



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION RELATED

TO AMENDMENT NO. **X** TO

RENEWED FACILITY OPERATING LICENSE NOS. NPF-41, NPF-51 AND NPF-74

ARIZONA PUBLIC SERVICE COMPANY

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

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

1.0 INTRODUCTION

By application dated December 27, 2019 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML18361A845), Arizona Public Service Company (APS, the licensee) requested changes to the Technical Specifications (TS) for Palo Verde Nuclear Generating Station Units 1, 2, and 3 (PVNGS). Specifically, the licensee requested changes consistent with Technical Specifications Task Force (TSTF) Traveler TSTF-529, Revision 4, "Clarify Use and Application Rules" dated February 29, 2016 (ADAMS Accession No. ML16062A271).

The licensee proposed changes to PVNGS's TS Sections 1.3, "Completion Times," and 3.0, "LCO [limiting condition for operation] Applicability" and "SR [surveillance requirement] Applicability." The proposed changes clarify and expand the use and application of PVNGS's TS usage rules.

2.0 REGULATORY EVALUATION

2.1 Description of Subject TS Sections

PVNGS TS Section 1.3, "Completion Times," currently describes completion times as follow:

The completion time is the amount of time allowed for completing a Required Action. It is referenced to the time of discovery of a situation (e.g., inoperable equipment or variable not within limits) that requires entering an ACTIONS Condition unless otherwise specified, providing the unit is in a MODE or specified condition stated in the Applicability of the LCO.

Required Actions must be completed prior to the expiration of the specified Completion Time. An ACTIONS Condition remains in effect and the Required Actions apply until the Condition no longer exists or the unit is not within the LCO Applicability.

If situations are discovered that require entry into more than one Condition at a time within a single LCO (multiple Conditions), the Required Actions for each Condition must be performed within the associated Completion Time. When in multiple Conditions, separate Completion Times are tracked for each Condition starting from the time of discovery of the situation that required entry into the Condition.

Once a Condition has been entered, subsequent divisions, subsystems, components, or variables expressed in the Condition, discovered to be inoperable or not within limits, will not result in separate entry into the Condition, unless specifically stated. The Required Actions of the Condition continue to apply to each additional failure, with Completion Times based on initial entry into the Condition.

LCO 3.0.1 through LCO 3.0.9 establish the general requirements applicable to all specifications and apply at all times, unless otherwise stated. Similarly, SR 3.0.1 through SR 3.0.4 establish the general requirements for surveillances that are applicable to all specifications and apply at all times, unless otherwise stated.

2.2 Description of TS Changes

The proposed change will revise PVNGS TS Sections 1.3, "Completion Times," and 3.0, "LCO Applicability" and "SR Applicability." The proposed changes are described in more detail below.

2.2.1 Proposed Changes to "Time of Discovery"

PVNGS TS Section 1.3, "Description," currently states, in part, the following (with emphasis added on "time of"):

The Completion Time is the amount of time allowed for completing a Required Action. It is referenced to the *time of* discovery of a situation (e.g., inoperable equipment or variable not within limits) that requires entering an ACTIONS Condition unless otherwise specified, providing the unit is in a MODE or specified condition stated in the Applicability of the LCO.

PVNGS TS Section 1.3, "Description," also currently states, in part, the following (with emphasis added on "time of"):

If situations are discovered that require entry into more than one Condition at a time within a single LCO (multiple Conditions), the Required Actions for each Condition must be performed within the associated Completion Time. When in multiple Conditions, separate Completion Times are tracked for each Condition starting from the *time of* discovery of the situation that required entry into the Condition.

The licensee's proposed changes to PVNGS TS Section 1.3 would delete "time of" from the previous statements and read as follow:

The Completion Time is the amount of time allowed for completing a Required Action. It is referenced to the discovery of a situation (e.g., inoperable equipment or variable not within limits) that requires entering an ACTIONS Condition unless otherwise specified, providing the unit is in a MODE or specified condition stated in the Applicability of the LCO.

[...]

If situations are discovered that require entry into more than one Condition at a time within a single LCO (multiple Conditions), the Required Actions for each Condition must be performed within the associated Completion Time. When in multiple Conditions, separate Completion Times are tracked for each Condition starting from the discovery of the situation that required entry into the Condition.

The adequacy of this change is discussed in Section 3.1.1.1.

2.2.2 Proposed Addition to "Completion Times"

The licensee proposed to add the following paragraph to PVNGS TS Section 1.3 of the TS under Description:

Unless otherwise specified, the Completion Time begins when a senior licensed operator on the operating shift crew with responsibility for plant operations makes the determination that an LCO is not met and an ACTIONS Condition is entered. The "otherwise specified" exceptions are varied, such as a Required Action Note or Surveillance Requirement Note that provides an alternative time to perform specific tasks, such as testing, without starting the Completion Time. While utilizing the Note, should a Condition be applicable for any reason not addressed by the Note, the Completion Time begins. Should the time allowance in the Note be exceeded, the Completion Time begins at that point. The exceptions may also be incorporated into the Completion Time. For example, LCO 3.8.1, "AC Sources - Operating," Required Action B.2, requires declaring required feature(s) supported by an inoperable diesel generator, inoperable when the redundant required feature(s) are inoperable. The Completion Time states, "4 hours from discovery of Condition B concurrent with inoperability of redundant required feature(s)." In this case the Completion Time does not begin until the conditions in the Completion Time are satisfied.

The proposed change augments the NRC staff's expectation that a senior licensed operator on the operating shift crew with responsibility for plant operations makes the determination that an LCO is not met and a Condition is entered.

The adequacy of this change is discussed in Section 3.1.1.2.

2.2.3 Proposed Addition of “Unless Otherwise Specified”

PVNGS TS Section 1.3, “Description,” currently states the following (with emphasis added on “unless otherwise specified”):

The Completion Time is the amount of time allowed for completing a Required Action. It is referenced to the time of discovery of a situation (e.g., inoperable equipment or variable not within limits) that requires entering an ACTIONS Condition unless otherwise specified, providing the unit is in a MODE or specified condition stated in the Applicability of the LCO.

The licensee proposed to add the following sentence right after the above statement to PVNGS TS Section 1.3, which contains the phrase “unless otherwise specified:”

Unless otherwise specified, the Completion Time begins when a senior licensed operator on the operating shift crew with responsibility for plant operations makes the determination that an LCO is not met and an ACTIONS Condition is entered.

In addition, the licensee proposed adding the phrase “unless otherwise specified” to the following two statements to PVNGS TS Section 1.3:

When in multiple Conditions, separate Completion Times are tracked for each Condition starting from the discovery of the situation that required entry into the Condition, unless otherwise specified.

and

The Required Actions of the Condition continue to apply to each additional failure, with Completion Times based on initial entry into the Condition, unless otherwise specified.

The adequacy of this change is discussed in Section 3.1.1.3.

2.2.4 Proposed Changes to LCO 3.0.4

PVNGS TS LCO 3.0.4 currently states:

When an LCO is not met, entry into a MODE or other specified condition in the Applicability shall only be made:

- a. When the associated ACTIONS to be entered permit continued operation in the MODE or other specified condition in the Applicability for an unlimited period of time;
- b. After performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering the MODE or other specified condition in the Applicability, and establishment of risk management actions, if appropriate; exceptions to this Specification are stated in the individual Specifications, or

- c. When an allowance is stated in the individual value, parameter, or other Specification.

The licensee proposed to clarify the b. statement above by placing the statement regarding exceptions in parenthesis and replacing the ending comma with a semicolon. The proposed TS LCO 3.0.4 would state the following:

When an LCO is not met, entry into a MODE or other specified condition in the Applicability shall only be made:

- a. When the associated ACTIONS to be entered permit continued operation in the MODE or other specified condition in the Applicability for an unlimited period of time;
- b. After performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering the MODE or other specified condition in the Applicability, and establishment of risk management actions, if appropriate (exceptions to this Specification are stated in the individual Specifications); or
- c. When an allowance is stated in the individual value, parameter, or other Specification.

The adequacy of this change is discussed in Section 3.1.2.

2.2.5 Proposed Changes to TS SR 3.0.3

PVNGS TS SR 3.0.3 currently states the following:

If it is discovered that a Surveillance was not performed within its specified Frequency, then compliance with the requirement to declare the LCO not met may be delayed, from the time of discovery, up to 24 hours or up to the limit of the specified Frequency, whichever is greater. This delay period is permitted to allow performance of the Surveillance. A risk evaluation shall be performed for any Surveillance delayed greater than 24 hours and the risk impact shall be managed.

If the Surveillance is not performed within the delay period, the LCO must immediately be declared not met, and the applicable Condition(s) must be entered.

When the Surveillance is performed within the delay period and the Surveillance is not met, the LCO must immediately be declared not met, and the applicable Condition(s) must be entered.

The licensee proposed to add the following to PVNGS TS LCO SR 3.0.3 (the additional sentence is underlined):

If it is discovered that a Surveillance was not performed within its specified Frequency, then compliance with the requirement to declare the LCO not met

may be delayed, from the time of discovery, up to 24 hours or up to the limit of the specified Frequency, whichever is greater. This delay period is permitted to allow performance of the Surveillance. The delay period is only applicable when there is a reasonable expectation the surveillance will be met when performed. A risk evaluation shall be performed for any Surveillance delayed greater than 24 hours and the risk impact shall be managed.

If the Surveillance is not performed within the delay period, the LCO must immediately be declared not met, and the applicable Condition(s) must be entered.

When the Surveillance is performed within the delay period and the Surveillance is not met, the LCO must immediately be declared not met, and the applicable Condition(s) must be entered.

The adequacy of this change is discussed in Section 3.1.3.

2.3 Regulatory Requirements, Licensing Information, Guidance Documents

The NRC staff considered the following regulatory requirements, guidance, and licensing information during its review of the proposed changes:

Paragraph 50.36(c) of 10 CFR requires TSs to include the following categories: (1) safety limits, limiting safety systems settings, and control settings; (2) limiting conditions for operation; (3) SRs; (4) design features; (5) administrative controls; (6) decommissioning; (7) initial notification; and (8) written reports. Section 50.36(c)(2) of 10 CFR states that “[l]imiting conditions for operation are the lowest functional capability or performance levels of equipment required for safe operation of the facility. When a limiting condition for operation of a nuclear reactor is not met, the licensee shall shut down the reactor or follow any remedial action permitted by the technical specifications until the condition can be met. When a limiting condition for operation of any process step in the system of a fuel reprocessing plant is not met, the licensee shall shut down that part of the operation or follow any remedial action permitted by the technical specifications until the condition can be met.” Section 50.36(c)(3) of 10 CFR states that “[s]urveillance requirements are requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the limiting conditions for operation will be met.”

The NRC staff’s guidance for review of the technical specifications is in Chapter 16, “Technical Specifications,” of NUREG-0800, “Standard Review Plan [(SRP)],” Revision 3, dated March 2010 (ADAMS Accession No. ML100351425). As described therein, as part of the regulatory standardization effort, the NRC staff has prepared STS (NUREG-1430 to NUREG-1434) for each of the light–water reactor nuclear steam supply systems (NSSSs) and associated balance–of–plant equipment systems. Accordingly, the NRC staff’s review includes consideration of whether the proposed technical specifications are consistent with the applicable reference technical specification (i.e., the current STS), as modified by NRC-approved TSTF Travelers such as TSTF-529, Revision 4. Special attention is given to technical specification provisions that depart from the

reference technical specifications and NRC-approved TSTF Travelers to determine whether proposed differences are justified by uniqueness in plant design or other considerations so that 10 CFR 50.36 is met. In addition, the guidance states that comparing the change to previous STS can help clarify the TS intent.

3.0 TECHNICAL EVALUATION

During the review of TSTF-529, Revision 4, the NRC staff considered generally the guidance on acceptance criteria of the SRP sections described in Section 2.3 of this safety evaluation, and, in particular, the acceptance criteria in Chapter 16, "Technical Specifications," of NUREG-0800, Revision 3. Additionally, the NRC staff evaluated the proposed changes to the PVNGS TS against what is required to be in the TS under 10 CFR 50.36.

3.1 Requested Changes

3.1.1 Proposed Changes to Section 1.3, "Completion Times"

3.1.1.1 Proposed Changes to "Time of Discovery"

The only mention of the term "time of discovery" in relation to completion times is in PVNGS TS Section 1.3 (quoted in Section 2.2.1 of this SE). Throughout the PVNGS TS, the term "discovery" is used to describe the point in time that it is recognized that the requirements of an LCO are not met. For example, TS LCO 3.0.2 states in part that upon discovery of a failure to meet an LCO, the required actions of the associated conditions shall be met, except as provided in LCO 3.0.5 and LCO 3.0.6.

The proposed PVNGS TS Section 1.3 would delete "time of" from the previous statements. The NRC staff finds the proposed change acceptable because it makes Section 1.3 consistent with the language used throughout the rest of the TS. This provides clarity to the term "discovery," and therefore provides a clear and objective application of the TS required actions and associated completion times. The change is editorial since it does not change the requirements currently in the TS. Therefore, the NRC Staff finds the proposed change acceptable.

3.1.1.2 Proposed Addition to "Completion Times"

The licensee also proposed to add the following paragraph to Section 1.3 of the PVNGS TS under Description:

Unless otherwise specified, the Completion Time begins when a senior licensed operator on the operating shift crew with responsibility for plant operations makes the determination that an LCO is not met and an ACTIONS Condition is entered. The "otherwise specified" exceptions are varied, such as a Required Action Note or Surveillance Requirement Note that provides an alternative time to perform specific tasks, such as testing, without starting the Completion Time. While utilizing the Note, should a Condition be applicable for any reason not addressed by the Note, the Completion Time begins. Should the time allowance in the Note be exceeded, the Completion Time begins at that point. The exceptions may also be incorporated into the Completion Time. For example, LCO 3.8.1, "AC Sources - Operating," Required Action B.2, requires declaring required feature(s) supported by an inoperable diesel generator, inoperable when the redundant

required feature(s) are inoperable. The Completion Time states, "4 hours from discovery of Condition B concurrent with inoperability of redundant required feature(s)." In this case the Completion Time does not begin until the conditions in the Completion Time are satisfied.

The operating shift crew is responsible for overall control of facility operation. As part of that responsibility, the operating shift crew must be aware of the status of the plant and condition of structures, systems and components (SSCs). This includes status of degraded or nonconforming conditions that may affect plant operation. Therefore, the proposed change simply augments the NRC staff's expectation that a senior licensed operator on the operating shift crew with responsibility for plant operations makes the determination that an LCO is not met and a Condition is entered. The phrase "and an ACTIONS Condition is entered" in the above proposed insertion, is necessary to accommodate circumstances in which LCO 3.0.6 allows an LCO to not be met without entry into the Conditions. In those circumstances, a completion time does not begin. In addition, an example is added to the proposed insertion in order to explain the concept presented.

The NRC staff finds the proposed change acceptable since it clarifies senior reactor operators' responsibilities and the allowances of LCO 3.0.6, and therefore, provides a clear and objective application of the PVNGS TS required actions and associated completion times.

3.1.1.3 Proposed Addition of "Unless Otherwise Specified"

The phrase, "unless otherwise specified," in PVNGS TS Section 1.3, refers to those instances in which TS LCOs define the start of the completion time as different from "discovery." For example, PVNGS TS 3.8.1, "AC Sources - Operating," required action B.2, calls for declaring required feature(s) supported by an inoperable diesel generator inoperable when the redundant required feature(s) are inoperable. The completion time states, "4 hours from discovery of Condition B concurrent with inoperability of redundant required feature(s)." In this case, the completion time does not begin until the conditions in the completion time are satisfied.

As discussed in Section 2.2.3 of this SE, the licensee proposed to add the following sentence to PVNGS TS Section 1.3, which contains the phrase "unless otherwise specified:"

Unless otherwise specified, the Completion Time begins when a senior licensed operator on the operating shift crew with responsibility for plant operations makes the determination that an LCO is not met and an ACTIONS Condition is entered.

In addition, the licensee proposed adding the phrase "unless otherwise specified" to the following two statements:

When in multiple Conditions, separate Completion Times are tracked for each Condition starting from the discovery of the situation that required entry into the Condition, unless otherwise specified.

and

The Required Actions of the Condition continue to apply to each additional failure, with Completion Times based on initial entry into the Condition, unless otherwise specified.

The addition of the phrase “unless otherwise specified” acknowledges that there are instances, as indicated in the individual TS, when the completion time does not start at discovery. These exceptions are varied, such as when a required action note or surveillance requirement note provides an alternative time to perform specific tasks, such as testing, without starting the completion time. While utilizing the note, should a condition be applicable for any reason not addressed by the cote, the completion time begins. Should the time allowance in the Note be exceeded, the completion time begins at that point as well.

The NRC staff finds the proposed change acceptable since it clarifies that there are exceptions and therefore provides a clear and objective application of the PVNGS TS required actions and associated completion times.

3.1.2 Proposed Changes to LCO 3.0.4

As stated in Section 2.2.4 of this SE, the current PVNGS TS LCO 3.0.4 contains three options, (a, b, and c). Paragraph a ends with a semicolon and paragraph b ends with “, or”.

LCO 3.0.4.b statement: “After performance of a risk assessment ... stated in the individual Specifications, or,” could lead to operator misinterpretation. Operators could misapply this statement by believing the “or” applies to the phrase regarding exceptions and that LCO 3.0.4.a, b, and c apply concurrently.

The licensee proposed to clarify this sentence by placing the statement regarding exceptions in parenthesis and replacing the ending comma with a semicolon. The proposed TS LCO 3.0.4 would state the following: “After performance of a risk assessment ... if appropriate (exceptions to this specification are stated in the individual Specifications); or.”

The NRC staff finds that the change is editorial since it does not change the requirements currently in the TS. The NRC staff finds the proposed change acceptable since it removes potential for misapplication of LCO 3.0.4 allowances, and therefore, provides a clear and objective application of the PVNGS TS required actions.

3.1.3 Proposed Changes to SR 3.0.3

The NRC has typically interpreted SR 3.0.3, which is quoted in Section 2.2.5 of this SE, as inapplicable to SRs that have never been previously performed. This is because the allowance provided by SR 3.0.3 is based on the fact that the SR was satisfactorily met in the past and the most probable result of performing the SR is the verification of conformance with the requirements. Therefore, there is reasonable expectation the SR will be met when performed.

However, the NRC staff recognizes that there are instances in which an SR may not have been performed in the past, but there is still a reasonable expectation the SR will be met when performed. For example, an SR requires testing of a relay contact. A licensee finds the relay contact has never been tested as required in accordance with a particular SR. That licensee, however, finds there is a reasonable expectation the SR will be met when performed because the subject relay contact has been tested by another SR or historical operation of the subject relay contact has been successful.

The delay period allowed by PVNGS TS SR 3.0.3 offers adequate time to complete SRs that have been missed. In addition, this delay period permits the completion of an SR before complying with required actions or other remedial measures that might preclude completion of

the SR. The NRC staff finds the application of the delay period provided by PVNGS TS SR 3.0.3 acceptable for use on SRs that have never been performed so as long as licensees can provide an adequate determination of reasonable expectation the SR will be met when performed.

The licensee's proposed PVNGS TS LCO SR 3.0.3 states the following (the new sentence reflecting the inclusion of SRs that have never been performed is underlined):

If it is discovered that a Surveillance was not performed within its specified Frequency, then compliance with the requirement to declare the LCO not met may be delayed, from the time of discovery, up to 24 hours or up to the limit of the specified Frequency, whichever is greater. This delay period is permitted to allow performance of the Surveillance. The delay period is only applicable when there is a reasonable expectation the surveillance will be met when performed. A risk evaluation shall be performed for any Surveillance delayed greater than 24 hours and the risk impact shall be managed.

If the Surveillance is not performed within the delay period, the LCO must immediately be declared not met, and the applicable Condition(s) must be entered.

When the Surveillance is performed within the delay period and the Surveillance is not met, the LCO must immediately be declared not met, and the applicable Condition(s) must be entered.

When making a determination of reasonable expectation that the SR will be met when performed, licensees should consider many factors. These factors include, but are not limited to, things such as the period of time since the SR was last performed, or whether the SR, or a portion thereof, has ever been performed, and many other indications, tests, or activities that might support the expectation that the SR will be met when performed. It is not sufficient to infer the behavior of the associated equipment from the performance of similar equipment. The rigor of determining whether there is a reasonable expectation an SR will be met when performed should increase based on the length of time since the last performance of the SR. If the SR has been performed recently, a review of the SR history and equipment performance may be sufficient to support a reasonable expectation that the SR will be met when performed. For SRs that have not been performed for a long period or that have never been performed, a rigorous evaluation based on objective evidence should provide a high degree of confidence that the equipment is capable of performing its specified safety function(s). The evaluation should be documented in sufficient detail to allow a knowledgeable individual to understand the basis for the determination.

The proposed change, which expands the scope of PVNGS TS SR 3.0.3 to SRs that have never been performed, is acceptable because it requires there to be an adequate determination of a reasonable expectation the SR will be met when performed. In addition, the proposed change augments plant safety since it could prevent unnecessary shutdowns by providing adequate time to complete SRs that have never been performed but are likely to achieve satisfactory results.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the **X** State official was notified of the proposed issuance of the amendment on **DATE**. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendment changes requirements with respect to the installation or use of facility components located within the restricted area as defined in 10 CFR Part 20 and changes SRs. The NRC staff has determined that the amendment involves no significant increase in the amounts and no significant change in the types of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding published in **the FR on DATE (X FR X)**. Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

6.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) there is reasonable assurance that such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: C. Tilton, NRR/DSS

Date: October 23, 2019