$10,350.00. Public meetings will perform and cost will be absorbed by normal daily operation being a minimal cost involved.

The total cost for DSM Program will be approximately \$25,010.00

For any questions contact Rene Beaulne at 613-679-4093

Yours truly,

A handwritten signature in cursive script that reads "Rene C. Beaulne".

Rene Beaulne
Manager

Cc: Jean-Marc Lalonde, MPP Glengarry-Prescott-Russell

Stantec Consulting Ltd.
1505 Laperriere Avenue
Ottawa ON K1Z 7T1
Tel: (613) 722-4420 Fax: (613) 722-2799

stantec.com



Stantec



December 16, 2004
File: 163399000

Mr. René Beaulne
Manager
Hydro 2000
265 rue St-Philippe St,
Alfred ON K0B 1A0

Tel: (613) 679-4093
Fax: (613) 679-4939

Dear Mr. Beaulne:

Reference: Power Systems Analysis for Hydro 2000 (Alfred & Plantagenet)

Thank you for your interest in our Engineering Services. As per our recent discussion, we are pleased to provide this proposal for the Load Flow Power Systems Study of your municipal distribution system. This proposal first explains some of the background to a typical Utility Load Flow Study and provides a comprehensive guide to the objectives for this specific study.

SCOPE OF WORK

BACKGROUND

A Load Flow Study is the steady state analysis of the power flow within a distribution system and its capability to supply the connected load. The analysis will provide the real and reactive power flows in each line and all bus voltages, for both normal and abnormal system conditions. The results include the power flow down each line, including all voltage drops and phase angles, and also the amount of power losses within each branch of the system. Using this model, the analyst can investigate a number of different scenarios, testing whether different operating methods would provide benefits such as reduced line losses, improved voltage regulation, and the amount of emergency overload capability. This study is an excellent tool to optimize the efficient operation of a distribution system, to evaluate and prepare for all emergency conditions, and to plan for future additions or modifications to the distribution system.

The existing distribution system is modeled, including the high voltage utility source, the local substation, and any main feeders and loads, in as much detail as required. Using a range of estimates for future load growth and approximate areas of development, many different scenarios can be analyzed, including new feeders, new substations, or modification of existing configurations and open points within the system. Typical, a sequence of iterations is done to select the optimal configuration of the system for existing and future loads.

Stantec Consulting Ltd. stresses the importance of providing the tools and resources to allow

Re: Power Systems Analysis for Hydro 2000 (Alfred and Plantagenet)

our professionals to master all aspects of their job. For this purpose, Stantec has invested significant resources into two software suites that allow extremely detailed modeling of any electrical distribution system. We use CYMEDIST software, designed by CYME in Montreal, for Utility distribution analysis. CYMDIST performs per-phase voltage drop calculations on balanced or unbalanced systems, fault calculations (fault flows and fault voltages), optimal capacitor placement and sizing, load balancing and load allocation. For electrical specialty studies, we use Power Tools for Windows, designed by SKM Systems Analysis Inc. This allows us to perform some of the following studies: Harmonics and Waveform Analysis, Transient Motor Starting, Demand Load Sizing, Reliability Analysis, Protective Device Coordination Studies, Short Circuit Studies, Device Evaluation, Grounding Designs, and Unbalanced and Single Phase Studies.

OBJECTIVES

The objectives of the Load Flow and System Analysis provided by Stantec Consulting Ltd. for Hydro 2000 are as follows:

1 Reduce Power Losses Within the System

Using existing loading measurements, both average as well as individual phase measurements, existing system losses will be evaluated. Hydro 2000 consists of two municipal systems (Alfred and Plantagenet), both consists of an almost completely radial system. Ensuring adequate conductor sizes will minimize losses along with ensuring unbalance conditions are minimized by re-phasing and balancing.

2 Flag Overload Conditions, Assign Emergency Overload Capacities

The study will flag lines which may be near their rating capability and may become overloaded with future load growth. If any feeder, transformer, or transmission line is overloaded for extended periods, severe damage can result. From these results, future system planning can ensure that new lines can reduce or share the system loading more appropriately.

Also, using the study results, system operators can determine how to most efficiently and safely route power in the event of line outages or transformer failures. This will allow quick verification of operational procedures during future emergencies, or allow preliminary emergency planning to take effect during various emergency scenarios.

3 Meet Required Voltage Tolerances Within the System and Improve Voltage Stability

Low voltages can result in industrial or consumer complaints about flickering or dim lights and reduced motor starting ability. Various recommendations will be provided to improve voltage stability within the system if required, including transformer tap settings changes; re-routing distribution through lower impedance lines; and the possibility of distributed reactive power or regulators within the system to compensate for line reactances. The CSA Standard CAN3-C235-83 and relevant MEA documentation will be used to evaluate all system voltages.

4 Task Description

Stantec proposes the following tasks to meet these objectives at Hydro 2000:

- Model Design and Evaluation
- System Simulation
- Report and Recommendations

.1 Model Design and Evaluation

Stantec will ensure the accurate modeling of the Hydro 2000 distribution system. This will include the local Hydro-One substation, the Hydro 2000 lines and distribution of loads. This will include ensuring accuracy in transformer loads, cable sizes, transformer information, scales, and other relevant system parameters. Stantec will use loading information to the detail provided by Hydro 2000, either existing loading measurements on lines and transformers scaled to their current demand loading, or to any current measurements at the taps or transformers taken from Hydro 2000 actual line measurements.

.2 System Simulation

The distribution system model will then be used to simulate a number of different conditions, including:

- Normal operating conditions.
- Normal operating conditions with various re-phasing or re-conductoring contingencies as required.
- Feeder contingencies as per Hydro 2000 operations

.3 Report and Recommendations

A report will be produced that includes the following information:

- Model data and line drawings
- Simulation data of normal operation
- Branch currents and voltages, including loss distribution

The modeling, analysis, report, and recommendations will be performed by a Professional Engineer, licensed in the Province of Ontario.

Our price for the above scope of work is \$14,660, taxes not included, as per the attached work breakdown.

The following conditions would be applicable to this proposal:

- The fee does not include for engineering services related to the design of any of the proposed initiatives. It does not include the preparation of drawings or specifications related to any recommendations being presented.
- Our involvement is limited to a study, assessment and report creation. Any further work will be priced upon further negotiation with the client.
- The scope of work does not include using field measurement equipment to obtain study related material. Any current measurements to be done by Hydro 2000 or their contractors using their own equipment.
- Drawings and operation and maintenance manuals of the existing distribution systems are made available for our review and perusal.

Stantec

Mr. René Beaulne
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Re: Power Systems Analysis for Hydro 2000 (Alfred and Plantagenet)

- The fees offered are applicable up to 90 days from the date of this fee letter. After the 90-day period, adjustments to the fees may be required to account for inflation and/or market conditions.
- Access to all facilities and all areas concerned for record gathering.
- Access to such related "as-built" drawings for the main substation and switchboards as exist.
- Documents will be in English only.
- All work will be done during normal business hours.
- There will be a maximum of 1 coordination meeting and 1 final meeting for this project

We thank you sincerely for taking the time to consider our proposal and we remain at your disposal to respond to any additional questions you may have.

Yours very truly,

STANTEC CONSULTING LTD.



Peter Dyck, P.Eng.
Associate, Sr. Power Systems Engineer

Tel: (613) 724-4403
pdyck@stantec.com

Attachment



Stantec

FEE ESTIMATE			
PROJECT	Hydro 2000 LoadFlow Study		
PROJECT No.: 163399000	DATE:	December 16, 2004	

TASK	ARCHITECTURAL				STRUCTURAL				MECHANICAL				ELECTRICAL				REMARKS
	PM	PA	PT	PS	PM	PE	PT	PS	PM	PE	PT	PS	PM	PE	PT	PS	
System Study																	
Coordination meetings (1 max)														4			
Information gathering for substation, main lines, taps, loads (Alfred)														8	8		
Information gathering for substation, main lines, taps, loads (Plantagenet)														8	8		
System Modelling														12	24		
Analysis, configuration changes, reconductoring, etc.														16			
Report generation														14		8	
Review Meeting (1 max)														6			
Sub Total	0	0	0	0	0	0	0	0	0	0	0	0	0	68	40	8	\$14,356.00
TOTALS	0	0	0	0	0	0	0	0	0	0	0	0	0	68	40	8	\$14,356.00

LABOUR COST

PM=Project Manager
PD=Project Draftsmen

PA=Project Architect

PE=Project Engineer
PS= Project Secretary

PT=Project Technologist/Technician

ARCHITECTURAL

PM =	x 0 hours =	\$0
PA =	x 0 hours =	\$0
PT =	x 0 hours =	\$0
PS =	x 0 hours =	\$0
TOTAL		\$0

STRUCTURAL

PM =	x 0 hours =	\$0
PE =	x 0 hours =	\$0
PT =	x 0 hours =	\$0
PS =	x 0 hours =	\$0
TOTAL		\$0

MECHANICAL

PM =	x 0 hours =	\$0
PE =	x 0 hours =	\$0
PT =	x 0 hours =	\$0
PS =	\$66 x 0 hours =	\$0
TOTAL		\$0

ELECTRICAL

PM =	\$145 x 0 hours =	\$0
PE =	\$137 x 68 hours =	\$9,316
PT =	\$113 x 40 hours =	\$4,520
PS =	\$65 x 8 hours =	\$520
TOTAL		\$14,356

LABOUR TOTAL: \$14,356

DISBURSEMENT COSTS

TRAVEL:

MILEAGE	=	\$0.41	x	100 km x	4	trips	=	\$164.00
MEALS	=	\$20.00	x	2 meals x	2	people	=	\$80.00
ACCOMMOD	=	\$0.00	x	nights x		people	=	\$0.00
FLIGHTS	=	\$0.00	x	flights			=	\$0.00
TAXI	=	\$0.00	x	trips			=	\$0.00
CAR RENTAL	=	\$0.00	x				=	\$0.00
PARKING	=	\$5.00	x				=	\$0.00
TOTAL								\$244.00

PRODUCTION:

CAD TIME	=	\$10.00	x	hours	=	\$0.00	
TRANSLATION	=	\$200.00	x	dwgs.	=	\$0.00	
TRANSLATION	=	\$5,000.00	x	specs.		\$0.00	
PLOTS	=	\$8.00	x	dwgs. x	plots	=	\$0.00
PRINTS	=	\$1.25	x	5 dwgs. x	6 sets	=	\$37.50
COPIES/LASER	=	\$0.15	x	25 sheets	6 sets	=	\$22.50
PHONE	=	\$5.00	x	per month x	1 months	=	\$0.00
FAX	=	\$1.00	x	per month x	1 months	=	\$0.00
COURIER	=	\$10.00	x	per month x	1 months	=	\$0.00
				TOTAL		\$60.00	

DISBURSEMENT TOTAL \$304.00

Total \$14,660.00