REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS) 094

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AUTH.NAME AUTHOR AFFILIATION
CURTIS,N.W. Pennsylvania Power & Light Co.
RECIP.NAME RECIPIENT AFFILIATION
SCHWENCER,A. Licensing Branch 2

SUBJECT: Forwards revs to Section 9.3 of FSAR covering process sampling sys & design bases. Revs will be inconporated in next FSAR amend.

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	IE/DEQA/QAB 21	1	1	NRR/DE/AEAB	1	0
	NRR/DE/CEB 11	1	1	NRR/DE/EHEB	1	1
	NRR/DE/EQB 13	2	2	NRR/DE/GB 28	2	2
	NRR/DE/MEB 18	1	1	NRR/DE/MTEB 17	1	1
	NRR/DE/SAB 24	1	1	NRR/DE/SGEB 25	1	1
	NRR/DHFS/HFEB40	1	1	NRR/DHFS/LQB 32	1	1
	NRR/DHFS/PSRB	1	1	NRR/DL/SSPB	1	0
	NRR/DSI/AEB 26	1	1	NRR/DSI/ASB	1	1
	NRR/DSI/CPB 10	1	1	NRR/DSI/CSB 09	1	1
	NRR/DSI/ICSB 16	1	1	NRR/DSI/METB 12	1	1
	NRR/DSI/PSB 19	1	1	NRR/DSI/RAB 22	1	1
	NRR/DSI/RSB 23	1	1	REG FILE 04	1	1
	RGN1	3	3	RM/DDAMI/MIB	1	0
EXTERNAL:	ACRS 41	6	6	BNL(AMDTS ONLY)	1	1
	DMB/DSS (AMDTS)	1	1	FEMA-REP DIV 39	1	1
	LPDR 03	2	2	NRC PDR 02	1	1
	NSIC 05	1	1	NTIS	1	1
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PP&L Pennsylvania Power & Light Company
Two North Ninth Street • Allentown, PA 18101 • 215 / 770-5151

Norman W. Curtis
Vice President-Engineering & Construction-Nuclear
215/770-7501

OCT 14 1983

Director of Nuclear Reactor Regulation
Attention: Mr. A. Schwencer, Chief
Licensing Branch No. 2
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, DC 20555

SUSQUEHANNA STEAM ELECTRIC STATION
FSAR SECTION 9.3
ER 100508 FILE 841-1
PLA-1861 Docket No. 50-388

Dear Mr. Schwencer:

In order to support obtaining an operating license for Susquehanna SES Unit 2, enclosed is revised Section 9.3 of the Susquehanna SES FSAR. The revisions to this section are as follows:

9.3.1.5.5 - This section has been revised to describe the monitoring for the Unit 2 containment instrument gas bottles.

9.3.5.2 - This section has been revised to indicate that there is a flow transmitter and a flow meter on the Unit 2 standby Liquid Control System.

Table 9.3-7 - This table has been revised to add the Unit 2 valves which are operated from the instrument gas system.

Table 9.3-10 - This table has been revised to change the sump/tank capacity for the Unit 1 and 2 Drywell Floor Drains and Drywell Equipment Drains. These changes were previously submitted in a revision to Section 5.2. This revision also clarifies that the Drywell Floor Drain Sumps do not have cooling coils.

These revisions will be incorporated in the next amendment to the FSAR.

Very truly yours,

N. W. Curtis
Vice President-Engineering & Construction-Nuclear

Enclosure
cc: R. L. Perch NRC

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1/1

the header start their respective compressor if the compressor is in standby mode.

A pressure transmitter on the header transmits to a pressure indicator in the main control room. Two local pressure gages (Unit 1) indicate the pressure in the manifold of each safety related instrument gas supply bottle header. Two pressure transmitters (Unit 2) monitor containment instrument gas bottles discharge pressure and transmit to a pressure indicator in the main control room. A pressure switch on each header annunciates safety related header low pressure in the main control room.

Reduced pressure instrument gas is provided via a pressure reducing valve. Local and control room indication of this pressure is provided, as well as local pressure indication on the instrument gas accumulator.

9.3.2 PROCESS SAMPLING SYSTEM

The process sampling system is provided to monitor the operation of plant equipment and to provide information needed to make operational decisions.

The process sampling system provides remote sampling facilities and the capability for sampling fluids of various process systems during normal plant power operation and shutdown conditions.

The monitoring of gaseous and liquid process streams for nuclear radiation is covered separately in Section 11.5.

9.3.2.1 Design Bases

The portion of the process sampling system running from the reactor coolant system to the first isolation valve outside the containment is constructed in accordance with ASME Boiler and Pressure Vessel Code, Section III, Class 1. Other sample piping, from the point where it connects to the process system and including the first process shutoff valve (root valve), will be the same classification as the system piping to which it connects. For ASME III, Class 1, 2, and 3 systems the sampling piping downstream from the root valve will be ASME III, Class 3 up to and including the isolation valve above the sample station.

All ASME Section III Class 1, 2 and 3 sample piping and valves are designed to Seismic Category I requirements.

Lines connected to reactor water or main steam systems are of sufficient length to permit decay of short lived nuclides so that sampling personnel will not be unnecessarily exposed to

Section 5.3). For Unit 2 only, there is a SLCS flow transmitter and flow meter to indicate that the borated liquid is flowing.

The specified neutron absorber solution is sodium pentaborate ($Na_2B_{10}O_{16}H_{20}$). It is prepared by dissolving stoichiometric quantities of borax and boric acid in demineralized water. An air sparger is provided in the tank for mixing. To prevent system plugging, the tank outlet is raised above the bottom of the tank.

The SLC system is sized to deliver enough sodium pentaborate solution into the reactor (see Figure 9.3-14) to assure reactor shutdown.

The saturation temperature of the recommended solution is 59°F at the low level alarm volume and approximately 49°F at the tank overflow volume (see Figure 9.3-15). The equipment containing the solution is installed in a room in which the air temperature is to be maintained within the range of 60° to 100°F. In addition, a heater system maintains the solution temperature at 75° to 85°F to prevent precipitation of the sodium pentaborate from the solution during storage. High or low temperature, or high or low liquid level, causes an alarm in the control room.

Each positive displacement pump is sized to inject the solution into the reactor in 50 to 125 minutes. The pump and system design pressure between the explosive valves and the pump discharge is 1400 psig. The two relief valves are set slightly under 1400 psig. To prevent bypass flow from one pump in case of relief valve failure in the line from the other pump, a check valve is installed downstream of each relief valve line in the pump discharge pipe.

The two explosive-actuated injection valves provide assurance of opening when needed and ensure that boron will not leak into the reactor even when the pumps are being tested.

Each explosive valve is closed by a plug in the inlet chamber. The plug is circumscribed with a deep groove so the end will readily shear off when pushed with the valve plunger. This opens the inlet hole through the plug. The sheared end is pushed out of the way in the chamber; it is shaped so it will not block the ports after release.

The shearing plunger is actuated by an explosive charge with dual ignition primers inserted in the side chamber of the valve. Ignition circuit continuity is monitored by a trickle current, and an alarm occurs in the control room if either circuit opens. Indicator lights show which primary circuit opened.

The SLC system is actuated by a three-position keylocked switch on the control room console. This assures that switching from the "off" position is a deliberate act. Switching to either side

TABLE 9.3-7

LIST OF INSTRUMENT GAS OPERATED DEVICES

1. Four main steam isolation valves.
2. Sixteen main steam relief valves, including six valves with auto depressurizing function (ADF).
3. One recirculation sample line valve.
4. Two RHR check valves.
5. Two equalizing valves for RHR check valves.
6. Two core spray check valves.
7. Two equalizing valves for core spray check valves.
8. Five tip indexing mechanisms.
9. Ten vacuum relief valves.
10. Eight reactor building chilled water solenoid valves in Unit 1. Twenty-two reactor building chilled water solenoid valves in Unit 2.
11. One Reactor Core Isolation Cooling (RCIC) steam line equalizing valve.
12. One High Pressure Coolant Injection (HPCI) steam line equalizing valve.

TABLE 9.3-10

EQUIPMENT AND FLOOR DRAINING SYSTEM
COMPONENT DESCRIPTION

SUMPS AND DRAIN TANKS

	Equipment Nos.	Type	Quantity	Material Line/Cover	Sump (Tank) Live/ Nominal Capacity Each, gal.	Manhole	Oil Interceptor Type	Oil Sump Capacity Each, gal.
Drywell Floor Drains	Unit #1	Lined Sump	2	SS/-	90/ 150	No	-	-
Drywell Floor Drains	Unit #2	Lined Sump	2	SS/-	90/ 150	No	-	-
Drywell Equipment Drains	1T-218	Vert. Tank	1	CS	610/1060	Yes	-	-
Drywell Equipment Drains	2T-218	Vert. Tank	1	CS	610/1060	Yes	-	-
Reactor Building Drains	Unit #1	Lined Sump	1	SS/18" Conc.	2510/4050	Yes	API-500 gpm	670
Reactor Building Drains	Unit #2	Lined Sump	1	SS/18" Conc.	2510/4050	Yes	API-500 gpm	670
Turbine Bldg. Outer Area Drains	Unit #1	Lined Sump	1	SS/9" Conc.	2570/4130	Yes	API-500 gpm	670
Turbine Bldg. Outer Area Drains	Unit #2	Lined Sump	1	SS/9" Conc.	2570/4130	Yes	API-500 gpm	670
Turbine Bldg. Central Area Drains	Unit #1	Lined Sump	1	SS/9" Conc.	2570/4130	Yes	API-500 gpm	670
Turbine Bldg. Central Area Drains	Unit #2	Lined Sump	1	SS/9" Conc.	2570/4130	Yes	API-500 gpm	670
Turb. Bldg. Condenser Area Drains	Unit #1	Lined Sump	1	SS/1" CS	- / 692	No	-	-
Turb. Bldg. Condenser Area Drains	Unit #2	Lined Sump	1	SS/1" CS	- / 692	No	-	-
Turbine Bldg. Chemical Drains	Unit #1	Lined Sump	1	SS/1" CS	486/ 935	No	-	-
Turbine Bldg. Chemical Drains	Unit #2	Lined Sump	1	SS/1" CS	486/ 935	No	-	-
Chemical Radwaste Drains	OT-114	Vert. Tank	1	SS	280/ 378	No	-	-
Laundry Radwaste Drains	OT-115	Vert. Tank	1	SS	280/ 378	No	-	-
Radwaste Building Drains	Common	Lined Sump	1	SS/12" Conc.	970/1940	Yes	-	-
Radwaste Building Chem. Drains	Common	Lined Sump	1	SS/12" Conc.	630/1215	Yes	-	-
Pipe Tunnel Drains	Unit #1 Only	Lined Sump	1	SS/1" CS	150/ 360	No	-	-
Circ. Water Pump House Drains	Common	Unlined Sump	1	-/15" Conc.	920/1550	Yes	AP & Baffle	250
Diesel Generator Building Drains	Common	Unlined Sump	1	-1/4" CS	920/1390	Yes	Baffle	135
Cl and Acid Storage Bldg.	Common	Unlined Sump	1	-/12" Conc.	790/4110	Yes	-	-
Water Treat. Bldg. Chem. Drains	Common	Unlined Sump	1	-/15" Conc.	600/1190	Yes	-	-