

**Shearon Harris Nuclear Power Plant Units 2 and 3  
COL Application  
Part 2, Final Safety Analysis Report**

CHAPTER 7  
INSTRUMENTATION AND CONTROLS

TABLE OF CONTENTS

<u>Section</u>	<u>Title</u>	<u>Page</u>
7.1	INTRODUCTION.....	7.1-1
7.1.6.1	Setpoint Calculations for Protective Functions.....	7.1-1
7.2	REACTOR TRIP .....	7.2-1
7.3	ENGINEERED SAFETY FEATURES .....	7.3-1
7.4	SYSTEMS REQUIRED FOR SAFE SHUTDOWN.....	7.4-1
7.5	SAFETY-RELATED DISPLAY INFORMATION .....	7.5-1
7.5.2	VARIABLE CLASSIFICATIONS AND REQUIREMENTS .....	7.5-1
7.5.3.5	Type E Variables .....	7.5-1
7.5.5	COMBINED LICENSE INFORMATION .....	7.5-1
7.6	INTERLOCK SYSTEMS IMPORTANT TO SAFETY .....	7.6-1
7.7	CONTROL AND INSTRUMENTATION SYSTEMS .....	7.7-1

**Shearon Harris Nuclear Power Plant Units 2 and 3  
COL Application  
Part 2, Final Safety Analysis Report**

LIST OF TABLES

<u>Number</u>	<u>Title</u>
7.5-201	Post-Accident Monitoring System
7.5-202	Summary of Type E Variables

**Shearon Harris Nuclear Power Plant Units 2 and 3  
COL Application  
Part 2, Final Safety Analysis Report**

LIST OF FIGURES

Number

Title

None

**Shearon Harris Nuclear Power Plant Units 2 and 3  
COL Application  
Part 2, Final Safety Analysis Report**

**CHAPTER 7**

**INSTRUMENTATION AND CONTROLS**

7.1 INTRODUCTION

This **section** of the referenced DCD is incorporated by reference with the following departures and/or supplements.

---

7.1.6.1 Setpoint Calculations for Protective Functions

STD COL 7.1-1

The Setpoint Program described in Technical Specifications Section 5.5 provides the appropriate controls for update of the instrumentation setpoints following completion of the calculation of setpoints for protective functions and the reconciliation of the setpoints against the final design.

---

**Shearon Harris Nuclear Power Plant Units 2 and 3  
COL Application  
Part 2, Final Safety Analysis Report**

7.2 REACTOR TRIP

This **section** of the referenced DCD is incorporated by reference with no departures or supplements.

**Shearon Harris Nuclear Power Plant Units 2 and 3  
COL Application  
Part 2, Final Safety Analysis Report**

7.3 ENGINEERED SAFETY FEATURES

This **section** of the referenced DCD is incorporated by reference with no departures or supplements.

**Shearon Harris Nuclear Power Plant Units 2 and 3  
COL Application  
Part 2, Final Safety Analysis Report**

7.4 SYSTEMS REQUIRED FOR SAFE SHUTDOWN

This **section** of the referenced DCD is incorporated by reference with no departures or supplements.

**Shearon Harris Nuclear Power Plant Units 2 and 3  
COL Application  
Part 2, Final Safety Analysis Report**

7.5 SAFETY-RELATED DISPLAY INFORMATION

This **section** of the referenced DCD is incorporated by reference with the following departures and/or supplements.

---

7.5.2 VARIABLE CLASSIFICATIONS AND REQUIREMENTS

---

Add the following paragraph at the end of DCD **Subsection 7.5.2**.

STD COL 7.5-1

FSAR **Table 7.5-201** supplements DCD **Table 7.5-1** and provides variable data shown in the DCD Table as “site specific.”

---

7.5.3.5 Type E Variables

---

Add the following paragraphs at the end of DCD **Subsection 7.5.3.5**.

STD COL 7.5-1

FSAR **Table 7.5-202** supplements DCD **Table 7.5-8** and provides variable data shown in the DCD Table as “site specific.”

---

7.5.5 COMBINED LICENSE INFORMATION

---

STD COL 7.5-1  
HAR COL 7.5-1

This COL item is addressed in **Subsection 7.5.2** and **Table 7.5-201**, and in **Subsection 7.5.3.5** and **Table 7.5-202**.

---

**Shearon Harris Nuclear Power Plant Units 2 and 3  
COL Application  
Part 2, Final Safety Analysis Report**

HAR COL 7.5-1

**Table 7.5-201  
Post-Accident Monitoring System<sup>(a)</sup>**

Variable	Range / Status	Type/ Category	Qualification		Number of Instruments Required	Power Supply	QDPS Indication	Remarks
			Environmental	Seismic				
Boundary environs radiation  <ul style="list-style-type: none"> <li>• Airborne Radiohalogens and Particulates (Portable sampling with onsite analysis capability)</li> <li>• Radiation (portable instrumentation)</li> <li>• Radioactivity (portable instruments)</li> </ul>	10 <sup>-9</sup> to 10 <sup>-3</sup> µCi/cc  10 <sup>-3</sup> to 10 <sup>4</sup> R/hr, photons; 10 <sup>-3</sup> to 10 <sup>4</sup> rads/hr, beta and low-energy photons  Multichannel gamma ray spectrometer	C3, E3	None	None	N/A	Non-1E	No	taken from RG 1.97 Revision 3
Meteorological parameters  <ul style="list-style-type: none"> <li>• Wind Speed</li> <li>• Wind Direction</li> <li>• Differential Temperature</li> </ul>	See Remarks	E3	None	None	2 (1 @ 12 m and 1 @ 61 m)  2 (1 @ 12 m and 1 @ 61 m)  2 (10 - 61 m)	Non-1E	No	See FSAR Subsection 2.3.3 and Tables 2.3.3-201, 2.3.3-202

a) This Table supplements DCD Table 7.5-1 and provides the site specific information noted in remarks column of DCD Table 7.5-1.

**Shearon Harris Nuclear Power Plant Units 2 and 3  
COL Application  
Part 2, Final Safety Analysis Report**

**Table 7.5-202  
Summary of Type E Variables<sup>(a)</sup>**

HAR COL 7.5-1

<b>Function Monitored</b>	<b>Variable</b>	<b>Type/Category</b>
Environs Radiation and Radioactivity	Plant Environs radiation levels and airborne radioactivity	E3
Meteorology	Wind speed, wind direction, and estimation of atmospheric stability (based on vertical temperature difference)	E3

a) This Table supplements DCD [Table 7.5-8](#) and provides the site specific information noted in the variable column of DCD [Table 7.5-8](#).

**Shearon Harris Nuclear Power Plant Units 2 and 3  
COL Application  
Part 2, Final Safety Analysis Report**

7.6 INTERLOCK SYSTEMS IMPORTANT TO SAFETY

This **section** of the referenced DCD is incorporated by reference with no departures or supplements.

**Shearon Harris Nuclear Power Plant Units 2 and 3  
COL Application  
Part 2, Final Safety Analysis Report**

7.7 CONTROL AND INSTRUMENTATION SYSTEMS

This **section** of the referenced DCD is incorporated by reference with no departures or supplements.