

Document Front Sheet



LOWER CHURCHILL PROJECT

NE-LCP Contractor/Supplier

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## LOWER CHURCHILL PROJECT

### Risk Management Requirements for Contractors and Suppliers

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**1 INTRODUCTION**

All key decisions made by the Lower Churchill Project team are risk-based. Package management is not an exclusion from this rule. Package risk management process adopted by the Project supports selection of Contractors and Suppliers in a way that allows reduce overall Project risk exposure. Same time, it promotes and supports development of effective Contractor's/ Supplier's risk management.

**1.1 Purpose**

To facilitate effective package risk management and put forward Risk Management Requirements for Bidders (Contract pre-award) and Contractors/ Suppliers (Contract post-award).

**1.2 Scope**

The scope of this document covers management of risks within the package scope both during the bidding process and after a Contract is awarded. It identifies general package Risk Management Requirements (Figure 1), namely, general guidelines to

- reply to the package Risk Questionnaire (pre-award),
- prepare package Risk Management Plan including package Risk Register (pre-award),
- update package Risk Management Plan (post-award),
- produce Monthly Risk Reporting (post-award).

Normally, a requirement to reply to the Risk Questionnaire is part of any package RFP. Whereas requirements to produce Risk Management Plan/ Risk Register or Monthly Risk Report (items A03 and A04 of SDRL) could be included to/ excluded from the package Risk Requirements. If included to the Requirements, the specific content of these documents will be stipulated by the package RFP (pre-award requirements) and the awarded Contract (post-award requirements) depending on the package scope, form / type of contract and package criticality.

If part of the package scope is to be actually performed on Contractor's/ Supplier's behalf by another parties, associated risks should be reflected in documents listed above.

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**1.3 Definitions**

*Bidder:* any entity that responds to a package request for purchase (RFP) issued by SNC-Lavalin on behalf of Nalcor Energy.

*Contractor:* Any entity that is awarded a contract package to provide on-site construction and/or installation services to Nalcor Energy, with SNC-Lavalin acting as the Nalcor’s representative for contract administration.

*Fixed Price Contract:* a form of contract when payment to deem to cover all costs, overheads and profits, wherein the Contractor/ Supplier includes all necessary contingencies for possible risks. Usually includes Liquidated Damages clauses for a case of Contract term’s violations. This type of Contracts is characterised by higher Contractor’s/ Supplier’s risk exposure.

*LCP:* The Lower Churchill Project.

*RAM:* Risk Assessment Matrix is tool to measure deviations from package Contract objectives.

*RBS:* Risk Breakout Structure identifies sources of risks relevant to package delivery, may be based on package WBS and reflect technical, commercial, organizational, economic, etc. aspects.


*Reimbursable Contract:* a Contract when all costs incurred in the performance of the Contract are reimbursed and a fee is paid to cover profit and overheads. This type of contracts is characterised by higher Owner’s risk exposure.

*Risk:* A risk is a future event that, if occurs, may cause deviations from the Contract.

*Risk Management:* The systematic application of management procedures and practices aimed at establishing the context for identifying, analyzing, evaluating, addressing, monitoring and reporting risks.

*Risk Register:* a log of package risks identified and managed by a Bidder or Contractor/ Supplier that includes risk descriptions, risk addressing actions, assessments of the risks before and after addressing, etc.

*SLI:* SNC-Lavalin Inc.

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*SDRL*: Supplier Document Requirement List (document “Contractor Document Requirements”/ SLI # 505573-0000-37AG-I-0015). It includes the document requirements for either a Contractor or Supplier depending on a type of a package.

*Supplier*: Any entity that is awarded a Contract to provide equipment, materials or services to Nalcor Energy, with SNC-Lavalin acting as the Nalcor’s representative for contract administration.

*Unit Price Contract*: a form of contract when payment to deem to cover fixed sum for each completed unit of work including all unit costs, overheads and profits as well as all necessary contingencies. This type of contracts usually used in case of construction packages is characterised by sharing of risks between the Owner and a Contractor/ Supplier. Namely, a Contractor/ Supplier bears the unit price risks, whereas the Owner covers risks associated with uncertainty about number of units.

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**2 RISK MANAGEMENT DELIVERABLES**

This section contains general guidelines on preparing major package risk management deliverables. Specific requirements and content of the deliverables (e.g., list of risks that are subject to Monthly Risk Reporting, etc.) will be defined by corresponding sections of RFP and the Contract.

**2.1 Risk Questionnaire (Pre-award)**

Risk Questionnaire contains a number of generic questions about Bidder’s existing risk management system applicable to the proposed package Contract. In addition, some package related risk questions are included. They are based on risks preliminary identified by the Package Owner. The Risk Questionnaire is included to all package RFP’s as a mandatory requirement. The Risk Questionnaire responses will be considered in the evaluation of Bidders.

**2.2 Risk Management Plan (Pre-award & Post-award)**

Depending on the package scope, form / type of contract and package criticality, package Risk Management Plan could be part of the Risk Requirements (SDRL item A04) both pre-award and post-award.

If included to the Requirements pre-award, the Risk Management Plan developed by a Bidder as part of the RFP response will be used for evaluation of Bidder’s capability and should contain following items:

- Description of risk management process steps adopted by a Bidder for the contract scope of work / service (usually consists of risk identification, risk assessment “as-is” (before addressing), risk addressing, assessment “to-be” (after addressing), retirement and acceptance of risks)
- Description of organizational context of risk management (usually includes responsibilities of team members in the risk management process, types and frequencies of risk review meetings, risk reporting and communications including rules to prioritize risks, etc.)



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- Description of tools used to support the risk management process (usually includes list of risk categories (e.g. Risk Breakdown Structure (RBS)), Risk Assessment Matrix (RAM) and Risk Register)

Figure 2 provides the Risk Assessment Matrix (RAM) recommended to Contractors/ Suppliers for LCP. (Specific descriptions of risk impacts could be amended in some cases to better reflect package scope, budget and schedule.)

Risk Management Plan pre-award should contain full package Risk Register developed by a Bidder as an appendix using RAM of Figure 2.


Upon award of a Contract, the initial Risk Management Plan should be reviewed with the Package Owner. The content of a Risk Management Plan post-award (including list of risks included to Risk Register) is a subject to the Contract’s Coordination Procedure. Guidelines to prepare Risk Registers are described in section 2.3.

**2.3 Risk Register (Pre-award & Post-award)**

A Risk Register is a log of package risks identified, assessed and addressed by a Bidder or Contractor/ Supplier. If indicated in a particular RFP, the full Risk Register should be submitted by a Bidder with its accompanying Risk Management Plan as part of response to Request for Proposals and will be considered by SLI during the evaluation process.

Depending on the form/ type of contract, managing of and reporting on some of the package risks post-award would be delegated to Contractor/ Supplier and becomes part of the package scope. However, reporting on some risks could not be mandatory in terms of these Risk Requirements. Same time, Contractor/ Supplier is encouraged to manage corresponding risks as part of its internal risk management. The list of risks that become part of the Risk Register post-award and subject to Monthly Risk Reporting (section 2.4) should be agreed and reflected in the Contract’s Coordination Procedure. Its content depends on form/ type of contract and normally includes only risks of Medium and High level.

In case of fixed price/ unit price types of Contracts of supply packages, only risks of Schedule and Quality impacts normally become subject to reporting by Contractor/ Supplier post-award. Although, in

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case of fixed price/ unit price types of Contracts of on-site construction/ installation packages besides risks of Schedule and Quality impacts risks of Safety and Environment impacts become the subject to the Risk Requirements.

In case of reimbursable types of Contracts, Cost impacts become a subject to Risk Requirements for both supply and construction/ installation packages.

Managing risks of impacts on Reputation is optional in terms of these Risk Requirements for any types of contract. However, a Contractor/ Supplier could be interested in managing corresponding risks on its own by obvious reasons.

The approved list of package risks that become part of the Risk Register post-award and subject to Monthly Reporting (section 2.4) should be reflected in the Contract's Coordination Procedure.

Following items should be included to a Risk Register both pre-award and post-award for each selected risk (Figure 3):

- Risk Identification No.
- Risk title
- Risk definition (recommended is three part risk definition: cause(s) – risk event – impact(s))
- Comments (additional relevant notes and insights on risk definition and description)
- Risk status (it could be proposed, active, retired, accepted)
- Risk owner (a member of the Bidder's or Contractor's/ Supplier's team who is responsible for managing of a risk)
- Risk category (as part of Risk Breakdown Structure it could point to technical, commercial, organizational, economic, etc. types of risks)
- Assessment of probability of occurrence and impact(s) before addressing ("as-is") (according to the RAM)
- Response strategy (avoid, mitigate, transfer, accept)
- Addressing actions (particular steps to support selected addressing strategy including measures in place)
- Action status (it could be proposed, active, on-hold, completed, retired)

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- Comments on progress of the addressing strategy and actions (is used in Monthly Reporting post-award)
- Assessment of probability of occurrence and impact(s) after addressing (“to-be”) as if all the proposed addressing actions were already implemented (according to the RAM)

Note: As a general rule, representatives of SLI and/ or Nalcor Energy do not take part in risk identification and assessment sessions in case of fixed price and unit price types of Contracts, while in the case of reimbursable type of contract their participation would normally occur. Specific level of involvement of representatives of SLI and Nalcor Energy in risk identification and assessment sessions is to be stipulated by the Contract’s Coordination Procedure.

Following contract award the approved Risk Register should be regularly updated by the Contractor/ Supplier during the phases of the package delivery and submitted as part of Monthly Progress Reports.

**2.4 Monthly Risk Report (Post-award)**

Monthly risk reporting (as part Monthly Progress Reports) is defined by item A03 of SDRL and consists of two parts. Part One is a structured narrative that describes major risk activities and events during the reporting period and should contain:

- Comments on major changes in the risk register (addition of new risks or addressing actions, change of risk ownership or status, retirement of risks, risk re-assessments, etc.) with a focus on Medium and High level risks.
- Highlights of 5 to 7 most important package risk management activities and events (e.g., risk reviews and workshops (internal and with sub-vendors), implementation of addressing actions and possible related issues, successes and failures related to risk management, any occurred risks, etc.)

Part Two is an updated package Risk Register.


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**3 RISK MANAGMENT REVIEWS**

Standard requirement is to hold Monthly Risk Reviews based on submitted Monthly Risk Reports.

Review requirements, including types and frequency of the risk management reviews and audits post-award, will be initially introduced in the package RFP and finally stipulated by the Contract's Coordination Procedure.

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**4 FIGURES**

**4.1 Summary of the Risk Requirements for Bidders and Contractors/Suppliers**

	<b>Requirement</b>	<b>Description</b>	<b>Reference Documents</b>
<b>Pre-Award</b>	Risk Questionnaire	Contains list of generic risk questions as well as package specific ones; requirements are described in section 2.1.	Appendix of RFP
	Risk Management Plan	Provides description of the risk process, organizational context and tools adopted by a Bidder; requirements are described in section 2.2.	SDRL item A04; Appendix of RFP
	Risk Register (part of the Risk Management Plan)	A log of package risks developed by a Bidder including their assessments before addressing, their addressing actions and assessment after addressing; requirements are described in section 2.3.	SDRL item A04; Appendix of RFP
<b>Post-Award</b>	Risk Management Plan	Provides description of the risk process, organizational context and tools adopted by a Contractor/ Supplier and agreed upon in the Contract's Coordination Procedure; requirements are described in section 2.2.	SDRL item A04; Contract's Coordination Procedure
	Monthly Risk Report	A summary of monthly activities carried out by a Contractor/ Supplier aimed at addressing selected risks; the Coordination Procedure of the Contract defines if all package risks are subject to monthly reporting or only selected ones; requirements are described in section 2.4. Normally, Monthly Risk Reports are a subject to Monthly Risk Reviews.	SDRL item A03; Contract's Coordination Procedure
	Risk Register (part of the Monthly Report)	The Coordination Procedure of the Contract defines if all package risks are subject to monthly reporting by the Contractor/ Supplier or only selected ones; requirements are described in section 2.3.	SDRL item A03; Contract's Coordination Procedure


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**4.2 Recommended Package Risk Assessment Matrix**

Risk Ranking Score = (Impact Score) x (Probability Score)	Risk Level Colour Code	Low	Medium	High
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		IMPACT				
		Insignificant (1)	Minor (2)	Moderate (3)	Major (4)	Extreme (5)
PROBABILITY	>90% Almost Certain (5)	5	10	15	20	25
	50% - 90% Likely (4)	4	8	12	16	20
	1% - 50% Possible (3)	3	6	9	12	15
	0.1% - 1% Low (2)	2	4	6	8	10
	< 0.1% Rare (1)	1	2	3	4	5
PROJECT OBJECTIVES	<b>Capital Cost, \$M</b>	< 0.1	0.1 - 1	1 -- 10	10 - 100	>100
	<b>Schedule, Mos</b> (First Power Target Date)	< 0.25	0.25 - 1	1 -- 3	3 -- 12	>12
	<b>Product Quality</b> (Availability, Reliability, Performance)	Potential degradation of element performance, system level not affected.	Decrease in system performance, however still above requirement.	Decrease in system performance eliminates all design and operating margins.	Decrease in system performance that substantially affects performance objectives.	System requirement is not achieved, safety objectives are not achievable. System or element is effectively useless.
	<b>People</b> (Health & Safety)	Minor impact on personnel. First aid only. No lost time.	Potential to cause medical treatment of personnel. Lost time incident.	Injury to personnel that does not result in some permanent disability. Multiple lost time incidents outside established targets.	Serious personal injury resulting in permanent disability. Total lost time well outside established targets to the point where operations are temporarily suspended.	Potential to cause single or multiple fatalities.
	<b>Environmental</b> (Physical)	Slight Effect: e.g. Non-reportable spill or release contained within the immediate work area, negligible financial consequences, no lasting effect.	Minor Effect: e.g. Sufficiently large contamination or discharge to damage environment, but no lasting effect. Single breach of statutory or prescribed limit or single complaint.	Localized Effect: e.g. limited discharges affecting the local area and damaging the environment. Repeated breaches of statutory/regulatory limit or multiple complaints.	Major Effect: e.g. Severe environmental damage. The company is required to take extensive measures to restore the damaged environment. Regulatory restriction or enforcement action probable.	Massive Effect: e.g. Persistent severe environmental damage or severe impact extending over a large area resulting in major financial implications for the Project. Direct impact on public with prosecution possible.
	<b>Reputation</b>	No or very minor media attention. Little or no loss in Package Owner's trust.	Some unfavourable media attention. Some loss in Package Owner's trust which can easily be rebuilt.	Local media coverage only. Some loss in Package Owner's trust that will require commitment to rebuild.	Local and possibly national media coverage. A loss in Package Owner's trust that it is doubtful whether it can be rebuilt.	National and international media coverage. An irreparable loss in Package Owner's trust.

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4.3 Sample Risk Register Template

RISK DEFINITION				RISK ATTRIBUTES			ASSESSMENT "AS-IS"							RISK ADDRESSING				ASSESSMENT "TO-BE"						
ID	Title	Three Part Definition	Comments	Status	Owner	Category	Probability	Cost	Schedule	Product Quality	Safety	Environmental	Reputation	Response Strategy	Action(s)	Action Status	Comments on Progress	Probability	Cost	Schedule	Product Quality	Safety	Environmental	Reputation
R-1	Sub-Vendor's Skilled Labour Availability	Due to heated market conditions in Sub-Vendor's industries, <b>shortage of Sub-Vendor's skilled labour could take place</b> , leading to longer delivery timelines and overall package schedule delays	TBD	Proposed	TBD	Commercial	3	0	4	0	0	0	4	Mitigate-Prevent	TBD	Proposed	TBD	3	0	4	0	0	0	4