NORTH AMERICA TRANSMISSION, LLC

c/o LS Power Development, LLC
400 Chesterfield Center, Suite 110
St. Louis, MO 63017
(636) 532-2200 · Fax (636) 532-2200

June 5, 2012

Howard Tarler
New York Independent System Operator
10 Krey Blvd.
Rensselaer, NY 12144
(518) 356-6000

Re: NAT CARIS Phase 2 Project - Request For Benefit/Cost Analysis of Edic – Fraser #2

Sent Via: Electronic Mail and FedEx

Howard:

In response to the results of NYISO's 2011 CARIS Phase 1, North America Transmission, LLC (NAT) has identified a prospective transmission project. The project consists of a new 345 kV transmission line from the Edic 345 kV Station to the Fraser 345 kV Station (Edic – Fraser #2). NAT believes that this project will have significant production cost benefits to New York ratepayers. Therefore, in accordance with Attachment Y to the NYISO OATT, NAT respectfully request that NYISO perform a Benefit/Cost Analysis of Edic – Fraser #2. In support of this request, NAT has enclosed the following required materials;

i) an executed CARIS Phase 2 – Request for Benefit/Cost Analysis form,

ii) an associated Project Conceptual Package, and

iii) a check in the amount of $25,000.00, for the required deposit.

If you have any questions or would like to discuss this submittal, please do not hesitate to contact me at (636) 532-2200 or by email at eestes@lspower.com

Sincerely,

Evan Estes

Evan Estes

CARIS PHASE 2 PROJECT- REQUEST FOR BENEFIT/COST ANALYSIS

1. The undersigned developer of a regulated economic transmission project (the "Requestor") submits this request for the NYISO to conduct, pursuant to Section 31.4.3.3 of Attachment Y to the Open Access Transmission Tariff ("OATT"), an analysis of the benefits and costs ("Benefit/Cost Analysis") of a regulated economic transmission project that will interconnect with or be integrated into the existing New York State Bulk Power Transmission Facilities.

2. Requestor shall be responsible for all reasonable actual costs incurred by the NYISO for the Benefit/Cost Analysis. Such costs may include the cost of consultants and subcontractors retained by the NYISO, and the cost, if any, incurred by Transmission Owner(s) to supply analysis-related data when requested to do so by the NYISO.

3. When the scope and subject matter of two or more contemporaneous Benefit/Cost Analyses overlap to any material degree the NYISO, with the prior agreement of each affected Requestor, will conduct the overlapping analysis work on a consolidated basis and allocate the cost of such work equally to each affected Requestor.

4. This Request For Analysis must be accompanied by a refundable deposit of $25,000 payable to "The New York Independent System Operator, Inc." The Project Analysis Agreement will require Requestor to deposit additional money as needed to cover the actual cost of the Benefit/Cost Analysis. The NYISO will apply all deposits to the costs it incurs for the Benefit/Cost Analysis.

5. The NYISO will post on its website the following facts regarding this Request For Analysis: (i) a general description of the Benefit/Cost Analysis requested, (ii) the identity of the Requestor, and (iii) the date the NYISO received this Request For Analysis. The NYISO will also post the final results of this Benefit/Cost Analysis if Requestor seeks regulated cost recovery under Section 31.4.4 of Attachment Y to the OATT based upon the results of this Benefit/Cost Analysis.

6. Requestor shall submit to the NYISO, with this Request for Analysis, a Project Conceptual Package ("PCP") as described in the Congestion Assessment and Resource Integration Study procedure "Regulated Economic Projects: Specific Projects Submittal", which shall include information about the proposed transmission project, including but not limited to the following:

    a. Requestor's Contact Information
    b. Project Description;
    c. Project Drawings;
    d. Project Capital Costs;
    e. Risk Profile;
    f. Annual Revenue Requirements for Years 1-30;
    g. Developer Business Information; and
    h. Any Other Reasonably Required Information to Aid NYISO in Understanding the Scope of the Project

7. The NYISO will acknowledge receipt of this Request For Analysis within ten (10) business days and at that time will also tell Requestor whether the information submitted in the PCP is adequate or, if not, what type of additional information needs to be submitted.

8. Following receipt of a complete Request For Analysis and PCP, the NYISO will meet with Requestor at a mutually agreeable time to discuss and determine the nature and scope of the Benefit/Cost Analysis, addressing any questions regarding the project description to ensure that all the technical parameters needed by the NYISO to perform the Benefit/Cost Analysis are understood. The analysis scope will be recorded in the Project Analysis Agreement.

9. Requestor may withdraw this Request For Analysis by terminating the Project Analysis Agreement in accordance with its Section 10.5 therein or, if the Project Analysis Agreement has not yet been executed, the Requestor may terminate this Request For Analysis by written notice to the NYISO. Upon termination, the NYISO will cease work on the Benefit/Cost Analysis and forward to Requestor either (i) an invoice for unpaid analysis work or (ii) a refund of that portion of the deposit not required to cover unpaid analysis work. The NYISO will forward all completed results and work papers, if any, to Requestor with the refund, if one is due, or upon receipt of full payment from Requestor for unpaid analysis work.

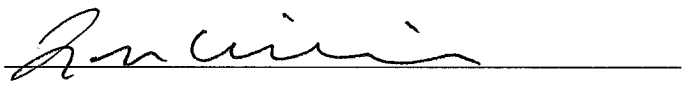
10. This Request For Analysis shall be submitted to CARISSpecificProject@nyiso.com. The currently designated representative of the NYISO is:

Name:	Howard Tarler
Title:	Manager – Long Term Planning
Address:	10 Krey Blvd.
	Rensselaer, NY 12144
Email:	HTarler@nyiso.com
Telephone:	518-356-6000
Fax:	518-356-7524

11. Representative of Requestor to contact:

Name:	Evan Estes
Title:	Manager, Electric Transmission
Address:	400 Chesterfield Center, Suite 110
Email:	EEstes@LSPower.com
Telephone:	(636) 532-2200
Fax:	(636) 532-2250

12. This Request For Analysis is submitted by:

Requestor:	North America Transmission, LLC
By (signature):	
Name of Representative (type or print):	Lawrence Willick
Title:	Senior Vice President
Date:	June 1, 2012

NORTH AMERICA TRANSMISSION, LLC

EDIC to FRASER #2 – PROJECT CONCEPTUAL PACKAGE

May 25, 2012

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Executive Summary

North America Transmission, LLC (NAT), a member of the LS Power Group, submits this Project Conceptual Package to accompany its Request for Benefit/Cost Analysis of its proposed Edic to Fraser #2, 345 kV, AC transmission project (Edic - Fraser #2).

North America Transmission is confident that the NYISO benefit/cost analysis will confirm that Edic - Fraser #2 provides New York ratepayers with significant production cost benefits. The project was conceived and designed to reduce congestion on the Central East Interface (Central East). According to the 2011 CARIS Phase 1 report, Central East has accounted for almost $3 billion worth of Demand Congestion since 2006. The constraint is projected to cause over $2 billion worth of Demand Congestion over the next 10 years. This constraint has and will continue to increase costs to ratepayers and restrict New York from fully utilizing its portfolio of in-state generating resources, including renewables.

During the process of identifying Edic - Fraser #2, NAT performed an extensive analysis of potential projects to reduce future congestion on Central East. Edic - Fraser #2 provided the highest production cost savings, reduction in congestion, enhanced system transfer capability and reliability benefits, relative to its cost. Using NYISO's 2011 CARIS Phase 1 assumptions, NAT estimates the annual NYCA-wide production cost saving of the project at approximately $95 million in 2020.

Edic – Fraser #2 is proposed to consist of a new 345 kV, AC transmission line between the existing Edic and Fraser 345 kV stations with 30% series compensation. NAT estimates the cost to construct Edic - Fraser #2 is approximately $282 million. The project's estimated in-service date is 4th quarter of 2017. Edic - Fraser #2's projected revenue requirement over the first 10 years of operation is $338 million (in 2018$). Over this same time period, using the Phase 1 CARIS assumptions, NAT estimates the NYCA-wide production cost benefits of the project to be $704 million (in 2018$). Over the first 10 years of operation NAT estimates the benefit/cost ratio of the project to be 2.08. This does not include consideration of load-savings, reduced system losses, emissions reductions, or other benefits of the project.

In addition to the direct benefits of relieving congestion and increasing reliability, NAT also believes that Edic – Fraser #2 will have the indirect benefits of encouraging additional renewable development and job creation.

Section 1 - Developer's Contact Information

The Project will be owned by North America Transmission, LLC ("NAT") or an affiliate. The contact is:

Evan Estes
Manager, Electric Transmission
North America Transmission, LLC
c/o LS Power Development, LLC
400 Chesterfield Center, Suite 110
St. Louis, MO 63017
Phone: 636-532-2200
Fax: 636-532-2250
E-mail:eestes@lspower.com

Section 2 - Project Proposal

Project Description

Edic - Fraser #2 will consist of a new 345 kV line from the existing Edic 345kV station to the existing Fraser 345 kV station (See Attachment 1 for a one line diagram of the project). For the purposes of this submittal, the line is estimated to be 88 miles long.

North America Transmission contracted with Burns and McDonnell to evaluate a proposed designed for Edic – Fraser #2, as well as to develop preliminary cost estimates for the project. A report of Burns and McDonnell findings are located in Attachment 2.

North America Transmission proposes to install double bundled, 1590 kcmil ACSR, Falcon conductor on Edic to Fraser #2. The new line is proposed to be built with steel monopole structures on drilled pier concrete foundations or directed embed. The project will also include a series compensation installation with 30% of the line's reactive impedance compensated (See Attachment 3 for positive sequence modeling data and thermal rating for the project). At the Edic and Fraser 345 kV stations, NAT will install equipment necessary to expand both stations, in order to accommodate the connection of the new line. The actual list of equipment to be installed will be determined in collaboration with the facility owners.

The benefits of the project result from a reduction in the impedance south of Edic, redirecting power that would otherwise flow across the Central East interface, thereby increasing the ability of the overall transmission system to transfer power south. Based on load flow analysis completed by NAT, no additional system upgrades are anticipated, beyond upgrades need to interconnect the line. NAT estimates a significant increase in the amount of power that can be delivered out of the Marcy and Edic stations, at a relatively low project cost.

In the event the proposed Edic - Fraser #2 transmission line does not meet the benefit cost ratio test under the CARIS process, NAT has identified an alternative project which consists of installing series compensation on the Marcy to Coopers Corners 345 kV and Oakdale to Fraser 345 kV lines. While this alternative does not address the congestion as well as the proposed Edic - Fraser #2 transmission line, and therefore has lower total benefits for ratepayers, it has a lower overall project cost. This alternative does not deliver benefits after inclusion of the Edic - Fraser #2 transmission line, and therefore should only be considered for evaluation in the event the Edic - Fraser #2 project does not move forward.

As an integrated AC transmission line, NAT proposes to turn operations of the project to the NYISO, with the capacity to be used in the overall transmission system for the benefit of all customers.

Project Real Estate Rights and Siting Plan

For the purposes of this submittal, this line is estimated to be 88 miles long. The straight line distance between the substations is 63 miles, and the estimate of 88 miles was developed by multiplying the straight line distance by a routing factor 1.4. NAT has conducted preliminary desktop routing analysis using publicly available data and has identified several opportunities for project routing along existing linear features. However, NAT will not be able to formally identify alternative routes without conducting extensive stakeholder and landowner outreach. Identifying any specific route at this time may be perceived as prejudicial to that process, so NAT has instead applied what is believed to be a conservative routing factor for its current estimate of the project length. By way of comparison, the existing Edic – Frasier circuit is approximately 77 miles. Subsequent to completion of the New York State Department of Public Service Article VII siting process, NAT will negotiate with landowners to obtain the necessary easements. This is currently estimated to occur in 2015.

NAT estimates Edic - Fraser #2 will need a 120 ft wide right of way (ROW) for the entire length of the new line.

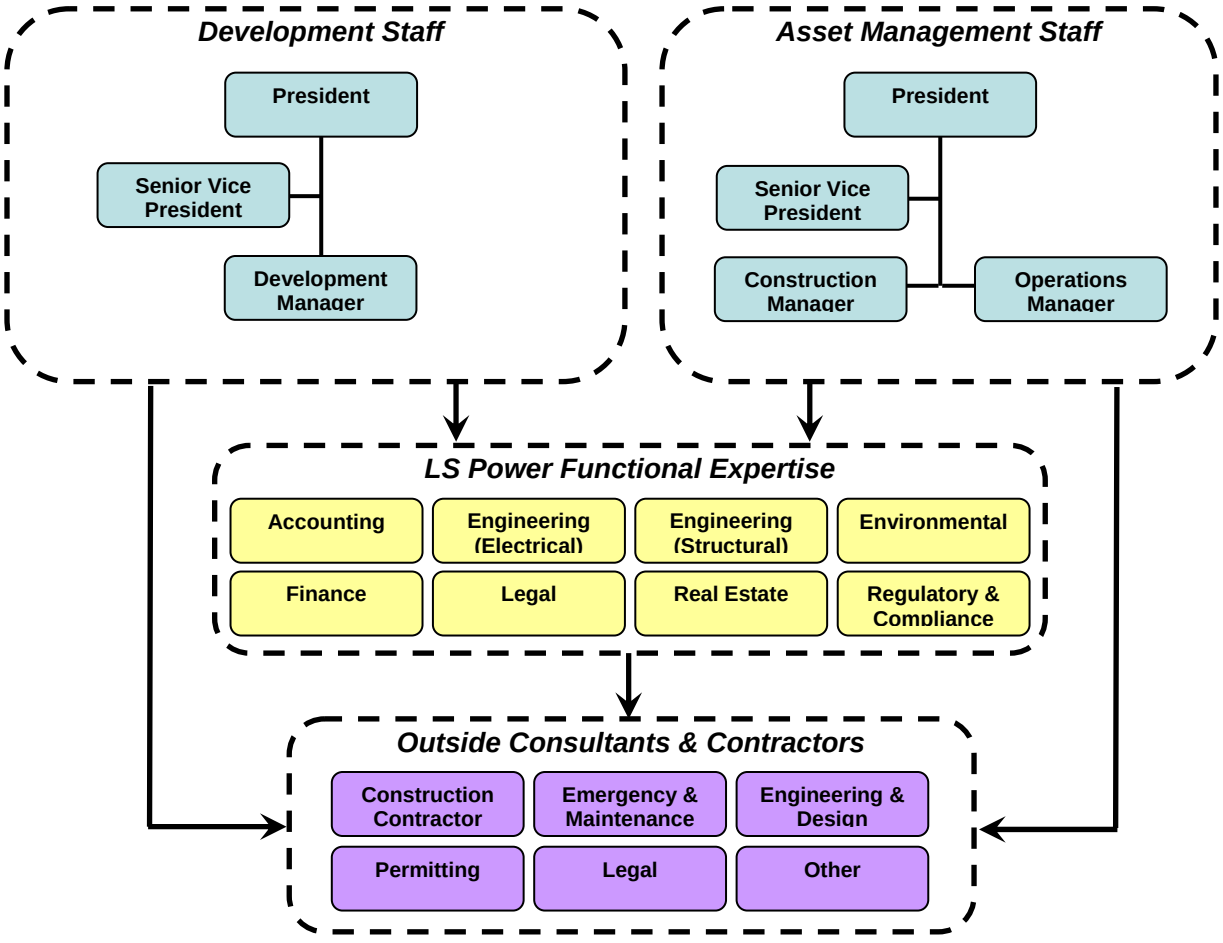
Project Capital Costs and Financial information

NAT estimates the Edic – Fraser #2 project to cost $282 million. (See Attachment 4 for a buildup of the construction cost estimate and a quarterly drawdown schedule for the project during development and construction including all assumptions). NAT also includes an estimated 30 year revenue requirement for the project in Attachment 5.

Project Implementation Plan

Set out below is an organizational chart identifying the responsibility within LS Power for development and asset management for the Edic – Fraser #2. This is based on the approach LS Power has used for all of its projects, including transmission projects. There are three phases of the project including development (pre-construction), construction and operations. LS Power will have individual project managers with the responsibility for overall project activities during each of the project phases. While these project phases are well defined, there will be transition periods and extensive coordination among the different project managers.
The project managers will be able to draw upon internal departments with functional expertise in areas such as engineering, environmental permitting, legal and accounting. These departments support numerous projects with several staff members. Resumes of key personnel are included in Attachment 6.

NAT intends to be the owner of the proposed facility. Operational control is proposed to be transferred to the NYISO. Field operation, inspection, and maintenance, including hands-on operation of the Edic – Fraser #2 may be conducted by a qualified third-party contractor, or a utility with operations in the area, to the extent such utility has qualified personnel available and is willing to provide this service.



Project Schedule, Approvals and Permits

NAT estimates approximately 5 years to gain necessary approvals, permits and to construct Edic-Fraser #2 (see Attachment 7 a proposed project schedule with major milestones). Given this schedule, the proposed in-service date for the project is 4th quarter 2017, assuming approval of the project by beneficiaries in the 3rd quarter of 2012.

Edic – Fraser #2 will require several project approvals, permits or agreements to be in place prior to commencement of construction. The critical path item will be the New York State Article VII siting permit. Other major approvals or agreements necessary to construct the project include:

i) completion of the benefit/cost analysis by NYISO,
ii) approval vote from the LSE beneficiaries,
iii) a FERC order grating incentive rates and approval of a project OATT,
iv) interconnection agreements for the project, and
v) engineering, procurement and construction contracts for the project.

NAT intends to file interconnection requests once the project has received approval from the LSE beneficiaries. An allowance is included in the project budget for the necessary interconnection studies, station expansion and additions and modifications to the protection and communication systems.

Section 3 - Risk Profile

The project is in the early stage of development. The project revenue requirement estimate contains many assumptions. We believe the cost estimates are very conservative, for example using a historical high cost of transmission tower steel rather than the midpoint of the range, and assuming a length of 88 miles, and including a 10% project contingency on top of these other assumptions. NAT generally proposes traditional cost of service ratemaking for recovery of its costs, assuming the project is approved in the CARIS process, with the enhancement of a risk protection provision for beneficiaries.

Under traditional cost of service ratemaking, ratepayers could be exposed to the risk that due to cost escalation or other factors, the final cost of the project could be higher than then calculated benefits of the project. NAT proposes to mitigate this risk by including the following project cost increase risk protection. In the event that the estimated Cost of the project on the commencement of construction is greater than 90% of the Benefits of the project (with Cost and Benefits as defined below, consistent with the CARIS process), then NAT can elect to either a) set the maximum revenue requirement of the project in any year at a fixed amount which would result in the Cost of the project being equal to 90% of the Benefits of the project or b) abandon the project and recover the expenditures incurred on the project to that date, unless the

beneficiaries at the time direct NAT to proceed with the project regardless of the higher Cost. This effectively caps the Cost of the project at an amount which is 10% less than the Benefits, ensuring the project beneficiaries will not paying a project cost that is greater than the project benefits, unless they choose to do so.

For the purpose of this risk protection measure, Cost and Benefit are as defined below, based on the metrics as defined in the CARIS process:

Cost – present value of the annual total revenue requirement for the project over the first ten years from the proposed commercial operation date for the project, based on the final project budget upon the date of financial closing and commencement of construction.

Benefit - the present value of the annual NYCA-wide production cost savings that would result from the implementation of the project, measured for the first ten years from the proposed commercial operation date for the project, as calculated by NYISO in response to the Request for Benefit/Cost Analysis submitted by NAT.

Additional PCP Requirements

The following information is being provided as required for a PCP submittal.

Cost increases due to a force majeure may be mitigated by insurance proceeds, however, to the extent insurance proceeds are not available or not sufficient, and such cost increase will be to the account of ratepayers.

If the project were to be approved by the NYISO and the benefitting LSEs, NAT does not foresee any reasons to cancel the project, other than pursuant to the risk protection provisions described above.

Section 4 - Developer's Business Information

NAT is a member of the LS Power Group. The LS Power Group is a group of power generation and transmission companies with a strong track record of success. LS Power is an experienced developer of large-scale energy projects, including several transmission projects. LS Power is well regarded in the financial community and has executed several complex projects. Since 2005 alone, LS Power has raised over $1 billion of debt and equity for investment into its projects and portfolio of subsidiary companies, including over $750 million for the construction of two large-scale overhead transmission line projects. Keys to our success include intensive community outreach, the ability to successfully resolve threshold issues, and a disciplined focus on execution.

Founded in 1990, LS Power has developed or managed over 20,000 MW of power generation. This includes approximately 8000 MW of greenfield power generation assets developed by LS

Power in the United States. Approximately five years ago, LS Power began to recognize the business opportunities related to the construction of new transmission infrastructure to support renewable generation and to relieve congestion on the grid. Since then, the development of transmission infrastructure has become a key business unit. LS Power has found that its expertise in the development of power generation facilities translates well to the development of large-scale transmission facilities. LS Power has a number of transmission projects under development, including two that began construction in 2011. Although LS Power's efforts in the transmission space are relatively new, the advanced state of the transmission project pipeline speaks volumes for our capabilities.

Southwest Intertie Project

LS Power began its development of large-scale transmission facilities in 2005 with the Southwest Intertie Project ("SWIP"). The SWIP is an approximate 570 mile, 500 kV transmission line traversing from southern Idaho to southern Nevada that is expected to have a Western Electricity Coordinating Council-approved path rating of approximately 2,000 MW. The SWIP is being developed in two phases. Phase 1, the One Nevada Transmission Line ("ON Line"), represents approximately 235 miles of single-circuit 500 kV overhead transmission that is currently under construction jointly with NV Energy. Great Basin Transmission – South, LLC ("GBT"), the LS Power affiliate which is the co-owner of ON Line, obtained all required right-of-way grants and private easements including acquisition of all major permits and approvals required for construction such as NEPA review, Endangered Species Act consultation, and approval of a detailed Construction, Operation and Maintenance Plan by the Bureau of Land Management. Financial closing for ON Line occurred in February 2011, with completion scheduled in 2013. Commencement of construction of Phase 2 of SWIP is subject to satisfactory cost recovery arrangements.

Cross Texas Transmission

Cross Texas Transmission, LLC ("Cross Texas"), a subsidiary of LS Power, was selected in early 2009 by the Public Utility Commission of Texas ("PUCT") to construct, operate and maintain a portion of the Competitive Renewable Energy Zone ("CREZ") Transmission Plan within Texas, which is being developed to enable the delivery of renewable resources. The transmission service providers were selected through a competitive process including incumbent utilities and new entrants. The PUCT determined Cross Texas to be one of the new entrants best qualified to develop, own, and operate a portion of participate in the CREZ Transmission Plan.

The Cross Texas facilities consist of approximately 235 miles of double circuit 345 kV transmission line and associated equipment (e.g. substation, series compensation, etc.) located in the Texas Panhandle with an estimated capital cost of approximately $450 million. Additionally, Cross Texas will process interconnection requests for power generators and build transmission facilities necessary to connect such power generators to its system. Cross Texas is a regulated transmission utility in the State of Texas.

Between selection in 2009 and closing of construction financing in July 2011, Cross Texas conducted extensive community outreach, obtained routing approval from the Public Utility

Commission of Texas, completed engineering and executed procurement and construction contracts for the project. Cross Texas was able to reach settlement in all three of its Certificate of Convenience and Necessity ("CCN") proceedings, where accommodations were reached with all intervening parties on an acceptable route. Cross Texas plans to file its initial ratecase later in 2012, with completion of all facilities in 2013.

Additional Project Conceptual Package Requirements

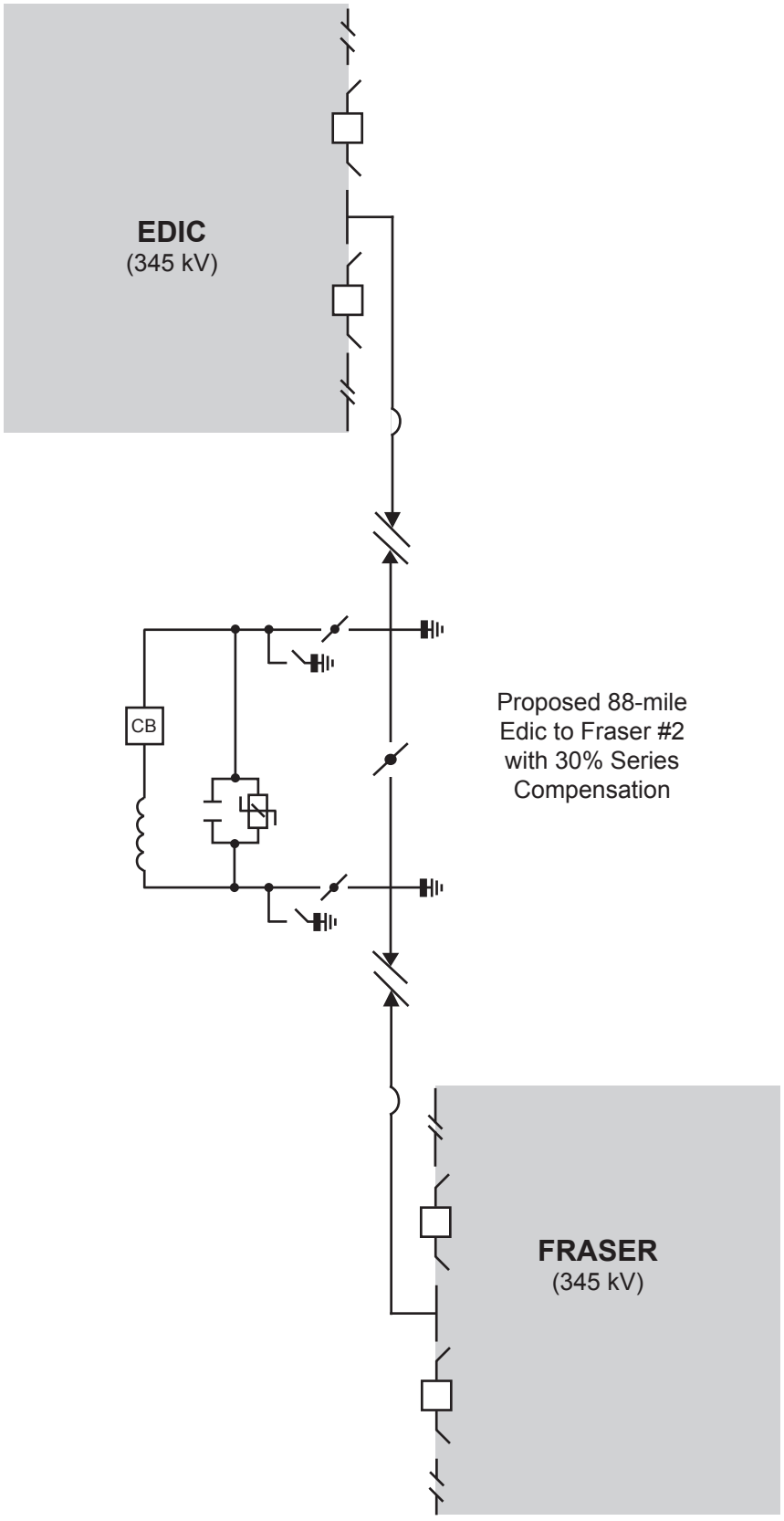
The following information is provided as required for a PCP submittal.

NAT does not have any ongoing or past lawsuits related to its performance. Cross Texas and GBTS are parties to litigation which occurs in the ordinary course of business, for example Cross Texas is a party to condemnation proceedings related to transmission easements, but no litigation is related to the performance of either Cross Texas or GBTS.

NAT does not have any debt, and does not have any current rating from any rating agencies. Cross Texas and GBTS do not maintain a public rating from any credit rating agencies. Despite not having a rating, LS Power's financial position is one of its strengths, and it is highly respected within the financial community. Since 2005, LS Power has raised over $16 billion in debt and equity for project financing, acquisitions or investment purposes in the power sector. The common feature of all these financings is that a subsidiary created by LS Power raises the capital required to construct, acquire, and/or operate a power-related business, with equity support and asset management services provided by LS Power. This organizational model insulates each LS Power subsidiary from the financial impact and operational risk of each of the other businesses, inherently providing an assurance of discipline and financing commitment to each business's counterparties. Every LS Power-sponsored business that has been taken to the financing community has been successfully financed.

NAT is a development entity and has not had any revenue for the past three years. Cross Texas and GBTS have facilities currently under construction which have not yet begun to receive revenue for transmission service.

Attachment 1 – Project One Line



LEGEND

CB BYPASS SWITCH

CAPACITOR UNIT

CURRENT LIMITING REACTOR

SURGE ARRESTER

VARISTOR

DISC SW

COMBINED DISC & EARTH SW

BREAKER

Attachment 1

Project One Line Diagram

Attachment 2 – Burns and McDonnell Planning Level Cost Estimate

Planning Level Cost Estimate for
Edic to Fraser #2 Transmission Project

prepared for

North America Transmission, LLC

May 2012

BMcD Project No. 67756

Burns & McDonnell Engineering Company, Inc.
Houston, TX

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1.0 EXECUTIVE SUMMARY

North America Transmission, LLC, (NAT) has proposed to construct, operate and maintain approximately 88 miles of new transmission line and associated facilities in New York. The proposed Edic to Fraser #2 transmission line would connect the Edic Substation in Oneida County to the Fraser Substation in Delaware County. The transmission line configuration proposed for Edic to Fraser is a single circuit 345-kV with bundled (2) 1590-kcmil ACSR conductor per phase, supported on steel monopole structures. NAT retained Burns & McDonnell Engineering Company, Inc. (Burns & McDonnell) to prepare a planning level cost estimate to develop and construct the Project.

A hypothetical alignment served as the basis for the cost estimate. The line length of the hypothetical alignment is approximately 88 miles. Preliminary designs for the single circuit monopole structure family were developed based on line loading conditions appropriate for the region. Burns & McDonnell used the preliminary structure designs to develop a conceptual design for the Project. The conceptual design and estimated structure counts were used to estimate material and labor costs for the proposed transmission line.

Burns & McDonnell supplemented available substation data with appropriate design assumptions to develop conceptual designs for connecting the proposed transmission line to the existing Edic and Fraser substations. The conceptual design was used to develop an estimate of the material and labor costs for the required substation modifications.

Table 1 provides the estimated cost, excluding cost escalation and AFUDC. Burns & McDonnell estimated the transmission line will cost $157.7M. The estimated cost of modifications to the Edic and Fraser Substations, plus the addition of a series compensation station, is $14.6M. The total cost for labor and materials to construct the project is $172.3M, before contingency.

Table 1 - Estimated Project Costs

Cost Item	Estimated Cost
Transmission Line Materials	$82,055,000
Transmission Line Installation	$75,686,000
Transmission Line Costs Sub-Total	**$157,741,000**
Edic Substation	$2,440,000
Fraser Substation	$2,440,000
Series Compensation Station	$9,700,000
Substation Costs Sub-Total	**$14,580,000**
TTL Cost	**$172,321,000**

2.0 INTRODUCTION

North America Transmission has proposed to construct, operate and maintain approximately 88 miles of new transmission line in New York, connecting the Edic Substation in Oneida County to Fraser Substation in Delaware County. The transmission line configuration proposed is a single circuit 345-kV with bundled (2) 1590-kcmil ACSR conductors per phase, supported on steel monopole structures. NAT asked Burns & McDonnell to prepare a planning level cost estimate to construct the Project.

To develop the planning level cost estimate, Burns & McDonnell began with basic information about the Project provided by NAT, such as Project endpoints and general configuration. This information was used to make appropriate experience-based assumptions and develop design criteria and conceptual designs for the Project. Burns & McDonnell used the conceptual design, combined with recent project experience, to develop cost estimates for materials and construction labor.

This report summarizes the methodology, assumptions, and results of the estimating effort.

3.0 TRANSMISSION LINE CONCEPTUAL DESIGN & COST ESTIMATE

Burns & McDonnell first established preliminary transmission line design criteria. NAT specified that the transmission line will be single circuit 345-kV, with bundled (2) 1590-kcmil ACSR conductors per phase, supported by tubular steel pole structures. Additional design criteria provided by NAT included assumed line length and basic line design parameters.

A scaling factor of 1.4 was applied to the straight line distance between the Edic and Fraser Substations to get the assumed line length of 88-miles.

3.1 Structure Loading Criteria

Burns & McDonnell developed transmission line loading design criteria based on the location of the Project. The National Electric Safety Code (NESC) was used as the primary resource for development of the design criteria. Burns & McDonnell also considered common practices found in the Rural Utility Service (RUS) design manual and the American Society of Civil Engineers (ASCE) Manual of Practice, “Transmission Line Loading Guide.”

The Project lies entirely within the NESC Heavy loading district (Rule 250B). The NESC wind map indicates that the NESC Extreme Wind should be 90 mph (Rule 250C). For the NESC Ice & Wind case (Rule 250D), the ice map indicates that the radial ice should be 0.75" and the wind speed should be 40 mph. In addition to these NESC weather cases, additional weather cases were included in the design based on common practice. Table 2 provides a summary of each of the weather cases considered.

Table 2 - Design Weather Cases

Weather Case	Temperature	Wind	Ice
NESC Heavy (250B)	0º F	4-psf	0.5-in radial ice
NESC Extreme Wind (250C)	60º F	90-mph	0.0-in radial ice
NESC Ice & Wind (250D)	15º F	40-mph	0.75-in radial ice
NESC 6-psf Wind	60º F	6-psf	0.0-in radial ice
Heavy Ice	32º F	0-mph	1.0-in radial ice
Unbalanced Ice	0º F	0-psf	0.75/0.25-in radial ice
Max Operating (Sag)	212º F	0-mph	0.0-in radial ice
Galloping Swing	32º F	2-psf	0.5-in radial ice
Galloping Sag	32º F	0-psf	0.5-in radial ice
Swing 1	32º F	6-psf	0.0-in radial ice
Swing 2	60º F	6-psf	0.0-in radial ice
Swing 3	60º F	9-psf	0.0-in radial ice
Normal Everyday	60º F	0-mph	0.0-in radial ice
Uplift	0º F	0-mph	0.0-in radial ice

Burns & McDonnell increased the loads shown in each of the weather cases in Table 2 by applying overload factors as required by code or according to common industry practice in the region. The NESC Heavy case used standard NESC overload factors of 1.5 for vertical loads including structure weight, 2.5 for transverse loads, and 1.65 for wire tensions. An overload factor of 1.1 was applied to all loads for the NESC Extreme Wind case, which is a factor greater than required by NESC but commonly used. An overload factor of 1.1 was also applied to the Radial Ice cases. For all other cases an overload factor of 1.0 was applied.

3.2 Wire Design Criteria

The conductor size specified by NAT, 1590-kcmil ACSR, is available in two stranding configurations: the 45/7 strand Lapwing and the 84/19 strand Falcon. Burns & McDonnell as-

sumed the 84/19 Falcon for this study. Burns & McDonnell selected 7#8 Alumoweld® for the shield wire, based on recent practice for similar projects. Burns & McDonnell assumed a similarly sized OPGW for the second shield wire.

Burns & McDonnell used the criteria in Table 3 to determine tensions for the conductors and shield wires. The conceptual design assumed the maximum tension allowed by these criteria for structure loading. However, a tension associated with a ruling span of 90% of the wind span was used to determine structure above-ground height requirements. This is a conservative approach for both structure height and conductor tension.

3.3 Clearance Criteria

In developing the clearance criteria, Burns & McDonnell began with the conductor clearance required by NESC between the conductor and the ground. The minimum above-ground clearance to the conductor required by NESC at 345-kV is 25-ft. Common practice is to add a 3 to 5 foot buffer be added to this NESC clearance. For the purpose of this study, Burns & McDonnell used a 5-ft buffer over the NESC requirement as an additional allowance for unknowns. Therefore, a 30-ft above-ground clearance requirement was used throughout this study.

3.4 Structure Design

Previous projects for 345-kV steel monopole transmission lines have typically used design structure wind spans in the 1000 to 1200-ft range. Burns & McDonnell selected a design wind span of 1200-ft for the conceptual design. Based on the terrain found in the Project area, a design weight span of 1800-ft was selected, to be about 50% greater than the design wind span. Applying these wind and weight spans has typically resulted in average span lengths ranging from 900 to 1000-ft for past projects.

Table 3 - Wire Tension Limits

Weather Case	Cable Condition	% of Ultimate
NESC HEAVY (250B) (0°F conductor, 4psf wind, 0.5in radial ice)	Initial RS	60
NORMAL EVERYDAY (60°F conductor, 0psf wind, 0.0in radial ice)	Initial RS	35
NORMAL EVERYDAY (60°F conductor, 0psf wind, 0in radial ice)	Creep RS	25
EXTREME WIND (60°F conductor, 100mph wind, 0in radial ice)	Initial RS	60

Burns & McDonnell selected a single circuit monopole structure with delta phase configuration. Preliminary designs for this structure family were developed using PLS-Lite™ and the transmission line loading conditions stated in Section 3.1. The resulting tangent structure configuration and corresponding average height is illustrated in Figure 1.

Burns & McDonnell developed a single circuit tangent structure design for the required average structure height of 130-ft, resulting in a design with an estimated weight of 43,500-lbs for a direct-embedded structure. A shorter wind span of 900-ft was used to develop a single angle structure design for a 30° line angle. The resulting average structure height of 115-ft resulted in a design with an estimated weight of 45,000-lbs for a base-plated structure. A single circuit 90° dead end structure was similarly developed for a 900-ft wind span resulting in a design with an average structure height of 100-ft and an estimated weight of 56,500-lbs for a base-plated structure.

3.5 Foundation Design

Burns & McDonnell assumed foundation design using direct-embedded poles with concrete backfill for the tangent structures and drilled concrete piers for the angle and dead end structures. For estimating purposes, Burns & McDonnell assumed the embedment depth to be 25% of the above ground height (or 20% of the pole length for the embedded structures.) Concrete backfill was assumed for embedded poles with an assumed annulus of about 1 to 1.5 feet around the pole. Concrete drilled piers were assumed to be the minimum diameter allowed by the pole design with an average depth 35% of the pole length.

3.6 Right-of-Way Requirements

Burns & McDonnell applied the maximum wind case with overload factors to the structure designs described in Section 3.4 and a maximum span length of 1200-ft to determine minimum right-of-way requirements. This generated a conductor blowout that would require a minimum of 120-ft right of way width to keep the conductors inside the right-of-way.

3.7 Transmission Line Cost Estimate

Burns & McDonnell developed a conceptual design for the line with an average span length of approximately 950-ft based on the structure designs. The result was 490 structures for the 88 mile hypothetical alignment. In Burns & McDonnell's experience, a typical 345-kV transmission line will have between 75 and 85% tangent structures, with the balance of

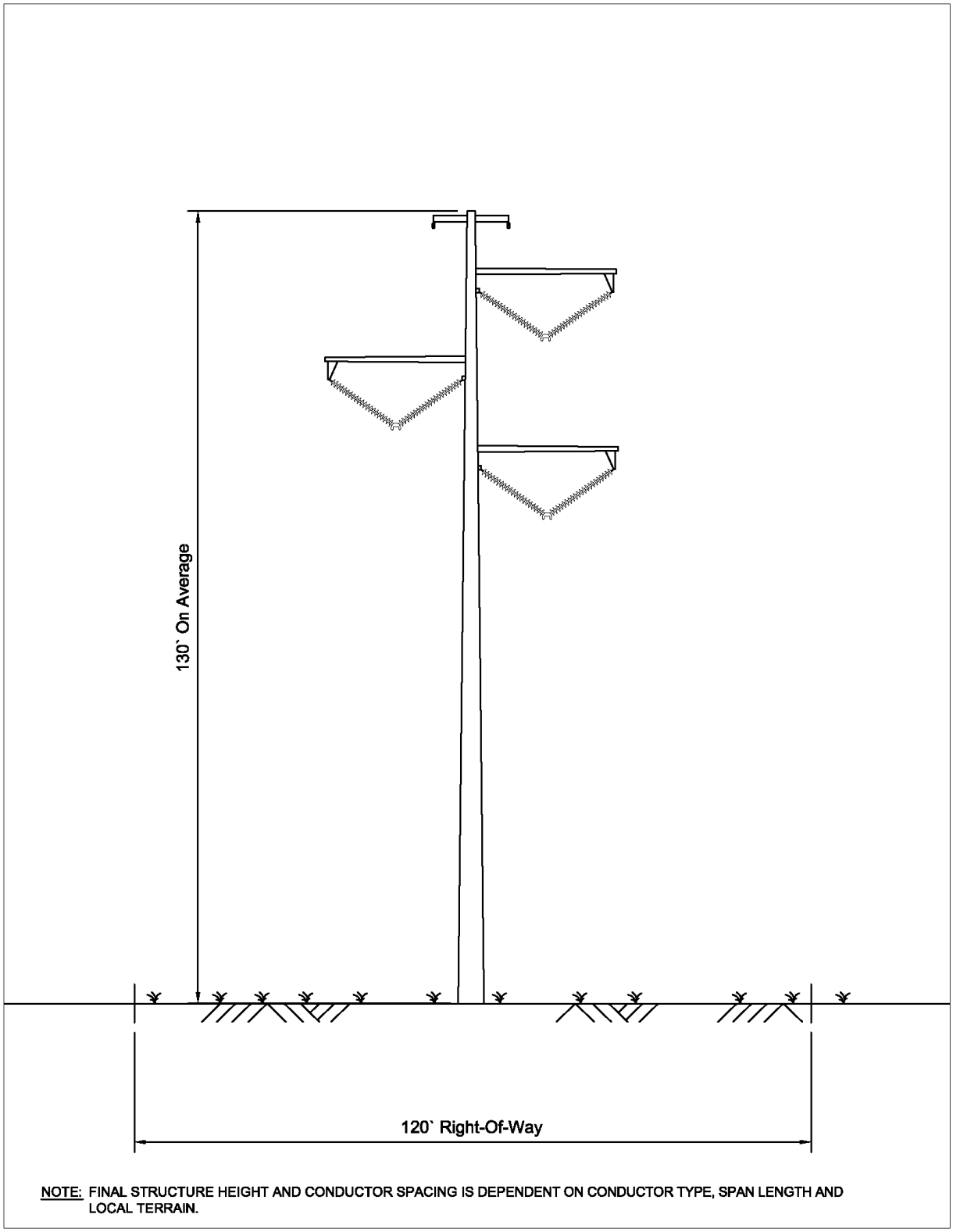


Figure 1 – Single Circuit Tubular Steel Monopole Tangent Structure

structures distributed between angles and dead ends. The structure counts were adjusted to approach 25% angles and dead ends to be conservative. The conceptual design used for the cost estimate assumes 370 tangent, 75 angle, and 45 dead end structures.

Burns & McDonnell estimated foundation and hardware quantities based on the structure count above. Wire quantities were estimated based on the design configuration and the length of the hypothetical alignment. Right-of-way preparation and restoration costs were estimated based on the line length, the assumed 120-ft right-of-way width, and the mix of land use in the Project area.

Assumed unit costs of transmission line materials and labor are shown in Table 4. These costs are generally based on Burns & McDonnell's experience with similar projects in other regions. Labor costs were adjusted as necessary to reflect expected labor costs in New York. Material costs were not adjusted for location, assuming that materials are generally competitively priced across the U.S. However, an allowance for taxes and additional handling costs (shipping, etc.) was added.

The resulting transmission line estimate of materials and installation labor costs for single circuit is shown in Table 5. The total estimated cost of materials and installation labor for single circuit is $155.2M, with $73.2M of labor and $82.0M of materials. The structures account for over $64.6M of the estimated single circuit cost of materials.

The estimated costs found in Table 5 do not include other costs of development, including routing, permitting, engineering, construction management, right-of-way acquisition, real estate, or substation modifications.

Table 4 - Material and Labor Unit Cost Assumptions

SPECIFIC LINE DETAILS		
ROW WIDTH	FT	120
# OF CIRCUITS		1
VOLTAGE	KV	345
CONDUCTOR TYPE		Falcon ACSR
# CONDUCTORS/BUNDLE		2
OPGW TYPE		CC-75-528-48F
# OF OPGW/LINE		1
OHGW TYPE		7#8 AW
# OF OHGW/LINE		1
% SURPLUS FOR WIRES		5%
UNIVERSAL MATERIAL COSTS		
CONDUCTOR	$/LF	$3.90
OPGW	$/LF	$2.20
OHGW	$/LF	$0.50
STEEL	$/LB	$2.60
ASSEMBLY COSTS		
V-STRING	ea	$840.00
ANGLE V-STRING	ea	$1,080.00
JUMPER POST	ea	$1,080.00
DEADEND STRAIN	ea	$2,040.00
OPGW TANGENT	ea	$150.00
OPGW ANGLE	ea	$240.00
OPGW DEADEND	ea	$360.00
OPGW SPLICE LOCATION	ea	$2,640.00
OHGW TANGENT	ea	$80.00
OHGW ANGLE	ea	$80.00
OHGW DEADEND	ea	$120.00

UNIVERSAL LABOR COSTS		
STRINGING		
CONDUCTOR	$/LF	$2.70
OPGW/WIRE*W/SPLICES	$/LF	$1.70
OHGW/WIRE	$/LF	$0.70
STRUCTURES		
TANGENT ERECTION	$/Pole	$8,100.00
ANGLE ERECTION	$/Pole	$9,500.00
DE ERECTION	$/Pole	$13,500.00
HARDWARE FRAMING		
V-STRING	ea	$1,690.00
ANGLE	ea	$1755.00
DEADEND ASSEMBLY	ea	$1,760.00
JUMPER	ea	$3,210.00
OHGW TANGENT	ea	$680.00
OHGW DEADEND	ea	$210.00
OPGW TANGENT	ea	$480.00
OPGW DEADEND	ea	$210.00
FOUNDATION		
DRILLED SHAFT FDN	$/CYD	$810.00
DIRECT EMBED/CONCRETE	$/CYD	$380.00
DIRECT EMBED/ROCK	$/CYD	$0.00
DIRECT EMBED/NATIVE	$/CYD	$0.00
ROCK DRILLING	$/CYD	$1,350.00
ROW COSTS		
TREE CLEARING (FULL)	$/MF	$22,700.00
CLEARING (FULL)	$/MF	$200.00
CLEARING (HALF)	$/MF	$28,300.00
MOWING	$/ACRE	$300.00
SILT FENCES	$/FT	$20.00
CULVERTS	ea	$8,100.00
GATES	ea	$2,200.00
TEMP CONST. ENTRANCE	ea	$5,400.00
TEMP CONST ROAD	FT	$30.00
MATTING	ea	$2,100.00
PIPELINE MITIGATION	MILE	$0.00

Table 5 - Estimated Single Circuit Transmission Line Material & Construction Costs

Cost Item	Quantity	Material (non-pole)	Structures	Labor	Total
Line Length (ft)	464640				
Line Length (miles)	88.0				
Total # of Structures	490				
# of Structures/mile	6				
Average Span (ft)	948				
STRUCTURE COSTS					
Deadend Structure Cost	45	$740,000	$6,611,000	$1,629,000	$8,980,000
Angle Structure Cost	80	$285,000	$9,360,000	$1,216,000	$10,861,000
Tangent Structure Cost	365	$1,004,000	$41,282,000	$4,961,000	$47,247,000
Total Structure Installed Cost	***490***	***$2,029,000***	***$57,253,000***	***$7,806,000***	***$67,088,000***
FOUNDATION COSTS					
Deadend Foundation Costs				$3,712,000	$3,712,000
Angle Foundation Costs				$6,146,000	$6,146,000
Tangent Foundation Costs				$4,549,000	$4,549,000
Rock Drilling Adder				$4,504,000	$4,504,000
Total Foundation Installed Cost				**$18,911,000**	**$18,911,000**
INSTALLED WIRES					
Conductor - 2 "Falcon" 1590 ACSR		$11,417,000		$7,904,000	$19,321,000
Static Wire - CC-75-528-48F OPGW		$1,074,000		$830,000	$1,904,000
Static Wire - 7#8 AW OHGW		$244,000		$342,000	$586,000
Total Wire Installed Cost		**$12,735,000**		**$9,076,000**	**$21,811,000**
Construction Incidentals		***$661,000***		***$5,573,000***	***$6,234,000***
ROW Preparation Costs				***$34,320,000***	***$34,320,000***
Spare Parts (2.5 miles)		***$438,210***	***$1,626,506***		***$2,064,716***
Sales Tax & Handling (10% of Mat'l)		***$1,586,321***	***$5,725,300***		***$7,311,621***
Total Labor and Material		***$17,450,000***	***$64,605,000***	**$75,686,000**	**$157,740,000**

4.0 SUBSTATION CONCEPTUAL DESIGN & COST ESTIMATE

The following sections describe the assumptions, conceptual design, and estimated costs for the required modifications at Edic and Fraser Substations to connect the proposed 345kV single-circuit transmission line.

4.1 Edic Substation

The existing Edic Substation will be expanded to accommodate the new 345kV transmission line. The expansion will include adding a new transmission line position to the existing 345kV bus and its associated protective relaying.

From aerial imagery and other publicly available data sources, Burns & McDonnell has determined that the current 345kV yard is a breaker-and-a-half bus configuration with four bays. There is an available position on the outer, northeastern bay that can be used to connect the new transmission line. Due to an existing position, there will be limited site work required within the existing substation. The following major equipment and materials forms the basis of the cost estimate:

- One (1) 345kV, 3000A, dead-tank, SF_6, power circuit breaker
- Two (2) 345kV, 3000A, three-phase, disconnect switches
- Three (3) 345kV, single-phase, voltage transformers
- Three (3) 345kV, station class, surge arresters
- One (1) 345kV, A-frame, low-tension, dead-end structure
- One (1) lot of steel support structures
- One (1) lot of bus, conductors, and materials
- One (1) lot of support foundations
- One (1) line protection and breaker control relay panel

The estimated cost to expand the Edic Substation to accommodate the proposed transmission line, based upon Burns & McDonnell's experience with similar projects, is $2.44M as shown in Table 6.

Table 6 - Estimated Edic Substation Costs

Project Task – Edic Substation Expansion (single circuit)	Cost ($)
Equipment & Materials	$1,050,000
Construction & Testing Labor	$850,000
Installation Cost (Sub-Total)	***$1,900,000***
Engineering Costs	$240,000
Procurement & Construction Management	$300,000
Total Substation Upgrade Costs	**$2,440,000**

The following assumptions form the basis of this estimate:

- The project site does not require slurry, use of casings, or excessive drilling or excavation of rock.
- Drilled piers or slab type foundations will be used to support the required structures and equipment.
- The existing grounding system is complete and can accommodate the new fault current level (with the new line), requiring only ground leads to new equipment.
- The existing RTU/SCADA at the substation has sufficient spare status, metering and control points for the new line position.
- The existing control house at the substation has adequate space for the installation of the protection & control equipment needed for the new position.
- The existing AC/DC Station Service system can accommodate the additional electrical loads from the new equipment, and has enough spare AC and DC breakers in the distribution panels for the new equipment.
- Only one (1) mobilization & de-mobilization will be required.

4.2 Fraser Substation

The existing Fraser Substation will be expanded to accommodate the new 345kV transmission line. The expansion will include adding a new transmission line position to the existing 345kV bus and its associated protective relaying.

From aerial imagery and other publicly available data sources, Burns & McDonnell has determined that the current 345kV yard is a breaker-and-a-half bus configuration with three bays. There is an available position on the southernmost bay that can be used to connect the new transmission line. Due to an existing position, there will be limited site work required within the existing substation. The following major equipment and materials forms the basis of the cost estimate:

- One (1) 345kV, 3000A, dead-tank, SF_6, power circuit breaker
- Two (2) 345kV, 3000A, three-phase, disconnect switches
- Three (3) 345kV, single-phase, voltage transformers
- Three (3) 345kV, station class, surge arresters
- One (1) 345kV, A-frame, low-tension, dead-end structure
- One (1) lot of steel support structures
- One (1) lot of bus, conductors, and materials
- One (1) lot of support foundations
- One (1) line protection and breaker control relay panel

The estimated cost to expand the Fraser Substation to accommodate the proposed transmission line, based upon Burns & McDonnell's experience with similar projects, is $2.44M as shown in Table 7.

Table 7 - Estimated Fraser Substation Costs

Project Task – Fraser Substation Expansion (single circuit)	**Cost ($)**
Equipment & Materials	$1,050,000
Construction & Testing Labor	$850,000
Installation Cost (Sub-Total)	***$1,900,000***
Engineering Costs	$240,000
Procurement & Construction Management	$300,000
Total Substation Upgrade Costs	**$2,440,000**

The following assumptions form the basis of this estimate:

- The project site does not require slurry, use of casings, or excessive drilling or excavation of rock.
- Drilled piers or slab type foundations will be used to support the required structures and equipment.
- The existing grounding system is complete and can accommodate the new fault current level (with the new line), requiring only ground leads to new equipment.
- The existing RTU/SCADA at the substation has sufficient spare status, metering and control points for the new line position.
- The existing control house at the substation has adequate space for the installation of the protection & control equipment needed for the new position.

- The existing AC/DC Station Service system can accommodate the additional electrical loads from the new equipment, and has enough spare AC and DC breakers in the distribution panels for the new equipment.
- Only one (1) mobilization & de-mobilization will be required.

4.3 Series Compensation Station

A series compensation station will be installed roughly mid-line of the new transmission line. The ultimate location of the series capacitor segment on the line will be established at a later time based on maintenance needs, line design criteria and other operating considerations. The exact location on the line will not influence the reactive compensation requirements.

The proposed new 345kV series compensation station will consist of the following major equipment and materials, which form the basis of the cost estimate:

- One (1) 345kV Series Capacitor Bank including damping reactors, MOVs, steel platforms, and protection panel
- Three (3) 345kV, 3000A, three-phase, disconnect switches
- Six (6) 345kV, station class, line surge arresters
- Two (2) 345kV, A-frame, low-tension, dead-end structures
- One (1) lot of steel support structures
- One (1) lot of bus, conductors, and materials
- One (1) lot of support foundations
- One (1) SCADA/RTU panel
- One (1) prefabricated, control building with HVAC

The estimated cost for the new series compensation station, based upon Burns & McDonnell's experience with similar projects, is $9.7M as shown in Table 8.

The following assumptions form the basis of this estimate:

- There is free and clear access to the project site for the entire construction period.
- There are no contaminated soils, asbestos traces, or lead on the project site.
- The project site is relatively flat and stepping the station will not be necessary.
- The project site does not require slurry, use of casings, or excessive drilling or excavation of rock.
- The substation will be approximately 300-feet wide by 400-feet long.
- Drilled piers or slab type foundations will be used to support the required structures and equipment.

Table 8 - Estimated Series Compensation Station Costs

Project Task – Series Compensation Station (single circuit)	Cost ($)
345kV Series Capacitors	$4,500,000
Equipment & Materials	$600,000
Construction & Testing Labor	$3,500,000
Installation Cost (Sub-Total)	***$8,600,000***
Engineering Costs	$400,000
Procurement & Construction Management	$700,000
Total Substation Upgrade Costs	**$9,700,000**

- No landscaping will be required at the project site.
- No access roads are required to be installed.
- Only one (1) mobilization & de-mobilization will be required.

5.0 ESTIMATED COST SUMMARY

Combining all of the costs developed in Sections 3 and 4 yields total estimated project material and labor costs of $172.3M. The contributing costs are tabulated and aggregated in Table 9 below.

Table 9 - Estimated Project Costs

Cost Item	Estimated Cost
Transmission Line Materials	$82,055,000
Transmission Line Installation	$75,686,000
Transmission Line Costs Sub-Total	**$157,741,000**
Edic Substation	$2,440,000
Fraser Substation	$2,440,000
Series Compensation Station	$9,700,000
Substation Costs Sub-Total	**$14,580,000**
TTL Cost	**$172,321,000**

6.0 STUDY QUALIFICATIONS

Estimates, forecasts, projections, and schedules prepared by the Engineer (Burns & McDonnell) relating to costs, quantities, demands or pricing (including but not limited to, property costs, construction, operations or maintenance costs, and/or energy or commodity demand and pricing),

are opinions based on Engineer's experience, qualifications and judgment. Engineer has no control over the weather, cost and availability of labor, materials and equipment, labor productivity, energy or commodity pricing, demand or usage, population demographics, market conditions, change in technology, and other economic or political factors affecting such estimates or projections. Owner acknowledges that actual results may vary significantly from the representations and opinions herein, and nothing herein shall be construed as a guarantee or warranty (actual or implied) that actual rates, demand, pricing, costs, performance, schedules, quantities, technology, and related items will not vary from the opinions contained in the estimates, forecasts, projections, schedules, results or other statements or opinions prepared by the Engineer.

Attachment 3 - Project Modeling Parameters

Line Modeling Parameters

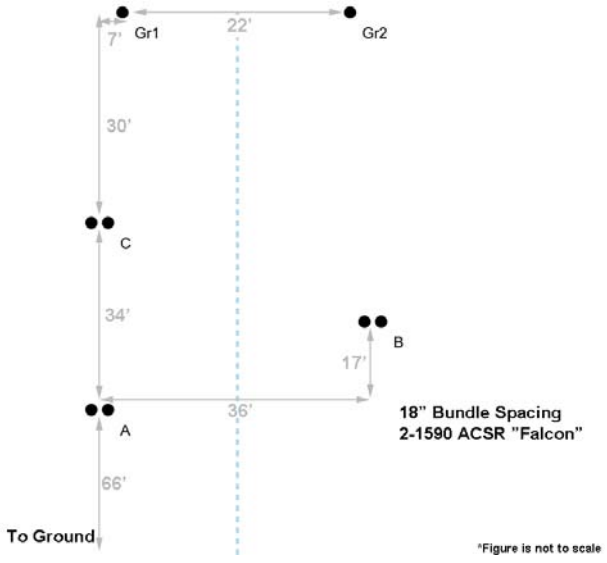
All assumptions used to calculate the positive sequence impedance data are shown below. The below table provides the total line impedance with and without the series compensation factored in. Additionally, the individual segments including the series compensation station segment are provided for more detailed modeling purposes.

- 2-1590 ACSR “Falcon” Phase Conductor
- Conductor Ampacity at 90C utilized for normal rating
- Conductor Ampacity at 100C utilized for emergency rating
- Line length estimated at 88 miles

Positive Sequence Line Impedance

Full Line Impedance	R	X	B	Normal (MVA)	Emergency (MVA)
Edic-Frasier Line w/o Compensation	0.0023	0.04393	0.74825	1618.66	1788
Edic-Frasier w/ 30% Compensation	0.0023	0.03075	0.74825	1618.66	1788
Line Segments					
Edic - Edic SC	0.00138	0.02636	0.4489	1618.66	1788
Edic SC - Frasier SC	0	-0.01318	0	1618.66	1788
Frasier SC – Frasier	0.00092	0.01757	0.2993	1618.66	1788

***Supplied values are represented as per unit (p.u) on a 100 MVA base**



Tower Configuration

Attachment 4 – Capital Cost Estimate and Drawdown Schedule

CARIS: Edic - Fraser #2 **Pmt Case:** Rate Base Revenue Req

Attachment 4 - Quarterly Capital Costs

All amounts in USD 000s, unless otherwise noted

Period Start		1-May-13	1-Jul-13	1-Oct-13	1-Jan-14	1-Apr-14	1-Jul-14	1-Oct-14	1-Jan-15	1-Apr-15	1-Jul-15
Period End		30-Jun-13	30-Sep-13	31-Dec-13	31-Mar-14	30-Jun-14	30-Sep-14	31-Dec-14	31-Mar-15	30-Jun-15	30-Sep-15
Quarter		Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
Quarter #		-	1	2	3	4	5	6	7	8	9
Year		2013	2013	2013	2014	2014	2014	2014	2015	2015	2015
Uses of Cash (Actual Construction Funding)	[$]										
Materials	98,521	-	-	-	-	-	-	-	-	-	-
Labor	89,283	-	-	-	-	-	-	-	-	-	-
Engineering and Construction Management	11,134	100	150	150	150	150	150	150	150	429	988
Licensing and Permitting	7,000	560	840	840	840	840	840	840	840	560	-
Real Estate Acquisition	20,300	-	-	-	-	-	-	-	-	1,845	5,536
Overhead and Insurance	3,025	110	165	165	165	165	165	165	165	165	165
Property and Sales Tax	11,988	-	-	-	-	-	-	-	-	-	-
Closing Costs	7,785	-	-	-	-	-	-	-	-	-	-
Interest & Fees During Construction (Project Level)	11,212	-	-	-	-	-	-	-	-	-	-
Contingency	22,048	-	-	-	-	-	-	-	-	-	-
Total Uses of Cash	**$282,295**	**$770**	**$1,155**	**$1,155**	**$1,155**	**$1,155**	**$1,155**	**$1,155**	**$1,155**	**$3,000**	**$6,690**

Assumptions

Materials: Attachment 2 - Burns & McDonnell Planning Level Cost Estimate escalted to 2016$

Labor: Attachment 2 - Burns & McDonnell Planning Level Cost Estimate escalted to 2016$

Engineering and Construction Management: Including all internal and external engineering and construction management

Licensing and Permitting: Including all internal and external licensing, permitting, regulatory approvals

Real Estate Acquisition: 120' easements for 88 miles @ $10,000 per acre, plus legal, survey, acquisition costs, other fees

Overhead and Insurance: Including all overhead and insurance costs

Property and Sales Tax: Sales tax at 8.75%. Property taxes at 75% equalization rate, $33.3/1000 assessed value

Interest & Fees During Construction: Equity ROE of 13% to financial close, 50% debt at 7% balance equity thereafter

Contingency: 10% of all costs before Interest & Fees During Construction

CARIS: Edic - Fraser #2

Pmt Case: Rate Base Revenue Req

Attachment 4 - Quarterly Capital Costs

All amounts in USD 000s, unless otherwise noted

Period Start		1-Oct-15	1-Jan-16	1-Apr-16	1-Jul-16	1-Oct-16	1-Jan-17	1-Apr-17	1-Jul-17	1-Oct-17
Period End		31-Dec-15	31-Mar-16	30-Jun-16	30-Sep-16	31-Dec-16	31-Mar-17	30-Jun-17	30-Sep-17	31-Dec-17
Quarter		Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Quarter #		10	11	12	13	14	15	16	17	18
Year		2015	2016	2016	2016	2016	2017	2017	2017	2017
Uses of Cash (Actual Construction Funding)	[$]									
Materials	98,521	$7,882	$11,823	$11,823	$11,823	$11,823	$11,823	$11,823	$11,823	$7,882
Labor	89,283	-	-	9,398	14,097	14,097	14,097	14,097	14,097	9,398
Engineering and Construction Management	11,134	988	988	988	988	988	988	988	988	659
Licensing and Permitting	7,000	-	-	-	-	-	-	-	-	-
Real Estate Acquisition	20,300	5,536	5,536	1,845	-	-	-	-	-	-
Overhead and Insurance	3,025	165	165	165	165	165	165	165	165	110
Property and Sales Tax	11,988	690	1,034	1,034	1,034	1,034	1,034	1,034	1,034	4,057
Closing Costs	7,785	7,785	-	-	-	-	-	-	-	-
Interest & Fees During Construction (Project Level)	11,212	448	517	510	916	1,310	1,670	2,090	2,255	1,495
Contingency	22,048	1,303	1,955	2,525	2,811	2,811	2,811	2,811	2,811	2,211
Total Uses of Cash	**$282,295**	**$24,797**	**$22,019**	**$28,289**	**$31,835**	**$32,229**	**$32,589**	**$33,009**	**$33,174**	**$25,811**

Assumptions

Materials: Attachment 2 - Burns & McDonnell Planning Level Cost Estimate escalted to 2016$

Labor: Attachment 2 - Burns & McDonnell Planning Level Cost Estimate escalted to 2016$

Engineering and Construction Management: Including all internal and external engineering and construction management

Licensing and Permitting: Including all internal and external licensing, permitting, regulatory approvals

Real Estate Acquisition: 120' easements for 88 miles @ $10,000 per acre, plus legal, survey, acquisition costs, other fees

Overhead and Insurance: Including all overhead and insurance costs

Property and Sales Tax: Sales tax at 8.75%. Property taxes at 75% equalization rate, $33.3/1000 assessed value

Interest & Fees During Construction: Equity ROE of 13% to financial close, 50% debt at 7% balance equity thereafter

Contingency: 10% of all costs before Interest & Fees During Construction

Attachment 5 – Revenue Requirement

CARIS: Edic - Fraser #2

Pmt Case: Rate Base Revenue Req

Attachment 5 - Annual Revenue Requirement

All amounts in USD 000s, unless otherwise noted

Period Start				1-Dec-17	1-Dec-18	1-Dec-19	1-Dec-20	1-Dec-21	1-Dec-22	1-Dec-23	1-Dec-24	1-Dec-25	1-Dec-26
Period End				30-Nov-18	30-Nov-19	30-Nov-20	30-Nov-21	30-Nov-22	30-Nov-23	30-Nov-24	30-Nov-25	30-Nov-26	30-Nov-27
Period % of Year				100.0%	100.0%	100.3%	100.0%	100.0%	100.0%	100.3%	100.0%	100.0%	100.0%
Year #				1	2	3	4	5	6	7	8	9	10
Year				2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Calculations													
Rate Base	[$]		291,258										
WACC													
	Percentage	***Cost***	***Weighted Avg***										
Debt	50.00%	7.00%	3.50%										
Equity	50.00%	13.00%	6.50%										
		WACC	**10.00%**										
General Inflation Rate	2.50%												
Revenue Requirement on Capital													
Opening Rate Base	[$]			291,258	282,374	268,904	256,391	244,755	233,905	223,767	213,956	204,155	194,344
Book Depreciation	[$]	(291,258)		(5,825)	(5,825)	(5,841)	(5,825)	(5,825)	(5,825)	(5,841)	(5,825)	(5,825)	(5,825)
Deferred Taxes	[$]	(0)		(3,058)	(7,646)	(6,671)	(5,811)	(5,026)	(4,312)	(3,970)	(3,976)	(3,986)	(3,976)
Ending Rate Base	[$]		291,258	282,374	268,904	256,391	244,755	233,905	223,767	213,956	204,155	194,344	184,543
Return on Rate Base	[$]			28,681	27,563	26,337	25,057	23,932	22,883	21,946	20,905	19,924	18,944
Book Depreciation	[$]			5,825	5,825	5,841	5,825	5,825	5,825	5,841	5,825	5,825	5,825
Deferred Taxes	[$]			3,058	7,646	6,671	5,811	5,026	4,312	3,970	3,976	3,986	3,976
Current Income Taxes (Book)	[$]			7,001	2,033	2,576	2,987	3,376	3,721	3,734	3,364	3,011	2,678
Revenue Requirement on Capital	[$]			44,566	43,067	41,425	39,679	38,159	36,741	35,492	34,070	32,746	31,422
Operations and Maintenance	[$]			3,250	3,331	3,413	3,494	3,575	3,656	3,738	3,819	3,900	3,981
Property Taxes	[$]			8,458	7,023	6,875	6,698	6,547	6,402	6,277	6,108	5,945	5,769
Total Revenue Requirement	**[$]**			**56,274**	**53,421**	**51,713**	**49,870**	**48,281**	**46,800**	**45,506**	**43,997**	**42,591**	**41,173**
Taxes													
Book Income (Project Level)													
EBITDA	[$]			44,566	43,067	41,425	39,679	38,159	36,741	35,492	34,070	32,746	31,422
less: Book Depreciation	[$]	(291,258)		(5,825)	(5,825)	(5,841)	(5,825)	(5,825)	(5,825)	(5,841)	(5,825)	(5,825)	(5,825)
EBIT	[$]			38,740	37,242	35,584	33,854	32,334	30,916	29,650	28,245	26,921	25,597
less: Interest Expense	[$]			(9,813)	(9,615)	(9,443)	(9,219)	(9,022)	(8,824)	(8,650)	(8,428)	(8,231)	(8,033)
EBT	[$]			28,928	27,627	26,141	24,634	23,312	22,092	21,001	19,816	18,690	17,564
Taxable Income (Project Level)													
EBITDA	[$]			44,566	43,067	41,425	39,679	38,159	36,741	35,492	34,070	32,746	31,422
less: Tax Depreciation	[$]	(291,258)		(14,563)	(27,669)	(24,903)	(22,427)	(20,184)	(18,145)	(17,184)	(17,184)	(17,213)	(17,184)
EBIT	[$]			30,003	15,397	16,523	17,252	17,975	18,596	18,307	16,886	15,533	14,238
less: Interest Expense	[$]			(9,813)	(9,615)	(9,443)	(9,219)	(9,022)	(8,824)	(8,650)	(8,428)	(8,231)	(8,033)
EBT	[$]			20,190	5,782	7,080	8,033	8,953	9,771	9,657	8,457	7,302	6,205
Tax Depreciation													
15 Year MACRS Schedule	[%]	100.00%		5.00%	9.50%	8.55%	7.70%	6.93%	6.23%	5.90%	5.90%	5.91%	5.90%
Tax Depreciation	[$]	291,258		14,563	27,669	24,903	22,427	20,184	18,145	17,184	17,184	17,213	17,184

Assumptions

Operations and Maintenance: Including all administrative, consulting, legal, staff, audit, financial, O and M contract and insurance costs

Property Tax: 75% equalization rate, $33.3/1000 assessed value

CARIS: Edic - Fraser #2 Pmt Case: Rate Base Revenue Req

Attachment 5 - Annual Revenue Requirement

All amounts in USD 000s, unless otherwise noted

Period Start				1-Dec-27	1-Dec-28	1-Dec-29	1-Dec-30	1-Dec-31	1-Dec-32	1-Dec-33	1-Dec-34	1-Dec-35	1-Dec-36
Period End				30-Nov-28	30-Nov-29	30-Nov-30	30-Nov-31	30-Nov-32	30-Nov-33	30-Nov-34	30-Nov-35	30-Nov-36	30-Nov-37
Period % of Year				100.3%	100.0%	100.0%	100.0%	100.3%	100.0%	100.0%	100.0%	100.3%	100.0%
Year #				11	12	13	14	15	16	17	18	19	20
Year				2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Calculations													
Rate Base	[$]	291,258											
WACC													
	Percentage	***Cost***	***Weighted Avg***										
Debt	50.00%	7.00%	3.50%										
Equity	50.00%	13.00%	6.50%										
		WACC	**10.00%**										
General Inflation Rate	2.50%												
Revenue Requirement on Capital													
Opening Rate Base	[$]			184,543	174,722	164,921	155,110	145,309	135,488	128,694	124,908	121,122	117,325
Book Depreciation	[$]	(291,258)		(5,841)	(5,825)	(5,825)	(5,825)	(5,841)	(5,825)	(5,825)	(5,825)	(5,841)	(5,825)
Deferred Taxes	[$]	(0)		(3,980)	(3,976)	(3,986)	(3,976)	(3,980)	(968)	2,039	2,039	2,044	2,039
Ending Rate Base	[$]		291,258	174,722	164,921	155,110	145,309	135,488	128,694	124,908	121,122	117,325	113,539
Return on Rate Base	[$]			18,012	16,982	16,001	15,020	14,078	13,209	12,680	12,301	11,955	11,543
Book Depreciation	[$]			5,841	5,825	5,825	5,825	5,841	5,825	5,825	5,825	5,841	5,825
Deferred Taxes	[$]			3,980	3,976	3,986	3,976	3,980	968	(2,039)	(2,039)	(2,044)	(2,039)
Current Income Taxes (Book)	[$]			2,347	1,991	1,638	1,305	970	3,671	6,486	6,353	6,238	6,088
Revenue Requirement on Capital	[$]			30,181	28,773	27,450	26,126	24,870	23,673	22,952	22,441	21,989	21,417
Operations and Maintenance	[$]			4,063	4,144	4,225	4,306	4,388	4,469	4,550	4,631	4,713	4,794
Property Taxes	[$]			5,597	5,381	5,169	4,944	4,720	4,516	4,420	4,365	4,316	4,239
Total Revenue Requirement	**[$]**			**39,840**	**38,298**	**36,843**	**35,376**	**33,978**	**32,658**	**31,923**	**31,437**	**31,018**	**30,450**
Taxes													
Book Income (Project Level)													
EBITDA	[$]			30,181	28,773	27,450	26,126	24,870	23,673	22,952	22,441	21,989	21,417
less: Book Depreciation	[$]	(291,258)		(5,841)	(5,825)	(5,825)	(5,825)	(5,841)	(5,825)	(5,825)	(5,825)	(5,841)	(5,825)
EBIT	[$]			24,340	22,948	21,624	20,301	19,029	17,848	17,127	16,616	16,148	15,592
less: Interest Expense	[$]			(7,857)	(7,637)	(7,440)	(7,242)	(7,064)	(6,847)	(6,649)	(6,451)	(6,271)	(6,056)
EBT	[$]			16,483	15,311	14,185	13,058	11,965	11,001	10,478	10,165	9,878	9,537
Taxable Income (Project Level)													
EBITDA	[$]			30,181	28,773	27,450	26,126	24,870	23,673	22,952	22,441	21,989	21,417
less: Tax Depreciation	[$]	(291,258)		(17,213)	(17,184)	(17,213)	(17,184)	(17,213)	(8,592)	-	-	-	-
EBIT	[$]			12,968	11,589	10,236	8,942	7,657	15,081	22,952	22,441	21,989	21,417
less: Interest Expense	[$]			(7,857)	(7,637)	(7,440)	(7,242)	(7,064)	(6,847)	(6,649)	(6,451)	(6,271)	(6,056)
EBT	[$]			5,111	3,952	2,796	1,699	593	8,234	16,303	15,990	15,719	15,362
Tax Depreciation													
15 Year MACRS Schedule	[%]	100.00%		5.91%	5.90%	5.91%	5.90%	5.91%	2.95%	-%	-%	-%	-%
Tax Depreciation	[$]	291,258		17,213	17,184	17,213	17,184	17,213	8,592	-	-	-	-

Assumptions

Operations and Maintenance: Including all administrative, consulting, legal, staff, audit, financial, O and M contract and insurance costs

Property Tax: 75% equalization rate, $33.3/1000 assessed value

CARIS: Edic - Fraser #2 **Pmt Case:** Rate Base Revenue Req

Attachment 5 - Annual Revenue Requirement

All amounts in USD 000s, unless otherwise noted

Period Start				1-Dec-37	1-Dec-38	1-Dec-39	1-Dec-40	1-Dec-41	1-Dec-42	1-Dec-43	1-Dec-44	1-Dec-45	1-Dec-46
Period End				30-Nov-38	30-Nov-39	30-Nov-40	30-Nov-41	30-Nov-42	30-Nov-43	30-Nov-44	30-Nov-45	30-Nov-46	30-Nov-47
Period % of Year				100.0%	100.0%	100.3%	100.0%	100.0%	100.0%	100.3%	100.0%	100.0%	100.0%
Year #				21	22	23	24	25	26	27	28	29	30
Year				2038	2039	2040	2041	2042	2043	2044	2045	2046	2047
Calculations													
Rate Base	[$]		291,258										
WACC													
	Percentage	***Cost***	***Weighted Avg***										
Debt	50.00%	7.00%	3.50%										
Equity	50.00%	13.00%	6.50%										
		WACC	**10.00%**										
General Inflation Rate	2.50%												
Revenue Requirement on Capital													
Opening Rate Base	[$]			113,539	109,752	105,966	102,169	98,383	94,597	90,810	87,013	83,227	79,441
Book Depreciation	[$]	(291,258)		(5,825)	(5,825)	(5,841)	(5,825)	(5,825)	(5,825)	(5,841)	(5,825)	(5,825)	(5,825)
Deferred Taxes	[$]	(0)		2,039	2,039	2,044	2,039	2,039	2,039	2,044	2,039	2,039	2,039
Ending Rate Base	[$]		291,258	109,752	105,966	102,169	98,383	94,597	90,810	87,013	83,227	79,441	75,654
Return on Rate Base	[$]			11,165	10,786	10,435	10,028	9,649	9,270	8,916	8,512	8,133	7,755
Book Depreciation	[$]			5,825	5,825	5,841	5,825	5,825	5,825	5,841	5,825	5,825	5,825
Deferred Taxes	[$]			(2,039)	(2,039)	(2,044)	(2,039)	(2,039)	(2,039)	(2,044)	(2,039)	(2,039)	(2,039)
Current Income Taxes (Book)	[$]			5,955	5,823	5,706	5,557	5,425	5,292	5,174	5,027	4,894	4,762
Revenue Requirement on Capital	[$]			20,906	20,395	19,938	19,371	18,860	18,349	17,886	17,325	16,814	16,303
Operations and Maintenance	[$]			4,875	4,956	5,038	5,119	5,200	5,281	5,363	5,444	5,525	5,606
Property Taxes	[$]			4,169	4,095	4,026	3,931	3,842	3,749	3,661	3,548	3,440	3,328
Total Revenue Requirement	**[$]**			**29,950**	**29,446**	**29,001**	**28,421**	**27,903**	**27,379**	**26,909**	**26,317**	**25,779**	**25,237**
Taxes													
Book Income (Project Level)													
EBITDA	[$]			20,906	20,395	19,938	19,371	18,860	18,349	17,886	17,325	16,814	16,303
less: Book Depreciation	[$]	(291,258)		(5,825)	(5,825)	(5,841)	(5,825)	(5,825)	(5,825)	(5,841)	(5,825)	(5,825)	(5,825)
EBIT	[$]			15,081	14,570	14,097	13,546	13,035	12,524	12,045	11,500	10,989	10,478
less: Interest Expense	[$]			(5,858)	(5,660)	(5,477)	(5,265)	(5,067)	(4,869)	(4,684)	(4,474)	(4,276)	(4,078)
EBT	[$]			9,223	8,910	8,619	8,282	7,968	7,655	7,361	7,027	6,713	6,399
Taxable Income (Project Level)													
EBITDA	[$]			20,906	20,395	19,938	19,371	18,860	18,349	17,886	17,325	16,814	16,303
less: Tax Depreciation	[$]	(291,258)		-	-	-	-	-	-	-	-	-	-
EBIT	[$]			20,906	20,395	19,938	19,371	18,860	18,349	17,886	17,325	16,814	16,303
less: Interest Expense	[$]			(5,858)	(5,660)	(5,477)	(5,265)	(5,067)	(4,869)	(4,684)	(4,474)	(4,276)	(4,078)
EBT	[$]			15,048	14,735	14,460	14,107	13,793	13,480	13,202	12,852	12,538	12,225
Tax Depreciation													
15 Year MACRS Schedule	[%]	100.00%		-%	-%	-%	-%	-%	-%	-%	-%	-%	-%
Tax Depreciation	[$]	291,258		-	-	-	-	-	-	-	-	-	-

Assumptions

Operations and Maintenance: Including all administrative, consulting, legal, staff, audit, financial, O and M contract and insurance costs

Property Tax: 75% equalization rate, $33.3/1000 assessed value

Attachment 6 – Resumes of Key Personnel

PAUL G. THESSEN

President

EXPERIENCE **LS POWER DEVELOPMENT, LLC** St. Louis, Missouri

2008 – present **President** – Leads the team responsible for identifying and executing LS Power's fossil generation and transmission development opportunities. Responsibilities include day to day oversight of development, environmental permitting, regulatory, marketing, engineering and construction management functions. Participated in the successful development of more than 7,700 MW of greenfield generation projects and two large-scale transmission projects during his tenor at LS Power.

2001 – 2008 **Executive Vice President** - Responsible for managing all new project development activities for LS Power including, identifying and implementing market/business opportunities, project conceptualization, environmental/regulatory permitting, public relations, fuel supply and transportation arrangements, electrical interconnection and transmission arrangements, long term power sales arrangements and project economics. Led the team responsible for developing multiple coal-fired, natural gas-fired and wind generation facilities representing approximately 10,000 MW of generating capacity, along with a 500 mile, 500 kV transmission line. Successes include completion of development, financing and start of construction of (i) a 665 MW coal-fired generation project in Arkansas in March 2006 and (ii) a 900 MW coal-fired generation project in Texas in August 2007.

1999-2001 **Vice President, New Business Development** – Responsible for identifying and pursuing new business opportunities. Responsibilities included identifying target markets, project conceptualization, strategic planning, conducting financial analyses and marketing and securing long-term power sale agreements for new, large-scale power generation facilities. Managed conceptualization and development of multiple projects. Served in an oversight role providing guidance to project development team to assist in resolving project development related issues.

1996-1999 **Assistant Vice President** – Responsible for coordinating all project development activities including siting, environmental/regulatory permitting, conceptual engineering, financial analysis, community relations and contractual arrangements for multiple natural gas-fired power generation facilities in the U.S. Managed internal staff and multiple outside engineering, environmental and public relations consultants. Developed detailed financial proformas to support project financing. Also participated in marketing and negotiation of long term power sales agreements. While serving in this role, successfully completed the development and financing of two natural gas fired power

generation projects representing a total capital investment of approximately $1 billion and 2,000 Megawatts of capacity.

1993-1996 **Project Manager** – Responsible for coordinating project development activities for multiple natural gas-fired power generation facilities in the U.S. Supervised completion of regulatory approval process involving an environmental impact statement and over two dozen approvals from various federal, state and local regulatory bodies for two power generation projects. Testified before the state public service commission to support an application for certificate of public convenience and necessity. Negotiated and implemented complex set of contracts for natural gas supply, transport and storage involving six contracting parties. Participated in EPC, electrical interconnection, steam sales, local community and financing negotiations for multiple power generation facilities. Activities resulted in the successful development and financing of two - $200 million, 245 Megawatt power generation facilities. Also served as project liaison between development and construction teams and developed responses to numerous electric utility requests for proposals for new generating capacity.

1992-1993 **Assistant Project Manager** – Developed and implemented site selection criteria for green-field, natural gas fired power generation facilities and identified and secured sites for such facilities. Identified potential thermal energy users and secured thermal energy sales contracts. Developed proposals in response to utility solicitations for new generating capacity. Performed conceptual engineering and other project development related tasks for numerous power generation facilities.

EDUCATION

UNIVERSITY OF MISSOURI – ROLLA Rolla, Missouri
B.S. in Electrical Engineering December, 1991
Graduated SUMMA CUM LAUDE

LAWRENCE J. WILLICK

Senior Vice President

EMPLOYMENT

LS Power Development, LLC LS Power, LLC August 1996 to Present *Senior Vice President* *Vice President* *Assistant Vice President* *Director, Development* *Project Manager* *Analyst*	Lead transmission development efforts throughout the U.S. Participated in the management of 28 independent power projects in operations or under construction representing approximately 20,000 MW in all markets within the U.S. Responsible for commercial aspects of electrical interconnection and transmission arrangements for over 50 generation development projects, including over 38 generator interconnection requests, 12 sets of transmission service requests, and negotiation of 12 electrical interconnection agreements. Conducted due diligence review of over 200 generators representing over 100,000 MW of generation with respect to electrical interconnection, transmission and deliverability. Participated in negotiation of seven long-term power purchase agreements to execution. Responsible for preparation of proposals for long-term power purchase agreements. Oversight of regulatory efforts including monitoring of regulatory proceedings at the state and federal level, preparation of regulatory filings, and participation in contested cases. Participated in the financing of five large generating projects under construction or in operations representing a capital investment over $2.5 billion. Performed specific project level siting for new generation. Performed regional siting analysis for new generation. Performed power market analysis.
The UNIMAR Group, Ltd. 1991 to August 1996 *Project Manager* *Market Research Analyst*	Coordinated development of commercial and industrial marketing consulting projects for investor-owned electricity and natural gas utility clients in 25 states.

EDUCATION

Masters in Business Administration May 1992	A.B. Freeman School of Business, Tulane University. Beta Gamma Sigma Business Honor Society. Graduate Fellowship. 5-year MBA.
Bachelors of Science in Engineering May 1991	Tulane University. Summa Cum Laude. Deans' Honor Scholarship. National Merit Scholarship. Dean's List.

MARK MILBURN

Vice President

Mr. Milburn is Vice President of LS Power, a fully integrated development, investment and asset management group of companies.

Mr. Milburn has over 20 years of experience in the power industry focused on fossil and renewable power generation and high voltage transmission. With LS Power Mr. Milburn has participated in the development of several thousand megawatts of power generation in the U.S. and hundreds of miles of high voltage transmission. He has served in various management and development capacities for greenfield development projects including responsibilities for feasibility analysis, site selection, land acquisition, regulatory and governmental affairs, environmental permitting, marketing, and community relations along with key roles in engineering and financing.

Most recently Mr. Milburn finalized the development of the ON Line Transmission Project, formerly known as SWIP-South, a 235-mile 500 kV transmission project in Nevada. He is currently serving as the asset manager for ON Line during construction and oversees compliance of the construction financing provided by the U.S. Department of Energy's Loan Guarantee Program. In addition, he oversees development of other high-voltage transmission projects in the West including the Southwest Intertie Project (SWIP) and Southern Nevada Intertie Project (SNIP).

Prior to LS Power Mr. Milburn served various roles during the design, construction, and commissioning of domestic and overseas generation projects for Black & Veatch Corp. He also managed a power generation consultancy for the National Engineering Laboratory in Scotland, a part of the Munich-based TÜV Group.

Mr. Milburn is a registered Professional Engineer and holds a Bachelor of Science degree in Mechanical Engineering from the University of Missouri. He is based in LS Power's St. Louis, Missouri offices.

ANDREW R. DERA

Vice President – Engineering and Construction

EMPLOYMENT

Vice President
Director, Engineering & Construction
Engineering Manager
Project Engineer
LS Power Development, LLC
LS Power, LLC
February 1999 to Present

Led and participated in the development and construction of independent power projects utilizing combustion turbine and coal-fired technologies.

Developed and executed strategies for soliciting proposals and contracting for the engineering, procurement, and construction of multiple generation projects and related infrastructure.

Provided asset management support to operating generation projects, including energy marketing activities, scheduling, annual budgeting.

Ensured implementation of and compliance with the requirements of project documents such as environmental permits, construction contracts, power purchase agreements, and credit agreements during project construction and operation.

Engaged and managed outside consultants providing support of project development.

Conducted merger and acquisition due diligence review of generation assets including site visits, interviews with plant management, review of operating and maintenance records, and development of economic models.

Conducted due diligence review for the siting of new generation projects.

Prepared and assisted in the preparation and submittal of applications for environmental permits.

Mechanical Engineer
Sargent & Lundy, LLC
January 1996 to February 1999

Led and participated in the development and design of gas and coal-fired generating projects.

EDUCATION

Masters in Business Administration
December 2003

Rutgers Business School, Rutgers University
Masters program included emphasis in finance.

Bachelors of Science in Mechanical Engineering
December 1995

Rensselaer Polytechnic Institute

PROFESSIONAL AFFILIATIONS/LICENSING

Licensed Professional Engineer – New Jersey

JAMES NEAL CHAPMAN, P.E.

Transmission Engineer

EMPLOYMENT

Transmission Engineer LS Power Development, LLC January 2010 to Present	Technical review of transmission line design standards and materials. Oversight of engineering consultants on new transmission line projects. Develop transmission line maintenance procedures.
Consulting Transmission Line Design Engineer/ Transmission Maintenance Engineer Ameren Services August 1999 through 2009	Responsible for developing and maintaining transmission maintenance and operations budgets for 7000+ miles of existing 110kV and above transmission lines. Worked closely with landowners, developers and state agencies to manage mutually agreeable plans for transmission corridor development. Served as project manager on new transmission lines. Developed cost estimates and schedules for interconnecting generation facilities through the MISO and PJM ISOs. Provide technical guidance on conductor rating methodologies. Provide technical guidance on transmission design standards and guidelines.

EDUCATION

Bachelors of Science in Engineering University of MO-Rolla May 1999	Bachelors of Science in Electrical Engineering.

PROFESSIONAL AFFILIATIONS AND GROUPS

IEEE
IEEE – PES
Vice-Chairman of the Overhead Conductors and Accessories working group in IEEE

PAST AFFILIATIONS AND GROUPS

Project Advisor for EPRI projects
Project Advisor for NEETRAC projects

PROFESSIONAL REGISTRATION

Licensed Professional Engineer in the State of Missouri

JIM ANDEREN

Project Manager – Engineering and Construction – Transmission

EMPLOYMENT

Project Manager LS Power Development, LLC February 2010 to Present	Project Manager for the ON Line 500kV Project. The On Line project is a 235 mile, 500kV transmission line and 500/345kV greenfield substation. Manage engineering subcontract and technical issues. Prepared construction and procurement RFP's and assisted with bid evaluations and contract awards. Approve monthly invoices for engineering, environmental, construction management, procurement and construction contracts.
Project Manager Black & Veatch June 1984 to February 2010	Provided complete engineering, procurement, and construction (EPC) services on numerous transmission line projects. Resident engineer on several major transmission line projects, providing construction management and inspection services both domestically and internationally. Transmission line design experience includes routing; permitting; conceptual design; structure design including wood, tubular steel, spun concrete and lattice steel; foundation design; insulator and hardware assembly design; plan and profile; and specification preparation. Proficient with the PLS-CADD suite of programs. Modeled and analyzed lattice transmission towers and provided lattice tower design and analysis training to several clients. Attended full-scale lattice tower tests in the USA, Italy, and Korea.

EDUCATION

Masters in Civil Engineering 1991	University of Kansas
Bachelors in Civil Engineering 1984	University of Nebraska

PROFESSIONAL AFFILIATIONS/LICENSING

American Society of Civil Engineers
Licensed Professional Engineer – Kansas, Florida,

DAVID K. WILSON, P.E.

Senior Environmental Engineer

EMPLOYMENT

Senior Environmental Engineer
Environmental Engineer
LS Power Development, LLC
April 2006 to Present

- Manages and executes environmental permitting efforts for transmission and generation development projects
- Recent transmission permitting experience includes the following:
  - Great Basin Transmission, LLC: led environmental permitting efforts for 235-mile, 500-kV ON Line transmission line located on private and federal lands in Nevada (commenced construction 2011)
  - Centinela Solar Energy, LLC: led environmental permitting efforts for 175-MW solar power generating facility and transmission components, including collector system, 230-kV collector substation, switchyard, and loop-in to transmission system on private and federal lands in Southern California (expected construction start Q3 2012)
- Select environmental permitting experience areas include the following: National Environmental Policy Act (NEPA); Prevention of Significant Deterioration (PSD); Maximum Achievable Control Technology (MACT); National Pollutant Discharge Elimination System (NPDES); U.S. Army Corps of Engineers; National Historic Preservation Act (NHPA); Storm Water Pollution Prevention Plans (SWPPP); Spill Prevention, Control, and Countermeasure (SPCC);

Senior Consultant
Consultant
Trinity Consultants
May 1999 through March 2006

- Prepared PSD air permit applications for natural gas-fired power generation projects totaling over 5,500 MW of capacity and negotiated permit terms with agencies
- Completed emissions and compliance reports for clients in various industries, such as power generation, steel, wood products, aggregate, and chemical products
- Created mass and energy balance-based process evaluations and assisted chemical industry clients with implementation of new industry-specific MACT standards

EDUCATION

Bachelors of Science in Engineering
University of Arkansas
May 1999

Bachelor of Science in Chemical Engineering.

PROFESSIONAL AFFILIATIONS & REGISTRATION

Air & Waste Management Association
National Society of Professional Engineers
Missouri Society of Professional Engineers
Licensed Professional Engineer, Missouri (License No. PE-2008002231, January 2008)

EVAN ESTES

Manager, Electric Transmission

EMPLOYMENT

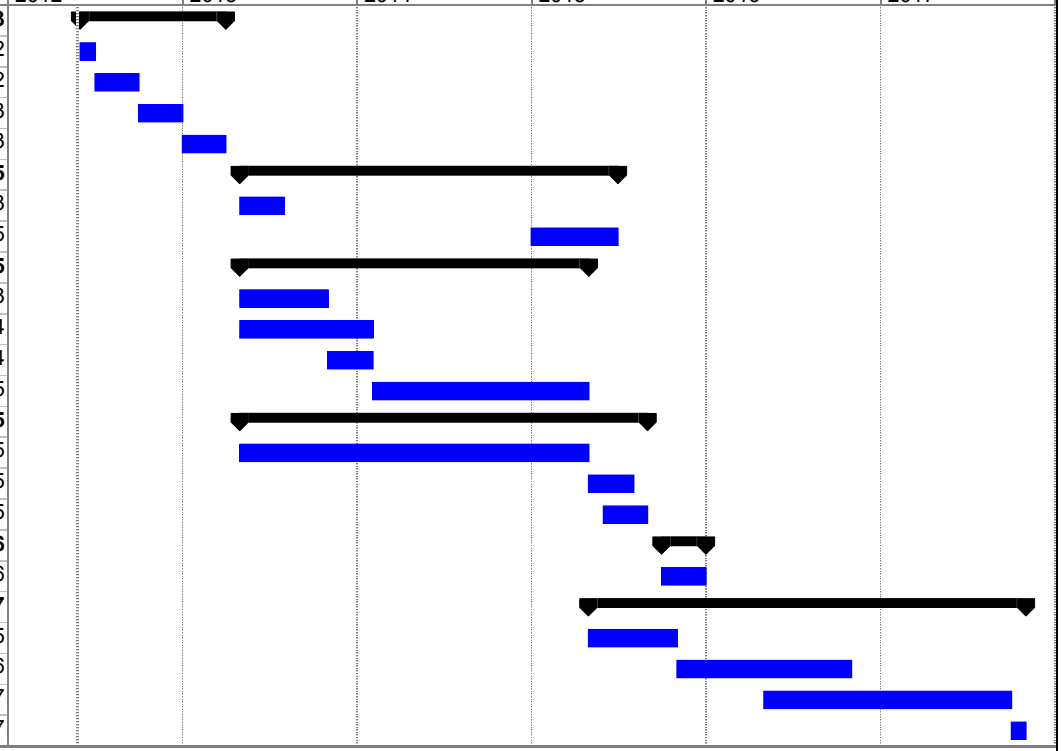
Manager, Electric Transmission *Transmission Specialist* *Project Engineer* LS Power Development, LLC January 2006 to Present	Responsible for the identification and development of transmission projects Participated in the development and financing of two transmission project representing over a $500M investment Responsible for interconnection and transmission service arrangements Responsible for directing technical study in support of LS Power's transmission projects Participates in regional planning groups to address system planning issues.
Transmission Planning Engineer Associated Electric Cooperative, Inc. 2003 to 2006	Responsible for transmission planning including modeling of transmission system, performance of operating studies, system impact studies, and cost estimates for transmission improvements. Supported transmission operations with outage coordination, transmission service request evaluation, and tariff administration. NERC Compliance

EDUCATION

Bachelors of Science, Electrical Engineering	University of Missouri-Rolla 2002

Attachment 7 – Project Schedule

ID	Task Name	Start	Finish
1	**NYISO-CARIS Process**	**Fri 6/1/12**	**Mon 4/1/13**
2	Application	Fri 6/1/12	Mon 7/2/12
3	B/C Analysis	Mon 7/2/12	Mon 10/1/12
4	Scenario Analysis	Mon 10/1/12	Tue 1/1/13
5	Beneficiary Approval	Tue 1/1/13	Mon 4/1/13
6	**FERC Filings**	**Wed 5/1/13**	**Wed 7/1/15**
7	Incentive Rate Filing	Wed 5/1/13	Thu 8/1/13
8	Tariff Filing	Thu 1/1/15	Wed 7/1/15
9	**Article 7 - NY Siting Permit**	**Wed 5/1/13**	**Fri 5/1/15**
10	Notifications & Public Outreach	Wed 5/1/13	Fri 11/1/13
11	Routing and Siting	Wed 5/1/13	Mon 2/3/14
12	Application	Fri 11/1/13	Mon 2/3/14
13	Proceedings	Mon 2/3/14	Fri 5/1/15
14	**Major Agreements & Contracts**	**Wed 5/1/13**	**Tue 9/1/15**
15	Interconnection Request & Agreement	Wed 5/1/13	Fri 5/1/15
16	NYISO TO Agreement	Fri 5/1/15	Mon 8/3/15
17	P&C Contract	Mon 6/1/15	Tue 9/1/15
18	**Project Financing**	**Thu 10/1/15**	**Fri 1/1/16**
19	Project Financing	Thu 10/1/15	Fri 1/1/16
20	**Engineering, Procurement, & Construction**	**Fri 5/1/15**	**Wed 11/1/17**
21	Engineering	Fri 5/1/15	Mon 11/2/15
22	Procurement	Mon 11/2/15	Tue 11/1/16
23	Construction	Mon 5/2/16	Mon 10/2/17
24	Commissioning	Mon 10/2/17	Wed 11/1/17



Attachment 7
Proposed Project Schedule

Edic - Fraser #2