

APP/3

MAY 27 1980

Docket Nos.: 50-387/388

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Dear Mr. Curtis:

Subject: Susquehanna Steam Electric Station, Units Nos. 1 and 2 - Request  
for Additional Information

As a result of our review of your application for operating licenses for the  
Susquehanna Steam Electric Plant, we find that we need additional information  
in the area of Instrumentation and Control Systems. The specific information  
required is listed in the Enclosure.

If you desire any discussion or clarification of the information requested,  
please contact R. M. Stark, Licensing Project Manager, (301) 492-7272.

Sincerely,

ORIGINAL SIGNED BY  
B. J. Youngblood, Chief  
Licensing Branch No. 1  
Division of Licensing

Enclosure:  
As Stated

cc: See next page

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OFFICE	DL:LB 1	DL:LB 1	DL:LB 1		
SURNAME	RStark/mrf	MRushbrook	BYoungblood		
DATE	5/23/80	5/27/80	5/29/80		

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Mr. Norman W. Curtis

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ENCLOSURE

32.98           The notes to Table 7.1-2 indicate in several places that  
5.0           Susquehanna has four sets of axial taps on the reactor  
6.0           pressure vessel for water level and vessel pressure sensors  
7.0           and, also indicate that the instrument racks have been  
T7.1-2       located in four distinct quadrants of the plant with the RPS  
F5.1-3b      equipment separated from the ECCS and isolation equipment.  
SSES         Figure 5.1-3b, "P&ID - Nuclear Boiler Vessel Instrumentation,"  
49           shows only two sets of axial taps and also shows the RPS and  
              ECCS sharing various sensors. Various other material in  
              Section 7.0 gives conflicting information as to the number of  
              sets of axial taps on the Sequehanna pressure vessel and to the  
              number and arrangement of RPS and ESF sensors. (See also  
              Q032.54, Q032.55, Q032.69, and Q032.74.)

              These inconsistencies make it difficult to complete the review.  
              Review Sections 5.0, 6.0 and 7.0 and amend the FSAR as necessary  
              to give a clear and consistent description of the pressure vessel  
              axial taps and the number and arrangement of RPS and ESF sensors.

32.99        Several inconsistencies and anomalies were noted in the review  
7.3           of the various RHR'S drawings:  
7.4           (1) Figure 5.4-2a shows four differential pressure switches  
7.6           measuring the difference in pressure between the risers  
F5.4-2a      for System A and System B. These switches are not shown

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T7.3-3 P&ID (M 143), are not included in T7.3-3, and are not  
T7.3-10 discussed in Section 7; however, F7.3-10 and drawing  
DWG M 143 (Rev 8) E11-1040 indicate they are used in the control logic  
Dwg E11-1040 (Rev 7) of valves E11-F015 and E11-F017.

SSES (2) Figure 7.3-10 appears to indicate that if the recir-  
50 culating pumps are not operating at the time of LPCI  
initiation, they will be given a superfluous trip and  
an additional reactor pressure permissive interlock  
will have to be satisfied. If the recirculation pumps  
are running, the trip circuit and the interlock are  
both bypassed.

(3) Figure 7.3-10 shows a number of signal seal-ins with no  
indication that there is any method for resetting them.  
In addition, redundant seal-ins are show following the  
recirculation pump running/not running logic.

Revise the FSAR as necessary to correctly describe the RHRS  
and its interlocks and logic, and verify that the FSAR and the  
drawings describe the instrumentation and controls that are  
actually being installed at your facility. All FCDs should be  
reviewed to ensure that all seal-ins are shown correctly.

32.100 Section 7.7.1.1 states that the upset water level and the  
7.7.1.1 narrow water level range are indicated by recorders in the  
7.7.1.4 control room (the wide water level range is described but the

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type and location of readout is not stated), and that reactor pressure is indicated on gages in the containment. Section 7.7.1.4 states that the narrow water level range and the wide water level range are continually recorded in the main control room, and the reactor pressure and upset water level range are "indicated in the main control room." Revise the FSAR to clarify the number of channels and the type of indication provided in the control room for monitoring reactor pressure and water level. Also, identify whether these indications are from the same transmitters that provide safety related displays in Section 7.5.

32.101

7.1.1.2

F7.7-2

F7.7-5

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Revise the FSAR to resolve the following discrepancies:

- (1) Section 7.7.1.2 states that the withdraw and settle commands are applied simultaneously to withdraw a rod and the withdraw command is dropped to enter the settle cycle. Figure 7.7-2 indicates that only the withdraw command is active during withdrawal.
- (2) Section 7.7.1.2 states in one paragraph that drive commands are transmitted to the selected rod every millisecond and in the next paragraph (and in Figure 7.7-5) states commands are transmitted every 0.2 milliseconds. Figure 7.7-2 indicates that commands are alternated with status monitoring of nonselected rods and that after monitoring the status of all rods, approximately 45



milliseconds, the RMC goes into the self-test loop long enough to test one rod (approximately 60-500 msec based on self-test loop duration). For 185 rods, the 45 millisecond for the monitor loop is a little long for a 0.2 millisecond action loop (37 msec corresponds to the 0.2 msec action loop) and too short for the 1 millisecond action loop. Correct the logic shown in Figure 7.7-5 if it is incorrect; otherwise, explain what happens within the HCU during the 60-500 millisecond the RMC is in the self-test loop.

32.102

7.7.1.4

SSES

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In Section 7.7.1.4, it is stated that "In event of loss of feedwater, the reactor protection system will cause plant shutdown thus preventing any further lowering of vessel water level." Identify the interlock in the feedwater system that causes "plant shutdown" instantaneously following the loss of feedwater and discuss the mechanism that prevents a continuing decrease in vessel water purely as a result of the plant being shut down.



