SMUD
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AN ELECTRIC SYSTEM SERVING THE HEART OF CALIFORNIA

RJR 85-447

September 27, 1985

DIRECTOR OF NUCLEAR REACTOR REGULATION
ATTENTION HUGH L THOMPSON JR DIRECTOR
DIVISION OF LICENSING
US NUCLEAR REGULATORY COMMISSION
WASHINGTON DC 20555

DOCKET 50-312
RANCHO SECO NUCLEAR GENERATING STATION UNIT NO. 1
CLARIFYING INFORMATION ON ALTERNATIVE SHUTDOWN CAPABILITY FOR COMPUTER AND CONTROL ROOM

The District submitted additional information to its response to Generic Letter 81-12 (i.e., Alternative Shutdown Capability for Computer and Control Room) on July 12, 1985. Subsequently, telephone conversations on August 12 and 14, 1985, with your staff requested some clarifying information which the District is providing in the attachment, which contains four replacement pages to the July 12, 1985 submittal. If you have any additional questions contact Larry Young at Rancho Seco.

R. J. RODRIGUEZ
ASSISTANT GENERAL MANAGER,
NUCLEAR

Attachment

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ATTACHMENT

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ATTACHMENT 1

NRC QUESTIONS ON DISTRICT'S
81-12 RESPONSE OF APRIL 5, 1985

1. NRC QUESTION

What is the basis for sizing the nitrogen supply required for shutdown?

RESPONSE

The nitrogen supply was based on the maximum air volume needed to operate the Atmospheric Dump Valves (ADV) for a period of 100 hours (average time required for cooldown). The two valve positions and transducers required 1.6 SCFM which results in a total air volume needed for 100 hours of 9,600 SCF. The nitrogen bottles used to supply air are in 6 packs of 255 SCF cylinders at normal pressure of 2200 psi. This results in the need for 42 bottles onsite for the 100 hour cooldown.

2. NRC QUESTION

Is there any service or instrument air piping in the Control Room or TSC that could be damaged by a fire in those rooms and affect the ability to safely shutdown?

RESPONSE

Service or instrument air piping to the Control Room, TSC or other plant areas are isolated in the hot shutdown procedure, so that the fire in these areas will not affect the availability of service air needed for shutdown. This isolation ensures that the part of the service air system needed for hot shutdown is isolated from a breached air line in any location, as well. This is accomplished by manual local isolation valves near the area of service air needs.

3. NRC QUESTION

How long until the switchgear rooms need cooling from the portable fans?

RESPONSE

A conservative calculation has been performed that shows that the bulk air temperature would not rise above 122°F (i.e., the allowed maximum temperature for equipment in the room) until after two hours following a loss of HVAC in the switchgear rooms. These two hours allow sufficient time for the operator to take the plant to hot shutdown and install the portable fans. Portable fan installation can be done in less than one hour for the critical switchgear rooms.

NRC REQUEST

e. Verify that the licensee procedures have been or will be developed which describe the tasks to be performed to effect the shutdown method. Provide a summary of these procedures outlining operator actions.

DISTRICT RESPONSE

The District has developed procedures for performing shutdown in the event of a fire in the Control Room. The procedures encompass shutdown with and without offsite power.

The procedures have been finalized and approved, and operator training has been conducted.

The methodology used in the procedures was patterned after the Abnormal Transient Operating Guidelines (ATOG) for a loss of offsite power. The objectives of the procedure were to prevent overcooling of the RCS, establish inventory control, and establish primary to secondary heat transfer. The major operator actions are:

1. De-energize the EMOV.

2. Gain control over the AFW and HPI valves controlled from the shutdown panel.

3. Establish AFW to "B" OTSG.

4. Initially isolate AFW to "A" OTSG. Then re-establish feed to "A" OTSG.

5. Re-establish plant air.

6. Assure main steam isolation.

7. Isolate and start the Diesel Generator as required.

Once these steps are performed, HPI and RC Pump Seal Injection will be established. This will assure control over the plant.

The plant will be stabilized in a hot shutdown condition before being taken to cold shutdown. All system contraction will be made up from the BWST. With slight variations in the normal shutdown process, a one percent delta k/k shutdown margin will be maintained through the entire cooldown process.

These procedures are in place for the first 130 Effective Full Power Days following startup from the 1985 Refueling Outage. Prior to November 1, 1985, a boric acid pump repair procedure will be in place or an analysis that will justify the use of the present procedure without a boric acid pump repair procedure will be completed. This is necessary as the current conservative shutdown margin analysis results in the need for a higher concentration of boric acid than is available in the BWST after 130 EFPD's.

The following is an outline of the Appendix R Hot and Cold Shutdown Procedures:

- Loss of Switchgear Ventilation

  A loss of offsite power or an impairment of the existing HVAC system may cause an unacceptable heat build-up in safe shutdown switchgear. A procedure has been written to provide a method of ventilating the switchgear rooms by dissipating the heat generated by the switchgear via portable fans and flexible ducting.

- Sound-Powered Phone Repair

  A fire in the Control Room could damage the sound-powered phone system. A procedure has been written to perform a circuit isolation of damaged phone lines and return the sound-powered phone system to operation.

- Emergency Repair of Atmospheric Dump Valves (ADV) Air Hoses After a Fire

  A fire at the ADVs could destroy the air hoses connected to the ADV positioner. A procedure has been written to replace the damaged hoses and return the ADVs to operation.

These procedures have been finalized and approved, and information has been given to appropriate personnel. After November 1, 1985, a boric acid pump repair procedure will be in place or an analysis that will justify the use of the present procedure without a boric acid repair procedure will be completed.

A separate elementary control system has been developed which includes a list of all material required for making necessary repairs and methods to ensure the material will be maintained on site. The elementary control system has been finalized and approved.

Fire area 36 contains:

1R2C215VA (PSV-21511)	Open or short drives the valve to close position. Hot short to 125 V DC cable from SOE panel can open the valve.
1R2C215VE (PSV-21511)	Short or hot short can open the valve.
121B182A (HV-21505) 1M1B182B	Open, short, or hot short will cause the valve to stay as is (normally OPEN).

Fire areas 1 and 17 contain:

1R2C215VB (PSV-21511)	Short or hot short in circuit can open the valve.
1R2C215VE (PSV-21511)	Short or hot short can open the valve.
1R2C215VF (PSV-21511)	Short or hot short can open the valve.
1M1B182A (HV-21505)	Open, short, or hot short can cause the valve to stay open.

Fire in areas 32, 19, 20, 36, 17, or the Control Room (area 1) can potentially cause the EMOV and its block valve to both open at the same time. This event can be precluded for fire in areas 32, 19, 20, 36, and the CR by tripping the 125 V DC power supply breaker SOE02 located in the 480 V West Switchgear Room. This will de-energize the solenoid on PSV-21511 allowing the valve to fail close.

In fire area 17, block valve HV-21505 has one circuit only (1M1B182). This circuit has been insulated. So fire in area 17 will not damage this circuit and block valve HV-21505 can be closed from the Control Room.

2. HV-21515 and HV-21517

Fire areas RG1, 36, 21, 18, 17, RM1, 28, 19, 20, 32 and 1 contain control and power circuits from both valves. Pressurizer vent valves HV-21515 and HV-21517 are 480 V motor operated normally closed valves.

During the normal plant operation, the supply breakers for these normally closed valves will be racked out. So power and control circuits of these valves would be de-energized during normal operation. Therefore, open, short, or hot short in the circuits of these valves due to fire in any of the areas will not affect the closed status of the valves.

3. a. HV-21516, SFV-70001, SFV-70002

Fire area 20 and 1 contain the circuits from all three valves. During normal plant operation, the supply breaker for the normally closed valve HV-21516 will be racked out. Pressurizer liquid sample valve HV-21516 is 480 V motor operated normally closed valve. So, power and control circuits of this valve would be de-energized during normal plant operation. Therefore, open, short, or hot short in the circuits of this valve due to fire in this area will not affect the closed status of the valve and at least one valve in the liquid sample line would remain closed all the time.

3. b. HV-21514, SFV-70001, SFV-70002

Fire area 20 contains the circuits from all three valves. During normal