November 19, 2004

Mr. Gregg R. Overbeck
Senior Vice President, Nuclear
Arizona Public Service Company
P. O. Box 52034
Phoenix, AZ 85072-2034

SUBJECT: CORRECTION TO APPROVAL LETTER FOR RELIEF REQUEST NO. 30 (TAC NOS. MC5080, MC5081, AND MC5082)

Dear Mr. Overbeck:

On November 19, 2004, the Commission issued its approval letter for Relief Request No. 30, requested by Arizona Public Service Company in its letter dated November 11, 2004. The approval was for an alternative to American Society of Mechanical Engineers Boiler and Pressure Vessel Code Case 1361-2, "Socket Welds, Section III," to allow a slightly larger diametral clearance between the replacement pressurizer heater sleeves and the heater sheaths.

Based on conversations with your staff, we are re-issuing the first two pages of the safety evaluation to remove references to mid-wall weld repairs associated with the pressurizer half-sleeve repairs activities. The areas of change are indicated by marginal lines. These references were related to the background discussion of the repair activities, and were not germane to the staff's decision to approve the relief request. We apologize for any inconvenience this may have caused.

Sincerely,

/RA/

Mel B. Fields, Senior Project Manager, Section 2
Project Directorate IV
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

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

Enclosure: Safety Evaluation (Pages 1 and 2)

cc w/encl: See next page

November 19, 2004

Mr. Gregg R. Overbeck
Senior Vice President, Nuclear
Arizona Public Service Company
P. O. Box 52034
Phoenix, AZ 85072-2034

SUBJECT: CORRECTION TO APPROVAL LETTER FOR RELIEF REQUEST NO. 30 (TAC NOS. MC5080, MC5081, AND MC5082)

Dear Mr. Overbeck:

On November 19, 2004, the Commission issued its approval letter for Relief Request No. 30, requested by Arizona Public Service Company in its letter dated November 11, 2004. The approval was for an alternative to American Society of Mechanical Engineers Boiler and Pressure Vessel Code Case 1361-2, "Socket Welds, Section III," to allow a slightly larger diametral clearance between the replacement pressurizer heater sleeves and the heater sheaths.

Based on conversations with your staff, we are re-issuing the first two pages of the safety evaluation to remove references to mid-wall weld repairs associated with the pressurizer half-sleeve repairs activities. The areas of change are indicated by marginal lines. These references were related to the background discussion of the repair activities, and were not germane to the staff's decision to approve the relief request. We apologize for any inconvenience this may have caused.

Sincerely,
/RA/

Mel B. Fields, Senior Project Manager, Section 2
Project Directorate IV
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

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

Enclosure: Safety Evaluation (Pages 1 and 2)

cc w/encl: See next page
DISTRIBUTION:

PUBLIC	RidsNrrPMMFields	GHill (6)
PDIV-2 r/f	RidsNrrLADBaxley	KManoly
RidsNrrLpdivHBerkow	RidsOgcRp	JFair
RidsNrrLpdiv2RGramm	RidsAcrsAcnwMailCenter	JDixon-Herrity, EDO

RidsRgn4MailCenter (SSchwind)

ACCESSION NO: ML043270626 Nrr-028

OFFICE	PDIV-2/PM	PDIV-1/LA	PDIV-2/SC
NAME	MFields	DBaxley	RGramm
DATE	11/19/04	11/19/04	11/19/04

OFFICIAL RECORD COPY

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

INSERVICE INSPECTION PROGRAM RELIEF REQUEST NO. 30

ARIZONA PUBLIC SERVICE COMPANY, ET AL.

PALO VERDE NUCLEAR GENERATING STATION, UNITS 1, 2, AND 3

DOCKET NOS. STN 50-528, STN 50-529, AND STN 50-530

1.0 INTRODUCTION

By letter dated November 11, 2004, Arizona Public Service Company (APS or the licensee) submitted Relief Request No. 30, requesting NRC approval of an alternative to an American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (Code) Case requirement for the Palo Verde Nuclear Generating Station (Palo Verde), Units 1, 2, and 3. The request for relief is from Code Case 1361-2, "Socket Welds, Section III," to allow a slightly larger diametral clearance between the replacement pressurizer heater sleeves and the heater sheaths. This request is associated with the pressurizer half-sleeve weld repairs at all three units. These repairs were completed for Unit 2 during its fall 2003 refueling outage, are ongoing during the fall 2004 refueling outage for Unit 3, and are scheduled for the fall 2005 refueling outage for Unit 1. The relief is requested for the remainder of plant life at the three units.

2.0 BACKGROUND

The pressurizer lower head, to which the heater sleeves are attached, is manufactured from SA-533, Grade B, Class 1 low alloy steel. The pressurizer in each unit has 36 heater sleeves. Each sleeve is a tube having nominal 1.66 inch outside diameter and 0.192 inch wall thickness, and is attached to the lower pressurizer head by a partial penetration weld (J-groove weld) made at the pressurizer inside surface. The original sleeves are made from Alloy 600 material, a nickel-based alloy, which has been found to be susceptible to primary water stress corrosion cracking (PWSCC). The attachment weld is made with Alloy 82/182 material which is a nickel-based alloy and is susceptible to PWSCC also. There is an overlay on the inside surface of the pressurizer at the intersection of the sleeve and penetration to reinforce the pressurizer wall. The heater is inserted into the sleeve and is welded (fillet weld) to the sleeve.

Replacement of these sleeves by excavating the original attachment weld and then re-welding new full-length sleeves is not practical due to inaccessibility of the pressurizer vessel internal surface and high radiation field associated with the pressurizer. Therefore, APS proposes the half-sleeve replacement method. The lower half of the original sleeve is removed in two independent steps. First, the original sleeve is cut approximately 1 inch below the bottom surface of the pressurizer using a grinder. Second, the sleeve is severed within the penetration, approximately mid-wall, using a circular cutting disk, and is then removed. The half-length replacement Alloy 690 sleeve is then inserted into the penetration by slip fit. The top

half of the original sleeve and associated attachment weld will remain in service. There will be a gap between the original half-sleeve and the new half-sleeve in the penetration.

APS stated that the Palo Verde, Unit 1, pressurizer sleeves have not had any repairs; however, as a preventive measure, APS will perform half-sleeve replacement on all 36 heater sleeves in Palo Verde, Unit 1, in the fall of 2005. The Palo Verde, Unit 2, pressurizer sleeves have been repaired using the half-sleeve replacement method and no additional repairs are necessary. APS will perform half-sleeve replacement on all 36 heater sleeves in Palo Verde, Unit 3, in the fall of 2004.

The Palo Verde, Unit 2, heater sleeve replacement project (fall 2003) identified challenges in sleeve alignment and subsequent installation of heaters. As a result, a significantly longer duration than originally projected was required for sleeve welding. In an attempt to resolve the heater insertion challenges, APS increased the inside diameter of the replacement sleeve from 1.273 inch to 1.300 inch. The heater insertion challenges were essentially resolved utilizing the increased sleeve diameter. Ultimately, less radiation dose was incurred since substantially less time was spent by licensee personnel on the working platform.

The Unit 3 heater sleeve replacement project (fall 2004) incorporated the same heater sleeve inside diameter (1.300 inch). All heaters were inserted into the pressurizer on the initial attempt without rework and, therefore, there was no additional dose to personnel on the working platform due to rework.

The licensee recently determined that increasing the inside diameter of the replacement sleeves adversely impacted compliance with an ASME Section III Code Case.

3.0 REGULATORY REQUIREMENTS

The inservice inspection (ISI) of the ASME Code Class 1, 2, and 3 components in nuclear plants is to be performed in accordance with the ASME Code Section XI and applicable edition and addenda as required by 50.55a(g) of Title 10 of the *Code of Federal Regulations* (10 CFR), except where specific relief has been granted by the Commission pursuant to 10 CFR 50.55a(g)(6)(i). The regulation at 10 CFR 50.55a(a)(3) states: "Proposed alternatives to the requirements of paragraphs (c), (d), (e), (f), (g), and (h) of this section or portions thereof may be used when authorized by the Director of the Office of Nuclear Reactor Regulation. The applicant shall demonstrate that: (i) The proposed alternatives would provide an acceptable level of quality and safety, or (ii) Compliance with the specified requirements of this section would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety." The second 10-year ISI interval code for Palo Verde, Units 1, 2, and 3, is the ASME Code, Section XI, 1992 Edition, 1992 Addenda.

The 1992 Edition, 1992 Addenda, of the ASME Code, Section XI, IWA-4120(a) states that: "Repairs shall be performed in accordance with the Owner's Design Specification and the original Construction Code of the component or system. Later Editions and Addenda of the Construction Code or of Section III, either in their entirety or portions thereof, and Code Cases may be used." The construction code for the Palo Verde units is ASME Section III, 1971 Edition, and 1973 Winter Addenda, and the installation code is ASME Section III, 1974 Edition, and 1975 Winter Addenda.

cc:
Mr. Steve Olea
Arizona Corporation Commission
1200 W. Washington Street
Phoenix, AZ 85007

Douglas Kent Porter
Senior Counsel
Southern California Edison Company
Law Department, Generation Resources
P.O. Box 800
Rosemead, CA 91770

Senior Resident Inspector
U.S. Nuclear Regulatory Commission
P. O. Box 40
Buckeye, AZ 85326

Regional Administrator, Region IV
U.S. Nuclear Regulatory Commission
Harris Tower & Pavillion
611 Ryan Plaza Drive, Suite 400
Arlington, TX 76011-8064

Chairman
Maricopa County Board of Supervisors
301 W. Jefferson, 10th Floor
Phoenix, AZ 85003

Mr. Aubrey V. Godwin, Director
Arizona Radiation Regulatory Agency
4814 South 40 Street
Phoenix, AZ 85040

Mr. M. Dwayne Carnes, Director
Regulatory Affairs/Nuclear Assurance
Palo Verde Nuclear Generating Station
P.O. Box 52034
Phoenix, AZ 85072-2034

Mr. Hector R. Puente
Vice President, Power Generation
El Paso Electric Company
310 E. Palm Lane, Suite 310
Phoenix, AZ 85004

Mr. John Taylor
Public Service Company of New Mexico
2401 Aztec NE, MS Z110
Albuquerque, NM 87107-4224

Ms. Cheryl Adams
Southern California Edison Company
5000 Pacific Coast Hwy Bldg DIN
San Clemente, CA 92672

Mr. Robert Henry
Salt River Project
6504 East Thomas Road
Scottsdale, AZ 85251

Mr. Jeffrey T. Weikert
Assistant General Counsel
El Paso Electric Company
Mail Location 167
123 W. Mills
El Paso, TX 79901

Mr. John Schumann
Los Angeles Department of Water & Power
Southern California Public Power Authority
P.O. Box 51111, Room 1255-C
Los Angeles, CA 90051-0100

Brian Almon
Public Utility Commission
William B. Travis Building
P. O. Box 13326
1701 North Congress Avenue
Austin, TX 78701-3326