LETTER NO. L-37-95

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COMMISSION SECRETARY

BRITISH COLUMBIA UTILITIES COMMISSION

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August 8, 1995

Mr. Alan Fogwill
Senior Economist
Centra Gas British Columbia Inc.
1675 Douglas Street
P.O. Box 3777
Victoria, B.C.
V8W 3V3

Dear Mr. Fogwill:

Re: Centra Gas British Columbia Inc.
Whistler - Integrated Resource Plan

The Commission has reviewed the 1995 Centra Gas - Whistler Integrated Resource Plan ("IRP") and is satisfied that the IRP, as filed, substantially meets the requirements as set out in the BCUC Guidelines. Consequently, the Commission approves the IRP. Please note that approval of the IRP does not constitute pre-approval of the DSM programs discussed within the IRP. A copy of the staff report which discusses the IRP is attached for your information.

Yours truly,

Constance M. Smith
for: Robert J. Pellatt

DWE/ssc
Attch.

CG/Cor/Whistler IRP ltr

Centra Gas British Columbia Inc.
Whistler 1995 Integrated Resource Plan ("IRP")
BCUC Staff Evaluation Report

Recommendation

Commission staff have reviewed all aspects of the 1995 IRP against the Commission's 1993 IRP Guidelines and find it to be substantially in accord with them. Accordingly, staff recommend that the 1995 Centra -Whistler IRP be approved.

Background

Centra Gas - Whistler provides a propane gas distribution service to residential and commercial customers in the Whistler area of the province. The distribution system is composed of pipelines, two vaporizer plants and a rail off-loading facility. The Nesters plant in the North provides service to most of the system. The South Plant is used to serve customers in that area and for peak day requirements. The South plant has two storage tanks for propane while the Nesters plant has six. There are no compressors used on the system.

Guideline 1: Identification of the Objectives of the Plan

The BCUC Guidelines call for the identification of those objectives which the utility wishes to achieve through the selection of resources. Based on input from the consultative group, the 1995 Centra-Whistler IRP identifies six objectives. The objectives were not ranked with respect to priority as it was felt that this would be contentious and might be unnecessary if the decision making process provided a clearly preferred portfolio. As this did occur, the six objectives are simply listed below:

- Provide safe and reliable service by minimizing the frequency and length of service outages;
- Incorporate environmental and social values in the consideration of demand and supply resources;
- Encourage community initiatives in implementing energy sustainability principles;
- Provide stable and predictable propane bills to customers by minimizing service costs;
- Provide the opportunity for the company to earn stable returns to the shareholders based on efficient operations; and
- Minimize demand and supply resource risk.

These objectives are similar to those contained in the Centra-FSJ IRP with the exception of the inclusion of the third objective and the exclusion of the objective relating to mains extension. Staff support the exclusion of the mains extension objective but would prefer not to see the encouragement of community initiatives as an objective. While believing this is a laudable goal, staff believe the objectives should be limited to those which will help the Utility and the community choose between resource alternatives. Staff see this objective as being too broad for inclusion in the IRP. However, as it does reflect the wishes of the consultative group, staff does not believe it is significant enough to require the Commission to withhold approval of the IRP.

Guideline 2: Development of a Range of Gross (pre-DSM) Demand Forecasts

The BCUC Guidelines encourage the use of end-use forecasting and require the development of more than one forecast in order to reflect uncertainty about the future. Centra Gas has used an end-use approach to develop 15 year forecasts of annual and peak day gas volumes. Annual residential and commercial (including the limited volume of industrial) volumes were forecast using the Intra Sectoral Technology Use Model ("ISTUM") with a base year of 1994 and weather normalized data. Peak day volumes were

forecast based on historical data and a formula which translated annual volumes to peak day and peak hour. The exact methodology is detailed in the IRP.

Centra Gas provided scenarios which varied growth rate and energy price assumptions. The low price forecast was based on Centra's current weighted average cost of propane inflated at growth rates for natural gas from the Natural Resources Canada Energy Outlook, 1994 Update. The high price forecast inflated these prices by a further 20 percent. The three growth rates used (high, medium, low) were based on B.C. Ministry of Finance and Corporate Relations projections and revised to reflect information received from the consultative group.

The scenarios suggest that annual demand by 2009 will vary from 438 TJ (low price, low growth) to 603 TJ (high price, high growth) while peak day demand will vary from 4,179 (low price, low growth) to 5,742 GJ (high price, high growth). The results appear to be more sensitive to changes in growth rate assumptions than changes in price. New resources are needed by 2001 under the high growth scenario, 2003 under the medium growth scenario, and 2007 under the high growth scenario. Accordingly, no new resources are needed within the next five years.

Staff accept that the demand forecasts provided meet the requirements of an IRP as set out in the BCUC Guidelines.

Guideline 3: Identification of Supply and Demand Resources

Guideline 4: Characterizing Supply and Demand Resources

Supply Side

As indicated earlier, no new resources are needed to meet peak demand within the next five years. However, there are concerns with respect to reliability. Propane is delivered to Whistler via rail from three different processing plants; however, for all three sources of supply the last part of the route is the BC Rail track along the Lillooet-Squamish corridor. This line is subject to land slide activity and has disrupted propane deliveries for two to five days at a time. The distribution system has approximately seven peak days of storage capacity but this will decline as the community grows. Therefore, the IRP examines a number of resource options aimed at increasing reliability.

Eight supply options have been identified within the IRP. These include the addition of a third vaporizer at the Nesters Plant, the addition of storage at the Nesters Plant, the removal of the south plant plus the addition of a 4 km pipeline loop plus an additional vaporizer at the Nesters Plant and the connection of Whistler to the provincial natural gas system. Each of the resource options is described in terms of technical characteristics, economic characteristics (e.g. capital cost, annual operating costs, annual energy cost), financial impacts (e.g. levelized costs, rate impact) and environmental and social impacts (e.g. land use, project safety, employment). Reliability considerations associated with each option are also discussed. As a result, the supply resources are assessed in terms of the IRP objectives.

The IRP shows that the vaporizer option is the least expensive capacity resource while truck storage is the least expensive storage resource. Connection to the gas grid is the most expensive option and would result in rate increases of approximately 73.7 percent.

Staff are satisfied that Centra has adequately canvassed the supply options available to it.

Demand Side

Centra Gas undertook a review of potential demand resources from which it identified ten as being worth more detailed review. These included four programs aimed at residential consumers, five programs aimed at commercial customers and an energy sustainability program. The programs were substantially the same as those proposed in the Centra-FSJ IRP except that the Whistler proposal contains an education program and does not contain a NGV program.

Each of the ten potential programs were analyzed using the four standard financial tests applied to demand resources. The avoided cost used in the test was estimated at $5.33 per GJ. The methodology used to determine the avoided cost is detailed within the IRP and appears to be reasonable. Only the residential water heater upgrade, the residential home visit (BC21 PowerSmart), the commercial new envelope upgrade, the commercial new heating upgrade, and the commercial existing heating upgrade passed the Total Resource Cost test ("TRC"). None of the programs passed the RIM test at 0 percent rebate.

In addition to the financial tests, all the potential DSM resource options were described in terms of their impact on system reliability, employment impacts and the environment (i.e. CO2 Reduction) and thus were related back to the IRP objectives. As well, information was provided on implementation strategies for each program, possible difficulties, and plans for evaluation and monitoring of the program.

In general, Commission staff found that the identification and characterization of the demand resources met the requirements of the IRP Guidelines.

Guideline 5: Development of Multiple Integrated Resource Portfolios

Guideline 6: Evaluation and Selection of Resource Portfolios

The IRP presents five possible portfolios of incremental resources. Each portfolio reflects a theme developed by the consultative group. These themes are: 1) minimize financial cost, 2) minimize environmental impact, 3) maximize reliability, 4) cost effective environmental impact mitigation, and 5) cost effective environmental impact mitigation plus commercial interruption. These themes are related to the IRP objectives. In addition, the IRP examines a status quo option.

Each portfolio was developed to meet peak day demand in five years as opposed to peak day demand in 15 years. Centra indicated that using the five year target for the portfolio analysis decreases the likelihood of making inappropriate resource acquisition decisions.

Each portfolio was analyzed based on nine attributes. These were 1) contribution to peak day demand capacity, 2) capital cost, 3) annual cost, 4) bill impact, 5) CO2 emissions reduction in 2000, 6) land use impact, 7) safety, 8) employment impact, and 9) reliability plus flexibility. Some of the attributes are measured quantitatively (e.g. bill impact) while others are measured qualitatively (e.g. safety).

Those attributes which were measured qualitatively were assigned values of 1, 2 or 3 to reflect the relative acceptability of impacts. A "3" indicated that the impact was more preferable than a "2". In addition, a weighting factor was applied to attributes to reflect the importance of those attributes in meeting the IRP objectives. Reliability was ranked most important at "4", land use impact and safety were ranked "3", and employment was ranked "1". The attribute value times the weighting factor resulted in the weighted attribute value. These were summed over the four qualitative attributes to determine the relative rank of each portfolio based solely on the qualitative criteria. Both the attribute values and the weighting values were assigned by the consensus of the consultative group.

To assess the relative attractiveness of each of the various portfolios a table was constructed showing the non-participant bill impact for each portfolio, the CO2 reduction in tonnes, and the summed weighted attributes. Based on the information in this table, the consultative group picked Resource Portfolio 4 (Cost Effective Environmental Impact Mitigation) as the preferred option. It was chosen since the table indicated that it resulted in a lower bill impact than all other portfolios, resulted in significant CO2 emission reductions, and had a minimal land use impact and provided a moderately increased level of reliability. The preferred portfolio contains the five demand resources which passed the TRC as well as the energy sustainability education program. It does not include any supply resources, reflecting the fact that the comparison of supply to demand was limited to five years.

Staff have two sources of concern with respect to this analysis. Firstly, staff are concerned that resource selection for the portfolios is limited by the five year horizon. Although we agree that firm commitments

should not be made to minimize the risk of inappropriate investment decisions, an indication of what resources may be required in order to meet demand over a period greater than five years would be helpful. Staff suggest that Centra consider a ten year horizon. Secondly, staff are concerned about the low level at which some of these programs passed the TRC. As approval of the IRP does not constitute approval of the DSM programs, and Centra-Whistler has indicated to staff that it will be submitting a formal application for approval of its DSM programs around mid-August, staff do not believe the IRP should be rejected on these grounds. However, Centra should be informed that if itchooses to proceed with these programs without receiving prior approval they will be subject to after the fact prudency review.

Overall, staff are satisfied that the process used by Centra to develop and analyze the resource portfolios meet the requirements of the IRP Guidelines. However, Centra should be advised that in the next IRP, the Commission wishes to see portfolios which cover a ten year period.

Guideline 7: The Action Plan

The Guidelines call for the Utility to outline the actions it intends to take over the next four years to bring the IRP into place. Centra-Whistler has indicated that it intends to monitor and evaluate the DSM programs over the next two years in effort to determine their effectiveness.

Guideline 8: Public Input

The IRP Guidelines call for the involvement of the public throughout the development of the IRP but allows individual utilities significant latitude as to how this is to be accomplished. Centra Gas invited 13 organizations representing local and regional governments, business groups, industry, environmental and union groups, community organizations and First Nations to be part of a consultative group. Six parties representing local government, business interests and the environment responded.

Prior to commencing the consultations, the group was provided with terms of reference and operating guidelines which defined the scope of the work which the group was asked to undertake. In addition, each member of the group was provided with discussion notes describing the various components of the IRP, e.g. the demand forecast. The consultative group met three times. As a result of the meetings, the Utility identified the objectives of the IRP (see above) as well as a variety of resource portfolios (see above). Centra has indicated that it reviewed the recommendations of the group and accepted and adopted them all.

Commission staff were kept informed of the consultation process as it occurred, were provided with all documentation given to the group, and attended one meeting as an observer. Commission staff are satisfied that the process followed by Centra meets the requirements for public participation as set out in the Guidelines.

Guideline 9: Regulatory Input

Guideline 10: Government Policy Input

Guideline 11: Regulatory Review

The Guidelines indicate that the BCUC staff should be given opportunities to review and comment during the various phases of preparation of the IRP. As indicated above, Commission staff were kept informed of the progress of the IRP and were able to provide comments as the work progressed.