
2.9.3 Gaseous Waste Processing System

Design Description

1.0 System Description

The gaseous waste processing system (GWPS) is a non-safety related system that utilizes delay beds containing activated carbon to reduce the radioactivity of the waste gas before release to the Nuclear Auxiliary Building for additional processing and release through the vent stack. A high radioactivity signal from the radiation monitor downstream of the delay beds activates an alarm in the main control room (MCR) and terminates gaseous waste releases.

2.0 Arrangement

2.1 The functional arrangement of the GWPS is as described in the Design Description of Section 2.9.3, Tables 2.9.3-1— GWPS Equipment Mechanical Design and 2.9.3-2— GWPS Equipment I&C and Electrical Design, and as shown on Figure 2.9.3-1— Gaseous Waste Processing System Functional Arrangement.

2.2 Deleted.

3.0 Mechanical Design Features

3.1 Equipment identified as RW-IIa in Table 2.9.3-1 can withstand design basis loads listed in Regulatory Guide 1.143 without a loss of structural integrity.

3.2 Deleted.

3.3 Deleted.

3.4 Deleted.

3.5 Deleted.

3.6 Deleted.

3.7 Deleted.

3.8 Deleted.

3.9 Deleted.

3.10 Deleted.

3.11 Deleted.

3.12 Deleted.

4.0 I&C Design Features, Displays, and Controls

4.1 Displays listed in Table 2.9.3-2 are indicated on the PICS operator workstations in the main control room (MCR).

4.2 Controls on the PICS operator workstations in the MCR perform the function listed in Table 2.9.3-2.

5.0 Electrical Power Design Features

5.1 Deleted.

6.0 Environmental Qualifications

6.1 Deleted.

7.0 Equipment and System Performance

7.1 The GWPS processing equipment contains delay beds listed in Table 2.9.3-1 filled with activated charcoal.

7.2 Upon receipt of a high radioactivity signal from the radiation monitor (R-2), the GWPS discharge valve closes.

7.3 Deleted.

Inspections, Tests, Analyses, and Acceptance Criteria

Table 2.9.3-3 lists the gaseous waste processing system ITAAC.

Table 2.9.3-1—GWPS Equipment Mechanical Design

Description	Tag Number ⁽¹⁾	Location	Seismic Category
Delay Beds	30KPL50AT001 30KPL50AT002 30KPL50AT003	Nuclear Auxiliary Building	RW-IIa
Discharge Valve	30KPL83AA005	Nuclear Auxiliary Building	RW-IIa
Condensate Collecting Tank	30KPL30BB001	Nuclear Auxiliary Building	RW-IIa
Gas Cooler	30KPL11AC001	Nuclear Auxiliary Building	RW-IIa
Gas Drier	30KPL01AC001	Nuclear Auxiliary Building	RW-IIa
Gas Filter	30KPL70AT001	Nuclear Auxiliary Building	RW-IIa
Gel Drier	30KPL40AT001	Nuclear Auxiliary Building	RW-IIa
Measuring Gas Compressors	30KPL05AN001 30KPL05AN002 30KPL05AN003	Nuclear Auxiliary Building	RW-IIa
Measuring Gas Driers	30KPL05AC001 30KLP06AC001	Nuclear Auxiliary Building	RW-IIa
Pre-drier	30KPL30AC001	Nuclear Auxiliary Building	RW-IIa
Recombiner	30KPL11AT001	Nuclear Auxiliary Building	RW-IIa
Sealing Liquid Coolers	30KPL21AC001 30KPL22AC001	Nuclear Auxiliary Building	RW-IIa
Sealing Liquid Tanks	30KPL21BB001 30KPL22BB001	Nuclear Auxiliary Building	RW-IIa
Waste Gas Compressors	30KPL21AN001 30KPL22AN001	Nuclear Auxiliary Building	RW-IIa

1. Equipment tag numbers are provided for information only and are not part of the certified design.

Table 2.9.3-2—GWPS Equipment I&C and Electrical Design

Description	Tag Number ⁽¹⁾	Location	MCR Displays	MCR Controls
Discharge Valve	30KPL83AA005	Nuclear Auxiliary Building	Position	Open-Close
Radiation Monitor (R-1)	30KPL40CR001	Nuclear Auxiliary Building	Radioactivity level	N/A
Radiation Monitor (R-2)	30KPL83CR001	Nuclear Auxiliary Building	Radioactivity level	N/A

1. Equipment tag numbers are provided for information only and are not part of the certified design.

Table 2.9.3-3—Gaseous Waste Processing System ITAAC
Sheet 1 of 2

Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
2.1	The functional arrangement of the GWPS is as described in the Design Description of Section 2.9.3, Tables 2.9.3-1 and 2.9.3-2, and as shown on Figure 2.9.3-1.	An inspection of the as-built GWPS functional arrangement will be performed.	The GWPS conforms to the functional arrangement as described in the Design Description of Section 2.9.3, Tables 2.9.3-1 and 2.9.3-2, and as shown on Figure 2.9.3-1.
2.2	Deleted.	Deleted.	Deleted.
3.1	Equipment identified as RW-IIa in Table 2.9.3-1 can withstand design basis loads listed in Regulatory Guide 1.143 without a loss of structural integrity.	An inspection and analysis will be performed to verify the as-built equipment identified as RW-IIa in Table 2.9.3-1 will withstand design basis loads.	A report concludes that the equipment identified as RW-IIa in Table 2.9.3-1 will withstand design basis loads listed in Regulatory Guide 1.143 without a loss of structural integrity.
3.2	Deleted.	Deleted.	Deleted.
3.3	Deleted.	Deleted.	Deleted.
3.4	Deleted.	Deleted.	Deleted.
3.5	Deleted.	Deleted.	Deleted.
3.6	Deleted.	Deleted.	Deleted.
3.7	Deleted.	Deleted.	Deleted.
3.8	Deleted.	Deleted.	Deleted.
3.9	Deleted.	Deleted.	Deleted.
3.10	Deleted.	Deleted.	Deleted.
3.11	Deleted.	Deleted.	Deleted.
3.12	Deleted.	Deleted.	Deleted.
4.1	Displays listed in Table 2.9.3-2 are indicated on the PICS operator workstations in the MCR.	Tests will be performed to verify that the displays listed in Table 2.9.3-2 are indicated on the PICS operator workstations in the MCR.	Displays listed in Table 2.9.3-2 are indicated on the PICS operator workstations in the MCR.
4.2	Controls on the PICS operator workstations in the MCR perform the function listed in Table 2.9.3-2.	Tests will be performed using controls on the PICS operator workstations in the MCR.	Controls on the PICS operator workstations in the MCR perform the function listed in Table 2.9.3-2.
5.1	Deleted.	Deleted.	Deleted.
6.1	Deleted.	Deleted.	Deleted.

**Table 2.9.3-3—Gaseous Waste Processing System ITAAC
Sheet 2 of 2**

Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
7.1	The GWPS processing equipment contains delay beds listed in Table 2.9.3-1 filled with activated charcoal.	Inspections and analyses will be performed to verify the as-built mass of activated charcoal loaded in each delay bed.	Each delay bed listed in Table 2.9.3-1 contains a minimum of 5,440 lb _m of activated charcoal.
7.2	Upon receipt of a high radioactivity signal from the radiation monitor (R-2), the GWPS discharge valve closes.	A test will be performed to verify that the GWPS discharge valve closes upon receipt of a high radioactivity signal from the radiation monitor (R-2).	The GWPS discharge valve closes upon receipt of a high radioactivity signal from the radiation monitor (R-2) using an established trip setpoint.
7.3	Deleted.	Deleted.	Deleted.