



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 34 TO FACILITY OPERATING LICENSE NO. NPF-41,  
AMENDMENT NO. 21 TO FACILITY OPERATING LICENSE NO. NPF-51  
AND AMENDMENT NO. 8 TO FACILITY OPERATING LICENSE NO. NPF-74  
ARIZONA PUBLIC SERVICE COMPANY, ET AL.  
PALO VERDE NUCLEAR GENERATING STATION, UNIT NOS. 1, 2 AND 3  
DOCKET NOS. STN 50-528, STN 50-529 AND STN 50-530

1.0 INTRODUCTION

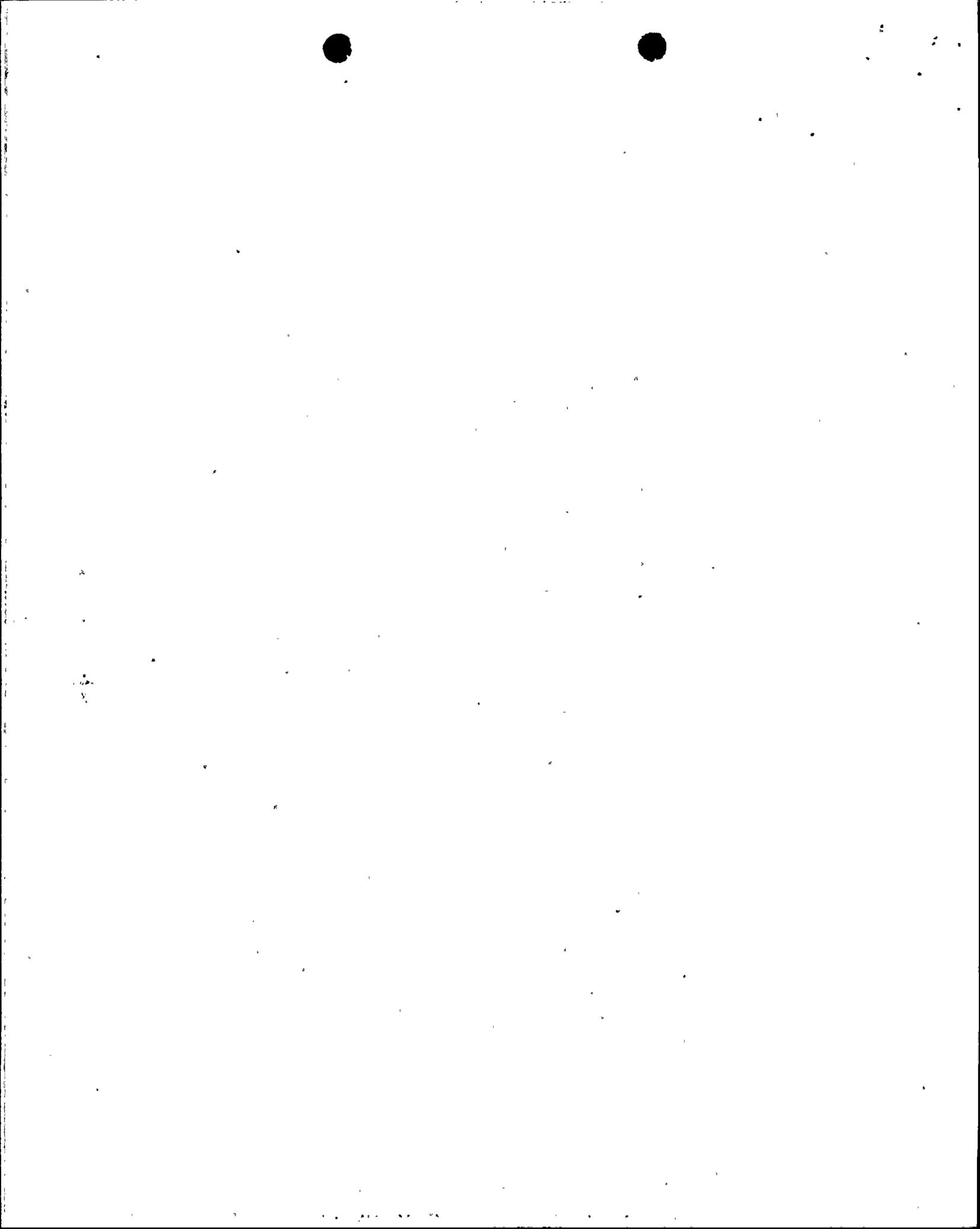
By letter dated April 8, 1988, the Arizona Public Service Company (APS) on behalf of itself, the Salt River Project Agricultural Improvement and Power District, Southern California Edison Company, El Paso Electric Company, Public Service Company of New Mexico, Los Angeles Department of Water and Power, and Southern California Public Power Authority (licensees), requested a change to the Technical Specifications for the Palo Verde Nuclear Generating Station, Units 1, 2, and 3 (Appendix A to Facility Operating License Nos. NPF-41, NPF-51 and NPF-74, respectively). The proposed change would revise Technical Specification 5.3.1 for each unit to include in the design description of the fuel assemblies, assemblies containing a limited number of Zircaloy-4 or stainless steel filler rods, or vacancies, in lieu of fuel rods for use in reload cores.

2.0 EVALUATION

Technical Specification 5.3.1, "Fuel Assemblies," describes the design characteristics of the fuel assemblies to be included in the reactor core. The Specification states, in part, that the reactor core shall contain 241 fuel assemblies with each assembly containing 236 fuel rods or burnable poison rods clad with Zircaloy-4. In the April 8, 1988 amendment request, the licensees propose to modify the above statement by including the following exception:

"except that limited substitution of fuel rods by filler rods consisting of Zircaloy-4 or stainless steel, or by vacancies, may be made if justified by a cycle specific reload analysis."

The purpose of the proposed amendment is to allow the use of reconstituted fuel assemblies in which leaking fuel pins are removed and replaced with filler rods or the position is left vacant. In the case of Palo Verde, Unit 2, there is an immediate need for this change since the unit is currently in a refueling outage and eight fuel assemblies require reconstitution to replace leaking fuel pins. The change is also being requested



for Palo Verde, Units 1 and 3 in the event that reconstitution of fuel assemblies becomes necessary for these units in the future.

Palo Verde is a CESSAR System 80 plant and references the CESSAR FSAR (Docket No. STN 50-460) for the nuclear steam supply system design. Therefore, the Palo Verde fuel design is discussed in the CESSAR FSAR.

In support of the amendment request, the licensees provided the following information. Section 5.3.1 of Chapter 16 (dealing with Technical Specifications) in the CESSAR FSAR states that each fuel assembly shall contain a maximum of 236 fuel rods or burnable poison rods clad with Zircaloy-4. Therefore a lesser number of those rods can be used to accommodate reconstituted fuel assemblies. Sections 4.2.1.1.A.3 and 4.2.2.1 of the CESSAR FSAR discuss the use of reconstituted fuel assemblies in the reactor core. Furthermore, the methodology used during the reconstitution process was developed by Combustion Engineering (CE) and has been implemented in other CE plants (e.g., San Onofre Nuclear Generating Station, Units 2 and 3, Docket Nos. 50-361 and 50-362).

The proposed reconstituted fuel assemblies will meet the same mechanical, nuclear and thermal hydraulic limits as an original fuel assembly described in Chapter 4 of the CESSAR FSAR. Furthermore, the reload safety analysis performed for each cycle will confirm that the use of reconstituted fuel assemblies in the reactor core does not result in exceeding any existing design limit.

The staff has evaluated the proposed change to Specification 5.3.1. Based on that review, the staff has made the following determinations.

- (1) The use of less than a total of 236 fuel rods and burnable poison rods is permitted by the fuel assembly design.
- (2) The fuel assembly design permits reconstitution to replace leaking fuel pins.
- (3) The use of proposed reconstituted fuel assemblies in the reactor core is acceptable when such use is supported by a cycle specific reload analysis which demonstrates that no existing design limits are exceeded.

On the basis of the above evaluation, the staff concludes that the proposed change to Specification 5.3.1 is acceptable.

### 3.0 CONTACT WITH STATE OFFICIAL

The Arizona Radiation Regulatory Agency was advised of the proposed determination of no significant hazards consideration with regard to this change. No comments were received.



#### 4.0 ENVIRONMENTAL CONSIDERATIONS

The amendments involve a change in the installation or use of facility components located within the restricted area as defined in 10 CFR Part 20. The staff has determined that the amendments involve 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 proposed findings that the amendments involve no significant hazards consideration, and there has been no public comment on such findings. Accordingly, the amendments meet 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 needs to be prepared in connection with the issuance of these amendments.

#### 5.0 CONCLUSION

The staff 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) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of these amendments will not be inimical to the common defense and security or to the health and safety of the public. We, therefore, conclude that the proposed change is acceptable.

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Dated: May 20, 1988

