February 19. 2010

LICENSEE: Arizona Public Service Company

FACILITY: Palo Verde Nuclear Generating Station, Units 1, 2, and 3

SUBJECT: SUMMARY OF TELEPHONE CONFERENCE CALL HELD ON JANUARY 28, 2010, BETWEEN THE U.S. NUCLEAR REGULATORY COMMISSION AND ARIZONA PUBLIC SERVICE COMPANY, CONCERNING DRAFT REQUEST FOR ADDITIONAL INFORMATION PERTAINING TO THE PALO VERDE NUCLEAR GENERATING STATION, UNITS 1, 2, AND 3, LICENSE RENEWAL APPLICATION

The U.S. Nuclear Regulatory Commission (the staff) and representatives of Arizona Public Service Company (the applicant) held a telephone conference call on January 28, 2010, to discuss and clarify the staff's draft request for additional information (RAI) concerning the Palo Verde Nuclear Generating Station, Units 1, 2, and 3, license renewal application. The telephone conference call was useful in clarifying the intent of the staff's draft RAI.

Enclosure 1 provides a listing of the participants and Enclosure 2 contains a listing of the draft RAI discussed with the applicant, including a brief description on the status of the items.

The applicant had an opportunity to comment on this summary.

/RA/

Lisa M. Regner, Senior Project Manager
Projects Branch 2
Division of License Renewal
Office of Nuclear Reactor Regulation

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

Enclosures:
As stated

cc w/encls: See next page

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Enclosures:
As stated

cc w/encls: See next page

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NAME	LRegner	DFigueroa	DWrona	LRegner (Signature)
DATE	02/17/10	02/04/10	02/18/10	02/19/10

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Memorandum to Arizona Public Service Company from Lisa M. Regner dated February 19, 2010

SUBJECT: SUMMARY OF TELEPHONE CONFERENCE CALL HELD ON JANUARY 28, 2010, BETWEEN THE U.S. NUCLEAR REGULATORY COMMISSION AND ARIZONA PUBLIC SERVICE COMPANY, CONCERNING DRAFT REQUEST FOR ADDITIONAL INFORMATION PERTAINING TO THE PALO VERDE NUCLEAR GENERATING STATION, UNITS 1, 2, AND 3, LICENSE RENEWAL APPLICATION

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TELEPHONE CONFERENCE CALL
PALO VERDE NUCLEAR GENERATING STATION, UNITS 1, 2, AND 3
LICENSE RENEWAL APPLICATION

LIST OF PARTICIPANTS
JANUARY 28, 2010

PARTICIPANTS	**AFFILIATIONS**
Lisa Regner	U.S. Nuclear Regulatory Commission (NRC)
Robert Sun	NRC
Wilkins Smith	NRC
Bob Jackson	Advanced Technologies and Laboratories (ATL) International, Inc.
Wayne Pavanich	ATL
Angela Krainik	Arizona Public Service Company (APS)
Glenn Michael	APS
Richard Badsgard	APS
Eric Blocher	Strategic Teaming and Resource Sharing (STARS) Alliance
David Lipinski	STARS
Gordon Chen	STARS

ENCLOSURE 1

DRAFT REQUESTS FOR ADDITIONAL INFORMATION
PALO VERDE NUCLEAR GENERATING STATION, UNITS 1, 2, AND 3
LICENSE RENEWAL APPLICATION

JANUARY 28, 2010

The U.S. Nuclear Regulatory Commission (the staff) and representatives of Arizona Public Service Company (the applicant) held a telephone conference call on January 28, 2010, to discuss and clarify the following draft request for additional information (RAI) concerning the Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3, license renewal application (LRA).

DRAFT RAI 3.x.1-1

Background:

Table 3.2.1 of the LRA, item 3.2.1.21 states, "Not applicable. PVNGS has no in-scope high-strength steel closure bolting exposed to air with steam or water leakage in the Engineered Safety Features system."

The discussion in item 3.2.1.22 states, "Not applicable. PVNGS has no closure bolting in Engineered Safety Features systems that is exposed to an environment of water [*sic*] with steam or water leakage, so the applicable NUREG-1801 line was not used."

Table 3.3.1 of the LRA, item 3.3.1.42 states, "Not applicable. PVNGS has no in-scope steel closure bolting exposed to air with steam or water leakage in the auxiliary systems, so the applicable NUREG-1801 line was not used."

The discussion in item 3.3.1.44 states, "Not applicable. PVNGS has no in-scope steel closure bolting exposed to condensation in the compressed air system, so the applicable NUREG-1801 line was not used."

Issue:

The discussions in the LRA items described above are not sufficient for the staff to determine whether there is no in-scope closure bolting used in these systems or whether the in-scope closure bolting is used, but these bolts are not exposed to an environment of air with steam or water leakage.

The discussion in LRA item 3.2.1.22 appears to contain a typographic error, with the word "water" being used where the word "air" is intended.

Request:

- Clarify whether the discussion in 3.2.1.21 means a) that no high strength closure bolting is used or b) that high strength closure bolting is used, but is not in an environment of air with steam or water leakage.

- If high strength closure bolting is used, then, provide the basis for your claim that the high strength closure bolting cannot be in an environment of air with steam or water leakage and explain whether monitoring of the high strength bolting is needed to manage the potential aging effect of cracking.

- Verify if there is a typographic error in 3.2.1.22 and provide the basis for your claim that closure bolting in the Engineered Safety Features (ESF) systems cannot be in an environment of air with steam or water leakage.

- Provide the basis for your claim in Table 3.3.1, item 3.3.1.42 that in-scope steel closure bolting will not be exposed to air with steam or water leakage in the auxiliary systems.

- Provide the basis for your claim in Table 3.3.1, item 3.3.1.44, that in-scope steel closure bolting will not be exposed to condensation in the compressed air system.

Discussion: Based on the discussion with the applicant, the staff will revise the question as follows. The revised question will be sent as a formal RAI.

DRAFT RAI 3.3-1

Background:

Table 3.2.1 of the LRA, item 3.2.1.21 states, "Not applicable. PVNGS has no in-scope high-strength steel closure bolting exposed to air with steam or water leakage in the Engineered Safety Features system."

The discussion in item 3.2.1.22 states, "Not applicable. PVNGS has no closure bolting in Engineered Safety Features systems that is exposed to an environment of water [*sic*] with steam or water leakage, so the applicable NUREG-1801 line was not used."

Table 3.3.1 of the LRA, item 3.3.1.42 states, "Not applicable. PVNGS has no in-scope steel closure bolting exposed to air with steam or water leakage in the in the auxiliary systems, so the applicable NUREG-1801 line was not used."

The discussion in item 3.3.1.44 states, "Not applicable. PVNGS has no in-scope steel closure bolting exposed to condensation in the compressed air system, so the applicable NUREG-1801 line was not used."

Issue:

The discussion in the LRA, item 3.2.1.21, is not sufficient for the staff to determine whether there is no in-scope high-strength closure bolting used in the Engineered Safety Feature (ESF) systems or whether high-strength closure bolting is used but these bolts are not exposed to an environment of air with steam or water leakage.

The discussions in the LRA, items 3.2.1.22, 3.3.1.42, and 3.3.1.44, are not sufficient for the staff to determine why the environments identified in the Generic Aging Lessons Learned (GALL) Report are not applicable for steel closure bolting in the ESF and auxiliary systems.

Request:

a) For Table 3.2.1, item 3.2.1.21, clarify whether high strength closure bolting is used in ESF systems.

b) For Table 3.2.1, item 3.2.1.22 and for Table 3.3.1, items 3.3.1.42 and 3.3.1.44, clarify the basis for your claim that the environments listed in the GALL Report are not applicable for steel closure bolting in ESF or auxiliary systems.

DRAFT RAI 3.3.2-1

Background:

Table 3.3.2-2 of the LRA, page 3.3-76, includes two aging management review (AMR) line items for closure bolting made of stainless steel in an environment of borated water leakage. For one of these line items, the aging effect requiring management (AERM) is identified as loss of preload which is managed by the Bolting Integrity AMP (B2.1.7); for the other of these line items, the AERM is identified as "none," and no aging management program (AMP) is recommended. There also are similar pairs of AMR line items for closure bolting in other LRA tables where for identical materials and environments one AMR line item identifies the AERM as loss of preload managed by the Bolting Integrity AMP and the other line identifies the AERM as "none," with no AMP recommended. These occur in LRA Table 3.3.2-4, page 3.3-89 (stainless steel, plant indoor air); Table 3.3.2-5, page 3.3-101 (stainless steel, plant indoor air); Table 3.3.2-7, page 3.3-107 (copper alloy, plant indoor air); Table 3.3.2-8, page 3.3-114 (stainless steel, borated water leakage); and Table 3.3.2-9, page 3.3-122 (copper alloy, plant indoor air).

Issue:

Because one of the AMR line items identifies the aging effect of loss of preload to be managed by the Bolting Integrity program and the other AMR line, with the same component, material and environment combination, states that there is no aging effect, the two AMR result lines appear to contradict each other.

Request:

Explain why the AMR line items discussed above specify differing results for closure bolting for the same material and environment.

Discussion: The applicant indicated that the question is clear. This draft question will be sent in a formal RAI, but the question will be re-numbered as 3.3-2.

DRAFT RAI 3.3.2.2.4-1

Background:

LRA Sections 3.3.2.2.4.1 Stainless steel PWR non-regenerative heat exchanger components exposed to borated water, 3.3.2.2.4.2 Stainless steel PWR regenerative heat exchanger components exposed to borated water, and 3.3.2.2.4.3 Stainless steel pump casings in the chemical and volume control system state that the Water Chemistry program (B2.1.2) and the One-Time Inspection program (B2.1.16) will manage cracking due to stress corrosion cracking (SSC) and cyclic loading for the stainless steel charging and volume control system (CVCS) letdown (non-regenerative) heat exchanger components, CVCS and nuclear sampling systems regenerative heat exchanger components and stainless steel pump casings exposed to treated borated water. GALL Items VII.E1-5, VII.E1-7, VII.E1-9 recommend AMP XI.M2 "Water Chemistry" and a plant-specific program to manage cracking due to SSC and cyclic loading for these components.

Issue:

The staff notes that various heat exchangers and pump casing will be subjected to different cyclic loads depending on operating history and therefore each component would need a separate inspection to detect cracking. One-time inspection uses representative sampling to detect aging of components with similar environments. Although all these components are subjected to a treated borated water environment, the cyclic loading history will be different for each component. It is not clear to the staff how the heat exchanger and pump casing one-time inspection program accounts for cyclic loading history for the various components.

Request:

Explain how the heat exchanger and pump casing one-time inspection program accounts for the cyclic loading history for the various components.

Discussion: Based on the discussion with the applicant, the staff deleted the question.

DRAFT RAI 3.3.2.2.5–1

Background:

Section 3.3.2.2.5.1 of the LRA states that the External Surfaces Monitoring Program will manage hardening and loss of strength from elastomer degradation for elastomer external surfaces exposed to plant indoor air (uncontrolled) in locations where the ambient temperature cannot be shown to be less than 95 degrees Fahrenheit. It also states that the Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components Program will manage hardening and loss of strength from elastomer degradation for elastomer internal surfaces exposed to plant indoor air (uncontrolled) in locations where the ambient temperature cannot be shown to be less than 95 degrees Fahrenheit.

Issue:

In Table XI.D of the GALL Report, the temperature of 95 degrees Fahrenheit is identified as a temperature limit below which any thermal aging of organic materials can be considered to be insignificant over the period of extended operation. However, being below this temperature limit does not preclude hardening and loss of strength of due to other aging mechanisms such as exposure to ozone, oxidation, and radiation.

Request:

- Considering potential aging mechanisms other than thermal aging of organic material, provide a technical basis for using a lower temperature limit of 95 degrees Fahrenheit to select which in-scope elastomer components will be managed for the aging effect of hardening and loss of strength.

- Identify which plant systems contain in-scope elastomer components that will be inspected using this criteria and which plant systems will use this criteria to eliminate inspection of all in-scope elastomer components.

Discussion: Based on the discussion with the applicant, the staff revised the request of this question as follows. The revised question will be sent as a formal RAI.

DRAFT RAI 3.3.2.2.5–1

Background:

Section 3.3.2.2.5.1 of the LRA states that the External Surfaces Monitoring Program will manage hardening and loss of strength from elastomer degradation for elastomer external surfaces exposed to plant indoor air (uncontrolled) in locations where the ambient temperature cannot be shown to be less than 95 degrees Fahrenheit. It also states that the Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components Program will manage hardening and loss of strength from elastomer degradation for elastomer internal surfaces exposed to plant indoor air (uncontrolled) in locations where the ambient temperature cannot be shown to be less than 95 degrees Fahrenheit.

Issue:

In Table XI.D of the GALL Report, the temperature of 95 degrees Fahrenheit is identified as a temperature limit below which any thermal aging of organic materials can be considered to be insignificant over the period of extended operation. However, being below this temperature limit does not preclude hardening and loss of strength due to other aging mechanisms such as exposure to ozone, oxidation, and radiation.

Request:

Identify which plant systems contain in-scope elastomer components that will be inspected using this criteria and which plant systems will use this criteria to eliminate inspection of all in-scope elastomer components.

Palo Verde Nuclear Generating Station,
Units 1, 2, and 3

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