

## **TASK 13: DELIVERABLE D77 – PLAINS CO<sub>2</sub> REDUCTION (PCOR) PARTNERSHIP (PHASE III) – RISK MANAGEMENT PLAN OUTLINE**

Outline of Phase III Risk Management Plan – D77

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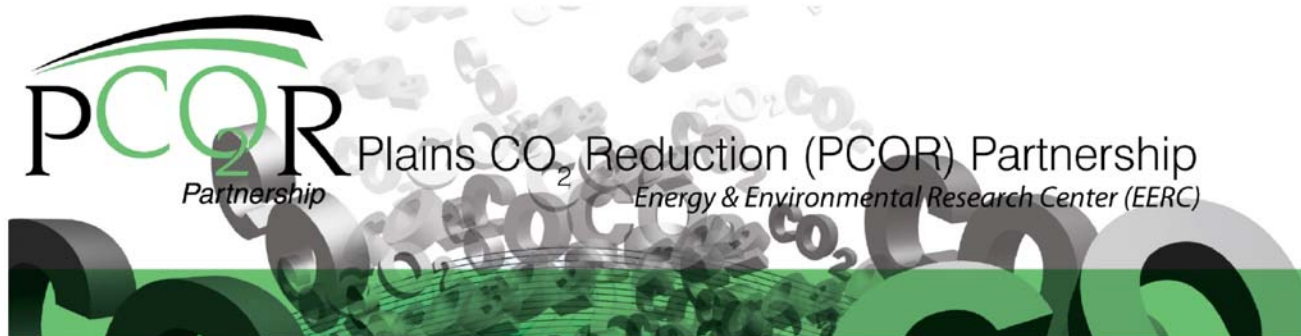
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## **TASK 13: DELIVERABLE D77 – PLAINS CO<sub>2</sub> REDUCTION (PCOR) PARTNERSHIP (PHASE III) – RISK MANAGEMENT PLAN OUTLINE**

### **OVERVIEW**

The risk management plan outline presented here is designed to produce a comprehensive plan to effectively control the risks associated with the Plains CO<sub>2</sub> Reduction (PCOR) Partnership's Phase III activities. The following should be noted about this outline and risk management in general:

- Risk management is, by nature, an iterative process. As a project progresses, several aspects can change, e.g., project objectives, drivers, stakes, risk acceptability levels, etc., and updates must be made accordingly. Because of this iterative nature, the risk management plan outline presented here will evolve over time to accommodate changing project components.
- The outline below presents the basic components of risk management. While these principles are likely to be found in most projects where risk is managed, the actual implementation of them will be dependent on the company managing the risk. For example, a risk assessment is designed to *identify* risk, *estimate* the overall risk (usually done using a combination of probability and severity), and *evaluate* the risk using a risk acceptability threshold. While there are several risk assessment tools available to assist in performing these three steps, not all will be used by every company. As a result, the procedure for performing the risk assessment may look very different from project to project.
- While the PCOR Partnership Program is responsible for ensuring the risks of its Phase III activities are effectively controlled, it is recognized that some operators may already have established risk management practices in place. In such cases, the PCOR Partnership is not in a position to dictate what methodology they should use, but will simply incorporate their risk management procedures into the overall risk management plan to satisfy both our partners and the U.S. Department of Energy's objectives. To allow for this flexibility, the two Phase III projects were given their own sections within this outline. It is expected that these will be filled in as the projects progress.

### **I. INTRODUCTION**

This section addresses the purpose and objective of the risk management plan (RMP), and provides a brief summary of the PCOR Partnership, including the management approach

and its Phase III activities. Also included is a section that lists and defines the terms used throughout this document to describe, assess, and manage risk.

- A. Purpose and Objective
- B. Project Summary
  - 1. PCOR Partnership Program Overview
  - 2. Overview of Phase III Demonstration Projects
    - a) Fort Nelson
    - b) Williston Basin
  - 3. Phase III Task Structure
  - 4. Project Management Approach
- C. Definitions

## II. RISK MANAGEMENT STRATEGY AND APPROACH

This section provides an overview of the risk management scope, goals, and approach, including the status of the risk management effort to date and the organization and responsibilities of the risk management participants.

### A. Scope and Goals

In the context of the PCOR Partnership Program, both technical and nontechnical risks need to be considered. Figure 1 shows that the PCOR Partnership Program as a whole will have nontechnical risk associated with it that will be managed separately from the Fort Nelson and Williston Basin projects. The PCOR Partnership Program itself does not have any technical risk associated with it, apart from that which results from the two Phase III projects.

While the same approach to risk management can be applied to the two Phase III demonstrations, as well as the PCOR Partnership Program, the actual implementation for the demonstrations will be governed by the project operators. As a result, it was necessary to give each Phase III project a dedicated section within this RMP. The applications of the risk management methodology to the Fort Nelson and Williston Basin projects are given in Sections V and VI, respectively.

- B. Approach
- C. Current Risk Management Status
- D. Organization and Responsibilities

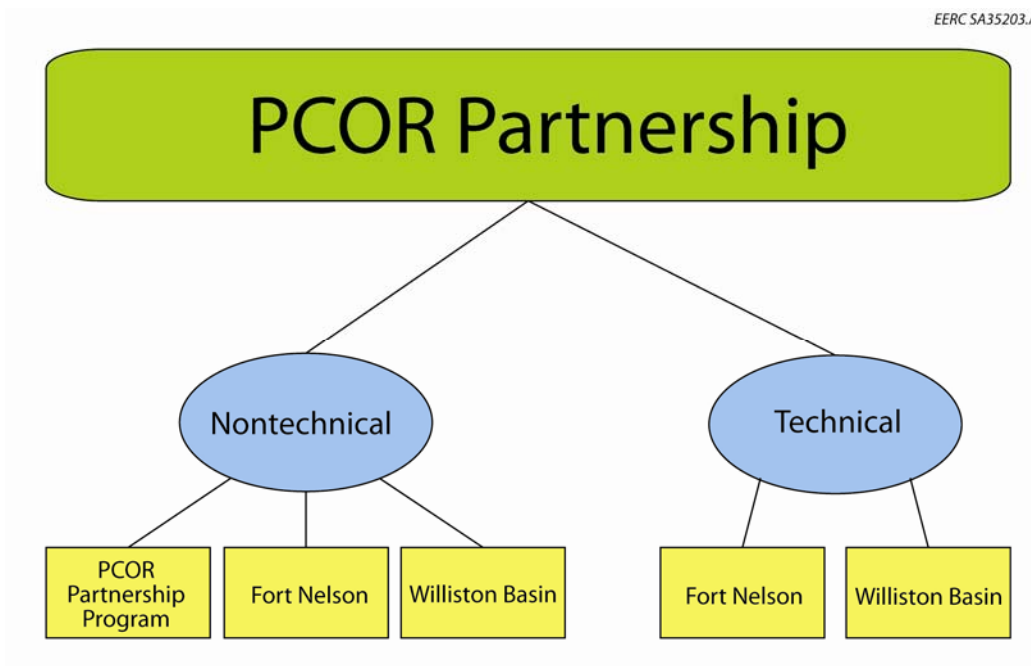


Figure 1. Breakdown of risk for the PCOR Partnership.

### III. RISK MANAGEMENT PROCESS AND PROCEDURES

This section describes the PCOR Partnership's risk management process and gives a basic explanation of the components.

#### A. Context of Risk Management

This section describes the context of the risk management project and may include the drivers and stakes of the project as well as criteria that will be used to evaluate the risks, e.g., probability and severity scales used for estimating the risk, risk tolerance levels, etc.

1. Overview
2. Project Drivers
3. Stakes
4. Risk Criteria

#### B. Risk Assessment

This section includes the process and procedures for identifying, estimating, and evaluating the risks of the PCOR Partnership. It summarizes the analyses process which leads to the determination of a risk rating. This rating is a reflection of the potential impact of the risk in terms of its probability of occurrence and its consequence.

1. Process

2. Procedure
  - a) Identify
  - b) Estimate
  - c) Evaluate
- C. Risk Handling

This section describes the risk-handling, or risk treatment, options and provides guidance on the use of the various handling options for specific risks.

  1. Process
  2. Procedures
    - a) Avoid
    - b) Transfer
    - c) Mitigate
    - d) Accept
- D. Risk Monitoring

This section describes the process and procedures that will be used to monitor the status of the various risk events identified.

  1. Process
  2. Procedures

#### IV. RISK MANAGEMENT INFORMATION SYSTEM, DOCUMENTATION, AND REPORTS

This section describes the management information system structure, rules, and procedures that will be used to document the results of the risk management process. It identifies the risk management documentation and reports that will be prepared, specifies the format and frequency of the reports, and assigns responsibility for preparation. It includes a description of the method and frequency for updating the RMP.

- A. Documentation, Reporting
- B. RMP Update

#### V. FORT NELSON

- A. Introduction
  1. Purpose and Objective
  2. Project Summary
    - a) Fort Nelson
    - b) Project Management Approach
  3. Definitions
- B. Risk Management Strategy and Approach
  1. Scope and Goals
  2. Approach

3. Current Risk Management Status

The risk management work for the Fort Nelson carbon capture and storage (CCS) project began in early 2009. The context of the project has been identified, including objectives, stakes, and criteria that will be used to perform the risk assessment. This information, along with the risk management policy and procedures to be used for the project are undergoing validation by the project operator.

A first-round risk assessment (risk identification, estimation, and evaluation) is being conducted for the Fort Nelson CCS project. To date, two workshops have been held, i.e., risk identification and estimation. During the risk identification workshop, a site-specific risk register was created. The register was used during the risk estimation workshop, where a probability of occurrence and potential physical consequence were assigned to each risk.

4. Organization and Responsibilities

C. Risk Management Process and Procedures

1. Context of Risk Management

- a) Overview
- b) Project Drivers
- c) Stakes
- d) Risk Criteria

2. Risk Assessment

- a) Process
- b) Procedures
  - (1) Identify
  - (2) Estimate
- c) Evaluate

3. Risk Handling

- a) Process
- b) Procedures
  - (1) Avoid
  - (2) Transfer
  - (3) Mitigate
  - (4) Accept

4. Risk Monitoring

- a) Process
- b) Procedures

D. Risk Management Information System, Documentation, and Reports

- 1. Documentation and Reporting
- 2. RMP Update

## VI. WILLISTON BASIN

### A. Introduction

1. Purpose and Objective
2. Project Summary
  - a) Williston Basin
  - b) Project Management Approach
3. Definitions

### B. Risk Management Strategy and Approach

1. Scope and Goals
2. Approach
3. Current Risk Management Status
4. Organization and Responsibilities

### C. Risk Management Process and Procedures

1. Context of Risk Management
  - a) Overview
2. Risk Assessment
  - a) Process
  - b) Procedures
3. Risk Handling
  - a) Process
  - b) Procedures
    - (1) Avoid
    - (2) Transfer
    - (3) Mitigate
    - (4) Accept
4. Risk Monitoring
  - a) Process
  - b) Procedures

### D. Risk Management Information System, Documentation, and Reports

1. Documentation and Reporting
2. RMP Update

## VII. REFERENCES