



IN THE MATTER OF
the Utilities Commission Act, R.S.B.C. 1996, Chapter 473

and

An Application by British Columbia Hydro and Power Authority
for Approval of a Certificate of Public Convenience and Necessity
for the Installation of a New 230 kV Circuit 2L33 from Horne Payne Substation
in the City of Burnaby to the Cathedral Square Substation in the City of Vancouver

BEFORE: P. Ostergaard, Chair)
N.F. Nicholls, Commissioner) December 17, 2002

CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY

WHEREAS:

- A. On September 30, 2002, British Columbia Hydro and Power Authority ("B.C. Hydro") applied, pursuant to Section 45 of the Utilities Commission Act ("the Act"), for a Certificate of Public Convenience and Necessity ("CPCN") ("the Application"), for the installation of a new 230 kV underground cable, Circuit 2L33, from Horne Payne Substation in Burnaby to the Cathedral Square Substation in Vancouver, including associated substation upgrades and circuit reconfigurations ("the Project"); and
- B. The Project is estimated to cost \$43.8 million with an in-service date of May 2004; and
- C. The Project is required to replace the aging and unreliable 230 kV Circuit 2L46; and
- D. B.C. Hydro has prepared a Metro Vancouver Planning Report dated September 2002 and has commissioned two independent studies confirming that the Project is the best system option for the replacement of Circuit 2L46 and as the first phase for the refurbishment of the Metro Vancouver transmission cable system; and
- E. Commission Order No. G-75-02 established a written hearing and regulatory timetable and requested interested parties to comment to the Commission by December 6, 2002; and

- F. B.C. Hydro conducted two open house information sessions prior to submitting the Application; and
- G. B.C. Hydro has obtained agreement from the City of Vancouver for the preferred route selection; and
- H. The Commission has received five inquiries from individuals and businesses regarding the project or requesting details of traffic disruption in their areas and has required B.C. Hydro to respond to those concerns; and
- I. The Commission has received no other letters of comment; and
- J. The Commission has reviewed the costs, timing, impacts and justification for the Project and finds that approval of the Application is required, for the reasons set out in the Reasons for Decision that are attached as Appendix A to this Order.

NOW THEREFORE the Commission orders as follows:

1. Pursuant to Sections 45 and 46 of the Act, the Commission issues a CPCN to B.C. Hydro for the installation of a new 230 kV Circuit 2L33 and associated works at an estimated cost of \$43.8 million, as set out in the Application.
2. B.C. Hydro is directed to continue to consult with residents and businesses along the route of the Project to minimize any inconvenience or economic hardship from traffic disruption.
3. B.C. Hydro must file monthly progress reports on the Project commencing with the start of construction and a final project report after circuit energization. The progress and final reports should describe and explain any significant budget or schedule variations and public concerns.

DATED at the City of Vancouver, in the Province of British Columbia, this 19th day of December 2002.

BY ORDER

Original signed by:

Peter Ostergaard
Chair

Attachment

Orders/BCH-CPCN-2L33 Order

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY
Certificate of Public Convenience and Necessity Application
for a 230 kV Underground Transmission Circuit from
Horne Payne Substation to Cathedral Square Substation

REASONS FOR DECISION

INTRODUCTION

British Columbia Hydro and Power Authority (“B.C. Hydro”) applied for a Certificate of Public Convenience and Necessity (“CPCN”) for the construction and installation of a 230 kV underground transmission cable (referred to as Circuit 2L33) on September 30, 2002 (“the Application”). The Application covers the construction of nine kilometers of underground 230 kV cable and associated duct banks from the Horne Payne substation in Burnaby to the Cathedral Square substation in downtown Vancouver. It also consists of the installation of new Gas Insulated Switchgear in the Cathedral Square substation, the installation of conventional switchgear in the Horne Payne substation and the realignment of several other circuits. The construction will utilize an open trench to install a concrete duct bank except where a pipe jacking installation is to be used to tunnel under Highway No. 1 at William Street.

B.C. Hydro estimates the cost of this project to be \$43,800,000 with an in-service date of May 2004. The cost estimate is based on B.C. Hydro using an oil-filled cable and could be less if cross-linked polyethylene type cable is determined to be an acceptable alternative. B.C. Hydro will make its cable selection based on the overall capital costs, reliability, operating costs, and environmental impacts. B.C. Hydro expects to complete its evaluation of the various manufacturers’ bids by the end of December 2002.

Commission Order No. G-75-02 established a written public hearing process to examine the Application. The Order required B.C. Hydro to publish the Commission’s requirements for the written public hearing and to notify residential and commercial owners and occupants along the proposed route. The Order set a regulatory agenda that requested written submissions and comments be made to the Commission by December 6, 2002.

PROJECT JUSTIFICATION

B.C. Hydro has a network of underground cables supplying electricity to downtown Vancouver. This network includes cables that have been in service for 40 years and that are beginning to show signs of deterioration. B.C. Hydro estimates the expected life of these cables to be approximately 40 years. In particular, one path of supply consists of Circuits 2L46/2L53 which supply power to the Murrin substation in downtown Vancouver from the Newell substation in Burnaby and the Mainwaring substation in South Vancouver. B.C. Hydro reports that Circuit 2L46 is in very poor condition and has seven active oil leaks, all

of which are being managed. The Application proposes to effectively replace Circuit 2L46 with a new cable along a different route. This project is part of an ongoing requirement to replace many of the cables supplying Metro Vancouver.

B.C. Hydro studied two alternatives for the replacement of Circuit 2L46. One alternative involved the direct replacement of the 2L46 cable in place and the other involved the building of a new duct bank and cable along a new route. B.C. Hydro preferred the latter alternative as it has the advantage of being able to avoid seismically unstable areas that place the 2L46 route at risk. It also has the advantage of providing a much larger reliability factor and the ability to keep Circuit 2L46 in service while construction is proceeding on its replacement. The costs for each alternative are similar in both the short-term and long-term development sequence. B.C. Hydro has confirmed that the proposed new Circuit 2L33 will not restrict the options it can consider when it evaluates future system upgrades to serve the Vancouver area.

B.C. Hydro commissioned two independent studies by Sandwell Engineering Services Limited and by ZE Power Group Inc. to determine the optimum system and economic options. Both reports recommended the immediate replacement of Circuit 2L46 with a new cable and route.

ROUTING SELECTION

B.C. Hydro's preferred new route exits north from the Horne Payne Substation along Ingleton to William and then west to Windermere, north to Pender, west to Vernon, north to Cordova, west to Homer and south on Homer to Dunsmuir and the Cathedral Square Substation. The total length is nine kilometers and is completely along city streets. B.C. Hydro's route selection was based on the following criteria:

- Overall distance;
- Ease of construction;
- Seismic suitability;
- Minimization of traffic and transit impacts;
- Future system growth; and
- The inability to cross the Cassiar Connector tunnel.

The main impact of the route selection and circuit construction will be traffic disruption during construction. B.C. Hydro has prepared a draft traffic management plan and its construction contractors will be required to prepare detailed site-specific traffic management plans. All other impacts are minimal. Maximum magnetic field levels at the edge of the road allowance have been calculated to be seven milligauss, which is consistent with similar urban underground cables. Electric field levels will be zero.

PUBLIC CONSULTATION

Prior to filing its Application B.C. Hydro held two open houses to allow the public to become informed and to ask questions about the Project. B.C. Hydro also met with City of Vancouver and City of Burnaby staff to inform them of the Project and to obtain input regarding route and traffic issues.

The Commission has received four letters from people concerned with the possible disruption of access to their places of business and one note from an interested resident who wished to be kept informed. These letters were referred to B.C. Hydro with direction to discuss the concerns of the business owners and to take their concerns into account when developing the traffic management plan. B.C. Hydro discussed the concerns directly with the people affected. B.C. Hydro reported that the business owners were generally satisfied with the replies, on the understanding that they would be contacted prior to construction in their areas.

The City of Vancouver has written to B.C. Hydro, accepting the proposed new route and stipulating certain requirements for traffic control and the traffic management plan. Vancouver and Burnaby must still approve the details of the traffic management plan proposed by B.C. Hydro and its contractors.

COMMISSION DETERMINATION

The Commission agrees that the aging cable system that provides power to downtown Vancouver needs to be reinforced at this time. The Commission approves the Application and issues a CPCN for the Circuit 2L33 project. B.C. Hydro remains responsible for minimizing disruption to residents and businesses along the route and the Commission directs that B.C. Hydro and its contractors are to continue to consult with residents and businesses while carrying out the Project.