

**SNM-42**

CHAPTER 6

CHEMICAL PROCESS SAFETY

CHAPTER 6  
CHEMICAL PROCESS SAFETY

## TABLE OF CONTENTS

Chapter	Title	Page
6.0	Introduction	6-1
6.1	Chemical Safety Management	6-1
6.1.1	Organization	6-1
6.1.2	Procedures	6-1
6.1.3	Engineering Review	6-1
6.1.4	Inspection, Testing, and Maintenance	6-1
6.2	Chemical Risk Identification	6-2
6.2.1	Chemical Hazards Analysis	6-2
6.2.2	Integrated Safety Analysis	6-2
6.3	Facility Design	6-2
6.4	Process Chemical Safety	6-2
6.5	Chemical Safety and Emergency Response	6-2

## 6.0 Introduction

The chemical safety program at the site is based on a defense-in depth philosophy aimed at designing facilities and processes to minimize the potential for chemical releases or hazards and implementing administrative systems to prevent chemical process upsets.

## 6.1 Chemical Safety Program Management

### 6.1.1 Organization

The program shall be administered by the Manager, Industrial Health & Safety. Oversight of the program shall be provided by the Safety Review Committee and the Industrial Health and Safety (IH&S) Committee, both described in Chapter 2. The membership of the Safety Review Committee includes the Chairman of the IH&S Committee (reference Chapter 2). The Industrial Health and Safety Specialists shall provide day-to-day oversight of the program.

### 6.1.2 Procedures

The program shall be implemented as described in Chapter 11. Procedures will be implemented that establish requirements to minimize and control chemical safety risk resulting in: (a) radiation risk produced by licensed materials; (b) chemical risks produced by licensed materials; and (c) plant conditions that may affect the safety of licensed materials and thus present a radiation risk to workers, the public or the environment.

Procedures shall also be implemented to investigate chemical safety incidents or failures of Items Relied on for Safety in accordance with Chapters 11.2.

### 6.1.3 Engineering Review

All changes to the facility or processes, which could affect chemical safety or could affect Items Relied on for safety are reviewed and approved according to the Change Control process described in Chapter 11.

### 6.1.4 Inspection, Testing, and Maintenance

The inspection, testing and maintenance of chemical related Items Relied on For Safety is established during the ISA. The ISA Summary identifies inspection testing and maintenance as it applies to the specific IROFS.

## 6.2 Chemical Risk Identification

### 6.2.1 Chemical Hazards Analysis

Chemical hazards are analyzed and considered during the Integrated Safety Analysis described in Chapter 3 and as part of the Change Management process described in Chapter 11. In addition, chemical interaction and compatibility evaluations are conducted to identify and analyze accident scenarios that could result in High or Intermediate Consequence events.

### 6.2.2 Integrated Safety Analysis

Controlling the risk from chemicals that could produce high or intermediate consequences described in 10CFR70.61 is a key component of the ISA. Scenarios are identified which, if unmitigated, could result in these consequences. Items Relied on for Safety are then identified and implemented to assure an acceptable level of risk. The ISA process is described in detail in Chapter 3 and the results of the ISA are provided in the ISA Summary.

## 6.3 Facility Design

Facilities shall be designed in accordance with written procedures that establish chemical safety design guidance and that implement Baseline Design Criteria required by 10 CFR 70.64.

## 6.4 Process Chemical Safety

The ISA Summary provides a general discussion of process chemical safety as it applies to the facility and potential offsite consequences and a discussion of the chemical safety of each process as it applies to workers at the facility

## 6.5 Chemical Safety and Emergency Response

Potential accident scenarios are described in the ISA Summary and the Emergency Plan (Chapter 8). The ISA Summary describes the scenarios and Items Relied on for Safety that make the risk of the accident either unlikely or highly unlikely as required by 10CFR70.61. The Emergency Plan describes actions that would be taken in the event that the accident occurred.

The Emergency Plan also describes response to potential accidents that are purely chemical in nature and not within the scope of 10CFR70.61. This is consistent with the philosophy that the site has a single Emergency Plan.