REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS) AA4

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

SUBJECT: Forwards revised FSAR Section 7.3 re control sys & automatic depressurization sys.Revs will be incorporated in next FSAR amend.

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CURTIS,N.W. Pennsylvania Power & Light Co.
RECIP.NAME RECIPIENT AFFILIATION
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SUBJECT: [illegible] Section 2.3 [illegible] control [illegible] automatic [illegible] incorporated in next FSAR [illegible]

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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

NOV 21 1983

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

SUSQUEHANNA STEAM ELECTRIC STATION
FSAR SECTION 7.3
ER 100508 FILE 841-1
PLA-1819 Docket No. 50-388

Dear Mr. Schwencer:

In order to support obtaining an operating license for Susquehanna SES Unit 2, attached is revised Section 7.3 of the Susquehanna SES FSAR. The revisions to this section are as follows:

7.3.1.1a.1.4.3 - This section has been revised to show the NRC approved modifications to the Automatic Depressurization System for Unit 2.

7.3.1.1b.8.1.6 - The ESW pump discharge header temperature instrumentation has been deleted from this list since it has been upgraded because of Regulatory Guide 1.97 requirements.

7.3.1.1b.8.3.5 - This section has been added to describe the safety-related portion of the Unit 2 containment instrument gas system.

Fig. 7.3-5,Sht. 3 - This figure has been added to show the initiation logic for the Unit 2 ADS.

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

Very truly yours,

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

Attachment

cc: R. L. Perch NRC

A001
1/1

The control system consists of drywell pressure and reactor water level sensors arranged in trip systems that control two solenoid-operated pilot air valves (one for each ADS system) for each safety relief valve. Each of these two air valves controls pneumatic pressure for safety relief valves actuation. (A third solenoid-operated pilot air valve with each safety relief valve is used for the Relief Valve function. See Subsection 7.7.1.12 for details of Relief Valve control.) An accumulator is included with the control equipment to store pneumatic energy for safety/relief valve operation. The accumulator is sized to provide air for five actuations of the ADS piston type pneumatic actuator via the solenoid valves following failure of the pneumatic supply to the accumulator. Cables from the sensors lead to the control structure where the logic arrangements are formed in cabinets. The electrical control circuitry is powered by dc from the plant batteries. The power supplies for the redundant control circuits are selected and arranged to maintain tripping ability in the event of an electrical power circuit failure. Electrical elements in the control system energized to cause opening of the safety/relief valve.

7.3.1.1a.1.4.3 Initiating Circuits

The pressure and level switches used to initiate one ADS logic are separated from those used to initiate the other logic on the same ADS valve. Reactor vessel low water level is detected by six switches that measure differential pressure. Primary containment high pressure is detected by four pressure switches, which are located outside the primary containment and inside the reactor building. The level instruments are piped individually so that an instrument pipeline break will not inadvertently initiate auto blowdown. The primary containment high pressure signals are arranged to seal into the control circuitry; they must be manually reset to clear.

A timer is used in each ADS logic. The time delay setting before actuation of the ADS is long enough that the HPCI system has time to operate, yet not so long that the LPCI and CS systems are unable to adequately cool the fuel if the HPCI system fails to start. An alarm in the main control room is annunciated when either of the timers is timing. Resetting the ADS initiating signals recycles the timers. For Unit 2 only, an eight (8) minute timer and additional switches have been added so that ADS will initiate after the 8 minute time delay even if high drywell pressure is not present. In addition, a manual inhibit switch is installed to permit overriding ADS actuation in the event that the actuation signals are due to an ATWS rather than a LOCA.

7.3.1.1a.1.4.4 Logic and Sequencing

7.3.1.1b.8.1.5 Supporting Systems

The ESSW pumphouse HVAC system described in Subsection 9.4.8 is a supporting system to the emergency service water system.

7.3.1.1b.8.1.6 ESW Instrumentation Not Required for Safety

Non-safety related instrumentation in the control room includes:

a) Diesel generator A cooler outlet temperature

b) Diesel generator B cooler outlet temperature

c) Diesel generator C cooler outlet temperature

d) Diesel generator D cooler outlet temperature

e) ESW loop A (B) flow (recording)

Refer to Section 7.5 for instrument ranges, accuracy, and panel location for the above mentioned instruments.

Control room annunciators are not required for safety, but alert the operator of abnormal process conditions. The following alarms are in the main control room:

a) Spray pond low level

b) ESSW structure flooded

c) ESW loop low flow

d) Diesel generator coolers high outlet temperature

e) Diesel generator rooms flooded

7.3.1.1b.8.2 RHR Service Water System - Instrumentation and Controls

The description, the design basis and the safety evaluation of the RHR service water system are in Subsection 9.2.6.

The controls and instrumentation for the RHR service water system are designed to provide adequate information to the control room operator for control and monitoring of the system during system operating modes. Capability for test and calibration is provided as described in Subsection 7.3.2b.2-4.10.

7.3.1.1b.8.3.2 Bypasses, Interlocks and Sequencing

The system is not designed with bypass capability.

Sequencing is not applicable for this system. This system is not interlocked with other systems.

7.3.1.1b.8.3.3 Redundancy

Instrumentation and controls are provided on a one-to-one basis with the mechanical equipment.

7.3.1.1b.8.3.4 Containment Instrument Gas Instrumentation Not Required for Safety

The instrumentation application discussed in Subsection 9.3.1.5.5 describes the monitoring instruments and controls for the gas compressors and its controls.

The monitoring instruments in the auxiliary support system are not safety-related. Each train of gas bottles has a low header pressure alarm in the main control room. The isolation valve position is indicated by status lights on the main control room panel. Refer to Table 7.5-7 for listing of instrumentation for the containment instrument gas system.

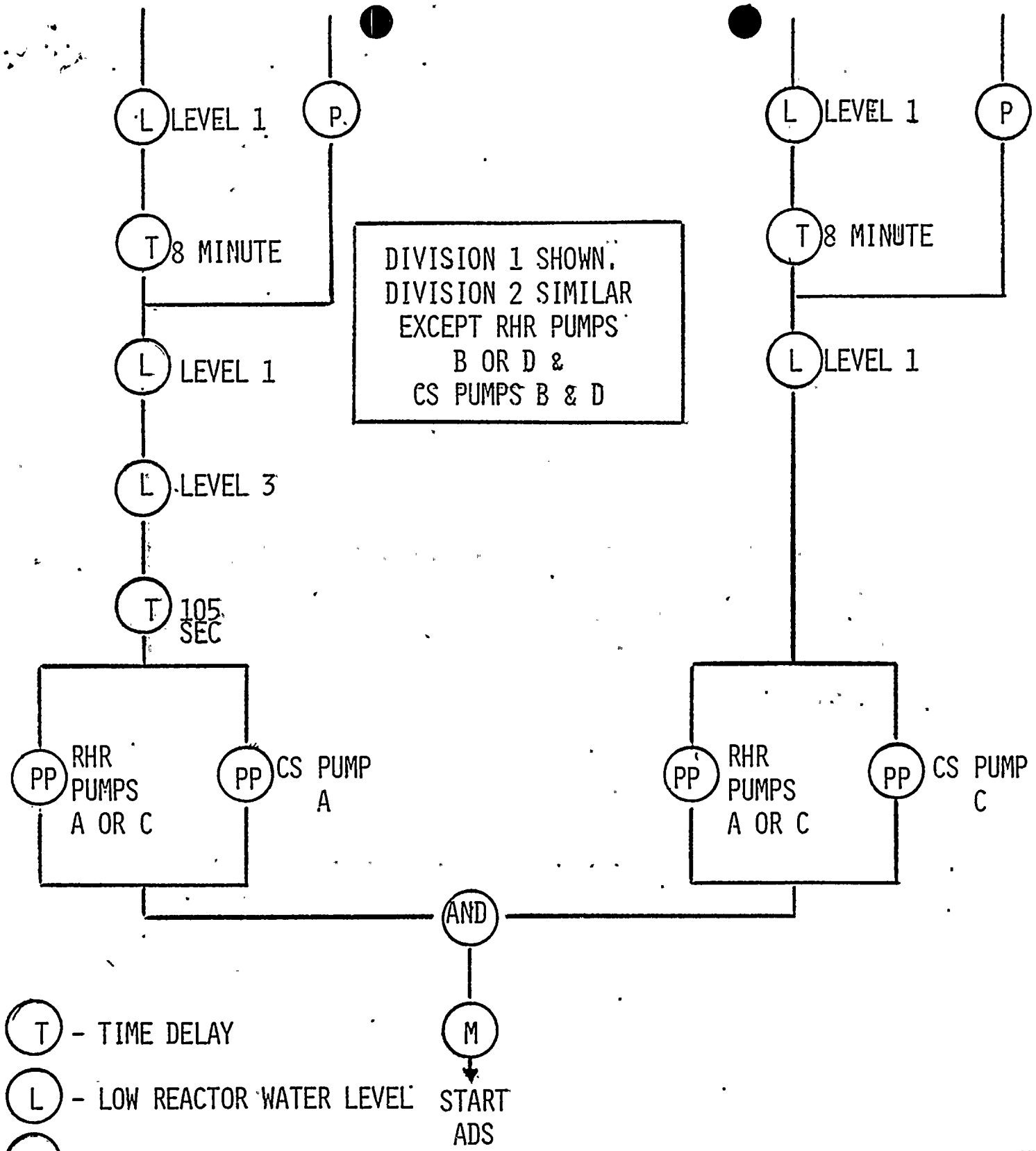
7.3.1.1b.8.3.5 Containment Instrument Gas Safety-Related Instrumentation

For Unit 2 containment instrument gas system, each train of gas bottles has indication and computer input at the control room for post accident monitoring per Regulatory Guide 1.97.

7.3.1.1b.8.4 Standby Power System

Descriptions of the standby power system and supporting system can be found in the following:

a) Refer to Subsection 8.3.1 for description of the diesel generators. Refer to Section 7.6.1b.3 for NSSS to non-NSSS diesel initiation signal.



SUSQUEHANNA STEAM ELECTRIC STATION
UNITS 1 AND 2
FINAL SAFETY ANALYSIS REPORT

UNIT 2 ADS
INITIATION LOGIC

FIGURE 7.3-5 Sheet 3