Appendix O – Alternative Analysis (CIS Replacement)
Appendix O

Analysis of Alternatives

Project: Customer Information System
**ALTERNATIVES SUMMARY**

The following alternatives were considered and evaluated. The alternatives not selected were rejected based on a number of reasons with a focus on how well the alternatives could meet the requirements of BC Hydro.

**Alternative 1: Maintain the status quo - Rejected**

This alternative was rejected because the current system cannot be maintained indefinitely with diminishing experienced resources, which cannot be replaced. Additionally, the technology platform and design architecture of the current system is rapidly approaching obsolescence. See appendices A and D and the first section of this Business Case. It is expected that risks introduced because of resource constraints, ageing technology and design architecture restrictions cannot be mitigated beyond 2004-2005.

**Alternative 2: Enhance the current system - Rejected**

This alternative was rejected based on the same restrictions as listed in Alternative 1. Additionally, if the system enhancements included renewing the technology and design architecture, the effort and cost would be very significant and would be roughly equivalent to a custom development. Additional enhancements on obsolete technology are typically complex, time-consuming, not cost-effective, and risky. Experience with making enhancements in the last couple of years has proven these facts. In addition, as the patchwork of changes grows, so does the risk associated with more changes.

Appendix D lists the costs of some of the functional enhancements (labour only) without costs of any changes to system architecture or underlying technologies.

**Alternative 3: Custom New CIS Development - Rejected**

This alternative was rejected because the corporate strategy and indeed industry trends strongly discourage the development of custom packages - especially when many CIS packages are available in the marketplace. Recent industry experience indicates that the time to develop a custom CIS is very extensive and cost prohibitive. See appendix D for further details.

Based on the consideration and rejection of the above three alternatives, a Request for Proposal was issued on April 25, 2000, requesting package CIS solutions. See Appendix E for details of the RFP and the Functional Checklist.

**Alternative 4: Package CIS Solution - Recommended**

This alternative is recommended based on the following reasons:

- The CIS package solution meets BC Hydro’s current and near-term requirements (See Appendix D for a detailed list of functional requirements).

- Package solutions are functionally rich, can be implemented relatively quickly and have a pool of experienced resources in the industry who can be drawn on to help with the implementation.
• BC Hydro’s strategy recommends the adoption of a package solution over writing a custom solution.

• Package solutions offer industry best practices, with flexible options to configure the system to meet specific BC Hydro requirements.

• Package solutions come with an array of templates and samples facilitating implementation and training, thereby reducing the overall cost and time-lines.

Key results from the Phase II project (see Appendix D for further detail) further reinforce the recommended decision to proceed with a package CIS solution. Very few utilities undertake the building of a custom CIS today due to the prohibitive high cost and risk. Very few are also able to meet requirements based on their legacy systems.

Note: the following results are from December 1999.

In the realm of package solutions, three options were considered:

**Option 1: Package CIS Solution: Application Service Provider (ASP) - Rejected**

Two vendors responded to the RFP with the capability to provide their specific brand of CIS as Application Service Providers. One of the vendors withdrew their proposal during the RFP evaluation and has since withdrawn completely from the CIS ASP marketplace. The second vendor’s CIS offering is deficient in functionality and flexibility, and was rejected on this basis. Also the vendor has been bought and sold a few times in the recent past, and their long-term viability is deemed risky by BC Hydro. See appendix F solution selection steps.
Option 2: Package CIS Solution: Outsourced - Rejected

Several proposals provided the option to implement their specific CIS software with outsourcing alternatives: operations and/or maintenance. However, the CIS marketplace is not yet mature enough for outsourcing and there are no industry leaders providing this alternative. All CIS vendors and solution integrators will provide this option and leave it up to BC Hydro to negotiate a particular one-off contract for outsourcing.

This alternative was rejected for the following reasons:

- Outsourcing is deemed risky to implement while a CIS is being installed if there is not sufficient experience and expertise in doing so. There is no proven experience with large scale CIS outsourcing with a viable vendor.

- Outsourcing necessitates the full implementation of a CIS for BC Hydro in any event: selection of a viable package, blue print, implementation, training and support.

- The option to outsource is independent of this project and can be exercised at anytime by BC Hydro, when it is deemed appropriate.

Option 3: Package CIS Solution: Implemented at BC Hydro - Recommended

This option is recommended based on the following analysis:

- BC Hydro has extensive experience in successfully implementing large-scale package solutions and managing a program of change. Examples: PeopleSoft, Indus, PowerOn, and SmallWorld.

- This option poses the lowest risk. BC Hydro has full control of the implementation including the change management and costs. The other options are not proven in the industry for CIS offerings as explained above.

- This option also provides BC Hydro with the ability to provide CIS services to other utilities, and grow the business in support of the corporate strategy.

- At any time in the future, BC Hydro could outsource CIS operations and/or support. A separate project and business case would have to support this decision.

This is how the finalist was selected:

The RFP garnered 20 responses, eight were selected for round one evaluation with the selection criteria based on Functional Fit, Usability, Technical Architecture, Contract and pricing, and vendor viability. Of these eight, four were short-listed for a second round of more in-depth evaluations resulting in two finalists. These two finalists were further subjected to extensive working sessions with the project team representing all relevant areas of BC Hydro. Based on the following evaluation criteria the finalist was selected:

<table>
<thead>
<tr>
<th>Evaluation Criteria</th>
<th>Weight</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Functional Fit</td>
<td>20%</td>
<td>See Appendix G for evaluation report.</td>
</tr>
<tr>
<td>Usability Labs</td>
<td>20%</td>
<td>See Appendix G for evaluation report.</td>
</tr>
</tbody>
</table>
Technical Architecture | 10% | See Appendix G for evaluation report.
Contract, pricing, business opportunities | 30% | See Appendix G for evaluation report.
Vendor viability, reference checks | 20% | See Appendix G for evaluation report.

In addition to the evaluation criteria shown above, the finalist is also recommended for these reasons:

- The recommended solution is well developed in the industry and has a proven track record.
- The solution integrator selected to help BC Hydro implement the solution also has a proven track record with an extensive experienced resource pool to draw from. Their experience includes very recent implementation at a similar size utility with a very similar profile to BC Hydro (1.2 million customers, Electric only, Crown Corporation).
- Both the recommended software vendor and the solution integrator are recognized as industry leaders.

Upon the selection of Option 3, there are a number of ways the CIS package can be implemented:

**Implementation Scenario 1: Pilot followed by a phased or total implementation – Rejected**

The benefit of this scenario is that the system can be refined based on the pilot experience before implementation. However, the pilot and possible phases introduce additional costs and risks, which make this option less desirable.

- This scenario increases the time-line to implement by 6 months, is more resource intensive and costs in excess of an additional $10 million.
- The project risks are also increased. The pilot will have to develop temporary interfaces, maintain dual business processes as well as multiple computing environments (new and legacy). It would require training staff on multiple systems – especially new staff, and keeping of track of customers who move from pilot area to non-converted areas of the province.

**Implementation Scenario 2: Phased implementation – Rejected**

This scenario is very similar to the Pilot scenario with the exception that customers are segmented based on geography or customer type and are migrated to the new system in phases. The key benefit of this scenario is that fewer customers are impacted should anything go wrong. However, the same negative impacts of a pilot apply (see above) and, in addition, the benefit of refining the system before converting users is lost.

**Implementation Scenario 3: Full System Implementation – Recommended**
This is the recommended solution. The proposed cost and implementation plan includes doing several mock-up conversions to mitigate the risks of not doing a pilot or phasing-in of smaller groups of customers.