

Exelon Generation
Victoria County Station, Units 1 and 2
COL Application

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Victoria County Station, Units 1 and 2

COL Application

Part 10

Inspections, Tests, Analysis, and Acceptance Criteria (ITAAC)

Revision 0

**TIER 1 INFORMATION
AND
INSPECTIONS, TESTS, ANALYSES, AND ACCEPTANCE CRITERIA**

1. TIER 1 INFORMATION

DCD Tier 1 is incorporated by reference.

2. COLA ITAAC

The Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) for the COLA are provided in tabular form, consistent with the format shown in RG 1.206 Table C.II.1-1.

The COLA-ITAAC consist of the following four parts:

1. Design Certification ITAAC
2. Physical Security ITAAC
3. Emergency Planning ITAAC
4. Site-Specific ITAAC

This set of COLA-ITAAC is included herein. Completion of the ITAAC is a proposed condition of the combined license to be satisfied prior to fuel load.

2.1 DESIGN CERTIFICATION ITAAC

The Design Certification ITAAC are contained in DCD Tier 1, which is incorporated by reference in Section 1.

2.2 PHYSICAL SECURITY ITAAC

The Physical Security ITAAC are contained in DCD Tier 1, which is incorporated by reference in Section 1.

2.3 EMERGENCY PLANNING ITAAC

The Emergency Planning ITAAC are provided in [Table 2.3-1](#).

Table 2.3-1 (Sheet 1 of 14)
ITAAC For Emergency Planning

Planning Standard	EP Program Elements ^a	Inspections, Tests, Analyses (ITA)	Acceptance Criteria
1.0 Emergency Classification System			
10 CFR 50.47(b)(4) – A standard emergency classification and action level scheme, the bases of which include facility system and effluent parameters, is in use by the nuclear facility licensee, and State and local response plans call for reliance on information provided by facility licensees for determinations of minimum initial offsite response measures.	<p>1.1 A standard emergency classification and emergency action level (EAL) scheme exists, and identifies facility system and effluent parameters constituting the bases for the classification scheme. [D.1]</p> <p><u>ITAAC element addressed in:</u> EP II.D.1</p>	<p>1.1 An inspection of the control room, technical support center (TSC), and emergency operations facility (EOF) will be performed to verify that they have displays for retrieving facility system and effluent parameters identified in the following list of EALs (Reference Section 3, Emergency Plan VCS Annex):</p> <p>Abnormal Rad Levels/Radiological Effluents: AU1 (EALs 1, 2), AU2, AA1 (EALs 1, 2), AA2, AA3, AS1 (EALs 1), AG1 (EAL 1)</p> <p>Cold Shutdown/Refueling System Malfunction CU1, CU2, CU3, CU4, CU7, CU8, CA1, CA4, CS1, CG1</p> <p>Fission Product Barrier Thresholds:</p> <p><u>Fuel Clad Barrier Thresholds Values:</u></p> <ol style="list-style-type: none"> 1. Primary Coolant Activity Level 2. Reactor Vessel Water Level 3. Primary Containment Radiation Monitoring 4. Other Indications <p><u>RCS Barrier Threshold Values:</u></p> <ol style="list-style-type: none"> 1. Primary Containment Pressure 2. Reactor Vessel Water Level 3. RCS Leak Rate 4. Primary Containment Radiation Monitoring 	<p>1.1.1 A report exists that confirms the specific parameters identified in the EALs listed in ITA Section 1.1 have been retrieved and displayed in the control room, TSC, and EOF.</p> <p>1.1.2 A report exists that confirms the displays available in the control room, TSC, and EOF are capable of displaying the range of values for the specific parameters identified in the EALs listed in Section 1.1.</p>

Table 2.3-1 (Sheet 2 of 14)
ITAAC For Emergency Planning

Planning Standard	EP Program Elements ^a	Inspections, Tests, Analyses (ITA)	Acceptance Criteria
1.0 Emergency Classification System (Continued)			
		<u>Containment Barrier Threshold Values:</u> 1. Primary Containment Conditions 2. Primary Containment Isolation Failure or Bypass 3. Primary Containment Radiation Monitoring Hazards or Other Conditions Affecting Plant Safety: HU1 (EAL 2), HA1 (EALs 1, 2) System Malfunction: SU1, SU4 (EAL 1), SU8, SA1, SA2, SA4, SS1, SS2, SS3, SS6, SG1, SG2	
2.0 Notification Methods and Procedures			
10 CFR 50.47(b)(5) – Procedures have been established for notification, by the licensee, of state and local response organizations and for notification of emergency personnel by all organizations; the content of initial and follow-up messages to response organizations and the public has been established; and means to provide early notification and clear instruction to the populace within the plume exposure pathway Emergency Planning Zone (EPZ) have been established.	2.1 The means exist to notify responsible state and local organizations within 15 minutes after the licensee declares an emergency. [E.1] <u>ITAAC element addressed in:</u> EP II.E.1	2.1 A test will be performed of the capabilities.	2.1.1 A report exists that confirms communications have been established via the Operational Hotline among the control room, the state of Texas, Victoria County, Refugio County, and Goliad County.

Table 2.3-1 (Sheet 3 of 14)
ITAAC For Emergency Planning

Planning Standard	EP Program Elements ^a	Inspections, Tests, Analyses (ITA)	Acceptance Criteria
2.0 Notification Methods and Procedures (Continued)			
	2.2 The means exist to notify emergency response personnel. [E.2] <u>ITAAC element addressed in:</u> EP II.E.2	2.2 A test will be performed of the capabilities.	2.2 A report exists that confirms notification to the emergency response organization has been performed.
	2.3 The means exist to notify and provide instructions to the populace within the plume exposure EPZ. [E.6] <u>ITAAC element addressed in:</u> EP II.E.6	NOTE: The means to notify and provide instructions to the populace within the plume exposure EPZ is addressed by Acceptance Criteria 8.1.1.2.	
3.0 Emergency Communications			
10 CFR 50.47(b)(6) – Provisions exist for prompt communications among principal response organizations to emergency personnel and to the public.	3.1 The means exist for communications among the control room, TSC, EOF, principal state and local emergency operations centers (EOCs), and radiological field assessment teams. [F.1.d] <u>ITAAC element addressed in:</u> EP II.F.1	3.1 A test will be performed of the capabilities.	3.1.1 A report exists that confirms communications have been established among the control room, operations support center (OSC), and TSC. 3.1.2 A report exists that confirms communications have been established among the control room, TSC, and EOF. 3.1.3 A report exists that confirms communications via the Operational Hotline have been established among the TSC, State of Texas, Victoria County, Refugio County, and Goliad County. 3.1.4 A report exists that confirms communications have been established between the TSC and radiological monitoring teams.

Table 2.3-1 (Sheet 4 of 14)
ITAAC For Emergency Planning

Planning Standard	EP Program Elements ^a	Inspections, Tests, Analyses (ITA)	Acceptance Criteria
3.0 Emergency Communications (Continued)			
	<p>3.2 The means exist for communications from the control room, TSC, and EOF to the NRC headquarters and regional office EOCs (including establishment of the Emergency Response Data System (ERDS) between the onsite computer system and the NRC Operations Center.) [F.1.f]</p> <p><u>ITAAC element addressed in:</u> EP II.H</p>	3.2 A test will be performed of the capabilities.	3.2 A report exists that confirms communications have been established from the control room, TSC, and EOF to the NRC headquarters and Region IV EOCs and an access port for ERDS is provided.

Table 2.3-1 (Sheet 5 of 14)
ITAAC For Emergency Planning

Planning Standard	EP Program Elements ^a	Inspections, Tests, Analyses (ITA)	Acceptance Criteria
4.0 Public Education and Information			
10 CFR 50.47(b)(7) – Information is made available to the public on a periodic basis on how they will be notified and what their initial actions should be in an emergency (e.g., listening to a local broadcast station and remaining indoors), the principal points of contact with the news media for dissemination of information during an emergency (including the physical location or locations) are established in advance, and procedures for coordinated dissemination of information to the public are established.	<p>4.1 The licensee has provided space that may be used for a limited number of the news media at the EOF. [G.3.b]</p> <p><u>ITAAC element addressed in:</u> EP II.H</p>	4.1 An inspection of the emergency news center will be performed to verify that space is provided for a limited number of the news media.	4.1 A report exists that confirms the emergency news center has space for a limited number of the news media.

Table 2.3-1 (Sheet 6 of 14)
ITAAC For Emergency Planning

Planning Standard	EP Program Elements ^a	Inspections, Tests, Analyses (ITA)	Acceptance Criteria
5.0 Emergency Facilities and Equipment			
10 CFR 50.47(b)(8) – Adequate emergency facilities and equipment to support the emergency response are provided and maintained.	<p>5.1 The licensee has established a TSC and onsite OSC. [H.1]</p> <p><u>ITAAC element addressed in:</u> EP II.H</p>	5.1 An inspection of the as-built TSC and OSC will be performed.	<p>5.1.1 A report exists that confirms the TSC has at least 174 square meters (1875 square feet) of floor space.</p> <p>5.1.2 A report exists that confirms the following communications equipment have been provided in the TSC and voice transmission and reception have been accomplished:</p> <ul style="list-style-type: none"> • NRC systems: Emergency Notification System, Health Physics Network, Management Counterpart Link • Dedicated telephone to EOF • Dedicated telephone to control room • Dedicated telephone to OSC <p>5.1.3 A report exists that confirms the common TSC (i.e., for both Unit 1 and Unit 2) has been located in the Unit 1 Electrical Building.</p> <p>5.1.4 A report exists that confirms the TSC includes radiation monitors and a ventilation system with a HEPA and charcoal filter.</p>

Table 2.3-1 (Sheet 7 of 14)
ITAAC For Emergency Planning

Planning Standard	EP Program Elements ^a	Inspections, Tests, Analyses (ITA)	Acceptance Criteria
5.0 Emergency Facilities and Equipment (Continued)			
			<p>5.1.5 A report exists that confirms backup electrical power supply is available for the TSC.</p> <p>5.1.6 A report exists that confirms the OSC for each unit is in a location separate from the control room (i.e., each unit will have a separate OSC).</p> <p>5.1.7 A report exists that confirms the following communications equipment have been provided in the OSC and voice transmission and reception have been accomplished:</p> <ul style="list-style-type: none"> • Dedicated telephone to control room • Dedicated telephone to TSC • Plant page system (voice transmission only)
	<p>5.2 The licensee has established an EOF. [H.2]</p> <p><u>ITAAC element addressed in:</u> EP II.H</p>	5.2 An inspection of the EOF will be performed.	<p>5.2.1 A report exists that confirms the EOF has at least 243 square meters (2,625 square feet).</p> <p>5.2.2 A report exists that confirms voice transmission and reception have been accomplished between the EOF and TSC.</p> <p>5.2.3 A report exists that confirms voice transmission and reception have been accomplished via the Operational Hotline among the EOF, State of Texas, Victoria County, Refugio County, and Goliad County.</p>

Table 2.3-1 (Sheet 8 of 14)
ITAAC For Emergency Planning

Planning Standard	EP Program Elements ^a	Inspections, Tests, Analyses (ITA)	Acceptance Criteria
6.0 Accident Assessment			
10 CFR 50.47(b)(9) – Adequate methods, systems, and equipment for assessing and monitoring actual or potential offsite consequences of a radiological emergency condition are in use.	<p>6.1 The means exist to provide initial and continuing radiological assessment throughout the course of an accident. [I.2]</p> <p><u>ITAAC element addressed in:</u> EP II.I</p>	6.1 A test of the emergency plan will be conducted by performing an exercise or drill to verify the capability to perform accident assessment.	<p>6.1 A report exists that confirms an exercise or drill has been accomplished including use of selected monitoring parameters identified in the EALs listed in ITA Section 1.1, to assess simulated degraded plant conditions and initiate protective actions in accordance with the following criteria:</p> <ul style="list-style-type: none"> A. Accident Assessment and Classification <ul style="list-style-type: none"> 1. Initiating conditions identified, EALs parameters determined, and the emergency correctly classified throughout the drill. B. Radiological Assessment and Control <ul style="list-style-type: none"> 1. Onsite radiological surveys performed and samples collected. 2. Radiation exposure of emergency workers monitored and controlled. 3. Field monitoring teams assembled and deployed. 4. Field team data collected and disseminated. 5. Dose projections developed. 6. The decision whether to issue radioprotective drugs to VCS emergency workers made. 7. Protective action recommendations developed and communicated to appropriate authorities.

Table 2.3-1 (Sheet 9 of 14)
ITAAC For Emergency Planning

Planning Standard	EP Program Elements ^a	Inspections, Tests, Analyses (ITA)	Acceptance Criteria
6.0 Accident Assessment (Continued)			
	<p>6.2 The means exist to determine the source term of releases of radioactive material within plant systems, and the magnitude of the release of radioactive materials based on plant system parameters and effluent monitors. [I.3]</p> <p><u>ITAAC element addressed in:</u> EP II.I</p>	6.2 An analysis of emergency plan implementing procedures will be performed.	6.2.1 A report exists that confirms a methodology has been established to determine the source term of releases of radioactive materials within plant systems.
	<p>6.3 The means exist to continuously assess the impact of the release of radioactive materials to the environment, accounting for the relationship between effluent monitor readings, and onsite and offsite exposures and contamination for various meteorological conditions. [I.4]</p> <p><u>ITAAC element addressed in:</u> EP II.I</p>	6.3 An analysis of emergency plan implementing procedures will be performed.	6.3 A report exists that confirms a methodology has been provided to establish the relationship between effluent monitor readings and onsite and offsite exposures and contamination for various radiological conditions.

Table 2.3-1 (Sheet 10 of 14)
ITAAC For Emergency Planning

Planning Standard	EP Program Elements ^a	Inspections, Tests, Analyses (ITA)	Acceptance Criteria
6.0 Accident Assessment (Continued)			
	<p>6.4 The means exist to acquire and evaluate meteorological information. [I.5]</p> <p><u>ITAAC element addressed in:</u> EP II.I</p>	<p>6.4 An inspection of the control room, TSC, and EOF will be performed to verify the availability of the following meteorological data:</p> <ul style="list-style-type: none"> • Wind speed (at 10 m and 60 m) • Wind direction (at 10 m and 60 m) • Ambient air temperature (at 10 m and 60 m) 	<p>6.4 A report exists that confirms the specified meteorological data was available at the control room, TSC, and EOF.</p>
	<p>6.5 The means exist to make rapid assessments of actual or potential magnitude and locations of any radiological hazards through liquid or gaseous release pathways, including activation, notification means, field team composition, transportation, communication, monitoring equipment, and estimated deployment times. [I.8]</p> <p><u>ITAAC element addressed in:</u> EP II.I</p>	<p>6.5 An analysis of emergency plan implementing procedures will be performed.</p>	<p>6.5 A report exists that confirms a methodology has been established to provide rapid assessment of the actual or potential magnitude and locations of any radiological hazards through liquid or gaseous release pathways.</p>

Table 2.3-1 (Sheet 11 of 14)
ITAAC For Emergency Planning

Planning Standard	EP Program Elements ^a	Inspections, Tests, Analyses (ITA)	Acceptance Criteria
6.0 Accident Assessment (Continued)			
	<p>6.6 The capability exists to detect and measure radioiodine concentrations in air in the plume exposure EPZ, as low as 1×10^{-7} $\mu\text{Ci/cc}$ (microcuries per cubic centimeter) under field conditions. [I.9]</p> <p><u>ITAAC element addressed in:</u> EP II.I</p>	<p>6.6 A test of VCS field survey instrumentation will be performed to verify the capability to detect airborne concentrations as low as 1×10^{-7} microcuries per cubic centimeter.</p>	<p>6.6 A report exists that confirms instrumentation used for monitoring I-131 to detect airborne concentrations as low as 1×10^{-7} microcuries per cubic centimeter has been provided.</p>
	<p>6.7 The means exist to estimate integrated dose from the projected and actual dose rates, and for comparing these estimates with the EPA protective action guidelines. [I.10]</p> <p><u>ITAAC element addressed in:</u> EP II.I</p>	<p>6.7 An analysis of emergency plan implementing procedures will be performed to verify that a methodology is provided to establish means for relating contamination levels and airborne radioactivity levels to dose rates and gross radioactivity measurements for the following isotopes – Kr-88, Ru-106, I-131, I-132, I-133, I-134, I-135, Te-132, Xe-133, Xe-135, Cs-134, Cs-137, Ce-144.</p>	<p>6.7 A report exists that confirms the means for relating contamination levels and airborne radioactivity levels to dose rates and gross radioactivity measurements for the specified isotopes have been established.</p>

Table 2.3-1 (Sheet 12 of 14)
ITAAC For Emergency Planning

Planning Standard	EP Program Elements ^a	Inspections, Tests, Analyses (ITA)	Acceptance Criteria
7.0 Protective Response			
10 CFR 50.47(b)(10) – A range of protective actions has been developed for the plume exposure EPZ for emergency workers and the public. In developing this range of actions, consideration has been given to evacuation, sheltering, and, as a supplement to these, the prophylactic use of potassium iodide (KI), as appropriate. Guidelines for the choice of protective actions during an emergency, consistent with federal guidance, are developed and in place, and protective actions for the ingestion exposure EPZ appropriate to the locale have been developed.	<p>7.1 The means exist to warn and advise onsite individuals of an emergency, including those in areas controlled by the operator, including:[J.1]</p> <ul style="list-style-type: none"> a. employees not having emergency assignments b. visitors c. contractor and construction personnel d. other persons who may be in the public access areas, on or passing through the site, or within the owner-controlled area. <p><u>ITAAC element addressed in:</u> EP II.E</p>	7.1 A test of the onsite warning and communications capability will be performed during a drill or exercise.	<p>7.1.1 A report exists that confirms that, during a drill or exercise, notification and instructions were provided to onsite workers and visitors, within the Protected Area, over the plant public announcement system.</p> <p>7.1.2 A report exists that confirms that, during a drill or exercise, audible warnings were provided to individuals outside the Protected Area, but within the owner-controlled area.</p>

Table 2.3-1 (Sheet 13 of 14)
ITAAC For Emergency Planning

Planning Standard	EP Program Elements ^a	Inspections, Tests, Analyses (ITA)	Acceptance Criteria
8.0 Exercises and Drills			
10 CFR 50.47(b)(14) – Periodic exercises are (will be) conducted to evaluate major portions of emergency response capabilities, periodic drills are (will be) conducted to develop and maintain key skills, and deficiencies identified as a result of exercises or drills are (will be) corrected.	<p>8.1 Licensee conducts a full-participation exercise to evaluate major portions of emergency response capabilities, which includes participation by each state and local agency within the plume exposure EPZ, and each state within the ingestion control EPZ. [N.1]</p> <p><u>ITAAC element addressed in:</u> EP II.N.1</p>	8.1 A full-participation exercise (test) will be conducted within the specified time periods of Appendix E to 10 CFR Part 50.	<p>8.1.1.1 A report exists that confirms an exercise was conducted within the specified time periods of Appendix E to 10 CFR Part 50, onsite exercise objectives were met, and there were no uncorrected onsite exercise deficiencies.</p> <p>8.1.1.2 A report exists that confirms exercise objectives, including specific acceptance criteria, addressed each of the following Emergency Planning (EP) Program Elements:</p> <ul style="list-style-type: none"> • Emergency Classification • Notification and Emergency Communications • Emergency Public Information • Emergency Facilities and Equipment • Accident Assessment • Protective Response and Protective Action Recommendations • Radiological Exposure Control • Recovery and Re-Entry <p>8.1.2.1 A report exists that confirms onsite emergency response personnel were mobilized to fill emergency response positions.</p> <p>8.1.2.2 A report exists that confirms onsite emergency response personnel performed their assigned responsibilities.</p>

Table 2.3-1 (Sheet 14 of 14)
ITAAC For Emergency Planning

Planning Standard	EP Program Elements ^a	Inspections, Tests, Analyses (ITA)	Acceptance Criteria
9.0 Implementing Procedures			
10 CFR Part 50, App. E.V - No less than 180 days prior to the scheduled issuance of an operating license for a nuclear power reactor or a license to possess nuclear material, the applicant's detailed implementing procedures for its emergency plan shall be submitted to the Commission.	9.1 The licensee has submitted detailed implementing procedures for its emergency plan no less than 180 days prior to fuel load.	9.1 An inspection of the submittal letter will be performed.	9.1 The licensee has submitted detailed implementing procedures for the onsite emergency plan no less than 180 days prior to fuel load.

a. The alphanumeric designations in square brackets correspond to NUREG-0654/FEMA-REP-1, Rev. 1, evaluation criteria.

2.4 SITE-SPECIFIC ITAAC

The Site-Specific ITAAC are provided in the following sections. Site-specific systems were evaluated against selection criteria in FSAR Section 14.3. If a site-specific system described in the FSAR does not meet an ITAAC selection criterion, only the system name and the statement “No entry for this system” are provided.

2.4.1 ITAAC FOR BACKFILL UNDER CATEGORY 1 STRUCTURES

Design Description

Backfill under Category I structures is installed up from the competent bearing layer to meet average and minimum soil density requirements specified in [Table 2.4.1-1](#).

Inspections, Tests, Analyses, and Acceptance Criteria

[Table 2.4.1-2](#) provides a definition of the inspections, tests, and/or analyses, together with associated acceptance criteria, for the backfill under Category I structures.

Table 2.4.1-1
Compaction Requirements for Backfill Under Category I Structures

Average Compaction (all tests)	97% Compaction
Number of compaction test results <95% compaction	≤10% of test results
Number of compaction test results <93% compaction	zero

Table 2.4.1-2
ITAAC for Backfill Under Category 1 Structures

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
1. Backfill under Category I structures is installed to meet average and minimum soil density requirements specified in Table 2.4.1-1 .	1. Inspection and testing will be performed during placement of the backfill materials.	1. A report exists that concludes the installed backfill under Category I structures meets the average and minimum soil density requirements specified in Table 2.4.1-1 .

2.4.2 ITAAC FOR PLANT SERVICE WATER SYSTEM (PORTION OUTSIDE SCOPE OF CERTIFIED DESIGN)

Design Description

The plant service water system (PSWS) is the heat sink for the reactor component cooling water system (RCCWS). The PSWS does not perform any safety-related function. There is no interface with any safety-related component.

The PSWS cooling towers and basins are not within the scope of the certified design. A specific design for this portion of the PSWS is described in FSAR Section 9.2.1. Interface requirements are necessary for supporting the post-72-hour cooling function of the PSWS. The plant-specific portion of the PSWS shall meet the following interface requirement:

The PSWS is required to remove 2.02×10^7 MJ (1.92×10^{10} Btu) over a period of 7 days without active makeup.

Inspections, Tests, Analyses, and Acceptance Criteria

[Table 2.4.2-1](#) provides a definition of the inspections, tests, and/or analyses, together with associated acceptance criteria for the PSWS.

Table 2.4.2-1
ITAAC For Plant Service Water Reserve Storage Capacity

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
1. The PSWS contains an inventory of cooling water sufficient for RCCWS cooling from hour zero (0) through day 7 (2.02×10^7 MJ (1.92×10^{10} BTU)) without active makeup.	1. Inspection of the as-built PSWS cooling tower basin and pump forebay will be conducted.	1. Report(s) document that the usable water volume in the cooling tower basins (Trains A and B) and associated pump forebay, defined as the volume above the pump minimum submergence water level and below the minimum normal operating level, is a minimum of 2.6 million gallons.

2.4.3 CIRCULATING WATER SYSTEM (PORTION OUTSIDE SCOPE OF CERTIFIED DESIGN)

No entry for this system.

2.4.4 STATION WATER SYSTEM (INCLUDING INTAKE STRUCTURE AND SERVICING EQUIPMENT)

No entry for this system.

2.4.5 YARD FIRE PROTECTION SYSTEM (PORTION OUTSIDE SCOPE OF CERTIFIED DESIGN)

No entry for this system.

2.4.6 POTABLE AND SANITARY WATER SYSTEMS

No entry for this system.

2.4.7 OFFSITE POWER

No entry for this system.

2.4.8 COMMUNICATIONS SYSTEMS (EMERGENCY NOTIFICATION SYSTEM)

Addressed in [Table 2.3-1](#), Topic 3.0, Emergency Communications.

2.4.9 MAKEUP WATER SYSTEM (PORTION OUTSIDE SCOPE OF CERTIFIED DESIGN)

No entry for this system.

2.4.10 MOBILE LIQUID RADWASTE SYSTEM (PORTION OUTSIDE SCOPE OF CERTIFIED DESIGN)

No entry for this system.

2.4.11 MOBILE SOLID RADWASTE SYSTEM (PORTION OUTSIDE SCOPE OF CERTIFIED DESIGN)

No entry for this system.

2.4.12 HYDROGEN WATER CHEMISTRY SYSTEM

No entry for this system.

2.4.13 METEOROLOGICAL MONITORING SYSTEM

No entry for this system.

2.4.14 SERVICE AIR SYSTEM (PORTION OUTSIDE SCOPE OF CERTIFIED DESIGN)

No entry for this system.

2.4.15 TOXIC GAS DETECTION SYSTEM

Design Description

The toxic gas detection system (TGDS) monitors control room ventilation intakes and provides an alarm to the operators before toxic gas levels exceed values that are hazardous to the operators. The TGDS does not perform any safety-related function. There is no active interface with safety-related components.

The TGDS is not within the scope of the certified design. The system is described in FSAR [Sections 6.4](#) and [9.4](#). The system shall meet the following requirement:

Detect gas levels for the following gases and at the indicated levels.

Chlorine ≤ 5 ppm

Hydrogen Chloride ≤ 6 ppm

Hydrogen Fluoride ≤ 5 ppm

Hydrogen Sulfide ≤ 10 ppm

Sulfur Dioxide ≤ 5 ppm

Inspections, Tests, Analyses, and Acceptance Criteria

[Table 2.4.15-1](#) provides a definition of the inspections, tests, and/or analyses, together with associated acceptance criteria for the toxic gas detection system.

Table 2.4.15-1
ITAAC for Toxic Gas Detection System

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
<p>1. The TGDS detectors in the normal and EFU outside air intakes will initiate an alarm in the control room when the concentrations of Chlorine, Hydrogen Chloride, Hydrogen Fluoride, Hydrogen Sulfide, or Sulfur Dioxide reach applicable setpoints.</p>	<p>1. Inspection and testing will be performed to verify the system will provide alarms when setpoints are reached for all five toxic gases.</p>	<p>1. Reports exist which document that alarms are received in the control room for Chlorine, Hydrogen Chloride, Hydrogen Fluoride, Hydrogen Sulfide, and Sulfur Dioxide at the following concentrations:</p> <ul style="list-style-type: none"> • Chlorine ≤ 5 ppm • Hydrogen Chloride ≤ 6 ppm • Hydrogen Fluoride ≤ 5 ppm • Hydrogen Sulfide ≤ 10 ppm • Sulfur Dioxide ≤ 5 ppm