Nalcor Energy – Lower Churchill Project

Project Change Management Plan

LCP-PT-MD-0000-PM-PL-0002-01

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Inter-Departmental / Discipline Approval (where required)

Department	Department Manager Approval	Date
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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 methods and processes to be used for the project team to effectively identify, screen, and incorporate changes to the baseline, including project delivery model. 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 *Project Change Management Plan* provides the both the strategy for managing change and the formal process to:

- Identify potential changes and the conditions that generate them;
- Identify high level contingency plans or responses to potential changes;
- Assess the need to adopt the potential changes including the cost benefit;
- Evaluate the impacts of the potential change to the Project baseline;
- Ensure health, safety, environment, operability and maintainability requirements are considered as part of the evaluation of potential change;
- Provide approval / acceptance of the potential change by all stakeholders;
- Implement action plans to address the change; and
- Documenting lessons learned with respect to the change.

It is imperative that this *Project Change Management Plan* is understood and used effectively by all Nalcor Energy – Lower Churchill Project (NE-LCP) team members and Nalcor co-venture partners, while the Engineering, Procurement, and Construction Management (EPCM) consultant, and Engineering, Procurement and Construction (EPC) contractors must have change management plans that align with this Plan.

This plan ensures project changes to applicable documents and processes are identified, evaluated, approved, documented, implemented, and closed out properly. It also describes the areas subject to change, the procedures to be used and maintained, and the roles, responsibilities, and approval limits for change management.

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" of the LCP Phase I:

- Muskrat Falls Generation
- Labrador – Island Transmission Link
- Labrador Transmission Assets

Another important element of the overall Lower Churchill Project Phase I, is the Maritime Link Sub-Project, to which the change management concepts contained herein are applicable and directly transferrable.

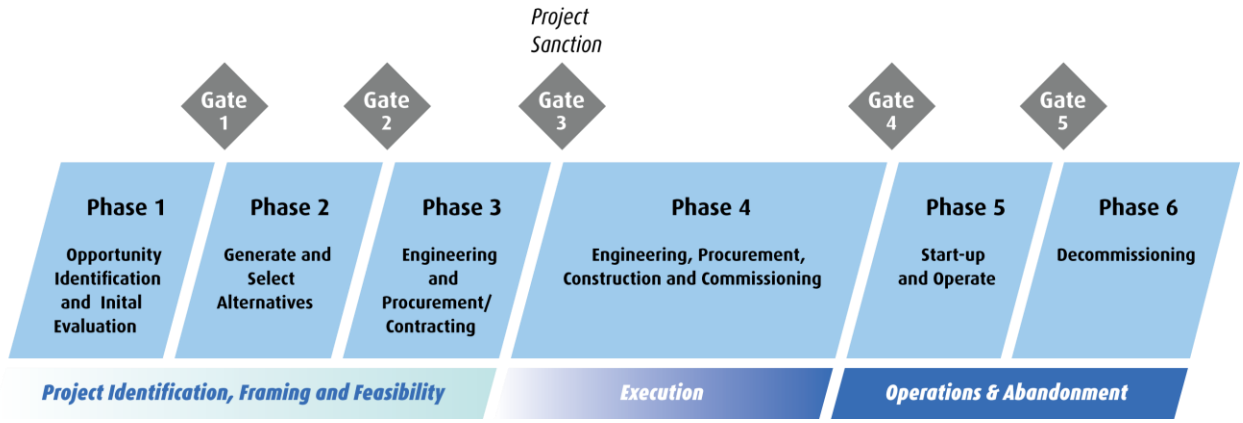


Figure 1: Gateway Process

The Change Management process provided within this Plan process is applicable to all changes that have the potential to impact the Project scope, cost and schedule baseline, 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.

Change management is a shared responsibility between the NE-LCP PMT, EPCM Consultant, the construction and installation contractors and the material and equipment vendors and suppliers working on the Project. Consultant, contractor and supplier change management processes will feed into the central Project process detailed within this plan. All change management requirements for contractors will be specified in the contract.

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), rather than directly by Nalcor itself. The detailed engineering change management processes (e.g. redline mark-ups, changes 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

Baseline In project control, the reference plans in which cost, schedule, scope and other project performance criteria are formally compared against for assessment of progress and performance, and the

comparison benchmark for identifying cost and schedule deviations.

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 *Change Approval* for additional details.

Change Control Board

This is a panel within the Project Management Team that has responsibility for determining whether proposed project changes shall be approved and developed further or rejected. It is comprised of the following members:

1. Project Director
2. General Manager Finance
3. Muskrat Falls Generation and Labrador Island Transmission Link Manager
4. Marine Crossings Manager
5. Deputy Project Manager
6. Area Manager
7. Engineering Manager
8. Business Services Manager
9. Environmental and Aboriginal Affairs Manager
10. Quality Assurance Manager
11. Health & Safety Manager
12. Supply Chain Manager
13. Project Controls Lead

Although higher levels of authority may be required to approve a Project Change they do not represent the Change Control Board.

Change Management Database

A database that contains a summary of all proposed changes (Deviation Alert Notices and Project Change Notices) and their statuses.

Change Order

A Change Order is a formal directive from Nalcor to the Consultant or a contractor / supplier to implement a change or amendment to a project contract.

Construction Site Event

Any unforeseen circumstance which occurs on the site during construction, installation or operations that requires immediate Corrective Action is classified as a Construction Site Event. Construction Site Events *may* result in a Project Change.

Controlled Project Documents	These are the Project documents identified in Section 10.0 *Change Management between Decision Gates* which provide the basis for determining what constitutes a project change. They include key control documents associated with the Gateway Process and other documents requiring control throughout project execution.
Corrective Action	Corrective action is a term used to describe an action which restores the course of a project in line with the plan. This term is generally associated with a quality function that strives to keep a project delivering to plan. Corrective Action(s) can have an impact on project resources (schedule, budget) as these resources may be required to cause a corrective action to occur. Corrective Action(s) are not considered to be a part of the change management process as they represent the level of effort required to deliver ***according*** to plan and not the effort needed to change from plan. A Corrective Action is not a Deviation or Project Change as these actions represent intentional departures from (or) change in the project plan.
Current Control Budget	The Original Control Budget plus the estimated value of any approved scope additions or deletions. *See Project Controls Management Plan – LCP-PT-MD-0000-PC-PL-0001-01, for additional detail.*
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 *guidelines, plans, or intentions*.
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 Nalcor Change Management Database. A Deviation Alert Notice may originate from Nalcor, the EPCM Consultant, or a subcontractor. Deviation Alert Notices are reviewed by the Change Control Board to determine how they will 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 must be processed through the change management Process.
Estimate Contingency	Estimate contingency is a provision made for variations to the basis of an estimate of time or cost that are likely to occur, that cannot be specifically identified at the time the estimate is prepared but, experience shows, will likely occur. Contingency does not cover scope changes from totally external factors such as strikes or natural disasters, escalation or foreign currency impact. Deviations and the Project Changes that may result from them should be assessed with respect to their potential impact on contingency. *See Project Controls Management Plan – LCP-PT-MD-0000-PC-PL-0001-01, for additional detail.*
Forecast Change Notice	This is a recommendation prepared by the Cost Engineer / Controller recommending an adjustment to the Final Forecast Cost or completion schedule. *See Project Controls Management Plan – LCP-PT-MD-0000-PC-PL-0001-01, for additional detail.*
Forecast Final Cost	The Forecast Final Cost is the anticipated cost of a project or component when it is complete. It is sum of the value of the Incurred Costs plus the estimated value of work left to complete, including approved Forecast Change Notices. Also referred to as Estimation at Completion. *See Project Controls Management Plan – LCP-PT-MD-0000-PC-PL-0001-01, for additional detail.*
Management Reserve	The approved capital budget held in reserve and controlled by Gatekeeper, which is used to provide a higher confidence cost level (i.e. comfort factor) is known as the Management Reserve. *See Project Controls Management Plan – LCP-PT-MD-0000-PC-PL-0001-01, for additional detail.*
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, labor productivity variances, etc.) and other developments within the defined project baseline scope, cost, and schedule. Approval of Non-Scope Changes does not affect the Current Control Budget, but rather may influence the Final Forecast Cost. Non-Scope Changes must be funded by Estimate Contingency.

Original Control Budget	The budget that represents the original approved scope of work and work plan is the Original Control Budget. *See Project Controls Management Plan – LCP-PT-MD-0000-PC-PL-0001-01, for additional detail.*
Project Budget	This is the translation of the Sanction Cost Estimate into man-hour rates and quantity units of production, allocated by Work Breakdown Structure (WBS) components so that these cost elements can be compared to actual costs and variances developed to highlight performance and alert those responsible to implement corrective action if necessary.
Project Change	A Project change is a deviation which represents a change or departure from the Project baseline scope, estimate, schedule, intended plant quality, HSE targets, project policy, or execution plan that results in an addition to or reduction in the Original Control Budget or baseline Project Control Schedule including correction for scope / estimate omissions, or change in execution approach.
Project Change Notice	This is the mechanism used to facilitate the processing of potential Project Changes. A Project Change Notice (PCN) is represented by both a form and a record which are generated in the Nalcor Change Management Database. Project Change Notices must be reviewed by the Change Control Board for approval or rejection.
Project Management Team	The Project Management Team (PMT) is led by the Project Director and is comprised of all managers on the NE-LCP Project Team, including the Area Managers. The PMT meets periodically, to identify issues that may affect cost and schedule and to determine how such issues should be resolved.
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.*
Project Team	This team includes all NE-LCP personnel assembled to develop and execute a project from planning through start-up. The Project Team (PT) is dedicated to managing the overall project including significant focus on monitoring and controlling the EPCM

Consultant's and contractor's performance in execution of the work.

Risk A risk is an uncertain event or condition that, if it occurs, has a positive or negative effect on a project's objectives.

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. Scope Change within the project boundaries results in the need to adjust the control budget through allocation of estimate contingency to support the implementation of the scope change, therefore increasing the Original Control Budget (which becomes the Current Control Budget). In the case of Scope Changes outside the Project's boundaries, Management Reserve must be allocated by the Gatekeeper to support implementation of the Scope Change.

Trend The outcome of a cost and schedule analysis with indicates the potential future state of the Project based on actual and past performance overlaid on approved Project baselines. *See Project Controls Management Plan – LCP-PT-MD-0000-PC-PL-0001-01, for additional detail.*

4.0 Abbreviations and Acronyms

AAL	Approval Authorisation Limit
CCB	Change Control Board
DAN	Deviation Alert Notice
E&AA	Environmental & Aboriginal Affairs
EPC	Engineer, Procure and Construct
EPCM	Engineering, Procurement and Construction Management
HAZID	Hazard Identification Review
HAZOP	Hazard Operability Review
H&S	Health and Safety
NE-LCP	Nalcor Energy – Lower Churchill Project
PCN	Project Change Notice
PMT	Project Management Team
PT	Project Team
WBS	Work Breakdown Structure

5.0 Reference Documents and/or Associated Forms

LCPT-MD-0000-PM-PR-0001-01	Gateway Process
LCP-PT-MD-0000-PC-Pl-0001-01	Project Controls Management Plan
LCP-PT-MD-0000-FI-PR-0001-01	Capital Expenditure Authorization Procedure
LC-G-002	EPCM Services Agreement
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
TBD	Integrated Project Schedule
TBD	Gate 3 Capital Cost Estimate reports
LCP-PT-MD-0000-PM-ST-0002-01	Overarching Contracting Strategy
LCP-PT-MD-000-CS-PL-0001-01	Construction Management Plan
MFA-SN-CD-3300-EN-LS-0001-01	Package Dictionary
LCP-PT-MD-0000-RI-PL-0001-01	Project Risk Management Plan
LCP-PT-MD-0000-CA-PL-0001-01	Contract Administration Management Plan
LCP-PT-MD-0000-EN-PL-0001-01	Engineering Management Plan
LCP-PT-MD-0000-HR-PL-0001-01	Human Resources and Organization Effectiveness Management Plan
LCP -PT-MD-0000-IS-RP-0001-01	NE-LCP and EPCM Consultant Interface Business Process Models
LCP-PT-MD-0000-PR-PL-0001-01	Procurement Management Plan
LCP-PT-MD-0000-AD-PL-0001-01	Administrative Management Plan

6.0 Responsibilities

Project Gatekeeper	Final authority for decisions on Project Changes that impact the Project's boundaries, execution / delivery or operating philosophies, moves the Project into a high risk zone, or as determined by the Change Management Approval Matrix included in Section 8.0 *Change Approval* 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, moves the Project into a high risk zone, or as determined by the Change Management Approval Matrix included in Section 8.0 *Change Approval* of this plan and in accordance with the Capital Expenditure Authorization Procedure – LCP-PT-MD-0000-FI-PR-0001-01.
Project Director & Project Managers	Demonstrate leadership and commitment to the principles of the change management system. • Ensure the PT appropriately applies and follows the processes described in the change management system. • Ensure changes are timely and properly approved prior to implementation. • Provide the necessary resources to achieve the process objectives. • Review and approve all PCNs. • Ensure Operations, Health and Safety, E&AA, external interfaces (such as partners), and other appropriate members of the PT understand their roles and responsibilities in reviewing and providing input to the change management approval process. • Provide a focus on change management utilization (PCNs are prepared and approved prior to implementation of the change) as well as recognition of change management Cycle Time. • Develop and document an agreement with the Project Gatekeeper and Project VP defining the method of securing PCN approvals. • Note: Project Director is the owner of the Project Contingency.
Deputy Project Manager (Muskrat Falls Generation and Labrador – Island Transmission Link)	• Owner of the Project Change Management Plan. • Accountable for the Plan's implementation and ensure the necessary resources are available to support the change management process. • Champion and communicate the importance of discipline and proactive change management. • Champion and communicate the importance of risk screening as an essential element of change management. • Review and provide direction on all PCNs prior to

their submission to the Change Control Board.

Change Coordinator

The Change Coordinator is responsible for the implementation of this *Project Change Management Plan*, including, ensuring project personnel are aware of the process, 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 approved DANs and PCNs are accurately reflected in the project baselines and forecasts.

Specific activities include:

- Work with Project Controls to compare current project activities and performance against approved budgets and scope and highlight any areas of concern;
- Maintain the Project Change Management Database including the status of DANs and PCNs;
- Ensure Project Changes are properly routed and approved as per the approval requirements provided in Section 8.0 *Change Approval*.
- Facilitate the generation of DANs and PCNs by providing guidance to the Originators and ensuring that approvals are obtained in a timely fashion when warranted;
- Facilitate the processing of DANs and PCNs;
- Assist Originators in compiling all DAN and PCN supporting documentation;
- Prepare (or) oversee preparation of PCNs Implementation Plans
- Organize, prepare, and moderate regular Change Control Board meetings;
- Provide DANs and PCN status updates to Originators and management;
- Produce (or) oversee production of monthly DAN and PCN reports for input into the Project monthly report;
- Coordinate impact analysis of DANs and PCNs; and
- Interface with Supply Chain, Engineering,

Construction and others functional groups to identify impact of all DANs and PCNs.

Scope / Area Manager

The Scope / Area Manager is the Sponsor for any proposed deviation or change within their area of responsibility. This includes responsibility for stewarding the change through the change management process.
Specific activities include:

- Checks the completeness and validity of the initiated DAN including designation of "Discretionary" or "Non discretionary"
- Respond to system messages regarding the progression of changes through the system.
- Review and ensure that all PCNs within their area of responsibility are complete and accurate and that the appropriate stakeholders have been identified and involved prior to tabling to the Change Control Board for approval.
- Responsible for the implementation of approved Deviations and Project Changes. The Scope / Area Manager participates in various change management processes including the Change Control Board meeting.
- Responsible for verification of completion of actions / requirements associated with approved DANs and PCNS within their area of responsibility prior to closeout.

Change Analysis Team

Team or working group of appropriate functional expertise that may be assembled either formally or informally to analyse a proposed Project Change in order to "quantify" the direct and indirect benefits and impacts the proposed Project Change in line with the Project's business case.

Change Control Board

The Change Control Board, led by the Project Director, serves to determine the validity and impacts of all potential/pending (outstanding) Deviations and Project Changes. Assessments will be made by the Change Control Board to determine whether each outstanding DAN and PCN is to be further progressed beyond its current status, implemented, or rejected.

The Change Control Board 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. Other individuals may be required to attend Change Control Board meetings from time to time to provide further expertise and/or insight to support the decision making process (i.e. Scope / Area Manager, engineering discipline specialists, contractor representative, etc.)
Deviation Originator	The individual who is made aware of a deviation within their area and as a result is tasked with raising the matter in the change management system. Specific activities include: • Responsible for clearly documenting Deviations via Deviation Alert Notices (DANs), ensuring awareness and understanding of their potential impacts by the responsible Scope / Area Manager, and supporting the resolution of all identified Deviations. • Supporting the Change Coordinator in developing / preparing DANs for tabling at the Change Control Board meetings.
Engineering Manager (including role of Technical & Design Integrity Manager)	• Review and approve all PCNs that impact the basis of design, design philosophies, criteria, standards and guidelines. • Update the Project's Basis of Design with respect to the impact of approved Project Changes.
Project Controls Lead	• Assess cost and schedule implications of proposed Project Changes; • Track Project Changes cost impact and compare against the contingency rundown curve; • Update Current Control Budget (CCB) and Final Forecast Cost (FFC) using information from Change Management Database. • As a regular member of the CCB, review and endorse all PCNs.
H&S Manager	• Review provide input as appropriate and endorse all PCNs that have the potential to impact Health and Safety to ensure health, safety, and security

	requirements are met. Also, when the subject of a DAN or PCN is within their remit, assume the role of Scope Manager.
E&AA Manager	• Review, provide input as appropriate, and endorse all PCNs that have the potential impact on the Environmental or Aboriginal Affairs to ensure any concerns understood and met. Also, when the subject of a DAN or PCN is within their remit, assume the role of Scope Manager.
Quality Manager	• Review, provide input as appropriate, and endorse all PCNs that have the potential to impact quality systems to ensure quality requirements are met. Also, when the subject of a DAN or PCN is within their remit, assume the role of Scope Manager.
Ready for Operations Manager	• Review, provide input as appropriate and endorse all PCNs that have the potential to impact Operations to ensure operability and maintainability requirements are met. Also, when the subject of a DAN or PCN is within their remit, assume the role of Scope Manager.
Project Risk Coordinator	• Review, provide input as appropriate, and endorse all PCNs to ensure that risk levels relative to an unmitigated base case have been adequately identified, assessed, and mitigated as appropriate. • Coordinate major risk assessments for changes and specification deviations which identify the need for a risk assessment after completion of the risk screening. • Track any action items generated by risk screening, or mitigation actions identified to maintain acceptable risk levels.
Supply Chain Manager	• Advises of contractual implications of any proposed Project Change. • Review provide input as appropriate, and endorse all PCNs that have the potential to impact Supply Chain functions to ensure that associated requirements are met. Also, when the subject of a DAN or PCN is within their remit, assume the role of Scope Manager. • Where applicable, implement approved PCNs in

	contracts via Change Orders, provides procurement services, issues new contracts, etc.
Project Team Members,	• Understand and adhere to the change management process, and provide information required by the Change Coordinator to facilitate processing of changes. • Identify Deviations and raise Deviation Alert Notices. • Process and develop Deviations as Project Change Notices as appropriate.
EPCM Consultant	• Establish a change management plan that both complies with the intent of and identifies how it engages with this Plan (as per Exhibit 5, Section 8 of the EPCM Services Agreement – LC-G-002). • Ensure that Contractors & Suppliers establish change management plans that both comply with the intent of and identify how they engage with either their plan or this plan as appropriate. • Identify Deviations and alert Nalcor of their existence in order to have them registered in the Nalcor's system as DANs and PCNs as appropriate. • Provide input and support on the management of DANs and PCNs.
Contractors & Suppliers	• Establish change management plans that both comply with the intent of and identify how they engage with either the EPCM Consultant's change management plan or this plan as appropriate.

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 part 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 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, 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 Changes

NE-LCP's 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.

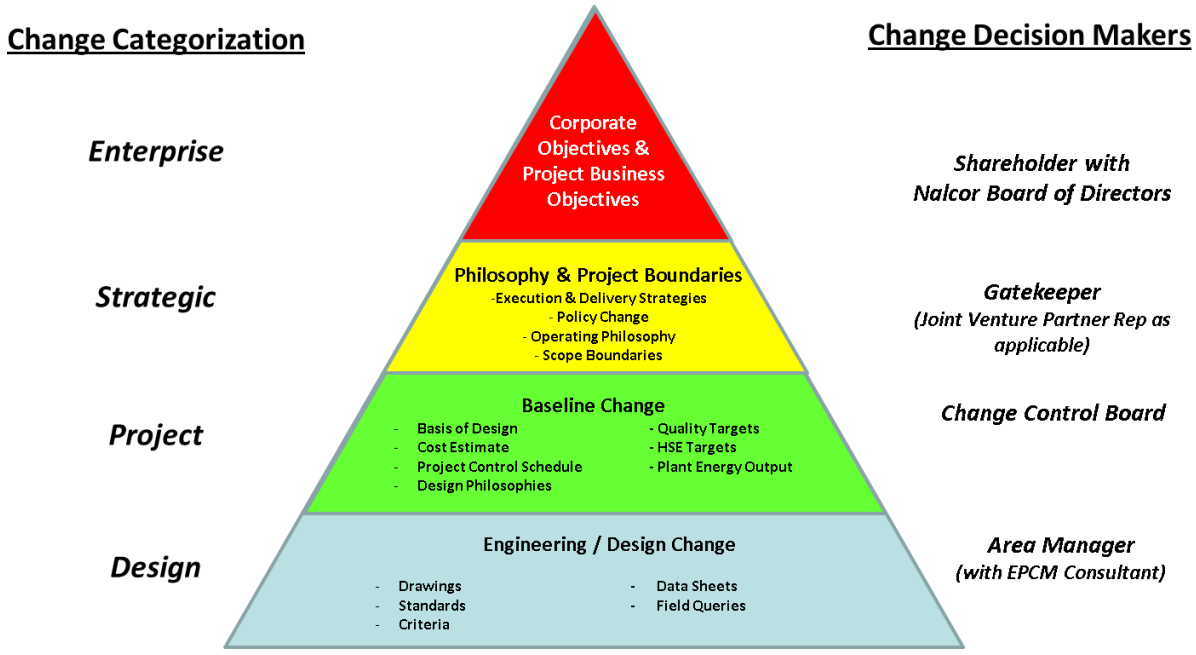


Figure 2: Project Change Approval Hierarchy

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
Project Manager	N/A	<1 week	Unlimited	As per AAL
Deputy PM	N/A	n/a	Technical & Construction Specs	As per AAL
Area / Scope Manager	N/A	n/a	Technical & Construction Specs	As per AAL
Engineering 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.

Table 1: Change Management Approval Matrix

The Capital Expenditure Authorisation Procedure – LCP-PT-MD-0000-FI-PR-0001-01 provides additional detail on change approval authorisation.

9.0 Change Management Process Overview

Figure 3 provides a high level overview of the change management process that has been developed for the Lower Churchill Project, Phase I comprising the six (6) distinct phases listed below. Attachment B1 provides the detailed Change Management Process Flow that will be used by the Project.

- Phase 1: Initiation
- Phase 2: Screening and Justification
- Phase 3: Analyzing Impact
- Phase 4: Acceptance
- Phase 5: Implementation

- Phase 6: Close-out

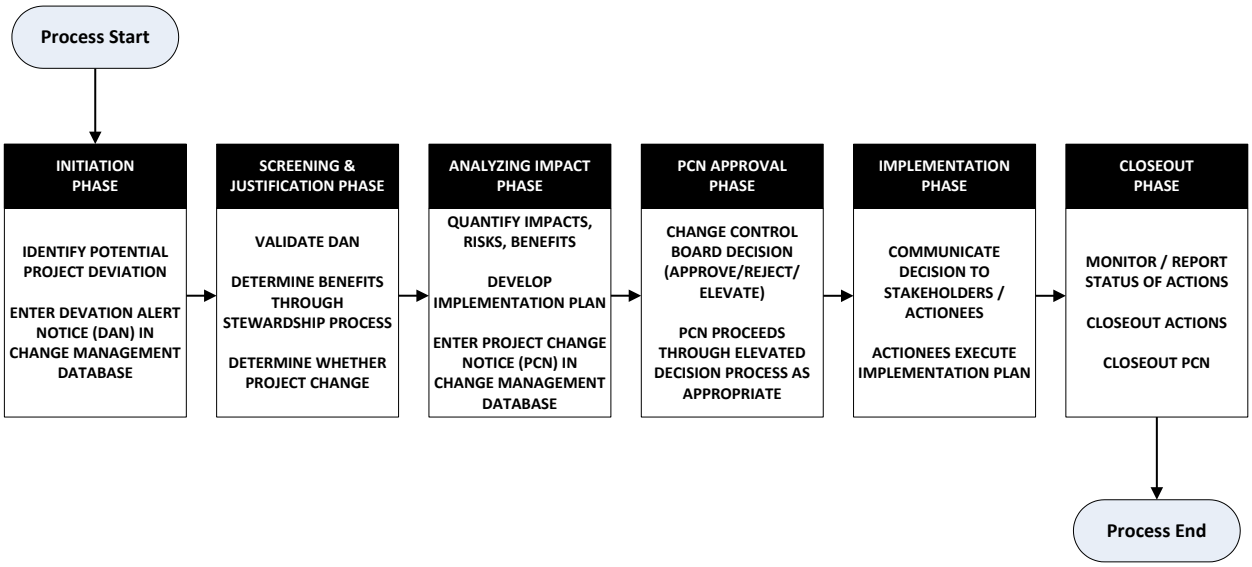


Figure 3: High Level Change Management Process Flow

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, understood, and approved by the Change Control Board (CCB) 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, and design; project risk exposure; and an implementation plan.

The overall Project Cost and Schedule Stewardship Process (reference Project Controls Management Plan - LCP-PT-MD-0000-PC-Pl-0001-01) culminates in a monthly meeting that communicates cost and schedule activity to the PMT. These meetings will be chaired by the Project Director, and facilitated by the Projects Controls Lead. Any changes (i.e.: Deviations) that are proposed by the Change Coordinator and Scope / Area Manager(s) are to be discussed

during these meetings with respect to opportunity benefits, risk and rational for their endorsement. Attractive prospects are to be submitted to the Change Control Board for further assessment and subsequent approval or rejection.

Change management meetings will be scheduled on regularly occurring basis as well as on an ad hoc basis as deemed necessary by the Change Coordinator. 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 process them for approval or rejection.

It is important to note that the EPCM Consultant's change management process shall feed into Nalcor's change management process and interact with it as defined by this plan. The EPCM Consultant will have a Project Change Management Plan of its own, approved by Nalcor, in accordance to the process discussed in Attachment B.2.

10.0 Change Management between Decision Gates

In order to understand the nature of a change or its impact on the Project, the Project 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 and "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 Coordinator 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.

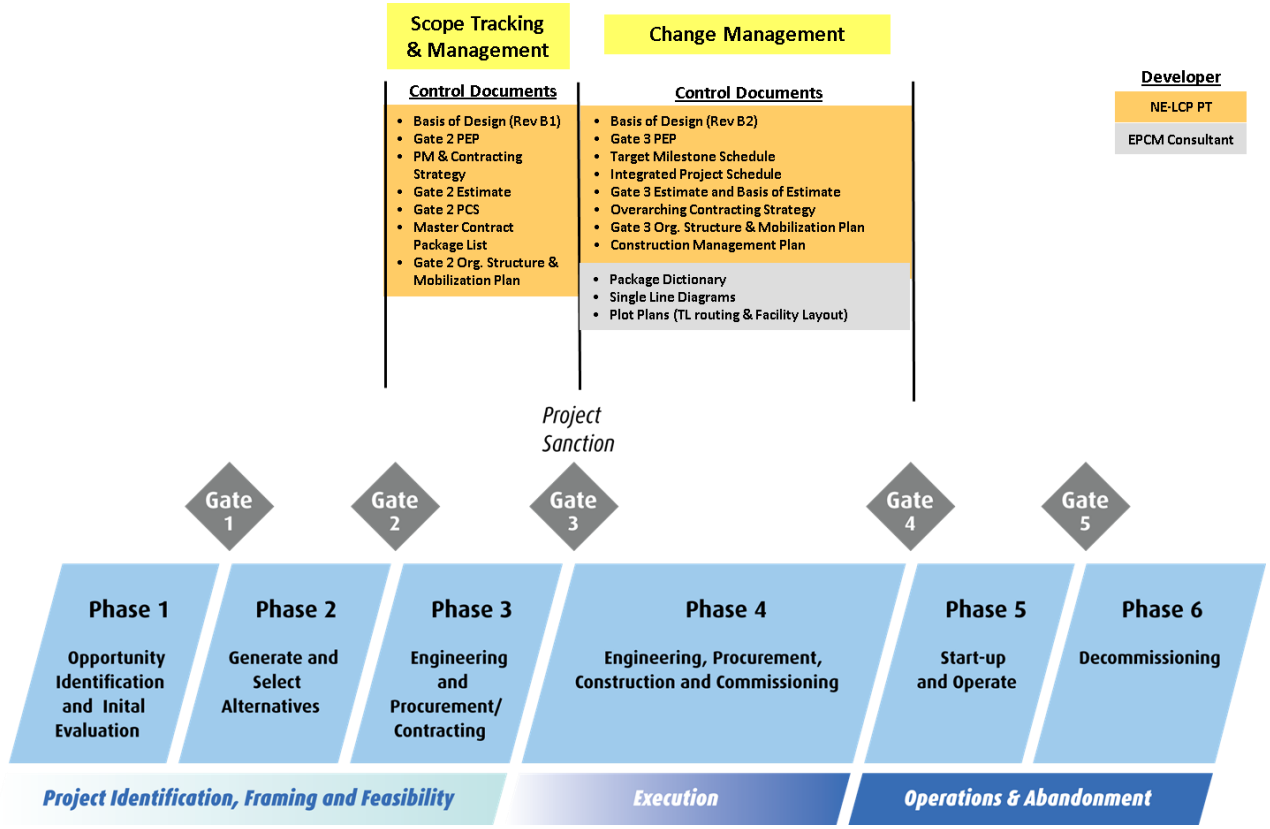


Figure 4: Development of Controlled Project Documents

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, will 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

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	TBD	B1
Gate 3 Capital Cost Estimate Reports	TBD	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
Package Dictionary	MFA-SN-CD-3300-EN-LS-0001-01	B1
Gate 3 Organization Structure & Mobilization Plan	TBD	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 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 / Area Managers. A number of them are described below in some detail to assist in their recognition and mitigation:

11.1 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 Change Coordinator and Area / Scope Manager have primary responsibility for the identification and control of Scope Creep in order to avoid Project Change.

11.2 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.

11.3 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 Manager(s) have primary responsibility for identification and control of risk of Project Change associated with level of effort.

11.4 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 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 Projects Risk Coordinator has primary responsibility with support from the Engineering Manager for identification and control of risk of Project Change associated with the introduction of new technology and tools.

11.5 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 Manager and Construction Specialists for identification and control of risk of Project Change associated with performance and site conditions.

11.6 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 Projects Risk Coordinator has primary responsibility, with support from relevant PMT members, for identification and control of risk.

11.7 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 Manager has primary responsibility with support from relevant functional managers for identification and control of change resulting from the application of lessons learned.

11.8 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 or vice-versa. The mechanism for authorising and formalising a contract change, also know 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, EPCM Consultant, the construction and installation contractors, or the material and equipment vendors and suppliers. While contract changes are issued and administered by the Supply Chain Manger within the framework of the Contract Administration Management Plan – LCP-PT-MD-0000-CA-PL-0001-01, initiation and communication of contract changes to Scope / Area Manager shall be carried out as a part of the overall change management process.

11.9 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

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 Nalcor's package engineers with responsibility for design functionality held by the Technical & Design Integrity Manager. If a technical design change, deviation or exception is in conflict with the Controlled Project Documents, the Engineering Manager (or, in the case of that scope being undertaken by the EPCM Consultant the Technical & Design Integrity Manager), through the Change

Coordinator, will bring the matter forward to or convene a Change Control Board meeting in order to table the proposed Project Change for a decision on how 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 Nalcor's discipline engineers with responsibility for deciding whether a change has merit delegated to the Area Manager 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 Scope / Area Manager, Project Manager and 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 the start of construction on package, technical errors and omissions are the only changes that will be given consideration. Construction engineers (EPCM) or package engineers (Nalcor) 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 construction engineers.

11.10 Technical Document and Drawing Revision

With respect to revisions to engineering and technical drawings, the EPCM Consultant and EPC contractors, with Project Team oversight, have responsibility for, the development and implementation of a procedure for managing changes to technical drawings and documents. This procedure should include

- Maximizing use of the EPCM Consultant's and Contractor's systems.
- Defining the types of changes involved and Nalcor review requirements, including for minor design developments.
- Defining the format of the documentation.
- Requiring periodic reviews to ensure consistency the approach and assessment of requirements for project change management and/or contract changes.
- Guidance that other drawing revisions are subject to document management, whether or not they are as a result of change management.

11.11 Estimating and Budget Baseline Change

Estimating and Budget baseline changes may occur as the result of a Project Change Notice (PCN) that is approved by the Change Control Board. The Project Controls Lead is responsible for preparation and submission of estimate and/or budget Baseline changes to the Change Control Board. The CCB will evaluate the merit, risk, and impact on the Project and either approve or reject the Project Change Notice.

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.

11.12 Planning and Schedule Baseline Change

Planning and Schedule baseline changes may occur as the result of PCN that is approved by the Change Control Board. The Project Controls Lead is responsible for preparation and submission of planning and/or schedule Baseline changes to the Change Control Board. 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.

11.13 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. Organisational change is subject to a Management of Organisational change process defined in the Human Resources and Organisation Effectiveness Management Plan – LCP-PT-MD-0000-HR-PL-0001-01.

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 Nalcor PMT. Interface of the NE-LCP's administrative process with those of an EPCM or EPC contractor will be carried out through written coordination procedures that will be made part of the scope of work in the relevant contract or service agreement.

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

12.0 Change Management Process Flow

Change to the Project's Baseline may occur during the execution of the Project. The earlier a potential Baseline change is identified the more options are available to avoid, mitigate or manage the impact to the Project.

Attachment B1 provides the Change Management Process Flow that will be used by the Project. Each of the six (6) discrete phases of the process, illustrated in summary in Figure 3, is discussed in detail in the following subsections. Additional details are provided in the NE-LCP and EPCM Consultant Interface Business Process Models – LCP -PT-MD-0000-IS-RP-0001-01, where process maps for Project Change Management are located.

The change management process provides for both internal (Nalcor) and external (EPCM Consultant) inputs. It is the responsibility of the EPCM Consultant to understand this plan and how their internal change management plan and associated processes as well as those of their contractors and suppliers interface with it. It will be necessary for the EPCM Consultant and the Nalcor Scope / Area Managers to be diligent in recognising potential Deviations and Project Changes and ensure that the relevant DANs and PCNs are raised and tabled.

12.1 Phase 1: Initiation

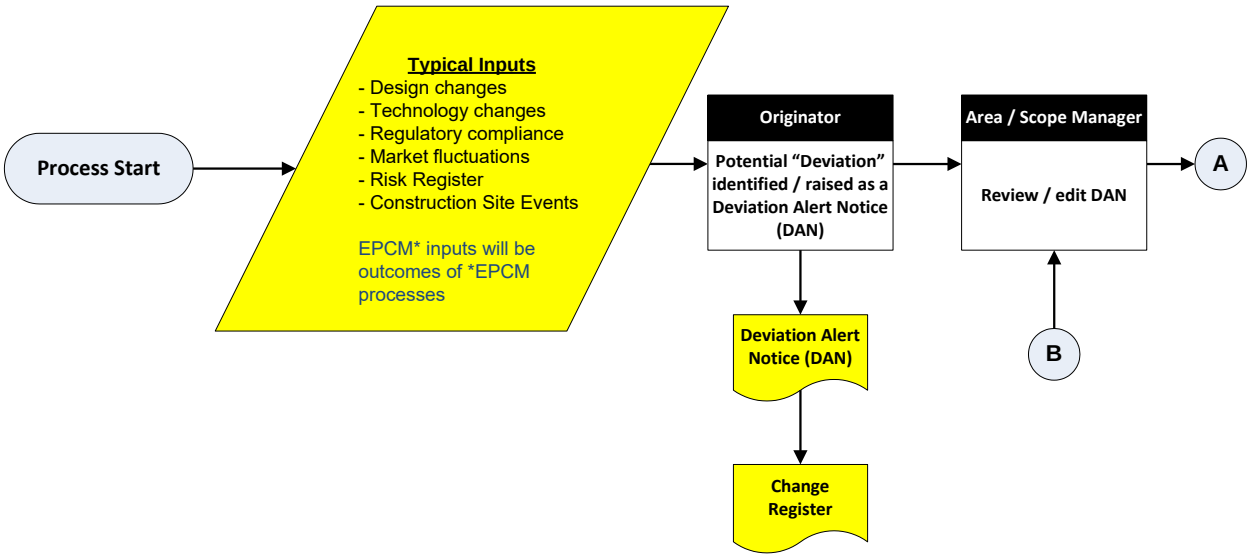


Figure 5: Illustration of Initiation Phase

The Deviation Alert Notice (DAN) is an *"early warning"* mechanism to identify, assess, and manage perceived or real departures or "*deviations*" from the established Project guidelines or plans or intentions. **DANs** provide a means to prevent or substantially reduce the number of unexpected scope, cost and schedule changes that might impact the Project Baseline and assist in identifying opportunities that should be exploited for the Project's benefit. One of the primary objectives in raising a DAN is to provide a means to assess and control the number of

variances and proposed changes that become PCNs – and as a result have an impact on Project scope, cost and schedule baselines.

Each individual involved in the Project is responsible for the early identification of any potential change that might impact project scope, cost, or schedule baselines. (Note: DANs may originate from any source within the Project and could be the result of any change stimulus including those identified in Section 11.0). Any individual (DAN Originator) who identifies a change or deviation, whether Nalcor or EPCM, should first advise/consult the applicable Scope / Area Manager who will act as the Sponsor for the change. The Originator shall then raise a DAN (reference Attachment B.4) in the Change Management database, contacting the Change Coordinator for assistance if necessary. The Change Coordinator will maintain and monitor the DAN in a Change management database which is the recording and tracking system for all potential changes or "*Deviations*".

12.2 Phase 2: Screening and Justification

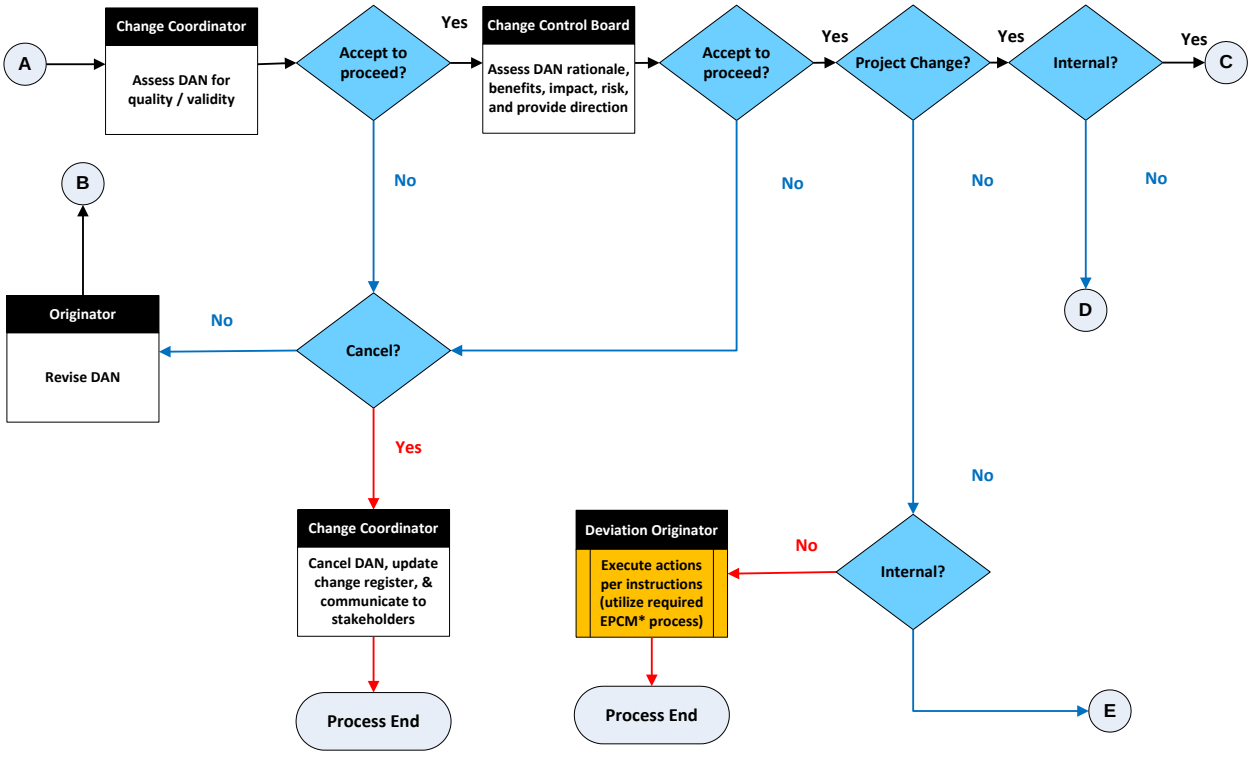


Figure 6: Illustration of Screening and Justification Phase

During the assessment of the DAN, the Change Coordinator and DAN Originator determine if it meets the criteria of a deviation from what was planned or expected, regardless of the level of detail. The Scope / Area Manager may also be consulted for input at this stage.

If it does not meet the criteria of a DAN (e.g. is an information request or observation), it will be cancelled, the change database updated and DAN Originator and Scope / Area Manager

notified. If the DAN is determined to be valid (i.e. represents a true deviation or change from plan regardless of the level of detail), the Change Coordinator will then determine if it constitutes a Project Change (i.e. has an effect on the Project Baseline).

If it is determined that the DAN does not constitute a Project Change, it will be returned to the Scope / Area Manager to be handled as simple Deviation within the boundaries of the Project Baseline. **This step is paramount to the change management process as the Change Coordinator and relevant Scope / Area Manager will have to assess the documented Baseline to determine if the DAN constitutes a change from the published baseline or its underlying intention. If uncertain, the Change Coordinator will consult with members of the PMT and owners of the baseline documents in order to determine if it is a Project Change.**

A deviation that is not a Project Change may still require mitigating action(s) and it is the responsibility of the Scope / Area Manager to ensure that any required action(s) are appropriately identified, communicated, implemented, and tracked to completion in order to resolve the matter and close it out in the system. Regardless of whether the DAN was an internal issue or originated by the EPCM Consultant, the Scope / Area Manager must ensure that an action plan is developed to this end.

If the Deviation is determined to be a Project Change, the Originator and Scope / Area Manager will gather qualitative details as per the PCN form including Cost/Benefit information relative to Cost, Schedule, Scope, Quality, H&S, E&AA, Reputation, and Regulatory compliance. Key questions that will be asked during this process include:

- Is this proposed Project Change discretionary or non-discretionary?
- Will undertaking the proposed Project Change assist the Project in achieving its goals and objectives?
- Does the proposed Project Change introduce new or impact existing risk to the cost, schedule, or scope?

The Change Coordinator convenes meetings of the Change Control Board on a regular basis to review proposed deviations and changes during the screening and justification phase as well as at the acceptance phases. The Change Coordinator and Scope / Area Manager will first present the Proposed Change at a Change Control Board (CCB) meeting. The Change Control Board will make a “qualitative” determination as to whether the proposed change would provide benefits to the Project. If it is determined that the proposed change does not benefit the Project, the Change Coordinator will cancel the DAN, update the Change Management Database and notify the DAN Originator.

If it is determined that the proposed change provides benefits to the Project, it will proceed to the Analysing Impact Phase prior to reconsideration by the Change Control Board.

12.3 Phase 3: Analyzing Impact

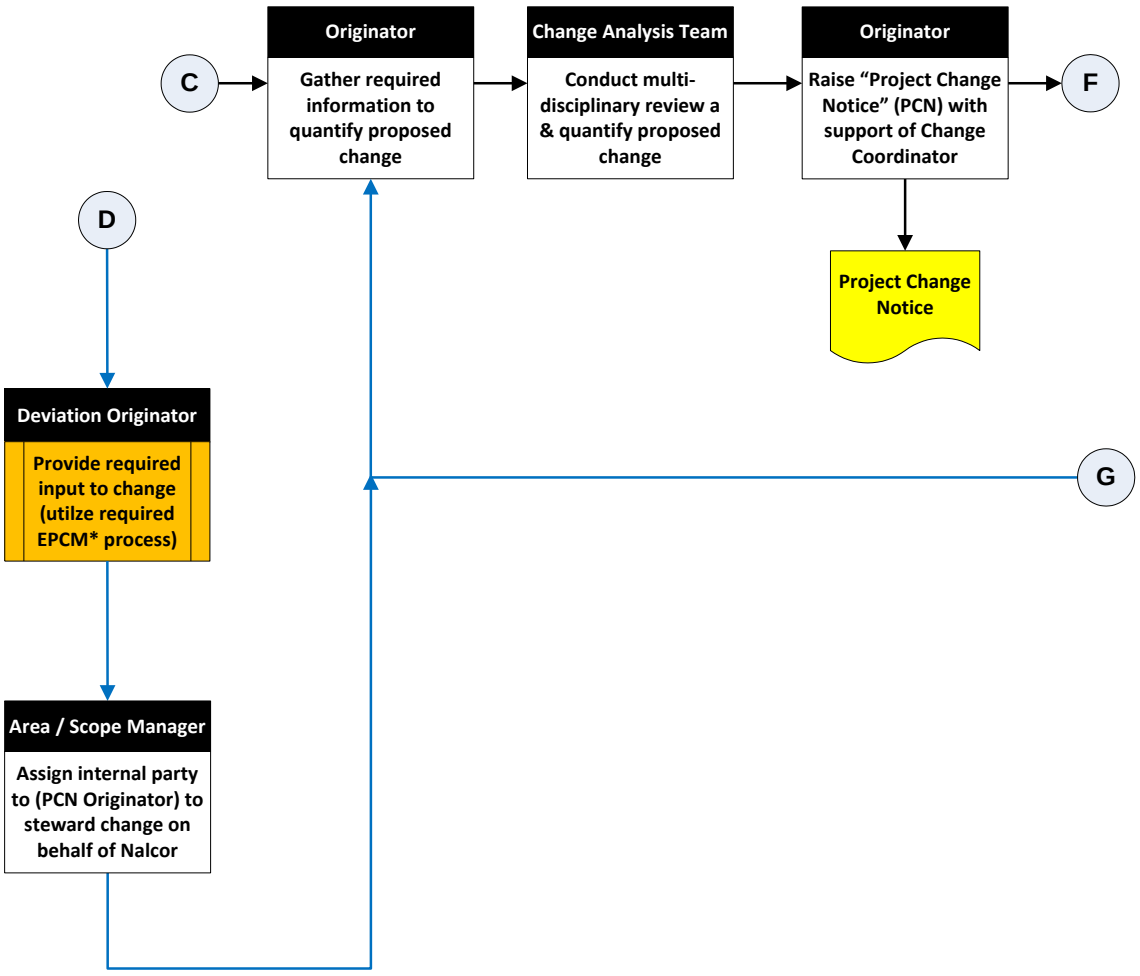


Figure 7: Illustration of Analyzing Impact Phase

If it is determined during the first tabling of the proposed change at the CCB Meeting that it will likely benefit the Project, the Originator or Scope / Area Manager, with the assistance of the Change Coordinator, may convene a meeting of a Change Analysis Team comprising the appropriate functional expertise to "quantify" the proposed Project Change in line with the Project's business case. The decision to identify and convene a meeting of a Change Analysis Team is contingent upon the complexity of the change. When a Change Analysis team is assembled, the Originator will provide assistance with information to support project analysis in areas of return on investment, net present worth, project schedule and capital investment, quality, environmental, safety, availability, operating cost, regulatory compliance, risk and other factors that investors express as having a bearing on project success.

The Project Risk Coordinator, with the support of appropriate PT members, is responsible for risk screening the proposed Project Change using the Project's risk matrix in order to determine its impact on the overall risk profile for the Project. Generally a Project Change that increases

the Project's overall risk exposure (i.e. risk screening indicated a higher level of risk than existed prior to implementing the proposed change) requires a broad and comprehensive analysis of the proposed change.

During the change analysis process, the Cost Engineer / Controller will assess the proposed Project Change to determine if there will be a cost or schedule impact on the Project. Changes to the overall cost and schedule baseline, or which involve engineering design or scope changes will be identified and detailed during the PCN process and approved as part of the Change Control Board decision process.

Once the Project cost/benefit analysis is quantified, the Change Coordinator and Scope / Area Manager together will develop an implementation plan that articulates how the proposed Project Change would be implemented if supported by the Change Control Board.

Once the benefits of a change have been quantified and an action plan has been developed these, along with the contents of the associated DAN may be used as the basis for developing the proposed Project Change, into a formal Project Change Notice (PCN) using a PCN Form (reference Attachment B.5). The PCN form is intended to standardize the presentation of information to the Change Control Board such that business decisions are made on a consistent basis regardless of the source of the change.

12.4 Phase 4: PCN Acceptance

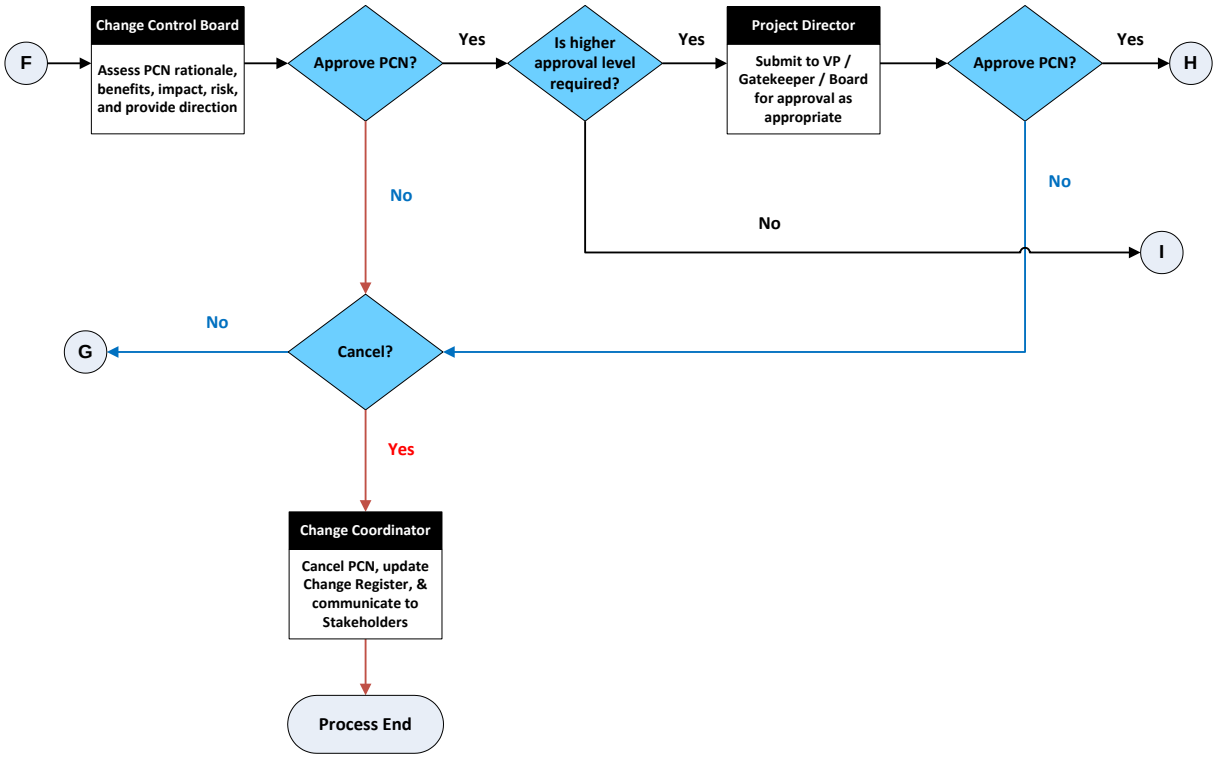


Figure 8: Illustration of PCN Acceptance Phase

The Change Coordinator convenes meetings of the Change Control Board on a regular basis to review proposed changes at both the initiation and acceptance phases. Additional meetings will be convened as required to facilitate change management.

The Change Coordinator together with the Scope / Area Manager presents the Project Change Notice and Implementation Plan to the Change Control Board where it is granted either approval or rejection. If the PCN receives the approval of the Change Control Board they will also determine if it requires a higher level of approval (i.e. Vice President, Gatekeeper, or Board of Directors).

In accordance to the Project Change Approval Hierarchy shown in Figure 1, if a PCN is required to be elevated, the Project Director will convene a review of the PCN by the Project Vice President or Gatekeeper for Approval/Rejection or elevation to the Nalcor's Board of Directors.

All approved PCNs should be endorsed by way of signatures of the appropriate approval authorities as indicated on the PCN Form. The approval authorities are determined by a combination of those stakeholders within the Change Control Board directly impacted by the change, the Change Approval Hierarchy, and the Capital Expenditure Approval Procedure - LCP-PT-MD-0000-FI-PR-0001-01. The original signed PCN Form is maintained in a filing system by the Change Coordinator, and notification is provided to the Scope / Area Manager and those parties actioned on the implementation plan.

If a PCN is Rejected by either the Change Control Board, Vice President, Gatekeeper or Nalcor's Board of Directors, the Change Coordinator will terminate the PCN, update the change management database and notify stakeholders (i.e.: Deviation Originator, Scope / Area Manager, Sponsors, etc.)

12.5 Phase 5: Implementation

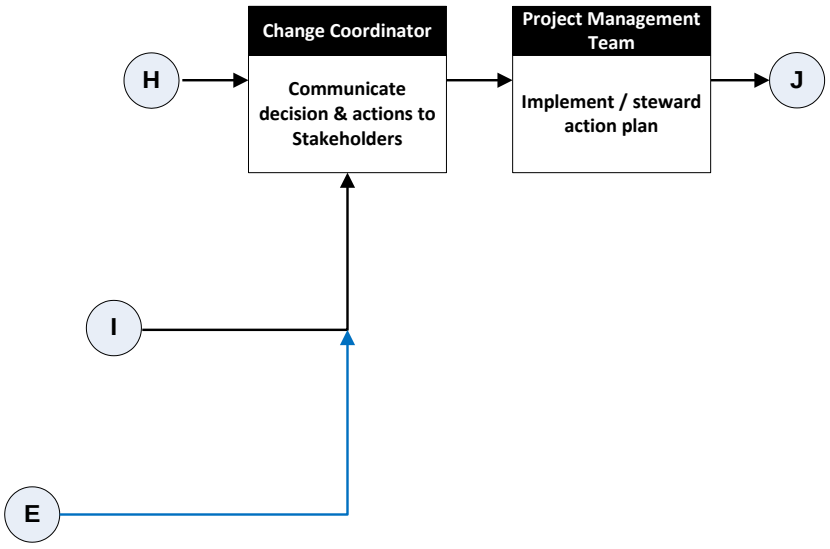


Figure 9: Illustration of Implementation Phase

Approval of the PCN at the appropriate level of authority signifies the beginning of the Implementation Phase. For descriptive purposes the difference between a Scope and Non-Scope Change is the addition of an engineering step versus the treatment of cost accounting. For simplicity, only the process involving a Scope Change will be described below.

The Project Basis of Design will be revised by the Engineering Manager to reflect the approved Project Change in Project baseline scope. Relevant specifications, philosophies, material requisitions, drawings, data sheets, studies, and reports will be revised in line with this. Reviews, acceptance and approval of the revisions will be in accordance with the Engineering Management Plan – LCP-PT-MD-0000-EN-PL-0001-01. As well communication of engineering action will occur within the PMT. The Change Coordinator will also be advised when revisions have been made such that the Change Management Database may be kept current.

The Integrated Project Schedule (IPS) will be revised by the Senior Planner to reflect the change in project baseline schedule. Relevant durations, dependencies, critical paths, key dates, milestones and float will be revised to reflect the Project Change. Reviews, acceptance and approval of the revisions will follow the Project Control Management Plan – LCP-PT-MD-0000-PC-PL-0001-01. As well as communication of planning action will occur within the PMT. The Change Coordinator will also be advised when revisions have been made such that the Change Management Database may be kept current.

The Project Control Budget will be revised by the Senior Cost Engineer to reflect change in the Project's baseline budget (or) Final Forecasted Cost for each Project Change. If there is a scope change associated with implementation of the approved Project Change then a revision to the Current Control Budget (via allocation of estimate contingency) and Final Forecast Cost is made by the Senior Cost Engineer via a Forecast Change Notice. If no scope change is reflected in the approved Project Change, then the Senior Cost Engineer will recalculate the Forecast Final Cost (FFC), also referred to as the Estimate at Completion (EAC). Review, acceptance and approval of budget and/or cost revisions will follow the Project Control Management Plan – LCP-PT-MD-0000-PC-PL-0001-01. The Change Coordinator will also be advised when revisions have been made such that the Change Management Database may be kept current.

Change Orders will be prepared for relevant Project Contracts, by the Contract Coordinator, to reflect scope, budget and/or schedule changes made for each Project Change. Review, acceptance and approval of the revisions will follow the Procurement Plan – LCP-PT-MD-0000-PR-PL-0001-01 and the Contract Administration Plan – LCP-PT-MD-0000-CA-PL-0001-01 as well as communication of purchasing action within the PMT. The Change Coordinator will also be advised when revisions have been made such that the Change Management Database may be kept current. (Note: All requirements with respect to Change Orders are contained in contracts and purchase orders). Attachment B.3 provides the business process maps illustrating the process by which Change Orders are processed within the EPCM Services Agreement only.

Execution of the Implementation Plan associated within a Project Change should follow the Management Plan associated with the affected scope. EXAMPLE: An Office Administrative Change may be implemented under the Administrative Management Plan – LCP-PT-MD-0000-AD-PL-0001-01.

The Change Coordinator is tasked with recording and communicating the status of each PCN that is pending, approved or rejected. The principal tool for controlling and reporting change is the project Change Management Database which shall be maintained current and accessible to all stakeholders including Deviation Originators, Scope / Area Managers and Project Managers. Minutes of Change Control Board meetings shall provide summary updates on both DANs and PCNs while regular action log reports will be issued to maintain awareness of incomplete elements of the Implementation Plans.

12.6 Phase 6: Closeout

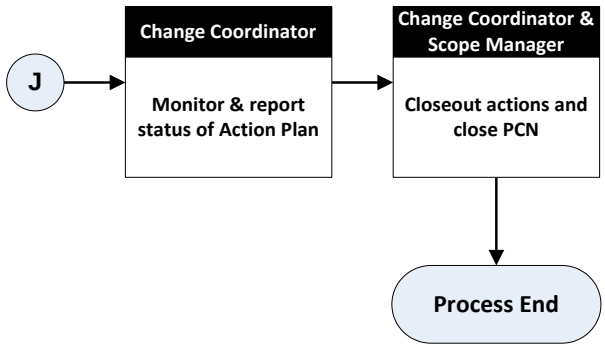


Figure 10: Illustration of Closeout Phase

As stated in Phase 5, the Action Plan associated with any Project Change should follow the Management Plan associated with the affected scope. This implies that close out of a PCN would also follow Management Plan associated with the affected Scope Manager.

Steps that are unique to the close out of a PCN are as follows:

- The Change Coordinator in addition to the Project Controls Manager will track status of a Project Change.
- The Change Coordinator will coordinate the closeout of the PCN with the responsible Scope / Area Manager
- The Change Coordinator will update the Change Management Database to include closeout signatures and reflect closeout status
- The Change Coordinator will participate in the Lessons Learned from a Project Change.

The Change Coordinator will ensure that the Change Management Database is updated as Deviation Alerts and Project changes are identified processed, implemented, and closed out. Reporting of changes will be on done at a minimum on a monthly basis to the PMT, included in

the Project monthly report and incorporated into the current basis of estimate document where appropriate.

13.0 A.0 Activity Flowchart (Excel Format)

A.1 N/A

14.0 B.0 Attachments/Appendices

B.1 Change Management Process Flowchart

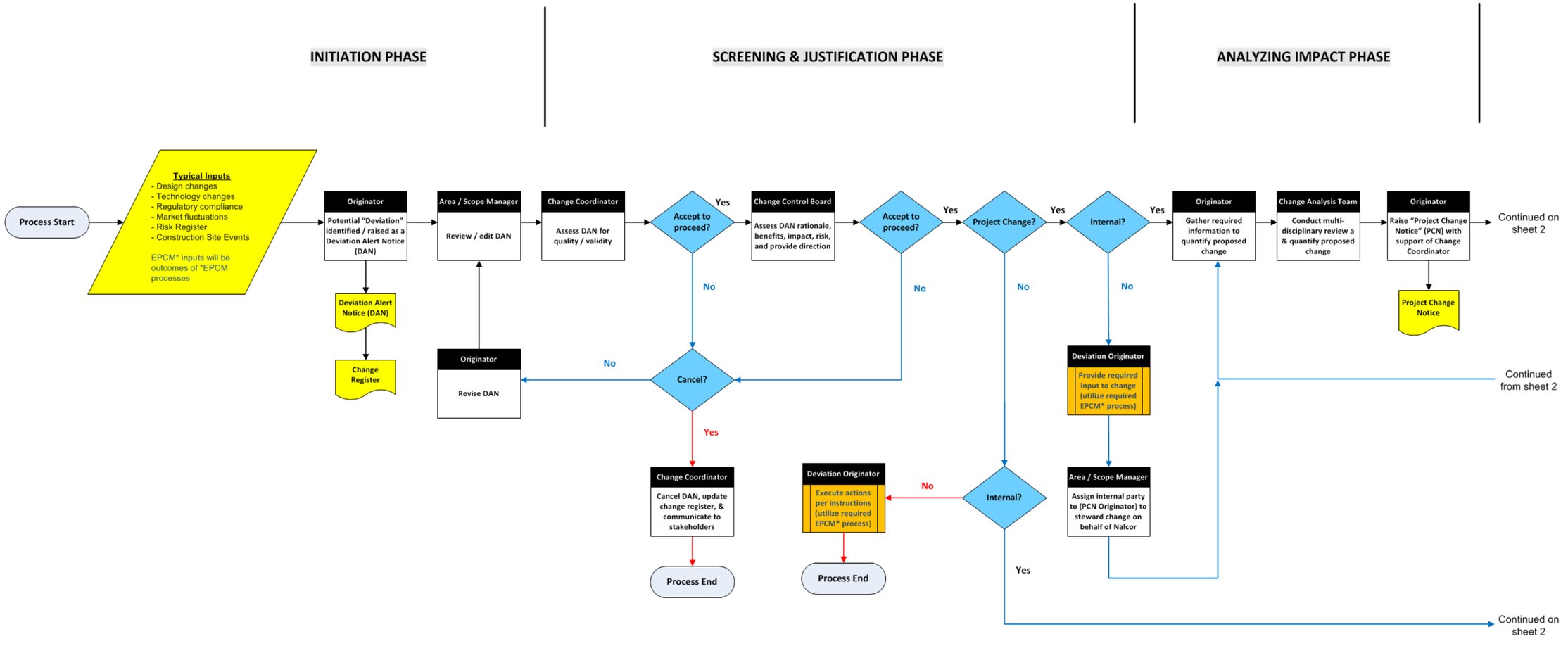
B.2 Project Deviation Alert Notice Form (sample at time of issue)

B.3 Project Change Notice Form (sample at time of issue)

Attachment

B.1: Change Management Process Flowchart (sheet 1)

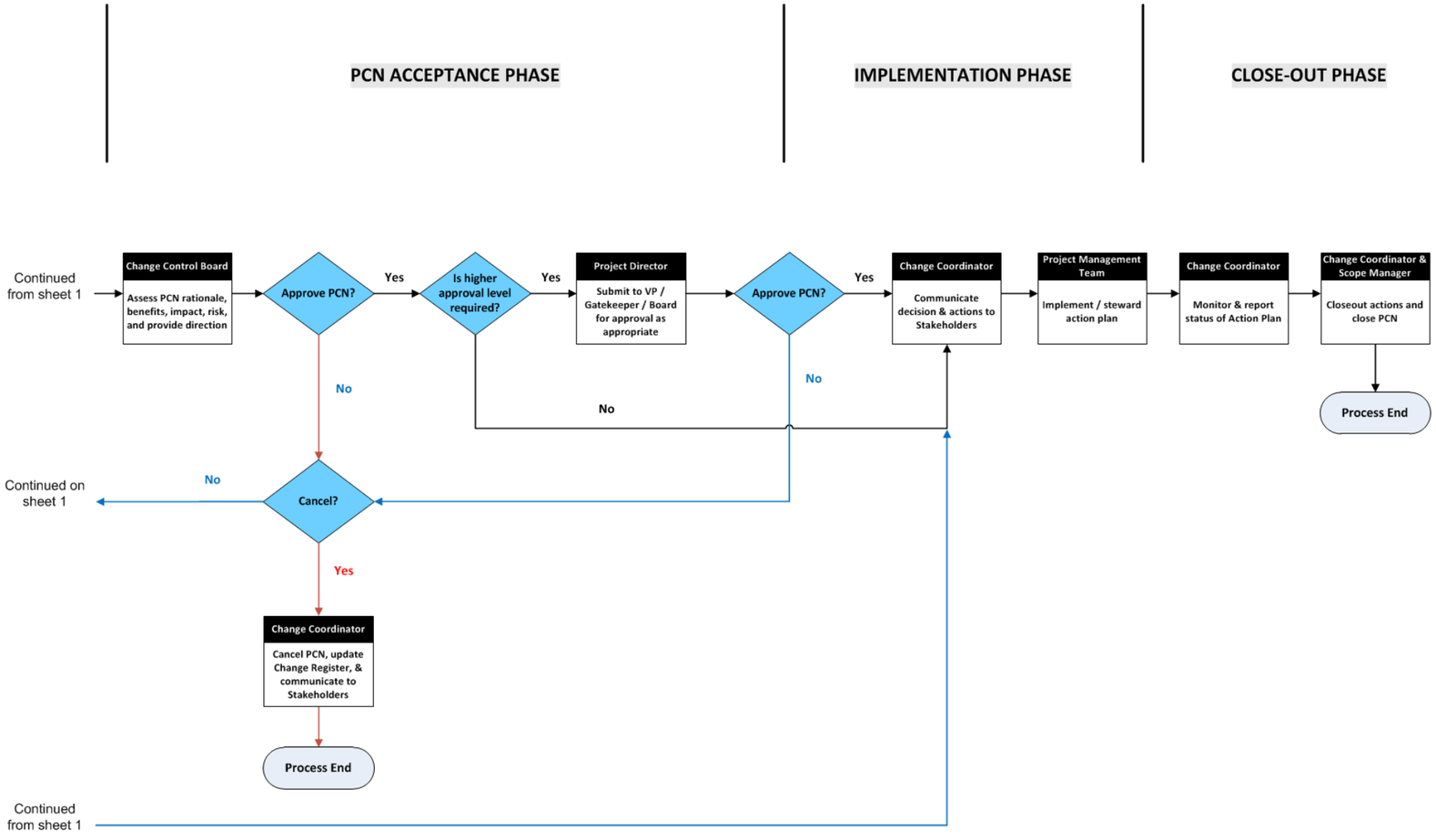
NE-LCP Change Management Process



NOTE: *EPCM inputs and actions must comply with both this Plan and the EPCM Project Change Management Plan – LCP-SN-CD-0000-PC-PL-0004

Attachment

B.1: Change Management Process Flowchart (sheet 2)



Attachment
B.2: Project Deviation Alert Notice Form

(Sample only – form available in Change Management Database)

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Project Deviation Alert Notice

Deviation Alert Notice ID:

Title

Description

SAMPLE ONLY

Form available in Change Management Database

Originator

Submission Date

Scope/Area Manager

Status

PCN XRef

Close Out Date

Construction Site Event

Action List

Action	Actionee	Status

MOC Comments

Attachment
B.3: Project Change Notice Form

(Sample only – form available in Change Management Database)

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Project Change Notice

Section 1: Request for Proposed Change

Title

PCN No.

DAN X-Ref.

Originator

Date Originated

Current Status

Agreement No.

Revision

Origin

- ☐ Internal PMT
- ☐ Other Nalcor
- ☐ EPCM Consultant
- ☐ Contractor/Supplier
- ☐ Construction Site Event
- ☐ Other External

Description

SAMPLE ONLY

Rationale

Form available in Change Management Database

Benefits

Section 2: Inpact of the Proposed Change to Project

Categorization

- ☐ Scope Addition/Deletion
- ☐ Scope Modification
- ☐ Non-Scope Change

Affected Project Component

- ☐ Muskrat Falls
- ☐ Labrador Transmission Assets
- ☐ Labrador - Island Tx Link
- ☐ Maritime Link
- ☐ Nalcor PM
- ☐ Other

Direct and Indirect Impact by Change Analysis Team

- ◉ Basis of Design
- ◉ Design Philosphy
- ◉ Execution Approach
- ◉ Health & Safety
- ◉ Environment and Regulatory Comp.
- ◉ Quality
- ◉ Cost

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Project Change Notice

◉	**Schedule**
◉	**Reputation**
◉	**Contracts/Procurement**
◉	**Operations/Reliability**
◉	**Other**

Section 3: Risk Screening

LIKELIHOOD	IMPACT 1	2	3	4	5
5	Low	Medium	High	High	High
4	Low	Medium	Medium	High	High
3	Low	Low	Medium	Medium	High
2	Low	Low	Medium	Medium	Medium
1	Low	Low	Low	Low	Medium

	Low	Medium	High
Risk Pre-Change	☐	☐	☐
With Proposed Change	☐	☐	☐

Comments

Verification

*Reference Project Risk Management Plan for risk screening guidelines.

Section 4: Implementation Plan

Additional Actions

Actionee	Action	Status

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Project Change Notice

Attachment Listing

Section 5: Distribution

- ☐ H&S
- ☐ Supply Chain
- ☐ Operations
- ☐ Originator
- ☐ Document Control
- ☐ Finance
- ☐ Scope/Area Manager
- ☐ Engineering
- ☐ Project Controls
- ☐ Quality
- ☐ Construction
- ☐ Risk
- ☐ E&AA
- ☐ Project Director
- ☐ Other
- ☐ Project Manager (MF&LIL)

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Project Change Notice

Section 6: Acceptance Phase

Decision

☐ Approve ☐ Reject/Cancel Decision Date

CHANGE CONTROL BOARD APPROVAL

☐ Scope/Area Manager Signature Date

☐ Project Controls Lead Signature Date

☐ Supply Chain Manager Signature Date

☐ H&S Manager Signature Date

☐ Quality Manager Signature Date

☐ E&AA Manager Signature Date

☐ Business Services Manager Signature Date

☐ Engineering Manager Signature Date

☐ Deputy Project Manager Signature Date

☐ Marine Crossings Manager Signature Date

☐ Project Manager (MF & LIL) Signature Date

☐ General Finance Manager Signature Date

☐ Project Director Signature Date

ADDITIONAL APPROVAL AS REQUIRED

☐ Nalcor System Planning Signature Date

☐ Operations Engineering Lead Signature Date

☐ Other Approval Date

☐ V.P. - Lower Churchill Project Signature Date

☐ Gatekeeper Signature Date

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Project Change Notice

Section 7: Close-Out

Implementation Status Complete: ☐

Signoff:

Change Coodinator:		**Date:**	
Scope/Area Manager:		**Date:**	

Comments

Comments	

SAMPLE ONLY

Form available in Change Management Database