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 MARTIN, J.B. Region 5 (Post 820201)

SUBJECT: Request's temporary waiver of compliance from surveillance
 requirement 4.0.3 to allow continued operability of snubbers
 attached to sys required in modes 5 & 6.

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WILLIAM F. CONWAY
EXECUTIVE VICE PRESIDENT
NUCLEAR

161-03899-WFC/GEC
April 24, 1991

Docket No. STN 50-530

Mr. John B. Martin
Regional Administrator, Region V
U. S. Nuclear Regulatory Commission
1450 Maria Lane, Suite 210
Walnut Creek, California 94596-5368

Dear Mr. Martin

Subject: Palo Verde Nuclear Generating Station (PVNGS)
Unit 3
Request for a Temporary Waiver of Compliance for
Surveillance Requirement 4.0.3
File: 91-056-026

Arizona Public Service Company (APS) requests a temporary waiver of compliance from Surveillance Requirement 4.0.3 to allow continued operability of snubbers attached to systems required in MODEs 5 and 6. This waiver is needed until completion of snubber functional testing currently being conducted in Unit 3 in accordance with Surveillance 4.7.9e. This was discussed in a conversation with Mr. Howard J. Wong, NRC Region V, on April 22, 1991.

REQUIREMENTS FOR WHICH A WAIVER IS REQUESTED

Surveillance Requirement 4.7.9 requires APS to demonstrate that each snubber is OPERABLE by performance of both an augmented inservice inspection program and the requirements of Specification 4.0.5. Paragraph 4.7.9e. requires that APS perform functional tests during the first refueling outage and at least once per 18 months thereafter during shutdown to demonstrate continued snubber operability. The number of snubbers to be functionally tested is determined using a preselected sampling plan that specifies both the minimum initial sample size and the method of determining increases in the sample size as a result of snubbers not meeting the acceptance criteria.

The surveillance interval specified in Paragraph 4.7.9e. is 18 months. Combined with the maximum allowable extension of 25 percent specified in Surveillance Requirement 4.0.2, this results in a total surveillance interval of 22-1/2 months. Exceeding this surveillance interval would result in snubbers being declared inoperable and subsequently entering the ACTION for Specification 3.7.9. This ACTION requires APS to either, within 72 hours, replace or restore the inoperable snubber(s) to OPERABLE status and perform an engineering evaluation per Specification 4.7.9g. on the attached component or declare the attached system inoperable and follow the appropriate ACTION statement for that system.

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APS requests a temporary waiver of compliance to allow continued operability of the Unit 3 snubbers until completion of functional testing currently being conducted in Unit 3. This temporary waiver of compliance from Surveillance Requirement 4.0.3 will allow APS to complete functional testing currently being conducted in Unit 3 without declaring attached systems inoperable.

CIRCUMSTANCES SURROUNDING THE SITUATION

Unit 3 is currently in MODE 6 with fuel loading scheduled to be completed on April 26, 1991. The snubber functional testing, stipulated in Specification 4.7.9e., is performed in accordance with PVNGS Procedure 73ST-9ZZ22. The Surveillance Test (ST) interval is 18 months. The previous ST, performed as part of the first Unit 3 refueling outage, was completed on June 8, 1989. Therefore the current ST interval expires on April 29, 1991 ($92 \text{ days/quarter} \times 6 \text{ quarters} \times 1.25 = 690 \text{ days}$).

The most recent snubber ST was performed at the end of the planned 1989 refueling outage schedule. However, the outage was extended to late December 1989 due to maintenance activities associated with equipment modifications on the Atmospheric Dump Valves. On December 30, 1989, one hour after returning to service, Unit 3 experienced an internal fault in the "A" Main Transformer which resulted in a further delay. The Unit was subsequently returned to service on January 21, 1990 following replacement of the failed transformer. The Unit operated with a high capacity factor until being removed from service for the current (second) refueling outage on March 16, 1991. The extended 1989 outage resulted in the required completion date for the current snubber ST becoming due approximately midway through the outage. Based upon favorable results experienced during previous snubber functional testing, adequate time was believed to exist for completion of the testing prior to expiration of the surveillance interval on April 29, 1991. The snubber ST was begun on April 7, 1991, in accordance with the outage plan. The ST was scheduled to be complete on April 14, 1991, well in advance of the end of the surveillance interval on April 29, 1991. The testing has, however, resulted in several failures of the mechanical snubbers that have caused the test population to increase from the original 37 snubbers to the current 166 snubbers. Of these 166 snubbers, 147 were tested as of April 23, 1991. However, if there are any test failures in the remaining 19, the sample size will again have to be expanded. It is the potential for additional snubber ST failures that has caused completion of the snubber ST by April 29, 1991 to be in question. Assuming the maximum ST population as a result of additional test failures, the snubber ST would not be completed until approximately May 22, 1991.

NEED FOR PROMPT ACTION

If the temporary waiver of compliance is not granted, PVNGS will enter ACTION statement 3.7.9 beginning April 29, 1991. Entry into MODE 5 could be delayed if the systems required for the MODE change were declared inoperable due to entering the ACTION for Specification 3.7.9.



DESCRIPTION OF WHY THE SITUATION COULD NOT HAVE BEEN AVOIDED

The most recent snubber ST was completed on June 8, 1989, near what was originally expected to be the end of the planned 1989 refueling outage. The outage was extended to late December 1989 due to modifications on the Atmospheric Dump Valves. As the result of the Main Transformer fault, cycle two operation was further delayed until January 21, 1990. Recognizing the need to schedule the snubber ST as early in the current outage as practical, the snubber ST was begun on April 7, 1991. This schedule was expected to allow adequate time for completion of the ST prior to the expiration of the surveillance interval on April 29, 1991, based upon favorable results experienced during previous snubber functional testing. The larger than expected number of snubbers that did not meet the acceptance criteria of Specification 4.7.9f. has resulted in several expansions of the test population (from an original test population of 37 snubbers to the present population of 166 snubbers). These expansions of test population, in combination with the number of snubbers that can be tested on a daily basis, have resulted in the uncertainty in completing the required testing by the expiration of the surveillance interval on April 29, 1991.

COMPENSATORY MEASURES

During the period of this temporary waiver or until Surveillance Requirement 4.7.9e. has been satisfied, PVNGS Unit 3 will restrict operations to MODEs 5 or 6 at RCS temperatures of ≤ 135 degrees Fahrenheit.

PRELIMINARY EVALUATION OF THE SAFETY SIGNIFICANCE AND POTENTIAL CONSEQUENCES OF THE PROPOSED REQUEST

Snubbers are required to be OPERABLE to ensure that the structural integrity of the reactor coolant system and all other safety-related systems is maintained during a seismic or other event initiating dynamic loads. Only those snubbers installed on nonsafety-related systems (and then only if their failure or failure of the system on which they are installed would have no adverse effect on any safety-related system) are excluded from the inspection program.

The purpose of the LIMITING CONDITION FOR OPERATION for MODES 5 and 6 in Technical Specification 3.7.9 is to ensure operability of snubbers located on systems required to be OPERABLE in those MODEs. The associated ACTION, with one or more snubbers inoperable on any system, is to (within 72 hours) replace or restore the inoperable snubber(s) to OPERABLE status and perform an engineering evaluation per Specification 4.7.9g. on the attached component or declare the attached system inoperable and follow the appropriate ACTION statement for that system. Exceeding the surveillance interval specified in Specification 4.7.9e. would require APS to replace or restore to operability, within 72 hours; all of the snubbers not previously tested during the Surveillance Testing or alternatively rendering the affected systems inoperable within 72 hours.

Snubbers are installed in a piping system to provide rigid support during a seismic event or hydraulic transient and to allow slow movement of the piping during thermal growth or shrinkage.

Snubbers can fail in one of three ways:

1. Failure to initiate motion (breakaway) within a specified range of force in either direction of travel. This type of failure will restrict thermal movement.
2. Failure to maintain motion (drag) within a specified range of force in either direction of travel. This type of failure may restrict thermal movement.
3. Failure to activate within a specified range of acceleration in either tension or compression. This type of failure will prevent the snubber from providing rigid support during a seismic event or hydraulic transient.

The first two ways are the predominant failures based on industry experience. The systems required during MODEs 5 and 6 are one Shutdown Cooling train and a boration flowpath. Both of these systems operate at less than 135° F during MODE 6 and will be limited to 135° F in MODE 5 until snubber testing is completed. Consequently, thermal expansion of the piping is negligible, and therefore, the first two failure modes described above do not present a challenge to the operation of the system. Industry experience and the PVNGS snubber failure history provide a high degree of confidence that the snubbers will perform during a seismic event. These two facts form the basis for declaring these systems operable during MODEs 5 and 6.

APS functionally tests snubbers in accordance with Specification 4.7.9e., sample plan (2), using surveillance test procedure 73ST-9ZZ22. Sample plan (2) requires that an initial sample of 37 randomly selected snubbers be functionally tested. Depending on the failures in the initial sample, additional snubbers are tested in accordance with Figure 4.7-1 of Specification 4.7.9. The surveillance test is successfully completed when the results of the designated sample plan are in the "accept" region of Figure 4.7-1. Independent of the sample plan, APS tests additional snubbers if a type of snubber or a group of snubbers is particularly susceptible to failure based on the sample plan results.

Following is the snubber test failure history at PVNGS:

<u>Unit</u>	<u>1st Outage</u> <u>(Tested/Failed)</u>	<u>2nd Outage</u> <u>(Tested/Failed)</u>	<u>ST Outage</u> <u>(Tested/Failed)</u>
1	276/8	301/12	37/0
2	37/0	57/1	NA
3	113/5	147/7 (as of 4-23-91)	NA



Of the 969 snubbers tested at PVNGS as of April 23, 1991, 33 (3.4%) have failed. One (0.1%) failed to activate. Of the 220 snubbers on the MODEs 5 and 6 systems tested during this Unit 3 outage, 53 have been tested and all have passed the required tests.

DURATION OF THE REQUEST

The duration of the request can vary from the time required for completion of a single additional sample (approximately one day) to the time required for completion of testing all remaining snubbers. There are approximately 720 mechanical snubbers of this type in Unit 3, and testing has been completed on 147 of those as of April 23, 1991. Approximately 20 snubbers can be tested per day. This additional testing could require an additional 23 days of testing. The completion date, if the total snubber population were to be tested, would be approximately May 22, 1991. A delay of this magnitude with the attendant restrictions on CORE ALTERATIONS or positive reactivity changes would result in a significant delay in returning to power operation.

SIGNIFICANT HAZARDS CONSIDERATION

APS has performed a No Significant Hazards Analysis (refer to Enclosure A) and concluded that this temporary waiver of compliance will have no adverse impact on the continued safe operation of the Unit 3. This temporary waiver request has been concurred with by the Plant Review Board.

ENVIRONMENTAL CONSEQUENCES

APS has performed an Environmental Impact Consideration Determination (refer to Enclosure A) and concluded that this temporary waiver of compliance does not involve irreversible environmental damage.

Pursuant to 10 CFR 50.91(b)(1), and by copy of this letter and enclosure, APS has notified the Arizona Radiation Regulatory Agency of this request for a temporary waiver of compliance.

U. S. Nuclear Regulatory Commission
Request for a Temporary Waiver of Compliance
Page Six

161-03899-WFC/GEC
April 24, 1991

If you should have any questions, please contact Michael E. Powell of my staff
at (602) 340-4981.

Sincerely,

James M. Levine for WFC

WFC/GEC/gec

Enclosure

cc: Document Control Desk (all w/enclosure)
C. M. Trammell
D. H. Coe
A. C. Gehr
A. H. Gutterman
C. F. Tedford

April 24, 1991

Enclosure A .

Basis for No Significant Hazards Consideration

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed waiver of compliance to an operating license for a facility involves no significant hazards consideration if operation of the facility in accordance with a proposed waiver of compliance would not: (1) involve a significant increase in the probability or consequences of an accident previously evaluated; or (2) create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) involve a significant reduction in a margin of safety.

A discussion of these standards as they relate to this temporary waiver of compliance request follows:

Standard 1: Involve a significant increase in the probability or consequences of an accident previously evaluated.

The waiving of the restriction of Specification 4.0.3 to allow continued operability of snubbers attached to systems required in MODEs 5 and 6 during completion of snubber functional testing does not involve a significant increase in the probability or consequences of an accident previously evaluated.

Specification 3.7.9 requires all snubbers to be OPERABLE. This requirement is further clarified under APPLICABILITY to ensure operability, during MODEs 5 and 6, of snubbers located on systems required to be OPERABLE in MODEs 5 and 6. Mechanical snubbers are not load bearing and are not considered accident initiators; therefore, the presence or absence of snubbers will not increase the probability of an accident previously evaluated. The failure modes identified for all but one of those snubbers that have not met the acceptance requirements of Specification 4.7.9f. indicated that they have failed to properly release but have activated properly. Release rate is not a concern in MODEs 5 and 6 as the thermal growth associated with RCS temperature limited to 135° F is negligible. Activation, to ensure proper response to seismically induced motion, is most important in MODEs 5 and 6. The vast majority of those snubbers tested (only one of 147 snubbers has failed in a condition where it would have not resisted seismic motion) were demonstrated to be capable of performing their design function. Additionally, approximately 25% (53 of 220) of the snubbers in systems required in MODEs 5 and 6 have been tested, and all have passed the required testing. This success rate provides reasonable assurance that the remaining snubbers on these systems would also successfully pass the testing requirements. Therefore, continuing to rely on the snubbers located on systems required to be OPERABLE in MODEs 5 and 6 during the period while functional testing is completed will not result in a significant increase in the consequences of an accident previously evaluated.

Standard 2: Create the possibility of a new or different kind of accident from any accident previously evaluated.

The waiving of the restriction of Specification 4.0.3 to allow continued operability of snubbers attached to systems required in MODEs 5 and 6 during completion of snubber functional testing does not create the possibility of a new or different kind of accident from any previously evaluated.

Mechanical snubbers are not load bearing and are not considered accident initiators; therefore, the presence or absence of snubbers will not create the possibility of a new or different kind of accident from any previously evaluated.

Standard 3: Involve a significant reduction in a margin of safety.

The waiving of the restriction of Specification 4.0.3 to allow continued operability of snubbers attached to systems required in MODEs 5 and 6 during completion of snubber functional testing does not involve a significant reduction in a margin of safety.

The change does not affect operation of the plant except to allow continued operability of snubbers attached to systems required in MODEs 5 and 6 during completion of snubber functional testing. The high success rate of those snubbers tested to perform their design function during a seismic event (only one of 147 snubbers has failed in a condition where it would have not resisted seismic motion), combined with the low probability of the occurrence of a seismic event affecting the site, give assurance that no reduction in the margin of safety will occur.

Environmental Impact Consideration Determination

The proposed waiver of compliance request does not involve an unreviewed environmental question because operation of PVNGS Unit 3 in accordance with this change, would not:

1. Result in a significant increase in any adverse environmental impact previously evaluated in the Final Environmental Statement (FES) as modified by the staff's testimony to the Atomic Safety and Licensing Board; or
2. Result in a significant change in effluents or power levels; or
3. Result in matters not previously reviewed in the licensing basis for PVNGS which may have a significant environmental impact.

As discussed above, no significant reduction in safety and no new accidents are introduced by this change. This waiver of compliance does not affect effluents or power levels, and consequently does not involve irreversible environmental consequences.

