



**The Yukon Electrical Company Limited**  
An **ATCO** Company

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February 17, 2014

Yukon Utilities Board  
Box 31728  
Whitehorse, Yukon  
Y1A 6L3

Attention: Mr. Bruce McLennan, Chair

Re: Yukon Energy Corporation – Application for an Energy Project Certificate and an Energy Operation Certificate regarding the Proposed Whitehorse Diesel to Liquefied Natural Gas Conversion Project – YECL Information Requests to YEC

Dear Mr. McLennan:

Please find attached, pursuant to Board Order 2014-01, Information Requests (IR's) from Yukon Electrical pertaining to YEC's above named application.

Please contact the undersigned should you have any questions or if you require further information.

Sincerely  
THE YUKON ELECTRICAL COMPANY LIMITED  
An ATCO Company

Dwight Redden  
General Manager  
DR:cm



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**Yukon Energy Project Certificate  
And Energy Operation Certificate  
Whitehorse Diesel to Liquefied Natural Gas  
Conversion Project  
The Yukon Public Utilities Board  
Information Request No. 1  
Dated: February 17, 2014  
YECL-YEC**

## **YECL-YEC 1**

**Reference: YECL would like to understand more about Yukon Energy's capital replacements and retirements for diesel generation.**

### **Request:**

- a) Please describe the system planning criteria and the parameters that are factored when considering replacement of existing diesel generation units.
- b) What factors were considered in determining the capacity of the new natural gas-fired generating units?
- c) Are the existing units (WD1 and WD2) being retired based on overall condition, lifetime operating hours, and forecast operating hours or due to obsolete equipment considerations?
- d) Please provide a list of forecasted retirement dates for all existing diesel generation units including location and capacity of each unit.
- e) For all diesel generating units, please provide the typical maintenance intervals for all required rebuilds.

### **Response:**



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## **YECL-YEC 2**

### **Reference: YEC Application – 3.1 Project Summary Description**

Yukon Electrical would like to understand the rationale for selecting single fuel natural gas generating units instead of dual fuel units able to utilize natural gas or diesel fuel.

### **Request:**

- a) Please explain why YEC is not proceeding with dual fuel units to provide fuel optionality with respect to future price variability of diesel and natural gas or an extended break in the supply chain of LNG.
- b) Can LNG be stored indefinitely? If no, how long? Please discuss the risks and probability of YEC having LNG that cannot be used for generation. What does YEC intend to do with LNG that reaches the end of its storage life?
- c) What does YEC intend to do if there is an extended disruption to the supply of LNG beyond the storage capacity of the project?

### **Response:**



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### **YECL-YEC 3**

**Reference:** YEC Application – page 7 “YEC also plans an RFP for preliminary design and potential fabrication for the A-Train trailer units in order to address the tight timelines for the Project and the objective to keep delivered LNG costs as low as possible.”

#### **Request:**

- a) Please fully explain all anticipated contractual arrangements and forecast contract amounts YEC expects to enter into for the transportation of LNG to the proposed storage facility in Whitehorse.
- b) Please explain the strategy for purchasing fuel trailer units as opposed to other options considered by YEC.

#### **Response:**



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#### **YECL-YEC 4**

**Reference:** YEC Application – page 8  
Yukon Energy has selected GE gas-fired generating units.

**Request:**

- a) Please fully explain the criteria as well as relative weightings used by YEC to evaluate its generation unit options.
- b) Please provide a table that shows the ratings by criteria for each generation option evaluated by YEC.
- c) Please fully explain why YEC chose the GE gas-fired generating units as the best solution for its needs.

**Response:**

#### **YECL-YEC 5**

**Reference:** Section 4.2.3 Diesel Generation Alternatives to the Project.

Footnote 35, page 26 YEC states that preliminary engineering was completed on two new 6.7 Wartsila dual fuel engines.

**Request:**

- a) Did YEC consider or provide preliminary engineering for new diesel only units? If so, what were the costs? If not, why not?
- b) Were annual O&M costs considered in comparison between new natural gas-fired engines and new diesel units? If so, please provide. If not, why not?

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## **YECL-YEC 6**

**Reference: Estimated Capital Costs for Project**

### **Request:**

- a) Many costs are assumed or forecast in the Application. Please provide any updates YEC has obtained that would support additional forecast accuracy.
- b) Please provide a breakdown, similar to table 3-1, of costs that are required to replace WD1 and WD2 with new diesel only engines.
- c) What costs have been incurred to date on the LNG project? How is YEC proposing to treat these costs if the project does not move forward to completion?

### **Response:**

## **YECL-YEC 7**

**Reference: Retirement of WD1 and WD2**

### **Request:**

- a) For WD1 and WD2, when was the last major rebuild or life extension completed project completed, what were the costs incurred and how were they incorporated into YEC's 2012-2013 approved Revenue Requirement?
- b) What are the operating hours (lifetime) of each unit?
- c) What were the operational hours for the units in each year 2010 – 2013?
- d) What are the forecast operating hours for each unit up to retirement dates?

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**YECL-YEC 8**

**Reference: Generation engine efficiency**

**Request:**

- a) Please provide the base load and part load efficiency curve for the selected generating units.
- b) Please provide the base load generation engine efficiency on a Lower Heating Value (LHV) basis and a Higher Heating Value (HHV) basis.
- c) Please provide the expected HHV/LHV ratio of the fuel.
- d) Please confirm that the projected fuel savings for the project are based on an HHV basis (i.e. the basis that fuel is purchased from a supplier rather than the LHV basis of engine performance characteristics provided by the equipment manufacturer. If not confirmed, why not?

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## **YECL-YEC 9**

### **Reference: New Modular Natural Gas-fired Generation units**

On page 7 of the Application it is stated 'new natural gas-fired engines are assumed to have an economic life of 40 years'

### **Request:**

- a) Is the economic life based on information from manufacturer, an industry standard or based on operating hours of the unit in that timeframe?
- b) What are the maintenance intervals for the new natural gas-fired engines?
- c) Does YEC currently have staff or employees that can complete work for the required maintenance of the new natural gas-fired engines? If yes, please fully explain. If no, please fully explain.
- d) What external resources will be needed to complete regular work and maintenance on the new natural gas-fired engines natural gas units?
- e) Please provide a life cycle cost analysis of the total expenditures for the Project over the future expected life of the facility considering capital and future operating expenditures. Please provide a comparison to a new diesel generation alternative.

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#### **YECL-YEC 10**

**Reference: Forecast Diesel Generation**

**Request:** Table 4-1 indicates forecast Default Diesel Generation for 2013, please provide actual diesel generation for 2013.

**Response:**

#### **YECL-YEC 11**

**Reference: First Nation Partnership Agreements**

**Request:**

- a) Please provide an update on First Nations Partnership Agreements in relation to the Project.
- b) What are the Project implications if a First Nations Partnership Agreement is not completed?

**Response:**