2.9 Radioactive Waste Management

2.9.1 Liquid Waste Management System

1.0 Description

The liquid waste management system (LWMS) collects and treats radioactive liquid effluents from several systems throughout the plant. If the total activity indicated by activity sensors exceeds predetermined limits, the LWMS discharge valves automatically close.

2.0 Arrangement

2.1 The location of LWMS equipment is as listed in Table 2.9.1-1—LWMS Equipment Mechanical Design.

3.0 Instrumentation and Controls (I&C) Design Features, Displays, and Controls

3.1 LWMS displays listed in Table 2.9.1-2—LWMS Equipment I&C and Electrical Design are retrievable in the main control room (MCR) as listed in Table 2.9.1-2.

3.2 The LWMS equipment controls are provided in the MCR as listed in Table 2.9.1-2.

4.0 Equipment and System Performance

4.1 The LWMS processing equipment contains the proper types and amounts of filter media or treatment media.

4.2 The LWMS discharge valves close upon receipt of a high-radiation signal from the activity monitors.

5.0 Inspections, Tests, Analyses, and Acceptance Criteria

Table 2.9.1-3 lists the liquid waste management system ITAAC.

Table 2.9.1-1—LWMS Equipment Mechanical Design

Description	Tag Number (1)	Location	ASME Code Section III	Function	Seismic Category I
Discharge valves	30KPK29AA001 30KPK29AA002	Radioactive Waste Processing Building	No	Close	No
Radiation monitors	30KPK29CR001 30KPK29CR002	Radioactive Waste Processing Building	No	Measure activity levels	No

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

Table 2.9.1-2—LWMS Equipment I&C and Electrical Design

Description	Tag Number(1)	Location	IEEE Class 1E(2)	EQ – Harsh Env.	PACS	MCR Displays	MCR Controls
Discharge valves	30KPK29AA001 30KPK29AA002	Radioactive Waste Processing Building	No	No	No	Position	Open-Close
Radiation monitors	30KPK29CR001 30KPK29CR002	Radioactive Waste Processing Building	No	No	No	Radiation activity levels	N/A

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

2) ^{N} denotes the division the component is normally powered from. ^{A} denotes the division the component is powered from when alternate feed is implemented.

Table 2.9.1-3— Liquid Waste Management System ITAAC

Commitment Wording		Inspections, Tests, Analyses	Acceptance Criteria
2.1	The location of LWMS equipment is as listed in Table 2.9.1-1.	Inspections will be performed to verify equipment locations.	The equipment listed in Table 2.9.1-1 is located as listed in Table 2.9.1-1.
3.1	LWMS displays listed in Table 2.9.1-2 are retrievable in the MCR as listed in Table 2.9.1-2.	Tests will be performed for the retrievability of the displays in the MCR as listed in Table 2.9.1-2.	The displays listed in Table 2.9.1-2 as being retrieved in the MCR can be retrieved in the MCR.
3.2	The LWMS equipment controls are provided in the MCR as listed in Table 2.9.1-2.	Tests will be performed for the existence of control signals from the MCR to the equipment listed in Table 2.9.1-2.	The controls listed in Table 2.9.1-2 as being in the MCR exist in the MCR.
4.1	The LWMS processing equipment contains the proper types and amounts of filter media or treatment media.	Analyses and inspections will be performed to verify the LWMS processing equipment contains filter/treatment media capable of maintaining offsite doses to members of the public within 10 CFR 20 limits and effluent concentrations below the annual average concentration limits of 10 CFR 20.	Analyses and inspection reports indicate that the LWMS processing equipment contains filter/treatment media capable of maintaining offsite doses to members of the public within 10 CFR 20 limits and effluent concentrations below the annual average concentration limits of 10 CFR 20.
4.2	The LWMS discharge valves close upon receipt of a high-radiation signal from the activity monitors.	Tests of the discharge valves closure will be performed by verifying radiation monitor operation and simulating a high-radiation signal at each activity monitor (tag numbers KPK29CR001 and KPK29CR002) downstream on the liquid radwaste release line.	The LWMS discharge valves (tag numbers 30KPK29AA001 and 30KPK29AA002) close upon receipt of a high-radiation signal from the activity monitors (tag number KPK29CR001 and KPK29CR002).

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