

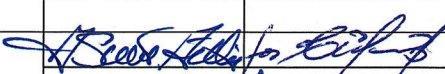
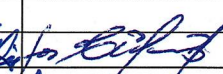
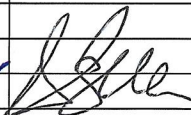
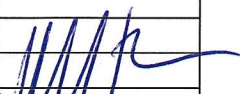
Nalcor Energy – Lower Churchill Project



Change Management Plan

Nalcor Doc. No. LCP-PT-MD-0000-PM-PL-0002-01

<p>Comments: This plan is to be used in association with the <i>Change Management Procedure</i> (LCP-PT-MD-0000-PM-PR-0005-01). The separation of the previous version into this revision and the procedure has resulted in widespread change and therefore the individual changes have not been indicated.</p>	<p>Total # of Pages: (Including Cover): 24</p>
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B3	23-Dec-2014	Issued for Use	 G. Scott Gillis	 Ed Bush	 David Green	 Ron Power
Status / Revision	Date	Reason for Issue	Prepared by	Functional Manager Approval	Quality Assurance Approval	General Project Manager Approval

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Inter-Departmental / Discipline Approval (where required)

Department	Department Manager Approval	Date
Project Manager SOBI Crossing	 Greg Fleming	Dec/22/2014

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1.0 PURPOSE

To function effectively, a project team must understand the basics of change management and have a plan in place that establishes the strategy to be used for the project team to identify, screen, and incorporate changes to the baseline, including the project delivery model. On the Lower Churchill Project (LCP), by adopting a disciplined approach to managing potential changes, negative impacts to project goals and objectives are minimized and positive opportunities can be realized.

This plan provides the overall strategy for change management on the LCP, definition with respect to what constitutes change, the scope of change management for the Project, an overview of the process, and a breakdown of the roles and responsibilities of those accountable for its implementation. The details of the process used to implement this plan are provided in the associated [Change Management Procedure – LCP-PT-MD-0000-PM-PR-0005-01](#). Individual contractors must have their own change management plans that align and comply with this Plan.

2.0 APPLICATION AND SCOPE

This *Project Change Management Plan* is applicable to the Project during Phases 3 and 4 of the [Gateway Process, LCPT-MD-0000-PM-PR-0001-01](#) (see Figure 1), for the following *Sub-Projects* or *Components* of the LCP Phase I:

- Muskrat Falls Generation
- HVdc Specialties
- Transmission Lines
- Strait of Belle Isle Crossing

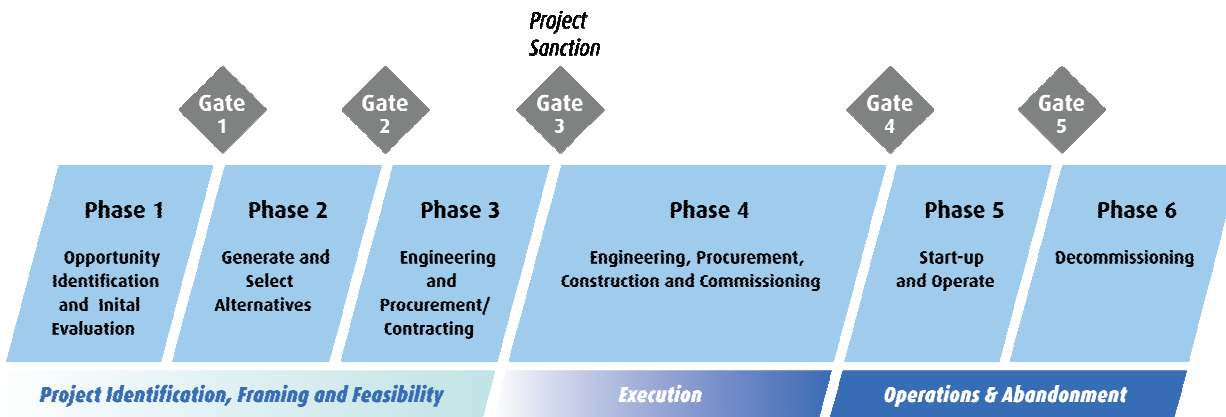


Figure 1: Gateway Process

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The change management principles provided within this Plan are applicable to all changes that have the potential to impact the Project scope, schedule, and cost baselines, including changes to the Project’s delivery method or execution approach. This includes Engineering Change as well as contract change facilitated through the use of Change Orders. A summary of the most common sources of change that may be introduced to the Project is detailed in Attachment 1.

Change management is a shared responsibility between the PDT, the contractors, and the vendors and suppliers working on the Project. Contractor and supplier change management processes will be consistent with the central Project plan detailed within this document. All change management requirements for contractors will be specified in the individual contracts.

Detailed engineering and design for the Project will be undertaken by various consultants and contractors, as determined by the execution plan for the sub-project (e.g. SOBI Crossing). The detailed engineering change management processes (e.g. redline mark-ups, changes in design codes and standards, field request for information, etc.) employed by these parties will be used to support the effective management of engineering and design change prescribed in this Project plan and as detailed in the respective contract coordination procedures.

3.0 DEFINITIONS

Change Approval Hierarchy

The Change Approval Hierarchy establishes the limits of authority designated to specified positions of responsibility within the Project and establishes the types and thresholds of change that may be approved by individuals. See Section 8.0 *Approval of Change* for additional details.

Change Control Board

This is a panel led by the Project Director and comprised of the remaining members of the Project Management Team (see [Project Delivery Team Organization Charts – LCP-PT-MD-0000-PM-CR-0001 Chart LCP1: Management Team](#)). It is responsible for determining whether proposed project changes shall be approved and developed further or rejected. Occasionally higher levels of authority may be required to approve a Project Change (reference AAL).

Change Management

The process of incorporating a balanced change culture of recognition, planning, and evaluation of project changes in an organization to effectively manage project changes (reference *Construction Industry Institute*.)

Change Management Database

A database that is used to record, manage, and report on all proposed deviations and project changes (Deviation Alert Notices

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and Project Change Notices) and their statuses. The Change Management Database resides in the Change Management module of LCP Tracker.

Design Freeze	Design Freeze is the stage in the project at which no further changes can be made to the design without substantive implications on the project cost and schedule. It identifies a critical point in change management.
Deviation	A deviation is a departure of a characteristic from specified product, process, or system requirement. Specifically with respect to the Project, the term refers to a change/ modification / alteration from established Project <i>guidelines, plans, or intentions</i> .
Deviation Alert Notice	This is the mechanism used to facilitate the processing of potential Project Deviations. A Deviation Alert Notice (DAN) is represented by both a form and a record which are generated in the LCP Change Management Database. A Deviation Alert Notice may originate from any member of the Project Delivery Team. Deviation Alert Notices may be reviewed by the Change Control Board to obtain direction on how they shall be addressed or resolved.
Engineering Change	An Engineering Change is a modification to established Project design criteria as defined or specified in the accepted design philosophies, design briefs, or technical documentation. Engineering Changes are subject to the conditions of the change management process and the Engineering Management Plan – LCP-PT-MD-0000-EN-PL-0001-01 .
Non-Scope Change	This is a Project change that cannot be classified as a scope change, but can be attributed to project evolution (pricing, quantity fluctuations, design evolution, labour productivity variances, execution approach, etc.) and other developments, within the defined project baseline scope, cost, and schedule. Approval of Non-Scope Changes may not affect the Current Control Budget, but rather may influence the Final Forecast Cost. Non-Scope Changes must be funded by contingency.
Project Change	A Project Change is a deviation which represents a change or departure from the Project baseline scope, estimate, schedule, intended quality, HSE targets, project policy, or execution plan that results in an addition to or reduction in the Original Control Budget

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or baseline Project Control Schedule including correction for scope / estimate omissions.

Project Change Notice This is the mechanism used to facilitate the processing of Project Changes. A Project Change Notice (PCN) is represented by both a form and a record which are generated in the LCP Change Management Database. Project Change Notices must be reviewed by the Change Control Board for approval or rejection.

Project Scope Project Scope is a concise and accurate description of the end products or deliverables to be expected from the project and that meet specified requirements as agreed between the Project stakeholders. It represents the combination of all project goals and tasks, as well as the resources and activities required to accomplish them. See [Project Controls Management Plan – LCP-PT-MD-0000-PC-PL-0001-01](#), for additional detail.

Scope Change A Project Change that results from the addition or deletion of scope to meet functional requirements or due to regulatory requirements is a Scope Change.

4.0 ABBREVIATIONS AND ACRONYMS

AAL	Approval Authorisation Limit
CCB	Change Control Board
DAN	Deviation Alert Notice
EPC	Engineer, Procure and Construct
HAZID	Hazard Identification Review
HAZOP	Hazard Operability Review
HSS&ER	Health, Safety, Security & Emergency Response
PCN	Project Change Notice
PDT	Project Delivery Team
PMT	Project Management Team

5.0 RESPONSIBILITIES

Project Gatekeeper Final authority for decisions on Project Changes that impact the Project's boundaries, execution / delivery or operating philosophies, move the Project into a high risk zone (reference [Project Risk Management Plan – LCP-PT-MD-0000-RI-PL-0001-01](#)), or as determined by the Change

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Management Approval Matrix included in Section 8.0 *Approval of Change* of this plan and in accordance with the [Capital Expenditure Authorization Procedure – LCP-PT-MD-0000-FI-PR-0001-01](#).

Vice President – Lower Churchill Project

Authority for decisions on Project Changes that impact the Project’s boundaries, scope limits, and delivery philosophies, move the Project into a high risk zone, (reference [Project Risk Management Plan – LCP-PT-MD-0000-RI-PL-0001-01](#)), or as determined by the Change Management Approval Matrix included in Section 8.0 *Approval of Change* of this plan and in accordance with the [Capital Expenditure Authorization Procedure – LCP-PT-MD-0000-FI-PR-0001-01](#).

Change Control Board

The Change Control Board (CCB) is the approval authority for Project Changes and although the composition of this group is fixed, only those members that are stakeholders in any given change are required to provide authorisation for that change.

The CCB must demonstrate leadership and commitment to the principles of the change management system by:

- ensuring the PDT appropriately applies and follows the processes described in the change management plan and procedure;
- ensuring decisions on changes are made in a timely manner and the appropriate approvals are in place prior to implementation;
- providing the necessary resources to achieve the process objectives;
- reviewing and approving / rejecting all PCNs; and
- ensuring that all members of the PDT understand their roles and responsibilities in reviewing and providing input to the change management process.

Project Controls Manager

As owner of the *Change Management Plan*, this role is accountable for:

- implementation of this plan and ensuring the necessary resources are available to support the change management process;
- championing and communicating the importance of discipline and proactive change management;

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- championing and communicating the importance of risk screening as an essential element of change management; and
- being engaged in and providing direction on all Project Changes prior to their submission to the Change Control Board as PCNs.

Change Management Lead

The Change Management Lead is responsible for the implementation of this *Change Management Plan*, including ensuring project personnel are aware of it, ensuring resources are available to administer the process, facilitating communication on Deviation Alert Notice (DAN) and Project Change Notice (PCN) status, ensuring the project change management tools and supporting processes are maintained and that the project baseline impacts of DANs and PCNs are accurately reflected in the project baselines and forecasts.

Specific activities include:

- working with other members of the Project Controls Team to compare current project activities and performance against approved budgets and scope and highlight any areas of concern;
- ensuring the maintenance of the Project Change Management Database including the status of DANs and PCNs;
- ensuring Project Changes are properly routed and approved as per the approval requirements provided in Section 8.0 *Change Approval*;
- facilitating the generation of DANs and PCNs by providing guidance to the Originators and ensuring that approvals are obtained in a timely fashion;
- facilitating the processing of DANs and PCNs;
- assisting originators in compiling all DAN and PCN supporting documentation;
- overseeing the preparation / execution of PCN Implementation Plans
- organizing, preparing, and moderating regular Change Control Board meetings;
- providing DAN and PCN status updates to Originators and management;
- producing / overseeing the production of monthly change management reports for input into the

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- Project monthly report; and
- interfacing with Supply Chain, Engineering, Construction, Operations, and other functional groups to identify impact of all DANs and PCNs.

6.0 REFERENCES

LCPT-MD-0000-PM-PR-0001-01	Gateway Process
LCP-PT-MD-0000-PM-CR-0001	Project Delivery Team Organization Charts
LCP-PT-MD-0000-PC-PI-0001-01	Project Controls Management Plan
LCP-PT-MD-0000-FI-PR-0001-01	Capital Expenditure Authorization Procedure
LCP-PT-ED-0000-EN-RP-0001-01	Lower Churchill Project – Basis of Design
LCP-PT-MD-0000-PM-PL-0001-01	Project Execution Plan (Scope and Approach)
LCP-PT-ED-0000-EP-SH-0002-01	Project Control Schedule
MFA-PT-ED-0000-EP-RP-0001-01	Gate 2 Capital Cost Estimate Report – Muskrat Falls
ILK-PT-ED-0000-EP-RP-0001-01	Gate 2 Capital Cost Estimate Report – Island Link
LCP-PT-ED-0000-SC-LS-0001-01	Muskrat Falls and Island Link Master Contract Package List
LCP-PT-ED-0000-PM-ST-0001-01	Contracting & Procurement Management Strategy
LCP-PT-ED-0000-EP-SH-0001-01	Target Milestone Schedule
LCP-PT-MD-0000-PC-SH-0001-01	Integrated Project Schedule
LCP-PT-ED-0000-EP-ES-0001-01	Decision Gate 3 Basis of Estimate
LCP-PT-MD-0000-PM-ST-0002-01	Overarching Contracting Strategy
LCP-PT-MD-0000-CS-PL-0001-01	Construction Management Plan
LCP-PT-MD-0000-RI-PL-0001-01	Project Risk Management Plan
LCP-PT-MD-0000-EN-PL-0001-01	Engineering Management Plan
LCP-PT-MD-0000-PC-PR-0015-01	Management of Staffing Plan and Forecast

7.0 CHANGE MANAGEMENT PHILOSOPHY

Change management has both process and cultural aspects. As a **process** it is a disciplined approach to anticipating and managing potential changes / modifications / alterations from established Project *guidelines, plans, or intentions* with particular emphasis on the accepted Project Baseline – scope, budget, schedule, delivery approach, etc.

NOTE: Although it forms an essential element of the change management process, the administrative task of processing contract change orders should not be confused with the process of managing project change.

The goal is to establish a disciplined team with a **balanced change culture**. A team with a cost-conscious attitude that is alert to change issues and has developed disciplined methods for maximizing beneficial – value-added change and minimizing negative change. It is important for the team to

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recognize deviations and act quickly to define them, their potential impact on the project and the actions required to minimize their negative impact and maximize their positive impact. It is equally important for the team to understand the root cause of each potential change. This includes not just the source and type of change but also the conditions that generated the change, e.g. faulty planning, ambiguous direction, improved technology, site conditions, etc., whether those conditions will continue to be a threat or a benefit to the project, and what appropriate actions might be taken to control the risk of change from these sources.

8.0 APPROVAL OF CHANGE

The Lower Churchill Project change management process defines a system for controlling project scope and ensuring that Project Changes are reviewed and approved at the appropriate organizational level.

Figure 2 below, which illustrates the Project Change Approval Hierarchy, has been developed in order to provide clarity as to the level of authority required to approve or reject a proposed Project Change. In general, approval of a Project Change follows a vertical process, with those changes having larger cost, schedule, and risk implications, requiring higher level of approval. In addition Project Changes that alter the Project’s boundaries, objectives, key philosophies, or delivery approach must be approved by the Project’s Gatekeeper.

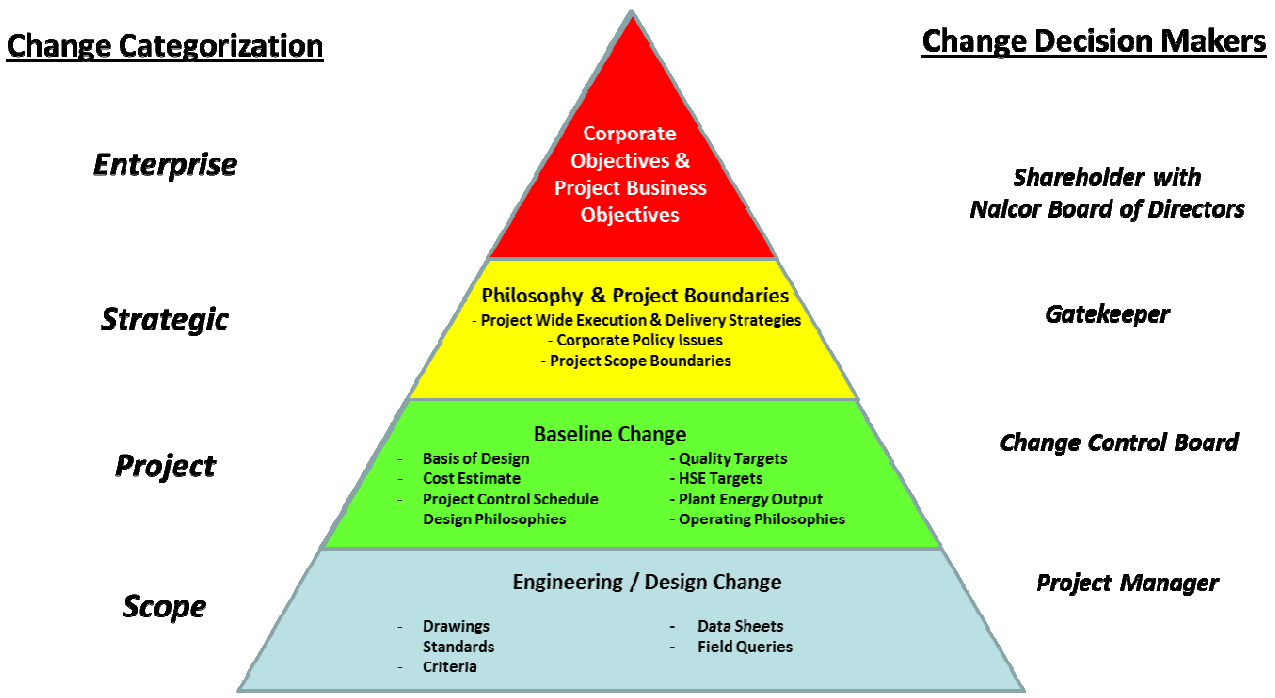


Figure 2: Project Change Approval Hierarchy

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Table 1 below provides the project specific authority for approval of change that has cost, schedule or risk impact.

Project Specific Authority				
Decision Level	Risk Impact	Schedule	Specifications	Cost Limit
Gatekeeper	High Risk Zone*	Unlimited	Unlimited	Unlimited
Project VP	High Risk Zone*	>2 weeks	Unlimited	As per AAL
Project Director	Medium Risk Zone**	<2 weeks	Unlimited	As per AAL
General Project Manager	N/A	<1 week	Unlimited	As per AAL
Project Manager	N/A	N/A	Technical & Construction Specs	As per AAL

* If the risk screening of a PCN indicates the introduction of a high risk the Gatekeeper and Project VP must approve the change.

** If the risk screening of a PCN indicates the introduction of a medium risk the Project Director must approve the change.

Table 1: Change Management Approval Matrix

The [Capital Expenditure Authorization Procedure – LCP-PT-MD-0000-FI-PR-0001-01](#) provides additional detail on change approval authorization. Further details on risk classification are provided in the [Project Risk Management Plan – LCP-PT-MD-0000-RI-PL-0001-01](#).

9.0 CHANGE MANAGEMENT PROCESS OVERVIEW

Figure 3 below provides a high level summary of the change management process that has been developed for the Lower Churchill Project, Phase I comprising the six (6) distinct steps while Attachment 2 describes an overview of the Change Management process with respect to some of the typical inputs / outputs and categorizations..

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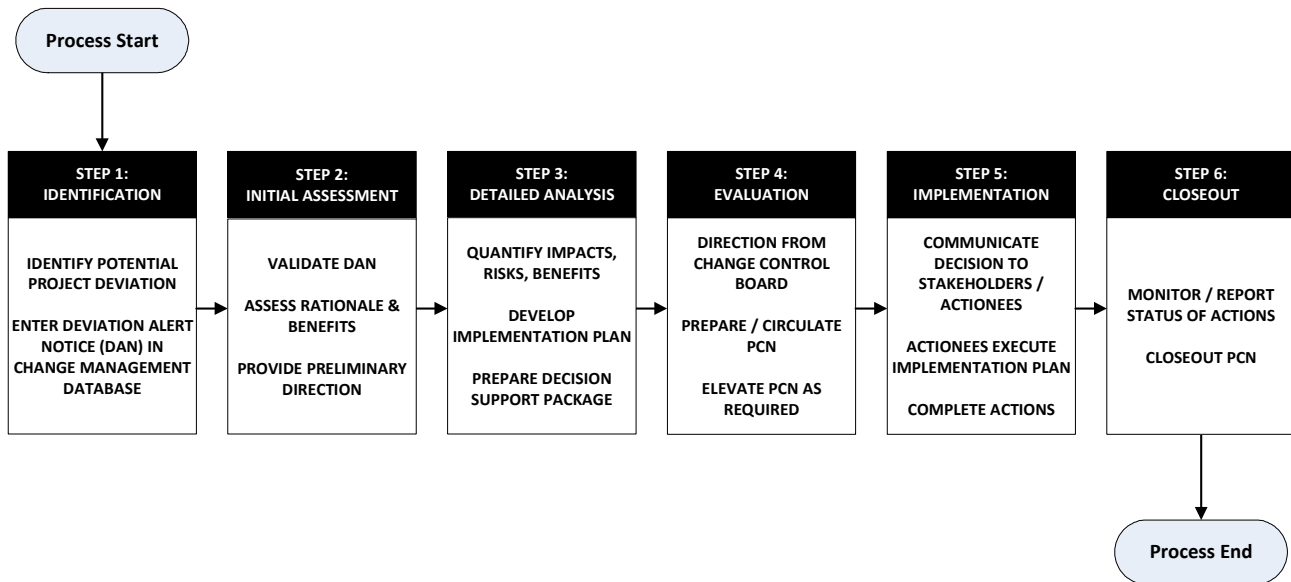


Figure 3: High Level Change Management Process Flow

In order to understand this change management process and how it is applied, it is essential to distinguish between **“Deviation”** and **“Project Change”**. As defined in Section 3.0 *Definitions*, a Deviation is a change / modification / alteration from established Project *guidelines, plans, or intentions*. In order for a Deviation that is either anticipated or is under consideration to be assessed it must be documented in the form of a Deviation Alert Notice (DAN).

Only a deviation that is confirmed to represent a change from the project baseline can be classified as a “Project Change”. In order for a Deviation to be confirmed as a Project Change the DAN must be reviewed and understood and the actions necessary to implement or accommodate the change clearly identified. Until such time it is an unresolved change issue and an appropriate resolution should be aggressively sought by the Project Team. When a DAN has been reviewed, understood and verified to represent a Project Change, a Project Change Notice (PCN) must be prepared for review and acceptance by the CCB. The PCN shall contain details including justification / rationale for the change; its impact on the project with respect to cost, schedule, design and other areas; project risk exposure; and an implementation plan including the actions necessary to implement the change.

Change management meetings will be scheduled on regularly occurring basis as well as on an ad hoc basis as deemed necessary by the Change Management Lead. These meetings will include the Change Control Board members and will be used to discuss Deviation Alert Notices and Project Change Notices, establish further understanding of them, and determine whether they should be progressed or rejected.

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10.0 CHANGE MANAGEMENT BETWEEN DECISION GATES

In order to understand the nature of a change or its impact on the Project, the Project Delivery Team must be able to reference and measure from a documented – and *commonly understood* – **Project Baseline**. The Project Baseline includes the definition of the scope at any phase in the project, the schedule, the budget, the method of delivery and risk under which it will be delivered or performed and is captured in the respective controlled project documents (see Figure 4). (Reference: Step 5 of the Integrated Project Control Process Cycle, [Project Controls Management Plan – LCP-PT-MD-0000-PC-PL-0001-01](#)).

Change and optimization of the physical plant to improve project performance occurs between Decision Gate 2 and Decision Gate 3, however it must be efficiently managed. During this period, Gateway Phase 3, the focus is on *Scope Tracking and Management*, while post Decision Gate 3 during “scope-lockdown” the focus is clearly on *Change Management*.

It is important to understand that increased detail of the Project Baseline between Decision Gate 2 and Decision Gate 3, as documented in Controlled Project Documents, does not necessarily represent change, however, **changes to the details or intent** contained within these Controlled Project Documents do represent change. Differentiating between change issues and the evolution of the Project Baseline is a critical activity that is the responsibility of the Project Team and is made simpler by a well documented and approved baseline through the use of Controlled Project Documents.

The goals and expectations of tracking and managing the project scope include:

- Identifying and obtaining alignment for major changes as they occur in a timely manner.
- Documenting and controlling pre-investment in excess of the design basis.
- Securing approval for Project Changes consistent with the required levels of authority.
- Avoiding unexpected project cost growth between the Decision Gate 2 estimate and the Decision Gate 3 estimate. This goal requires regular reporting of cost and schedule developments, as changes occur.
- Facilitating the cost and schedule reconciliation at the completion of the Gate 3 estimate.

Between Decision Gate 2 and Decision Gate 3 it may be impractical to raise an individual PCN for each and every change to a Controlled Project Document. For example, there might be multiple and frequent changes to the Master Contract Package List. The Change Management Lead will have the latitude to group changes into one or several PCNs where the changes have a logical relationship that supports such grouping.

As illustrated in Figure 4 below, between Decision Gate 2 and Decision Gate 3 the number of Controlled Project Documents increases. As a result the Change Management process has a broader scope than does the Scope Tracking and Management process.

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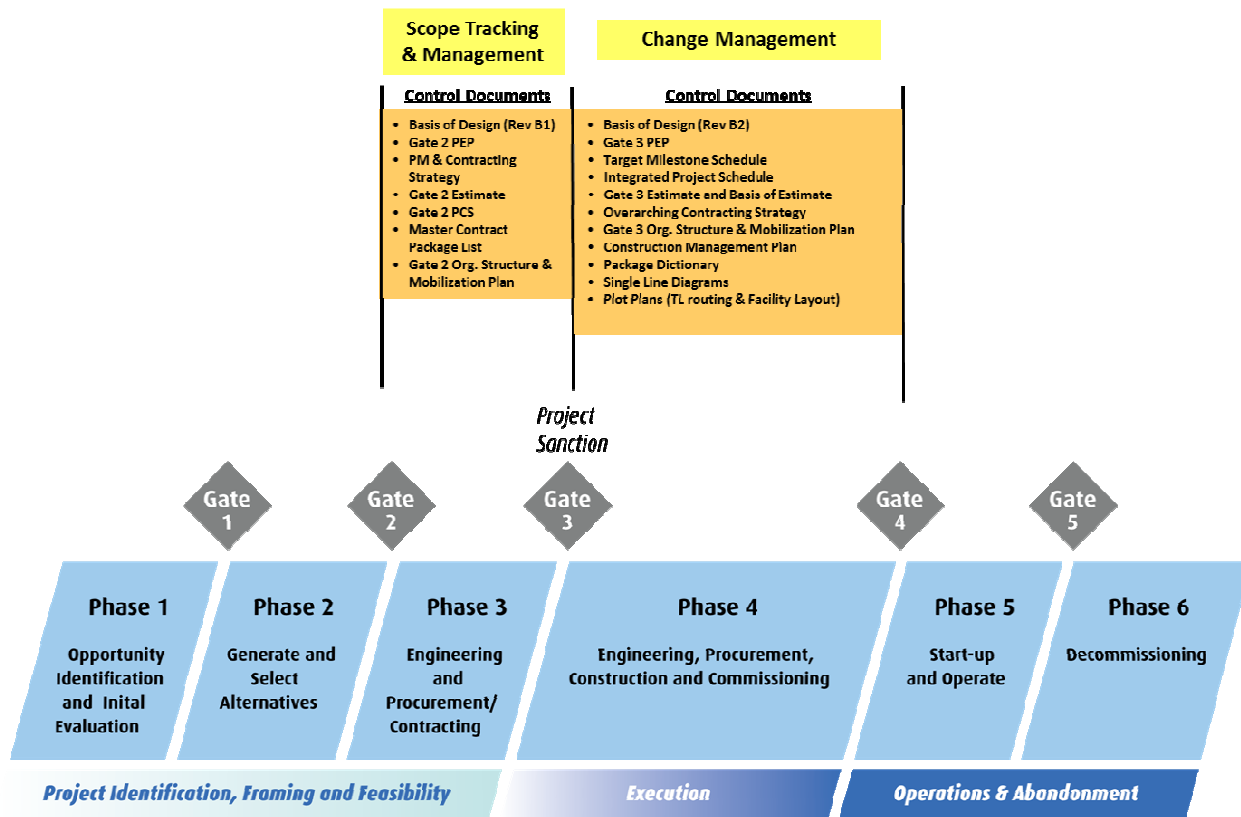


Figure 4: Development of Controlled Project Documents

As of Decision Gate 2 the Controlled Project Documents, listed in Table 2 below, capture the Project’s Baseline and form the basis from which Scope Tracking and Management is administered under this Project Change Management Plan. Project Changes that affect these documents, pre-Decision Gate 3, require approval under this process.

DECISION GATE 2 CONTROLLED PROJECT DOCUMENTS		
Document Title	Document Number	Rev.
Lower Churchill Project – Basis of Design	LCP-PT-ED-0000-EN-RP-0001-01	B1
Project Execution Plan (Scope and Approach)	LCP-PT-MD-0000-PM-PL-0001-01	A1
Project Control Schedule	LCP-PT-ED-0000-EP-SH-0002-01	B1
Gate 2 Capital Cost Estimate Report – Muskrat Falls	MFA-PT-ED-0000-EP-RP-0001-01	B1
Gate 2 Capital Cost Estimate Report – Island Link	ILK-PT-ED-0000-EP-RP-0001-01	B1
Muskrat Falls and Island Link Master Contract Package List	LCP-PT-ED-0000-SC-LS-0001-01	B1
Contracting & Project Management Strategy	LCP-PT-ED-0000-PM-ST-0001-01	B1
Gate 2 Organization Structure & Mobilization Plan (as contained in the 2011 Capital Budget Submission)	Record No. 200-160244-00001	N/A

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Table 2: Decision Gate 2 Controlled Project Documents

As of Decision Gate 3, changes that impact the expanded listing of Controlled Project Documents, listed in Table 3 below, require an approved PCN:

DECISION GATE 3 CONTROLLED PROJECT DOCUMENTS		
Document Title	Document Number	Rev.
Lower Churchill Project – Basis of Design	LCP-PT-ED-0000-EN-RP-0001-01	B2
Project Execution Plan (Scope and Approach)	LCP-PT-MD-0000-PM-PL-0001-01	B2
Target Milestone Schedule	LCP-PT-ED-0000-EP-SH-0001-01	B2
Integrated Project Schedule	LCP-PT-MD-0000-PC-SH-0001-01	B1
Decision Gate 3 Basis of Estimate	LCP-PT-ED-0000-EP-ES-0001-01	B1
Overarching Contracting Strategy	LCP-PT-MD-0000-PM-ST-0002-01	B1
Construction Management Plan	LCP-PT-MD-0000-CS-PL-0001-01	B1
LCP Master Package Dictionary	LCP-SN-CD-0000-PM-LS-0001-01	B1
Project Delivery Team Organization Charts	LCP-PT-MD-0000-PM-CR-0001	B1
Single Line Diagrams (SLDs) used to substantiate the scope as captured in the project cost and schedule estimate.		
Plot plans / general arrangements (GAs) used to substantiate the scope as captured in the project cost and schedule estimate.		

Table 3: Decision Gate 3 Controlled Project Documents

11.0 ATTACHMENTS

Attachment 1 Basis of Change

Attachment 2 Change Management Basic Elements Overview

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ATTACHMENT 1: Basis of Change

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BASIS OF CHANGE

There are a number of conditions that may result in change that are likely to be encountered during the Project. The more common changes to scope, cost, and schedule baselines such as additions, deletions, quantity variations, are typical, easily recognized, and easily controlled. In addition to these are a number of more obscure or subtle change causal factors – some of which may first manifest themselves as trends. These will require close scrutiny in order to determine whether they require additional attention through change management processes, particularly by the Scope / Project Managers. A number of them are described below in some detail to assist in their recognition and mitigation:

Scope Creep

Scope creep results from minor scope element changes which culminate in a significant change generally resulting from poorly defined scope of work and Work Breakdown Structure. This type of change is gradual and it could become substantial if the proper mechanisms are not in place to manage and control it. The Area Managers and Package Leaders have primary responsibility for the identification and control of Scope Creep in order to avoid Project Change.

Quality Creep

Changes resulting from a lack of understanding of or adherence to the Project's quality standards and specifications that are documented in the [Overarching Quality Management Plan – LCP-PT-MD-0000-QA-PL-0001-01](#), will result in Non-Conformance and Corrective Actions issued by the Quality department.

Level of Effort

Level of effort change is produced by continual refinement of alternatives, unknown obstacles and inaccurate data. Scope creep can also cause an increase in the level of effort, which could ultimately translate into increased costs and delays. The approach of encouraging the advancement of all ideas and concepts during the concept selection phase, a rigorous evaluation and selection process, then a "freezing" of concepts and designs and rigorously validating any proposed restudy or changes generally minimizes on-going "refinements" and allows the PMT to focus on producing the accepted concept. The Project Director and Project Managers have primary responsibility for identification and control of risk of Project Change associated with level of effort.

New Technology and Tools

The adoption of new technology or tools may result in an alteration of normal project deliverables and thereby impact cost and schedule. The adoption of new technologies and tools and their potential impact should be included in the Project's execution plan. The introduction of previously unused

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technologies for producing design or for construction is always a risk as a result of the lack of familiarity and the associated learning curve. Similarly, the adoption of "new" technologies in the Project will often introduce a level of uncertainty and risk of Project Change. The Project's Risk Coordinator with support from the Engineering Managers has primary responsibility for identification and control of risk of Project Change associated with the introduction of new technology and tools.

Performance and Site Conditions

Performance and site conditions produced by the lack of details about the site – especially the "hidden" details such as underground obstacles or an inadequate understanding of all of the performance conditions such as local environmental conditions, access, space and work rules: all of which could affect performance. The Project's Risk Coordinator has primary responsibility with support from the Engineering Managers and Construction Specialists for identification and control of risk of Project Change associated with performance and site conditions.

Project Risks and Corresponding Change

Risk management practice requires the development of a risk monitoring plan which identifies the risks being tracked, the signals and indicators that would alert the PMT to a change in either the probability of occurrence or its potential impact, and the monitoring and reporting actions that will be taken to track the risk element. A risk monitoring system is one tool that the PMT use in identifying and tracking potential change issues.

The process of identifying and assessing potential change is enhanced if the PMT has identified and understands the risks involved in the Project, its delivery and the impacts that those risks - if realized - would have on the Project Baseline. The [Project Risk Management Plan – LCP-PT-MD-0000-RI-PL-0001-01](#), provides detailed guidance on assessing, planning and managing risks during the Project's execution. The Project's Risk Coordinator has primary responsibility, with support from relevant PDT members, for identification and control of risk.

Lessons Learned

Understanding the experiences of others performing similar projects is a means of better understanding and preparing for the changes that may occur on the Project. Hence, the lessons learned process is another source of knowledge for the PMT to utilize in their preparation for identifying change.

This type of change might be initiated as the result of project development processes such as: HAZOP, HAZID, Safety Integrity Level, Cause and Effect analysis, Reliability Analysis Modeling, Failure Mode and Effects Analysis, Fault Tolerant Design Analysis, and Environmental Impact Analysis. The Engineering Managers have primary responsibility with support from relevant functional managers for identification and control of change resulting from the application of lessons learned.

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Contract Change

Contract change outlines any changes to the contractor's scope and/or contract's terms and conditions. Project change may result in a contract change. The mechanism for authorising and formalising a contract change, also known as change to services, is a Change Order. Within the change management process a contract change can include, but not be limited to the following contractual activities:

- technical issues
- scope
- duration
- termination
- schedule
- contact details
- approved personnel

The need for a Contract Change can be identified by the PMT, the construction and installation contractors, or the material and equipment vendors and suppliers. While contract changes are issued and administered by the Supply Chain Manager within the framework of the [Contract Administration Management Plan – LCP-PT-MD-0000-CA-PL-0001-01](#), initiation of contract changes shall only be carried out as a part of the overall change management process.

Engineering Design Changes

In theory change management is applicable up to the completion of detailed engineering (i.e. design freeze) after which a management of no-change (except in instances where a design is not safe or does not work) process would prevail. In practice design changes can occur at every stage of the design process, from the stage at which the project deliverables are defined, to when the design is proven fit for delivery, commissioned and operated. An effective and rigorous process provided to ensure design changes are documented, communicated, planned, and implemented is critical to the overall success of the Project. Processes including Technical Queries, Site Queries, and Concession Requests will often trigger potential design changes and require particular attention in order to avoid the introduction of unauthorised, unintentional, or inadequately assessed changes.

The hierarchy for resolving engineering design change is addressed below for the three major phases of project development. Additional details may be found in the [Engineering Management Plan – LCP-PT-MD-0000-EN-PL-0001-01](#).

Prior to Design Freeze, the task for technical design change decisions that are within the boundaries of the design philosophies and design basis are delegated to the Package Engineers with responsibility for design functionality held by the Engineering Manager. If a technical design change, deviation, or exception is in conflict with the Controlled Project Documents the Engineering Manager is responsible

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for ensuring the matter is brought forward to a Change Control Board meeting in order to table the proposed Project Change for clear direction on how best to proceed.

Post Design Freeze and prior to start of construction for the respective package, the task of identifying impending technical design changes is delegated to the Package Leaders with responsibility for deciding whether a change has merit delegated to the Area Managers in consultation with the Engineering Manager. If a proposed Project Change is the result of a design defect or the correction of an un-safe situation, the respective Area Manager, Project Manager as well as the Change Control Board must be advised of the cost, schedule, and the risk impact to the Project associated with maintaining compliance with the design basis in order to determine how to best proceed.

After construction begins on any package technical errors and omissions are the only changes that will be given consideration. Site Engineers in consultation with Package Engineers and the Engineering Managers will evaluate Construction Site Events for expeditious and safe solutions that comply with applicable stamps, license, codes, standards and specifications and minimize the impacts to resource downturn. Solutions that are implemented will be red-lined and made part of the as-built drawing set. During this time the Engineering Manager has responsibility for the acceptance of all solutions recommended by the Site Engineers.

Technical Document and Drawing Revision

With respect to revisions to engineering and technical drawings the PDT, as well as the EPC contractors with PDT oversight, have responsibility for, the development and implementation of procedures for managing changes to technical drawings and documents. This procedure should include

- utilising both the Project and Contractor's systems;
- defining the types of changes involved and Company review requirements, including those for minor design developments;
- complying with Project documentation formatting requirements; and
- guidance that other drawing revisions are subject to document management, whether or not they are as a result of change management.

Estimating and Budget Baseline Change

Estimating and Budget baseline changes may occur as the result of a PCN that is approved by the CCB. The respective Project Controls Lead with the support of the Cost Control representative is responsible for ensuring the accuracy of estimate and/or budget Baseline changes submitted to the Change Control Board as part of the subject PCN. The CCB will evaluate the merit, risk, and impact on the Project and either approve or reject the Project Change Notice.

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Estimating changes shall be consistent with the basis upon which the Project was sanctioned. Adjustments for inflation, escalation and currency exchange in the estimate shall be pointed out to the CCB.

Planning and Schedule Baseline Change

Planning and Schedule baseline changes may occur as the result of PCN that is approved by the CCB. The respective Project Controls Lead with the support of the respective Planner, is responsible for ensuring the accuracy of planning and/or schedule Baseline changes submitted to the Change Control Board as part of the subject PCN. The CCB will evaluate the merit of, and risk and impact on the Project and either approve or reject the Project Change.

Schedule changes shall be consistent with the basis upon which the Project was sanctioned. Adjustments to float and critical path shall be pointed out to the CCB.

Other Independent Change Processes

In addition to these bases of change there are changes that may occur that are addressed by other processes. These may impact the project in other ways or indirectly result in project changes.

Organizational Change

Organizational change may occur during each stage of project development and is a normal process as resource demands are adjusted to meet the Project's requirements. Organization change can disrupt project continuity with cost and schedule impacts if not managed well. Although some aspects of organisational change are subject to the [Management of Staffing Plan and Forecast – LCP-PT-MD-0000-PC-PR-0015-01](#), there is need to bring awareness of such change via the Change Management process.

Administrative Process Change

Administrative processes will be implemented and retired during the course of the Project to facilitate control, data logging, payments and information flow across the organization. The Quality Manager is accountable for development, control, communication, implementation and monitoring of processes affecting the PDT. Interface of the PDT's administrative processes with those of any contractors will be carried out through coordination procedures that will included in the scope of work in the relevant contract or service agreement.

Administrative processes and their changes shall be published and accessible by the PDT. Notices of change shall be issued monthly and historical processes retained for reference in the event of dispute.

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ATTACHMENT 2: CHANGE MANAGEMENT BASIC ELEMENTS OVERVIEW



LCP CHANGE MANAGEMENT OVERVIEW

