



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

**SAFETY EVALUATION REPORT**

**DOCKET NOS. 72-1031, 72-44, 50-528, 50-529, AND 50-530  
EXEMPTION REQUEST FOR  
ARIZONA PUBLIC SERVICE COMPANY  
PALO VERDE NUCLEAR GENERATING STATION  
INDEPENDENT SPENT FUEL STORAGE INSTALLATION**

**SUMMARY**

By application dated July 5, 2019 (Agencywide Documents Access and Management System (ADAMS) No. ML19186A449), Arizona Public Service Company (APS or the licensee) requested an exemption under Title 10 of the *Code of Federal Regulations* (10 CFR) Part 72, "Licensing Requirements for the Independent Storage of Spent Nuclear Fuel and High-Level Radioactive Waste, and Reactor-Related Greater Than Class C Waste," to load and store spent fuel with a larger maximum pellet diameter than authorized in Amendment No. 7 of the NAC International (NAC) certificate of compliance (CoC) No. 1031 for the MAGNASTOR® storage system. Specifically, APS requested an exemption from the requirements of 10 CFR 72.212(a)(2), 10 CFR 72.212(b)(3), 10 CFR 72.212(b)(5)(i), 10 CFR 72.214, and the portion of 10 CFR 72.212(b)(11), which requires storage of spent nuclear fuel under a general license in dry storage casks approved under the provisions of 10 CFR Part 72, and compliance with the terms and conditions set forth in the CoC for each dry storage spent fuel cask used by an independent spent fuel storage installation (ISFSI) general licensee.

The licensee plans to use NAC's MAGNASTOR® storage cask utilizing CoC No. 1031, Amendment No. 7 for dry storage of Combustion Engineering 16×16 fuel assemblies at the Palo Verde Nuclear Generating Station (PVNGS) ISFSI in an upcoming loading campaign. The maximum pellet diameter in CoC No. 1031, Amendment No. 7, for Combustion Engineering 16×16 fuel assemblies is 0.3250 in. (0.8255 cm), whereas the maximum pellet diameter for most of the fuel assemblies to be loaded at PVNGS is 0.3255 in. (0.8268 cm).

This safety evaluation report (SER) documents the staff's review and evaluation of APS' exemption request for PVNGS. The staff reviewed APS' application to determine whether it meets the criteria for an exemption specified in 10 CFR 72.7. The requirements in 10 CFR 72.7 authorizes the Commission to grant exemptions from the requirements of 10 CFR Part 72 if the exemption is authorized by law and will not endanger life, property, or the common defense and security, and is otherwise in the public interest.

**A. Authorized by Law**

The Commission has the legal authority to issue exemptions from the requirements of 10 CFR Part 72 as provided in 10 CFR 72.7. Issuance of this exemption is consistent with the Atomic Energy Act of 1954, as amended, and not otherwise inconsistent with the U.S. Nuclear Regulatory Commission regulations or other applicable laws. Therefore, issuance of the exemption is authorized by law.

Enclosure

## **B. Will Not Endanger Life, Property or the Common Defense and Security**

The staff reviewed APS' exemption request for PVNGS and concludes, as discussed below, that the proposed exemption from certain requirements of 10 CFR Part 72 will not cause the MAGNASTOR® storage cask to encounter conditions beyond those for which it has already been evaluated and demonstrated to meet the applicable safety requirements in 10 CFR Part 72. The staff followed the guidance of NUREG-1536 Revision 1, "Standard Review Plan for Spent Fuel Dry Cask Storage Systems at a General License Facility," July 2010. The staff's safety evaluation includes only the criticality safety area of review, since it is the only technical area affected by this exemption.

The licensee submitted an exemption request to deviate from the maximum pellet diameter for CE 16×16 fuel (assembly class C16H1), stored in the NAC MAGNASTOR® dry storage system. The licensee stated that NAC evaluated a pellet diameter of 0.3255 in. (0.8268 cm) in the MAGNASTOR® final safety analysis report (FSAR) (ADAMS Accession No. ML091030364), to determine the effect of an upper manufacturing tolerance of 0.0005 in. (0.0013 cm) applied to the nominal pellet diameter value of 0.3250 in. (0.8255 cm). In that FSAR, NAC determined that the system  $k_{\text{eff}}$  with this larger diameter pellet is statistically the same as the system  $k_{\text{eff}}$  with the nominal pellet diameter. Therefore, APS stated that its proposed exemption has no effect on the criticality safety of the MAGNASTOR® storage system.

The staff reviewed the FSAR and agrees that the proposed change to the pellet diameter will not result in changes to the storage cask system  $k_{\text{eff}}$  that are statistically significant. The staff also agrees with the results of the NAC criticality analysis in the FSAR, and with the licensee's conclusion that this proposed exemption does not affect the ability of the MAGNASTOR® system to meet the criticality safety requirements in 10 CFR Part 72.

Modification of the pellet diameter does not affect the ISFSI security plans. Accordingly, the PVNGS ISFSI will continue to be physically protected under APS' ISFSI Physical Security Plan to the same level of security. In addition, APS' exemption request is not related to any security or common defense aspect of the PVNGS ISFSI. Therefore, granting the exemption would not result in any potential impacts to common defense and security.

Based on these evaluations, the staff concluded that granting this exemption will be consistent with the requirements of 10 CFR Part 72 and will not endanger life or property or common defense and security.

## **C. Otherwise in the Public Interest**

In determining whether granting the exemption is in the public interest, the staff considered the no-action alternative of denying the exemption request. Denial of the exemption request would cause APS 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.

The licensee stated that the proposed exemption is in the public interest because it would allow APS to load spent fuel on schedule, maintain full-core offload capability and would not affect power plant operations or refueling outages for the three PVNGS units.

The staff reviewed the information provided by APS and based upon the above stated information, concludes that granting the requested exemption continues to provide adequate protection of public health and safety and is otherwise in the public interest.

## **CONCLUSION**

Based on the statements and representations provided by APS in its exemption request, the staff concludes that the proposed action (i.e., loading the larger pellet diameter using Amendment No. 7 to CoC 1031) is authorized by law and will not endanger life, property, or the common defense and security, and is otherwise in the public interest and, therefore meets the exemption requirements in 10 CFR 72.7.