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 SCHWENCER, A. Licensing Branch 2

SUBJECT: Discusses design changes necessary to support redundant remote shutdown path. Method discussed at 810817 meeting inadequate. Table re hot & cold shutdown mechanisms from outside main control room encl.

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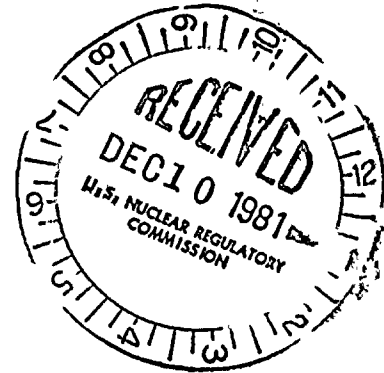
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December 8, 1981

Mr. A. Schwencer, Chief
Licensing Branch #2
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555



SUSQUEHANNA STEAM ELECTRIC STATION
REMOTE SHUTDOWN REQUIREMENTS
ER 100450 FILE 841-2, 265
PLA-973

Docket Nos. 50-387
50-388

Dear Mr. Schwencer:

As discussed with your Mr. J. Mauch, following the 8/17/81 NRC/PL meeting on remote shutdown requirements we re-evaluated the advisability of attempting to provide for individual equipment failures, which was the basis of the modifications described during the 8/17 meeting. We have concluded that this method would not provide adequate system redundancy.

We have therefore decided to provide two redundant paths to cold shutdown. The necessary equipment modifications have been identified below and will be made prior to fuel load. In addition the necessary procedure is being prepared.

The attachment to this letter tabulates the systems and functions required for the shutdown function from outside the main control room. In the attachment, the "Primary Path" tabulates those systems/functions controllable from the Remote Shutdown Panel (RSP). The "Redundant Path" tabulates the systems/functions required to achieve a redundant or diverse method of shutdown where the controls and indicators are not necessarily on the Remote Shutdown Panel. Both the Primary and the Redundant Paths are backup to the normally planned shutdown operations conducted from the control room.

The plant design changes needed to support the redundant shutdown path are as follows:

- 1) Add suppression pool temperature indication to the remote shutdown panel and to a local indicator.

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Pool
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- 2) Add a local indicator for Suppression Pool Level (LT-15776A). Channel B indication of Suppression Pool Level presently exists on the RSP. (LI-15776B2)
- 3) Add local indication for loop A of combined RHR Heat Exchanger and Bypass Flow (FT-1N015A). Indication of RHR combined flow presently exists on the RSP. (FI-15105)

The ADS system is divisionalized and can be controlled from either the upper or lower relay rooms. Due to the common HVAC system within the control structure we are providing for the use of breathing apparatus should it be necessary for entrance into the relay rooms.

Since these procedures will not be completed until late December, 1981 and the operator-written examinations are scheduled for January, 1982, time constraints will not allow fully familiarizing the operators with the use of the RSP procedure before the written exams are given. The results of a written exam on this subject in January will not give a realistic picture of the operator's ability to operate the RSP after they have been properly trained to do so.

It is therefore, necessary to propose the following alternatives to including this procedure as part of the written examinations.

- 1) The NRC can postpone the RSP testing and include it as a part of the oral exams to be given beginning March 22, 1982.
- 2) Operator Training can administer a written test on the RSP to document operator qualification after training on the RSP has been completed.

RSP operation will be included as part of the Startup Test program; therefore, the operators will become familiar with the RSP through actual use.

If you have any questions, please contact us.

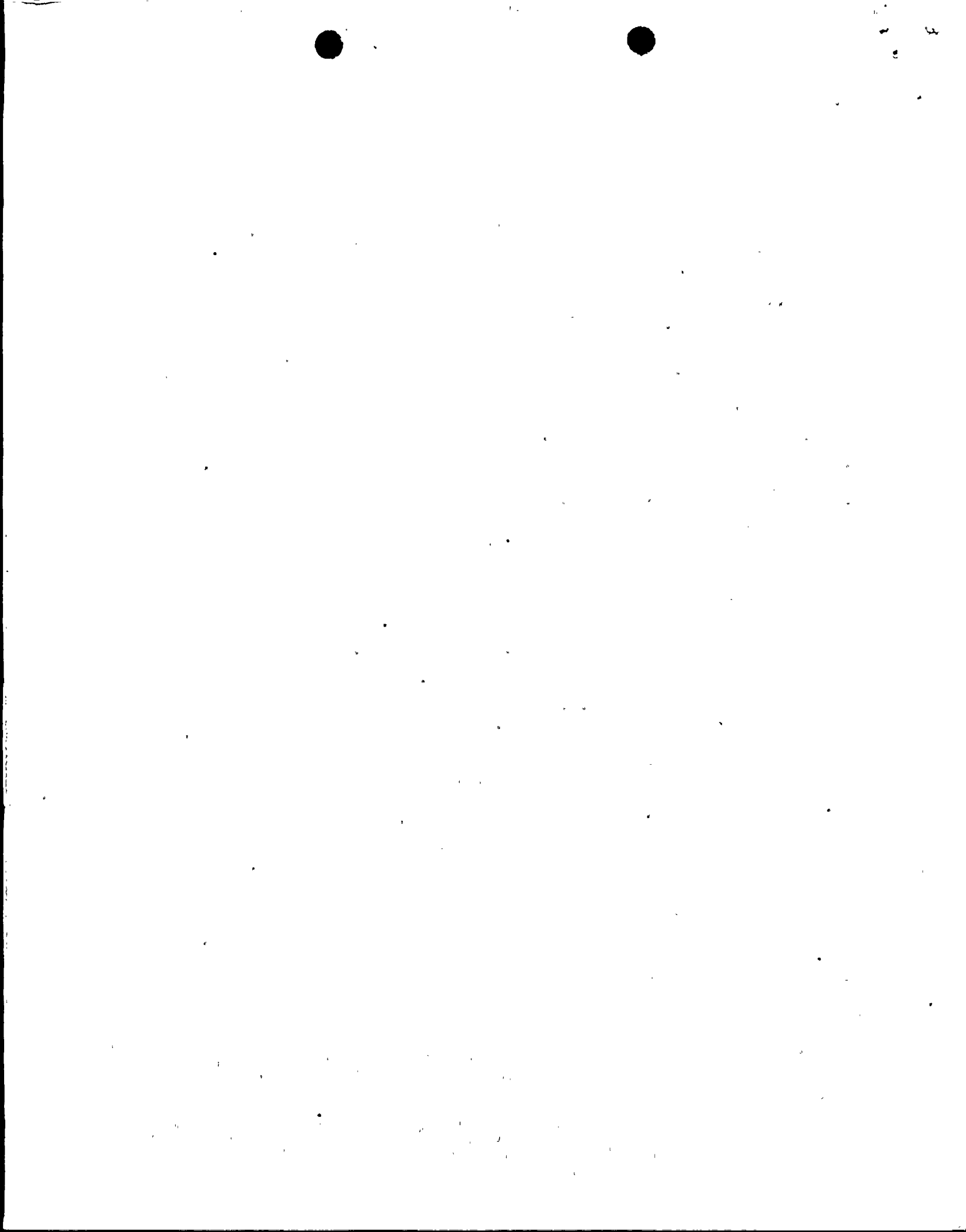
Very truly yours,



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

RRS/mks

cc: P. Collins - NRC
J. Mauch - NRC
R. Perch - NRC



ATTACHMENT

HOT & COLD SHUTDOWN MECHANISMS FROM OUTSIDE THE MCR

PRIMARY PATH

Hot Shutdown

- 1) RCIC-level control
- 2) SRV's mechanical or manual actuation-pressure control
- 3) RHR Suppression Pool Cooling-Loop B
- 4) RHR SW-Loop B
- 5) ESW-Loop B
- 6) RPV Level and Suppression Pool Temperature Indication
- 7) Status of MSIV inboard valves

Cold Shutdown (in addition to 1-7)

- 8) RHR Shutdown Cooling (when RPV pressure permissive is satisfied)
- 9) SRV's to depressurize
- 10) Containment instrument gas to support 9
- 11) Recirc. suction valve closure to support 8

REDUNDANT PATH

Hot Shutdown

- 1) HPCI (automatic actuation)
- 2) SRV's mechanical actuation (or ADS valves manual actuation)
- 3) RHR Suppression Pool Cooling-Loop A
- 4) RHR Service Water-Loop A
- 5) ESW Loop A
- 6) RPV Level and Suppression Pool Temperature Indication-local
- 7) Visual observation of MSIV's-outboard

Cold Shutdown (in addition to 1-7)

- 8) Alternate Shutdown Cooling mode (SRV's, Core Spray and RHR Suppression Pool Cooling)
- 9) ADS Safety Relief Valves
- 10) ADS Safety Relief Valves
- 11) Alternate Shutdown Cooling mode (SRV's Core Spray and RHR Suppression Pool Cooling)

