



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

November 13, 2015

LICENSEE: Arizona Public Service Company

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

SUBJECT: SUMMARY OF SEPTEMBER 22, 2015, PUBLIC MEETING WITH ARIZONA PUBLIC SERVICE COMPANY REGARDING UPCOMING LICENSE AMENDMENT REQUEST ON DEGRADED VOLTAGE RELAY SET POINTS FOR PALO VERDE NUCLEAR GENERATING STATION, UNITS 1, 2, AND 3 (TAC-NOS. MF6603, MF6604, AND MF6605)

On September 22, 2015, the U.S. Nuclear Regulatory Commission (NRC) staff hosted a Category 1 public meeting with representatives from Arizona Public Service Company (APS, the licensee) at NRC Headquarters, Three White Flint North, 11601 Landsdown Street, Rockville, Maryland. The purpose of this meeting was to discuss the upcoming license amendment request (LAR) to revise Technical Specifications (TS) Surveillance Requirement (SR) 3.3.7.3(a) to shorten the existing degraded voltage protection relay time delay for Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3. The meeting notice and agenda, dated September 10, 2015, are available in the Agencywide Documents Access and Management System (ADAMS) at Accession No. ML15253A358. The licensee provided presentation slides, which are available at ADAMS Accession No. ML15259A584. The Enclosure contains the public meeting attendance list.

The licensee covered five main topics during the public meeting, including the purpose of the LAR, information on the PVNGS switchyard, a regulatory summary of the LAR, details about the degraded voltage relay (DVR) time delay design change, and information on scheduling.

The LAR is a result of an unresolved item from an NRC-led component design bases inspection in July 2009, which was recorded in an inspection report (IR) dated November 19, 2009 (ADAMS Accession No. ML093240524). The unresolved item was closed after an NRC-led focused baseline inspection in 2014. This was documented in an IR dated November 12, 2014 (ADAMS Accession No. ML14317A308), and in the licensee's commitment to change its time delay set point by amending its DVR TSs dated September 26, 2014 (ADAMS Accession No. ML14276A032). The licensee stated that the DVR proposed in the LAR has a shorter time delay, and is, therefore, more consistent with industry norms. The licensee noted that the calculations associated with the design modification are not complete, and the design modification still needs to be reviewed by onsite and offsite review committees.

The licensee gave an overview of the switchyard at PVNGS. Salt River Project Agricultural Improvement and Power District owns the switchyard and is responsible for power distribution. The licensee discussed the local transmission network and described the electrical set-up at PVNGS. The licensee noted that the TS require the licensee to have two independent offsite power sources.

The licensee then summarized the regulatory aspects of the LAR. The licensee gave a brief overview of the regulatory timeline, as seen on slide 9 of the licensee's presentation. The proposed LAR will change TS 3.3.7, "Diesel Generator (DG) – Loss of Voltage Start (LOVS)," specifically SR 3.3.7.3, which requires the licensee to perform a channel functional test in accordance with its Surveillance Frequency Control Program. The licensee also mentioned TS 3.8.1, "AC [Alternating Current] Sources – Operating," Condition G, which is entered when one or more required offsite circuit(s) do not meet required capability. The licensee stated that TS 3.8.1, Condition G, is entered when the transmission operator has run an analysis and determined the grid does not meet the required capability.

Next, the licensee discussed the design changes proposed in the LAR in more detail. The new DVR will include a two-stage timer: a short-stage timer for accident conditions (5 to 9 seconds) and a long-stage timer for non-accident conditions, if no safety injection actuation signal (SIAS) signal is present (28.6 to 44 seconds). The licensee noted that the proposed time delay is consistent with its accident analysis, including the 10-second start time of the emergency diesel generators (EDGs). The licensee stated that if there is not a SIAS, the time delay will be 28.6 to 44 seconds. The longer time delay permits the reactor coolant pumps to start without concern for inadvertent transfer of Class 1E bus to the EDGs. The NRC staff questioned the licensee as to why the new DVR set points were chosen and why the new values are safe and acceptable. The NRC requested the licensee to include information on SIAS actuation and an explanation of why the safety analysis is not affected by this new design change in the LAR. The NRC staff also asked for information on the performance of the DVR model. The licensee stated that the analytical limit was reverse engineered from the current TS value. The NRC staff expressed interest in seeing the set point calculation for the DVR voltage and time delays.

The licensee noted that the DVR voltage allowable values will change if the LAR is approved. The licensee discussed the proposed relocation of TS 3.8.1, Condition G, from the TS to the Technical Requirements Manual (TRM), in order to make the PVNGS TS more consistent with Revision 4.0 of NUREG-1432, Volume 1, "Standard Technical Specifications, Combustion Engineering Plants," April 2012 (ADAMS Accession No. ML12102A165). The NRC staff pointed out that the licensee needs to provide a plant-specific basis to support moving Condition G from the TS to the TRM. NRC staff asked if the licensee plans to submit an LAR to adopt Technical Specifications Task Force (TSTF)-493, "Clarify Application of Setpoint Methodology for LSSS [Limiting Safety System Setting] Functions," in the future. The licensee stated its plan to submit the TSTF-493 LAR separately next year. The NRC staff encouraged the licensee to look at Exelon Generation's response to NRC's request for additional information for Byron Station and Braidwood Station dated April 30, 2015 (ADAMS Accession No. ML15120A501), specifically question 2 from the Instrumentation and Controls Branch on page 11 on Attachment 1. The NRC staff also encouraged the licensee to review an amendment regarding engineered safety features actuation system instrumentation at Shearon Harris Nuclear Power Plant dated June 30, 2015 (ADAMS Accession No. ML15163A056). The NRC staff asked if the licensee had considered open-phase conditions in the development of the LAR. The licensee stated it is not addressing it at this time.

Lastly, the licensee discussed the proposed schedule for the LAR. The licensee is planning to submit the LAR around the beginning of 2016, and will request a 12- to 18-month review by NRC staff. The licensee plans to use two sets of TS pages during the transition, one for prior to DVR modification, and another for after DVR modification. The NRC staff asked the licensee to

clarify the impact of the proposed LAR on operator training and licensing. The licensee stated that its operators are licensed and cross-trained on all three units. Thus, all operators will be trained to recognize which units and trains have had the modification installed, and which ones have not. The licensee also stated that the simulator will not be affected by the proposed modification.

PVNGS has two trains per unit that need to be modified. The licensee has not decided if it will perform modifications on one or two trains per outage. If the licensee modified one train per outage, the transition would take 3 years to complete. After the transition is complete, the licensee plans to submit an administrative LAR to remove the set of TS pages that relate to "prior to DVR modifications."

No regulatory decisions were made at the meeting. One member of the public attended the meeting in person. There were no public comments. The NRC did not receive public meeting feedback forms.

If you have any questions, please contact me at (301) 415-1233 or via e-mail at [Margaret.Watford@nrc.gov](mailto:Margaret.Watford@nrc.gov).



Margaret M. Watford, Project Manager  
Plant Licensing Branch IV-1  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

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

Enclosure:  
List of Attendees

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LIST OF ATTENDEES

SEPTEMBER 22, 2015, PUBLIC MEETING WITH ARIZONA PUBLIC SERVICE COMPANY

REGARDING UPCOMING LICENSE AMENDMENT REQUEST

ON DEGRADED VOLTAGE RELAY SET POINTS

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

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

| <u>NAME</u>        | <u>ORGANIZATION</u>                      |
|--------------------|--|
| Margaret Watford   | U.S. Nuclear Regulatory Commission (NRC) |
| Subinoy Mazumdar   | NRC                                      |
| Victoria Huckabay  | NRC                                      |
| Rich Stattel       | NRC                                      |
| Roy Mathew         | NRC                                      |
| Jake Zimmerman     | NRC                                      |
| Khadijah West      | NRC                                      |
| Summer Sun         | NRC                                      |
| George Lapinsky*   | NRC                                      |
| Gurcharan Matharu* | NRC                                      |
| George Andrews     | Arizona Public Service Company (APS)     |
| Dennis Bence       | APS                                      |
| Art Amoroso        | APS                                      |
| Kyle Wiedeman      | APS                                      |
| Kent Bjornn        | APS                                      |
| Tom Weber          | APS                                      |
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| Carl Stephenson*   | APS                                      |
| Steven Beckman*    | APS                                      |
| Alex Cullu         | Curtiss-Wright                           |

\* participated via telephone

Enclosure

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/RA/

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**ADAMS Accession Nos.:** Mtg Notice ML15253A358; Mtg Slides ML15259A584; Mtg Summary ML15306A235  
\*concurrence by email

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| DATE   | 11/2/15            | 11/2/15            | 11/3/15            | 11/12/15           | 11/6/15         |
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| NAME   | CJackson           | SWeerakkody        | RPascarelli        | MWatford           |                 |
| DATE   | 11/6/15            | 11/3/15            | 11/13/15           | 11/13/15           |                 |

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