

Nuclear Energy Institute). The licensee's request for an exemption is therefore consistent with the approach set forth by the Commission as discussed in the June 4, 2009, letter.

#### *VEGP Schedule Exemption Request*

The licensee provided detailed information in its letter dated November 6, 2009, as supplemented November 20, 2009, requesting an exemption. It describes a comprehensive plan to install equipment related to a certain requirement in the new Part 73 rule and provides a timeline for achieving full compliance with the new regulation.

The submittals contain proprietary information regarding the site security plan, details of the specific requirement of the regulation for which the site cannot be in compliance by the March 31, 2010, deadline and why, the required changes to the site's security configuration, and a timeline with critical path activities that will bring the licensee into full compliance by September 27, 2010. The timeline provides dates indicating (1) when various phases of the project begin and end (*i.e.*, design, field construction), (2) outages scheduled for each unit, and (3) when critical equipment will be ordered, installed, tested and become operational.

Notwithstanding the schedular exemption for this limited requirement, the licensee will continue to be in compliance with all other applicable physical security requirements as described in 10 CFR 73.55 and reflected in its current NRC approved physical security program. By September 27, 2010, VEGP will be in full compliance with all the regulatory requirements of 10 CFR 73.55, as issued on March 27, 2009.

#### **4.0 Conclusion for Part 73 Schedule Exemption Request**

The NRC staff has reviewed the licensee's submittals and concludes that the licensee has provided adequate justification for its request for an extension of the compliance date to September 27, 2010, with regard to a specific requirement of 10 CFR 73.55.

Accordingly, the Commission has determined that pursuant to 10 CFR 73.5, "Specific exemptions," an exemption from the March 31, 2010, compliance date is authorized by law and will not endanger life or property or the common defense and security, and is otherwise in the public interest. Therefore, the Commission hereby grants the requested exemption.

The NRC staff has determined that the long-term benefits that will be realized when the VEGP equipment installation

is complete justifies extending the full compliance date with regard to the specific requirement of 10 CFR 73.55. The security measure, that VEGP needs additional time to implement, is a new requirement imposed by the March 27, 2009, amendments to 10 CFR 73.55, and is in addition to those required by the security orders issued in response to the events of September 11, 2001.

Therefore, it is concluded that the licensee's actions are in the best interest of protecting the public health and safety through the security changes that will result from granting this exemption.

As per the licensee's request and the NRC's regulatory authority to grant an exemption from the March 31, 2010, implementation deadline for the requirement specified in the SNC letter dated November 6, 2009, as supplemented November 20, 2009, the licensee is required to be in full compliance by September 27, 2010. In achieving compliance, the licensee is reminded that it is responsible for determining the appropriate licensing mechanism (*i.e.*, 10 CFR 50.54(p) or 10 CFR 50.90) for incorporation of all necessary changes to its security plans.

Pursuant to 10 CFR 51.32, "Finding of no significant impact," the Commission has previously determined that the granting of this exemption will not have a significant effect on the quality of the human environment 75 FR 3943; dated January 25, 2010.

This exemption is effective upon issuance.

Dated at Rockville, Maryland, this 24 day of February 2010.

For the Nuclear Regulatory Commission.

**Allen G. Howe,**

*Acting Director, Division of Operating Reactor Licensing, Office of Nuclear Reactor Regulation.*

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## **NUCLEAR REGULATORY COMMISSION**

**[Docket Nos. STN 50-528, STN 50-529, and STN 50-530; NRC-2010-0058]**

### **Arizona Public Service Company, et al.; Palo Verde Nuclear Generating Station, Units 1, 2, and 3; Exemption**

#### **1.0 Background**

The Arizona Public Service Company (APS, the facility licensee) is the holder of Facility Operating License Nos. NPF-41, NPF-51, and NPF-74, which authorize operation of the Palo Verde Nuclear Generating Station (PVNGS, the facility), Units 1, 2, and 3, respectively. The licenses provide, among other

things, that the facility is subject to all rules, regulations, and orders of the Nuclear Regulatory Commission (NRC, or the Commission) now or hereafter in effect.

The facility consists of three pressurized-water reactors located in Maricopa County, Arizona.

#### **2.0 Request/Action**

Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, Appendix G, "Fracture Toughness Requirements," which is invoked by 10 CFR 50.60, requires that pressure-temperature (P-T) limits be established for the reactor coolant pressure boundary during normal operating and hydrostatic or leak rate testing conditions. Specifically, 10 CFR Part 50, Appendix G states that "[t]he appropriate requirements on both the pressure-temperature limits and the minimum permissible temperature must be met for all conditions," and "[t]he pressure-temperature limits identified as 'ASME [American Society for Mechanical Engineers] Appendix G limits' in Table 3 require that the limits must be at least as conservative as limits obtained by following the methods of analysis and the margins of safety of Appendix G of Section XI of the ASME Code [Boiler and Pressure Vessel Code]." The regulations in 10 CFR Part 50, Appendix G, also specify the applicable editions and addenda of the ASME Code, Section XI, which are incorporated by reference in 10 CFR 50.55a. In the most recent version of 10 CFR (2009 Edition), the 1977 Edition through the 2004 Edition of the ASME Code, Section XI are incorporated by reference in 10 CFR 50.55a. Finally, 10 CFR 50.60(b) states that, "[p]roposed alternatives to the described requirements in Append[ix] G \* \* \* of this part or portions thereof may be used when an exemption is granted by the Commission under [10 CFR] 50.12."

By letter dated February 19, 2009, as supplemented by letter dated December 22, 2009 (Agencywide Documents Access and Management System (ADAMS) Accession Nos. ML090641014 and ML100040069, respectively), the licensee submitted a request for exemption from 10 CFR Part 50, Appendix G regarding the pressure-temperature (P-T) limits calculation, and a license amendment request to revise Technical Specification (TS) 3.4, "Reactor Coolant System (RCS)," to relocate the P-T limits and the low temperature overpressure protection (LTOP) system enable temperatures from the TS to a licensee-controlled document; the Pressure and Temperature Limits Report (PTLR). In the license amendment request, the

licensee identified Combustion Engineering (CE) Owners Group Topical Report CE NPSD-683-A, Revision 6, "Development of a RCS Pressure and Temperature Limits Report (PTLR) for the Removal of P-T Limits and LTOP Requirements from the Technical Specifications" (ADAMS Accession No. ML011350387), as the PTLR methodology that would be cited in the administrative controls section of the PVNGS, Units 1, 2, and 3 Technical Specifications governing PTLR content. The NRC staff evaluated the specific PTLR methodology in CE NPSD-683, Revision 6. This evaluation was documented in the NRC safety evaluation (SE) of March 16, 2001 (ADAMS Accession No. ML010780017), which specified additional licensee actions that are necessary to support a licensee's adoption of CE NPSD-683, Revision 6. The final approved version of this report was reissued as CE NPSD-683-A, Revision 6, which included the NRC SE and the required additional action items as an attachment to the report. One of the additional specified actions stated that if a licensee proposed to use the methodology in CE NPSD-683-A, Revision 6, for the calculation of flaw stress intensity factors due to membrane stress from pressure loading ( $K_{IM}$ ), an exemption was required, since the methodology for the calculation of  $K_{IM}$  values in CE NPSD-683-A, Revision 6, could not be shown to be conservative with respect to the methodology for the determination of  $K_{IM}$  provided in editions and addenda of the ASME Code, Section XI, Appendix G through the 2004 Edition. Therefore, in addition to the license amendment request, the licensee's February 19, 2009, submittal also contains an exemption request, consistent with the requirements of 10 CFR 50.12 and 50.60, to apply the  $K_{IM}$  calculational methodology of CE NPSD-683-A, Revision 6, as part of the PVNGS, Units 1, 2, and 3 PTLR methodology.

During the NRC staff's review of CE NPSD-683, Revision 6, the NRC staff evaluated the  $K_{IM}$  calculational methodology of that report versus the methodologies for the calculation of  $K_{IM}$  given in the ASME Code, Section XI, Appendix G. In the NRC's March 16, 2001, SE, the staff noted, "[t]he CE NSSS [nuclear steam supply system] methodology does not invoke the methods in the 1995 edition of Appendix G to the Code for calculating  $K_{IM}$  factors, and instead applies FEM [finite element modeling] methods for estimating the  $K_{IM}$  factors for the RPV [reactor pressure vessel] shell \* \* \* the

staff has determined that the  $K_{IM}$  calculation methods apply FEM modeling that is similar to that used for the determination of the  $K_{IT}$  factors [as codified in the ASME Code, Section XI, Appendix G]. The staff has also determined that there is only a slight non-conservative difference between the P-T limits generated from the 1989 edition of Appendix G to the Code and those generated from CE NSSS methodology as documented in CE/ABB Evaluation 063-PENG-ER-096, Revision 00, "Technical Methodology Paper Comparing ABB/CE PT Curve to ASME Section III, Appendix G," dated January 22, 1998 (ADAMS Accession No. ML100500514, non-proprietary version). The staff considers that this difference is reasonable and that it will be consistent with the expected improvements in P-T generation methods that have been incorporated into the 1995 edition of Appendix G to the Code." This conclusion regarding the comparison between the CE NSSS methodology and the 1995 Edition of the ASME Code, Section XI, Appendix G methodology also applies to the 2004 Edition of the ASME Code, Section XI, Appendix G methodology because the evolution of the ASME Code Section XI, Appendix G methodology does not affect the  $K_{IM}$  calculation significantly.

In summary, the staff concluded in its March 16, 2001, SE that the calculation of  $K_{IM}$  using the CE NPSD-683, Revision 6 methodology would lead to the development of P-T limit curves which may be slightly non-conservative with respect to those which would be calculated using the ASME Code, Section XI, Appendix G methods, and that such a difference was to be expected with the development of more refined calculational techniques. Furthermore, the staff concluded in its March 16, 2001, SE that P-T limit curves that would be developed using the methodology of CE NPSD-683, Revision 6 would be adequate for protecting the RPV from brittle fracture under all normal operating and hydrostatic/leak test conditions.

### 3.0 Discussion

Pursuant to 10 CFR 50.12, the Commission may, upon application by any interested person or upon its own initiative, grant exemptions from the requirements of 10 CFR Part 50 when (1) the exemptions are authorized by law, will not present an undue risk to public health or safety, and are consistent with the common defense and security; and (2) when special circumstances are present.

This exemption results in changes to the plant by allowing the use of an

alternative methodology for calculating flaw stress intensity factors in the RPV due to membrane stress from pressure loadings in lieu of meeting the requirements in 10 CFR 50.60 and 10 CFR Part 50, Appendix G. As stated above, 10 CFR 50.12 allows NRC to grant exemptions from the requirements of 10 CFR Part 50. In addition, the granting of the exemption will not result in violation of the Atomic Energy Act of 1954, as amended, or the Commission's regulations. Therefore, the exemption is authorized by law.

The underlying purpose of 10 CFR 50.60 and 10 CFR part 50, appendix G is to ensure that appropriate P-T limits and the minimum permissible temperature are established for the RPV under normal operating and hydrostatic or leak rate test conditions. The licensee's alternative methodology for establishing the P-T limits and the LTOP setpoints is described in CE NPSD-683-A, Revision 6, which has been approved by the NRC staff. Based on the above, no new accident precursors are created by using the alternative methodology. Thus, the probability of postulated accidents is not increased. Also, based on the above, the consequences of postulated accidents are not increased. In addition, the licensee used an NRC-approved methodology for establishing P-T limits and minimum permissible temperatures for the reactor vessel. Therefore, there is no undue risk to the public health and safety.

The exemption results in changes to the plant by allowing an alternative methodology for calculating flaw stress intensity factors in the reactor vessel. This change to the calculation of stress intensity factors in the reactor vessel material has no negative implications for security issues. Therefore, the common defense and security is not impacted by this exemption.

Special circumstances, pursuant to 10 CFR 50.12(a)(2)(ii), are present in that continued operation of PVNGS, Units 1, 2, and 3 with P-T limit curves developed in accordance with the ASME Code, Section XI, Appendix G is not necessary to achieve the underlying purpose of 10 CFR part 50, appendix G. Application of the  $K_{IM}$  calculational methodology of CE NPSD-683-A, Revision 6 in lieu of the calculational methodology specified in the ASME Code, Section XI, Appendix G provides an acceptable alternative evaluation procedure, which will continue to meet the underlying purpose of 10 CFR part 50, appendix G. The underlying purpose of the regulations in 10 CFR part 50, appendix G is to provide an acceptable margin of safety against brittle failure of

the reactor coolant system during any condition of normal operation to which the pressure boundary may be subjected over its service lifetime.

Based on the staff's March 16, 2001, SE regarding CE NPSD-683, Revision 6 and the licensee's rationale to support the exemption request, the staff agrees with the licensee's determination that an exemption is required to approve the use of the  $K_{IM}$  calculational methodology of CE NPSD-683-A, Revision 6. The staff concludes that the application of the  $K_{IM}$  calculational methodology of CE NPSD-683-A, Revision 6, for PVNGS, Units 1, 2, and 3 provides sufficient margin in the development of RPV P-T limit curves such that the underlying purpose of the regulations (10 CFR part 50, appendix G) continues to be met. Therefore, the NRC staff concludes that the exemption requested by the licensee is justified based on the special circumstances of 10 CFR 50.12(a)(2)(ii), "[a]pplication of the regulation in the particular circumstances would not serve the underlying purpose of the rule or is not necessary to achieve the underlying purpose of the rule."

Based upon a consideration of the conservatism that is incorporated into the methodologies of 10 CFR part 50, appendix G and ASME Code, Section XI, Appendix G, the staff concludes that application of the  $K_{IM}$  calculational methodology of CE NPSD-683-A, Revision 6, as described, would provide an adequate margin of safety against brittle failure of the RPV. Therefore, the staff concludes that the exemption is appropriate under the special circumstances of 10 CFR 50.12(a)(2)(ii), and that the application of the  $K_{IM}$  calculational methodology of CE NPSD-683-A, Revision 6, is acceptable for use in the PVNGS, Units 1, 2, and 3 PTLR methodology.

#### 4.0 Conclusion

Accordingly, the Commission has determined that, pursuant to 10 CFR 50.12(a), the exemption is authorized by law, will not present an undue risk to the public health and safety, and is consistent with the common defense and security. Also, special circumstances are present. Therefore, the Commission hereby grants APS an exemption from the requirements of 10 CFR part 50, appendix G to allow application of the  $K_{IM}$  calculational methodology of CE NPSD-683-A, Revision 6 in establishing the PTLR methodology for PVNGS, Units 1, 2, and 3.

Pursuant to 10 CFR 51.32, the Commission has determined that the granting of this exemption will not have

a significant effect on the quality of the human environment (75 FR 8149; dated February 23, 2010).

*This exemption is effective upon issuance.*

Dated at Rockville, Maryland, this 24th day of February 2010.

For the Nuclear Regulatory Commission.

**Allen G. Howe,**

*Acting Director, Division of Operating Reactor Licensing, Office of Nuclear Reactor Regulation.*

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## NUCLEAR REGULATORY COMMISSION

[Docket Nos. 50-282 and 50-306; NRC-2010-0046]

### Northern States Power Company—Minnesota Prairie Island Nuclear Generating Plant, Units 1 and 2; Exemption

#### 1.0 Background

Northern States Power Company, a Minnesota corporation (NSPM, the licensee) is the holder of Facility Operating License Nos. DPR-42 and DPR-60, which authorize operation of the Prairie Island Nuclear Generating Plant, Units 1 and 2 (PINGP). The licenses provide, among other things, that the facility is subject to all rules, regulations, and orders of the U.S. Nuclear Regulatory Commission (NRC, the Commission) now or hereafter in effect.

The facility consists of two pressurized-water reactors located in Goodhue County, Minnesota.

#### 2.0 Request/Action

Title 10 of the *Code of Federal Regulations* (10 CFR) Part 73, "Physical protection of plants and materials," Section 73.55, "Requirements for physical protection of licensed activities in nuclear power reactors against radiological sabotage," published March 27, 2009, effective May 26, 2009, with a full implementation date of March 31, 2010, requires licensees to protect, with high assurance, against radiological sabotage by designing and implementing comprehensive site security programs. The amendments to 10 CFR 73.55 published on March 27, 2009, establish and update generically applicable security requirements similar to those previously imposed by Commission orders issued after the terrorist attacks of September 11, 2001 and implemented by licensees. In addition, the amendments to 10 CFR 73.55 include additional requirements

to further enhance site security based upon insights gained from implementation of the post September 11, 2001 security orders. It is from five of these new requirements that PINGP now seeks an exemption from the March 31, 2010 implementation date. All other physical security requirements established by this recent rulemaking have already been or will be implemented by the licensee by March 31, 2010.

By letter dated November 5, 2009, as supplemented by letters dated November 30 and December 17, 2009, the licensee requested an exemption in accordance with 10 CFR 73.5, "Specific exemptions." The licensee's November 5 and December 17, 2009, letters, and certain portions of its November 30, 2009 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML100050096), letter, contain security-related information and, accordingly, are not available to the public. The licensee has requested an exemption from the March 31, 2010, compliance date identified in 10 CFR 73.55(a)(1), stating that specific parts of the new requirements will require more time to implement before all requirements can be met. Specifically, the request is to extend the compliance date for five specific requirements from the current March 31, 2010, deadline to June 30, 2011. Being granted this exemption for the five requirements would allow the licensee to complete the modifications designed to provide significant upgrades to the security system to meet the noted regulatory requirements.

#### 3.0 Discussion of Part 73 Schedule Exemptions From the March 31, 2010, Full Implementation Date

Pursuant to 10 CFR 73.55(a)(1), "By March 31, 2010, each nuclear power reactor licensee, licensed under 10 CFR part 50, shall implement the requirements of this section through its Commission-approved Physical Security Plan, Training and Qualification Plan, Safeguards Contingency Plan, and Cyber Security Plan, referred to collectively hereafter as 'security plans.'" Pursuant to 10 CFR 73.5, the Commission may, upon application by any interested person or upon its own initiative, grant exemptions from the requirements of 10 CFR part 73 when the exemptions are authorized by law, and will not endanger life or property or the common defense and security, and are otherwise in the public interest.

NRC approval of this exemption would, as noted above, extend the required compliance date for the requirements specified in the licensee's