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SUBJECT: Application for amend to License NPF-51, postponing  
 performance of listed 18 month surveillance tests.

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WILLIAM F. CONWAY  
EXECUTIVE VICE PRESIDENT  
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161-02489-WFC/JRP  
October 13, 1989

Docket No. STN 50-529

Document Control Desk  
U. S. Nuclear Regulatory Commission  
Mail Station Pl-37  
Washington, D. C. 20555

Dear Sirs:

Subject: Palo Verde Nuclear Generating Station (PVNGS)  
Unit 2  
Proposed Technical Specification Amendment  
File: 89-F-005-419.05; 89-C-056-026

This letter is provided to request an amendment to the PVNGS Unit 2 Technical Specifications. The proposed amendment will, until the second refueling outage for Unit 2, postpone the performance of the following 18 month Surveillance Tests which cannot be performed at power. The affected tests are the Class 1E Diesel Generator and Integrated Safeguards Surveillance Test (73ST-2DG01,02), Station Battery Surveillance Test (32ST-9PK03), and Molded Case Circuit Breaker Surveillance Test (32ST-9ZZ74). The surveillance test for one Diesel Generator train will be completed as soon in the outage as plant conditions permit. The remaining surveillance tests will be completed prior to entry into Mode 4 following the refueling outage. A list of the affected Technical Specification Surveillance Requirements is contained in Section A of the attachment to this letter. The proposed Technical Specifications Amendment will allow Unit 2 to remain at power until its scheduled refueling outage, thus avoiding an unnecessary plant shutdown.

The attachment to this amendment request includes:

- A. Description of Amendment Request.
- B. Purpose of the Technical Specifications.
- C. Need for the Technical Specification Amendment.
- D. Basis for No Significant Hazards Consideration.
- E. Safety Analysis of the Proposed Amendment Request.
- F. Environmental Impact Consideration Determination.
- G. Marked-Up Technical Specification Pages.

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161-02489-WFC/JRP  
October 13, 1989

Pursuant to 10 CFR 50.91(b)(1), and by copy of this letter and attachment, we have notified the Arizona Radiation Regulatory Agency (ARRA) of this request for a Technical Specification Amendment. Should you have any questions please call Richard A. Bernier at (602) 371-4295.

Sincerely,



WFC/JRP/jle

Attachments

cc: G. W. Knighton (w/attachments)  
T. L. Chan  
J. B. Martin  
T. J. Polich  
C. F. Tedford (ARRA)

## ATTACHMENT

### A. DESCRIPTION OF AMENDMENT REQUEST

The proposed Technical Specification Amendment will postpone the performance of the following 18 month Surveillance Requirements (S.R.) for Unit 2 until the second refueling outage. The second refuel outage is tentatively scheduled to begin on February 14, 1990. Following is a list of the affected Surveillance Requirements and their due dates (not including the 25% time extension allowed by Technical Specification Section 4.0.2.a):

S.R. 4.3.2.3 (Due 9/23/89) - The ENGINEERED SAFETY FEATURES RESPONSE TIME of each ESFAS function shall be demonstrated to be within the limit at least once per 18 months. Each test shall include at least one channel per function such that all channels are tested at least once every N times 18 months where N is the total number of redundant channels in a specific ESFAS function as shown in the "Total No. of Channels" Column of Table 3.3-3.

S.R. 4.4.3.1.3.a & b (Due 9/23/89) - The emergency power supply for the pressurizer heaters shall be demonstrated OPERABLE at least once per 18 months by verifying that on an Engineered Safety Features Actuation test signal concurrent with a loss-of-offsite power:

a. The pressurizer heaters are automatically shed from the emergency power sources, and

b. The pressurizer heaters can be reconnected to their respective buses manually from the control room.

S.R. 4.5.1.d.2 (Due 9/23/89) - At least once per 18 months by verifying that each safety injection tank isolation valve opens automatically upon receipt of a safety injection actuation (SIAS) test signal.

S.R. 4.5.2.e.1 (Due 9/23/89) - Each ECCS subsystem shall be demonstrated OPERABLE, at least once per 18 months, during shutdown, by verifying that each automatic valve in the flow path actuates to its correct position on (SIAS and RAS) test signal(s).

S.R. 4.5.2.e.2.a & b (Due 9/23/89) - Each ECCS subsystem shall be demonstrated OPERABLE, at least once per 18 months, during shutdown, by verifying that the high pressure and low pressure safety injection pumps start automatically upon receipt of a safety injection actuation test signal.

S.R. 4.5.2.e.3 (Due 9/23/89) - Each ECCS subsystem shall be demonstrated OPERABLE, at least once per 18 months, during shutdown, by verifying that on a recirculation actuation test signal, the containment sump isolation valves open, the HPSI, LPSI and CS pump minimum bypass recirculation flow line isolation valves and combined SI mini-flow valve close, and the LPSI pumps stop.

S.R. 4.6.2.1.d.1,2, & 3 (Due 9/23/89) - Each containment spray system shall be demonstrated OPERABLE, at least once per 18 months, during shutdown, by:

1. Verifying that each automatic valve in the flow path actuates to its correct position on a containment spray actuation (CSAS) and recirculation actuation (RAS) test signal.

2. Verifying that upon a recirculation actuation test signal, the containment sump isolation valves open and that a recirculation mode flow path via an OPERABLE shutdown cooling heat exchanger is established.

3. Verifying that each spray pump starts automatically on a safety injection actuation (SIAS) and on a containment spray actuation (CSAS) test signal.

S.R. 4.6.2.2.d.1 & 2 (Due 9/23/89) - The iodine removal system shall be demonstrated OPERABLE at least once per 18 months, during shutdown, by

1. Verifying that each automatic valve in the flow path actuates to its correct position on a containment spray actuation (CSAS) test signal, and

2. Verifying that each spray chemical addition pump starts automatically on a CSAS test signal.

S.R. 4.6.3.2.a (Due 9/23/89) - Each [containment] isolation valve specified in Sections A, B, and C of Table 3.6-1 shall be demonstrated OPERABLE during the COLD SHUTDOWN or REFUELING MODE at least once per 18 months by:

- a. Verifying that on a CIAS, CSAS or SIAS test signal, each isolation valve actuates to its isolation position.

S.R. 4.7.1.2.b.1 & 2 (Due 9/23/89) - Each auxiliary feedwater pump shall be demonstrated OPERABLE, at least once per 18 months during shutdown by:

1. Verifying that each automatic valve in the flow path actuates to its correct position upon receipt of an auxiliary feedwater actuation test signal.

2. Verifying that each pump that starts automatically upon receipt of an auxiliary feedwater actuation test signal will start automatically upon receipt of an auxiliary feedwater actuation test signal.

S.R. 4.7.3.b & c (Due 9/23/89) - At least two essential cooling water loops shall be demonstrated OPERABLE:

- b. At least once per 18 months during shutdown, by verifying that each automatic valve servicing safety-related equipment actuates to its correct position on an SIAS test signal.

- c. At least once per 18 months during shutdown, by verifying that the essential cooling water pumps start on an SIAS test signal.

S.R. 4.7.7.d.2 (Due 9/23/89) - Each control room essential filtration system shall be demonstrated OPERABLE at least once per 18 months by verifying that on a Control Room Essential Filtration Actuation Signal and on a SIAS, the system is automatically placed into a filtration mode of operation with flow through the HEPA filters and charcoal adsorber banks.

S.R. 4.7.8.d.2 (Due 9/23/89) - Each ESF pump room air exhaust cleanup system shall be demonstrated OPERABLE, at least once per 18 months by verifying that the system starts on a SIAS test signal.

S.R. 4.8.1.1.2.d.2 through d.10 (Due 9/23/89) - Each diesel generator shall be demonstrated OPERABLE, at least once per 18 months during shutdown by:

1. Subjecting the diesel to an inspection in accordance with procedures prepared in conjunction with its manufacturer's recommendations for this class of standby service.

2. Verifying the generator capability to reject a single largest load of greater than or equal to 839 kW (Train B AFW pump) for emergency diesel generator B or 696 kW for emergency diesel generator A (Train A HPSI pump) while maintaining voltage at  $4160 \pm 420$  volts and frequency at  $60 \pm 1.2$  Hz.

3. Verifying that the automatic load sequencers are OPERABLE with the interval between each load block within  $\pm 1$  second of its design interval.

4. Simulating a loss of offsite power by itself, and:

- a) Verifying deenergization of the emergency busses and load shedding from the emergency busses.

- b) Verifying the diesel starts on the auto-start signal, energizes the emergency busses with permanently connected loads within 10 seconds, energizes the auto-connected shutdown loads through the load sequencer and operates for greater than or equal to 5 minutes while its generator is loaded with the shutdown loads. After energization of these loads, the steady state voltage and frequency shall be maintained at  $4160 \pm 420$  volts and  $60 \pm 1.2/-0.3$  Hz.

5. Verifying that on an ESF actuation test signal (without loss of power) the diesel generator starts on the auto-start signal and operates on standby for greater than or equal to 5 minutes.

6. Simulating a loss-of-offsite power in conjunction with an ESF actuation test signal, and

- a) Verifying de-energization of the emergency busses and load shedding from the emergency busses.

b) Verifying the diesel starts on the auto-start signal, energizes the emergency busses with permanently connected loads within 10 seconds, energizes the auto-connected emergency (accident) loads through the load sequencer, and operates for greater than or equal to 5 minutes and maintains the steady-state voltage and frequency at  $4160 \pm 420$  volts and  $60 \pm 1.2/-0.3$  Hz.

c) Verifying that all automatic diesel generator trips, except engine overspeed, generator differential, and low lube oil pressure, are automatically bypassed upon loss of voltage on the emergency bus, upon a safety injection signal or upon AFAS.

7. Verifying the diesel generator operates for at least 24 hours. During the first 2 hours of this test, the diesel generator shall be loaded to an indicated 5800-6000 kW and during the remaining 22 hours of this test, the diesel generator shall be loaded to an indicated 5200-5400 kW. Within 5 minutes after completing this 24-hour test, perform Surveillance Requirement 4.8.1.1.2.d.6.b).

8. Verifying that the auto-connected loads to each diesel generator do not exceed the continuous rating of 5500 kW.

9. Verifying the diesel generator's capability to:

a) Synchronize with the offsite power source while the generator is loaded with its emergency loads upon a simulated restoration of offsite power,

b) Transfer its loads to the offsite power source, and

c) Proceed through its shutdown sequence.

10. Verifying that the following diesel generator lockout features prevent diesel generator starting only when required:

a) turning gear engaged

b) emergency stop

S.R. 4.8.2.1.d (Due 8/22/89) - Each 125-volt battery bank and charger shall be demonstrated OPERABLE at least once per 18 months, during shutdown, by verifying that the battery capacity is adequate to supply and maintain in OPERABLE status all of the actual or simulated emergency loads for the design duty cycle when the battery is subjected to a battery service test.

S.R. 4.8.4.1.a.2 (Due 8/9/89) - All containment penetration conductor overcurrent protective devices (except fuses) shown in Table 3.8-2 shall be demonstrated OPERABLE, at least once per 18 months, by selecting and functionally testing a representative sample of at least 10% of each type of lower voltage circuit breakers. Circuit breakers selected for functional testing shall be selected on a rotating basis. Testing of these circuit

breakers shall consist of injecting a current with a value equal to 300% of the setpoint (pickup) of the long-time delay trip element and 150% of the setpoint (pickup) of the short time delay trip element, and verifying that the circuit breaker operates within the time delay band width for that current specified by the manufacturer. The instantaneous element shall be tested by injecting a current for a frame size of 250 amps or less with tolerances of +40%/-25% and a frame size of 400 amps or greater of  $\pm 25\%$  and verifying that the circuit breaker trips instantaneously with no apparent time delay. Molded case circuit breaker testing shall also follow this procedure except that generally no more than two trip elements, time delay and instantaneous, will be involved. Circuit breakers found inoperable during functional testing shall be restored to OPERABLE status prior to resuming operation. For each circuit breaker found inoperable during these functional tests, an additional representative sample of at least 10% of all the circuit breakers of the inoperable type shall also be functionally tested until no more failures are found or all circuit breakers of that type have been functionally tested.

S.R. 4.8.4.2.1 (Due 9/23/89) - At least once per 18 months the thermal overload protection for the valves shown in Table 3.8-3 shall be verified to be bypassed continuously or under accident conditions, as applicable, by an OPERABLE integral bypass device by the performance of a CHANNEL FUNCTIONAL TEST of the bypass circuitry for those thermal overloads which are normally in force during plant operation and bypassed under accident conditions and by verifying that the thermal overload protection is bypassed for those thermal overloads which are continuously bypassed and temporarily placed in force only when the valve motors are undergoing periodic or maintenance testing.

#### B. PURPOSE OF THE TECHNICAL SPECIFICATIONS

Surveillance Requirements are requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will be within the safety limits, and that the limiting conditions of operation will be met. The Surveillance Requirements applicable to lower voltage circuit breakers provide assurance of breaker reliability by testing at least one representative sample of each type of circuit breaker. The Surveillance Requirement for demonstrating the OPERABILITY of the station batteries are based on the recommendations of Regulatory Guide 1.129 and IEEE Standard 450-1980. This will ensure the operability of Class 1E batteries and demonstrate their ability to feed requisite station loads required to maintain core cooling and containment integrity. The Surveillance Requirements for demonstrating the OPERABILITY of the diesel generators are in accordance with the recommendations of Regulatory Guides 1.9 and 1.108. The Surveillance Requirements applicable to integrated safeguards systems assures the OPERABILITY of these systems which are required to provide the overall reliability, redundancy, and diversity assumed in the facility design for the protection and mitigation of accidents and transient conditions. The integrated operations of each of the systems is consistent with the assumptions in the safety analysis.



### C. NEED FOR THE TECHNICAL SPECIFICATION AMENDMENT

The proposed Technical Specification Amendment relates to 18 month Surveillance Requirements that must be performed during plant shutdown and are scheduled to be performed during the second refueling outage. The schedule for the second refueling outage has been delayed from September 15, 1989 to February 14, 1990, due to an unplanned outage that extended from March 15, 1989 to June 30, 1989 to address concerns that arose as a result of events at Units 1 and 3. Consequently, compliance with the 18 month interval would require that the plant be shutdown for the sole purpose of performing these required surveillance tests. As recognized in Generic Letter 89-14, the safety benefits of a plant shutdown solely to perform these surveillance tests is outweighed by the increased risks associated with an unnecessary transient.

It is overly conservative to assume that systems or components are inoperable when a surveillance requirement has not been performed. The opposite is in fact the case; the vast majority of Surveillance Requirements demonstrate that systems or components are in fact operable. This fact and the above considerations have led to this request for extension of the test interval for the refueling Surveillance Requirements listed in Section A of this amendment request.

### D. 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 amendment to an operating license for a facility involves no significant hazards consideration if operation of the facility in accordance with a proposed amendment 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 the amendment request follows:

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

The proposed Technical Specification change does not involve a significant increase in the probability or consequences of an accident previously evaluated. The proposed change does not alter the current design or operation of the facility. The change allows an extension of certain surveillance intervals to permit performance of surveillance requirements during the next refueling outage currently scheduled to begin on February 14, 1990. The extensions beyond those allowed by Technical Specification 4.0.2.a will not constitute a significant increase over the original test interval as they would constitute an increase of less than 20% of the allowable surveillance interval. Based upon the fact that the proposed changes do not impact the operations of the facility the change would not significantly increase the probability or 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 proposed Technical Specification change will not create the possibility of a new or different kind of accident from any accident previously evaluated. Since there are no changes in the way the facility is being operated, the potential for an unanalyzed accident is not created. No new failure modes are introduced by the proposed change. Therefore, the proposed change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

STANDARD 3 -- Involve a significant reduction in a margin of safety.

The proposed Technical specification change does not involve a significant reduction in a margin of safety. The proposed change to extend the time span for certain surveillance requirements to permit their performance during the next refueling outage will not constitute a significant increase (less than a 20% increase) beyond the allowable test interval. Therefore, the proposed change will not involve a significant reduction in a margin of safety.

#### E. SAFETY ANALYSIS OF THE PROPOSED AMENDMENT REQUEST

The proposed Technical Specification amendment will not increase the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety previously evaluated in the Updated Final Safety Analysis Report. The amendment will not make changes to the facility. The additional time between surveillance tests will not increase the probability of failure of the equipment. The equipment for which this surveillance interval extension is sought have other surveillance testing which will verify operability until such time as it can be taken out of service during a shutdown for integrated testing. The need to shut down to perform surveillance testing is also recognized in the Technical Specifications which state "At least once every 18 months during shutdown." The NRC has also stated in Generic Letter 89-14 that exceptions to the existing refueling surveillance intervals have been granted on a routine basis because the risk to safety is low in contrast to the alternative of a forced shutdown to perform these surveillances.

The Unit 2 Diesel Generators are tested monthly to verify they will start and load. During this testing the diesel generators are started using one of the emergency start signals. A review of the 210 valid start attempts performed in Unit 2 in the last 3 years showed no failures to start. This establishes the high reliability of the Unit 2 Diesel Generators and justifies an extension for performing the Integrated Safeguards Test.

The pumps and valves of the Auxiliary Feedwater, Safety Injection, Containment Spray, Essential Cooling Water, and Essential Spray Pond systems are subjected to ASME Section XI testing which verifies operability and provides for predictive as well as corrective maintenance. The extension of the Integrated Safeguards test will only affect the performance of an integrated test, all component level testing will continue to verify the operability of each component.

The ESFAS logic and relaying is tested periodically by other Surveillance Requirements which ensure operability of the relays and subgroups. Some of these relays are manufactured by Potter & Brumfield and are the subject of a 10 CFR 21 report. The Potter & Brumfield relays installed in Unit 2 which have a high risk of failure and can be tested at power are currently being tested on a 15 day versus normal 62 day frequency and every 62 days versus the normal 18 month surveillance. This testing schedule will continue until such time as the relays are replaced. The time response of the relays has shown little or no degradation as a result of aging in previous testing. Thus it can be inferred that the extension of this testing interval by the small amount of time requested in this amendment would have no impact on the time response of these relays and thus no impact on safety.

The 125 volt batteries are subject to periodic surveillance testing to verify electrolyte level, specific gravity, cell voltages, and general condition of the batteries. In addition to this Nuclear Engineering performed a study of the battery and concluded that 1) the extension of the discharge test by approximately 3 months represents a negligible interval compared to the 20 year design life and 2) there is a considerable level of safety margin of voltage for the four batteries.

The extension for the containment overcurrent protective device testing involves the testing of only one breaker in Unit 2. There are only four of this type of breaker installed in the plant. The Surveillance Requirement requires testing a 10% sample of each type of breaker. This testing was performed on identical breakers in Units 1 and 3 and no problems were noted. Unit 2 has three of this type of breaker installed as spares and has successfully tested both of these breakers. This testing represents more than the required 10% sample if considered on a site wide basis. Thus the reliability of this type of breaker has been established and an extension of the testing interval would have little or no affect on the safe operation of the plant.

The testing of the motor operated valve thermal overload bypasses required by Technical Specification 3.8.4.2.1 is part of the Integrated Safeguards testing which cannot be performed at power. This testing involves verifying that the thermal overload protection for the motor operators is bypassed when an ESFAS signal is present. The test is performed every 18 months and following any valve maintenance which could affect the performance of the bypass. In the event the bypasses were inoperable, the valve would continue to function barring other problems in the valve internals or motor operator causing it to exceed its normal operating current. These types of problems would normally be detected during the ASME Section XI testing and corrective maintenance performed to reestablish valve operability. The bypasses have a good history of reliability and thus extending the Surveillance Requirement interval would not significantly affect the safe operation of the plant.

In addition to the testing described above, two events occurred in Unit 2 during the past year which have demonstrated the operability of many of the systems for which surveillance test interval relief is sought. On January 3, 1989, a series of lightning strikes caused a complete loss of offsite power to the 4.16 Kv class 1E electrical busses. This caused an automatic start and loading of the diesels. The diesel generators then carried the loads on the essential busses

until such time as normal offsite power was restored. On July 12, 1989 a plant trip occurred which led to the actuation of SIAS and CIAS. During these events, all systems actuated as designed. Although credit is not being taken for these events for performance of the Surveillance Requirements they provide further evidence of the continued operability of certain equipment involved in this amendment request.

As stated in Generic Letter 83-27, the 18 month surveillance intervals were established based upon operating experience and the knowledge that some reactors would be utilizing 18-month fuel cycles. An extension of 25% beyond this test interval is allowed to accommodate normal outage time. The extension of this test interval to the next refueling outage in Unit 2 does not violate the licensing basis of the plant or the intent of the 18 month interval and is not a significant increase over the original test interval. That intent was to verify that equipment was still OPERABLE after each fuel cycle and to ensure that prior to returning the Unit to service following refueling, all equipment important to safety has been tested and is OPERABLE. All required testing will be performed during the refueling outage to validate the testing interval. Generic Letter 89-14 recognizes that the 3.25 limitation on extending refueling surveillances is not a practical limit because the risk to safety is low in contrast to the alternative of a forced shutdown to perform these surveillances. For that reason the NRC has routinely granted requests for exceptions to the 3.25 limit and concluded that removal of the 3.25 limit will have an overall positive impact on safety. Thus, extending the test interval for the specified surveillances will have a positive impact on plant safety in the same manner as not imposing the 3.25 limit on consecutive refueling surveillances.

#### F. ENVIRONMENTAL IMPACT CONSIDERATION DETERMINATION

The proposed Technical Specification Amendment request does not involve an unreviewed environmental question because operation of PVNGS Unit 2 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, Supplements to the FES, Environmental Impact Appraisals, or in any decisions of 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.

#### G. MARKED-UP TECHNICAL SPECIFICATION PAGES

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