



102-07186-MLL/JR  
January 29, 2016

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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, 50-529, and 50-530  
Response to Request for Additional Information Regarding the  
Request to Change the Quality Assurance Program Description**

By letter number 102-07022, dated July 28, 2015 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML15212A718), Arizona Public Service (APS) submitted a change to the Quality Assurance Program Description (QAPD) for PVNGS Units 1, 2, and 3. The proposed change would revise the PVNGS QAPD to adopt a standardized QAPD based upon the guidance of Nuclear Energy Institute (NEI) 11-04A, *Nuclear Generation Quality Assurance Program Description* (ADAMS Accession No. ML12258A358). The NEI 11-04A Quality Assurance Program template was reviewed and endorsed by the U.S. Nuclear Regulatory Commission (NRC) by letter dated May 9, 2013 (ADAMS Accession No. ML13023A051). APS submitted the QAPD based on a determination that the proposed change could be considered a reduction in the program's commitments pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR), Section 50.54(a).

Based on the review of the change, the NRC staff determined that additional information is required regarding the proposed PVNGS QAPD. A clarification call was held on December 21, 2015, with participants from APS and the NRC, to ensure APS understood the requested additional information. The NRC staff provided a formal request for additional information (RAI) by e-mail dated January 6, 2016 (ADAMS Accession No. ML16006A366). It was agreed that APS would provide a response to the RAI by February 5, 2016.

The enclosure to this letter provides the APS response to the NRC RAI. Replacement pages to address the RAI responses are included in the attachment to the enclosure. This includes pages 19, 49 and 67 of the proposed PVNGS QAPD. In addition, administrative changes were made to pages 4, 5 and 16 with revision bars showing the locations of the changes. These replacement pages are also included in the attachment.

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No commitments are being made by this letter. Should you need further information regarding this submittal, please contact Michael D. Dilorenzo, Regulatory Affairs Department Leader, at (623) 393-3495.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on January 29, 2016.  
(Date)

Sincerely,

MLL/JR

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cc:	M. L. Dapas	NRC Region IV Regional Administrator
	M. M. Watford	NRC NRR Project Manager for PVNGS
	L. J. Klos	NRC NRR Project Manager
	C. A. Peabody	NRC Senior Resident Inspector for PVNGS

**ENCLOSURE**

**Response to Request for Additional Information Regarding  
Request to Change the Quality Assurance Program Description**

Enclosure

Response to Request for Additional Information Regarding  
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## **Introduction**

By letter number 102-07022, dated July 28, 2015 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML15212A718), Arizona Public Service (APS) submitted a change to the Quality Assurance Program Description (QAPD) for Palo Verde Nuclear Generating Station (PVNGS) Units 1, 2, and 3. The proposed change would revise the PVNGS QAPD to adopt a standardized QAPD based upon the guidance of Nuclear Energy Institute (NEI) 11-04A, *Nuclear Generation Quality Assurance Program Description* (ADAMS Accession No. ML12258A358). The NEI 11-04A Quality Assurance Program template was reviewed and endorsed by the U.S. Nuclear Regulatory Commission (NRC) by letter dated May 9, 2013 (ADAMS Accession No. ML13023A051). APS submitted the QAPD based on a determination that the proposed change could be considered a reduction in the program's commitments pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR), Section 50.54(a).

Based on the review of the change, the NRC staff determined that additional information is required regarding the proposed PVNGS QAPD. A clarification call was held on December 21, 2015, with participants from APS and the NRC, to ensure APS understood the requested additional information. The NRC staff provided a formal request for additional information (RAI) by e-mail dated January 6, 2016 (ADAMS Accession No. ML16006A366). It was agreed that APS would provide a response to the RAI by February 5, 2016.

In addition to the RAI response, APS is providing an updated Table of Contents and a typographical correction to Section 2.2.1 for the proposed PVNGS QAPD. In Section 2.2.1, Responsibilities, the reference to Section 2.1.1 is a typographical error. The correct reference should be identified as Section 1.1. The updated Table of Contents pages and typographical correction to Section 2.2.1 are included in the attached, *Corrected QAPD Pages*, pages 4, 5 and 16 of 69.

The NRC request is stated first followed by the APS response.

## **NRC Question 1**

In the submittal dated July 28, 2015, Attachment 2, "Proposed PVNGS Operations Quality Assurance Program Description Based Upon NEI 11-04A," Section 2.2.7, "NQA-1 Commitment/Exceptions," states that Palo Verde is committed to compliance with American Society of Mechanical Engineers (ASME) NQA-1-2008, Requirement 2 with the following clarifications and exceptions:

As an alternative to Section 303.3 that prospective Lead Auditors have participated in a minimum of five (5) audits in the previous three (3) years, the following may be used for qualification of experienced individuals:

Prospective lead auditors shall demonstrate their ability to effectively implement the audit process and lead an audit team. They shall have participated in at least one audit within the year preceding the individual's effective date of qualification. Upon successful demonstration of the ability to effectively lead audits, licensee management may designate a prospective lead auditor as a "lead auditor."

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The proposed alternative was based on a previously approved NRC safety evaluation report dated March 27, 1998, for the San Onofre Nuclear Generating Station (ADAMS Legacy Accession No. 9803310346), which stated in part:

Prospective Lead Auditors shall demonstrate their ability to effectively implement the audit process and effectively lead an audit team. This process is described in written procedures which provide for evaluation and documentation of the results of this demonstration. In addition, the prospective Lead Auditor shall have participated in at least one Nuclear Oversight audit within the year preceding the individual's effective date of qualification. Upon successful demonstration of the ability to effectively implement the audit process and effectively lead audits, and having met the other provisions of Section 2.3 of ANSI/ASME N45.2.23-1978, the individual may be certified as being qualified to lead audits.

The proposed alternative in Palo Verde's QAPD does not require the prospective Lead Auditor to participate in at least one Nuclear Oversight audit. Provide clarification on how Palo Verde's Lead Auditor participates in at least one Nuclear Oversight audit within the year preceding the individual's effective date of qualification.

**APS Response**

The intent of the sentence, "They shall have participated in at least one audit within the year preceding the individual's effective date of qualification," is that the prospective Lead Auditor participate in at least one Nuclear Assurance audit. The omission of "Nuclear Assurance" prior to the word "audit" has been corrected and included in the attached, *Corrected QAPD Pages*, page 19 of 69.

**NRC Question 2**

In Attachment 2 of Palo Verde's proposed QAPD, Section 2.7, "Control of Purchased Material, Equipment, and Services," provides guidance on purchasing commercial grade calibration services from a calibration laboratory in accordance with the guidance contained in NEI 11-04A, Revision 0.

On August 28, 2014, NEI submitted Revision 1 of NEI 14-05, "Guidelines for the Use of Accreditation in Lieu of Commercial Grade Surveys for Procurement of Laboratory Calibration and Test Services," to the NRC staff for review and endorsement. The NRC staff reviewed and endorsed NEI 14-05 on February 9, 2015, in a safety evaluation report (ADAMS Accession No ML14322A535).

Clarify if Palo Verde intends to use the guidance in NEI 11-04A, or the recently approved guidance provided in the NRC's safety evaluation report for NEI 14-05, dated February 9, 2015.

**APS Response**

APS intends to use the guidance in NEI 11-04A.

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**NRC Question 3**

In Section 4.0, "Regulatory Commitments," of Palo Verde's proposed QAPD, the licensee commits to Regulatory Guide (RG) 1.8, Revision 1-R, "Personnel Selection and Training," dated September 1975 (ADAMS Accession No. ML12305A250) and includes a list of exceptions and clarifications, A through F.

The exception under Paragraph C does not align with any current staff or industry guidance. Clarify how the exception is acceptable and provide a basis of how the exception continues to satisfy Appendix B to 10 CFR Part 50.

Also, clarify where APS will use the equivalency of a bachelor's degree and which applicable regulatory guides that endorsed industry standards will be used as cited in paragraph C.

**APS Response**

Although the bachelor's degree equivalency requirements in Paragraph C are not explicitly contained in current regulatory or industry guidance, they are comparable to examples of bachelor's degree equivalency provided in ANSI/ANS 3.1-1993, Paragraph 4.1.1.1, the current industry guidance endorsed by RG 1.8, Revision 3. This is illustrated in the table below:

<b>PVNGS Equivalency RG 1.8, Rev 1-R Paragraph C</b>	<b>ANSI/ANS 3.1-1993 Equivalency Bachelor's Degree Example</b>	<b>Comment</b>
4 years of post-secondary schooling in science or engineering	Successful completion of 80 semester credit hours of the technical portions of an engineering, engineering technology, or related science program	Equivalent requirements
6 years of applied experience at a nuclear facility in the area for which qualification is sought, or  6 years of operational or technical experience/training in nuclear power,  Any years of experience credited to meet the education (degree) requirement, as described above, shall not also be credited to meet any additional experience required by the standard.	Related experience may be substituted for education at the rate of 6 semester credit hours for each year of experience up to a maximum of 60 hours of credit.  Paragraph 4.1.1.1 of ANSI/ANS 3.1-1993 provides guidance for when an individual does not possess the formal education requirements. This guidance states:  <i>Individuals who do not possess the formal educational requirements specified in this section shall not be automatically eliminated if other factors provide sufficient demonstration of their abilities to fulfill the duties of a specific position. These factors shall be evaluated on a case-by-case basis, and approved and documented by the owner organization.</i>	When assessed with minimum experience criteria, the degree equivalency criteria are comparable.  The 6 years of experience in the PVNGS equivalency excludes the 5 years minimum experience of Paragraph 4.4.4 of ANSI/ANS 3.1-1978. Thus the candidate would require 11 years total experience with the PVNGS equivalency.  ANSI/ANS 3.1-1993 contains no such exclusion and would permit crediting experience concurrently toward the degree and the minimum 4 years of experience.

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APS concludes that the bachelor's degree equivalency criteria contained in Paragraph C of exceptions and clarifications, which are applicable only to the Site Radiation Protection Director, are comparable to the example provided in the current guidance, ANSI/ANS 3.1-1993, and provide minimum engineering, technology, or science education criteria equivalent to a bachelor's degree.

The exception provided in Paragraph C, which is described in the current PVNGS licensing basis and listed in the proposed QAPD, continues to satisfy Appendix B to 10 CFR Part 50 to provide for indoctrination and training of personnel performing activities affecting quality as necessary to assure that suitable proficiency is achieved and maintained. The exception continues to provide criteria to ensure personnel performing activities affecting quality have sound judgment, based on knowledge and experience.

#### **NRC Question 4**

In Section 4.0 of Palo Verde's proposed QAPD, the licensee commits to RG 1.26, Revision 1, "Quality Group Classifications and Standards for Water, Steam and Radioactive-Waste-Containing Components of Nuclear Power Plants," dated September 1974. The equipment classification and code requirements are described in Updated Final Safety Analysis Report (UFSAR) 3.2. "Classification of Structures, Components, and Systems [SSCs]." Quality group classification and code requirements for each quality group correspond to those indicated in RG 1.28, Revision 1, "Quality Assurance Program Requirements (Design and Construction)," with exceptions.

RG 1.28, Revision 1 provides no classification and code requirements. Provide clarification on APS's use of RG 1.28, Revision 1 for equipment classification and code requirements.

#### **APS Response**

The reference to RG 1.28 was a typographical error. The correct reference should be identified as RG 1.26. As identified in the original submitted QAPD, Attachment 5, *Specific Deviations from the NEI 11-04A Template and Basis for Deviations*, PVNGS will maintain existing commitments to RG 1.26, Revision 1, September 1974. APS' current conformance to RG 1.26 states the following:

*Quality group classifications and code requirements for each quality group correspond to those indicated in Regulatory Guide 1.26 with ...*

The typographical error has been corrected and included in the attached, *Corrected QAPD Pages*, page 49 of 69.

#### **NRC Question 5**

Palo Verde's proposed QAPD Section 5.5, "Plant Maintenance," was identified in Attachment 5, "Specific Deviations from the NEI 11-04A Template and the Basis for the Deviations," of Palo Verde's submittal as being changed. Palo Verde's proposed QAPD does not reflect the proposed change as identified in Attachment 5.

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Provide clarification on what Palo Verde's intentions are for the proposed QAPD regarding Section 5.5, "Plant Maintenance."

**APS Response**

APS' intention, as detailed in section 4.0 of the QAPD, is to remain committed to RG 1.94, *Quality Assurance Requirements For Installation, Inspection, And Testing Of Structural Concrete And Structural Steel During The Construction Phase Of Nuclear Power Plants*. This regulatory guide describes a method acceptable to the NRC staff for complying with the commission's regulations with regard to quality assurance requirements for installation, inspection, and testing of structural concrete and structural steel during the construction phase of nuclear power plants.

The details documented in the original submitted QAPD, Attachment 5, *Specific Deviations from the NEI 11-04A Template and the Basis for the Deviations*, describe APS' intention to remain committed to RG 1.94 in lieu of adopting NQA-1-2008 Part II, Subpart 2.18, section 207 reference to subpart 2.5 for inspection. The proposed QAPD section 5.5, *Plant Maintenance*, did not clearly state the clarification that PVNGS will remain committed to RG 1.94.

An additional bullet has been added to Section 5.5, *Plant Maintenance*, to clearly describe the deviation and the continued commitment to RG 1.94. The corrected page is included in the attached, *Corrected QAPD Pages*, page 67 of 69.



**ATTACHMENT**

**Corrected QAPD Pages**

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"clock" for an activity is reset backward by performing the activity early. Audit schedules are based on the month in which the audit starts.

### **2.2.1 Responsibilities**

Personnel who work directly or indirectly for PVNGS are responsible for achieving acceptable quality in the work covered by the QAPD. This includes the activities delineated in Section 1.1. PVNGS personnel performing verification activities are responsible for verifying the achievement of acceptable quality. Activities governed by the QAPD are performed as directed by documented instructions, procedures, and drawings that are of a detail appropriate for the activity's complexity and effect on safety. Instructions, procedures and drawings specify quantitative or qualitative acceptance criteria as applicable or appropriate for the activity, and verification is against these criteria. Provisions are established to designate or identify the proper documents to be used in an activity, and to ascertain that such documents are being used. The Director, Nuclear Assurance is responsible to verify that processes and procedures comply with QAPD and other applicable requirements, that such processes or procedures are implemented, and that management appropriately ensures compliance.

### **2.2.2 Delegation of Work**

PVNGS retains and exercises the responsibility for the scope and implementation of an effective QAP. Positions identified in UFSAR 13.1 and QAPD Section 2.1 may delegate all or part of the activities of planning, establishing, and implementing the program for which they are responsible to others, but retain the responsibility for the program's effectiveness. Decisions affecting safety are made at the level appropriate based upon their nature and effect, with technical advice or review as appropriate.

2.2.3 Deleted

### **2.2.4 Periodic Review of the Quality Assurance Program**

Management of those organizations other than APS implementing the PVNGS QA program, or portions thereof, shall assess the adequacy of that part of the program for which they are responsible to assure its effective implementation at least once every two years or at least once during the life of the activity, whichever is shorter.

### **2.2.5 Issuance and Revision to Quality Assurance Program**

Administrative control of the QAPD will be in accordance with 10 CFR 50.54(a). Changes to the QAPD are evaluated by the Director, Nuclear Assurance to ensure that such changes do not degrade safety for previously approved quality assurance controls specified in the QAPD. New revisions to the document will be reviewed, at a minimum, by the PVNGS Director Nuclear Assurance and approved by the PVNGS Executive Vice President (CNO) or the Senior Vice President, Regulatory and Oversight.

Regulations require that the Final Safety Analysis Report (FSAR) include, among other things, the managerial and administrative controls to be used to assure safe operation,

- As an alternative to Section 303.3 that prospective Lead Auditors have participated in a minimum of five (5) audits in the previous three (3) years, the following may be used for qualification of experienced individuals:

Prospective lead auditors shall demonstrate their ability to effectively implement the audit process and lead an audit team. They shall have participated in at least one Nuclear Assurance audit within the year preceding the individual's effective date of qualification. Upon successful demonstration of the ability to effectively lead audits, licensee management may designate a prospective lead auditor as a "lead auditor."

- Section 400(a)(8) requires the date of certification expiration be included on the qualification record. PVNGS considers the certification expiration date to be the date from the certification or recertification date plus the certification interval time, and its inclusion on the qualification record is optional.

- D. For those individuals not already qualified by experience and education in their designated craft or discipline and where ANSI/ANS 3.1-1978 permits the use of related training to meet certain qualifications (examples include sections 3.2.4 and 5.3.1-5.3.4), appropriate training and qualification shall be provided to demonstrate capability to perform assigned tasks. Additional training program requirements for the nuclear power plant staff are described at UFSAR 13.2 and the pertinent section of the PVNGS Operations Quality Assurance Program Description.
- E. The experience requirements of NUREG 1021, Rev. 8, ES- 202, "Preparing and Reviewing Operator License Applications" are satisfied in lieu of experience requirements of ANSI/ANS 3.1, paragraph 4.3.1, Supervisors Requiring NRC Licenses, for individuals filling the position of LSRO.
- F. Qualifications of the quality assurance manager, quality assurance personnel, and quality control inspectors are as described in the pertinent sections of the PVNGS Operations Quality Assurance Program Description.

**REGULATORY GUIDE 1.26**, Revision 1, September 1974 Quality Group Classifications and Standards for Water, Steam and Radioactive-Waste-Containing Components of Nuclear Power Plants

Equipment classification and code requirements are described in UFSAR 3.2. Quality Group classification and code requirements for each quality group correspond to those indicated in Regulatory Guide 1.26, Revision 1, with the following exceptions:

A. Positions C.1 and C.2

For Quality Group B and C instrument lines for safety related instruments, the instrument piping, tubing, and fittings downstream of the instrument root valves will be the same quality group classification as the root valve. The instrument valves will be Quality Group D.

B. Position C.1 for the Quality Group B Refueling Water Tank and Position C.2 for the Quality Group C Condensate Storage Tank

These tanks are of concrete construction with a stainless steel liner for maintenance of water quality and are not constructed to the ASME Boiler and Pressure Vessel Code, Section III.

## 5.5 PLANT MAINTENANCE

PVNGS establishes controls for the maintenance or modification of items and equipment subject to this QAPD to ensure quality at least equivalent to that specified in original design bases and requirements, such that safety-related structures, systems and components are maintained in a manner that assures their ability to perform their intended safety function(s). Maintenance activities (both corrective and preventive) are scheduled and planned so as not to unnecessarily compromise the safety of the plant. In establishing controls for plant maintenance, PVNGS commits to compliance with NQA-1-2008, Subpart 2.18, with the following clarifications and exceptions:

- Where Subpart 2.18 refers to the requirements of ANS-3.2, it shall be interpreted to mean the applicable standards and requirements established within the PVNGS QAPD.
- Section 203 requires cleanliness during maintenance to be in accordance with Subpart 2.1. The commitment to Subpart 2.1 is described QAPD Section 2.13.2.
- Section 207 refers to Subpart 2.5 for inspection. In lieu of using Subpart 2.5, PVNGS will apply the commitment to NRC Regulatory Guide 1.94 (R1, April 1976) / ANSI 45.2.5 (1974) as identified in Section 4.0 of the PVNGS QAPD.