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November 19, 2014

The Board of Commissioners of Public Utilities
Prince Charles Building
120 Torbay Road, P.O. Box 21040
St. John's, Newfoundland & Labrador
A1A 5B2

Attention: Ms. Cheryl Blundon
Director Corporate Services & Board Secretary

Dear Ms. Blundon:

Re: The Board's Investigation and Hearing into Supply Issues and Power Outages on the Island Interconnected System – Responses to Requests for Information – Revision

Enclosed please find an original plus 12 copies of a revision to Hydro's response to the following Request for Information (RFI) with regard to the above-noted application:

PUB-NLH-417 (Rev 2) – Revision made to include Attachment 2; and
Revisions made to the text in Hydro's response to the above noted RFI are indicated by shading.

In accordance with the Rules of Procedure (Order No. P.U.3(2014)), only the revised pages are provided in paper copies, however the electronic version will be re-filed in its entirety.

Should you have any questions, please contact the undersigned.

Yours truly,

NEWFOUNDLAND AND LABRADOR HYDRO

Tracey Pennell

Tracey L. Pennell
Legal Counsel

TLP/jc

cc: Gerard Hayes – Newfoundland Power
Paul Coxworthy – Stewart McKelvey Stirling Scales
Thomas Johnson – Consumer Advocate
Danny Dumaresque
ecc: Roberta Frampton Benefiel – Grand Riverkeeper Labrador

Q. **Governance**

Provide a copy of the enterprise risk management framework and the tools package used to support it.

A. Nalcor's Enterprise Risk Management ("ERM") Framework was designed in alignment with CAN/CSA-ISO 31000, and is defined currently in the document *ERM – Policy Statement and Framework*.

The 2013 Draft *ERM Policy Statement & Framework* attached as PUB-NLH-417 Attachment 1 ("Framework") was developed to guide the operation of the ERM program. Portions of the Policy & Framework (primarily those related to the ERM Committee and the Business Unit Risk Registers) have been made fully operational. Implementation of other elements of the Policy & Framework were deferred until a Chief Risk Officer (CRO) could be recruited and had the opportunity to shape the Policy & Framework. A CRO has now been recruited and joined Nalcor in June 2014. The CRO is currently in the process of reviewing the Draft Policy & Framework document in conjunction with senior management. Once the CRO is satisfied that the Policy & Framework reflects the desired direction of the ERM program, final approval will be obtained from the Nalcor Leadership Team and Board of Directors and implementation of the remaining elements will commence. Hydro anticipates that this work will continue into 2015.

In the interim, the ERM Committee will continue to meet as it has been for the last several years and the business unit risk registers will continue to be reviewed, updated, and risk plans executed. While the business unit risk registers have existed for some time, the CRO will also be working with the ERM Committee to review these and working with the business units to ensure they are complete and risk plans developed and being executed.

The ERM Toolset currently includes the documents provided as Appendices 2 to 5 and 8 of the Framework.

Nalcor has taken steps to ensure that enterprise risks are considered and integrated as appropriate into its annual corporate planning process. Corporate planning guidelines in this regard were issued to Hydro and all other Nalcor business units in September, 2011 as an input to the 2012 corporate planning process, and all business units have been required since that time to integrate these guidelines and risk register considerations into their annual corporate and operations planning processes. Nalcor's *2012 Corporate Planning Process Risk Register Guidelines and Toolset* is attached as PUB-NLH-417 Attachment 2.

ENTERPRISE RISK MANAGEMENT
Policy Statement and Framework

Treasury & Risk Management
Draft
Subject to finalization by CRO and final review and approval by Nalcor Leadership Team and Board

Contents

1 Policy Statement

Guided by the vision of building a strong economic future for successive generations of Newfoundlanders and Labradorians, Nalcor Energy sets challenging targets in the areas of Safety, Environment, Business Excellence, People and Community. Recognizing that the management of risk is critical to achieving these targets and executing on the vision, Nalcor Energy will develop, implement and sustain an Enterprise Risk Management (ERM) program.

The Framework for the ERM Program outlines a timely, structured and systematic approach to identifying, evaluating, treating, reporting and monitoring both line of business and strategic level risks, including a common set of qualitative and quantitative tools used to support the process. This process should be undertaken at least annually and key risks should be addressed in the 5-Year business plans. While the Board is accountable for a periodic review of risk appetite and risk tolerances, primary accountability for risk management rests with the heads of each of Nalcor's Lines of Business, with critical support provided by multiple Corporate departments. Accountability for the administration and oversight of the Framework rests with the Chief Risk Officer and Internal Audit respectively.

The long-term goal for the ERM Program is to firmly embed risk management into Nalcor's strategic and operational processes, and to have an internal control process linked to our key risks, which are reported to the Board of Directors at least quarterly. In addition to supporting the Board and Leadership with their corporate governance needs and due diligence responsibilities, the Framework will strengthen our management practices in a way that we can easily communicate to our external stakeholders and will further demonstrate our commitment to achieving our goals and delivering on our vision.

Sincerely,

[Name]
[Title]

2 Executive Summary

Nalcor Energy and its subsidiaries are subject to a number of internal and external risks that make it uncertain as to whether it will meet planned targets and objectives in the areas of Safety, Environment, Business Excellence, People and Community. External stakeholders expect Nalcor to implement processes to ensure those risks are managed. Therefore, by fostering a common cultural awareness of risk and integrating proven risk management concepts into the business planning process, Nalcor can increase the likelihood of meeting those targets and objectives, thereby preserving and creating stakeholder value, while meeting the expectations of external stakeholders.

Based on an internationally accepted standard (ISO 310000), this Enterprise Risk Management ("ERM") Framework and Policy document ("the Framework", "Framework"), provides a common Framework for discussing risk management within the Company, embedding risk philosophy within our culture, and for clearly communicating our risk management capabilities to external and internal stakeholders. The Policy outlines the importance of defining and maintaining risk appetite statements for each line of business and emphasizes the key role played by the Board in this process. The Policy then addresses how risks emanating from each LOB are to be identified, monitored, reported and managed within risk tolerances that are reflective of the risk appetite. Finally, the Framework includes a discussion on reporting and measuring progress against the 5-year plan to implement a world-class ERM Framework at Nalcor Energy.

3 Scope, Guiding Principles, Goals and Objectives

3.1 Scope

This Policy applies to Nalcor and all of its subsidiaries, including Bull Arm Fabrication, Churchill Falls (Labrador) Corporation, Nalcor Energy – Oil and Gas, Newfoundland and Labrador Hydro, Gull Island Power Corporation, Lower Churchill Development Corporation and Twin Falls Power Corporation. For greater clarity, the Policy will also apply to various lines of business within those companies, including Energy Marketing and the Lower Churchill Project. Accordingly, unless otherwise noted, all references to Nalcor within the remainder of this document are meant to include all of its subsidiaries.

While the Enterprise Risk Management ("ERM") Policy addresses how risks emanating from each LOB are identified, monitored, reported and controlled at the corporate level, it will not dictate how those risks are to be managed at the line of business level. The LOB's are responsible for developing (in cooperation with Corporate departments, where applicable) strategies to address risks, provided those strategies are consistent with the framework outlined herein.

3.2 Guiding Principles

As outlined in more detail below (Section 4), this Framework is based on CANCSA-ISO 31000-10, Risk management – Principles and guidelines ("the standard" or "ISO 31000"), as published by the Canadian Standards Association ("CSA") and the Standards Council of Canada ("SCA"). The standard outlines a number of generic but fundamental principles on which an organization should base a risk management program in order to position for success.

At its core, and in accordance with one of ISO 31000's guiding principles, Nalcor's ERM Framework and Policy document describes a **principle-based system for explicitly identifying, characterizing and addressing uncertainty**. The following is a list of the other principles guiding found in ISO 31000, along with a narrative on how those principles are incorporated into or facilitated by this Framework:

- **Risk management will create and protect stakeholder value** – By facilitating a cultural awareness of risk and integration within the corporate planning process, Nalcor's ERM Framework contributes to the demonstrable achievement of objectives and targets in the areas of Safety, Environment, Business Excellence, People and Community, thereby creating value for the Company's stakeholders
- **Risk management will be an integral part of everything we do** – The process of identifying, analysing and evaluating risk is part of the day to day management and operational routines undertaken within each line of business at Nalcor – risk management is "business as usual". Risk Management is not and should never be a separate, centralized corporate function or process outside the line of business. In practical terms, this means that Nalcor's Framework places significant emphasis on ways to embed risk assessment into *existing* management planning, decision making, change management and oversight activities and to integrate risk reporting metrics into normal management reporting systems.

- **Risk management will improve decision making** – Enterprise Risk Management is fundamentally about how Nalcor makes decisions and ensures that the organization considers the potential impacts, both positive and negative, of those decisions. In practical terms, Nalcor's Framework provides a means by which risk assessment is integrated into all levels of organizational planning and decision making, including the annual business planning process. The link to the annual business planning process is mission critical for ERM.
- **Risk management should be systematic, structured and timely** - Nalcor's Framework and Policy describes a systematic, structured and timely approach to risk management, which contributes to efficiency and to consistent, comparable results. This is embodied at the process level by using the same set of qualitative and quantitative tools for risk assessment in all lines of business. The systematic and structured approach will be reinforced by a commitment to ongoing training in the use of these ERM tools and on the Framework.
- **Risk management will be a tailored activity, based on the best available information** – A good risk management system is aligned with the organization's external and internal context and risk profile. To that end, Nalcor's Policy document is based on a governance framework that emphasizes Senior Management accountability for identifying and mitigating risk at the **line of business level**, placing accountability with those closest to the day to day operations of the business to ensure the catalogue of risks are complete, relevant and up to date.
- **Risk management is iterative and responsive to change** – Nalcor's ERM Framework and Policy document positions the organization to proactively identify and respond to changes in its internal and external operating environment. Specifically, the Framework provides a mechanism by which it can evolve based on our experiences and on changes to the knowledge base in the area of risk management. Moreover, the Framework emphasizes management's ongoing responsibility for ensuring the risk profiles are current and that new risks are addressed as they emerge
- **Risk management should increase transparency** – The ERM management framework also provides a means by which Nalcor can clearly communicate its commitment, and its systematic approach to risk management, to its various stakeholders.

In addition to these guiding principles, the Framework is also based on an all-encompassing, holistic approach to conveying the risk universe in which Nalcor operates. In addition to financial risk, this Framework also advocates a comprehensive view of risk that includes strategic, operational and compliance risks.

3.3 Strategic Goal of ERM

The ultimate strategic goal of the ERM Program is to fully embed risk management into the strategic planning at the corporate and line of business levels, and to develop a system for controlling and reporting on key risks This will

- Increase the likelihood of meeting Nalcor's objectives with respect to Safety, Environment, Business Excellence, People and Community.
- Provide a sound platform for informing key stakeholders and outside parties of Nalcor's risk profile and risk management capabilities. For example, this is increasingly important as capital market participants are placing an increased emphasis on risk management in their assessment of the credit-worthiness of potential borrowers or counterparties.
- Facilitate Nalcor's obligations to the Government of Newfoundland and Labrador ("Government") with respect to prudent management of the Province's energy resources.
- Improves governance and internal control.
- Enhance compliance with relevant legal and regulatory frameworks and helps avoid the incurrence of un-necessary regulatory costs (penalties, fines, etc.).
- Can improve loss prevention and incident management.
- Improve the Company's ability to respond and adapt to changes in the business and regulatory environments in which it operates.

3.4 Specific Objectives of this Policy

In order for Nalcor to achieve a strategic advantage through ERM and meet the goal of fully embedding risk management into existing processes, a number of key objectives must be met. This document will outline the framework and policies which Nalcor can use to develop, maintain and continually improve upon more detailed processes, procedures, systems and workflows for:

- Managing risk in accordance with current best practices,
- Devising and updating risk appetite statements and risk tolerance levels,
- Ensuring that active discussion takes place between the Leadership Team and the Board regarding ERM, risk appetite and risk tolerances,
- Ensuring that all facets of the Policy and risk management activities are driven by the risk appetite set by the Board,
- Clearly defining a core risk management group within the Company,
- Using risk registers and an emerging risk identification process to identify, analyze and measure operational, business, compliance and financial risks in a timely manner, such that proactive strategies can be developed and implemented,
- Achieving full integration of the Framework with Nalcor's corporate planning process
- Developing, defining and maintaining relevant and reliable risk metrics to quantify and report on key risks. This will include the use of an "ERM Dashboard" for Board and Leadership reporting,
- Ensuring those risk metrics are communicated to the appropriate parties (Leadership and the Board) in a timely fashion to assist in decision-making,
- Facilitating ongoing professional development in the area of risk management by ensuring ERM LOB representatives are responsible for training within their divisions. This will serve to increase baseline risk knowledge throughout Nalcor,
- Holding periodic risk workshops with Leadership to identify corporate-level strategic risks

- Integrating ERM with performance contracts,
- Assessing whether additional ERM information technology solutions are required when processes have sufficiently evolved.

4 Enterprise Risk Management Framework

In 2010, Nalcor's Board approved a 5-year plan for fully operationalizing ERM by 2014. In that regard, a properly chosen framework will ensure ERM becomes part of - and not separate from – the existing governance and reporting structure, strategic planning process and day-to-day operations[1]. Additionally, a well developed framework will help ensure consistency of application, create a common understanding of roles of responsibilities and ensure knowledge transfer is fostered. Taken together, all of these factors ensure ERM will become fully operationalized.

4.1 Nalcor's ERM Framework – ISO 31000

Nalcor has adopted the framework outlined in CAN/CSA-ISO 31000-10 (Risk Management – Principles and guidelines), published by the Canadian Standards Association (CSA) and the Standards Council of Canada (SCA). Comprised of representatives from government, consumer groups and industry and accredited by the SCA,, the CSA is a recognized as an authoritative source for the development and certification of standards in this country.

In devising this standard, both the CSA and the SCA adopted International Standards Organization ISO 31000 in its entirety The standard is not "prescriptive" with respect to ERM - rather, it lays out a generic, principles-based approach for integrating risk management into the overall governance, strategy and planning, management, reporting process, policies, values and corporate culture of the organization.

This standard was chosen for a number of reasons. First, the standard will be updated on an ongoing basis as the field of ERM progresses and new best practices emerge. Also, the ISO framework is the most consistent with the work done to date and can therefore be easily tailored to accommodate the existing processes and culture of Nalcor Energy. Finally, it is important to note that The Chief Risk Officer is accountable for ensuring future updates to the standards are reflected in this Policy.

A summary of the ISO framework, which serves as the basis for much of the following discussion in this and the remaining sections, can be found in Appendix 1 of this Policy.

4.2 Establishing the Context

As outlined in Appendix 1, at the process or LOB level the context must be established before risk assessment and the treatment of risk can begin. Establishing the context requires consideration of risk sources in the[2]:

1. External context/ environment
    - Includes factors considered in a typical analysis of Strengths, Weaknesses, Opportunities and Threats ("SWOT"), which forms part of the business planning process

[1] Adopted from CAN/CSA-ISO31000-10
[2] Adopted from CAN/CSA-ISO31000-10

- Examples include stakeholder expectations, cultural considerations, the business operating environment, the regulatory environment, financial markets, technological changes and the political landscape

2. Internal context/environment
   - Includes factors considered in typical SWOT analysis carried out in formulating the annual business plan and the 5-year strategic plan
   - Examples include information technology resources, the organizational culture and human resources (turnover, succession, training needs, etc.).

Each external and internal risk source identified should be considered and evaluated in the context of the potential impact on Nalcor's targets and objectives in the areas of Safety, Environment, Business Excellence

4.3 Risk Assessment

As outlined in Appendix 1, once the context is established, the risk assessment process can begin. The first step in that process, risk identification, requires an understanding of the concept of risk. The ISO 31000 standard broadly defines risk as the effect of uncertainty on objectives[3]. This Policy expands on that fundamental definition by defining several types of risk which differ with respect to the particular objective(s) which are impacted. Specifically, within Nalcor's ERM Framework risks are described as either: (1) Operational, (2) Strategic, (3) Financial and (4) Compliance. Collectively, these 4 types of risks are referred to as risk categories. Users should refer to the *ERM Risk Category – Subcategory Catalog*, which can be found in Appendix 2 of this Policy. Nalcor's *Financial Risk Management Policy* is also a useful reference with respect to the various categories of financial risk.

Once identified, risks for each LOB should be inventoried using a *Risk Register*, a sample of which is included in Appendix 3 of this Policy. In order to be aligned with best practice with respect to identifying risks, risk owners should consider the following[4]:

- It is imperative to consider the "other side" of all opportunities – that is, the risks associated with not pursuing an opportunity should always be considered
- Identification should include risks irrespective of whether their source is under control of the particular LOB
- For each risk identified, so-called "knock-on" or "spin-off" impacts should be considered.

Once risks are appropriately identified and inventoried within the risk register, risk assessment should continue with risk analysis and risk evaluation. The outcome of this sub process is a discrete rating for each risk in the inventory (Low, Medium, High), based on the likelihood of occurrence (i.e. probability) and the potential impact. Tools for risk analysis and risk evaluation include the *Risk Rating Matrix, Impact Measurement Tool* and the *Financial Impact Matrix,* which are included as Appendices 4 – 6 of this Policy.

[3] Adopted from CAN/CSA-ISO31000-10
[4] Adopted from CAN/CSA-ISO31000-10

4.4 Risk Treatment (Risk Strategies)

This section will differentiate the various strategies that can be used to address high impact risks during the risk treatment phase. Specifically, with respect to risk the risk owner can choose to (1) avoid, (2) mitigate, (3) transfer, and (4) accept the risk. Risk avoidance can be as simple as avoiding the risk by deciding not to start or continue with the activity that gives rise to the risk[5]. Instead of avoiding the risk, the owner can transfer the risk to another party, through the use of insurance or outsourcing (where applicable). In contrast, with risk acceptance the risk owner can make the informed decision to take no further action and retain the risk in pursuit of a commensurate return. Alternatively, the owner may attempt to reduce likelihood of occurrence by implementing a risk mitigation strategy[6]. Examples include the use of derivative financial instruments to address foreign exchange rate or commodity price exposure.

[5] Adopted from CAN/CSA-ISO31000-10
[6] Adopted from CAN/CSA-ISO31000-10

5 Corporate Risk Appetite and Tolerance Levels

Based on current best practice, this Policy is based on the concepts of risk appetite and risk tolerance. Therefore, in order to ensure successful implementation and operationalization of ERM, all stakeholders, both internal and external, will be required to understand these concepts clearly and apply them consistently. This section of the Policy:

1. Defines risk appetite and emphasizes the importance of developing separate risk appetite statements for each LOB and outlines factors to consider in setting risk appetite.
2. Defines the concept of risk tolerance as it relates to the overall risk appetite, which currently stated in the context of net income impact and corporate credit ratings, and emphasize the role these tolerances play in measuring and managing risk (i.e. clearly define corporate level metrics)
3. Establishes the Board as being accountable for setting and periodically reviewing the corporate risk appetite, tolerances and framework, which is consistent with the best practice of developing a strong "tone at the top" regarding risk management.

5.1 Corporate Risk Appetite

Risk appetite is defined as the nature and amount of risk an organization is willing to take in pursuit of returns[7]. It should be noted that this Policy places equal emphasis on both the type and magnitude of risk a particular LOB or subsidiary is willing to assume in meeting its strategic objectives.

Many organizations make implicit use of the concept of risk appetite, especially with respect to strategic planning. However, within the framework of a best in class ERM system, current best practice calls for the use of explicit, formalized risk appetite statements that are widely communicated to all stakeholders[8,9].

In that regard, the Policy recognizes that the subsidiaries of the Nalcor group all operate in different business environments (e.g. regulated vs. non-regulated), have different strategic objectives, and vary in terms of their capacity and ability to bear risk. Therefore, management of each LOB within the Nalcor group should develop their own risk appetite statement(s). In order to ensure consistency across all LOB's, the statements should be developed using a basic template provided by the CRO. As outlined in the ERM RACI (See Appendix 7), the Nalcor Energy Board is responsible for approving the risk appetite statements. Moreover, the Board is responsible for monitoring the appropriateness of these statements on an ongoing basis. Leadership and management of the particular LOB or subsidiary should formulate or revise these statements during the annual strategic planning process and submit for Board approval in conjunction with the annual business plan.

[7] *Articulating Risk appetite – Developing a formal risk appetite framework* (Deloitte – June 3, 2010)
[8] *Articulating Risk appetite – Developing a formal risk appetite framework* (Deloitte – June 3, 2010)
[9] *Understanding Risk Management for Utilities (*Committee of Chief Risk Officers – May, 2007)

These formal risk appetite statements act as the foundation of the ERM framework by:

- Providing a foundational reference point for the long-term strategic planning process and other corporate policies and procedures, such as the Financial Risk Management Policy, the annual Financial Risk Management Strategy and the Energy Marketing Policy and Procedure Manual
- Clearly outlining the boundaries for risk taking within each LOB, which will allow LOB Managers the appropriate level of flexibility and autonomy in day to day decision making
- Creating consistency and clarity in communications with all relevant stakeholders including employees, regulators, rating agencies, customers and the Government
- Providing LOB ERM representatives with a reference point in the ranking of risks identified within their LOB risk registers (see Section 7.3)
- Allowing leadership to optimize risk-adjusted returns by setting risk appetite very close to organizations capacity to bear risk, if desired
- Helping to determine which mitigation strategies are appropriate for high risk items. This is of particular relevance to mitigation strategies that pose a degree of risk themselves (e.g. use of derivative financial instruments for hedging commodity price exposures).

Leadership and management should consider both risk capacity[10] and risk philosophy[11] in the formulation of risk appetite statements for their particular LOB or subsidiary.

An LOB's risk capacity is enhanced by a number of factors:

- Financial strength, including degree of access to capital markets
- Earnings stability
- Operational capability to manage risk (risk management capability)
- Strength and importance of reputation
- Degree of regulatory oversight
- Strategic and competitive position

In contrast, an LOB's risk capacity is reduced by any risk-taking constraints:

- Externally imposed: e.g. regulatory requirements, bond or loan covenants
- Internally imposed: e.g. desired credit rating, dividend policy, net income targets

In the context of Nalcor and its subsidiaries, public perception and political considerations will also be critical constraints, given the nature of the business.

[10] *Articulating Risk appetite – Developing a formal risk appetite framework* (Deloitte – June 3, 2010)
[11] *Articulating Risk appetite – Developing a formal risk appetite framework* (Deloitte – June 3, 2010)

In formulating risk appetite the risk philosophy - which reflects both the corporate values and those of the particular LOB - should also be considered[12]. The two extremes are risk optimization, whereby an organization accepts short-term earnings volatility and operates near its risk capacity to maximize shareholder value, and risk avoidance, whereby the organization avoids all new ventures or business activities that pose uncomfortably high levels of risk[13].

The interplay between these various risk drivers is more fully outlined in Appendix 8.

5.2 Corporate Risk Tolerances

Once the risk appetite is approved, there should be ongoing monitoring of the risk profile of each LOB/subsidiary against the approved risk appetite. This monitoring process is operationalized by the use of clearly defined risk tolerances in the form of thresholds, ranges and limits.

In the context of Nalcor Energy, the risk tolerances are currently articulated in relation to earnings and creditworthiness. More specifically, the tolerances are stated in terms of:

- A minimum acceptable level of volatility in budgeted net income
- Maintenance of a minimum acceptable credit rating

Risk tolerance levels are established annually by way of the Financial Risk Management strategy for each LOB. Strategies put forth in the annual business plans and the five year strategic plans must be consistent with the risk appetite and more importantly, must not result in a situation that puts the Company offside with respect to risk tolerance levels.

5.3 Risk Tolerance Tools – Financial Impact Matrix

Risk tolerance at the LOB/subsidiary level provides a reference point to assist in ranking of the impact of risks catalogued in that particular LOB/subsidiary's risks register. From the perspective of financial impact, the closer the net income impact of a particular risk is to the risk tolerance, the higher the rating in the financial impact matrix. A copy of the current version of the Financial Impact Matrix is attached to this Policy as Appendix 6.

[12] *Articulating Risk appetite – Developing a formal risk appetite framework* (Deloitte – June 3, 2010)
[13] *Articulating Risk appetite – Developing a formal risk appetite framework* (Deloitte – June 3, 2010)

6 Risk Governance Structure

Current best practices in ERM call for a governance structure that[14]:

- Provides for clear delegation of authority with respect to risk and risk management
- Includes well-defined roles and responsibilities as well as accountability
- Uses policies, procedures, limits and enforcement systems
- Ensures adequate segregation of duties such that those responsible for taking risks are not responsible for measuring and reporting on those risks

Figure 6.1 below outlines the current governance framework within Nalcor, and emphasizes that the Board has delegated much of its authority with respect to risk management down to (1) the Vice President Finance and Chief Financial Officer (CFO), who in turn has delegated accountability for enterprise risk management down to the level of Chief Risk Officer (CRO)and (2) the LOB VPs.

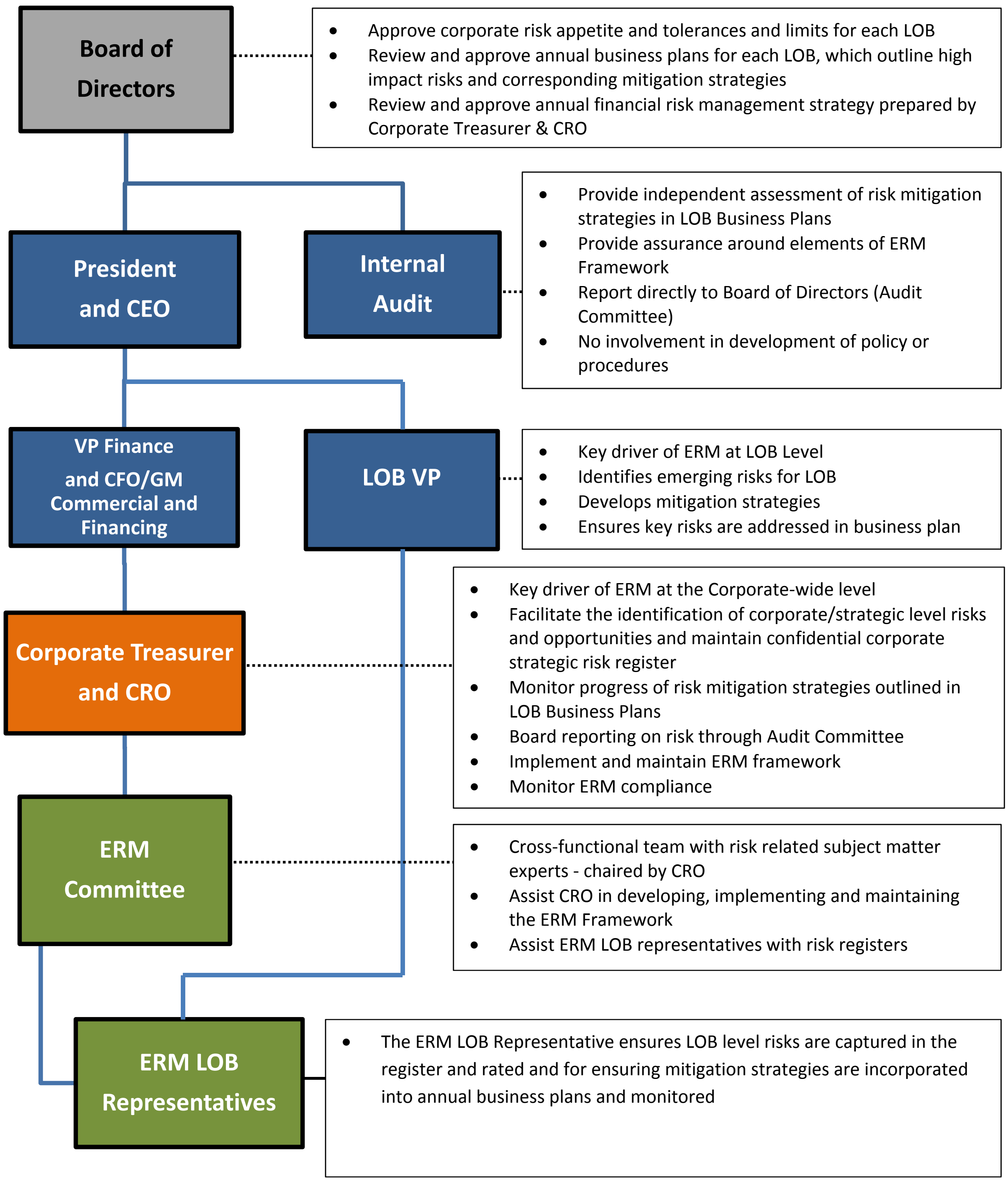
The CRO plays a key role in the corporate wide ERM framework and in the management of corporate level risks. While the CFO remains accountable to the Board for reporting on risk, the CRO is responsible and will be in attendance at all meetings where risk management is on the agenda. This ensures adequate segregation of duties. In that capacity, the CRO will be obliged to report to the Audit Committee on a regular basis. Prior to these Board meetings, the CRO is to brief the CFO on each of the agenda items. Initially, it is proposed that risk management will be an agenda item for the Audit Committee. Going forward, if the volume/importance of the risk management agenda reaches a critical mass, consideration could be given to the Board forming a separate Risk Management Committee. LOB VPs effectively drive the risk processes at the LOB level and are accountable for identifying key risks and for ensuring mitigation plans are put in place. LOB VP's are assisted by the ERM LOB Representatives.

The CRO is also responsible for overseeing the annual risk assessment process and, through co-ordination with the Manager of Strategic Planning, ensuring it takes place in concert with the business planning cycle. This is done by direct contact with the ERM Line of Business Representative, who is responsible for ensuring that the risk register is updated, risks are assessed and high risk items (post-mitigation) are addressed in the annual business plan. Eventually, we will ensure this alignment persists by including key dates for the risk management cycle in a Standards section that will be added to this Framework (See my response to Observation #39).

(**Continued on Next Page with Figure 6.1**)

[14] *Understanding Risk Management for Utilities (*Committee of Chief Risk Officers – May, 2007)

Figure 6.1: Governance Framework



7 Roles and Responsibilities within the ERM Framework

The previous sections broadly defined the ERM Framework (Section 4) and the ERM process at the LOB Level (Section 4) and delineated the governance structure with respect to risk (Section 5). In the context of the ISO 31000 ERM Framework (See Appendix 1) and the ERM RACI (See Appendix 2), this section will more fully explore the particular accountabilities and responsibilities within each of those roles identified previously and identify the key processes that ensure the broad ERM objectives are met. The section will also emphasize any important lines of communication between those roles.

7.1 Board of Directors

Through the Audit Committee, the Board approves and periodically reviews both the risk appetite and risk tolerances for each LOB. As well, Board approval is required for all changes to this Framework and related policies.

7.2 Chief Executive Officer (CEO)

The CEO is to be consulted on matters relating to reporting to the board, as well as on changes to the risk appetite or tolerances for each LOB and on any proposed ERM process improvements.

7.3 Vice President Finance and Chief Financial Officer (VP Finance and CFO)

With the exception reporting to the Board on the status of risk management, much of the remaining accountability for risk management is delegated to the LOB/Functional Vice Presidents and the Chief Risk Officer (see 6.4 and 6.5 below, respectively). However, the VP Finance and CFO is consulted on all maters related to risk tolerances for each LOB.

7.4 Chief Risk Officer

Reporting directly to the VP Finance and CFO, the Chief Risk Officer (CRO) has primary accountability for a great deal of ERM at the corporate-level (See Appendix 1). Specifically, the CRO:

- Oversees the annual risk assessment process and, through coordination with the Manager of Strategic Planning, ensures that it takes place in concert with the business planning cycle. This is to be done by direct communication with ERM Line of Business representatives, who are responsible for ensuring that the risk registers are updated and for ensuring risks are assessed or reassessed as required, and with the Line of Business VP’s, who are accountable for those risks.
- Chairs the Enterprise Risk Management Committee and ensures meetings are held at least quarterly and that there is adequate representation and expertise on the committee.
- Reviews this Policy and other ERM documentation for quality assurance and adherence to best practice and provides training as necessary.
- Identifies corporate level strategic risks and opportunities through Strategic Risk Workshops and for the maintenance of a corporate strategic risk register for any risks identified.
- Has primary accountability and responsibility for initial design of the ERM Framework (“Design of framework for managing risk” in Appendix 1). Consults with the ERM Committee on all aspects of the Framework.

- Monitors the ERM Framework and Process and consults with the ERM Committee to identify opportunities for improvement ("Monitoring and review of the framework" and "Continual improvement of the framework" in Appendix 1).
- Monitors mitigation strategies for high risk items
- Responsible for periodically reviewing risk tolerances ("Monitoring and review of the framework" in Appendix 1) in consultation with the CFO and CEO.
- Responsible for reporting the status of above-noted items and the progress of the ERM Committee to the Board in consultation with the VP Finance and CFO.
- Participates in (or delegates participation in) the corporate due diligence process to ensure timely identification of emerging risks
- Designs and delivers training sessions as required as required
- Responsible for designing and managing the escalation process and decides on appropriate course of action when risk tolerances fall outside approved ranges or when there has been a clear violation to or deviation from this Policy.

7.5 Line of Business Vice Presidents (LOB-VPs)

Within the ERM Framework, the LOB VP's are primarily accountable for most aspects of the risk assessment process (see Appendix 1) at the LOB level. In particular, the LOB VP's are:

- Accountable for identifying the external and internal factors that determine the context for risk assessment and for ensuring all risks identified. Also , the Asset Managers have responsibility for assisting the LOB VP's in this regard;
- Accountable for risk treatment and for developing appropriate mitigation strategies; and
- Accountable for integrating mitigation strategies into the 5-year plan in consultation with Asset Managers and Risk Owners;
- Accountable and responsible for identifying potential areas of emerging risk on an ongoing basis and consults with CRO and Manager, Risk and Insurance on such issues.

7.6 Line of Business ERM Representatives

As per the ERM Committee Charter, the LOB ERM Representatives form a sub-committee of the ERM Committee. Representatives are expected to be ERM subject matter experts for their LOB. Line of Business ERM Representatives play a central role by serving as coordinators for the annual risk assessment and ensuring that it takes place in a timely and effective manner. Key responsibilities are as follows:

- Identifies appropriate individuals within the LOB to identify, document and rate risks;
- Ensures that the risks identified are captured in the LOB's risk register and that the assessments are up to date;
- Assists in the development of risk treatments and mitigation strategies for identified risks;
- Monitors progress of mitigation strategies and reports to CRO and ERM Committee on same
- Updates the risk register for any emerging risks identified outside the annual planning process; and

- Coordinates with LOB ERM Representatives to design and deliver ERM training within the LOBs.

7.7 Risk Analysis and Evaluation

Once risks have been identified and inventoried in the registers, the LOB Asset Manager(s) is/are responsible for identifying a Risk Owner for each risk, which should be the individual with the required expertise to manage and assess the particular risk. Designated Risk Owners are responsible for using the ERM Risk Toolset (see Appendices 3 – 6) to determine a risk rating for each risk for which they have ownership. The risk owners are also accountable and responsible for implementing any budgeted mitigation strategies.

7.8 Risk Owners

As outlined above, designated Risk Owners are responsible for using the ERM Risk Toolset (see Appendices 3 – 6) to assess each risk for which they have ownership. The risk owners are also accountable and responsible for implementing any budgeted mitigation strategies.

However, given the diverse nature of the risks facing Nalcor, it is difficult to clearly define responsibilities of the Risk Owner at a tactical level. Therefore, it is the responsibility of the LOB VP to ensure the risk owner clearly understands the responsibilities and expectations with respect to the risk(s) which they have been assigned. The understanding can be documented in a manner agreed upon by the parties involved.

7.9 Enterprise Risk Management Committee

Established by the VP Finance and CFO and approved by the Board, this committee is to act for Nalcor in developing, implementing, managing and continuously maintaining “best practice” standards for risk management. The committee is structured to ensure there is subject matter expertise at the committee level. The Terms of Reference for the ERM Committee are included as Appendix 9.

The committee:

- Is responsible for assisting the CRO with reviewing and identifying ERM process improvements
- Will be consulted by CRO when compiling data for reporting
- Assist the CRO in reviewing ERM documentation for QA compliance

7.10 Emerging Risk Identification

While the LOB VP’s are accountable and responsible for identifying and reporting on emerging risks on an annual basis, risks emerging during the year may also warrant an immediate response based on this Framework. This Framework addresses emerging risk in several ways.

New contracts and agreements are one source of emerging risk for Nalcor. In that regard, as outlined in Section 6. 4 above, the CRO is responsible for ensuring that Treasury and Risk Management participate in all corporate due diligence reviews of new contracts and agreements.

Secondly, the discussion of emerging risks will be a standing agenda item for quarterly ERM Committee meetings.

Finally, this Policy recognizes that Nalcor's legal department is uniquely positioned to identify certain financial and compliance risks by virtue of their involvement in the contract review process. The CRO has developed an emerging risk identification framework in consultation with the legal department. During the course of reviewing contracts, Legal will advise the CRO if any of the following questions can be answered in the affirmative with respect to a pending agreement:

1. Could the agreement result in a gross cash outlay of greater than $10 million in any given year?
2. Could the agreement result in a gross cash inflow of greater than $10 million in any given year? (Note: Questions # 1 and 2 should be viewed and considered as mutually exclusive. In other words, there should not be netting.)
3. Could the agreement present an exposure in any given year to commodity price, foreign exchange or interest rate risk in excess of $10 million in total?
4. Could the agreement necessitate the placement of insurance?
5. Could the agreement result in liability in connection with claims, losses, and law suits alleging personal injury, property damage or loss of income?
6. Could the agreement expose the company to successful lawsuit for non-performance in an amount exceeding $10 million?
7. Is it likely that the agreement could expose the company to significant reputational risk?
8. Are there any other aspects of the agreement which in the judgement of legal counsel would warrant a thorough review of related risks by the Chief Risk Officer?

Changes in the internal and external operating environment are also a source of emerging risks and these changes need to be addressed on an ongoing basis. In that regard, the feasibility of the following initiatives will be explored under this Framework:

- Near term - Inclusion of a standing agenda item for emerging risk at quarterly ERM Committee meetings
- Longer term – Inclusion of a standing agenda item for emerging strategic risks at monthly Leadership Team meetings

7.11 Internal Audit and Enterprise Risk Management

There are a number of key roles that the internal audit function should play in Enterprise Risk Management, both during the implementation and on an ongoing basis thereafter. According to a recent white paper by the Institute of Internal Auditors Research Foundation (March, 2011), there are a number of "core" roles for internal audit in a best in class ERM Framework, such as:

- Providing assurance on the risk management process (risk identification, risk analysis and risk evaluation)

- Providing assurance on the risk treatment process, with particular emphasis placed on assessing completeness and accuracy of risk registers and the appropriateness of mitigation strategies
- Evaluating the risk management process outlined in Appendix 1
- Evaluating the ERM Framework outlined in Appendix 1
- Reviewing the management of key risks

By carrying out these roles, Internal Audit is positioned to quickly identify any gaps such that they can be addressed quickly. Also, as Nalcor progresses with the implementation of the Framework, Internal Audit should commence regular reporting to the Board on its audits of the Framework.

However, to ensure appropriate segregation of duties, Internal Audit will not[15]:

- Have any accountability for the ERM Framework
- Have any involvement in the process of formulating risk appetite
- Make any decisions with respect to the treatment of risks
- Implement any risk mitigation or other treatment of risks on behalf of management

[15] Internal Auditing's Role in Risk Management (IIARF White Paper – March, 2011)

8 ERM Metrics and Reporting

8.1 ERM Metrics

As outlined in Appendix 1, ongoing monitoring and assessment of risk management is a central part of the Framework. The process involves using clearly defined, relevant and reliable **risk metrics** to constantly monitor the LOB's risk profile and compare it to the approved risk tolerances.

This Framework does not prescribe a specific list of risk corporate metrics. Rather, it is the intent that each LOB will add new metrics and revise existing ones as (a) the underlying business risk profile changes and (b) as the ERM Framework expands. The intent is to have measurable metrics that are also relevant in that they reflect the status of the particular risks outlined in the risk registers. To that end, metrics need to extend beyond financial (Business Excellence) and should cover risk related to other Corporate Goals (Safety, Environment, People and Community) and should allow for frequent and timely reporting, which will allow sufficient time for corrective action, if required.

As an example, the current list of appropriate risk metrics is as follows*:*

- Financial: Earnings (net income) at risk, by LOB
- Financial: Maintenance of investment grade credit rating
- Financial: Credit rating of major counterparties
- Financial: Actual realized monthly pricing on commodities versus budgeted prices as a measure of hedge effectiveness. Financial: Forecasted realized monthly pricing on commodities versus hedged prices, as a forward looking proxy for hedge effectiveness
- Operational, Compliance and Strategic: Progress on mitigation strategies developed for "High" risks identified as part of LOB risk register and annual business plan

8.2 Reporting to Board of Directors

The CFO is accountable for reporting to the Board with respect to ERM. Reports should be provided at least on a semi-annual basis and should address:

- Status of mitigation strategies for high risk items from risk registers
- Update on financial risk management strategy
- Update on progress of 5-year ERM plan

8.3 External Reporting

External reporting of risk appetite and risk tolerances is consistent with best practices. Therefore, this section identifies external stakeholders to whom Nalcor should communicate its risk appetite and risk tolerances once ERM becomes fully operationalized. A major avenue for disclosing key aspects of the ERM Framework to these stakeholders will be the annual report. Key stakeholders include

- Government

- Credit rating agencies (Moody’s, Standard and Poors and Dominion Bond Rating Service)
- Newfoundland and Labrador Board of Commissioners of Public Utilities

9 Standards for ERM

The following table outlines current standards with respect to accountability and frequency for the key processes within the ERM Framework. This table will expand as the Framework is implemented.

Table 9.1 – ERM Standards

Standard	Accountable (Responsible)	Frequency or deadline
1. Update risk register for each LOB	LOB ERM Rep (LOB VP)	Annually
2. Develop mitigation strategy for each HIGH risk (residual) in register	LOB VP (Risk Owner) (LOB ERM Rep)	Annually
3. Incorporate mitigation strategies from 2 above into 5-year business plan for upcoming year	LOB VP (LOB ERM Rep) (Risk Owner)	Annually
4. Call and conduct meeting of the ERM Committee	CRO	Quarterly
5. **Report to the Board on status of financial risks management strategy and status of mitigation strategy for key operational risks**	CFO (CRO)	At least annually
6. Assess progress against 5-Year ERM Plan and maturity model and report to Board	Internal Audit	At least annually

10 Monitoring and Communicating Risk Maturity

The following table outlines key criteria which will be used in assessing and communicating Nalcor's progress with respect to risk maturity.

Table 9.1 – Risk Maturity Model

Enhanced Risk Management Attribute	Basic	Mature	Advanced
Maturity Description	The organization meets basic internal and external stakeholder risk management expectations from a compliance perspective.	Activities and techniques are employed for enhanced stakeholder confidence that risk is being managed proactively. Integration of risk management activities occurs across the organization.	Risk management is seen as a strategic tool to enhance performance and is a core value of the organization.
Governance & Accessibility	Risk management policies and procedures exist to meet compliance and internal control requirements.	A risk management framework and governance structure exists with clear accountabilities to support risk management objectives.	Risk management accountability fully integrated with performance management.
Decision Making	Decision making is supported by limited or highly specialized risk analysis at the functional level.	Major capital, operations, technology and change management decisions are supported by risk assessments. Risk and control activities are embedded in business processes.	The strategic planning process is fully supported and aligned with the risk management process. There is strong evidence that both formal and informal decision making are enhanced by risk management.
Risk Management & Optimization	Functional risk assessments with limited analysis and interpretation occur from an organization-wide perspective.	Frequent risk assessments occur in line with normal management analysis and reporting. Risks are assessed and managed in an integrated fashion across	The organization conducts strategic risk assessments, business unit or operational risk assessments and major investment or project risk assessments. The risk

		the organization.	assessment process is aligned with the multi-year strategic planning and annual business planning cycles.
Communications & Reporting	Business risk reporting is primarily designed to support external reporting or compliance requirements.	There is extensive reporting to the board or governing body, the audit committee and key stakeholders on current risk levels and future risk issues.	There is organization-wide analysis, aggregation and reporting across all risk areas. This is supported by specialized risk management information systems. There is alignment of all risk reporting to provide a comprehensive top-down and bottom-up view of risk.
Performance Assessment & Continuous Improvement	Performance assessment is tied to functional or highly specialized risk management responsibilities.	Explicit requirement for risk management performance assessment is aligned with the governance and accountability structure. There is periodic and independent evaluation of the risk management framework, policies, procedures and personnel. A multi-year continuous improvement program is in place.	There is risk-adjusted strategy performance evaluation and resource allocation.

11 Procedures for Updating Policy

The Chief Risk Officer is responsible for updating this Policy and for ensuring the Framework continues to be aligned with best practice. After approval by the Enterprise Risk Management Committee, changes to this Policy have to be reviewed by the Leadership team and approved by the Board.

12 Glossary of Key Terms

The following definitions are adapted from a number of sources: (1) Committee of Sponsoring Organizations of the Treadway Commission (COSO), (2) Deloitte and Touche LLP and CAN/CSA-ISO 31000-10 as published by the National Standard of Canada.

Enterprise risk management – a group of coordinated activities , effected by the organization's board of directors, management and other personnel in strategy setting and across the enterprise, designed to identify potential events that may affect the organization, and manage risk to be within the organization's risk appetite.

ERM framework – set of components that provide the foundations (policy, objectives, mandate and leadership commitment) and organizational arrangements (accountabilities, processes, responsibilities and resources) for designing, implementing, monitoring, reviewing and continually improving risk management throughout an organization

ERM policy – statement of overall intentions and direction of an organization related to ERM

External context – external environment in which the organization seeks to achieve its objectives including key drivers and trends having an impact on the objectives of an organization and the cultural, social, political, legal, regulatory, financial, economic, natural and competitive environments in which it operates

Impact – The relative significance of a particular risk to an entity if that risk event came to pass. The magnitude of the impact is assessed with respect to the effect on achieving the corporate goals of Safety, Environment, Business Excellence, People and Community,

Internal context – internal environment in which the organization seeks to achieve it's objectives, which encompasses consideration of the organization's governance framework, organizational structure, objectives, capabilities, culture, policies and information systems

Likelihood –The probability that a particular risk will occur within a given time period. In assessing the probability of occurrence for the purpose of risk assessment, it is important to define the time period over which the likelihood of occurrence is being assessed.

Residual risk – risk remaining after consdering the effectiveness of the chosen risk treatment (i.e. post-mitigation)

Risk – the effect of uncertainty on objectives, or anything that could prevent the organization from achieving its objectives if it came to pass (sometimes referred to as a "risk event")

Risk appetite – the nature and amount of risk an organization is willing to take on in pursuing its goals. Forms the bounds within which management must operate the business.

Risk analysis – process undertaken to comprehend the nature of risk and to determine the level of risk

Risk assessment – the overall process of risk identification, risk analysis and risk evaluation

Risk capacity – a key consideration in formulating risk appetite, it refers to the organization's ability to assume the impact of an adverse event as well as its degree of sophistication with respect to effecting risk management processes

Risk categories – Financial, Strategic, Operational or Compliance

Risk evaluation – process of comparing the results of the risk analysis with risk criteria to determine whether the risk and/or its magnitude is acceptable or tolerable

Risk identification – process of finding, recognizing and describing risks

Risk owner – person or entity with the accountability and authority to manage a risk or delegate

Risk philosophy – see risk appetite

Risk source – element which alone or in combination has the intrinsic potential to give rise to uncertainty

Risk tolerance – explicit statement of the acceptable level of variation from intended outcomes that serves as a means by which risk appetite can be operationalized. The tolerance is reflective of and consistent with the risk appetite. For example, an organization with an aggressive appetite for risk might define risk tolerance as a change in

Risk Treatment – often referred to as risk mitigation, it describes a process undertaken to modify a risk which can include avoiding the risk, accepting the risk to pursue opportunity, removing the risk source, changing the likelihood, changing the consequences, sharing or transferring the risk or retaining the risk by informed decision

Appendix 1 – Application of ISO 31000 Standard to Nalcor's ERM Framework

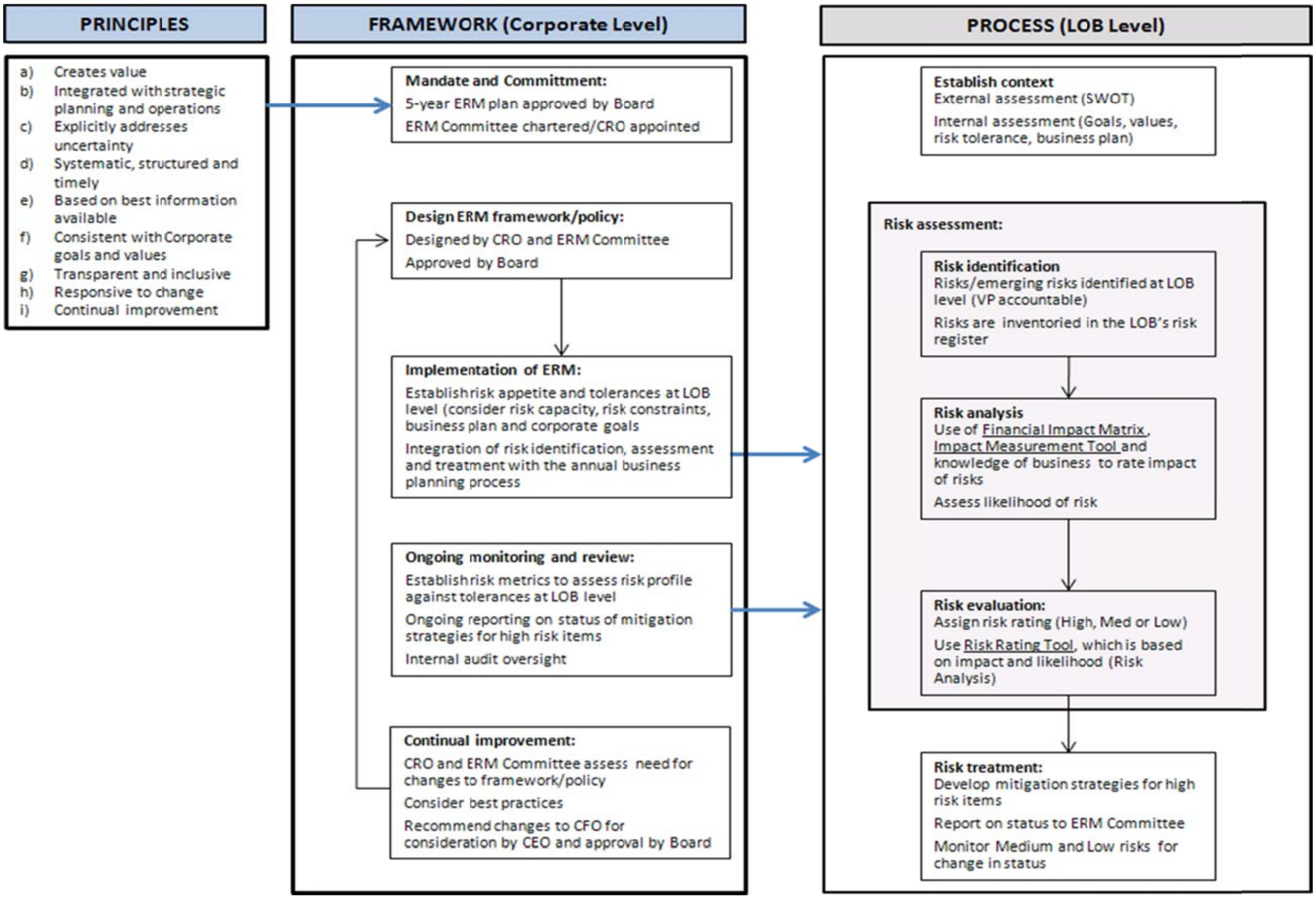


Figure above adapted from Figure 1 as published in *CAN/CSA-ISO 31000-10 – National Standard of Canada*

Appendix 2 – Risk Category and Subcategory Catalogue

NALCOR ENERGY
Categorization of Risk Exposures

1.000 STRATEGIC
1.100 **External Environment**
1.110 Political risk
1.120 Demographic changes
1.130 Legislative change
1.140 Environmental factors
1.150 Economic factors
1.151 Marketing sales and competition
1.160 Social factors
1.170 Natural disaster
1.180 Terrorism
1.200 **Organizational Culture**
1.210 Tone at the top
1.220 Governance
1.230 Leadership philosophy
1.240 Management style
1.250 Decision model
1.270 Ethics
1.280 Shared values
1.291 Lines of authority
1.292 Adaptability to change
1.300 **Structural and Growth**
1.310 Quality of opportunity assessment process
1.320 Inappropriate corporate or management structure
1.400 **Human Resources**
1.410 Staffing levels
1.420 Staff competencies
1.430 Recruitment/retention decisions
1.440 Performance incentives and compensation
1.450 Staff turnover
1.460 Job action
1.470 Training
1.480 Succession planning
1.500 **Information Resources**
1.510 Information/data security
1.520 Information/data quality
1.530 Availability/access to information
1.540 Obsolescence
1.550 Integration/coordination
1.560 Performance information
1.600 **Reputational risk**

2.000 OPERATIONAL
2.100 **Business Process**
2.110 Process/service quality
2.120 Process/service efficiency
2.130 Business continuity
2.140 Policies and procedures
2.150 Fraud
2.160 Reliance on third party
2.170 Quality of planning
2.180 Operational capacity
2.190 Internal controls
2.200 **Physical Assets**
2.210 Suitability
2.220 Theft
2.230 Breakdown
2.240 Level of maintenance
2.260 Misuse
2.270 Obsolescence
2.290 Inadequate design
2.300 Total asset loss (fire, explosion, etc)

3.000 FINANCIAL
3.100 **Market Fluctuation**
3.110 Interest rate risk
3.120 Foreign currency risk
3.130 Commodity price risk
3.200 **Investment risk**
3.300 **Liquidity Risk**
3.310 Capital funding
3.320 Operational funding
3.330 Re-financing risk
3.400 **Credit Risk**

4.000 COMPLIANCE
4.100 **Regulatory**
4.110 Public Utilities Board directives
4.120 Environmental regulations
4.200 **Financial Reporting**
4.210 Use of inappropriate accounting principles
4.300 **Legislative**
4.310 Various corporate acts
4.400 **Policy**
4.410 Corporate policy adherence
4.500 **Contractual**
4.510 Power contracts
4.520 Other contracts

***This list meant to facilitate the process of risk identification and is therefore not exhaustive in scope. Users should rely on their own knowledge and expertise within their LOB when identifying risks.**

Appendix 3 – Sample Risk Register

Risk Register for 2013 Business Plan (Sample)

LOB:

Date:

A1 = Avoid
M = Mitigate
T = Transfer
A2 = Accept

Risk #	Risk Description	Risk Category	Corp. Goal Impacted	Primary Risk Owner	Secondary Risk Owner	Risk Rating	Risk Strategy				Description of Risk Strategy	Residual Risk Following Implementation of Mitigation Strategy	Residual Risk Likelihood 1 to 5	Residual Risk Impact 1 to 5	Residual Risk Rating	2013 Plan Priority?
							A1	M	T	A2						

Appendix 4 – Risk Rating Matrix

NALCOR ENERGY

Risk Rating Matrix

					IMPACT*				
					Insignificant	Minor	Moderate	Major	Extreme
					1	2	3	4	5
					An event that has virtually no impact.	An event that could be considered as minor and of no lasting consequence.	An event that causes a disruption in performance levels without suspending operations	An event that results in substantial losses and that forces a suspension of certain operations for a period of time, or that permanently compromises the ability to realize one or more Corporate goals.	A catastrophic event that forces the suspension of all operations over a sustained time frame, perhaps permanently.
LIKELIHOOD	Almost Certain	5	>90%	Almost inevitable that this event will occur unless circumstances change	Low	Medium	High	High	High
	Likely	4	>50% to 90%	Likely to occur in most circumstances	Low	Medium	Medium	High	High
	Possible	3	1% to 50%	Might occur under certain circumstances	Low	Low	Medium	Medium	High
	Unlikely	2	0.01% to < 1%	Remote possibility of occurrence	Low	Low	Medium	Medium	Medium
	Rare	1	< 0.01%	Rare or Extremely Improbable - An unusual combination of factors would be required for the event to occur	Low	Low	Low	Low	Medium

* For further guidance in the assessment of impact, refer to the Impact Measurement Tool and also the Financial Impact Matrix.

Appendix 5 – Risk Impact and Likelihood Measurement Tools

Likelihood Levels	% Chance of Occurrence	Description
Almost Certain **5**	> 90%	Almost inevitable that this event will occur unless circumstances change
Likely **4**	> 50% to 90%	Highly likely to occur in most circumstances
Possible **3**	> 1% - 50%	Might occur under certain circumstances
Unlikely **2**	0.01% to 1%	Remote possibility of occurrence
Rare **1**	< 0.01%	Rare or Extremely Improbable – An unusual combination of factors would be required for the event to occur

SUMMARY STATEMENT: An event that has virtually no impact.					
Impact Levels	**Safety**	**Environment**	**Business Excellence**	**People**	**Community**
Insignificant **1**	• (a) Minor impact on personnel. First aid only • (b) No lost time	• (a) Environmental impact that does not attract press coverage and is not reportable • (b) Very minor, non-permanent environmental damage requiring no clean-up measures • (c) No assistance from other entities required • (d) No regulatory compliance concern	• (a) Asset damage or loss with insignificant financial impact • (b) Inability to complete > 95% of scheduled work plan • (c) Repair time < ¼ Maximum Acceptable Downtime as established per Business Continuity Planning Process • (d) Conditions leading to loss of generating efficiency having insignificant impact • (e) An event that reduces net income less than 1% of the average net income of the business unit for the last three years • (f) A loss of assets valued at less than 0.1% of total LOB assets. • (g) A loss of assets less than 0.1% of shareholders' equity. • (h) Liquidity not impacted to any significant degree • (i) Insignificant losses on funds invested • (j) Execution of a growth strategy that results in insignificant financial losses • (k) Very minor loss of corporate data • (l) Non-compliance with applicable legislation, environmental regulations, Public Utilities Board Directive contractual obligations, corporate policy or procedure that results in some impact that can be considered as insignificant • (m) no need to notify financiers of event • (n) Delay of 6 months or less beyond established contractual lead times for major industrial or wholesale load. • (o) Very limited exposure of sensitive information • (p) An impact on anticipated NPV of a project that is insignificant • (q) Up to 1 week project delay (LCP)	• (a) Difficulty in attracting/retaining employees for a particular position with-in the company • (b) Greater than 90% of employees agree with corporate strategic direction • (c) Virtually no instances of internal reprimands/discipline	• (a) No or very minor media attention • (b) Insignificant damage to public property that does not result in any disruption of service • (c) An incident having minor impact on the public. First aid only. • (d) Little or no loss in stakeholder trust/commitment

SUMMARY STATEMENT: An event that could be considered as minor and of no lasting consequence.					
Impact Levels	**Safety**	**Environment**	**Business Excellence**	**People**	**Community**
Minor **2**	• (a) Medical treatment for personnel • (b) Lost time incident	• (a) Environmental impact that does not attract press coverage and is reportable • (b) Minor, non-permanent environmental damage requiring very limited clean-up efforts • (c) Little or no assistance from other entities required • (d) Regulatory non-compliance addressed by internal improvements initiative	• (a) Loss of large physical asset that is replaceable in a short period of time without disruption to service or compromises ability to achieve one or more corporate goals • (b) Inability to complete > 90% of scheduled work plan • (c) Repair time ≥ ¼ and ≤ ½ Maximum Acceptable Downtime as established per Business Continuity Planning Process • (d) Conditions leading to loss of generating efficiency resulting in some financial or reputational impact • (e) An event that reduces net income not more than 20% of the average net income of the business unit for the last three years • (f) A loss of assets valued at not more than 1% of total LOB assets. • (g) A loss of assets equal to not more than 2% of shareholders' equity • (h) Corporate lines of credit constricted but operations not significantly impacted. • (i) Minor losses on funds invested • (j) Execution of a growth strategy that results in minor financial losses • (k) Limited loss of corporate data • (l) Non-compliance with applicable legislation, environmental regulations, Public Utilities Board Directive contractual obligations, corporate policy or procedure that results in some impact that can be considered as minor and of no lasting impact • (m) Financiers notified of impact but virtually no impact on available lines of financing • (n) Delay of between 6 – 12 months beyond established contractual lead times for major industrial or wholesale load • (o) Limited exposure of sensitive information • (p) An impact on anticipated NPV of a project that is minor • (q) 1 week to 1 month project delay (LCP)	• (a) Difficulty in attracting/retaining a specific discipline of skilled employees at a particular geographic location • (b) Between 80% and 90% of employees agree with corporate strategic direction • (c) Some instances of internal reprimands/discipline	• (a) Some unfavourable media attention • (b) Some damage to public property that does not inconvenience the public • (c) An incident necessitating medical treatment for members of the public • (d) Some loss in stakeholder trust/commitment that is easily rebuilt

SUMMARY STATEMENT: An event that causes a disruption in performance levels without suspending operations					
Impact Levels	**Safety**	**Environment**	**Business Excellence**	**People**	**Community**
Moderate **3**	• (a) Injuries to employees that do not result in some permanent disability • (b) Multiple lost time incidents outside established targets	• (a) Environmental impact that garners local press • (b) Temporary environmental damage requiring some clean up effort • (c) Assistance from previously contracted entities may be required • (d) Regulatory non-compliance identified by government inspector resulting in administrative penalty	• (a) Loss of a physical asset that causes a disruption in performance without suspending operations • (b) Inability to complete > 70% of scheduled work plan • (c) Repair time > ½ and ≤ Maximum Acceptable Downtime as established per Business Continuity Planning Process • (d) Loss of generating efficiency resulting in moderate financial impact • (e) An event that reduces net income not more than 100% of the average net income of the business unit for the last three years • (f) A loss of assets equal to not more than 3% of total LOB assets. • (g) A loss of assets equal to not more than 10% of shareholders' equity. • (h) A default on a corporate debt obligation is quickly remedied, but liquidity issues remain. • (i) Moderate losses on funds invested • (j) Execution of a growth strategy that results in moderate financial losses • (k) Some loss of corporate data • (l) Non-compliance with applicable legislation, environmental regulations, Public Utilities Board Directive contractual obligations, corporate policy or procedure that results in a disruption in performance levels without suspending operations. • (m) Financing for growth activities restricted • (n) Delay of one year beyond established contractual lead times for major industrial or wholesale load • (o) Exposure of sensitive information that garners some local media attention or with moderate financial consequences • (p) An impact on anticipated NPV of a project that is moderate • (q) 1 to 3 months project delay (LCP)	• (a) Unable to attract/retain multiple disciplines of skilled employees at a specific geographic location • (b) Between 70% and 80% of employees agree with corporate strategic direction • (c) Instances of internal reprimands/discipline that are above normal in terms of frequency	• (a) Local media coverage only • (b) Damage to public property that causes inconvenience in a localized area • (c) Injuries to the public that do not result in some permanent disability • (d) Some loss in stakeholder trust/commitment that will require a committed effort to rebuild

SUMMARY STATEMENT: An event that results in substantial losses and that forces a suspension of certain operations for a period of time, or that permanently compromises the ability to realize one or more Corporate goals.					
Impact Levels	**Safety**	**Environment**	**Business Excellence**	**People**	**Community**
Major **4**	• (a) Serious personal injury to employees resulting in permanent disability • (b) Total Lost time well outside established targets to the point where operations are temporarily suspended	• (a) Environmental impact that garners national press • (b) Extended clean-up effort required • (c) Requires assistance of previously contracted entities • (d) Regulatory non-compliance with stop work order issued	• (a) Loss of a physical asset that causes a significant disruption in delivery of essential services • (b) Inability to complete > 50% of scheduled work plan • (c) Repair time > Maximum Acceptable Downtime as established per Business Continuity Planning Process for a significant asset. • (d) Loss of generating efficiency resulting in major financial impact • (e) An event that eliminates not more than three years worth of net income • (f) A loss of assets equal to not more than 10% of total LOB assets. • (g) A loss of assets equal to not more than 30% of shareholders' equity • (h) Liquidity problems lead to temporary suspension of operations and significant reputational damage. • (i) Major losses on funds invested • (j) Execution of a growth strategy that results in major financial losses • (k) A loss of a significant amount of corporate data • (l) Non-compliance with applicable legislation, environmental regulations, Public Utilities Board Directive contractual obligations, corporate policy or procedure that results in temporary suspension of operations or permanently compromises ability to achieve one or more corporate goals • (m) Sources of financing severely restricted with no financing available for growth activities • (n) Delay of two years beyond established contractual lead times for major industrial or wholesale load • (o) Exposure of sensitive information that garners National media attention or with major financial impact • (p) An impact on anticipated NPV of a project that is major • (q) 3 to 12 month project delay (LCP)	• (a) Unable to attract/retain multiple disciplines of skilled employees at many geographic locations • (b) Between 50% and 70% of employees agree with corporate strategic direction • (c) Numerous instances of internal reprimands/discipline that are well above historical levels	• (a) Local and possibly national media coverage • (b) Significant damage to public property that entails hardship in a localized area • (c) Serious personal injury to the public resulting in permanent disability • (d) A loss in stakeholder trust/commitment that is doubtful whether it can be rebuilt

SUMMARY STATEMENT: A catastrophic event that forces the suspension of all operations over a sustained time frame, perhaps permanently.					
Impact Levels	**Safety**	**Environment**	**Business Excellence**	**People**	**Community**
Extreme **5**	• (a) Employee fatalities resulting from gross negligence on the part of the LOB • (b) Total Lost time far outside established targets to the point where operations suspended for extended period	• (a) Environmental disaster that garners international press • (b)Major impact of extended duration requiring full scale response • (c) Requires assistance of other corporate and governmental entities not previously contracted • (d) Regulatory non-compliance resulting in a shut down of all operations for extended period	• (a) Loss of key physical assets that cause longer term shut down of operations • (b) Inability to complete > 25% of scheduled work plan • (c) Repair time > Maximum Acceptable Downtime as established per Business Continuity Planning Process for a number of significant assets. Unable to perform essential services for extended period as a result. • (d) Loss of generating efficiency resulting in extreme financial impact • (e) An event that eliminates three year's worth of net income • (f) A loss of assets equal to more than 10% of total LOB assets. • (g) A loss of assets equal to greater than 30% of shareholders' equity • (h) Inadequate lines of credit force a liquidity crisis that leads to a permanent suspension of operations. • (i) Extreme losses on funds invested • (j) Execution of a growth strategy that results in extreme financial losses • (k) A total loss of corporate data • (l) Non-compliance with applicable legislation or contractual obligations that results in extreme impact • (m) All sources of financing cut off • (n) Delay of over three years beyond established contractual lead times for major industrial or wholesale load • (o) Exposure of sensitive information that garners national and/or international media attention or with extreme financial impact • (p) An impact on anticipated NPV of a project that is extreme • (q) Greater than 12 month project delay (LCP)	• (a) Unable to attract/retain multiple disciplines of skilled employees at most geographic locations • (b) Less than 50% of employees agree with corporate strategic direction • (c) Widespread instances of internal reprimands/discipline that are far above historical levels	• (a) National and international media coverage • (b) Serious damage to public property that results in widespread hardship • (c) External fatalities resulting from gross negligence on the part of the LOB • (d) An irreparable loss in stakeholder trust/commitment

Appendix 6 – Financial Impact Matrix

Currently under review

Appendix 7 – Enterprise Risk Management RACI Chart

Enterprise Risk Management RACI *PROCESS ELEMENTS*	***Stakeholders*** *(Owner: Corporate Treasurer & Chief Risk Officer)* BOD	CEO	CFO	CRO	LOB VP	Funct VP	Legal Dept	ERM Comte	Corp Plan Mgr	Asst Treasr	R & I Mgr	LOB ERM Rep	LT Asset Mgr	Asset Owner	Risk Owner
1 Potential areas of emerging risk are identified and reported in a timely manner			I	C	AR	C	C					I	I		
2 Identify Corporate level risks and opportunities through Strategic Risk Workshop		C	C	AR	C	C	I	I	I						
3 Identify uncertain events, and resultant risks and opportunities for each LOB				C	A	C						C	R		
4 Clarify and communicate opportunities identified		I	I	AR	I	I	I	I	I	I		C	C	I	
5 Identify risk owner				C	C	C						C	AR	C	I
6 Determine risk rating for each risk identified					I	I						C	C	C	AR
7 Develop appropriate mitigation strategies for higher level risks				C	A	C						I	C	C	R
8 Maintain register of Corporate level strategic risks		I	I	AR	I	I	I	I	I						
9 Maintain register of risks for each LOB				I	I					I	I	AR		I	C
10 Integrate risk strategies into 5 Year corporate plan				I	A	A			I	I		R	C	C	C
11 Implement budgeted mitigation strategies for higher level risks				I	I	I							C		AR
12 Monitor mitigation strategies for higher level LOB risks				A	I	I		I		I	I	R	I	I	C
13 Compile relevant ERM data for reporting purposes				A	C	C		C		R		I			
14 Report Risk Management Status	I	C	A	R	I	I		I				I			
15 Periodic review of Corporate Risk Framework & Philosophy (e.g. risk appetite and tolerances)	A	C	C	R	C	C	I	I	I	I	I	I	I	I	I
16 Review and identify ERM process improvements	C	C	I	A				R	I	C	I	I			
17 Review ERM documentation for QA compliance and provide training as necessary				A				C		C	R	C			I

A = Accountable **R = Responsible** **C = Consult** **I = Inform**

Appendix 8 –Formulation of Risk Appetite Statements

Inputs

Governing Objectives
-Nalcor's corporate goals and values
-Shareholder mandate
-Provincial Energy Plan

Risk Capacity and Constraints
-Regulatory environment, where applicable
-Employee knowledge/experience
-Maintenance of investment grade ratings
-Strength of balance sheet/earnings stream
-T&C's/covenants from material agreements
-Reputation/public perception

Risk Philosophy
-Need to be very conservative with respect to risks taken on in regulated business
-Can be more aggressive in non-regulated areas of the business

Business strategy and objectives
-5-year strategic plans for each LOB
-Annual business plans for each LOB
-Corporate quilt

Develop Risk Appetite Statement(s) for LOB

Translate Risk Appetite Statement(s) into limits and thresholds (Risk Tolerances)

Adapted from *Articulating Risk Appetite* by Deloitte and Touche (March 2011)

Appendix 9 – Enterprise Risk Management Committee Terms of Reference

Authority

- Nalcor Energy and its affiliates ("Nalcor" or the "Company") are committed to identifying and managing risk in a manner that supports disciplined corporate planning and strategy as the Nalcor business grows and its risk profile evolves
- To facilitate this process, and to assist the Board of Directors ("BOD") in meeting its corporate governance requirements, Nalcor's Chief Financial Officer ("CFO") has established an Enterprise Risk Management Committee (the "ERM Committee")
- The ERM Committee's role is to assist the Company in developing and operationalizing a world class ERM Framework designed to assist in the identification and management of the risks and opportunities associated with Nalcor's activities
- The objective of ERM is to create a strategic advantage for Nalcor and maximize shareholder value
- Nalcor's ERM Framework will be consistent with Risk Management Guidelines and Principles per ISO/CSA 31000

Committee Membership

- The ERM Committee will include the following members:
  - Corporate Treasurer & Chief Risk Officer, Nalcor Energy (the "ERM Committee Chair")
  - Assistant Treasurer, Nalcor Energy
  - Manager Risk & Insurance, Nalcor Energy
  - Manager Internal Audit, Nalcor Energy
  - Manager System Operation & Customer Service, NL Hydro
  - Manager System Planning, NL Hydro
  - Project Services Manager, Lower Churchill Project
  - Manager, Information Systems, Nalcor Energy
- A Line of Business ("LOB") Sub-Committee will be formed by the ERM Committee Chair with members appointed in consultation with the LOB Vice President, with Sub-Committee members being referred to as LOB ERM Representatives ("LOB ERM Reps"), and will include:
  - NL Hydro - Manager System Operation & Customer Service and Manager System Planning
  - Lower Churchill Project - Project Services Manager
  - Oil & Gas - Asset Managers
  - Energy Marketing/Bull Arm Fabrication - Manager, Business Development
  - Churchill Falls – Manager, Production

Responsibilities

- The principal mandate of the ERM Committee is to act for the Company in developing, implementing, managing and continuously maintaining "best practice" standards for ERM within Nalcor
- Develop and maintain an appropriate risk management information system that shall be comprised of all those standards, tools, risk inventories, policies, procedures and plans used in support of Nalcor's ERM Framework
- Where appropriate, identify, screen, select, and supervise consultants to assist the ERM Committee in meeting its responsibilities
- Assist LOB ERM Reps in the preparation of risk registers and the execution of ERM practices and strategies at the LOB level
- Identify possible expenditures in support of ERM Committee activities and incorporate into Treasury & Risk Management budget (the "ERM Budget")
- Periodically review RACI matrix for appropriateness (see Appendix A for copy of latest approved RACI matrix for the ERM process).
- Adhere to reporting and meeting guidelines as noted below

Responsibilities

ERM Committee Chair

- Serve as chairperson / moderator for ERM Committee meetings
- Schedule ERM Committee meetings and responsible for ensuring meeting minutes are recorded and distributed to the ERM Committee and CFO with 30 days of meeting
- Have a sound knowledge of ERM best practices and report findings, emerging trends and current events to the ERM Committee and LOB Sub-Committee
- Development of ERM work plans and objectives, in consultation with the ERM Committee
- Serve as a liaison between the ERM Committee and Nalcor's Leadership Team and BOD in communicating details of ERM Committee activities
- Facilitate a periodic review of the Terms of Reference by the ERM Committee, and recommend changes to the CFO as appropriate

Responsibilities

LOB ERM Representatives

- Expected to be ERM subject matter experts for their particular LOB
- Select appropriate individuals within the LOB to identify, document and rate risks to be included in the risk register used to support Nalcor's annual corporate planning process
- Provide ERM training to those individuals in the LOB, as appropriate
- As part of risk register preparation and the overall corporate planning processes, assist LOB and/or functional representatives in the development of mitigating strategies to address high likelihood and/or high impact risks
- Monitor progress towards implementation of risk mitigation strategies
- Ensure that business opportunities highlighted as part of the risk identification process are communicated to the LOB VP and ERM Committee Chair
- Ensure update the LOB risk register on an interim basis for any significant emerging risks
- Attend ERM Committee meetings, when required, to provide input on relevant matters (e.g. risk register modifications, emerging risks in the LOB)

Meetings

- The ERM Committee shall meet at least quarterly to discuss, co-ordinate and approve or, where appropriate, recommend approval of initiatives to further Nalcor's ERM Framework
- Other meetings of the ERM Committee will be at the discretion of the ERM Committee Chair
- The ERM Committee Chair shall meet with the CFO in advance of each regularly scheduled meeting of the Nalcor BOD, or as directed by the CFO, to report on the progress of the ERM Committee
- The minutes of all ERM Committee meetings shall be prepared

2012 Corporate Planning Process
Risk Register Guidelines and Toolset

September 2011

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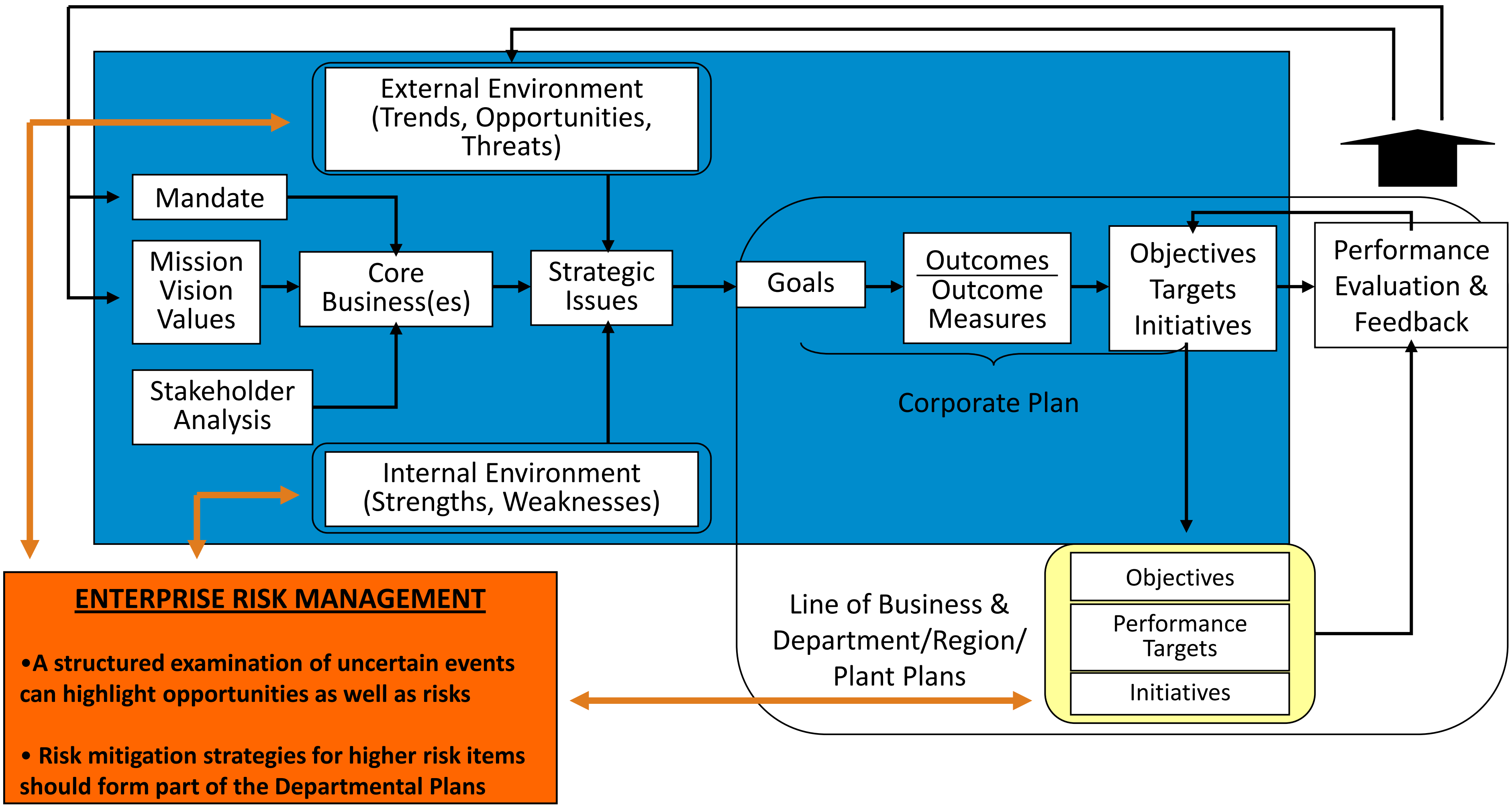
2012 Corporate Planning Process: Background

- As part of the 2012-2016 Business Planning process, ERM representatives from each Line of Business ("LOB") will be required to update/complete their Risk Register (see Appendix A for sample template)
- The purpose is to identify risks AND opportunities in 4 major categories - Strategic, Operational, Financial and Compliance - that could impact the achievement of LOB/Nalcor Corporate Goals (i.e. Safety, Environment, Business Excellence, People and Community)
- Recall, the ultimate goal is to "fully operationalize" an ERM process by 2014 using the 5-year plan previously approved by the Board (Jan/11)
  - The 5-Year plan requires **complete integration** of ERM with the Corporate Planning process in 2012
- Therefore, all decision-making, staffing and budgetary requirements of risk mitigation strategies **need to be incorporated into each LOB's business planning process**
- In addition to the sample Risk Register (Appendix A), this package also includes the "*Risk Register Toolset*" (Appendices B – F), which is comprised of a number of key documents designed to facilitate completion of the registers

Corporate Planning Process



Risk Register Toolset

- **Risk Rating Matrix** (Appendix B) – Helps identify risks (opportunities) on the basis of *Likelihood* of occurrence and potential *Impact* on achieving Corporate Goals. It considers both quantitative and qualitative factors in order to rate a particular risk on a scale of 1-5 in the context of these 2 measurements:
  - Risk Likelihood – Ranked from Rare (< 0.01% chance of occurrence) to Almost Certain (> 90%)
  - Risk Impact – Ranked from Insignificant (virtually no impact) to Extreme (catastrophic event forcing the suspension of operations, perhaps permanently)
- **Impact and Likelihood Measurement Tools** (Appendices C and D) – Supplements the Risk Rating Matrix by providing detailed examples of the possible implications of each Impact level on Corporate Goal achievement
  - Notation for each example within a goal category is consistent across all Impact levels (e.g. Business Excellence example *(e)* addresses Net Income impact for Insignificant, Minor, Moderate, etc.)
- **Financial Impact Matrix** (Appendix E) – Supplements the Risk Rating Matrix by quantifying the potential impact on net income / asset value at each Risk Impact level for each specific LOB
  - This matrix is to be used as a guide to the severity of the risk from a <u>financial perspective only</u>, and the final assessment of risk impact must also take into consideration non-financial impacts such as harm to people, the environment or reputation
- **ERM Risk Categories** (Appendix F) – Supplements the Risk Register by breaking down each Risk Category (Strategic, Operational, Financial and Compliance) into further sub-categories to assist in the risk identification process
  - This is not meant to be an all encompassing list, but rather a tool to stimulate thought

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Risk Register - Key Considerations

- Risk Description should be developed using the following format
  - "As a result of *[Definite Cause]* an *[Uncertain Event]* may occur, which could lead to a *[Positive/Negative]* impact on the *[Corporate Goal(s)]."*
- Primary Risk Owner is the individual held *Accountable* for the particular risk, as outlined in the Nalcor RACI Definitions - this is usually the LOB Vice President
- Secondary Risk Owner is the LOB Manager or Corporate Representative who is *Responsible*, as defined by RACI, for executing the strategy to address the risk
  - LOB always responsible for identifying the risk, but there can be instances where a Corporate group is assigned responsibility for implementing mitigation strategy (e.g. Energy Marketing identifies a commodity price/exchange rate risk exposure relating to a new recall power sales contract and Treasury develops a derivative hedge strategy to address the risk)
- For Risks with an overall rating of "High" (**RED** on the Risk Rating Matrix), the LOB in co-operation with a Corporate group, where applicable, will be responsible for including a Risk Mitigating Strategy in their 2011 Risk Register / Business Plan
- LOB will also be responsible for providing a mitigating strategy for risks having an Impact rating of "Major" or "Extreme", **regardless of their likelihood of occurrence**
- As part of the Risk Register, these 2 groups of risks will need to be re-evaluated from the perspective of Likelihood and Impact after the mitigating strategy has been implemented to determine the remaining Residual Risk

Next Steps

- The submission of the Risk Registers will follow the same timeline as those dictated by the overall 2012 Business Planning process being managed by Catherine Squire, Corporate Planning Analyst
- If you have any questions on the Risk Register or Toolset, please contact Scott Pelley, Assistant Treasurer, at 737-1364 or scottpelley@nalcorenergy.com
- **Note that the Risk Register and associated Risk Register Toolset are meant to assist in the overall business planning process, and are not meant to be a substitute for informed judgment on the part of subject matter experts within a particular LOB**

Appendix A – Risk Register

Risk Register for 2012 Business Plan (Sample)

LOB: NL Hydro

Date: September 2011

Corporate Goals		Risk Likelihoods	Risk Impacts
1 = Safety	4 = People	1 - Rare - < 1% chance	1 - Insignificant
2 = Environment	5 = Community	2 - Unlikely - 1 to 10% chance - Unlikely	2 - Minor
3 = Business Excellence		3 - Possible - 10 - 50% chance - Possible	3 - Moderate
		4 - Likely - 50 - 90% chance	4 - Major
		5 - Almost Certain - > 90% chance	5 - Extreme

Risk #	Risk Description	Risk Category	Corp. Goal Impacted	Primary Risk Owner	Secondary Risk Owner	Early Warning Signs / Leading Indicators: Measure	Early Warning Signs / Leading Indicators: Trend	Rationalization	Risk Likelihood 1 to 5	Risk Impacts 1 to 5
1	As a result of insufficient policy, procedures, standards, fraudulent activities may occur which could lead to permanent or long term damage to Corporate Citizenship Goal .	O	5	VP HR & OE	Hydro HR Rep. (MN Reviewed)	Internal audit review of procedures.		Business priorites & processes are changing and we are in a growth period. This could result in less planned/dedicated time to conduct reviews of policies, procedures and standards and their consistent application and monitoring.	3	3
2	As a result of a major fire or fuel system loss at isolated diesel site, particularly where no year round road or ship access, service may have to be curtailed or community evacuated due to loss of supply of power.	O	3	VP RO	G&T Manager (TRO Managers Reviewed)	Number of fire events or spills at plants		Significant number of fires both major and minor as well as near misses that did not evolve to major loss as the operator "happenned" to be in the plant and given that we have had 4 fires in recent memory (i.e. MSH, Hopedale, Recontre East, Nain) and numerous near misses, it is almost certain to occur again within the 10 to 15 year timeframe if plant design criterial does not change to include fire suppression systems.	5	4

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Risk Register for 2012 Business Plan (Sample Cont'd....)

LOB: NL Hydro

Date: September 2010

A1 = Avoid
M = Mitigate
T = Transfer
A2 = Accept

Risk #	Risk Description	Risk Category	Corp. Goal Impacted	Primary Risk Owner	Secondary Risk Owner	Risk Rating	Risk Strategy A1	Risk Strategy M	Risk Strategy T	Risk Strategy A2	Description of Risk Strategy	Residual Risk Following Implementation of Mitigation Strategy	Residual Risk Likelihood 1 to 5	Residual Risk Impact 1 to 5	Residual Risk Rating	2010 Plan Priority?
1	As a result of insufficient policy, procedures, standards, fraudulent activities may occur which could lead to permanent or long term damage to Corporate Citizenship Goal .	O	5	VP HR & OE	Hydro HR Rep. (MN Reviewed)	Medium		M			1. Establish a regular audit schedule for policies, procedures and standards affecting employee conduct and business operations. 2. Continue to coach employees to corporate values and goals, in particular on *Honesty and Trust.*		1	4	Low	No
2	As a result of a major fire or fuel system loss at isolated diesel site, particularly where no year round road or ship access, service may have to be curtailed or community evacuated due to loss of supply of power.	O	3	VP RO	G&T Manager (TRO Managers Reviewed)	High		M			Engineering review of overall diesel plant design strategy. Include fire supression system review containment options as well as plant layout (example separate building for control room and two or more for gensets). 2010 - Gap review of all facility fire protection needs and develop plan to correct deficiencies.	Risk and potential loss reduced.	3	3	Medium	Yes

Appendix B – Risk Rating Matrix

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Risk Rating Matrix

					IMPACT*				
					Insignificant	Minor	Moderate	Major	Extreme
					1	2	3	4	5
					An event that has virtually no impact.	An event that could be considered as minor and of no lasting consequence.	An event that causes a disruption in performance levels without suspending operations	An event that results in substantial losses and that forces a suspension of certain operations for a period of time, or that permanently compromises the ability to realize one or more Corporate goals.	A catastrophic event that forces the suspension of all operations over a sustained time frame, perhaps permanently.
LIKELIHOOD	Almost Certain	5	>90%	Almost inevitable that this event will occur unless circumstances change	Low	Medium	High	High	High
	Likely	4	>50% to 90%	Likely to occur in most circumstances	Low	Medium	Medium	High	High
	Possible	3	1% to 50%	Might occur under certain circumstances	Low	Low	Medium	Medium	High
	Unlikely	2	0.01% to < 1%	Remote possibility of occurrence	Low	Low	Medium	Medium	Medium
	Rare	1	< 0.01%	Rare or Extremely Improbable - An unusual combination of factors would be required for the event to occur	Low	Low	Low	Low	Medium

* For further guidance in the assessment of impact, refer to the Impact Measurement Tool and also the Financial Impact Matrix.

Appendix C – Impact Measurement Tool

	SUMMARY STATEMENT: An event that has virtually no impact.				
Impact Levels	Safety	Environment	Business Excellence	People	Community
Insignificant **1**	• (a) Minor impact on personnel. First aid only • (b) No lost time	• (a) Environmental impact that does not attract press coverage and is not reportable • (b) Very minor, non-permanent environmental damage requiring no clean-up measures • (c) No assistance from other entities required • (d) No regulatory compliance concern	• (a) Asset damage or loss with insignificant financial impact • (b) Inability to complete > 95% of scheduled work plan • (c) Repair time < ¼ Maximum Acceptable Downtime as established per Business Continuity Planning Process • (d) Conditions leading to loss of generating efficiency having insignificant impact • (e) An event that reduces net income less than 1% of the average net income of the business unit for the last three years • (f) A loss of assets valued at less than 0.1% of total LOB assets. • (g) A loss of assets less than 0.1% of shareholders' equity. • (h) Liquidity not impacted to any significant degree • (i) Insignificant losses on funds invested • (j) Execution of a growth strategy that results in insignificant financial losses • (k) Very minor loss of corporate data • (l) Non-compliance with applicable legislation, environmental regulations, Public Utilities Board Directive contractual obligations, corporate policy or procedure that results in some impact that can be considered as insignificant • (m) no need to notify financiers of event • (n) Delay of 6 months or less beyond established contractual lead times for major industrial or wholesale load. • (o) Very limited exposure of sensitive information • (p) An impact on anticipated NPV of a project that is insignificant • (q) Up to 1 week project delay (LCP)	• (a) Difficulty in attracting/retaining employees for a particular position with-in the company • (b) Greater than 90% of employees agree with corporate strategic direction • (c) Virtually no instances of internal reprimands/discipline	• (a) No or very minor media attention • (b) Insignificant damage to public property that does not result in any disruption of service • (c) An incident having minor impact on the public. First aid only. • (d) Little or no loss in stakeholder trust/commitment

SUMMARY STATEMENT: An event that could be considered as minor and of no lasting consequence

Impact Levels	Safety	Environment	Business Excellence	People	Community
Minor **2**	• (a) Medical treatment for personnel • (b) Lost time incident	• (a) Environmental impact that does not attract press coverage and is reportable • (b) Minor, non-permanent environmental damage requiring very limited clean-up efforts • (c) Little or no assistance from other entities required • (d) Regulatory non-compliance addressed by internal improvements initiative	• (a) Loss of large physical asset that is replaceable in a short period of time without disruption to service or compromises ability to achieve one or more corporate goals • (b) Inability to complete > 90% of scheduled work plan • (c) Repair time ≥ ¼ and ≤ ½ Maximum Acceptable Downtime as established per Business Continuity Planning Process • (d) Conditions leading to loss of generating efficiency resulting in some financial or reputational impact • (e) An event that reduces net income not more than 20% of the average net income of the business unit for the last three years • (f) A loss of assets valued at not more than 1% of total LOB assets. • (g) A loss of assets equal to not more than 2% of shareholders' equity • (h) Corporate lines of credit constricted but operations not significantly impacted. • (i) Minor losses on funds invested • (j) Execution of a growth strategy that results in minor financial losses • (k) Limited loss of corporate data • (l) Non-compliance with applicable legislation, environmental regulations, Public Utilities Board Directive contractual obligations, corporate policy or procedure that results in some impact that can be considered as minor and of no lasting impact • (m) Financiers notified of impact but virtually no impact on available lines of financing • (n) Delay of between 6 – 12 months beyond established contractual lead times for major industrial or wholesale load • (o) Limited exposure of sensitive information • (p) An impact on anticipated NPV of a project that is minor • (q) 1 week to 1 month project delay (LCP)	• (a) Difficulty in attracting/retaining a specific discipline of skilled employees at a particular geographic location • (b) Between 80% and 90% of employees agree with corporate strategic direction • (c) Some instances of internal reprimands/discipline	• (a) Some unfavourable media attention • (b) Some damage to public property that does not inconvenience the public • (c) An incident necessitating medical treatment for members of the public • (d) Some loss in stakeholder trust/commitment that is easily rebuilt

SUMMARY STATEMENT: An event that causes a disruption in performance levels without suspending operations

Impact Levels	Safety	Environment	Business Excellence	People	Community
Moderate **3**	• (a) Injuries to employees that do not result in some permanent disability • (b) Multiple lost time incidents outside established targets	• (a) Environmental impact that garners local press • (b) Temporary environmental damage requiring some clean up effort • (c) Assistance from previously contracted entities may be required • (d) Regulatory non-compliance identified by government inspector resulting in administrative penalty	• (a) Loss of a physical asset that causes a disruption in performance without suspending operations • (b) Inability to complete > 70% of scheduled work plan • (c) Repair time > ½ and ≤ Maximum Acceptable Downtime as established per Business Continuity Planning Process • (d) Loss of generating efficiency resulting in moderate financial impact • (e) An event that reduces net income not more than 100% of the average net income of the business unit for the last three years • (f) A loss of assets equal to not more than 3% of total LOB assets. • (g) A loss of assets equal to not more than 10% of shareholders' equity. • (h) A default on a corporate debt obligation is quickly remedied, but liquidity issues remain. • (i) Moderate losses on funds invested • (j) Execution of a growth strategy that results in moderate financial losses • (k) Some loss of corporate data • (l) Non-compliance with applicable legislation, environmental regulations, Public Utilities Board Directive contractual obligations, corporate policy or procedure that results in a disruption in performance levels without suspending operations. • (m) Financing for growth activities restricted • (n) Delay of one year beyond established contractual lead times for major industrial or wholesale load • (o) Exposure of sensitive information that garners some local media attention or with moderate financial consequences • (p) An impact on anticipated NPV of a project that is moderate • (q) 1 to 3 months project delay (LCP)	• (a) Unable to attract/retain multiple disciplines of skilled employees at a specific geographic location • (b) Between 70% and 80% of employees agree with corporate strategic direction • (c) Instances of internal reprimands/discipline that are above normal in terms of frequency	• (a) Local media coverage only • (b) Damage to public property that causes inconvenience in a localized area • (c) Injuries to the public that do not result in some permanent disability • (d) Some loss in stakeholder trust/commitment that will require a committed effort to rebuild

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	SUMMARY STATEMENT: An event that results in substantial losses and that forces a suspension of certain operations for a period of time, or that permanently compromises the ability to realize one or more Corporate goals.				
Impact Levels	Safety	Environment	Business Excellence	People	Community
Major **4**	• (a) Serious personal injury to employees resulting in permanent disability • (b) Total Lost time well outside established targets to the point where operations are temporarily suspended	• (a) Environmental impact that garners national press • (b) Extended clean-up effort required • (c) Requires assistance of previously contracted entities • (d) Regulatory non-compliance with stop work order issued	• (a) Loss of a physical asset that causes a significant disruption in delivery of essential services • (b) Inability to complete > 50% of scheduled work plan • (c) Repair time > Maximum Acceptable Downtime as established per Business Continuity Planning Process for a significant asset. • (d) Loss of generating efficiency resulting in major financial impact • (e) An event that eliminates not more than three years worth of net income • (f) A loss of assets equal to not more than 10% of total LOB assets. • (g) A loss of assets equal to not more than 30% of shareholders' equity • (h) Liquidity problems lead to temporary suspension of operations and significant reputational damage. • (i) Major losses on funds invested • (j) Execution of a growth strategy that results in major financial losses • (k) A loss of a significant amount of corporate data • (l) Non-compliance with applicable legislation, environmental regulations, Public Utilities Board Directive contractual obligations, corporate policy or procedure that results in temporary suspension of operations or permanently compromises ability to achieve one or more corporate goals • (m) Sources of financing severely restricted with no financing available for growth activities • (n) Delay of two years beyond established contractual lead times for major industrial or wholesale load • (o) Exposure of sensitive information that garners National media attention or with major financial impact • (p) An impact on anticipated NPV of a project that is major • (q) 3 to 12 month project delay (LCP)	• (a) Unable to attract/retain multiple disciplines of skilled employees at many geographic locations • (b) Between 50% and 70% of employees agree with corporate strategic direction • (c) Numerous instances of internal reprimands/discipline that are well above historical levels	• (a) Local and possibly national media coverage • (b) Significant damage to public property that entails hardship in a localized area • (c) Serious personal injury to the public resulting in permanent disability • (d) A loss in stakeholder trust/commitment that is doubtful whether it can be rebuilt

	SUMMARY STATEMENT: A catastrophic event that forces the suspension of all operations over a sustained time frame, perhaps permanently.				
Impact Levels	Safety	Environment	Business Excellence	People	Community
Extreme 5	• (a) Employee fatalities resulting from gross negligence on the part of the LOB • (b) Total Lost time far outside established targets to the point where operations suspended for extended period	• (a) Environmental disaster that garners international press • (b)Major impact of extended duration requiring full scale response • (c) Requires assistance of other corporate and governmental entities not previously contracted • (d) Regulatory non-compliance resulting in a shut down of all operations for extended period	• (a) Loss of key physical assets that cause longer term shut down of operations • (b) Inability to complete > 25% of scheduled work plan • (c) Repair time > Maximum Acceptable Downtime as established per Business Continuity Planning Process for a number of significant assets. Unable to perform essential services for extended period as a result. • (d) Loss of generating efficiency resulting in extreme financial impact • (e) An event that eliminates three year's worth of net income • (f) A loss of assets equal to more than 10% of total LOB assets. • (g) A loss of assets equal to greater than 30% of shareholders' equity • (h) Inadequate lines of credit force a liquidity crisis that leads to a permanent suspension of operations. • (i) Extreme losses on funds invested • (j) Execution of a growth strategy that results in extreme financial losses • (k) A total loss of corporate data • (l) Non-compliance with applicable legislation or contractual obligations that results in extreme impact • (m) All sources of financing cut off • (n) Delay of over three years beyond established contractual lead times for major industrial or wholesale load • (o) Exposure of sensitive information that garners national and/or international media attention or with extreme financial impact • (p) An impact on anticipated NPV of a project that is extreme • (q) Greater than 12 month project delay (LCP)	• (a) Unable to attract/retain multiple disciplines of skilled employees at most geographic locations • (b) Less than 50% of employees agree with corporate strategic direction • (c) Widespread instances of internal reprimands/discipline that are far above historical levels	• (a) National and international media coverage • (b) Serious damage to public property that results in widespread hardship • (c) External fatalities resulting from gross negligence on the part of the LOB • (d) An irreparable loss in stakeholder trust/commitment

Appendix D – Likelihood Measurement Tool

Likelihood Levels	% Chance of Occurrence	Description
Almost Certain **5**	> 90%	Almost inevitable that this event will occur unless circumstances change
Likely **4**	> 50% to 90%	Highly likely to occur in most circumstances
Possible **3**	> 1% - 50%	Might occur under certain circumstances
Unlikely **2**	0.01% to 1%	Remote possibility of occurrence
Rare **1**	< 0.01%	Rare or Extremely Improbable – An unusual combination of factors would be required for the event to occur

Appendix E – Financial Impact Matrix

NALCOR ENERGY

Financial Impact Matrix

$ millions $

	Insignificant		Minor		Moderate		Major		Extreme	
	Lo	Hi	Lo	Hi	Lo	Hi	Lo	Hi	Lo	Hi
Nalcor Energy	0.0	1.6	1.6	20.0	20.0	90.0	90.0	280.0	280.0	Unlimited
Newfoundland and Labrador Hydro - Regulated	0.0	0.7	0.7	10.0	10.0	30.0	30.0	100.0	100.0	Unlimited
Churchill Falls (Labrador) Corporation Ltd	0.0	0.5	0.5	10.0	10.0	30.0	30.0	100.0	100.0	Unlimited
Energy Marketing	0.0	0.5	0.5	10.0	10.0	50.0	50.0	160.0	160.0	Unlimited
Oil and Gas Inc.	0.0	0.2	0.2	3.0	3.0	10.0	10.0	40.0	40.0	Unlimited
Bull Arm Fabrication Inc.	0.0	0.01	0.01	0.2	0.2	0.8	0.8	2.5	2.5	Unlimited
Lower Churchill Project	0.0	0.1	0.1	1.0	1.0	10.0	10.0	100.0	100.0	Unlimited

NOTE: This Matrix is to be used as a guide to the severity of the risk from a financial perspective only. The final assessment of risk impact must also take into consideration impacts of a non-financial nature such as harm to people, the environment or reputation.

Appendix F – ERM Risk Categories

NALCOR ENERGY
Categorization of Risk Exposures

1.000 <u>STRATEGIC</u>
1.100 **External Environment**
1.110 Political risk
1.120 Demographic changes
1.130 Legislative change
1.140 Environmental factors
1.150 Economic factors
1.151 Marketing sales and competition
1.160 Social factors
1.170 Natural disaster
1.180 Terrorism
1.200 **Organizational Culture**
1.210 Tone at the top
1.220 Governance
1.230 Leadership philosophy
1.240 Management style
1.250 Decision model
1.270 Ethics
1.280 Shared values
1.291 Lines of authority
1.292 Adaptability to change
1.300 **Structural and Growth**
1.310 Quality of opportunity assessment process
1.320 Inappropriate corporate or management structure
1.400 **Human Resources**
1.410 Staffing levels
1.420 Staff competencies
1.430 Recruitment/retention decisions
1.440 Performance incentives and compensation
1.450 Staff turnover
1.460 Job action
1.470 Training
1.480 Succession planning
1.500 **Information Resources**
1.510 Information/data security
1.520 Information/data quality
1.530 Availability/access to information
1.540 Obsolescence
1.550 Integration/coordination
1.560 Performance information
1.600 **Reputational risk**

2.000 <u>OPERATIONAL</u>
2.100 **Business Process**
2.110 Process/service quality
2.120 Process/service efficiency
2.130 Business continuity
2.140 Policies and procedures
2.150 Fraud
2.160 Reliance on third party
2.170 Quality of planning
2.180 Operational capacity
2.190 Internal controls
2.200 **Physical Assets**
2.210 Suitability
2.220 Theft
2.230 Breakdown
2.240 Level of maintenance
2.260 Misuse
2.270 Obsolescence
2.290 Inadequate design
2.300 Total asset loss (fire, explosion, etc)

3.000 <u>FINANCIAL</u>
3.100 **Market Fluctuation**
3.110 Interest rate risk
3.120 Foreign currency risk
3.130 Commodity price risk
3.200 **Investment risk**
3.300 **Liquidity Risk**
3.310 Capital funding
3.320 Operational funding
3.330 Re-financing risk
3.400 **Credit Risk**

4.000 <u>COMPLIANCE</u>
4.100 **Regulatory**
4.110 Public Utilities Board directives
4.120 Environmental regulations
4.200 **Financial Reporting**
4.210 Use of inappropriate accounting principles
4.300 **Legislative**
4.310 Various corporate acts
4.400 **Policy**
4.410 Corporate policy adherence
4.500 **Contractual**
4.510 Power contracts
4.520 Other contracts