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SUBJECT: Provides alternate schedule for response to request for addl info re 10CFR50.62 (ATWS rule).

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April 27, 1989

Docket Nos. STN 50-528/529/530

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Reference: Letter from T. L. Chan, NRC, to D. B. Karner, ANPP, dated April 5, 1989. Subject: Request for Additional Information - 10 CFR 50.62 (ATWS Rule)

Dear Sirs:

Subject: Palo Verde Nuclear Generating Station (PVNGS)
Units 1, 2, and 3
Schedule for Response to Request for Additional Information - 10 CFR 50.62 (ATWS Rule)
File: 89-A-056-026

As requested by the referenced letter, APS is providing an alternate schedule for providing our response to the request for additional information. The schedule for this response is provided in attachment to this letter.

If you should have any questions concerning this matter, please contact Mr. A. C. Rogers of my staff, at (602) 371-4041.

Very truly yours,

D. B. Karner
Executive Vice President

DBK/ACR/KLMC/jle

Attachment

cc: G. W. Knighton (all w/attachment)
T. L. Chan
M. J. Davis
J. B. Martin
T. J. Polich
A. C. Gehr

A055
1/1

ATTACHMENT

Schedule for APS Response to
Request for Additional Information on ATWS Review
Palo Verde Nuclear Generating Station, Units 1, 2, and 3

Item (1) The staff has reviewed Combustion Engineering letters dated February 27, and September 18, 1987 with respect to System 80 plant's compliance with the ATWS Rule (10 CFR 50.62). The first letter described how through the use of System 80 CESSAR that Palo Verde complied with the ATWS Rule. The second letter forwarded CEN-362 which is CE's response to the NRC's evaluation of CEN-315. The purpose of CEN-362 is to demonstrate that the AFAS in the System 80 plants complies with the ATWS Rule.

It is the staff's understanding that the Supplementary Protection System (SPS) has all of the features of a Diverse Scram System (DSS) with the added feature of having been upgraded to safety-grade status. The SPS is diverse from the RPS with respect to the components and hardware and it is setpoint-coordinated such that the RPS is actuated first. The SPS also causes a reactor trip through diverse means, i.e., a contactor vs. a circuit breaker. In addition, the SPS will not interfere with the RPS and is not required for the safe shutdown. The System 80's SPS has all of the qualities and characteristics of a diverse scram system. Diverse scram systems augment the RPS and/or the RTS, they do not replace it. The descriptions of the SPS in CEN-362 present no new data with respect to the diversity of the AFAS from the RPS.

On February 27, 1989, the staff met with the Combustion Engineering Owners Group (CEOG) which operate Arkansas Nuclear One Unit 2, San Onofre Units 2 and 3, and Waterford Unit 3. The staff reiterated the importance of meeting the diversity requirements of the ATWS Rule and the immediate need to resolve the Auxiliary Mitigating System Actuation Circuitry (AMSAC) implementation issue. It was suggested that the CEOG seriously consider other design options such as a non-safety grade AMSAC with diverse sensors as the initiation signal. The AMSAC signal will be overridden by the safety AFAS signal in the event of a design basis event such as a steam generator rupture. The CEOG has agreed to provide a preliminary design within the next two weeks. The staff has agreed to review the conceptual design prior to implementation similar to the B&W plant approach now being used.

It is the staff's preliminary finding that the Palo Verde's auxiliary feedwater actuation system does not meet the diversity requirement of the ATWS Rule. Therefore, the staff requests the licensee to provide an alternative design to meet the ATWS Rule.

ATTACHMENT
(Continued)

APS Response Schedule

APS has recently made the decision to participate in the Combustion Engineering Owners Group (CEOG) effort to investigate conceptual AMSAC designs. Therefore, APS will respond to the Auxiliary Feedwater Actuation System diversity issue upon resolution of the CEOG task effort.

Item (2) Based on the staff's review of CE letters dated February 27, and September 18, 1987, the following list of questions was generated. Please provide the response to these questions.

(a) Provide detail and show on a block diagram the selective logic network that opens the MG set output load contactors.

(b) On the selective logic network block diagram indicate the control grade portion of the circuits and show the location of the isolators.

(c) Expand Figures 1 and 2 in CEN-362 to show the power supplies and their source of power.

(d) Contrary to the statement in CEN-362, the diverse reactor trip and diverse turbine trip have not been resolved. Provide the details showing how these two trip systems are in conformance with the ATWS Rule implementation guidance.

(e) Provide the isolator qualification data requested by Attachment 1.

ATTACHMENT
(Continued)

ATTACHMENT 1

Isolation Device
Request for Additional Information

Each light-water-cooled nuclear reactor shall be provided with a system for the prevention and/or mitigation of the effects from anticipated transient without scram (ATWS) events. The Commission-approved requirements for the prevention/mitigation of ATWS events are defined in the Code of Federal Regulations (CFR) Section 10 paragraph 50.62. The staff has determined that the isolation devices used within ATWS prevention/mitigation systems (to provide isolation between class 1E and non-class 1E circuits or between redundant class 1E circuits) will be reviewed on a plant-specific basis. The following additional information is required to continue and complete the plant-specific isolator review:

Isolation Devices

Please provide the following:

(a) For the type of device used to accomplish electrical isolation, describe the specific testing performed to demonstrate that the device is acceptable for its application(s). This description should include elementary diagrams, when necessary, to indicate the test configuration and should describe how the maximum credible faults were applied to the devices.

(b) Data to verify that the maximum credible faults applied during the test were the maximum voltage/current to which the device could be exposed, and define how the maximum voltage/current was determined.

(c) Data to verify that the maximum credible fault was applied to the non-Class 1E side of the device in the transverse mode (between signal and return) and that other faults were considered (i.e., open and short circuits).

(d) Define the pass/fail acceptance criteria for each type of device.

(e) A commitment that the isolation devices comply with the environmental qualifications (10 CFR 50.49) and seismic qualifications that were the basis for plant licensing.

(f) A description of the measures taken to protect the safety systems from electrical interference (i.e., Electrostatic Coupling, EMI, Common Mode and Crosstalk) that may be generated by the ATWS circuits.

(g) Information to verify that the Class 1E isolator is power from a Class 1E source.

ATTACHMENT
(Continued)

APS Response Schedule

By letter dated March 13, 1987 (161-00074), APS provided the schedule for implementation of the ATWS Rule (10 CFR 50.62) as prior to startup following the third refueling outage after July 24, 1986, for each PVNGS unit. To date, the only modification required for ATWS Rule compliance is a design change to the PVNGS safety-grade Supplementary Protection System (SPS). The request for additional information pertains to the SPS design modification. In support of the PVNGS implementation schedule for ATWS Rule compliance, the detailed SPS modification design is scheduled for completion by August, 1989. Therefore, the requested information will be provided to the NRC in September, 1989.