



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

September 18, 2012

Mr. Randall K. Edington
Executive Vice President Nuclear/
Chief Nuclear Officer
Mail Station 7602
Arizona Public Service Company
P.O. Box 52034
Phoenix, AZ 85072-2034

SUBJECT: PALO VERDE NUCLEAR GENERATING STATION, UNITS 1, 2, AND 3 –
REQUEST FOR RELIEF TO USE A LATER EDITION OF ASME CODE,
SECTION XI, FOR EXAMINATION CATEGORIES B-L-1, B-M-1, AND C-G (TAC
NOS. ME7805, ME7806, AND ME7807)

Dear Mr. Edington:

By letter dated December 29, 2011 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML12019A062), Arizona Public Service Company (APS, the licensee) requested U.S. Nuclear Regulatory Commission (NRC) approval to use a subsequent edition of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), Section XI, for examination categories B-L-1, B-M-1, and C-G at Palo Verde Nuclear Generating Station (Palo Verde), Units 1, 2, and 3, for the duration of the third 10-year inservice inspection (ISI) interval.

Specifically, pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) 50.55a(g)(4)(iv), the licensee requested approval to use later code editions and addenda for ISI items subject to the limitations and modifications listed in 10 CFR 50.55a(b).

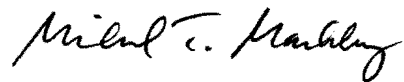
The NRC staff reviewed the subject request and concludes, as set forth in the enclosed safety evaluation, that APS has adequately addressed all of the regulatory requirements set forth in 10 CFR 50.55a(g)(4)(iv). Therefore, the NRC staff approves the use of the 2007 Edition, 2008 Addenda of the ASME Code Section XI for Examination Categories B-L-1, B-M-1, and C-G at Palo Verde the duration of the third 10-year ISI interval, which ends July 17, 2018, for Unit 1, March 17, 2017, for Unit 2, and January 10, 2018, for Unit 3.

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All other requirements of the ASME Code for which relief has not been specifically requested and authorized remain applicable, including a third-party review by the Authorized Nuclear Inservice Inspector.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael T. Markley". The signature is written in a cursive style with a large, sweeping initial "M".

Michael T. Markley, Chief
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. STN 50-528, STN 50-529,
and STN 50-530

Enclosure:
Safety Evaluation

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
REQUEST FOR RELIEF TO USE LATER EDITION AND ADDENDA OF AMERICAN
SOCIETY OF MECHANICAL ENGINEERS BOILER AND PRESSURE VESSEL CODE
PALO VERDE NUCLEAR GENERATING STATION, UNITS 1, 2, AND 3
ARIZONA PUBLIC SERVICE COMPANY
DOCKET NOS. 50-528, 50-529, 50-530

1.0 INTRODUCTION

By letter dated December 29, 2011 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML12019A062), Arizona Public Service Company (APS, the licensee) requested U.S. Nuclear Regulatory Commission (NRC) approval to use a subsequent edition of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), Section XI, for examination categories B-L-1, B-M-1, and C-G at Palo Verde Nuclear Generating Station (Palo Verde), Units 1, 2, and 3, for the duration of the third 10-year inservice inspection (ISI) interval.

Specifically, pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) 50.55a(g)(4)(iv), the licensee requested approval to use later code editions and addenda for ISI items subject to the limitations and modifications listed in 10 CFR 50.55a(b).

2.0 REGULATORY EVALUATION

Pursuant to 10 CFR 50.55a(g)(4), ASME Code Class 1, 2, and 3 components (including supports) shall meet the requirements, except the design and access provisions and the pre-service examination requirements, set forth in the ASME Code, Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," to the extent practical within the limitations of design, geometry, and materials of construction of the components. The regulations in 10 CFR 50.55a(g)(4)(ii) require that ISI examinations of components and system pressure tests conducted during successive 120-month inspection intervals must comply with the requirements in the latest edition and addenda of Section XI of ASME Code incorporated by reference in 10 CFR 50.55a(b) 12 months prior to the start of the 120-month interval, subject to the limitations and modifications listed therein.

The repair, replacement, and modification of plant components are not explicitly referenced in 10 CFR 50.55a(g)(4) and associated subparagraphs. However, these activities are specifically referenced in the ASME Code, Section XI. The NRC staff maintains that these activities are not

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separate and distinct from, but are included under, inservice examinations. Therefore, the requirements of 10 CFR 50.55a(g)(4)(iv) are applicable to repair/replacement activities.

The regulations in 10 CFR 50.55a(g)(4)(iv) state that inservice examination of components and system pressure tests may meet the requirements set forth in subsequent editions and addenda of the ASME Code provided that they are incorporated by reference in 10 CFR 50.55a(b), subject to the limitations and modifications listed in 10 CFR 50.55a(b), and subject to Commission approval. Portions of editions or addenda may be used provided that all related requirements of the respective editions or addenda are met. Currently, 10 CFR 50.55a(b)(2) incorporates by reference the ASME Code, Section XI, from the 1970 Edition through the 1976 Winter Addenda, and the 1977 Edition through the 2007 Edition with the 2008 Addenda.

Based on the above analysis, the NRC staff concludes that regulatory authority exists to approve the use of a subsequent edition of the ASME Code, as requested by the licensee.

3.0 TECHNICAL EVALUATION

3.1 Licensee's Request to Use a Subsequent ASME Code Edition and Addenda

3.1.1 ASME Code Components Affected (as stated by the licensee)

The affected components are ASME Section XI, Examination Categories:

- B-L-1, Pressure Retaining Welds in Pump Casings
- B-M-1, Pressure Retaining Welds in Valve Bodies
- C-G, Pressure Retaining Welds in Pumps and Valves

3.1.2 Applicable Code Edition and Addenda (as stated by the licensee)

The Code of Record for the current ISI interval for Code Class 1, 2 and 3 components is the ASME Section XI, 2001 Edition, 2003 Addenda. The examinations would not be required to be performed under the Code of Record until the last period of the current inspection interval.

3.1.3 Proposed Subsequent Code Edition and Addenda (or Portion) (as stated by the licensee)

The subsequent code edition and addenda proposed for the third interval of the ISI Program, Examination Categories B-L-1, B-M-1 and C-G is ASME Section XI, 2007 Edition, 2008 Addenda. In the 2008 Addenda, Examination Categories B-L-1, B-M-1 and C-G were deleted from the Code.

In the 2001 Edition, 2003 Addenda of ASME Section XI:

- Category B-L-1 requires a visual examination (VT-1) of pump casing welds

- Category B-M-1 requires a surface examination of valve body welds for valves less than 4 inches NPS [nominal pipe size] and a volumetric examination for valves larger than 4 inches NPS
- Category C-G requires a surface examination of pump and valve body welds in all components in each piping run examined under Category C-F

ASME Category B-L-1, B-M-1, and C-G welds were removed in the ASME Section XI, 2007 Edition, 2008 Addenda because experience has not identified any failures in pump casing or valve body welds. The requirement for performing these examinations results in unnecessary radiation exposure for non-destructive examination (NDE) personnel.

The subsequent code edition and addenda proposed for the third interval of the ISI Program is ASME Section XI, 2007 Edition, 2008 Addenda, for Examination Categories B-L-1, B-M-1 and C-G. The 2008 Addenda of Section XI has been incorporated into the regulations by reference, as published in the *Federal Register* on [June] 21, 2011 (76 FR 36232), and became effective July 21, 2011.

3.1.4 Duration of Proposed Requested (as stated by the licensee)

The duration of use of the proposed subsequent Code Edition and Addenda for PVNGS Units 1, 2, and 3 is the third ISI interval, which ends July 17, 2018, March 17, 2017, and January 10, 2018, respectively.

3.2 NRC Staff Evaluation

The NRC staff evaluated the licensee's request using the criteria contained in 10 CFR 50.55a(g)(4)(iv), which states that inservice examination of components and system pressure tests may meet the requirements set forth in subsequent editions and addenda of the ASME Code provided certain criteria are satisfied.

The first criterion is that the edition and addenda of the ASME Code, Section XI, that will be used in the proposed request is incorporated by reference in 10 CFR 50.55a(b). Currently, 10 CFR 50.55a(b)(2) incorporates by reference the ASME Code, Section XI, from the 1970 Edition through the 1976 Winter Addenda, and the 1977 Edition through the 2007 Edition with the 2008 Addenda, which was proposed by the licensee. Therefore, the NRC concludes that the first criterion has been satisfied.

The second criterion is that the limitations and modifications listed in 10 CFR 50.55a(b) are satisfied for the specific use of the proposed subsequent edition and addenda of the ASME Code, Section XI. The regulations in 10 CFR 50.55a(b) set no limitations and modifications on Examination Categories B-L-1, B-M-1, and C-G in the 2007 Edition, 2008 Addenda of the ASME Code, Section XI. Therefore, the NRC staff concludes that the second criterion has been satisfied.

The third criterion is that if portions of subsequent editions or addenda of the ASME Code, Section XI, are used, all related requirements of the respective editions or addenda must be

met. The NRC staff is satisfied that the licensee has listed all related requirements in Examination Categories B-L-1, B-M-1, and C-G of the 2007 Edition, 2008 Addenda of the ASME Code, Section XI. Therefore, the NRC staff concludes that the third criterion has been satisfied.

Based on the above, the NRC staff concludes that the criteria of 10 CFR 50.55a(g)(4)(iv) are satisfied and that the licensee's request to use the 2007 Edition, 2008 Addenda of the ASME Code Section XI for Examination Categories B-L-1, B-M-1, and C-G is acceptable.

4.0 CONCLUSION

Based on the above, the NRC staff concludes that the use of a subsequent edition and addenda of the ASME Code, Section XI requirements is acceptable. Accordingly, the NRC staff concludes that the licensee has adequately addressed all of the regulatory requirements set forth in 10 CFR 50.55a(g)(4)(iv). Therefore, the NRC staff approves the use of the 2007 Edition, 2008 Addenda of the ASME Code Section XI for Examination Categories B-L-1, B-M-1, and C-G at Palo Verde for the duration of the third 10-year ISI interval, which ends July 17, 2018, for Unit 1, March 17, 2017, for Unit 2, and January 10, 2018, for Unit 3.

All other requirements of the ASME Code for which relief has not been specifically requested and authorized remain applicable, including a third-party review by the Authorized Nuclear Inservice Inspector.

Principal Contributor: M. Audrain

Date: September 18, 2012

R. Edington

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All other requirements of the ASME Code for which relief has not been specifically requested and authorized remain applicable, including a third-party review by the Authorized Nuclear Inservice Inspector.

Sincerely,

/RA/

Michael T. Markley, Chief
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. STN 50-528, STN 50-529,
and STN 50-530

Enclosure:
Safety Evaluation

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