IN THE MATTER OF

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY

AND

MICA GAS INSULATED SWITCHGEAR PROJECT

DECISION

March 16, 2010

BEFORE:

R.J. Milbourne, Panel Chair/Commissioner
P.E. Vivian, Commissioner

TABLE OF CONTENTS

TABLE OF CONTENTS

PAGE NO.

1.0 INTRODUCTION

1.1 Application

On August 5, 2009 the British Columbia Hydro and Power Authority (BC Hydro) filed its application (the Application) for its Mica Dam and Generating Station (Mica, Mica GS) 500 kilovolt (kV) Gas Insulated Switchgear (GIS) Project (the Project) pursuant to section 44.2(1)(b) of the *Utilities Commission Act* (the *UCA,* the *Act)*.

In the Application, BC Hydro requests approval for expenditures to complete the Project at an Expected Cost of $180.6 million and an Authorized Cost of $200.2 million. The Project encompasses the replacement of all the existing GIS with modern technology, except for the recently replaced circuit breakers in the at-grade switch gear building. As well, it includes the installation of GIS in Lead Shaft (LS) 3 – an unused tunnel of the three from the below-ground generating units to the surface building - that is in place as provision for the future addition of generating Units 5 and 6 to the existing Units 1 through 4. Installation of GIS in LS 3 requires an extension of that existing switch gear building as a part of the Project, since LS 3 does not presently terminate inside that building.

The justification for the Project is described and discussed at Section 3 of this Decision. The technical and physical aspects of the Project are more fully described at Section 4, as are its implementation and financial implications.

1.2 Orders Sought

In the Application BC Hydro seeks the following orders to be issued by the British Columbia Utilities Commission (Commission, BCUC):

- that the expenditures required to complete the Project, as described in the Application, are in the public interest in accordance with section 44.2(3)(a) of the *UCA*.
- that it be directed to file with the Commission quarterly progress reports on the Project schedule, costs, and any variances or difficulties that the Mica GIS Project may be encountering; that the form and content of the quarterly progress reports be consistent

with other BC Hydro capital project reports filed with the Commission; and that the quarterly progress reports be filed within 30 days of each reporting period.

- that it be directed to file a final report within six months of the end of the substantial completion of the Project; that the final report include a complete breakdown of the final costs of the Project, a comparison of these costs to the Project Expected Cost estimate, and an explanation of all material cost variances.

1.3 Context

Recent amendments to the *UCA*, other proceedings before the Commission, and decisions of the Courts in respect of certain such proceedings all intersected with the Commission's review of the Application. These include the following:

(i) First Nations Consultation

On February 18, 2009, the British Columbia Court of Appeal in *Carrier Sekani Tribal Council v. British Columbia (Utilities Commission), (Carrier)* 2009 BCCA 67 and *Kwikwetlem First Nation v. British Columbia (Utilities Commission)*, 2009 BCCA 68 found that the Commission has the obligation to assess the adequacy of Crown consultation with First Nations within the scheme of its regulation.

The adequacy of BC Hydro's First Nations consultation for the Project is considered in Section 5.0 of this Decision.

(ii) Amendments to the *UCA*

On May 1, 2008, the *Act* was amended in several ways, including the addition of sections 44.1, Long-term resource and conservation planning, and 44.2, Expenditure schedule. For ease of reference, sections 43, 44, 45 and 46 of the amended Act are attached as Appendix A to this Decision. Section 44.2 identifies the criteria the Commission must consider when it is determining whether to accept or reject an expenditure schedule. These matters are discussed in Section 2.0 of the Decision.

(iii) The Commission's Decision and Order G91-09-09 in *The Matter of An Application by BC Hydro and Power Authority for the Approval of the 2008 Long –Term Acquisition Plan (2008 LTAP)*

BC Hydro's current capital plan review process was the subject of some considerable discussion in the Commission's review of BC Hydro's F2009/F2010 Revenue Requirements Application. Pursuant to the Commission's determination in that proceeding, the matter was referred for further consideration in the Commission's review of BC Hydro's 2008 LTAP Application and Decision dated July 27, 2009.

Among other determinations arising from the 2008 LTAP Decision, the Commission declined to endorse BC Hydro's approach to filing its capital plans and made determinations on several requests for relief by Interveners. In that regard, the Commission made the following determination:

> For all the above reasons, and given the flexibility provided by the *Act* to both public utilities and the Commission, the Commission Panel declines to provide BC Hydro with prescriptive guidance as to how it should file its capital plans for review, other than that they should be filed as part of an LTAP proceeding. As to the form of, and proceeding in which it files its [Major Threshold Project(>$50- million planned expenditure)] applications, the Commission Panel requests that, at its earliest convenience but in any event no later than 6 months from the date of this Decision, BC Hydro file with the Commission a set of guidelines within which it is prepared to make MTP filings and applications and that that set of guidelines reflect such consultations with its Intervenors and Commission staff as BC Hydro deems appropriate.

(2008 LTAP Decision, p. 148)

In response to a request from BC Hydro, Commission Letter L-101-09 dated November 16, 2009, extended the date for filing those Guidelines for MTPs to March 31, 2010.

The Commission Panel (the Panel) notes that the Project meets the criteria of an MTP as contemplated by that Order but the Application has been filed, and is of necessity being reviewed by the Commission prior to the receipt and review of those guidelines by the Commission and interested Parties.

As well, a number of the Parties' positions and submissions in this proceeding relate directly to, or parallel, certain matters canvassed in the 2008 LTAP review. These include BC Hydro's reliance on the approval of a notionally comparable Project as an expenditure schedule in that proceeding, and the Parties' views and requests for relief in respect of the appropriateness of the Application and the scope of the Commission's review of it. These matters are further described at Section 2 of this Decision and give rise to certain determinations by the Panel.

Further, the 2008 LTAP involved consideration of certain matters directly related to the Mica GS, particularly the approval of expenditures for the continuation of project definition work for Units 5 and 6, as well as their role as contingency resources. These two matters directly affecting the Project were reviewed in the LTAP proceeding but resulted in separate, early determinations and Orders. These are referenced in the appropriate Sections of this Decision.

1.4 Regulatory Process

The Regulatory Process is described in Appendix B to this Decision. A complete list of Interveners is provided in Appendix C, and a list of Exhibits filed is provided in Appendix D.

1.5 Overview of Decision

The Decision at Section 2 first deals with the "macro issues" of whether the Application is properly before the Commission and the scope of the Panel's review of it. The Panel determines that the Application is properly before it under section 44.2 of the *Act*.

The justification for the Project is reviewed at Section 3. The Panel finds that the essential elements of the Project to replace the existing GIS are justified on the basis of enhanced operational safety, improved reliability, and conformance with the government's energy objectives.

The technical and physical aspects of the Project and its implementation are discussed at Section 4, and the alternative approaches to achieving its benefits explored by BC Hydro are analyzed as to their cost effectiveness. The Panel finds that the while the core elements of the Project and its costs are supportable, it finds at Section 4.6 that it lacks sufficient evidence and justification to conclude that the entirety of the scope, schedule, and cost of the Project as applied for are in the interests of persons who receive or may receive service from BC Hydro, and declines to accept the Application as filed.

The Panel discusses the adequacy of BC Hydro's First Nations Consultation at Section 5, but has not made any final determinations in that regard as a result of finding that the Application is not otherwise in the public interest.

2.0 MACRO ISSUES

In its Application, BC Hydro requests that the Commission accept the capital expenditures for the Project in the expenditure schedule it filed under section 44.2 of the *Act* as being in the public interest.

One of the major issues in the review of the Application was whether BC Hydro should have filed its request under sections 45 and 46 as opposed to section 44.2 of the *Act*.

In this Section of the Decision the Commission Panel discusses several questions that arose from that issue. This Section also addresses certain requests from Interveners regarding the overall disposition of the Application.

2.1 MTP Application as an Expenditure Schedule or as a CPCN?

BC Hydro states:

> "The expenditure schedule that is the subject of the Application is described in section 3.3 of Exhibit B-1 (the Application), as informed by the balance of the Application and the evidentiary record of this proceeding."

BC Hydro submits that there is only one material, substantive difference between acceptance under section 44.2 and approval under sections 45 and 46 of the *Act*. In particular, where a CPCN is required by section 45, the utility may not begin construction of the project in the absence of a CPCN. BC Hydro states that filing an application under section 44.2 affords it significant scheduling flexibility that is important for projects with long lead times, complex and costly procurement

strategies, or limited construction windows (Exhibit B-5, BCUC 1.2.3).

BC Hydro notes that as filing for acceptance of an expenditure schedule under section 44.2 of the *UCA* is voluntary, it has the choice to file such an application in order to mitigate the cost recovery risk associated with one or more projects. BC Hydro submits that if the Project expenditure schedule is rejected by the Commission as not being in the public interest, it would have the managerial discretion to proceed with the Project, albeit at a potentially high risk of recovering the Project cost in future rates.

BC Hydro also submits that "nothing in section 44.2 or any other section of the *UCA* prevents a public utility from filing an expenditure schedule for a single project under section 44.2(1)(b)." It cites as a precedent the Commission's recent acceptance of its expenditure request for the Fort Nelson Generating Station Upgrade Project (FNU3) and submits that "Like the present application, that expenditure consisted of a single project." (Exhibit B-5, BCUC 1.1.1; BC Hydro Reply, p. 11-12)

The Panel notes that the FNU3 project was one of seven capital items listed on an expenditure schedule as filed in the 2008 LTAP proceeding. BC Hydro requested acceptance of all seven items as its Primary Relief #2 (2008 LTAP Decision p. 21). That expenditure schedule was reviewed within the context of that proceeding and, at BC Hydro's request and with Interveners' concurrence, the FNU3 and one other matter were separated from that review only in respect of the timing of the release of their determination by the Commission. Both were accorded determinations separate from the 2008 LTAP Order G-91-09 (2008 LTAP Decision p. 23). That Order denied one expenditure pursuant to the Commission's discretion under subsection 44.2(4) to "… accept or reject, under subsection (3) a part of a schedule," and approved the balance.

2.2 Can the Commission Accept the Application as filed under section 44.2?

The Lakes Division opposes the Application, in part on the basis of its view that "the switchgear and Mica 5 & 6 are part of an expansion of the Mica Dam project" and questions why the Project is not being reviewed under section 45 of the *UCA* (Lakes Division Submissions, p. 3).

The British Columbia Old Age Pensioners' Organization *et al.* (BCOAPO) submits that BC Hydro is asking the Commission to do something that is beyond its jurisdiction and the Commission must reject the Application as filed. While it accepts that the Project *per se* is in the public interest and supports it based on BC Hydro's "strong evidentiary case," BCOAPO submits that section 44.2 envisions an application to approve the utility's intended capital investments over a time period, rather than an approval for a "one-off" project. BCOAPO submits that BC Hydro should have applied for a CPCN under sections 45 and 46. BCOAPO submits that section 44.2 was enacted together with section 44.1 and "is part of a legislative package for integrated planning approvals which takes a longer view than the more traditionally piecemeal, project-by-project mechanism of the CPCN." (BCOAPO Final Submission, pp. 2-4)

The Commercial Energy Consumers Association of British Columbia (CECBC) supports BC Hydro's approach, and the Independent Power Producers of British Columbia (IPPBC) takes no position.

In its reply, BC Hydro submits that filing under section 45(1) would be inappropriate or unnecessary for reasons which include the following:

- it already is deemed to have a CPCN for the Mica GS, including the GIS, under section 45(2);
- it does not believe that the purpose of the Project is to serve new customers or otherwise serve new load; i.e., the Project is not an extension as contemplated by section 45(1), and it could not have been and cannot be compelled to seek a CPCN for it; and,

- even if the Commission were to have deemed the project to be an extension, it did not order BC Hydro to apply for a CPCN for it within the 30-day window from the September 2009 start of construction as required by section 45(5).

(BC Hydro Reply, pp. 11-13)

Notwithstanding the distinctions between the routes taken to put the Application and that for FNU3 before the Commission as noted in section 2.2 above, the Panel observes that the generic matter as to which section of the *UCA* the Application should be filed under, as raised by the Lakes Division and BCOAPO, was well canvassed in the 2008 LTAP review that gave rise to Order G-75-09 and its accompanying Reasons for Decision in the Matter of "*An Application by British Columbia Hydro and Power Authority (BC Hydro) for the Approval of the 2008 Long Term Acquisition Plan Expenditure Request for the Fort Nelson Generating Station Upgrade Project."* The FNU3 project involved an expenditure of some $140.1 million over F2009 – F2012 to complete the definition phase work and implement a substantial increase in the capacity of the Fort Nelson Generating Station.

The issue regarding whether the Commission should accept and review the FNU3 application under section 44.2(3)(a) or reject it and require it to be re-filed as an application for a CPCN under sections 45 and 46 was canvassed by way of cross-examination, written submissions, and in the Oral Phase of Argument. The positions taken by Interveners registered in the 2008 LTAP review of the FNU3 Project and of the review of the Application in this proceeding are summarized below:

Intervener	2008 LTAP/FNU3	The Application
CEC	accept as filed	accept as filed
IPPBC	should be CPCN	no position
BCOAPO	no position	reject, must be CPCN
JIESC*	inappropriate use of 44.2	no submission
(FNU3 Reasons, p. 3) * Joint Industry Electricity Steering Committee		

Based on the evidence and submissions before it, in the FNU3 matter the Commission determined that:

> "[It] accepts BC Hydro's argument that it need not seek a CPCN for its Fort Nelson upgrade, and that its request for approval has been made in a "CPCN- like" fashion. Accordingly, the Commission Panel has applied its guidelines for CPCN's in determining whether or not to approve BC Hydro's request."

(Order G-75-09 Reasons, p. 28)

Commission Determination

In this proceeding, the Panel finds that no new evidence or argument has been put before it that would cause it to come to a different conclusion in respect of the Application than did the Commission in the FNU3 matter. The Panel accepts BC Hydro's Application as being properly before it under section 44.2 of the *Act*, and as being filed in a CPCN-like manner, and will make its determinations accordingly. The requests of the Lakes Division and the BCOAPO to direct BC Hydro to refile its Application as an Application for a CPCN are denied.

Having made that determination, the Panel notes that it does not regard either the FNU3 finding, or the finding in this proceeding as in any way determinative or "generic" in respect of similar matters that may come before the Commission. Given the summary of Interveners' views above, the Panel is mindful of the continuing lack of consensus among, and indeed the changing of, the views of Interveners as to whether BC Hydro's MTPs should be filed as CPCN's or under the expenditure schedule provisions of section 44.2.

BC Hydro submits that "There are other processes where stakeholders can transparently debate the applicability of [sections 44.2, 45 and 46 of the *UCA*], specifically, the BCUC's public review of its CPCN guidelines and BC Hydro's upcoming [MTP] guidelines filing." (BC Hydro Reply, p. 14)

The Panel agrees with BC Hydro, and encourages Interveners and other stakeholders to engage constructively in those processes.

2.3 Can the Commission reject part of an expenditure schedule?

Notwithstanding the explicit jurisdiction given to the Commission under subsection 44.2(4) to accept or reject a part of an expenditure schedule as noted at Section 2.1 above, BC Hydro submits that "… where a capital expenditure schedule consists of only one Project, the BCUC does not have the jurisdiction to reject part of that expenditure schedule, where the rejection would alter the Project filed." Further, BC Hydro submits that if the Commission took such action by way of exercising its jurisdiction pursuant to subsection 44.2(4), "[the Commission] would be placing itself in the position of management of BC Hydro," which the Courts have found is the function of BC Hydro's Board of Directors. (BC Hydro Submissions, pp. 7, 8)

CEC submits that the Commission has jurisdiction to reject part of a project-specific expenditure schedule, as rejection of a part of an expenditure schedule does not mean that any part of the project must change, since changes to the project are a BC Hydro responsibility. CEC believes that the Commission must have jurisdiction to reject a part of a project that it considers to not be in the public interest, and does not see any point in a process that would require the Commission to reject all of a project just because some small part of the project is not in the public interest.

CEC submits that there is nothing in section 44.2 that equates an expenditure schedule with a project or a list of projects, and recommends that the Commission determine that it is able to reject any part of an expenditure schedule. This would permit the Commission to provide a refined assessment of a project for the benefit of the public interest, and not just a crude acceptance or rejection of an expenditure schedule as a single project (CEC Final Submission, pp. 7-9).

CEC recommends that the Commission determine that it has a broad power in interpreting section 44.2(4) to reject any part (meaning any aspect of the filings the Commission finds relevant) of the applicant's expenditure schedule which it finds is not in the public interest. The CEC notes that such a rejection would not in any way impair BC Hydro's "asserted right" to proceed with the Project on its own initiative. Such rejection would only go to providing a firm and strong signal to the utility that "when it comes time to consider cost recovery from ratepayers that the Commission

will have due regard to what was seen as an issue at the time of the expenditure schedule review." (ibid)

Certain aspects of CEC's views concerning the Commission's discretion to consider and accept or reject "parts" of an expenditure schedule in fact arose and were canvassed in the 2008 LTAP review. Further to the Parties' written submissions, and tangentially, in the Oral Argument Phase of that proceeding, there was general agreement among the Parties that the Commission could, with reason, reject any particular element or elements of the LTAP or its accompanying expenditure schedules, and that it was then a matter of judgment for the Commission to make as to whether the aggregate of any such rejections constituted the effective rejection of the whole.

The Panel notes that the Parties in the 2008 LTAP proceeding were in further general agreement that it was appropriate for the Commission to advise or otherwise suggest to BC Hydro what changes or other amendments could be made to any rejected parts so as to enable BC Hydro to enable approval if it chose to resubmit its application. (2008 LTAP Decision, p. 19)

In point of fact, BC Hydro seemed to recognize that latter possibility in its request for approval of the FNU3 as a part of the 2008 LTAP expenditure schedule review. In anticipation of the possibility that the Commission could decline to approve the FNU project as it contained an otherwise near-term-avoidable increment of capacity needed for longer term requirements, BC Hydro included as an alternative option for consideration and approval if appropriate, the FNU2 project which reflected the incrementally lower capacity (2008 LTAP Decision, p. 148).

The Panel also notes the consistency of the relevant criteria the *UCA* provides for its consideration in approving capital project applications as being in the public interest under the two approaches:

Expenditure Schedule – 44.2(5)	**CPCN-46(3.1)**
(a) the government's energy objectives	(a) same
(b) the most recent long-term resource plan filed by the public utility under by section 44.1 if any	(b) same
(c) whether the schedule is consistent with the requirements under section 64.01 (electricity self- sufficiency) and 64.02 (acquisition of clean and renewable resources) if applicable	(c) same, with "schedule" replaced "application for the certificate"
(d) the interests of persons in British Columbia who receive or may receive service from the public utility	

As well, the Panel notes the equivalence between the approaches in terms of the Commission's ability to consider applications in whole or in part. In particular, section 46(3) provides the Commission with the discretion to "….Issue a [CPCN] for the construction or operation of a part only of the proposed facility, line, plant or system extension…," essentially paralleling its discretion under section 44.2(4) to reject a part of an expenditure schedule.

The Panel observes that in its Reply, BC Hydro introduces the argument that "It is only if the BCUC wishes to reject some part of the Project expenditure schedule that the BCUC need consider whether it has the jurisdiction to reject that part" (BC Hydro Reply, p. 17). Since BC Hydro has defined the Project, as described at 2.1 above, with reference to "section 3.3 of the Application as informed by the balance of the Application…," it seems to the Panel axiomatic that, as well as the expenditure schedule applied for being the Project, indeed, the Project itself has an expenditure schedule with defined elements and a time frame for their implementation. (underlining added)

Further, in Section 4.5 of the Application, the Panel notes that BC Hydro presents and analyzes various options for carrying out the Project, including delaying LS 3 until Unit 5 is installed, or, if LS 3 is installed first, delaying LS 1 for a ten year period (Exhibit B-1, pp. 4-26 - 4-32). This analysis

of alternative ways to carry out the Project is consistent with Section 3(ii) of the CPCN Guidelines in Letter L-18-04, and is reflective of BC Hydro's commitment to provide information in its MTP applications in a "CPCN-like manner." The timing and sequencing of the GIS replacement is presented as a series of options which, pursuant to cost-effectiveness analysis by BC Hydro, results in its "Recommended Option."

The Panel further notes the alignment of the actual structure of the Application, as is discussed in Section 4 of this Decision, with CEC's view that "the applicant's expenditure schedule" should be, and in fact is, available to be reviewed.

It is a matter of record in the proceeding that Interveners have requested specific relief in consideration of some matters, inclusive of the options BC Hydro has presented in terms of the implementation of the Project. The "Project expenditure schedule" referenced by the underlining in the paragraph above would, in principle, seem to the Panel to be as open to review under the framework of section 44.2 as it would have been under a CPCN regime. The matters of specific relief requested by CEC and IPPBC in that regard are dealt with at Section 4 of this Decision.

BCOAPO observes that while it "makes sense that the Commission can reject elements of a multi-project schedule of capital projects," it "makes less sense that it could re-engineer a specific project by approving a different version than the one it applied for." BCOAPO submits that where the Commission feels a project requires re-thinking in order to conform with the public interest, its remedy is to refuse a CPCN but indicate that with further changes it would meet with approval, thus "leav[ing] management in control of the ultimate character of the undertaking." (BCOAPO Submissions, p. 4)

Given the technical complexity of the Project, in this instance the Panel agrees with BCOAPO's views, and finds that the approach BCOAPO submits is open to the Commission in a CPCN application to "reject with recommendations," is equally open to the Commission for a single project presented as an expenditure schedule under section 44.2, as noted in the above reference to the consensus of the parties in the 2008 LTAP review.

2.4 Can the Commission attach conditions to an approval of the Application?

BC Hydro states it believes the practical effect of any difference in the scope of the Commission's power to impose conditions under sections 44.2 and 45/46 are immaterial (Exhibit B-5, BCUC 1.2.3). In that response, BC Hydro also outlines the legal basis on which it believes the Commission has no jurisdiction to attach conditions in respect of financial restrictions to its approval of an Application.

Only CEC makes submissions concerning the Commission's ability to approve the Application with conditions. It submits that while:

- it "disagrees with BC Hydro's interpretation of section 44.2.3(a) that acceptance if provided must not be qualified" in that,
- "Acceptance of an expenditure schedule is always subject to the parts which may have been rejected…," pursuant to the Commission's discretion under section 44.2(4) but that,
    - it "agrees with the notion that the Commission does not have the jurisdiction to impose conditions with respect to any aspect of the expenditure schedule." in that,
    - the applicant remains responsible for and able to choose whether or not to carry out all or any part of the expenditure schedule …"

(CEC Submissions, p. 9)

In its Reply, BC Hydro does not further address the matter of conditions, but reiterates its view as to the Commission's jurisdiction to deal with parts of the Application.

The Commission Panel notes the parallelism between the notion of "conditions" and "rejections-in-part" as dealt with at Section 2.4 above, and sees no need to make any determinations in this regard. The Panel does not view its discretion as particularly fettered, and believes that

appropriate remedies to any concerns it may have arising from its review of the Application can be dealt with in its determinations.

3.0 PROJECT JUSTIFICATION

BC Hydro states the replacement of the GIS at the Mica GS is required because of the high probability of failure and the associated consequences brought on by the age and condition of the existing GIS in LS 1 and LS 2, the below ground transformer gallery, and the switchgear building. BC Hydro proposes the most efficient project scope and sequence is the expansion of the switchgear building and the installation of new GIS in LS 3 by 2011, followed by the replacement of LS2 and LS1 by 2012 and 2013 respectively. The GIS equipment in the transformer gallery and switchgear building will be replaced in two separate four-month outages, one in the spring of 2011 for the equipment associated with Units 3 and 4, and the second in the spring of 2012 for the equipment associated with Units 1 and 2.

This Section describes the justification for the Project in further detail, and leads to the Panel's acceptance that the replacement of the existing GIS contemplated by the Project is justified.

3.1 Need for the Project

BC Hydro states the existing GIS at Mica presents a substantial risk of forced outages. The GIS, which is over 30 years old, may be the last 500kV GIS of this vintage in service in North America. The purpose of the Project is to mitigate this risk of forced outages. (Exhibit B-1, p. 4-1)

BC Hydro describes Mica as a "key facility" in its generation strategic asset management system in that Mica supplies approximately 16 percent of the energy, and 17 percent of the capacity for BC Hydro. At Mica, the expected cost of a forced outage in any month varies, ranging from zero to over $20 million per month depending on the time of year, as replacement energy and capacity

may need to be purchased on the market at a higher cost than that of self-generation. (Exhibit B-1, p. 4-2)

BC Hydro asserts the evidence clearly establishes that the GIS is in poor or unsatisfactory condition, and among other things, cites three condition assessment reports BC Hydro commissioned from independent GIS experts. BC Hydro specifically points to one of the condition assessment reports in which it was concluded by the author that there was, "a 99 percent chance of a GIS failure within ten years or, in other words, there is a 33 per cent chance of failure in each of the next ten years. The risk of a GIS failure is expected to increase over time as the GIS ages." (Exhibit B-1, p. 4-3)

Since the independent condition assessments were made, a surge arrestor has failed on Unit 3, resulting in it being out of service for ten weeks. As well, BC Hydro has identified additional issues with key GIS components. It provides a summary of the principal components, their current state, the planned outage requirement for replacement or installation, the consequences of a forced outage of the component, and the benefits of new equipment by way of the following table:

Table 4-1
Analysis of GIS by Component

Component	Current State	Planned Outage Required for Replacement or Installation	Forced Outage Consequence	Benefits of New Equipment
Surge Arrestors	The probability of failure is very high: – one has already failed – another has been removed – a third is suspect Existing surge arrestors may not be protecting transformers. No spare parts Mica staff monitoring electrical behaviour for signs of imminent failure with every switching event.	5 – 7 days per Surge Arrestor or one month per unit (3 surge arrestors per unit). One generator out of service.	No spare parts. Surge arrester must be removed or substituted. 6 weeks outage to remove and repair associated damage. 6 months to obtain new technology replacement. Risk of catastrophic transformer failure increased.	Existing surge arresters are an obsolete technology. Modern metal oxide surge arrestors are demonstrably better at protecting transformers than the existing gap type surge arresters.
Disconnect switches and bus in Transformer Chamber	The probability of failure is very high. Motor operating mechanisms on disconnects do not function properly and are not repairable. Existing disconnects are first generation of GIS equipment and there have been several past failures. To reduce risk of failures, operating restrictions are imposed on how disconnect switches are operated. Need to de-energize units on either side to operate – consequently operation results in short outage in all cases. Extensive partial discharge has been found in most disconnect operating rods indicating electrical breakdown activity. Operating rods with the highest risk have been replaced. Partial discharge has also been detected in several other locations. Repairs at other partial discharge locations would require extensive dismantling and refurbishing.	3 – 4 months to replace the GIS for one or two units. Replacing two units at a time would minimize outage times and costs. Long lead times and customized design work required.	Two coincident failures could result in full Mica outage depending on location. Any repair requires extensive scaffolding, rigging and dismantling.	Enables remote operation, alleviating staff resources and improve operating efficiency. Newer technology disconnects will not impose any operating restrictions. Reduced risk of fault and resulting forced outage.

Component	Current State	Planned Outage Required for Replacement or Installation	Forced Outage Consequence	Benefits of New Equipment
Disconnect switches and bus in switchgear building	Same as above.	Same as above but can transfer power from 3½ units up alternate lead shaft during replacement. Limit dictated by transmission restrictions.	Failure of one disconnect switch could result in extended ½ unit outage.	Enables remote operation. Reduced risk of fault and resulting forced outage.
GIS in Lead Shaft 1 & 2	Deteriorated condition of solid insulators is associated with increased risk of failure. Equipment is at steep inclines in confined space so any failure is difficult to repair. Condition of solid insulators and SF_6 seal systems have deteriorated and require replacement. Some spare bus parts. Mica limited to transferring only 3½ units of power up single lead shaft because of MSSC limitations.	See alternatives in Table 4-3.	Based on the 1984 lead shaft repair at Mica and similar repairs carried out at Revelstoke, a faulted bus section in a lead shaft in Mica can be expected to take between one to three months to repair depending on the location of the fault, the phase of bus affected and the availability of skilled workers and supervisors. The work would not extend the useful life of equipment. Mica output is reduced by 300 MW if one lead shaft is out of service. Mica would be out of service for extended period of time if the second lead shaft fails.	Reduced risk of failure New equipment would provide an estimated life of 50 years New equipment would be more cost effective than refurbishing Better monitoring of SF_6 pressure. Partial discharge activity will be monitored to better provide warning of impending failure.

(Source: Application, Table 4-1)

No Intervener opposed or otherwise questioned BC Hydro's basis for its conclusion that it was appropriate to replace the existing GIS in a comprehensive and timely manner.

3.2 Criteria for Commission Review of the Application

As noted at Section 2.3 above, the first three criteria [(a), (b), and (c)] are common to both CPCN and section 44.2 applications. With respect to criterion (a), BC Hydro submits that the Project supports and is supported by the BC Government's energy objectives pursuant to section 1 of the *UCA* in that it both will result in the reduction of emissions of greenhouse gas emissions, and contribute to the reliable generation of clean and renewable energy in accordance with those respective criteria (BC Hydro Final Submission, p. 7).

No Intervener took issue with BC Hydro's submissions.

Concerning criterion (b) BC Hydro submits the Commission need not consider BC Hydro's most recent long term resource plan, as the 2008 LTAP did not specifically address the Project. (BC Hydro Final Submission, p. 7)

No Intervener took direct issue with BC Hydro's position. The Panel notes, however, that the Commission did in fact approve item (d) of the section 44(2)(b) expenditure schedule BC Hydro filed with the 2008 LTAP Application for $30.0 million to be spent over F2009, F2010, and F2011 to undertake and complete the definition phase work for Mica Units 5 and 6, by way of Order G-69-09 and its accompanying Reasons for Decision dated June 15, 2009. (2008 LTAP Decision, p. 23)

As well, the Panel notes that by way of Directive 24 of the 2008 LTAP Decision the Commission approved BC Hydro's Contingency Resource Plans (CRPs) for inclusion in BC Hydro's Network Integrated Transmission Services update to the British Columbia Transmission Corporation (BCTC). Those CRPs included BC Hydro "planning to continue to advance Mica Units 5 and 6 as part of its CRP #1" (LTAP Decision, pp. 135, 136).

The measures involving Mica which were approved in the 2008 LTAP decision may well have some bearing on the concerns expressed by the Lakes Division in their submissions regarding the adequacy of BC Hydro's consultations with First Nations affected by the Project. Those matters are discussed at Section 5 of this Decision.

Concerning criterion (c), BC Hydro submits that it is not necessary for the Commission to address the requirements of sections 64.01 and 64.02, as the BC Government has yet to prescribe the criteria with respect to BC Hydro under either section (BC Hydro Final Submission, p. 7).

No Intervener took issue with BC Hydro's submissions.

With respect to criterion (d), which does not specifically apply to review of a CPCN application but is nonetheless a part of the overall public interest test that applies to both types of application, BC Hydro submits that the expenditures related to the Project are in the interest of persons in BC who receive or may receive service from BC Hydro. It submits that the Project is a cost effective way to reduce the likelihood of forced outages at Mica GS caused by the aging GIS, and that it is in the economic interest of ratepayers that output from Mica GS remains reliable.

BCOAPO and the Lakes Division took no issue with BC Hydro's submissions in this regard *per se*. CECBC and IPPBC expressed concerns regarding the particulars of BC Hydro's approach to and justification for its recommended approach to the implementation of the Project, as will be described at Section 4.4 of this Decision.

Commission Determination

The Panel accepts BC Hydro's evidence that the existing Mica GIS should be replaced and that that replacement is consistent with the government's energy objectives. Subject to the determinations in the following sections of this Decision, the Panel finds that replacement of the existing Mica GIS is in the interest of those who receive, or may receive service from BC Hydro.

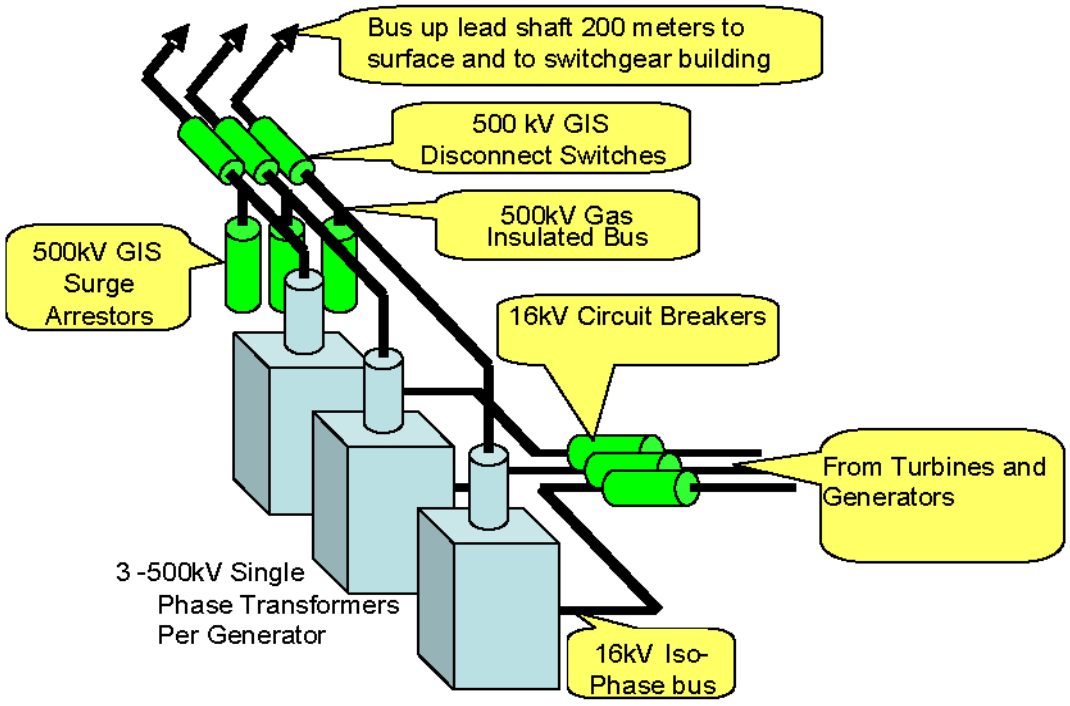
4.0 PROJECT DESCRIPTION, TIMING AND SEQUENCING, AND IMPACTS

BC Hydro brings forward the Application to address the unreliable existing GIS at the Mica GS. It proposes that at the conclusion of the Project in 2013, all of the existing original switchgear will have been replaced and new equipment installed in LS3 (which presently sits empty) at a total expected project cost of $180.6 million excluding project reserves.

4.1 Description

The powerhouse at Mica GS is deep underground, and houses the transformer gallery, as shown schematically for a single generating unit in the following figure.

Figure 3-4 GIS in Transformer Gallery for Single Generating Unit



(Source: Application, Figure 3-4, p. 3-5)

Equipment in the gallery includes the generator step-up transformers that convert the 16kV generator voltage to 500kV for transmission. The 500kV side of the transformers is connected via GIS equipment that consists of bus sections, disconnect switches and surge arrestors, to two bus sections running in LS 1 and LS 2. The LSs interconnect the underground transformer gallery with the surface switchgear building. Each LS normally carries the output of two generating units, and as Mica GS was originally constructed with only four of a possible six generating units, the equipment in LS 3 was never installed. The existing switchgear building was constructed large enough only to house the equipment necessary for interconnecting the GIS in LS 1 and LS 2 to the transmission system and does not extend over LS 3's opening to the surface. (Exhibit B-1, pp. 3-4, 3-7)

4.2 Architecture Evaluation and Selection

BC Hydro identified eight candidate architectures for the replacement of the existing GIS including different technologies and alternative configurations. It selected four architectures for further analysis. BC Hydro dismissed architectures that required the relocation of the generator step-up transformers to the surface or those that relied on insulating gas other than SF_6. The only other technology that BC Hydro identifies as having been considered was cross-linked polyethylene (XLPE) cable for use in the lead shafts in lieu of GIS bus sections.

BC Hydro states that two of the four selected architectures – partial replacement of the GIS with XLPE cable in the lead shafts and replacement of all the other GIS in-kind, and full in-kind replacement of all of GIS – were clearly superior to the rest. The two superior architectures were scored using subject matter experts and quantitative data to arrive at the preferred architecture for the proposed Project which BC Hydro submits best meets its requirements. BC Hydro did not identify the two rejected architectures of the four selected.

Despite a lower initial cost for the XLPE cable option, BC Hydro concluded that application of 500kV XPLE cables in the lead shafts is not recommended since:

- knowledgeable personnel are available locally for GIS, but not the cable;
- the cable alternative is not available with the same transfer capacity as GIS;
- the cable alternative has higher risks because the technology has never been implemented in North America;
- the cable has insufficient operational history in 500Kv service for its long-term performance to be adequately assessed;
- the cost over the life of the cable alternative was estimated to be higher than GIS due to the cost of planned outages required for installation; and
- the safety and environmental risks for both alternatives are estimated to be similar.

(Exhibit B-1, p. 4-20)

In the course of the review, BC Hydro provided further specifics as to the costs of the two alternatives on a net present value (NPV) basis, inclusive of the costs of outages for installation. That analysis indicated a NPV for the XLPE cable option of $121 million as compared to that for the GIS option of $122 million. (Exhibit B-5, BCUC 1.41.1)

The only technology BC Hydro considered for the replacement of the active components in the switchgear building and transformer gallery was GIS since space constraints preclude the use of other technologies. Although the overall architecture remains the same, several improvements on the existing installation are proposed, including metal-oxide surge arrestors in place of gap-type surge arrestors, and the introduction of a mezzanine floor and an overhead crane in the transformer gallery to facilitate access to the active components (Exhibit B-1, p. 4-21).

BC Hydro also considered, and incorporated as it found appropriate, suggestions as to alternative architectures from its independent GIS experts. BC Hydro ultimately rejected the majority of the suggestions with the exception of the relocation of two disconnect switches (Exhibit B-1, pp. 4-22, 4-23).

BCOAPO, CECBC and IPPBC accept the project architecture as proposed by BC Hydro. However, the IPPBC submits that BC Hydro should perform a more thorough investigation of options that would allow the overall installation to more readily accept interconnections from new resources (IPPBC Submission, p. 3). The Lakes Division took no position regarding the architecture to replace the existing GIS.

In response to the submission from IPPBC, BC Hydro submits that the issue of future interconnections of resource additions is best considered within the Section 5 Inquiry process or between the BCTC and IPPBC and not in this proceeding. (BC Hydro Reply, p. 18)

Commission Determination

The Panel accepts BC Hydro's evidence and analysis of the alternative architectures it considered, and that the marginal potential benefit of using 500kV XPLE cable as a partial alternative to GIS replacement is not sufficient to outweigh the identified risks of that architecture. Subject to determinations in the following sections of this decision, the Panel accepts BC Hydro's preferred architecture as appropriate for the facility.

With respect to the IPPBC's request for relief, the Panel notes that since the request arose only in IPPBC's submissions, it has no evidence before it to assess what, if any, the implications on the scope, costs or schedule for the Project would be if it were to be granted. **The Panel agrees with BC Hydro's view that the matter of interconnection of future IPP generating resources in the region to the BCTC system at Mica is best canvassed either through the Section 5 inquiry or between the IPPBC and the BCTC. Accordingly, the Panel declines to grant IPPBC the relief it requests.**

4.3 Scope of the Project

In summary, the scope of the Project as proposed by BC Hydro consists of:

- replacing all the existing 500 kV GIS in the transformer gallery;
- installing new 500 kV GIS to accommodate the connection of the generator step-up transformers for Mica Units 5 and 6;
- installing a new partial mezzanine and overhead crane in the transformer gallery;
- replacing the gas insulated bus in LS 1 and LS 2;
- installing new gas insulated bus in LS 3;
- upgrading the lifts and skips in LS 1 and LS 2, and installing a new lift and skip in LS 3;
- expanding the switchgear building and the services contained therein to cover the LS 3 surface opening and house the equipment necessary to interconnect LS 3 to the transmission system;
- installing new GIS circuit breakers, disconnect switches and bus sections in the expanded switchgear building necessary to interconnect LS 3 to the transmission system;
- upgrading fire protection, auxiliary mechanical systems, electrical infrastructure and miscellaneous civil improvements to support the new equipment; and,
- replacing and installing new protection and control equipment for the GIS.

(Exhibit B-1, pp. 3-7, 3-9)

The Panel notes that the second and fifth listed items above can be related in whole to the installation of Units 5 and 6, the sixth and seventh are in large part related, and the last three are in part related. Accordingly, the Panel is of the view that, all else equal, a material portion of the project scope and costs are arguably related to making provision for and pre-building parts of a project to install Units 5 and 6.

BC Hydro states in the Application that its analysis "assumes in all cases that the GIS in lead shaft 3 would be completed first to meet a Mica Unit 5 ISD of 2013 (F2014)" (Exhibit B-1, p. 4-21), but later it states that it "is not of the view that significant weight needs to be given to the benefits of installing GIS in lead shaft 3 to the Mica Unit 5 and 6 projects" (Exhibit B-5, BCUC 1.20.2).

As referenced at Section 3.2 above, while the Commission approved BC Hydro's expenditure for continued project definition work regarding Mica 5 and 6 in the 2008 LTAP Decision, it did not approve expenditure for implementation of that project, as none was requested by BC Hydro. Rather the Commission approved Mica 5 as a Contingency Resource for planning purposes only by BC Hydro and BCTC, as requested by BC Hydro.

BC Hydro's justification for its Project scoping was extensively canvassed in this proceeding. A principal issue crystallized around the necessity for the LS 3 first concept. This matter is described and dealt with in the following Section.

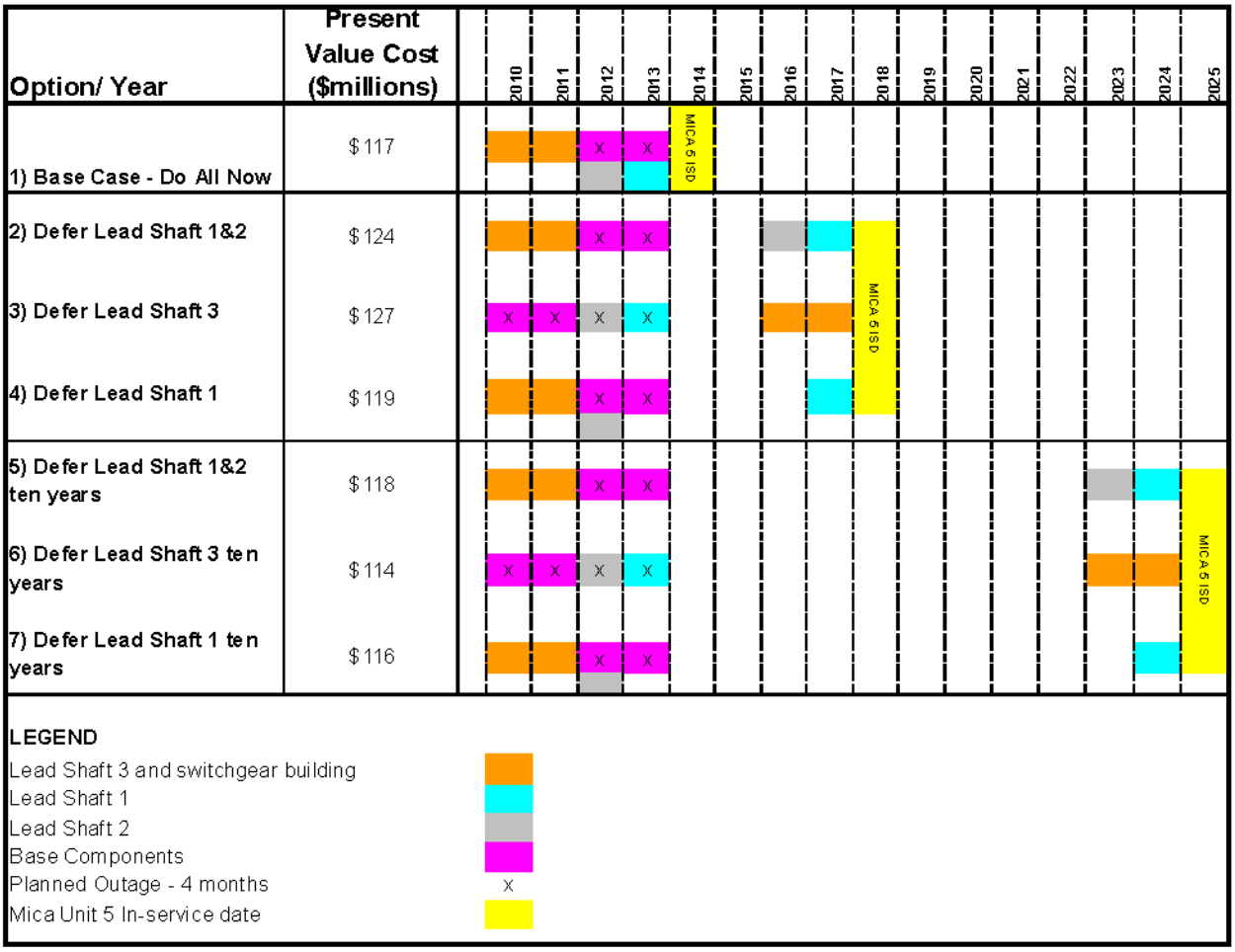
4.4 Sequencing of GIS Replacement

In Section 4.5 of the Application BC Hydro presents and analyzes seven options covering various sequences of the LS work and the timing of its execution over the period 2010 to 2025. In all cases, the base GIS components – breakers, surge arrestors, bus-work other than that in the LSs, etc. – are replaced within the period 2010 to 2013. The variable implementation sequences and dates relate principally to the bus work in the LSs and the extension to the at-grade switchgear building.

BC Hydro provides an economic analysis of each option, based on certain assumptions including outage costs, greenhouse gas costs, construction escalation factors, and discount rates, to arrive at a PV for each option. It also considers the impact of each option on the earliest In Service Date (ISD) for Mica Units 5 and 6.

BC Hydro summarizes its options and analysis of them in the following table:

Table 4-4 Sensitivity Analysis for Meeting Alternative Mica Units 5 and 6 ISD



(Source: Exhibit B-1, Table 4-4, p. 4-32)

BC Hydro's analysis shows that, on an all else equal basis, its Option 1 "base case" of first installing GIS in LS 3 and then replacing all the existing GIS, inclusive of that in LS 1 and LS 2, has the lowest PV ($117 million) of any of the options it canvassed that permits an ISD of Mica 5, if required, by 2014. Option 6, by which LS 3 is deferred for ten years but replaces all of the existing GIS now, and Option 7, by which LS 3 and all of the existing GIS are replaced now, with the exception of deferring LS 1 GIS replacement for ten years, have marginally lower PV's at $114 and $116 million respectively, but preclude an ISD of Mica 5, if required, before 2025.

BC Hydro's recommendation that Option 1 constitutes the scope of the Project and be implemented is based on further considerations which include:

- installing GIS in LS 3 first provides redundancy during construction and on-going operations;
- having the GIS in LS 3 reduces the planned outage required for the GIS in the existing Lead Shafts from months to days; and
- having the GIS in LS 3 allows the replacement of the existing GIS to be completed during spring outages in 2011 and 2012 when the costs of outages are minimized.

(Exhibit B-1, p. 4-33)

All Interveners either support the installation of GIS in LS 3 as part of the proposed project, or take no position to the contrary. Notwithstanding their support in principle, both CECBC and IPPBC qualify their positions, and request that the Commission take certain actions with respect to the Project.

IPPBC concludes that "BC Hydro should proceed with the installation of GIS in LS 3 as the first step in the Mica GIS Project," but goes on to say that BC Hydro should "defer the conversion of the 3rd path in order to reduce the present value and the ratepayer impact of the Project, and to preserve its options for future design modifications." (IPPBC Submissions, p. 6) IPPBC submits that its suggestion to defer not only the final LS conversion, but also as much of the GIS equipment associated with the tie-in of that LS, would defer some of the costs of the Project, and minimize the risk of stranded costs in the event that Unit 5 does not proceed.

IPPBC notes the similarity of its proposal to that of BC Hydro's Option 7, with its fixed-term 10 year deferral of converting the GIS in LS 1, and questions BC Hydro's PV of that Option being within $1 million of Option 1, the base case, submitting that "the deferral should produce a PV benefit of $10 million or more …" (IPPBC Submissions, p. 4)

In response, BC Hydro submits that:

- there is extensive evidence that supports the installation of GIS in all three LSs;
- IPPBC does not specify what relief it seeks from the BCUC in respect of its request as to what BC Hydro "should" do; and
- in any event the Commission has no jurisdiction to alter the scope of the Project.

(BC Hydro Reply, p. 21).

BC Hydro does not respond directly to IPPBC's submissions on their merits or otherwise to IPPBC's estimate of the potential financial benefit to ratepayers of its suggested deferral approach.

The Panel considers IPPBC's submissions in this regard further at Sections 4.5 and 4.6 of this Decision.

IPPBC also submits that BC Hydro should acknowledge its allocated Capital Overhead charges as real and appropriate components of the total cost of every capital project, and factor these costs into its economic evaluations, its unit energy cost calculations, and its ratepayer impact calculations. With reference to BC Hydro's response to a Commission Information Request (IR), the IPPBC states that if overhead charges are properly capitalized for accounting purposes under GAAP rules, as they are *"directly attributable to the construction or development activity,"* then those same costs should be properly attributed to the projects that are being executed, whether for accounting purposes, for economic evaluation purposes, for unit energy cost calculations, or for ratepayer impact calculations. (IPPBC Final Submission, p. 6)

In its Reply, BC Hydro submits that its approach which excludes such costs is consistent with the approach approved in the BCUC decision on the Revelstoke Unit 5 application. BC Hydro believes its approach remains appropriate for evaluating and comparing project and resource alternatives as BC Hydro believes these overhead costs do not represent an incremental cost, but instead are simply an allocation of costs that will be incurred whether or not the project is undertaken. (BC Hydro Reply, p. 21)

CECBC submits that "Given the level of BC Hydro's commitment to the Project and the Mica GIS reliability benefits and other related benefits and considerations --- the Project should proceed as planned now," but then goes on, after a detailed recitation of its concerns with the methodology of BC Hydro's analysis of the Options for the Project, to submit that "… the Commission should reject specifically the parts of the expenditure schedule concerned with: (1) analysis of the potential benefit of deferral of timing for the start of the Project (2) the analysis methodology for determining the timing and sequencing of components of the Project (3) the work schedule approach and methods for managing the opportunity cost risks related to the planned outages for the Project during construction which supports the decision making with regard to the timing of when to undertake the Project." (CECBC Submissions, pp. 12, 18)

The CECBC submits that such a decision would "put some components of cost up for closer review and examination in regard to cost recovery at a future point in time and in future regulatory proceedings," and "would amount to a constructive regulatory process." (CECBC Submissions, p. 18)

In response, BC Hydro provides its view that Chapter 4 of the Application explains its need to proceed with the Project, that its decision to proceed is not based solely on a simple calculation of the estimated costs to delay versus the costs to implement the Project, and that its decision to advance the Project must include more than financial analysis. BC Hydro points to CECBC's submission that "the CEC does not believe that there is sufficient evidence on the record to establish that the proposed BC Hydro timing and sequencing is wrong" and therefore BC Hydro submits it does not understand the basis on which CECBC requests the BCUC reject the part of the Project that supports BC Hydro's decision making in regard to the scheduling and sequencing of the Project (BC Hydro Reply, p. 19).

Commission Determination

With respect to IPPBC's concern regarding the inclusion of capital overheads, the Panel accepts BC Hydro's methodology for preparation of its cost estimates for comparison as it has no new evidence that would warrant a different approach than the Commission took in the Revelstoke 5 review and determination. **Accordingly IPPBC's request that BC Hydro include its Capital overhead allocations in its economic evaluations is denied.**

With respect to the relief requested by CECBC, the Panel agrees with BC Hydro that given CECBC's seemingly dichotomous views, it is difficult to understand the basis on which that request to reject the specified part(s) of the expenditure schedule is made. **Accordingly, the Panel declines to grant CECBC the relief requested.**

With respect to the installation of GIS in LS 3 and the corollary extension of and enhancements to the existing switchgear building as the first step in a cost effective approach to implementation of the Project, the Panel accepts BC Hydro's evidence as to the reliability and flexibility that Option 1 provides during the course of the Project to deal with the unreliability of the existing GIS to serve Units 1 through 4, and with respect to an early ISD of Mica 5 if required.

Notwithstanding that acceptance, the Panel notes that there is no evidence before it that such an early ISD for Mica 5 is required, or as to the probability of it being required, and addresses that matter in subsequent Sections of this Decision.

4.5 Schedule

BC Hydro describes the implementation of the Project as a series of eleven stages, with construction commencing in September 2009 and ending by December 2012 with final Project close-out by June 2013 (Exhibit B-1, Table 3-1, p. 3-12). The first two stages are the expansion of the switchgear building, upgrading of the lifts in LS1 and LS2, and installation of a new lift in LS3. These two stages do not involve any work on existing or new GIS and are intended to be completed

before the GIS-related work starts in October 2010. BC Hydro began work on the expansion of the switchgear building in September 2009 (BC Hydro Final Submission, p. 5).

BC Hydro identifies nine stages which involve GIS installation, the content and timing of which are summarized in the following table:

Table 3-1
Project Stages

Stage	Location	Description	Start of Work	End of Work
Non-GIS Work	Switchgear building	Addition of 560 square meters to Switchgear building to house termination of lead shaft 3.	September 2009	March 2010
Lead Shaft Lifts	Lead Shafts 1 - 3	Upgrade lifts in lead shafts 1 and 2. Add lift to lead shaft 3.	May 2010	August 2010
GIS Work				
1	Install GIS support structures in Lead Shaft 3	Install bus, GIS support structures, and gas monitoring systems for lead shaft 3 GIS	October 2010	December 2010
2	Switchgear Building Ring Extension	Install disconnects, ground switches, gas monitoring, GIS support systems required to operate and connect lead shaft 3 to existing GIS in switchgear building	October 2010	January 2011
3	Install GIS equipment in Lead Shaft 3	Install disconnects, surge arrestors, gas monitoring and interface between existing equipment and lead shaft 3 in transformer chamber. Includes crane and mezzanine over this section of the chamber.	October 2010	January 2011
4	Mica Units 3 and 4 GIS Replacement	Replace disconnects, surge arrestors and connecting bus on Mica Units 3 and 4 in transformer chamber. Extend crane and mezzanine and all GIS support structures for this section of transformer chamber.	March 2011	May 2011
5	Switchgear Building - Transmission Line to Reactor	Replace all existing original disconnects, air bushing and bus between Transmission Line Air Bushing 5L71 to Reactor 5RX4 in switchgear building including Return bus. (Excludes circuit breakers replaced by BCTC in 2008.)	April 2011	June 2011
6	Mica Units 1 and 2 GIS Replacement	Replace disconnects, surge arrestors and connecting bus on Mica Units 1 and 2 in transformer chamber. Extend crane and mezzanine and all GIS support structures for this section of transformer chamber.	March 2012	July 2012
7	Switchgear Building to Lead Shaft 2	Replace all existing original GIS between Air Bushing 5L72 and Reactor 5RX3.	March 2012	July 2012
8	Lead Shaft 2	Replace with new GIS equipment in lead shaft 2. Upgrade skip and gas monitoring systems.	August 2011	January 2012
9	Lead Shaft 1	Replace with new GIS equipment in lead shaft 1. Upgrade skip and gas monitoring systems.	August 2012	December 2012
	Project Close	Complete documentation, manuals and maintenance instructions.		June 2013

(Source Application Table 3-1, p. 3-12)

BC Hydro states that stage 4, the replacement of the GIS serving Units 3 and 4 will require a four month outage, from March through July 2011, as will stage 6, for the replacement of the GIS serving Units 1 and 2. (Exhibit B-1, p. 3-10)

No Intervener took a contrary position with respect to BC Hydro's proposed scheduling sequence of the Project, except IPPBC, who, as noted at Section 4.4 above, submitted that BC Hydro should defer installation of the "third path." The Panel notes that BC Hydro's schedule proposes that that third path, the replacement of the GIS in LS 1, or stage 9, is the last stage of its execution of the project.

Elsewhere in the Application, BC Hydro has described the reliability benefits and reduced outage requirements arising from installing and interconnecting the GIS in LS 3 first, and has summarized those benefits as the second case in the following table:

Table 4-3 Replacement of Lead Shaft 1 and 2 with or without Lead Shaft 3 in Place

Component	Current State	Planned Outage Required for Replacement or Installation	Forced Outage Consequence	Benefits of New Equipment
Replace GIS in lead shafts 1 or 2 without lead shaft 3 in place		Curtail transfer of power to 3½ units for alternate lead shaft. 3 – 4 months outage to replace. (Cannot replace transformer chamber equipment and switchgear building equipment and lead shaft bus in the same calendar year without lead shaft 3).	Curtails power transfer on alternate lead shaft to 3½ units. During single lead shaft outage the plant is exposed to risk of complete outage for many second contingency failure events in the GIS.	Same consequence of failure in future as existing plant.
Replace GIS in lead shafts 1 or 2 with lead shaft 3 in place	Addition of third lead shaft recommended by external consultants as this significantly improves reliability of entire Mica.	5 – 8 day outage to disconnect and reconnect. 3 – 5 months to replace but can be done without outage. Replacement can be at same time as outage for disconnects	Provides contingency in event of failure in either lead shaft 1 or lead shaft 2. Loss of one lead shaft out of three should not impact plant generation output. Very robust architecture that allows minimal disruption in the case of one lead shaft bus outage and most possible second contingency GIS failure events.	Significantly reduces consequence of failure in future. Lead shaft 3 is required, in any event, for the proposed Mica Units 5 and 6 capacity addition.

(Source: Application Table 4-3, p. 4-28)

Commission Determination

The Panel notes from the summary of the second case in the above table that once the GIS in LS 3 is installed and interconnected, the principal threat to the reliability of Mica, either during implementation of the Project or on-going, particularly with respect to a failure of the GIS in either LS 1 or 2, is resolved. Further, it seems apparent from the summary of stages above that once stages 1 through 8 have been completed, all of the GIS equipment required to service the existing four generating units is renewed and all of the reliability and other issues with the existing GIS have been dealt with. It seems clear to the Panel that the existing GIS in LS 1 could either be left as-is in service for additional redundancy, or, disconnected, drained of SF_6 to preclude GHG leakage, and left in a secure state pending a determination as to when Mica 5 might be required.

The Panel finds there is merit in IPPBC's suggestion to consider deferring the installation of new GIS in the last LS until such time as is necessary to meet a future, as yet to be determined in-service date for Mica Unit 5, and that such a deferral may have benefits to ratepayers in terms of lower rate impacts and a lower risk of significant costs being stranded.

The Panel finds that, in principle, the objectives for securing the reliability of Mica in its present configuration can be met by implementation of the Project according to BC Hydro's scheduling sequence to the completion of stage 8, and accordingly accepts that scheduling sequence. The Panel will make its final determination in respect of stage 9 and IPPBC's request in that regard after consideration of the Project costs in the following Section.

4.6 Project Costs

BC Hydro estimates of the Project Expected and Authorized Costs are $180.6 million and $200.2 million respectively. (Exhibit B-1, Section 3.3.1)

Table 4-1
Summary Cost Estimate

PROJECT COMPONENT	AMOUNT ($ million)
Direct Construction Cost	**$ 94.6**
Project Management and Engineering	18.8
Sub-total: Construction Cost before Contingency (Note 1)	**$113.4**
Contingency on Expected Cost	11.3
Dismantling and Removal	1.0
Inflation and Escalation (Note 2)	8.4
Sub-total: Implementation Phase Cost (Direct)	**$134.1**
Capital Overhead (Note 3)	17.7
Interest During Construction (Note 4)	21.3
Sub-total: Implementation Phase Cost (Loaded)	**$173.1**
Identification and Definition Phase (loaded)	7.5
Total Expected Cost	**$180.6**
Project Reserve (Note 5)	19.6
Total Authorized Cost (note 6)	**$200.2**

Source: Exhibit B-1, Table 3-2, p. 3-14

Notes:

1. The construction cost before contingency includes allowances for other supporting items such as P&C, HVAC, and Fire Protection equipment.
2. Inflation and escalation rates used are five per cent and four per cent in F2010 and F2011 respectively, and three per cent in F2012 and beyond.
3. Capital overhead is 13.3 per cent of the direct Implementation phase cost excluding dismantling and removal.
4. An IDC rate of 6.52 per cent is applied to the sum of the direct Implementation phase cost and corporate overhead accumulated in each year.
5. The Project reserve is the sum of the management reserve and the additional contingency in the Authorized Cost above the contingency in the Expected Cost (refer to section 3.3.1.1 for further details on contingencies).
6. On May 22, 2009, BC Hydro's Board of Directors approved the project with an authorized cost of $238 million for implementation. Subsequently, with the award of the MEPPI contract, the authorized cost has been reduced to $200.2 million.

BC Hydro notes that its Board of Directors approved the Project to advance to implementation phase on May 22, 2009. A fixed price contract for the GIS was awarded on June 15, 2009 for a base value of $42 million (Exhibit B-1, p. 3-18). The implementation phase includes all activities to commission the Project into service and ends with sign-off of the Project completion report.

In its Application BC Hydro extensively describes and analyses the implementation and other risks it foresees as potentially affecting the project and its estimated costs, and provides justification for its contingency allowances and Management Reserve as summarized in the following table:

Table 3-3
Total Contingencies and Reserves

	$ millions			
Description		**Total Contingency on Expected and Authorized Costs**	**Project Reserve**	**Project Cost**
Project Expected Cost	A			$180.6
Contingency included in Expected Cost	B	$11.3		
Inflation, escalation and loadings on Contingency included in Expected Cost (Note 1)	C	$4.8		
Incremental Contingency on Authorized Cost	D	$11.3		
Inflation, escalation and loadings on Incremental Contingency included in Authorized Cost (Note 1)	E	$4.8		
Total Contingency included in Project Authorized Cost	B+C+D+E	$32.2		
Total Incremental Contingency included in Authorized Cost	F=D+E		$16.1	
Management Reserve (Note 2)	G		$3.5	
Authorized Project Reserve	H=F+G		$19.6	$19.6
Project Authorized Cost	A+H			$200.2

(Source: Application Table 3-3, p. 3-15)

Notes:
1. Loadings on contingency include capital overhead and interest during construction.
2. Management reserve is requested to allow for additional snow removal costs, accommodation allowances and contract claims.

BC Hydro submits it has reduced the risk of cost uncertainty by entering into fixed price contracts for approximately 43 per cent of direct construction costs and for the extension of the switchgear building. It further submits that it has included contingency and management reserve cost estimates for un-forecasted costs (BC Hydro Final Submission, pp. 11-12).

CECBC submits that the evidence on record supports acceptance of either the $180.6 million expected cost, or the $200.2 million authorized cost of the Project as being in the public interest depending on the nature of events which may cause the project costs to vary between the two cost numbers. The CEC therefore recommends that the Commission accept the expected costs and the authorized costs established for the Project by BC Hydro as being part of the expenditure schedule the Commission finds in the public interest (CECBC Submissions, p. 2).

BC Hydro states that the supply and installation of six of 18 (two out of the six sets) of surge arrestors and related bus is for the yet to be installed Mica units 5 and 6. Related bus refers to the "bus extension beyond LS 3 to connect Mica Unit 6 transformers and the branches from the main bus to the Mica Units 5 and 6 transformers." It estimates the loaded cost of this work is approximately $2 million, which expenditure would be stranded if Units 5 and 6 do not proceed. It submits that this "relatively small expenditure" is worthwhile at this time in order to ensure that operating instructions and spare parts will be the same throughout Mica (Exhibit B-1, p. 3-16).

BC Hydro does not similarly directly characterize and justify the timing of the cost for the supply and installation of the "third path" – the GIS in LS 1 and its interconnection – as being for the "yet to be installed Mica Units 5 and 6." It provides an "Allocated Implementation Phase Direct Cost by Major Component" cost for LS 1 (in 2009$) of $13 million (Exhibit B-1, Appendix 1, Table 5).

IPPBC points out that this expenditure is not necessary to meet the principal objective of the Project, is deferrable, and would likewise be stranded if Units 5 and 6 do not proceed, or if new, alternative, cost-effective technology is available at the time such expansion is proceeded with (IPPBC Submissions, p. 5).

BC Hydro made no specific reply to that concern as tabled by IPPBC.

Commission Determination

The Panel is concerned that the full extent of the Project estimated cost that goes beyond the stated purpose of the Project to address the unreliability and other issues with the existing GIS equipment, and which is directly related to future expansion of Mica GS, may not be made clear in the Application.

In the absence of a response from BC Hydro to IPPBC's submissions in that regard, the Panel is left to presume that the $13 million cost for LS 1 is equivalent to the work that is represented by stage 9 of BC Hydro's implementation schedule, and that it represents the totality of all of the otherwise deferrable, potentially stranded costs of supplying, installing, and interconnecting the GIS in LS 1 to the other GIS. As well, it is unclear in which stage of the proposed implementation schedule the $2.0 million cost for the surge arrestors is to be incurred.

The Panel can only conclude that some $15 million of the proposed Project expenditure is both deferrable, and at risk of being stranded.

As noted at Section 2.3 above, in the 2008 LTAP review and Decision concerning the FNU3 Project, which BC Hydro references as relevant to this review and determinations, BC Hydro provided cleanly differentiated, well described options for meeting the known needs in the Fort Nelson Region (FNU2) and for meeting both of the known and possible future needs (FNU3), justified its recommendation by illustrating the cost-effectiveness of FNU3, and dealt constructively with the concerns regarding the assets becoming stranded.

In this proceeding , BC Hydro has chosen not to provide such an alternative; it has not put clear evidence before the parties as to what quantum of its Project cost could be avoided or otherwise deferred until such time as the need for expansion of Mica is justified – if at all; nor has it provided justification that in all of the circumstances, its proposed Project scope and cost is the most cost

effective alternative available – among other things, no PV to ratepayers is provided for a case where Mica GS is not expanded.

Accordingly, the Panel finds that BC Hydro has not justified that the Project cost as tabled is in the interest of persons who receive or may receive service from BC Hydro, and cannot accept the Application as being in the public interest. Should BC Hydro choose to resubmit the Application, the Panel suggests BC Hydro should clearly define the scope and cost of an alternative Project that follows the scheduling sequence and other matters in this Application that the Panel has accepted, but eliminates or defers those elements which, given the new GIS and interconnecting GIS associated with doing LS 3 first, are not required to meet the accepted Project scope of providing reliable GIS to service Units 1 to 4. BC Hydro should, if it continues to recommend a Project that "pre-builds" otherwise avoidable or deferrable portions of the GIS necessary to accommodate a future expansion of Mica GS, provide persuasive evidence as to the cost effectiveness of that approach.

5.0 PUBLIC AND FIRST NATIONS CONSULTATION

In Section 5 of the Application BC Hydro describes the general consultation that has taken place in respect of the Project, and the nature and adequacy of its consultations with affected First Nations.

Having already determined that the Project as applied for is not in the public interest, it is not necessary for the Panel to make determinations with respect to the adequacy of BC Hydro's Public and First Nations Consultation. However, on the same basis that the Panel has agreed with the Parties that it is appropriate for it to provide guidance as to how BC Hydro could, if it chose to reapply for approval of the Project, remedy the concerns the Panel has found in its Application, the Panel believes that it should review the record in respect of the adequacy of BC Hydro's consultations and provide its views to the Parties in the event that BC Hydro does reapply. This Section of the Decision describes BC Hydro's consultation activities, the positions of the Parties, and provides the Panel's guidance to the Parties should BC Hydro choose to amend and resubmit

its Application.

5.1 General Consultation

BC Hydro states that since LS 3 may be used for future interface and operations of Mica Units 5 and 6, the Project was included as a component of the Mica Units 5 and 6 project description it submitted to be considered for review under the *BC Environmental Assessment Act* (BCEAA) process. Those project descriptions were submitted to the BC Environmental Assessment Office (BCEAO) in March 2008 to seek a BC Environmental Assessment Certificate (BCEAC) for the Mica 5 and 6 projects. The submitted project descriptions included an overview of the Project and described its main components.

In July 2008 the BCEAO convened a project working group (PWG) meeting to discuss the proposed Mica 5 and 6 project and draft procedural documents. Government agencies, stakeholders, First Nations and Tribal Councils were invited to attend and provide comments. BC Hydro states that no issues or comments were raised in regard to the Project.

On September 17, 2008 BC Hydro and the BCEAO conducted a site visit to Mica. All members of the PWG, which included 25 First Nation and Tribal Councils identified pursuant to the BCEAA Sections 11 and 13 procedural Orders, were invited to attend. BC Hydro states that the location of the current at-grade switchgear building and its proposed extension were pointed out and no concerns were raised by any of the attendees. (Exhibit B-1, pp. 5-2, 5-3)

In parallel with the BCEAO's consultations in respect of Mica 5 and 6, BC Hydro states that it used as a key consultative tool its "core committee" process "to provide a facilitated and structured process of committees and meetings to integrate First Nation and stakeholder values into the environmental assessment and water use planning decisions related to the potential incremental impacts of the Mica Units 5 and 6 project." BC Hydro states that this process began in January 2008 and completed in May 2009, and involved participants from federal and provincial agencies, local government, First Nations, former Columbia Water Use Plan and Revelstoke Unit 5 Core

Committees, not for profit organizations, and interested community individuals (ibid).

BC Hydro reports that on January 19, 2009, in the course of a Core Committee meeting at the City of Revelstoke, it made a presentation on the Project. In the materials for that presentation, BC Hydro stated that it was extending the at-grade switchgear building in order to accommodate the switch gear and conductor to be installed in LS 3 so that:

a) It can be used while the conductors in the first and second shafts are being maintained or replaced; and

b) To provide the required reliability for six units once Unit 5 and Unit 6 are installed.

(Exhibit B-1, Appendix J-3, p. 5/13)

BC Hydro states that its presentation included that:

> [The] switchgear building extension is included in the "Scope" of the Mica 5 Project environmental assessment because part of the reason for the extension relates to the reliable delivery of power from the additional units; and,
>
> The switchgear building extension is planned to be constructed as part of a separate BCH project – the Mica Switchgear Project; and
>
> The Mica Switchgear Project would start late 2009 or early 2010 after receipt of the Mica 5 Environmental Approval Certificate.
>
> (ibid pp. 7/13, 11/13)

BC Hydro states that no participant in the meeting, including those First Nations representatives present, raised any concerns with respect to the Project (Exhibit B-1, p. 5-4).

BC Hydro states that "due to a significant extension of the Mica 5 and 6 First Nations consultation timeline," it requested the BCEAO "approve an amendment to remove the Project from the BCEAA process in order to preserve the Project schedule." Specifically, by letter of March 12, 2009 it requested the BCEAO to "amend the Terms of Reference and Section 11 Order for the [Mica] Unit 5

project to remove the switchgear building extension work from the scope of the project." (Exhibit B-1, Appendix K-1, p. 1/4)

On April 17, 2009, pursuant to Section 13 of the BCEAA, the BCEAO ordered that:

> Section 3.1, bullet 3, of the Section 11 order issued on October 28, 2008 is varied by removing the following sentence:
>
> - The switchgear building will be extended to accommodate the new 500kV circuit breakers.
>
> (Exhibit B-1, Appendix K-3, p. 2/2

BC Hydro states that consultation in respect of this amendment was conducted by the BCEAO (Exhibit B-1, p. 5-3)

In terms of future consultation BC Hydro states that it had "created a webpage for the public to view project information" in support of the Mica Units 5 and 6 project, that on May 29, 2009 "[it posted Project content on its website and sent local stakeholders a newsletter about current and planned upgrades at Mica," and that "[f]urther newsletters and website updates will be provided throughout the Project as appropriate." (Exhibit B-1, p. 5-4)

No Intervener took issue with BC Hydro's general consultation *per se.* The Panel accepts that BC Hydro's general canvas of parties affected or potentially affected by the Project prior to the filing of its Application has been broad and seemingly adequate and has no further comment in that regard.

5.2 First Nations Consultation

BC Hydro states that through information sharing and discussions with First Nations, Tribal Councils, and the BCAEO, it identified and subsequently contacted 22 First Nations and three Tribal

Councils as having a potential interest in the Mica projects (Mica Units 5 and 6 and the GIS), as summarized in the following table:

Table 5-1
First Nations and Tribal Councils Identified for Consultation

First Nation/Tribal Council/Association			
Shuswap Nation Tribal Council (SNTC)	Ktunaxa Nation Council (KNC)	Okanagan Nation Alliance (ONA)	Other
Adams Lake	Columbia Lake	Okanagan	Lheidli T'enneh
Bonaparte	Lower Kootenay	Osoyoos	
Kamloops	St. Mary's	Lower Similkameen	
Little Shuswap	Tobacco Plains	Penticton	
Neskonlith		Upper Nicola	
Shuswap		Upper Similkameen	
Simpcw		Westbank	
Skeetchestn			
Splatsin			
Whispering Pines			

(Source: Application Table 5-1, p. 5-6)

By way of context for the balance of this Section, the Panel notes that three First Nations of the Sushwap Nation Tribal Council (SNTC) – Adams Lake, Neskonlith, and Splatsin – constitute the Lakes Division, a registered Intervener in the proceeding. In response to a Commission IR, BC Hydro states that its consultation in support of the Mica Unit 5 and 6 project has followed the request of First Nations and Tribal Councils, as summarized in Attachment 1 to Commission IR 1.24.1.2. That summary states, among other things, that, at some unspecified date:

> Adams Lake, Neskonlith, and Splatsin organized themselves to participate in project consultation activities as the Lakes Division.

BC Hydro describes the SNTC First Nations as having a traditional territory of approximately 18 million hectares from the Columbia River valley on the east slope of the Rocky Mountains to the Fraser River in the west, and from the upper Fraser River in the north to the Arrow Lakes in the south. BC Hydro states that the Project area is situated within the northeastern portion of SNTC's

asserted traditional territory, and that Member First Nations of the SNTC collectively assert Aboriginal rights and title within the traditional territory. The Project area is subject to overlapping assertions of Aboriginal rights and title from the Okanagan Nation Alliance (ONA) and the Ktunaxa Nation Council (KNC) (Commission IR 1.24.1.1).

BC Hydro states that since none of the ONA, the KNC, or the SNTC or their respective First Nations have "outlined their claims with clarity to the BCEAO (on the BCEAA Terms of reference) or to BC Hydro (on the project description and draft project assessment studies), BC Hydro has proceeded on the assumption that the SNTC's and the others' asserted Aboriginal rights include hunting, gathering and fishing, as well as Aboriginal title (ibid).

BC Hydro states that it has been engaged with the above identified First Nations and Tribal Councils since January 2008 and has offered and conducted a range of consultation activities pursuant to the BCEAA process for the Mica Units 5 and 6 project. (Commission IR 1.24.3.3)

In response to Commission IR 1.23.6 BC Hydro states that in the course of those activities it offered capacity funding to all of the identified First Nations and Tribal Councils to support traditional use studies or aboriginal use studies. No funds were specifically budgeted for the Project as the study area for the Mica Unit 5 and 6 project encompasses the Project area. In Attachment 1 (Confidential) to that response, BC Hydro indicates that the KNC and the ONA (and one of its member First Nations) accessed that funding, and that while the SNTC did not, eight of its nine Member First Nations did, including the Lakes Division First Nations.

BC Hydro states that once it receives the above studies, responses to any material issues or concerns arising that are specific to the Project will be developed after discussion and coordination with First Nations, and updated in Project progress reports to the Commission. BC Hydro considers material "to mean any issues that may have a significant impact on the Project scope or schedule." (Commission IR 1.23.5)

BC Hydro states that adverse impacts of the Mica GIS Project were studied under the Mica Units 5 and 6 project BCEAA process as LS 3 would be used for future Mica Units 5 and 6 interface and operations, and that no potential wildlife, vegetation, or archeological impacts were identified. Further it states that no issues specific to the Project have been raised by any First Nation or Tribal Council nor have any accepted BC Hydro's offer to discuss capacity funding requirements in relation to the Project. BC Hydro "is of the view that there are no potential adverse impacts to Aboriginal rights or title as a result of the Project." (Commission IR 1.24.3.3)

Given the above view, BC Hydro is also "of the view [that] the Project does not give rise to any duty to consult." That position notwithstanding, BC Hydro states that "if there are unanticipated potential impacts to Aboriginal rights ….the impacts would be minimal." BC Hydro states that if such impacts occur, "the Project may trigger a duty to consult that would lie at the extreme low end of the *Haida* spectrum where notice would discharge the duty." BC Hydro notes that First Nations were notified of the Project in the context of the Mica Units 5 and 6 project, where it has engaged in a range of consultation activities pursuant to the BCEAA process, as well as by BC Hydro's separate letter of February 23, 2009 (Commission IR 1.24.3.4; Application, Appendix J-2).

BC Hydro references further notification of the First Nations and Tribal Councils by way of the BCEAO's March 23, 2009 circulation of an e-mail with a copy of the draft amending order removing the switchgear building extension from the scope of the Mica Units 5 and 6 BCEAA process (Exhibit B-1, Appendix K-2), which e-mail included a description of the scope of work of the Project, and invited comments (Exhibit B-1, p. 5-10).

In summary, BC Hydro submits that its consultation with identified First Nations in respect of the Project has been adequate to this stage, taking into consideration that:

- it took reasonable steps to identify those First Nations potentially impacted;
- it provided relevant information in respect of the Project, including a project notification letter (and follow-up phone calls) to those identified First Nations and Tribal Councils;

- it offered those identified First Nations capacity funding to review Project materials, attend site visits, and engage in community and Chief and Council discussions to identify issues related to the Project;

- no First Nations or Tribal Councils have expressed concerns or interest in engaging in consultations or discussions concerning the Project;

- the only First Nation entity to intervene in the proceeding is the Lakes Division, who did not submit any IR's to BC Hydro;

- it anticipates the Project will have no, or, if any, minimal potential adverse impacts since the Project is within Mica GS or on previously disturbed ground and has no impact on the Kinbasket or Revelstoke Reservoirs; and

- BC Hydro will continue to inform First Nations about the Project through the implementation phase, as required, and will address any issues as they arise.

(BC Hydro Final Submission, p. 14)

5.3 Submissions of the Lakes Division, BC Hydro's Reply, and the Panel's Views

The Lakes Division registered as an Intervener in this proceeding by letter of August 31, 2009, and by letter of September 9, 2009 applied for Participant Assistance/Cost Award (PACA) funding. The Lakes Division are not represented by Counsel, but are self-represented by their "Technical Co-ordinator (Energy)."

The Lakes Division submitted no IR's, but provided written submissions under cover of their letter of November 19, 2009. As an attachment to its submission, the Lakes Division provides, "for [the Commission's] reference, our submission to the EAO regarding the Mica Expansion project which further describes the shortcomings we have experienced." [Lakes Division Submission, p. 3, (numbering added)].

That attachment (the LD EAO Submission) is dated October 24, 2009, and covers topics as described in the following table:

TABLE OF CONTENTS

(Source: LD EAO Submission, p. 2)

In its Reply, BC Hydro objects to the Lakes Division's "introduction of the BCEAO related evidence at this stage of the proceeding," submitting that: the regulatory timetable was known to all parties; "there was no provision for the entry of intervener evidence"; "it would be prejudiced by the introduction of the evidence at this stage of the proceeding"; and that the appropriate forum for it to respond to the Lakes Division's evidence is in the BCEAA process for the Mica Units 5 and 6 project. (BC Hydro Reply, p. 5)

The Panel shares BC Hydro's concern as to the timing of the Lakes Division's evidence, but does not agree that it could not have been filed in the proceeding due to intervener evidence not being specifically addressed in the regulatory timetable. It may be that had the Lakes Division been more experienced with the Commission's processes, it could well have applied to the Commission for leave to file its evidence and, subject to the Panel's consideration of its submissions on the issue, a decision could have been rendered by the Panel.

The Panel has found that the option that BC Hydro has chosen for the Project enables an earlier implementation of Mica Units 5 and 6 than is otherwise necessary to deal with the unreliability of the existing GIS. Accordingly any impacts from that expansion would, all else equal, occur earlier than if the option to not replace the GIS in the last LS and interconnect it had been elected. The evidence the Lakes Division has filed with its submission might well have impacted on the Panel's determinations as to the adequacy of BC Hydro's consultations had it been necessary to address the issue.

The balance of this Section deals with the concerns and/or requests for relief the Lakes Division raises at pages 2 and 3 of its Letter of Submission in this proceeding, in the general order in which they arise:

1. They "formally request the support of the [Commission] process in the development of and negotiation of a W7mec (Energy) Agreement between the [Lakes Division] and the Province of British Columbia to govern energy generation, transmission, use and export of energy within [their] traditional territory."

BC Hydro submits that it would be inappropriate for the Commission to support the negotiation of an agreement between the Lakes Division and the Province of British Columbia as the Commission lacks jurisdiction in this regard. (BC Hydro Reply, p. 10)

The Panel concurs with BC Hydro's view that such intervention by the Commission would be inappropriate. As a quasi-judicial body, the Commission must remain independent and not engage as a party in negotiations or agreements between the Crown and First Nations.

2. They have all times remained steadfast in insisting that any expansion of the existing dam through the proposed Mica Units 5 and 6 or expanding and replacing switchgear must address the "historical wrongs [from] when the dams were installed," and that "[they] have suffered, and continue to suffer loss as a result of the damage to their surrounding ecosystem caused by the Mica Dam."

BC Hydro submits that the issue of past grievances is outside the scope of the proceeding, that only new adverse impacts to Aboriginal rights and title resulting from the Project would be properly addressed in this proceeding, that there is no legal requirement for it to consult with the Lakes Division in respect of past grievances involving the existing Mica GS and dam, that those past grievances are better addressed in forums such as the BC Treaty Commission process or the courts, and that the Commission should not allow its hearing process to become an alternative avenue.

Further, BC Hydro submits the Lakes Division does not meet its duty to outline its claims with clarity, and it does not identify any potential adverse impacts associated with the Project in its final submission letter. (BC Hydro Reply, pp. 6-8)

The Panel shares BC Hydro's view that the Commission hearing process is not an appropriate forum in which First Nations should pursue redress for past grievances *per se*. The Panel notes, however, that in discharging its responsibility to assess the adequacy of consultation with First Nations it can consider the nature of the alleged proven or historical infringement, and possible or future cumulative adverse impacts related to any such infringement in making its determination of the adequacy of that Crown consultation and accommodation effort where required in a particular situation.

As noted earlier in this Section, the Project as applied for enables the bringing forward in time of any potential impacts associated with the Mica Units 5 and 6 project. The evidence that the Lakes Division filed with its final letter of submission, and to which BC Hydro objects, may well have shed additional light on both the nature of the Lakes Division's asserted rights and title and its view of any alleged or proven historical infringement and possible or proven future cumulative adverse impacts arising pursuant to the Project. That evidence will not be tested or otherwise considered in this proceeding for the reasons stated earlier in this Section.

3. There is no consultation process in this proceeding that recognizes their aboriginal title and rights area and consults with them from that starting point.

Further to item 2 above, the Panel notes that it has no jurisdiction under the *UCA* to resolve matters of historical infringement on Aboriginal rights and title. Those matters can and should be pursued through other processes.

4. They are not aware of any assessment by or communication from the Commission as to the adequacy of Crown consultation with them pursuant to the obligations of the Commission to do so.

The Panel notes that it can only make such determinations after its review of the evidence and submissions before it.

5. BC Hydro's evidence regarding its consultation with First Nations to date is "indicative of the formulaic approach BC Hydro has [taken] towards communicating with our people," in that there is "no actual substance to the consultation," and that "[w]hen consultation becomes checkmarks on a log sheet to form a record" and is not on a "substantive level," what is the purpose of consultation?" and they seek a ruling from the Commission that "BC Hydro's consultation regarding the Mica Expansion project does not meet their needs or interests or satisfy the governments duty to consult."

The Panel declines to make the ruling requested by the Lakes Division. The Panel need not decide the issue given its previous determinations but suggests that both BC Hydro and the Lakes Division continue to attempt to resolve the issues raised by the Lakes Division.

6. With respect to the Commission's [Draft] First Nations Filing Guidelines "[they] were not made aware of any request for [their] comments and input prior to the deadline for submissions."

The Panel notes the Lakes Division's concern, but as the review of those Draft Guidelines is not a part of this proceeding, can only suggest that the Lakes Division approach the Commission directly with that concern.

7. They "have not been provided with adequate funding to meaningfully participate in the BCUC process," and "expressly object to the process continuing in this way, to [their] distinct disadvantage, and without funding being worked out in advance of the BCUC process, so as to allow [them] to meaningfully participate in that process.

The Panel notes that PACA funding requests and awards if any are a matter between the Intervener seeking such funding and the Commission. BC Hydro's role is to provide comment to the Panel at the conclusion of the proceeding as to the appropriateness of PACA awards to be granted by the Panel to the requesting Interveners, as it is BC Hydro's ratepayers who ultimately pay for such awards.

Pursuant to the Commission's PACA Guidelines, funding for legal representation, expert consultants, and case management are eligible for consideration. As noted above in this Section, the Lakes Division submitted a PACA funding request and budget in support of it in this proceeding, and has received a letter of comment from Commission staff. Pursuant to the PACA Guidelines, the Panel can only finalize, and make such awards after the conclusion of the proceeding unless an advance costs award is requested and granted. The Lakes Division did not apply for an advanced costs award.

8. They request that "[t]his BCUC process should review the adverse effect of the proposed switchgear in view of the fact that it will increase the capacity of the entire dam," since it appears that "the current switchgear restricts the output to 1500MW and the new switchgear will not only increase the capacity of Mica 1 – 4, but also service Mica 5 and 6," necessitating the expansion of the switchgear building.

In its Reply BC Hydro submits that the current switchgear only restricts the output to 1500MW if the GIS in one of LS 1 or LS 2 is out of service, and that that restriction is necessary to comply with BCTC's Most Severe Single Contingency requirements. Accordingly the improvement in GIS reliability resulting from the Project does not increase the capacity of Units 1-4 from its present full output of 1805MW.

BC Hydro acknowledges that "While some aspects of the Project will benefit any future Mica Units 5 and 6 project(s) by reducing the scope of such project(s), that is only an ancillary benefit of [the Project]," and that in any event this proceeding does not include a Mica 5 and 6 project (BC Hydro Reply, pp. 5, 6).

The Panel accepts BC Hydro's submission that dealing with the reliability issues with the existing GIS does not increase the capacity of the existing Mica Units 1-4. However, as has been noted earlier, the Panel does not accept BC Hydro's position that the only impacts of the Project as applied for on any future Mica Units 5 and 6 would be "ancillary" in terms of reducing the scope of those projects, and has recorded its determinations at Section 4 of this Decision.

9. They object to the "Mica Expansion project being split" by the "[removal] of the [GIS] from the Mica 5&6 project scope as defined by the EAO," but did not so respond to the "letters received from BC Hydro on February 19, 2009 because [they] hoped there would be significant movement towards a government to government W7mec Agreement by winter 2009."

The Panel notes the explanation provided by the Lakes Division, but can only deal with the evidence and submissions before it. On the basis of that record, the Panel has accepted, at Section 2.2 of this Decision, that the Application is properly before it and has made its determinations accordingly.

DATED at the City of Vancouver, in the Province of British Columbia, this 16th day of March 2010.

ROBERT J. MILBOURNE
PANEL CHAIR AND COMMISSIONER

DISSENT OF COMMISSSIONER VIVIAN

I agree with the analysis and determinations of the Panel Majority save in respect of two issues:

1. The finding that Phase 9 of the Project is not in the public interest and that such a finding is sufficient to reject the Project in whole under section 44.2 of the *UCA*; and
2. The decision not to reach any conclusion with respect to the adequacy of consultation with First Nations in respect of the Project.

First, I agree with the Panel Majority that the Project Phases 1-8 are in the public interest. The phases are set out in the Application at Section 3, Figure 3-9 and Table 3-1 at pages 3-11 and 3-12 respectively. It is only in respect of Phase 9, the installation of GIS in Lead Shaft 1 where we reach different conclusions. The majority determination states that BC Hydro "...has not put clear evidence before the parties as to what quantum of its Project cost could be avoided or otherwise deferred until such time as the need for expansion of Mica is justified – if at all; nor has it provided sufficient justification that in all of the circumstances, its proposed Project scope and cost is the most cost effective alternative available." (Reasons for Decision, p. 37) The majority decision then rejects the Application in whole. The decision to reject the Application in whole does not directly address the jurisdictional issue as to the Commission's jurisdiction to approve parts of a schedule as submitted under section 44.2 of the *Act* but rejects the Application in whole on the basis of that the technical complexity of the Project precludes any approval in part. This finding adopts the BCOAPO submission that while "the Commission can reject elements of a multi-project schedule of capital projects," it runs the risk of re-engineering the Project by approving a different project than the one submitted for approval. (BCOAPO Submissions, p. 4) The majority decision adopts this reasoning in rejecting the Project in total, with recommendations to BC Hydro, should they choose to refile the Application.

I agree with the Panel Majority that portions of the Project amount to a "pre-build" for Mica 5/6. It is clear that in the planning for the replacement of the GIS at Mica, BC Hydro was taking into consideration the possible expansion of the generating station and particularly the addition of Unit 5. (See in particular, the Application at Section 3.3.1.2, p. 3-16; Section 4.4.1, p. 4-19; and the

sensitivity analysis presented at Section 4.5.3, p. 4-29.) In the sensitivity analysis, there was considerable attention given to the possible in-service dates (ISDs) for Mica 5; possibilities ranged from 2013, 2018, up to 2025 under the various scenarios. Also, consideration was given to the longer term requirements of a sixth unit at Mica (Exhibit B-1, Section 4.4.1, p. 4-19).

Both the addition of six surge arrestors (and the related bus) as well as the GIS in LS1 can be attributed to the possible expansion of the Mica generating station. The total costs involved with such a pre-build are not definitively defined in the Application; however, BC Hydro does put a price tag on the first item (surge arrestors and related bus) at $2 million (Exhibit B-1 Section 3.3.1.2., p. 3-16). (There are three surge arrestors for each of the six generating units planned for, including Mica 5 and 6. That is, one surge arrestor for each of the three phases for each of the planned six generating units, totalling eighteen.) The marginal additional costs of placing GIS in LS1 are not estimated as a single budgetary line item; but BC Hydro has allocated $13 million of a total estimated direct cost of $134 million to Lead Shaft 1 (Exhibit B-1, Appendix I, Table 5). BC Hydro points out that the total cost of the Project (if the scope of the Project were to be reduced) would not be reduced by the amount of the allocated cost. "The cost to design, engineer and procure a smaller scope of work is not proportionally reduced by the [smaller] scope of the Project." I accept this position and rely upon the NPV sensitivity analysis (discussed below) as to the possible savings in the cost of the Project, if the installation of GIS in LS1 were deferred. The Total Expected Project Cost (before a Project Reserve) is estimated at $180.6 million (Exhibit B-1, Section 3.3.1, Table 3-2, p. 3-14).

In the sensitivity analysis, there is only an insignificant difference in the NPVs calculated for Options 4 and 7 which are the two scenarios that deal with deferment of the installation of GIS in LS1. (Option 1, the preferred option, has an NPV of $117 million and by comparison, Options 4 and 7 come in at $119 and $116 respectively.) There is further analysis of the Cost of Replacement Alternatives (see Application, Appendix I, Tables 6 and 7, pp. 9-10). Again there is little difference in the total Direct Costs as between Option 1 and Options 4 and 7 with the latter two options being slightly higher than the preferred Option 1. BC Hydro states that the underlying assumption behind

the installation of GIS in LS 3, was that there would be an in-service date for Mica 5 of 2013 (Exhibit B-1, Section 4.5.1, p. 4-23)

IPPBC questions the NPV calculations, at least in respect of Option 7 and "suspects that there may be a miscalculation." (IPPBC Final Submission, p.4) IPPBC does admit that there may be compensating benefits and disadvantages that may affect the calculation. The concerns about any possible error in the calculations as presented in the Application were not raised during the IR process and are presented by IPPBC only late in the day in its Final Submission. Unfortunately, BC Hydro, in its Reply Submission, chose not to address the IPPBC concern and simply stated that "...there is extensive evidence in this proceeding that supports the installation of GIS in all **three** lead shafts." (Reply Submission, p. 21, emphasis added)

It is reasonable for BC Hydro's planning to take into consideration the possible expansion of the Mica generating station given that there was reference to Mica 5/6 in the 2008 Long Term Acquisition proceeding (see 2008 Reasons for Decision, p. 39) and Mica 5 is shown as a Resource Smart capability, albeit with an estimated ISD of F2027 (2008 LTAP Reasons for Decision, pp. 118-119). Both Mica 5 and Mica 6 are identified as capacity resources needed to meet Contingency Resource Plans (see 2008 LTAP Reasons for Decision, p .134). Further, the low cost of hydro power compared to the other green alternatives will induce BC Hydro to maximize its hydro power resources in order to meet the goals of self-sufficiency and other governmental policy objectives in the 2007 Energy Plan and SD 10. Mica 5/6 might well play a role in achieving the government's policy objectives in the relatively near future. Any final decision leading to the addition of Mica units 5 or 6 will be the subject of a separate proceeding before the Commission that will examine all aspects of the generating plant expansion.

BC Hydro recognized that in the event that Mica 5 and 6 do not proceed, some of the money spent in the "pre-build" options would be stranded (Exhibit B-1, Section 3.3.1.2, p. 3-16). Against this negative result, BC Hydro cites the benefits that will accrue including the following:

- operational benefits (Section 3.3.1.2);

- additional reduction and tracking of SF_6 GHG (Section 3.6.5);
- reduction in scope of the Mica 5/6 expansion and an earlier ISD (Section 4.3.3);
- reduction in mobilization costs and cost of materials by buying in one larger order for all GIS equipment (Appendix I, Section 2, pp. 1-2);
- ensuring common GIS equipment throughout Mica, including the pre-build equipment with a potential resulting savings in spares inventory costs, training and risk of operator errors.

My view is that on balance, BC Hydro has presented a persuasive case for the pre-build aspects of the Project and the resulting marginal cost increases and I find that they are in the public interest.

Also, BC Hydro notes that the fixed price contract for the GIS was awarded to Mitsubishi (MEPPI) on June 15, 2009 for a base value of $42 million (Exhibit B-1, Section 3.4, p. 3-18). BC Hydro has already commenced construction of the Project (BC Hydro Final Submission, p. 5). The installation of GIS in LS1 will probably proceed under the contract that was let; therefore, the only regulatory issue that is at play is whether incremental expenditures to be made, that are in essence a pre-build for Mica 5/6, are in the public interest and hence eligible for recovery in the normal course from BC Hydro rates and ratepayers. I answer this question in the affirmative.

My view is that it is proper and indeed best engineering planning and practice to anticipate future events and to try to find a least-cost design and sequencing decision that meshes current operating efficiency with future requirements. In this proceeding, BC Hydro has examined several sequencing strategies, acknowledges the possibility of stranded assets, and presents cost estimates. In retrospect, it would have been worthwhile to flesh out the record and present the definitive benefits/costs of postponing the pre-build portions of the Project, at the IR stage of the proceeding. To leave criticism of the engineering sequencing chosen by BC Hydro to the Final Submission stage, is in my view, too late in the regulatory process. There is also the danger that the Commission and/or interveners will substitute their engineering views for those of BC Hydro and trespass on the rightful role of BC Hydro management and its Board of Directors. BC Hydro submits that the *UCA* "... does not provide the Commission with jurisdiction to put itself in the

position of BC Hydro's Board of Directors and management (BC Hydro Final Submission, pp. 7, 8; BC Hydro Reply, pp. 21-22). These comments were advanced in the context of whether the Commission has the power to reject a part of any expenditure schedule and were it necessary to decide the point, I would have decided that the Commission does, in fact, have such power.

I agree with BC Hydro that "While some aspects of the Project will benefit any future Mica Units 5 and 6 project(s) by reducing the scope of such project(s), that is only an ancillary benefit of this GIS Project." (Reply Argument, p. 6)

In result, I would have approved the whole Project (including Phase 9) as being in the public interest; however, if the expenses involved with the pre-build aspects of the Project escalate over time, beyond estimates, then any such excess expenses should be subject to a prudency test.

To monitor the costs of the Project, I would have instituted a reporting regime that would have required BC Hydro to periodically report progress and costs, similar to what the Commission ordered in respect of the Revelstoke Unit 5 Project. Given that the Application is rejected in the majority decision, I would encourage BC Hydro to volunteer reporting to the Commission along these lines if a decision is made by BC Hydro not to refile the Application and if construction proceeds toward completion. This would be in accord with the reporting regime outlined by BC Hydro in Section 1.7 of the Application.

Second, as I would have otherwise accepted the Project, it is incumbent upon me to make an assessment of the adequacy of consultation with First Nations and to ensure that the honour of the Crown has been upheld in relation to the Project. (The Panel Majority found that it was not necessary to determine this issue, as the Application is being rejected.)

I would have found that the consultation carried out, both in the context of this proceeding and the prior consultation that was carried out under the aegis of the BCEAO process for the Mica Expansion Project, exceeds the legal requirement.

I have reviewed Section 5.3 of the Application, the analysis in the majority Reasons for Decision (Section 5.2), and the written submission of the Lakes Division (November 19, 2009). The issue of consultation with First Nations in respect of the Project is clouded by several background factors:

- There are portions of the Project that were carved out of the application by BC Hydro for an Order from the Environmental Assessment Office in respect of the Mica 5 and 6 Expansion Project; some consultation with First Nations had taken place under the aegis of the procedures established by the Environmental Assessment Office;

- The Lakes Division of the Sexqéltkemc Nation (Lakes Division)takes exception to the carving out and states: "We object to the Mica Expansion Project being split in this way where the Gas Insulated Switchgear has been removed from the Mica 5 & 6 project scope as defined by the EAO" (Lakes Division Submission, p. 2 of covering e-mail);

- The Lakes Division was hopeful that there would be "significant movement towards a government to government W7mec Agreement by the winter of 2009" and as a consequence, perhaps were not as engaged in this Project as they otherwise might have been;

- The Lakes Division submission *"A Drop of Rain and Coyote"* (October 24, 2009) was initially submitted to the BC Environmental Assessment Office in the context of the Mica Expansion Project. The date of the submission to the BCOEA is contemporaneous with the timelines in this proceeding. It addresses the environmental and rights issues that arose in the BCOEA process rather than the more narrow impacts of the Mica GIS Replacement (the Project in this proceeding). BC Hydro objected to the filing of the material, late in this proceeding, in which the regulatory timetable did not provide for the filing of Intervenor evidence. I agree with the majority that the material should be excluded from consideration in this proceeding but would note that it provides no comments or concerns in respect of the Mica GIS installation, the subject matter of this proceeding;

- In this proceeding, a central issue presented by First Nations is a request for accommodation for **past infringements** as a result of the installation of the original dams and infrastructure. The Commission has no legal jurisdiction under the Act to consider or order such relief.

In respect of the Mica GIS Project, what is the level of consultation with First Nations that BC Hydro must meet in order to uphold the honour of the Crown?

BC Hydro takes the position that because there are no known adverse impacts that arise directly from the Project, there is no duty to consult. On the evidence before us in this proceeding, I agree.

But as noted above, the Project in this proceeding was originally filed with the BCEAO as part of the Mica 5 and 6 Expansion Project. Whether or not consultation was legally required for this Project, BC Hydro carried out extensive communication and contact with all identified First Nations that may have rights claims in the area of the Mica dam and reservoir. Initially this was done under the aegis of the BCEAO and latterly, for this proceeding and the stand alone Mica GIS Project.

I have read the First Nations' consultation analysis in the majority Reasons for Decision and in general, agree with it. However, I do not agree that the "pre-build" associated with a possible Mica 5/6 Expansion Project, and the reduction of scope and advancement of in-service dates for Mica 5/6, then triggers, in this proceeding, an examination of the possible negative impacts of the expansion project(s).

Given that no negative impact has been identified by any First Nation (or any other intervener) arising from the Project, the particulars of the Project do not require consultation. However, to its credit, BC Hydro did carry out substantial consultation, albeit partially under the BCEAO process. The consultation that did take place is summarized by BC Hydro at Part VI of its Final Submission. BC Hydro undertakes to address any new issues that may arise.

DATED at the City of Vancouver, in the Province of British Columbia, this 16th day of March 2010.

PETER E. VIVIAN
COMMISSIONER

SIXTH FLOOR, 900 HOWE STREET, BOX 250
VANCOUVER, B.C. V6Z 2N3 CANADA
web site: http://www.bcuc.com

BRITISH COLUMBIA UTILITIES COMMISSION

BRITISH COLUMBIA
UTILITIES COMMISSION

ORDER
NUMBER G-38-10

TELEPHONE: (604) 660-4700
BC TOLL FREE: 1-800-663-1385
FACSIMILE: (604) 660-1102

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 the Mica Gas Insulated Switchgear Project

BEFORE: R.J. Milbourne, Commissioner
P.E. Vivian, Commissioner

March 16, 2010

O R D E R

WHEREAS:

A. On August 5, 2009, British Columbia Hydro and Power Authority (BC Hydro) applied (the Application) for acceptance by the British Columbia Utilities Commission (the Commission) that the expenditures in a capital expenditure schedule filed pursuant to section 44.2(1)(b) of the *Utilities Commission Act* (the Act) in respect of the Mica Gas Insulated Switchgear Project (Mica GIS Project) are in the public interest; and

B. The Mica GIS Project is estimated to cost $180.6 million and is scheduled to be completed in June 2013; and

C. By Order G-95-09 dated August 14, 2009, the Commission established a Written Public Hearing and Regulatory Timetable for the review of the Application; and

D. By Order G-127-09 dated October 28, 2009, the Commission revised the Regulatory Timetable for the review of the Application; and

E. The filing of evidence and submissions pursuant to the Revised Regulatory Timetable was completed when BC Hydro filed its Reply Submission on December 3, 2009; and

.../2

F. The Commission Panel has reviewed the Application, evidence and submissions, and concludes that it does not accept the Application as being in the public interest.

NOW THEREFORE the Commission Panel, pursuant to section 44.2(3)(b) of the Act, finds that the Mica GIS Project is not in the public interest and orders that the capital expenditure schedule having a Expected Cost estimate of $180.6 million is not accepted. The Commission Panel issues its Decision concurrently with this Order.

DATED at the City of Vancouver, in the Province of British Columbia, this 16th day of March 2010.

BY ORDER

R.J. Milbourne
Panel Chair/Commissioner

Utilities Commission Act References

Section	
1	***Definitions*** **1** In this Act: **"appraisal"** means appraisal by the commission; **"authority"** means the British Columbia Hydro and Power Authority; **"commission"** means the British Columbia Utilities Commission continued under this Act; **"compensation"** means a rate, remuneration, gain or reward of any kind paid, payable, promised, demanded, received or expected, directly or indirectly, and includes a promise or undertaking by a public utility to provide service as consideration for, or as part of, a proposal or contract to dispose of land or any interest in it; **"costs"** includes fees, counsel fees and expenses; **"demand-side measure"** means a rate, measure, action or program undertaken (a) to conserve energy or promote energy efficiency, (b) to reduce the energy demand a public utility must serve, or (c) to shift the use of energy to periods of lower demand; **"distribution equipment"** means posts, pipes, wires, transmission mains, distribution mains and other apparatus of a public utility used to supply service to the utility customers; **"expenses"** includes expenses of the commission; **"government's energy objectives"** means the following objectives of the government: (a) to encourage public utilities to reduce greenhouse gas emissions; (b) to encourage public utilities to take demand-side measures; (c) to encourage public utilities to produce, generate and acquire electricity from clean or renewable sources; (d) to encourage public utilities to develop adequate energy transmission infrastructure and capacity in the time required to serve persons who receive or may receive service from the public utility; (e) to encourage public utilities to use innovative energy technologies (i) that facilitate electricity self-sufficiency or the fulfillment of their long-term transmission requirements, or (ii) that support energy conservation or efficiency or the use of clean or renewable sources of energy; (f) to encourage public utilities to take prescribed actions in support of any other goals prescribed by regulation; **"petroleum industry"** includes the carrying on within British Columbia of any of the following industries or businesses: (a) the distillation, refining or blending of petroleum; (b) the manufacture, refining, preparation or blending of products obtained from petroleum; (c) the storage of petroleum or petroleum products; (d) the wholesale or retail distribution or sale of petroleum products; (e) the retail distribution of liquefied or compressed natural gas;

	"petroleum products" includes gasoline, naphtha, benzene, kerosene, lubricating oils, stove oil, fuel oil, furnace oil, paraffin, aviation fuels, butane, propane and other liquefied petroleum gas and all derivatives of petroleum and all products obtained from petroleum, whether or not blended with or added to other things; **"public hearing"** means a hearing of which public notice is given, which is open to the public, and at which any person whom the commission determines to have an interest in the matter may be heard; **"public utility"** means a person, or the person's lessee, trustee, receiver or liquidator, who owns or operates in British Columbia, equipment or facilities for (a) the production, generation, storage, transmission, sale, delivery or provision of electricity, natural gas, steam or any other agent for the production of light, heat, cold or power to or for the public or a corporation for compensation, or (b) the conveyance or transmission of information, messages or communications by guided or unguided electromagnetic waves, including systems of cable, microwave, optical fibre or radiocommunications if that service is offered to the public for compensation, but does not include (c) a municipality or regional district in respect of services provided by the municipality or regional district within its own boundaries, (d) a person not otherwise a public utility who provides the service or commodity only to the person or the person's employees or tenants, if the service or commodity is not resold to or used by others, (e) a person not otherwise a public utility who is engaged in the petroleum industry or in the wellhead production of oil, natural gas or other natural petroleum substances, (f) a person not otherwise a public utility who is engaged in the production of a geothermal resource, as defined in the *Geothermal Resources Act*, or (g) a person, other than the authority, who enters into or is created by, under or in furtherance of an agreement designated under section 12 (9) of the *Hydro and Power Authority Act*, in respect of anything done, owned or operated under or in relation to that agreement; **"rate"** includes (a) a general, individual or joint rate, fare, toll, charge, rental or other compensation of a public utility, (b) a rule, practice, measurement, classification or contract of a public utility or corporation relating to a rate, and (c) a schedule or tariff respecting a rate; **"service"** includes (a) the use and accommodation provided by a public utility, (b) a product or commodity provided by a public utility, and (c) the plant, equipment, apparatus, appliances, property and facilities employed by or in connection with a public utility in providing service or a product or commodity for the purposes in which the public utility is engaged and for the use and accommodation of the public; **"tenant"** does not include a lessee for a term of more than 5 years; **"transmission corporation"** has the same meaning as in the *Transmission Corporation Act*; **"value"** or **"appraised value"** means the value determined by the commission.
43	***Duty to provide information*** **43** (1) A public utility must, for the purposes of this Act, (a) answer specifically all questions of the commission, and (b) provide to the commission

	(i) the information the commission requires, and (ii) a report, submitted annually and in the manner the commission requires, regarding the demand-side measures taken by the public utility during the period addressed by the report, and the effectiveness of those measures. (1.1) The authority, in addition to providing the information and reports referred to in subsection (1), must provide to the commission, in accordance with the regulations, an annual report comparing the electricity rates charged by the authority with electricity rates charged by public utilities in other jurisdictions in North America, including an assessment of whether the authority's electricity rates are competitive with those other rates. (2) A public utility that receives from the commission any form of return must fully and correctly answer each question in the return and deliver it to the commission. (3) On request by the commission, a public utility must deliver to the commission (a) all profiles, contracts, reports of engineers, accounts and records in its possession or control relating in any way to its property or service or affecting its business, or verified copies of them, and (b) complete inventories of the utility's property in the form the commission directs. (4) On request by the commission, a public utility must file with the commission a statement in writing setting out the name, title of office, post office address and the authority, powers and duties of (a) every member of the board of directors and the executive committee, (b) every trustee, superintendent, chief or head of construction or operation, or of any department, branch, division or line of construction or operation, and (c) other officers of the utility. (5) The statement required under subsection (4) must be filed in a form that discloses the source and origin of each administrative act, rule, decision, order or other action of the utility.
44.1	A public utility must have in British Columbia an office in which it must keep all accounts and records required by the commission to be kept in British Columbia.
44.2	A public utility must not remove or permit to be removed from British Columbia an account or record required to be kept under subsection (1), except on conditions specified by the commission.
44.2(1)(b)	A public utility may file with the commission an expenditure schedule containing one or more of the following: (b) a statement of capital expenditures the public utility has made or anticipates making during the period addressed by the schedule;
44.2(3)	After reviewing an expenditure schedule submitted under subsection (1), the commission, subject to subsections (5) and (6), must (a) accept the schedule, if the commission considers that making the expenditures referred to in the schedule would be in the public interest, or (b) reject the schedule.
44.2(3)(a)	After reviewing an expenditure schedule submitted under subsection (1), the commission, subject to subsections (5) and (6), must (a) accept the schedule, if the commission considers that making the expenditures referred to in the schedule would be in the public interest, or
44.2(4)	The commission may accept or reject, under subsection (3), a part of a schedule.

44.2(b)	a statement of capital expenditures the public utility has made or anticipates making during the period addressed by the schedule;
45	***Certificate of public convenience and necessity*** **45** (1) Except as otherwise provided, after September 11, 1980, a person must not begin the construction or operation of a public utility plant or system, or an extension of either, without first obtaining from the commission a certificate that public convenience and necessity require or will require the construction or operation. (2) For the purposes of subsection (1), a public utility that is operating a public utility plant or system on September 11, 1980 is deemed to have received a certificate of public convenience and necessity, authorizing it (a) to operate the plant or system, and (b) subject to subsection (5), to construct and operate extensions to the plant or system. (3) Nothing in subsection (2) authorizes the construction or operation of an extension that is a reviewable project under the *Environmental Assessment Act*. (4) The commission may, by regulation, exclude utility plant or categories of utility plant from the operation of subsection (1). (5) If it appears to the commission that a public utility should, before constructing or operating an extension to a utility plant or system, apply for a separate certificate of public convenience and necessity, the commission may, not later than 30 days after construction of the extension is begun, order that subsection (2) does not apply in respect of the construction or operation of the extension. (6) A public utility must file with the commission at least once each year a statement in a form prescribed by the commission of the extensions to its facilities that it plans to construct. (6.1) and (6.2) [Repealed 2008-13-8.] (7) Except as otherwise provided, a privilege, concession or franchise granted to a public utility by a municipality or other public authority after September 11, 1980 is not valid unless approved by the commission. (8) The commission must not give its approval unless it determines that the privilege, concession or franchise proposed is necessary for the public convenience and properly conserves the public interest. (9) In giving its approval, the commission (a) must grant a certificate of public convenience and necessity, and (b) may impose conditions about (i) the duration and termination of the privilege, concession or franchise, or (ii) construction, equipment, maintenance, rates or service, as the public convenience and interest reasonably require.
45(1)	Except as otherwise provided, after September 11, 1980, a person must not begin the construction or operation of a public utility plant or system, or an extension of either, without first obtaining from the commission a certificate that public convenience and necessity require or will require the construction or

	operation.
45(2)	The commission has a discretion whether or not to hold any hearing on the application.
45(5)	On application under subsection (4), the commission may make an order declaring that it will, on application, under rules it specifies, issue the desired certificate, on the terms it designates in the order, after the public utility has obtained the proposed consent, franchise, licence, permit, vote or other authority.
46	***Procedure on application*** **46** (1) An applicant for a certificate of public convenience and necessity must file with the commission information, material, evidence and documents that the commission prescribes. (2) The commission has a discretion whether or not to hold any hearing on the application. (3) Subject to subsections (3.1) and (3.2), the commission may issue or refuse to issue the certificate, or may issue a certificate of public convenience and necessity for the construction or operation of a part only of the proposed facility, line, plant, system or extension, or for the partial exercise only of a right or privilege, and may attach to the exercise of the right or privilege granted by the certificate, terms, including conditions about the duration of the right or privilege under this Act as, in its judgment, the public convenience or necessity may require. (3.1) In deciding whether to issue a certificate under subsection (3), the commission must consider (a) the government's energy objectives, (b) the most recent long-term resource plan filed by the public utility under section 44.1, if any, and (c) whether the application for the certificate is consistent with the requirements imposed on the public utility under sections 64.01 and 64.02, if applicable. (3.2) Section (3.1) does not apply if the commission considers that the matters addressed in the application for the certificate were determined to be in the public interest in the course of considering a long-term resource plan under section 44.1. (4) If a public utility desires to exercise a right or privilege under a consent, franchise, licence, permit, vote or other authority that it proposes to obtain but that has not, at the date of the application, been granted to it, the public utility may apply to the commission for an order preliminary to the issue of the certificate. (5) On application under subsection (4), the commission may make an order declaring that it will, on application, under rules it specifies, issue the desired certificate, on the terms it designates in the order, after the public utility has obtained the proposed consent, franchise, licence, permit, vote or other authority. (6) On evidence satisfactory to the commission that the consent, franchise, licence, permit, vote or other authority has been secured, the commission must issue a certificate under section 45. (7) The commission may amend a certificate previously issued, or issue a new certificate, for the purpose of renewing, extending or consolidating a certificate previously issued. (8) A public utility to which a certificate is, or has been, issued, or to which an exemption is, or has been, granted under section 45 (4), is authorized, subject to this Act, to construct, maintain and operate the plant, system or extension authorized in the certificate or exemption.
46(3)	Subject to subsections (3.1) and (3.2), the commission may issue or refuse to issue the certificate, or may issue a certificate of public convenience and necessity for the construction or operation of a part only of the proposed facility, line, plant, system or extension, or for the partial exercise only of a right or privilege, and may

	attach to the exercise of the right or privilege granted by the certificate, terms, including conditions about the duration of the right or privilege under this Act as, in its judgment, the public convenience or necessity may require.
64.01	***Electricity self-sufficiency*** **64.01** (1) The authority must (a) by the 2016 calendar year, achieve electricity self-sufficiency according to the prescribed criteria, and (b) maintain, according to the prescribed criteria, electricity self-sufficiency in each calendar year after achieving it. (2) A public utility, in planning for (a) the construction or extension of generation facilities, and (b) energy purchases, must consider the government's goal that British Columbia be electricity self-sufficient by the 2016 calendar year and maintain self-sufficiency after that year.
64.02	***Clean and renewable resources*** **64.02** (1) To facilitate the achievement of the government's goal that at least 90% of the electricity generated in British Columbia be generated from clean or renewable resources, a person to whom this section applies (a) must pursue actions to meet the prescribed targets in relation to clean or renewable resources, and (b) must use the prescribed guidelines in planning for (i) the construction or extension of generation facilities, and (ii) energy purchases. (2) This section applies to (a) the authority, and (b) a prescribed public utility, if any, and a public utility in a class of prescribed public utilities, if any.

REGULATORY PROCESS

By letter dated August 17, 2009 and Order G-95-09 the Commission established a Regulatory Timetable and Notice of Written Public hearing for the review of the Application. The Order established the following Regulatory Timetable:

ACTION	DATE (2008)
BC Hydro Workshop commencing at 9:00AM	Wednesday, August 26
Commission Information request No. 1	Wednesday, September 2
Registration of Intervenors and Interested Parties with the Commission	Thursday, September3
Participant Assistance Budgets filed	Wednesday, September 9
BC Hydro Response to Information Request No.1	Thursday, September24
Commission IR No. 2 and Intervenor IR No. 1	Wednesday, October 7
BC Hydro Responses to Information Requests	Thursday, October 22
BC Hydro Final written Submission	Thursday, October 29
Intervenors written Final Submissions	Thursday, November 5
BC Hydro written Reply Submissions	Thursday, November 12

By letter dated August 31, 2009 the Commission established the Panel for the review of the Application.

By letter dated October 27, 2009 and Order G-127-09, the Commission amended the regulatory Timetable, extending the filing dates for Submissions as follows:

ACTION	DATE (2009)
BC Hydro written Final Submission	Thursday, November 12
Intervenors written Final Submissions	Thursday, November 19
BC Hydro written Reply Submission	Thursday, December 3

LIST OF INTERVENORS/INTERESTED PARTIES

INTERVENORS

C1-1 **BRITISH COLUMBIA OLD AGE PENSIONERS' ORGANIZATION (BCOAPO)**

C2-1 **INDEPENDENT POWER PRODUCERS ASSOCIATION OF BC (IPPBC)**

C3-1 **SEXQÉLTKEMC LAKES DIVISION OF THE SECWEPEMC NATION**

C4-1 **COMMERCIAL ENERGY CONSUMERS ASSOCIATION OF BC (CEC)**

C5-1 **JOINT INDUSTRY ELECTRICITY STEERING COMMITTEE (JIESC)**

INTERESTED PARTIES

D-1 **N. MOYSA**

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

and

British Columbia Hydro and Power Authority
Application for the Mica Gas Insulated Switchgear Project
~ Project No. 3698567

EXHIBIT LIST

Exhibit No.	Description
COMMISSION DOCUMENTS	
A-1	Letter dated August 17, 2009 Regulatory Timetable
A-2	Letter dated August 28, 2009 responding to Letter dated August 19, 2009 from Splatsin, Neskonlith and Adams Lake
A-3	Letter dated August 31, 2009 appointing the Commission Panel for the review of the British Columbia Hydro and Power Authority Application for the Mica Gas Insulated Switchgear Project
A-4	Letter dated September 2, 2009 issuing Commission Information Request No. 1 to BCH
A-5	Letter dated October 7, 2009 and Commission Information Request No. 2
A-6	Letter dated October 28, 2009 – Revised Regulatory Timetable
APPLICANT DOCUMENTS BC HYDRO	
B-1	**BC HYDRO (BCH)** Letter dated August 5, 2009 Application for the Mica Gas Insulated Switchgear Project
B-1-1	Letter dated August 24, 2009 BCH filing Supplemental Information for Mica Gas Insulated Switchgear Project.
B-1-2	Letter dated October 22, 2009 filing Errata – Table 4-2
B-2	Letter dated August 17, 2009 Via Email – Notice of workshop

Exhibit No.	Description
B-3	Received August 27, 2009 BC Hydro's presentation of the Workshop held on Wednesday, August 26, 2009
B-4	Letter dated September 16, 2009, filing copies of the notifications of the Mica Gas Insulated Switchgear Project Application and written public hearing process that appeared in news publications.
B-5	Letter dated September 24, 2009 BC Hydro's PUBLIC Responses to BCUC Information Request No. 1
B-5-1	CONFIDENTIAL Letter dated September 24, 2009 BC Hydro's Responses to BCUC Information Request No. 1
B-5-2	Letter dated September 29, 2009 BC Hydro's Public Outstanding Responses to BCUC Information Request No. 1
B-5-3	CONFIDENTIAL Letter dated September 29, 2009 BC Hydro's Public Outstanding Responses to BCUC Information Request No. 1
B-5-4	Letter dated September 29, 2009 BC Hydro's Revised response to BCUC IR 1.27.2
B-5-5	Letter dated October 26, 2009 filing Errata to the response to Commission Information Request 1.54.4
B-6	Letter dated October 22, 2009 issuing Responses to Commission Information Request No. 2 and Intervenor Information Requests No. 1
B-6-1	Letter dated October 22, 2009 issuing **Confidential** Responses to Commission Information Request No. 2 and Intervenor Information Requests No. 1
B-6-2	Letter dated October 26, 2009 filing Errata to the response to CEC BC Information Request 1.5.3
B-7	Letter dated October 26, 2009 requesting an amendment to the balance of the Regulatory Timetable

INTERVENOR DOCUMENTS

C1-1	**BRITISH COLUMBIA OLD AGE PENSIONERS' ORGANIZATION (BCOAPO) VIA EMAIL** Letter Dated August 25, 2009 filing request by and for Leigha Worth and Bill Harper for Intervenor Status
C1-2	Letter received October 6, 2009 BCOAPO Information Request No. 1

Exhibit No.	Description
C2-1	**INDEPENDENT POWER PRODUCERS ASSOCIATION OF BC (IPPBC) –** Letter dated August 27, 2009, from David Austin, Tupper Jonsson & Yeadon, legal counsel, filing request for Registered Intervenor
C2-2	Letter dated October 7, 2009 IPPBC Information Request No. 1
C3-1	**SEXQÉLTKEMC LAKES DIVISION OF THE SECWEPEMC NATION** Letter dated August 31, 2009, filing request for Registered Intervenor
C4-1	**COMMERCIAL ENERGY CONSUMERS ASSOCIATION OF BC (CEC) - VIA EMAIL** Letter dated September 3, 2009 from Christopher P. Weafer, Owen Bird, legal counsel, filing request for Registered Intervenor status
C4-2	Letter dated October 7, 2009 CEC Information Request No. 1
C5-1	**JOINT INDUSTRY ELECTRICITY STERRING COMMITTEE (JIESC) VIA EMAIL** Letter dated September 2, 2009 from R. Brian Wallace, Bull Housser & Tupper, legal counsel filing request for Registered Intervenor status on behalf of Dan Potts and Lloyd Guenther
INTERESTED PARTY DOCUMENTS	
D-1	**N. MOYSA** Letter Dated August 24, 2009 filing request for Interested Party status