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July 4, 2007

Mr. Robert J. Pellatt  
Commission Secretary  
British Columbia Utilities Commission  
Sixth Floor – 900 Howe Street  
Vancouver, BC V6Z 2N3

Dear Mr. Pellatt:

**RE: Project No. 3698455  
British Columbia Utilities Commission (BCUC)  
British Columbia Hydro and Power Authority (BC Hydro)  
2007 Rate Design Application**

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Subsequent to filing the response to ESVI IR 1.2.5 on April 30, 2007 (Exhibit B-3) BC Hydro has come across an additional E-Plus Brochure entitled “BC Hydro Electric Plus – Question and Answer Guide” dated September 1989. which is being submitted as Attachment 4 to ESVI IR 1.2.5.

BC Hydro notes that a similar Brochure dated March 1989 is already on the evidentiary record as Attachment 3 to ESVI IR 1.2.5.

Yours sincerely,



Joanna Sofield  
Chief Regulatory Officer

Enclosure

c. Project No. 3698455 Intervenors

**BC hydro**  
***Electric***  
***Plus***

Question  
and  
Answer  
Guide

**BC hydro**



*proud of our Service*

### **Questions and Answers**

This booklet provides answers to some of the most frequently asked questions about Electric Plus that we receive from heating contractors, tradespeople and customers.

### **Ask us for more information**

If you have questions not answered here, contact your local B.C.Hydro office, or write to Energy Management, 6th Floor, 1045 Howe Street, Vancouver, B.C. V6Z 2B1. Or call our toll-free customer advisory numbers:

Lower Mainland	293-7777 or 1-800-663-0431
Vancouver Island	1-800-663-1033
South Interior	Vernon 1-800-663-2723 Cranbrook 1-800-663-4306
Northern B.C.	1-800-663-1689

29. Q. When will service interruptions occur?

A. Minimal interruptions (maximum of 120 days) will occur before March 31, 1991. Interruptions will occur when there is not enough water in our reservoirs to meet B.C.Hydro's basic electricity commitments. A minimum of 30 days' notice will be given for long-term interruptions.

30. Q. How are customers interrupted?

A. During the initial period, B.C.Hydro will be interrupting residential customers by manually operating a switch located on the outside of the house. However, B.C.Hydro reserves the right to interrupt by serving notice to the customer that an interruption is scheduled and asking the customer to operate the disconnect switch himself. This is the same method used for commercial and industrial customers.

31. Q. During an interruption, what stops a customer from switching to firm electricity?

A. The customer signs a Service Agreement assuring B.C.Hydro that he will not switch the load from the Electric Plus program to a firm load during interruptions. B.C.Hydro will be able to detect such a change by noting the significant increase in the firm load of the residence following an interruption. Should a customer try to attempt what is contravention of the terms of the Agreement, B.C.Hydro will discontinue the supply of electricity under the reduced rate schedule and bill the estimated unauthorized consumption at the rate specified during a period of interruption (15¢/kW.h). B.C.Hydro has the right to inspect premises to ensure that only authorized loads are connected to Electric Plus and that they are not switched to firm during an interruption.

1. Q. What is meant by *dual fuel*?

A. A dual fuel heating system consists of an electric heating system with an oil, propane, butane or solid fuel back-up system, which takes over the heating function when the supply of electricity is interrupted.

2. Q. What is meant by *interruptible electricity*?

A. It is surplus secondary electricity offered to customers at a reduced rate, the supply of which can be interrupted during periods when no surplus secondary energy is available. B.C.Hydro will not build new dams to supply this interruptible energy.

3. Q. What is *firm electricity*?

A. This is your normal electricity supply from B.C.Hydro. It is always available except during a system failure or planned short-term outages, sometimes required to facilitate system modifications.

4. Q. What are the typical costs and benefits?

A. The benefits depend directly on the amount of fuel displaced by the low-cost electricity. If the customer can provide his current oil consumption, B.C.Hydro can estimate the benefits he will receive. The cost of the installation depends very much on the present wiring in the customer's home and the type of system he chooses to add. B.C.Hydro's recommendation is that two or three quotes be obtained from different contractors who can advise on the most suitable type of equipment needed for conversion to Electric Plus. Most customers should be able to convert to Electric Plus for less than \$2,500 and will be able to save \$200 to \$400 annually. Savings will be even greater in the colder regions.

5. **Q. For residential service, what does the homeowner pay for and what does B.C.Hydro pay for?**

A. The homeowner is responsible for installing his dual fuel heating system with the electric portion wired so that B.C.Hydro can meter it separately from other electricity uses. This includes providing an approved meter base and disconnecting means. The homeowner must also pay B.C.Hydro's standard charges of \$10 for the installation of one meter or \$13 for the installation of two meters.

B.C.Hydro provides its own meter and makes necessary changes to its system to accommodate the added consumption. If required, B.C.Hydro will provide a new overhead service drop up to 30 m (100 ft.).

If an underground service is upgraded, the customer must pay costs over the equivalent cost of an overhead service upgrade.

B.C.Hydro will make transformation improvements required to provide service for additional consumption at no cost to the customer. Where additional upgrading beyond transformation is required, B.C.Hydro will make improvements costing up to \$1,000 on public property and the customer will be responsible for any additional costs.

6. **Q. What about existing electric customers?**

A. Existing customers with "firm electric" heating are eligible for the program. They can still become "dual fuel" customers if the economics are acceptable to them. They must, however, install an additional heating system as back-up to their existing electric system. In many cases the cost of doing this is prohibitive.

26. **Q. Where can the sub-panel be located?**

A. The sub-panel must be located in accordance with the local electrical code. There will obviously be some consideration given to the meter's effect on the appearance of the dwelling and where it might be most conveniently accommodated. In most cases, the sub-panel would probably be close to the existing panel.

27. **Q. What is the means of disconnection for residential customers?**

A. Currently the method of disconnection used is a manually switched circuit breaker or disconnect switch. Separately mounted circuit breakers, unfused disconnect switches (in weather-proof enclosures) located next to the interruptible meter base or a combination meter base/circuit breaker can be used. The weatherproof enclosure must have a lockable cover unless the circuit breaker or disconnect switch can be locked in both the on and off positions. An appropriately sized circuit breaker, preferably of non-automatic type where available, should be used. Currently, three manufacturers have acceptable combination meter base/circuit breaker units: Commander Electrical Equipment #RC1-2100 and #RC1-2200; Murray Jensen #JA000PW and #JA000PWS (100A), #JA402P and #JA402PS (200A); Microelectric #C01-100, #C01-125 and #C02-200.

28. **Q. How are wood/electric furnaces connected to the Electric Plus power supply?**

A. The heating elements should be connected through the Electric Plus panel. However, the power for the fan/blower should be on the firm power supply off the main panel, in order to continue operating during an interruption.

21. **Q. Is a diesel generator acceptable for back-up?**  
 A. Yes, an approved diesel generator is acceptable as back-up, provided it meets all code requirements, is suitable for continuous duty, has a proper transfer mechanism and can also meet the local requirements for noise and air pollution.
22. **Q. Can the exhaust heat recovered from a diesel generator be included in the total heating capacity of the back-up system?**  
 A. Yes, provided the necessary hardware (heat exchanger, piping, etc.) to supply the recovered heat is installed and the heat is available during interruption periods.
23. **Q. Is solar heating acceptable as a back-up for outdoor swimming pool heating, domestic hot water heating or space heating?**  
 A. No.
24. **Q. What is the maximum consumption that can be placed on a 100A meter base?**  
 A. A single load (furnace, plenum heater or boiler) of 20 kW supplied from a single branch circuit can be supplied through a 100A meter base, 100A safety switch or a 125A circuit breaker. However, 20 kW of baseboard heating supplied from a branch circuit of a sub-panel requires a 200A meter base (125A meter base when it becomes available), 125A safety switch, 125A wiring to the sub-panel and 125A circuit breaker.
25. **Q. What is the maximum permitted kW capacity of baseboard heaters on a 100A meter base with a 100A lockable breaker?**  
 A. An aggregate baseboard heater load of 19 kW can be supplied from a 100A meter base and breaker using the 80% rule in the Canadian Electrical Code.
7. **Q. How is the interruptible electricity metered for residential customers?**  
 A. The interruptible electricity is metered by a second meter on a separate heating circuit, usually off the main electrical panel. The electrical consumption on this second Electric Plus meter is billed at the Electric Plus rate. When the Electric Plus meter is fed from the main meter, your normal electricity consumption will be calculated by subtracting the Electric Plus consumption from the main electrical billing meter.
8. **Q. Can customers in a mobile home park have Electric Plus?**  
 A. Yes, as long as the park distribution system has the capacity available to handle the additional electrical load "set aside" for Electric Plus.
9. **Q. What are the Electric Plus interruptible rates?**  
 A. Residential: 2.5¢/kW.h  
 Commercial/Industrial: 2.5¢/kW.h for the first 8,000 kW.h per month, 1.8¢/kW.h for the remainder. Rates are fixed until March 31, 1991.
10. **Q. How long will the Electric Plus rates be available?**  
 A. Once our targets have been achieved, the rates will be closed. At that point new customers will not be accepted on the Electric Plus program, but those customers who already have the rate will keep it.
11. **Q. What are the financing limits for residential customers?**  
 A. The minimum amount that can be financed is \$500, and the maximum is \$2,500. Financing is subject to credit approval, which may have a security deposit requirement. The annual interest rate is 8.5%. Repayment is made on the customer's Hydro bill over periods up to four years.

12. **Q. Are new homes eligible for Electric Plus financing?**  
 A. Yes, B.C.Hydro will finance the incremental cost up to a maximum of \$2,500 for either the electric or back-up heating system, provided contractors eligible to offer the Electric Plus finance plan install the system. The financing is available to the homeowner only through the contractor.
13. **Q. Can wood, oil, propane or butane space heaters be used as back-up?**  
 A. Yes, provided they can heat the entire area that is heated by the Electric Plus heating system.
14. **Q. How do I ensure that the back-up heating system will function when the Electric Plus power is interrupted?**  
 A. Every electrical component of the back-up system (controls, fans, pumps) must be supplied from the main (firm) panel. We recommend testing the back-up system periodically with the Electric Plus interruption switch open.
15. **Q. What about problems with the back-up system, for example, an old oil furnace?**  
 A. The customer, in his contract with B.C.Hydro, undertakes to keep his back-up system in good working order. He is responsible for seeing that regular maintenance is conducted and that the system is checked periodically for correct operation. B.C.Hydro reserves the right to interrupt power specifically to ensure that such back-up systems are in complete working order.
16. **Q. Does the customer have to have a permanent back-up for applications other than space heating?**  
 A. Yes, for any application, there must be a suitable system to provide satisfactory back-up during an interruption.
17. **Q. Do you need a back-up system even for non-essentials like swimming pool or spa heating?**  
 A. Yes. B.C.Hydro must be able to interrupt the electricity supply to the Electric Plus heating application. Therefore, there must be a working system to back it up. While it might appear that a particular use is non-essential, it could be that in a particular instance, when the interruption actually occurs, such a use has become very important to the customer and he would have considerable difficulty in accepting the fact that the load must be cut off.
18. **Q. What is the minimum on-site storage of back-up fuel?**  
 A. Minimum acceptable on-site fuel storage is the equivalent of 50 hours' consumption based on the maximum firing of properly sized and installed back-up heating equipment.
19. **Q. Does the Electric Plus program allow the use of wood as a back-up fuel?**  
 A. Yes, but only if the heating equipment is designed for continuous heating rather than for decorative or intermittent use. All equipment used as back-up must be certified and labelled to meet the appropriate CSA, ULC or UL standards of safety. Moreover, the wood-fired system must have the capacity to heat all the areas of the house that are going to be heated by the Electric Plus system.
20. **Q. Is a customer who has an electric water heater hooked up to Electric Plus with wood back-up allowed to switch this load to the firm electric panel during non-interruption periods?**  
 A. Yes, any customer may choose to switch any Electric Plus load to his firm power panel by giving B.C.Hydro a three-month notice of such a transfer. However, the transfer cannot occur during or three months prior to a planned interruption period, and this load can never be