**10 CFR 50.55a(g)(4)(ii)**

APS *A subsidiary of Pinnacle West Capital Corporation*

Palo Verde Nuclear Generating Station

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102-05769-DCM/RJR
November 28, 2007

ATTN: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Dear Sirs:

**Subject: Palo Verde Nuclear Generating Station (PVNGS)**
**Units 1, 2 and 3**
**Docket Nos. STN 50-528/529/530**
**Inservice Inspection Program, Third Interval – Snubber Program**

Pursuant to 10 CFR 50.55a(g)(4)(ii) Arizona Public Service Company (APS) is required to update the inservice inspection program (ISI) each successive 120-month inspection interval. In accordance with American Society of Mechanical Engineers (ASME) Code for Operation and Maintenance of Nuclear Power Pants (OM Code) Section ISTA-3200, "Administrative Requirements," APS is filing the update described below to the Palo Verde Snubber Testing Program. The update complies with the requirements of the latest edition and addenda of the Code that were incorporated by reference in paragraph (b) of 10 CFR 50.55a twelve months before the start of the 120-month inspection interval.

Commencing with the third inservice inspection interval each Palo Verde unit will transition from the owner defined inservice inspection requirements for snubbers currently contained in the Palo Verde Technical Requirements Manual (TRM) Section T3.7.101, to the requirements of the ASME OM Code 2001 Edition and ASME OMb Code-2003 Addenda, Subsection ISTD, "Preservice and Inservice Examination and Testing of Dynamic Restraints (Snubbers) in Light-Water Reactor Nuclear Power Plants," as described in the attached TRM change.

Third Interval Start Dates:

Unit 2 – March 18, 2007 Unit 3 – January 11, 2008 Unit 1 – July 18, 2008

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NRR

No commitments are being made to the NRC by this letter. Should you have any questions, please contact Glenn A. Michael at (623) 393-5750.

Sincerely,

D. C. Mauro

DCM/GAM/RJR/gt

Attachment: Information Copy of Revision to the Palo Verde Technical Requirement Manual, T3.7.101, Snubbers

cc:

| | | |
|---|---|---|
| E. E. Collins, Jr. | NRC Region IV Regional Administrator |
| M. T. Markley | NRC NRR Project Manager |
| G. G. Warnick | NRC Senior Resident Inspector for PVNGS |

# Attachment:
# Information Copy of Revision to the Palo Verde Technical requirement Manual, T3.7.101, Snubbers

Pages T3.7.101-1
T3.7.101-2
T3.7.101-3
T3.7.101-4
T3.7.101-5
T3.7.101-6
T3.7.101-7
T3.7.101-8
T3.7.101-9
T3.7.101-10

T3.7 PLANT SYSTEMS

T3.7.101 Snubbers

TLCO 3.7.101 All hydraulic and mechanical snubbers shall be OPERABLE. The only snubbers excluded from this requirement are those 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.

APPLICABILITY: MODES 1, 2, 3 and 4.
MODES 5 and 6 for snubbers located on systems required OPERABLE in those MODES.

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|---|---|
| A. One or more snubbers inoperable. | A.1 Replace or restore the inoperable snubbers to OPERABLE status and perform an engineering evaluation per TSR 3.7.101.g on the attached component. | 72 hours |
| B. Required Action and associated Completion Time of Condition A not met. | B.1 Declare the attached system inoperable and follow the appropriate ACTION statement for that system. | Immediately |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | | FREQUENCY |
|---|---|---|
| TSR 3.7.101.1 | ~~Each~~ For unit(s) in the second interval of the inservice inspection program, each snubber shall be demonstrated OPERABLE by performance of the attached augmented inservice inspection program and the requirements of ASME Section XI. | In accordance with the attached augmented inservice inspection program and ASME Section XI. |
| TSR 3.7.101.2 | For unit(s) in the third interval of the inservice inspection program, each snubber shall be demonstrated OPERABLE in accordance with the requirements of the ASME OM Code 2001 Edition and ASME OMb CODE-2003 Addenda, Subsection ISTD, "Preservice and Inservice Examination and Testing of Dynamic Restraints (Snubbers) in Light-Water Reactor Nuclear Power Plants," and approved relief requests. | In accordance with the requirements of the ASME OM Code, Subsection ISTD. |

AUGMENTED INSERVICE INSPECTION PROGRAM

a. Snubber Types

As used in this specification, type of snubber shall mean snubbers of the same design and manufacturer, irrespective of capacity.

b. Visual Inspections

Snubbers are categorized as inaccessible or accessible during reactor operation. Each of these categories (inaccessible and accessible) may be inspected independently according to the schedule determined by Table 3.7.101-1. The visual inspection interval for each type of snubber shall be determined based upon the criteria provided in Table 3.7.101-1 and the first inspection interval determined using this criteria shall be based upon the previous inspection as interval established by the requirements in effect before Amendment No. 44.

c. Visual Inspection Acceptance Criteria

Visual inspections shall verify that: (1) there are no visible indications of damage or impaired OPERABILITY and (2) attachments to the foundation or supporting structure are secure, and (3) fasteners for attachment of the snubber to the component and to the snubber anchorage are secure. Snubbers which appear inoperable as a result of visual inspections shall be classified as unacceptable and may be reclassified acceptable for the purpose of establishing the next visual inspection interval, provided that: (1) the cause of the rejection is clearly established and remedied for that particular snubber and for other snubbers irrespective of type that may be generically susceptible; and (2) the affected snubber is functionally tested in the as-found condition and determined OPERABLE per TSR 3.7.101.1.f. When a fluid port of a hydraulic snubber is found to be uncovered, the snubber shall be declared inoperable and cannot be determined OPERABLE via functional testing unless the test is started with the piston in the as-found setting, extending the piston rod in the tension mode direction.

(continued)

Augmented Inservice Inspection Program (continued)

d. Transient Event Inspection

An inspection shall be performed of all hydraulic and mechanical snubbers attached to sections of systems that have experienced unexpected, potentially damaging transients as determined from a review of operational data. A visual inspection of the systems shall be made within 6 months following such an event. In addition to satisfying the visual inspection acceptance criteria, freedom-of-motion of mechanical snubbers shall be verified using at least one of the following: (1) manually induced snubber movement; or (2) evaluation of in-place snubber piston setting; or (3) stroking the mechanical snubber through its full range of travel.

e. Functional Tests

During the first refueling shutdown and at least once per 18 months (Except that the functional testing due not later than September 25, 1991 may be deferred until the next refueling outage, but not beyond December 17, 1991) thereafter during shutdown, a representative sample of snubbers shall be tested using one of the following sample plans. The sample plan shall be selected prior to the test period and cannot be changed during the test period.

1) At least 10% of the total of each type of snubber shall be functionally tested either in-place or in a bench test. For each snubber of a type that does not meet the functional test acceptance criteria of TSR 3.7.101.1.f., an additional 10% of that type of snubber shall be functionally tested until no more failures are found or until all snubbers of that type have been functionally tested; or

2) A representative sample of each type of snubber shall be functionally tested in accordance with Figure 3.7.101-1. "C" is the total number of snubbers of a type found not meeting the acceptance requirements of TSR 3.7.101.1.f. The cumulative number of snubbers of a type tested is denoted by "N". At the end of each day's testing, the new values of "N" and "C" (previous day's total plus current day's increments) shall be plotted on Figure 3.7.101-1. If at any time the point plotted falls in the "Reject" region all snubbers of that type shall be functionally tested. If at any time the point plotted falls in the "Accept" region,

(continued)

Augmented Inservice Inspection Program (continued)

testing of snubbers of that type may be terminated. When the point plotted lies in the "Continue Testing" region, additional snubbers of that type shall be tested until the point falls in the "Accept" region or the "Reject" region, or all the snubbers of that type have been tested. Testing equipment failure during functional testing may invalidate that day's testing and allow that day's testing to resume anew at a later time, providing all snubbers tested with the failed equipment during the day of equipment failure are retested; or

3) An initial representative sample of 55 snubbers shall be functionally tested. For each snubber type which does not meet the functional test acceptance criteria, another sample of at least one-half the size of the initial sample shall be tested until the total number tested is equal to the initial sample size multiplied by the factor, 1 + C/2, where "C" is the number of snubbers found which do not meet the functional test acceptance criteria. The results from this sample plan shall be plotted using an "Accept" line which follows the equation N = 55(1 + C/2). Each snubber point should be plotted as soon as the snubber is tested. If the point plotted falls on or below the "Accept" line, testing of that type of snubber may be terminated. If the point plotted falls above the "Accept" line, testing must continue until the point falls in the "Accept" region or all the snubbers of that type have been tested.

The representative sample selected for the functional test sample plans shall be randomly selected from the snubbers of each type and reviewed before beginning the testing. The review shall ensure as far as practical that they are representative of the various configurations, operating environments, range of size, and capacity of snubbers of each type. Snubbers placed in the same locations as snubbers which failed the previous functional test shall be retested at the time of the next functional test but shall not be included in the sample plan. If during the functional testing, additional sampling is required due to failure of only one type of snubber, the functional testing results shall be reviewed at the time to determine if additional samples should be limited to the type of snubber which has failed the functional testing.

(continued)

Augmented Inservice Inspection Program (continued)

f. Functional Test Acceptance Criteria

The snubber functional test shall verify that:

1) Activation (restraining action) is achieved within the specified range in both tension and compression;
2) Snubber bleed, or release rate where required, is present in both tension and compression, within the specified range;
3) For mechanical snubbers, the force required to initiate or maintain motion of the snubber is within the specified range in both directions of travel; and
4) For snubbers specifically required not to displace under continuous load, the ability of the snubber to withstand load without displacement.

Testing methods may be used to measure parameters indirectly or parameters other than those specified if those results can be correlated to the specified parameters through established methods.

g. Functional Test Failure Analysis

An engineering evaluation shall be made of each failure to meet the functional test acceptance criteria to determine the cause of the failure. The results of this evaluation shall be used, if applicable, in selecting snubbers to be tested in an effort to determine the OPERABILITY of other snubbers irrespective of type which may be subject to the same failure mode.

For the snubbers found inoperable, an engineering evaluation shall be performed on the components to which the inoperable snubbers are attached. The purpose of this engineering evaluation shall be to determine if the components to which the inoperable snubbers are attached were adversely affected by the inoperability of the snubbers in order to ensure that the component remains capable of meeting the designed service.

If any snubber selected for functional testing either fails to lock up or fails to move, i.e., frozen-in-place, the cause will be evaluated and if caused by manufacturer or design deficiency all snubbers of the same type subject to the same defect shall be functionally tested. This testing requirement shall be independent of the requirements stated in TSR 3.7.101.1.e for snubbers not meeting the functional test acceptance criteria.

(continued)

Augmented Inservice Inspection Program (continued)

h. Functional Testing of Repaired and Replaced Snubbers

Snubbers which fail the visual inspection or the functional test acceptance criteria shall be repaired or replaced. Replacement snubbers and snubbers which have repairs which might affect the functional test result shall be tested to meet the functional test criteria before installation in the unit. These snubbers shall have met the acceptance criteria subsequent to their most recent service, and the functional test must have been performed within 12 months before being installed in the unit.

i. Snubber Seal Replacement Program

The service life of hydraulic and mechanical snubbers shall be monitored to ensure that the service life is not exceeded between surveillance inspections. The maximum expected service life for various seals, springs, and other critical parts shall be determined and established based on engineering information and shall be extended or shortened based on monitored test results and failure history. Critical parts shall be replaced so that the maximum service life will not be exceeded during a period when the snubber is required to be OPERABLE. The parts replacements shall be documented and the documentation shall be retained for the duration of the Unit Operating License.

Table 3.7.101-1 (Page 1 of 2)
Snubber Visual Inspection Interval

| POPULATION OR CATEGORY (Notes 1 and 2) | NUMBER OF UNACCEPTABLE SNUBBERS | | |
|---|---|---|---|
| | COLUMN A EXTEND INTERVAL (Notes 3 and 6) | COLUMN B REPEAT INTERVAL (Notes 4 and 6) | COLUMN C REDUCE INTERVAL (Notes 5 and 6) |
| 1 | 0 | 0 | 1 |
| 80 | 0 | 0 | 2 |
| 100 | 0 | 1 | 4 |
| 150 | 0 | 3 | 8 |
| 200 | 2 | 5 | 13 |
| 300 | 5 | 12 | 25 |
| 400 | 8 | 18 | 36 |
| 500 | 12 | 24 | 48 |
| 750 | 20 | 40 | 78 |
| 1000 or greater | 29 | 56 | 109 |

----------NOTES----------

1. The next visual inspection interval for a snubber population or category size shall be determined based upon the previous inspection interval and number of unacceptable snubbers found during that interval. Snubbers may be categorized, based upon their accessibility during power operation, as accessible or inaccessible. These categories may be examined separately or

(continued)

Table 3.7.101-1 (Page 2 of 2)
Snubber Visual Inspection Interval

(continued)

jointly. However, the licensee must make and document that decision before any inspection and shall use that decision as the basis upon which to determine the next inspection interval for that category.

2. Interpolation between population or category sizes and the number of unacceptable snubbers is permissible. Use next lower integer for the value of the limit for Columns A, B, and C if that integer includes a fractional value of unacceptable snubbers as determined by interpolation.

3. If the number of unacceptable snubbers is equal to or less than the number in Column A, the next inspection interval may be twice the previous interval, but not greater than 48 months.

4. If the number of unacceptable snubbers is equal to or less than the number in Column B, but greater than the number in Column A, the next inspection interval shall be the same as the previous interval.

5. If the number of unacceptable snubbers is equal to or greater than the number in Column C, the next inspection interval shall be two-thirds of the previous interval. However, if the number of unacceptable snubbers is less than the number in Column C, but greater than the number in Column B, the next interval shall be reduced proportionally by interpolation, that is, the previous interval shall be reduced by a factor that is one-third of the ratio of the difference between the number of unacceptable snubbers found during the previous interval and the number in Column B to the difference in the number in Columns B and C.

6. The provisions of TSR 3.0.100.2 are applicable for all inspection intervals up to and including 48 months.

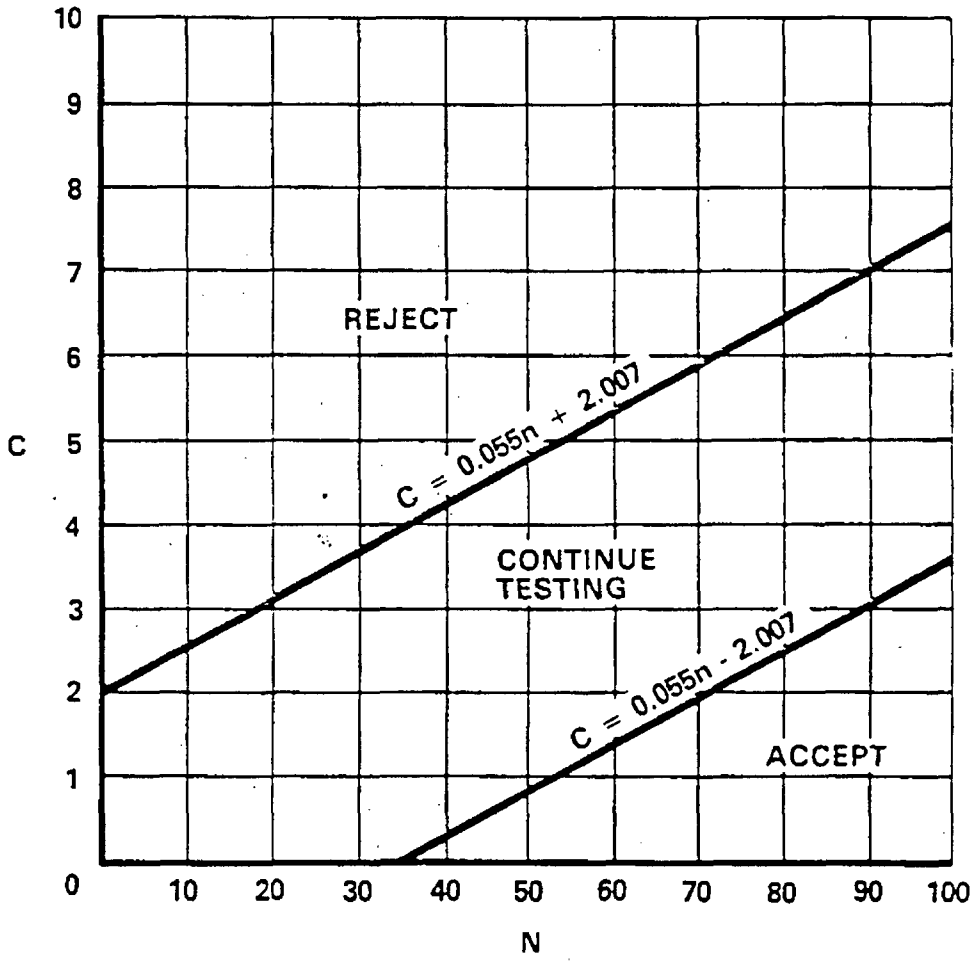


FIGURE 3.7.101-1
SAMPLING PLAN FOR SNUBBER FUNCTIONAL TEST