

NUCLEAR REGULATORY COMMISSION
DOCKET NOS. 72-1031, 72-44, 50-528, 50-529, and 50-530
August 19, 2019

ENVIRONMENTAL ASSESSMENT FOR THE EXEMPTION REQUEST FOR
ARIZONA PUBLIC SERVICE COMPANY'S
PALO VERDE NUCLEAR GENERATING STATION
INDEPENDENT SPENT FUEL STORAGE INSTALLATION
IN WINTERSBURG, ARIZONA

1. INTRODUCTION

By letter dated July 5, 2019 (APS 2019), Arizona Public Service Company (APS) submitted a request to the U.S. Nuclear Regulatory Commission (NRC) for an exemption, in accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) 72.7, from the requirements of 10 CFR 72.212(a)(2), 72.212(b)(3), 72.212(b)(5)(i), 72.214, and the portion of 72.212(b)(11) that requires compliance with the terms, conditions, and specifications of the Certificate of Compliance (CoC) No. 1031 for spent fuel storage at the Palo Verde Nuclear Generating Station (PVNGS) Independent Spent Fuel Storage Installation (ISFSI). Specifically, APS is requesting an exemption to load and store spent fuel with a larger maximum pellet diameter than authorized in Amendment No. 7 of the NAC International (NAC) CoC No. 1031 for the MAGNASTOR® storage system. This exemption would allow APS to load Combustion Engineering 16×16 spent fuel assemblies with a maximum pellet diameter of 0.3255 in. which is 0.0005 in. larger than the 0.325 in. maximum pellet diameter in Amendment No. 7 for CoC No. 1031.

The NRC staff will perform both a safety evaluation and an environmental review to determine whether to grant this exemption request. The NRC staff will prepare a separate safety evaluation report to document its safety review and analysis. The NRC's safety review will evaluate the proposed change to assure continued protection of public health and safety, common defense and security. Specifically, the NRC staff will evaluate the potential safety impacts of granting the exemption to APS, assess the potential for any danger to life or property or the common defense and security, and evaluate the potential for an inadvertent criticality for this exemption request.

The environmental review is documented in this environmental assessment (EA), which the NRC staff prepared in accordance with 10 CFR 51.21 and 51.30(a). The preparation of this EA is being coordinated with the development of the safety evaluation report. This EA defines the NRC's proposed action in Section 2 and the purpose and need for the proposed action in Section 3. The evaluation of the potential environmental impacts of the proposed action is presented in Section 4, the environmental impacts of the alternative to the proposed action is found in Section 5, and the NRC's conclusion is summarized in Section 7. Section 6 discusses the agency consulted in development of this EA. The NRC's decision whether to grant the exemption will be based on the results of the NRC staff's review as documented in this EA and the staff's safety review to be documented in the safety evaluation report.

1.1 Background

PVNGS began operation in 1986 and has been storing pressurized-water reactor (PWR) spent fuel in its ISFSI since March 2003 utilizing CoC No. 1015 for the NAC-UMS storage system.

For the loading campaign commencing in August 2019, APS is transitioning to the MAGNASTOR® storage system. The majority of the spent fuel assemblies have pellets with a nominal diameter of 0.3255 in. While the NAC-UMS system was approved for this pellet diameter in Amendment No. 2 to CoC No. 1015, the MAGNASTOR® storage system is approved for the nominal pellet diameter of 0.325 in., thereby precluding some of the spent fuel at the PVNGS from being loaded in the upcoming loading campaign. APS' exemption would authorize loading of spent fuel which has a maximum pellet diameter, prior to irradiation, of 0.3255 in.

2. THE PROPOSED ACTION

As requested by APS, the proposed action is for the NRC to grant APS an exemption from the requirements of 10 CFR 72.212(a)(2), 72.212(b)(3), 72.212(b)(5)(i), 72.214, and the portion of 72.212(b)(11), which state the general licensee shall comply with the terms, conditions, and specifications of the CoC to allow loading of spent fuel with a pellet diameter of 0.3255 in.

3. NEED FOR THE PROPOSED ACTION

APS scheduled a loading campaign to begin on August 29, 2019, for Unit 3, ahead of its fall outage. In order to maintain full-core offload capability during and after the outage, APS must load two of the three scheduled MAGNASTOR® storage casks during this loading campaign.

4. ENVIRONMENTAL IMPACTS OF THE PROPOSED ACTION

This EA evaluates the potential environmental impacts of granting the exemption to allow APS to load PWR spent fuel with a larger pellet diameter than currently authorized in Amendment No. 7 to CoC No. 1031 for the MAGNASTOR® storage cask. The potential environmental impacts of Amendment No. 7 to the CoC for the MAGNASTOR® storage cask were evaluated by the staff prior to being added to the list of approved spent fuel storage casks in 10 CFR 72.214 (82 FR 25931).

On July 18, 1990 (55 FR 29181), the NRC amended 10 CFR Part 72 to provide for the storage of spent fuel under a general license in cask designs approved by the NRC. The EA for the 1990 final rule analyzed the potential environmental impact of using NRC-approved storage casks. The EA for MAGNASTOR®, Amendment No. 7 (82 FR 25931), tiered off the EA issued for the July 18, 1990, final rule. The EA for this exemption tiers off the EA for MAGNASTOR®, Amendment No. 7 direct final rule. Tiering off earlier EAs is a standard process under the National Environmental Policy Act by which the impact analyses of previous EAs can be cited by a subsequent EA, such as this one, to include the impacts of the proposed action within the scope of the previous EA.

This exemption does not involve the disturbance of land, the construction of new facilities, or modifications to current operating practices. The EA for NAC's MAGNASTOR®, Amendment No. 7, analyzed the effects of design-basis accidents that could occur during storage. Design basis accidents account for human-induced events and the most severe natural phenomena reported for the site and surrounding area and the resultant effects on the storage cask. APS' proposed exemption request does not reflect any change in cask design or fabrication requirements, therefore no additional risk of loss of structure or confinement in the event of a design-basis accident will occur. The request by APS to increase the pellet diameter without a corresponding increase in the uranium oxide loading of spent fuel assemblies will not result any change in the risk of inadvertent criticality event.

Accordingly, NRC staff finds that APS' requested action is bounded by CoC No. 1031, Amendment No. 7. NRC staff also find that occupational exposure and offsite dose rates from this exemption request will not increase the occupational exposure and offsite dose rates and that the dose rates will remain within applicable 10 CFR Part 20 limits. No change in the types or amounts of any effluent released, no significant increase in individual or cumulative radiation exposures, and no significant increase in the potential for or consequences of radiological accidents will occur from this proposed action. Therefore, the proposed exemption request will not result in radiological or non-radiological environmental impacts that significantly differ from impacts evaluated in the EA supporting the MAGNASTOR[®], Amendment No. 7 direct final rule. Based upon the foregoing discussion the NRC finds that the exemption will not significantly impact the quality of the human environment.

5. ENVIRONMENTAL IMPACTS OF THE ALTERNATIVES TO THE PROPOSED ACTION

In addition to the proposed action, the staff also considered the no-action alternative – NRC denial of the proposed exemption request. Denial of the exemption request would require the licensee to postpone loading of spent fuel that contains the larger pellet diameter until it is approved in an amendment for CoC No. 1031 or alternative loading arrangements are implemented. In the meantime, the licensee will lose full-core offload capability. The environmental impacts of postponing storage of spent fuel would either be the same or greater (in the event of an emergency that required full-core offload) than the proposed exemption. The NRC staff has determined that the environmental impact of the proposed action and no action alternative are similar.

6. AGENCIES CONSULTED

The NRC provided the Arizona Department of Health Services-Bureau of Radiation Control a draft copy of this EA for review in an email dated July 24, 2019 (NRC 2019). In an email dated August 18, 2019 (ARDHS 2019), the Arizona Radiation Regulatory Agency stated that it concurs with the NRC's assessment that granting the PVNGS exemption request continues to provide adequate protection of public health and safety for the State of Arizona.

Endangered Species Act (ESA) Section 7 Consultation

The Endangered Species Act was enacted to prevent further decline of endangered and threatened species and restore those species and their critical habitat. Section 7 of the Endangered Species Act requires Federal agencies to consult with the U.S. Fish and Wildlife Service or National Marine Fisheries Service regarding actions that may affect listed species or designated critical habitats.

The NRC staff has determined that a consultation under Section 7 of the Endangered Species Act is not required because the proposed action will not affect listed species or critical habitat. The NRC staff has also determined that the proposed action is not a type of activity that has the potential to impact historic properties because the proposed action would occur within the established PVNGS site boundary. Therefore, no consultation is required under Section 106 of the National Historic Preservation Act.

National Historic Preservation Act Section 106 Consultation

Section 106 of the National Historic Preservation Act requires federal agencies to consider the effects of their undertakings on historic properties. As stated in the Act, historic properties are any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in the National Register of Historic Places.

The NRC has determined that the scope of activities described in this exemption request do not have the potential to cause effects on historic properties as the NRC's approval of this exemption request will not authorize new construction or land disturbance activities. The fuel loading activities will be the same and will be done within the existing reactor building. Therefore, in accordance with 36 CFR 800.3(a)(1), no consultation is required under Section 106 of the National Historic Preservation Act

7. CONCLUSION

The environmental impacts of the proposed action have been reviewed under the requirements in 10 CFR Part 51. The exemption request, if granted, would allow PVNGS to load spent fuel in the MAGNASTOR® storage system that has a maximum pellet diameter of 0.3255 in.

In this EA, the NRC determined that the environmental impacts of granting this exemption will be no greater than if the licensee delayed loading spent fuel. No changes are being made in the types or quantities of effluents that may be released offsite, and there is no significant increase in occupational or public radiation exposures in granting this exemption request for PVNGS. Accordingly, NRC has determined that a finding of no significant impact (FONSI) is appropriate and an environmental impact statement is not warranted. The NRC will publish the FONSI in the *Federal Register*.

8. REFERENCES

The documents referenced in this EA are all publicly available. The references are available for public inspection and copying at NRC's Public Document Room, One White Flint North, 11555 Rockville Pike, Rockville, Maryland 20852. Documents available through the NRC's electronic reading room (ADAMS) at <http://www.nrc.gov/reading-rm/adams.html> have an Accession No. provided.

10 CFR Part 51. *Code of Federal Regulations*, Title 10, Energy, Part 51, "Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions." Washington, D.C.

10 CFR Part 72. *Code of Federal Regulations*, Title 10, Energy, Part 72, "Licensing Requirements for the Independent Storage of Spent Nuclear Fuel, High-Level Radioactive Waste, and Reactor-Related Greater Than Class C Waste." Washington, D.C.

10 CFR Part 20. *Code of Federal Regulations*, Title 10, Energy, Part 20, "Standards for Protection Against Radiation." Washington, D.C.

55 FR 29181. Final Rule: Storage of Spent Fuel in NRC-Approved Storage Casks at Power Reactor Sites. *Federal Register* Volume 55, Issue 138. July 18, 1990.

66 FR 52486. Final Rule: List of Approved Spent Fuel Storage Casks: NAC–UMS Revision. Federal Register Volume 66, Issue 200. October 16, 2001.

82 FR 25931. Direct Final Rule: List of Approved Spent Fuel Storage Casks: NAC International MAGNASTOR® Cask System; Certificate of Compliance No. 1031, Amendment No. 7. *Federal Register* Volume 82 Issue 107. June 6, 2017.

APS 2019. Letter from Arizona Public Service Company to NRC “Palo Verde Nuclear Generating Station Units 1, 2, and 3 and Independent Spent Fuel Storage Installation Docket Nos. STN 50-528/529/530 and 72-44 Renewed Operating License Nos. NPF-41, NPF-51, NPF-74 Request for Exemption from NAC-MAGNASTOR Certificate of Compliance 72-1031.” July 5, 2019. ADAMS Accession No. ML19186A449.

ARDHS 2019. Email from Arizona Department of Health Services-Bureau of Radiation Control. “Re: Exemption Request from Arizona Public Supply Company for Spent Fuel Loading Campaign at Palo Verde.” August 18, 2019. ADAMS Accession No. ML19231A033.

Endangered Species Act of 1973, as amended. 16 USC §1531 et seq.

National Historic Preservation Act of 1966. 16 USC §470 et seq.

NRC 2019. Email from NRC to Arizona Radiation Regulatory Agency – Bureau of Radiation Control, “Draft Environmental Assessment: Exemption Request for Palo Verde Independent Spent Fuel Storage Installation.” July 24, 2019. ADAMS Accession No. ML17289A422.

SUBJECT: ENVIRONMENTAL ASSESSMENT FOR THE EXEMPTION REQUEST FOR ARIZONA PUBLIC SERVICE COMPANY'S PALO VERDE NUCLEAR GENERATING STATION INDEPENDENT SPENT FUEL STORAGE INSTALLATION

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