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Risk Mitigation and Planning Procedure

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Abstract:

This document describes the requirements for risk mitigation and planning.

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1.0 Purpose

The risk mitigation and planning process uses information from risk identification, assessment and analysis to formulate response strategies for key risks. Common strategies are avoidance, transference and/or mitigation acceptance. The mitigation and planning exercises must be documented in an organized and comprehensive fashion that clearly assigns responsibilities and delineates procedures for mitigation and allocation of risks. Common documentation procedures frequently include the creation of red flag item lists, risk charters and formal risk management planning documentation. Risk mitigation and planning efforts may necessitate that Suppliers set policies, procedures, goals and responsibility standards. Formalizing risk mitigation and planning throughout the Company will help establish a risk culture that should result in better cost management from planning through production and better allocation of project risks that align teams with Customer-oriented performance goals.

2.0 Objectives of Risk Mitigation and Planning

The objectives of risk mitigation and planning are

[REDACTED]

Three key questions can be posed for risk mitigation:

- 1.
- 2.
- 3.

[REDACTED]

An understanding of these three questions is critical to risk mitigation and risk management planning. Question 1 addresses

[REDACTED]

3.0 Risk Response Options

Risk identification, assessment and analysis exercises form the basis for sound risk response options. A series of risk response actions can help to avoid or mitigate the identified risks. A response may be the following:

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

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The above categorization of risk response options [REDACTED]
 [REDACTED] The strategies and actions include the following:

Acceptance: [REDACTED]
 [REDACTED]

Avoidance: [REDACTED]
 [REDACTED]

Mitigation: [REDACTED]
 [REDACTED]

Transference: [REDACTED]
 [REDACTED]

Given a clear understanding of the risks, their magnitude and the options for response, an understanding of project risk will emerge. This understanding will include [REDACTED]
 [REDACTED]

4.0 Risk Planning

Risk planning involves the thoughtful development, implementation and monitoring of appropriate risk response strategies. Risk planning is the detailed formulation of a plan of action for the management of risk:

- [REDACTED]
- [REDACTED]
- [REDACTED]

Risk planning is iterative and includes [REDACTED]
 [REDACTED]

Planning begins by [REDACTED]
 [REDACTED]

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4.1 Risk Planning Documentation

Each risk plan should be documented but the level of detail will vary with the unique attributes of each project. Large projects or projects with high levels of uncertainty

[Redacted]

4.2 Red Flag Item Lists

A red flag item list is

[Redacted]

A red flag item list is

[Redacted]

See a sample list of risks in Appendix A. While this sample list can be used to create a list of red flag items for a project, it is

[Redacted]

4.3 Risk Charters

The creation of a risk charter is a more formal identification of risks than the listing of red flag items. Typically, it is

[Redacted]

A risk charter is

[Redacted]

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[Redacted]

A risk charter is [Redacted]

The risk charter [Redacted]

The risk charter may include relevant information such as the following:

- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]

Two examples of risk charters are in Appendix B and C. The first example is a spreadsheet that forms the basis of the risk management plan. The spreadsheet contains columns for identification, analysis, response strategy, monitoring and control. The second example uses the term risk register synonymously with risk charter. The risk register contains more quantitative risk assessment information than the spreadsheet example but the goal of the documentation is similar. The risk register adds issues such as correlation among dependent components, type of distribution used to model the risk and expected value of the risks.

5.0 Formal Risk Management Plan

The strategy to manage risk provides the project team with direction and basis for planning. The risk management plan should [Redacted]

The six primary steps in project risk management are the following:

1. [Redacted]
2. [Redacted]
3. [Redacted]
4. [Redacted]
5. [Redacted]
6. [Redacted]

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The plan is the road map that tells the Company and Supplier how

[REDACTED]

The following is a sample risk management plan outline:

1. [REDACTED]
2. [REDACTED]
3. [REDACTED]
4. [REDACTED]
5. [REDACTED]
6. [REDACTED]
7. [REDACTED]
8. [REDACTED]
9. [REDACTED]
10. [REDACTED]
11. [REDACTED]

Each risk plan should be documented but the level of detail will vary with the unique attributes of each project. Red flag item lists, risk charters and formal risk management plans provide flexibility in risk management documentation.

6.0 Risk Identification Process

The risk identification process begins with

[REDACTED]

Typical Risk Identification Checklist:

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

The team should examine and identify project events by

[REDACTED]

[Redacted]

After the risks are identified, they should be [Redacted]

The following table provides a typical list of classifications with alternate identified risks.

CLASSIFICATION OF IDENTIFIED RISKS				
[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]
[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]
[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]
[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]
[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]
[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]
	Inflation			

A number of documents and tools are available to support the risk identification process. The following table provides an example of project-specific documents, program documents and techniques available for risk identification.

6.1 Risk Identification Tools and Techniques

Project risk can be identified multiple ways [Redacted]

Risks and opportunities that affect products and services (operational processes) can be determined using tools such as [Redacted]

- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]

RISK IDENTIFICATION TOOLS AND TECHNIQUES		
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]

The key to success with any risk identification tool or technique is [REDACTED]

The risk identification process identifies and categorizes risks that could affect the project. It documents these risks and, at a minimum, [REDACTED]

6.2 Risk Allocation

The rigorous process of risk identification, assessment, analysis and mitigation allows for [REDACTED]

In theory, best value is achieved by [REDACTED]

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The Company is more likely to accept risks [REDACTED]

The purchase order is [REDACTED]

Best practice:

The goal of an optimal allocation of risk is [REDACTED]

The rigorous process of risk identification, assessment, analysis and mitigation allows for a more transparent and informed understanding of project risk. When risks are understood and their consequences are measured, decisions can be made to allocate risks in a manner that [REDACTED]

The objectives of risk allocation can vary depending on unique project goals but four fundamental tenets of sound risk allocation should always be followed:

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

6.2.1 Allocate Risks to Party Best Able to Manage Them

A fundamental tenet of risk management is [REDACTED]

Following this principle [REDACTED]

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6.2.2 Risk Allocation in Alignment with Project Objectives

Risks should be allocated in a manner that

[REDACTED]

Allocating risks in alignment with project objectives begins with

[REDACTED]

The importance of clearly understanding and defining project objectives cannot be overemphasized. Project objectives

[REDACTED]

6.2.3 Risk Sharing

The concepts of risk sharing and risk allocation are often used synonymously. Risk allocation is defined as

[REDACTED]

Communication among parties is a key to any sharing of risk allocation. Risk-sharing provisions should

[REDACTED]

6.2.4 Risk Allocation in Alignment with Customer-Oriented Performance Goals

The ultimate goal of risk allocation should

[REDACTED]

6.2.5 Risk Allocation Matrix

Perhaps the most widely used tool for risk allocation is

[REDACTED]



Example of risk allocation matrix for outsourced processes:

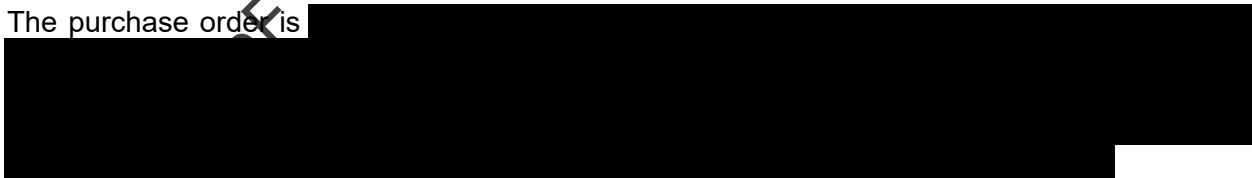
RISK	PARTY RECOMMENDED TO ASSUME RISK	HOW RISK IS ASSIGNED OR MANAGED
[Redacted]	[Redacted]	[Redacted]
[Redacted]	[Redacted]	[Redacted]
[Redacted]	[Redacted]	[Redacted]
[Redacted]	[Redacted]	[Redacted]

Allocation matrices are a fundamental tool in the development of design-produce contracts. Appendix D provides an example design-produce risk allocation matrix. It provides a detailed framework to make risk allocation decisions for each design-produce project. The matrix is also

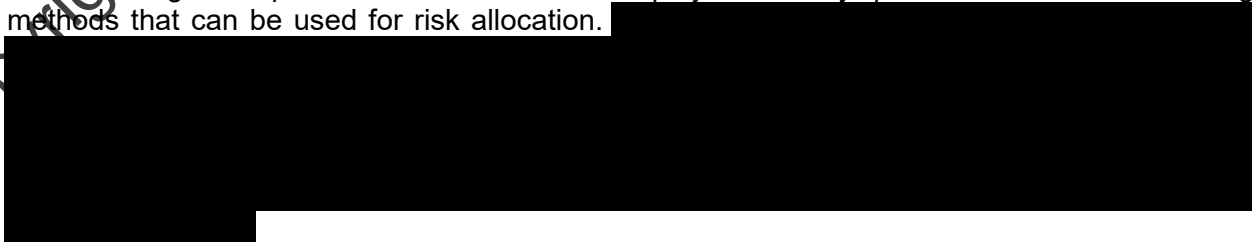


6.2.6 Innovative Contracting Tools and Techniques

The purchase order is



The following table provides a list of innovative project delivery, procurement and contracting methods that can be used for risk allocation.



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Innovative contracting approaches for risk allocation:

Project Delivery Approaches	Procurement Approaches	Purchase order Payment Approaches
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]

6.2.7 Contingency Considerations

Any party assuming a risk must be prepared

[REDACTED]

Left blank intentionally

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Appendix A - Risk Identification Checklists - Red-Flag List

1. Project Management Risk Document Checklist

Risk management reports vary depending on the size, nature and phase of the project. The following are examples of risk management documents and reports that may be useful:

- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]
- Risk monitoring documentation:
 - [Redacted]
 - [Redacted]
 - [Redacted]
 - [Redacted]
 - [Redacted]
 - [Redacted]

2. Sample Red Flag Item List (reduce list as required)

Technical Risks



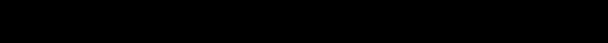


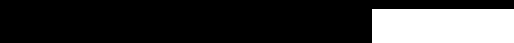



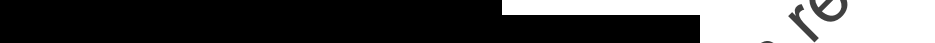
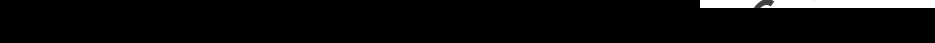
- [Redacted]
- [Redacted]
- [Redacted]
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- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]

External Risks

- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]

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Environmental Risks

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Organizational Risks

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- [Redacted]
- [Redacted]
- [Redacted]

3. Miscellaneous Checklist

- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]

4. Common Risks

- [Redacted]
- [Redacted]

Environmental

- [Redacted]
- [Redacted]

Other Risks

- [Redacted]

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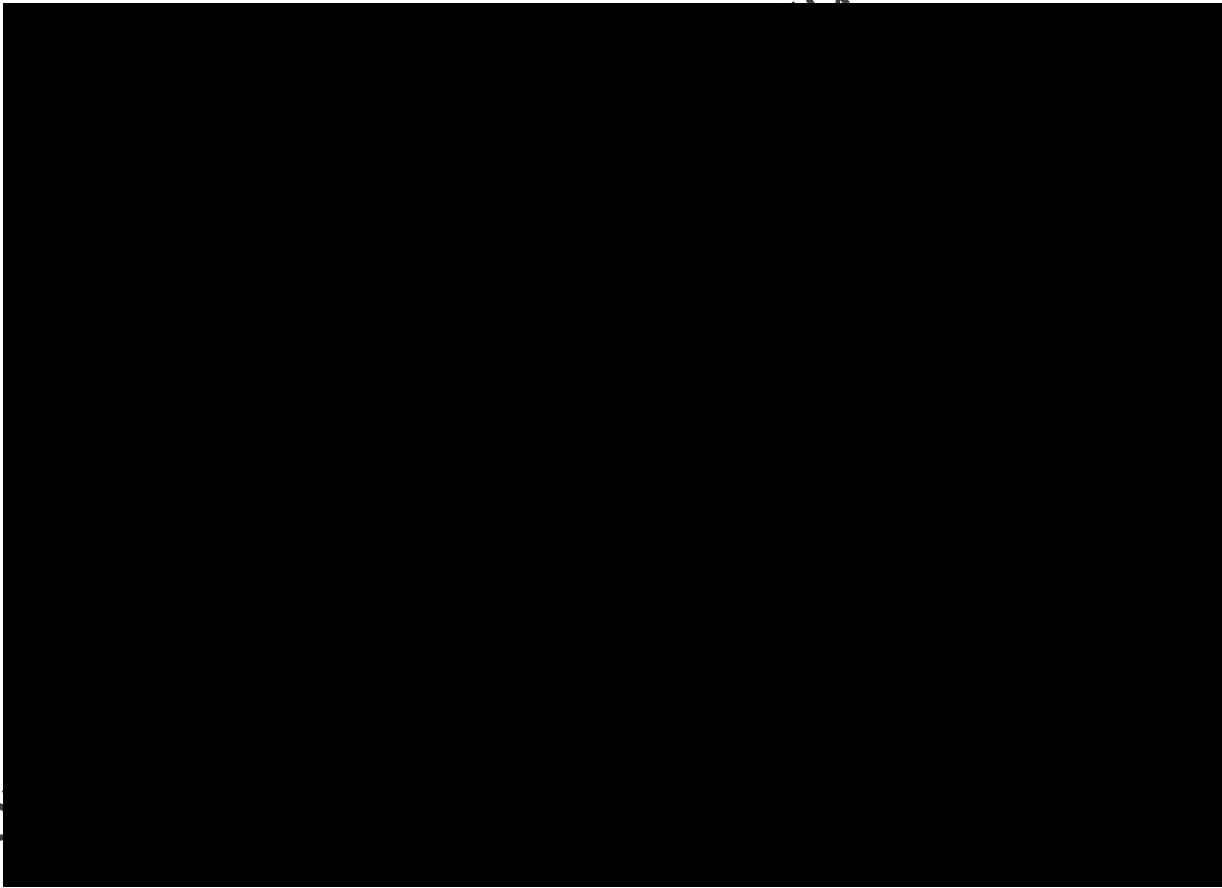
Appendix B - Risk Charter

[Redacted]

[Redacted]

[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]
1	Active	3c	8/7/xxxx	[Redacted]	[Redacted] more time than needed to mitigate NRE	Residents near the proposed equipment location have expressed a desire for	Risk is occurring if the Revised Noise Study indicates the additional wall height is	[Redacted]	[Redacted]

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Appendix C - Risk Register

[REDACTED]

[REDACTED]

[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Risk 1	Agreements	Permits required from approval agencies could be	[REDACTED]	Positive between Cost and Schedule (i.e. Duration) of	25% (0.25)	Triangular	[REDACTED]	Triangular	[REDACTED]
Risk 2	Regulatory Approval	Grantee documentation of readiness to enter into full funding	B. Regulatory Approval		10%	No Significant Effect	No Significant Effect	[REDACTED]	2 mos.
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

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[REDACTED]

Appendix D - Design-Produce Risk Allocation Matrix

[Redacted]	[Redacted]	[Redacted]
[Redacted]		
[Redacted]		
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[Redacted]		
[Redacted]		
[Redacted]		
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