DRAFT

Proposed Carmacks – Stewart 66 kV Transmission Line

Corridor Review & Refinement Klondike Highway Route

February 3-4th, 2001

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Summary

Yukon Energy Corporation contemplates the construction of a 66kV transmission line linking the proposed Carmacks and Stewart substations and following the Klondike Highway.

In order to focus on the issues arising from this step, YEC generated a composite route map at 1:50,000 and requested a review and a refinement of a corridor within which a 66kV transmission line could be located effectively, safely & economically. The width of the corridor was generally 200 meters and was either on, adjacent to or near the Highway Right of Way.

The review confirms that a 66kV transmission line can be constructed and operated within the proposed corridor subject to minor refinements which will solve a few topographic, physical and terrain conflicts.

The most serious problems concern possible conflict with First Nations when topography and/or terrain eliminate a 66kV power line on the Highway Right of Way and access across First Nation land is not negotiable. In this case, a 66kV cable could be installed within the Highway Right of Way; however, cost and other considerations limit this solution to relatively short distances.

Introduction

Yukon Energy Corporation contemplates the construction of a 66kV transmission line connecting the Carmacks and Stewart substations along a route that generally follows the Klondike Highway.

Accordingly, Yukon Energy assembled a range of data relevant to the location, construction and operation of a 66kV transmission line and arranged the preparation of composite mapping with a view to selecting a route that either utilized or avoided the natural or man-made features.

This methodology evolved for the reconciliation of conflicting factors associated with linear developments and is based on the definition of a corridor within which the development would be located.

Background

This report is based on a study of composite mapping at 1:50,000 prepared by Applied Ecosystem Management Ltd. and carrying the following data:

1. National Topographic Data Base at 1:50,000
2. Terrain Mapping & Interpretation by C. Mougeot
3. Yukon Community Cadastral Data
4. First Nation Settlement Lands

The composite map carried a proposed corridor of varying width but generally approximately 200 meters wide and which followed the alignment of the Klondike Highway.

This report is based on a review of this composite map and the corridor that has been selected with a view to approving or refining the corridor for suitability for the contemplated transmission line. No field work was done by the author except for area surrounding the junction of the Klondike and Faro Highways and a distance of 10 kilometers north on the Klondike Highway from the junction. It is assumed that the 66kV transmission line is single word pole construction.

Methodology

The composite mapping was examined by sheet beginning at the proposed substation near the Carmacks Airport. Each conflict or concern is identified on the referenced map and explained in the following text.

Sheet 115; 01

1. Widen the corridor to the foot of the bluffs to avoid steep side hills.
2. Organic material – span < 100 meters
3. Organic material – span < 200 meters
   No conflict with First Nation Lands.

Sheet 115; 08

4. Difficult location problem, fish, slopes, Highway and First Nation Land combine to conflict. Could be solved by detailed location but the alternative indicated might prove better.
5. Steep gravel slope – relocate below highway.
6. Steep gravel slope – relocate above highway.

Sheet 115; 07

7. Steep gravel slopes – move above highway also avoids First Nation Land.
8. Fish conflicts can be avoided by care in construction and in line maintenance.
9. Very steep slopes – to be avoided. Change to other side of the highway provided the structures are on the Highway Right of Way.

Sheet 115; 10

10. Very steep slopes – locate below highway.
11. Organics – span < 100 meters
12. Organics – span < 150 meters
    Locate line on or near Highway Right of Way away from First Nation Land.

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13. Organics – span < 100 meters
14. Conflict of steep slope and First Nation Land north of Pelly River. Line route along Highway Right of Way improbable. Solution by cable?

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15. On Highway Right of Way on east side. Span bog.

Sheet 115 p.01

16. Relocate to span organics.
    Line to be located west of highway, on Highway Right of Way on either side, on west side through SFNR-HB.

Sheet 115 p.02

17. Widen corridor.
    Line to be located west of highway or on Highway Right of Way on either side.

Sheet 115 p.07

18. Organics – span or by pass.
    Locate line on Highway Right of Way west of highway throughout.

Summary

This map study confirms that the highway route from Carmacks to Stewart substations is feasible and that there are few problem areas that cannot be solved by field survey. The corridor as refined defines the limits of the line alignment. There are two areas where conflict may arise with First Nations. Either of these can be solved by a short distance of underground cable on the Highway Right of Way; however, one of these may be solved by the line relocation indicated on the sheet.