

March 23, 2004

Mr. Gregg R. Overbeck  
Senior Vice President, Nuclear  
Arizona Public Service Company  
P. O. Box 52034  
Phoenix, AZ 85072-2034

SUBJECT: PALO VERDE NUCLEAR GENERATING STATION, UNITS 1, 2, AND 3 -  
ISSUANCE OF AMENDMENTS ON REPLACEMENT OF PART-LENGTH  
CONTROL ELEMENT ASSEMBLIES (TAC NOS. MC0870, MC0871, AND  
MC0872)

Dear Mr. Overbeck:

The Commission has issued the enclosed Amendment No. 152 to Facility Operating License No. NPF-41, Amendment No. 152 to Facility Operating License No. NPF-51, and Amendment No. 152 to Facility Operating License No. NPF-74 for the Palo Verde Nuclear Generating Station, Units 1, 2, and 3, respectively. The amendments consist of changes to the Technical Specifications (TS) in response to your application dated September 17, 2003, as supplemented by letter dated February 20, 2004.

A portion of the September 17, 2003, license amendment request (LAR) proposed a change to Limiting Condition for Operation 3.1.5, Condition B, concerning control element assembly (CEA) position indicators. Your letter dated February 20, 2004, among other things, requested withdrawal of that portion of the LAR. The enclosed Notice of Partial Withdrawal of Application for Amendment to Facility Operating License has been forwarded to the Office of the Federal Register for publication.

The amendments support the replacement of part-length control element assemblies (CEAs) with a new design CEA described as part-strength CEA. The two designs are geometrically very similar and contain essentially the same amount and type of neutron absorber in the lower half of the CEA assemblies, which is the region inserted into the reactor core during normal operations. This amendment revises the appropriate sections of the TS related to this replacement activity.

G. Overbeck

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A copy of the related Safety Evaluation is also enclosed. The Notice of Issuance will be included in the Commission's next biweekly *Federal Register* notice.

Sincerely,

**/RA/**

Mel B. Fields, Senior Project Manager, Section 2  
Project Directorate IV  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Docket Nos. STN 50-528, STN 50-529,  
and STN 50-530

Enclosures: 1. Amendment No. 152 to NPF-41  
2. Amendment No. 152 to NPF-51  
3. Amendment No. 152 to NPF-74  
4. Safety Evaluation  
5. Notice of Partial Withdrawal

cc w/encls: See next page

A copy of the related Safety Evaluation is also enclosed. The Notice of Issuance will be included in the Commission's next biweekly *Federal Register* notice.

Sincerely,

***/RA/***

Mel B. Fields, Senior Project Manager, Section 2  
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cc w/encls: See next page

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**TS: ML040850316**

**NRR-100**

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**ACCESSION NO: ML040860573**

**NRR-058**

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Palo Verde Generating Station, Units 1, 2, and 3

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ARIZONA PUBLIC SERVICE COMPANY, ET AL.

DOCKET NO. STN 50-528

PALO VERDE NUCLEAR GENERATING STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 152  
License No. NPF-41

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by the Arizona Public Service Company (APS or the licensee) on behalf of itself and the Salt River Project Agricultural Improvement and Power District, El Paso Electric Company, Southern California Edison Company, Public Service Company of New Mexico, Los Angeles Department of Water and Power, and Southern California Public Power Authority dated September 17, 2003, and its supplement dated February 20, 2004, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's regulations set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
  - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
  - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C(2) of Facility Operating License No. NPF-41 is hereby amended to read as follows:

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 152, and the Environmental Protection Plan contained in Appendix B, are hereby incorporated into this license. APS shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan, except where otherwise stated in specific license conditions.

3. This license amendment is effective as of the date of issuance and shall be implemented within 60 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

***/RA/***

Stephen Dembek, Chief, Section 2  
Project Directorate IV  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical  
Specifications

Date of Issuance: March 23, 2004

ARIZONA PUBLIC SERVICE COMPANY, ET AL.

DOCKET NO. STN 50-529

PALO VERDE NUCLEAR GENERATING STATION, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 152  
License No. NPF-51

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by the Arizona Public Service Company (APS or the licensee) on behalf of itself and the Salt River Project Agricultural Improvement and Power District, El Paso Electric Company, Southern California Edison Company, Public Service Company of New Mexico, Los Angeles Department of Water and Power, and Southern California Public Power Authority dated September 17, 2003, and its supplement dated February 20, 2004, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's regulations set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
  - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
  - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C(2) of Facility Operating License No. NPF-51 is hereby amended to read as follows:

Date of Attachment: March 28, 2004

This is a technical specification for the implementation of the new system.

Specifications

Product: IBM Business Partner

Office of the Director of the Missouri State Regulatory Commission

/RA/

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The application for amendm

The Nuclear Regula

License No. NPF-74  
Amendment No. 152

AMENDMENT TO FACILITY OPE

PALO VERDE NUCLEAR GEN

DOCKET NO. STN 50-530

ARIZONA PUBLIC SERVICE COM





SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 152 TO FACILITY OPERATING LICENSE NO.  
NPF-41, AMENDMENT NO. 152 TO FACILITY OPERATING LICENSE NO. NPF-51,  
AND AMENDMENT NO. 152 TO FACILITY OPERATING LICENSE NO. NPF-74  
ARIZONA PUBLIC SERVICE COMPANY, ET AL.  
PALO VERDE NUCLEAR GENERATING STATION, UNITS 1, 2, AND 3  
DOCKET NOS. STN 50-528, STN 50-529, AND STN 50-530

1.0 INTRODUCTION

By letter dated September 17, 2003, as supplemented by letter dated February 20, 2004, Arizona Public Service Company (APS or the licensee), requested changes to the Technical Specifications (TS) for the Palo Verde Nuclear Generating Station (PVNGS), Units 1, 2, and 3. APS requested changes to the sections of the TS that refer to the part-length control element assemblies (CEAs) and the full-length CEAs. The licensee will replace the part-length CEAs with a new design known as part-strength CEAs which are functionally equivalent in the core. The current part-length CEAs have been in use since the start of operation of each PVNGS unit and are planned to be replaced before reaching 15 effective full power years. The wording for "part length" CEAs in the TS will be changed to "part length or part strength" CEAs since both designs will be in service until all the part-length CEAs have been replaced in all three units by the part-strength CEAs. The name for full-length CEAs will be changed to full-strength CEAs for terminology consistency only, with no changes being made to the design or operation of the full-length CEAs.

The February 20, 2004, supplemental letter provided additional clarifying information, did not expand the scope of the application as originally noticed, and did not change the NRC staff's original proposed no significant hazards consideration determination as published in the *Federal Register* on December 9, 2003 (68 FR 68657).

In addition, the February 20, 2004, supplemental letter contained a withdrawal of one of the proposed TS changes included in the original application (a change to Limiting Condition for Operation (LCO) 3.1.5, Condition B, concerning CEA position indicators). A Notice of Partial Withdrawal of Application for Amendments to Facility Operating Licenses has been forwarded to the Office of the Federal Register for publication.

## 2.0 REGULATORY EVALUATION

### 2.1 Regulatory Requirements and Review Documents

The staff used NUREG-0800, Standard Review Plan (SRP), Section 4.3, "Nuclear Design," focusing on the control systems area, SRP Section 15.4.3, "Control Rod Misoperation," and SRP Section 15.4.8, "Spectrum of Rod Ejection Accidents," Draft, Rev. 3, to assist in its review of the licensee's amendment request.

Title 10 of the *Code of Federal Regulations* (10 CFR), Part 50 Appendix A, "General Design Criteria (GDC) for Nuclear Power Plants," provides a list of the minimum design requirements for nuclear power plants. The staff finds that the licensee in Section 5.2 of its submittal identified the applicable regulatory requirements. The regulatory requirements for which the staff based its acceptance are summarized below.

GDC 10, "Reactor design," requires the reactor core and associated coolant, control and protection systems to be designed with appropriate margin to assure that specified acceptable fuel design limits are not exceeded during any condition of normal operation, including the effects of anticipated operational occurrences (AOOs).

GDC 11, "Reactor inherent protection," requires that in the power operating range, the net effect of the prompt inherent nuclear feedback characteristics tends to compensate for a rapid increase in reactivity.

GDC 12, "Suppression of reactor power oscillations," requires the reactor core and associated coolant, control and protection systems be designed to assure that power oscillations which can result in conditions exceeding specified acceptable fuel design limits are not possible or can be reliably and readily detected and suppressed.

GDC 26, "Reactivity control system redundancy and capability," requires one of the independent reactivity control systems be control rods and shall be capable of reliably controlling reactivity changes to assure that under conditions of normal operation, including AOOs, and with appropriate margin for malfunctions such as stuck rods, specified acceptable fuel design limits are not exceeded.

GDC 27, "Combined reactivity control systems capability," requires the reactivity control systems have a combined capability, in conjunction with poison addition by the emergency core cooling system, of reliably controlling reactivity changes to assure that under postulated accident conditions and with appropriate margin for stuck rods the capability to cool the core is maintained.

GDC 28, "Reactivity limits," requires the reactor control systems be designed with appropriate limits on the potential amount and rate of reactivity increase to assure that the effects of postulated reactivity accidents can neither result in damage to the reactor coolant pressure boundary greater than limited local yielding nor sufficiently disturb the core, its support structures or other reactor pressure vessel internals to impair significantly the capability to cool the core.

GDC 29, "Protection against anticipated operational occurrences," requires protection and reactivity control systems be designed to assure an extremely high probability of accomplishing their safety functions in the event of AOOs.

## 2.2 Description of Proposed Technical Specification Changes

APS provided a descriptive list of requested changes to the PVNGS Units 1, 2, and 3 TS with relation to part-length CEAs and full-length CEAs in Section 2.0 of their September 17, 2003, submittal. The staff reviewed each of these changes against the regulatory criteria described in Section 2.1 of this safety evaluation (SE) and found them acceptable. The basis for the staff's acceptance and a description of the review it performed is located in Section 3.0 of this SE. The staff reviewed the proposed changes to the following TS sections.

Editorial changes from full-length to full-strength CEAs and part-length to part-strength CEAs will be made to page i of the Table of Contents and to the relevant definitions in TS Section 1.1.

TS Section 3.1.5 requires all full-length and part-length CEAs be aligned to within 6.6 inches of all other CEAs in their respective groups. This requirement will not change for the part-strength CEAs. The TS LCO changes and surveillance requirement (SR) changes will consist only of an editorial change from full-length to full-strength CEAs and part-length to part-strength CEAs.

TS Section 3.1.8 sets insertion limits in the Core Operating Limit Report (COLR) explicitly for the part-length CEAs. There are no changes to the maximum designated insertion limit or to the time limit for returning the full-length CEAs and part-length CEAs to within the power dependent insertion limit (PDIL). The only change to this TS is an editorial change from part-length to part-strength CEAs.

TS Section 3.1.9 provides for relaxations in existing LCOs to permit the performance of certain physics tests during Modes 2 and 3. There are no changes made to the requirements to the LCOs or SRs other than changing the terminology used for full-length CEAs to full-strength CEAs.

TS Section 3.1.10 provides for relaxations in existing LCOs to permit the performance of certain physics tests during Modes 1 and 2. There are no changes made to the requirements to the LCOs or SRs other than changing the terminology used for part-length CEAs to part-strength CEAs.

TS Section 3.1.11 provides for relaxations in existing LCOs to permit the performance of certain physics tests during Mode 1 with thermal power greater than 20 percent. There are no changes made to it other than changing the terminology used for part-length CEAs to part-strength CEAs.

TS Section 3.3.3 requires that full-length and part-length CEAs be fully withdrawn in the event of certain conditions for control element assembly calculators (CEACs) inoperability. The operation of the new part-strength CEAs is equivalent to the current part-length CEAs. The part-strength CEAs will not functionally impact operation of the CEACs since the same CEA extension shafts, control element drive mechanisms, and rod position indicators are used and will continue to provide position indication for the CEACs. Accident events applicable to part-

strength CEAs are bounded by the existing safety analyses for the full-strength CEAs. The only change to this TS is the editorial change from full-length to full-strength and part-length to part-strength CEAs.

TS Section 4.2.2 describes the CEAs used at PVNGS. This section will provide a description of the part-strength CEAs along with maintaining a description of the part-length CEAs to accommodate staggered installation of part-strength CEAs in each unit.

TS Section 5.6.5 identifies the core operating limits required to be in the COLR along with their technical basis. TS 5.6.5.a.7 identifies the insertion limits of the part-length CEAs. The same technical information will apply to the new part-strength CEAs. TS 5.6.5.b.3 identifies the reference for the analytical methodology used for specifying limiting data to be included in the COLR. The same analytical methodology will apply to the proposed change for the part-strength CEAs. Thus, the only change being made is the editorial change from "part-length" to "part-length or part-strength." TS 5.6.5.b.12 refers to the technical basis documentation for the CENTS computer code as is applicable to the part length CEAs insertion limits. Since the analytical methodology in the CENTS code can be applied to the part-strength CEAs, only the editorial change from part-length to part-strength will be made.

### 3.0 TECHNICAL EVALUATION

The staff has reviewed the licensee's regulatory and technical analyses in support of its proposed license amendment which are described in Sections 4.0 and 5.0 of the licensee's September 17, 2003, submittal. The detailed evaluation below will support the conclusion 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 the amendments will not be inimical to the common defense and security or to the health and safety of the public.

#### 3.1 Background

CEAs perform two functions within the core, reactivity control during operation and maintenance of shutdown margin. The regulating CEA groups, which are full-length CEAs, provide reactivity control during operation, and are used to compensate for changes in reactivity associated with routine power level changes, to offset minor variations in moderator temperature and boron concentration changes during operation at power, and to dampen axial xenon oscillations. There are thirteen part-length CEAs in the reactor that also provide reactivity control during operation, assisting in controlling the core power distribution, including the suppression of xenon-induced axial power oscillations. The regulating full-length CEA groups and the part-length CEAs are not relied upon for shutdown margin or accident mitigation.

Combustion Engineering developed a new design for the original part-length CEAs to be used in the System-80 designed reactors. The original part-length CEA control section design consists of solid Inconel 625 comprising the bottom 50 percent of the assembly length, a stainless steel tube open to the reactor coolant over the next 40 percent, and a sealed chamber containing 73 percent theoretical density boron carbide pellets in the top 10 percent. The new part-strength CEA design maintains the same external dimensions as the original design, but with changes to the construction and internal components of the CEA finger. The new part-

strength CEA design is composed of an Inconel 625 tube filled with Inconel 625 slugs throughout the full length of the active region of the finger. The perforated tube in the upper 40 percent section and sealed chamber of boron carbide pellets at the top of the original part-length CEA design has been replaced by Inconel tubing and slugs in the new part-strength CEA design. There are currently 13 part-length CEAs installed in each reactor. APS intends to replace the 13 existing part-length CEAs in each PVNGS reactor with the new part-strength CEAs in the upcoming refueling outages, which are scheduled for Spring 2004 for Unit 1, Spring 2005 for Unit 2, and Fall 2004 for Unit 3.

APS has not proposed to change the full-length CEA design. The licensee's amendment request proposes to change the name from full-length CEAs to full-strength CEAs so that the terminology for CEAs will be consistent.

### 3.2 Part-Strength Control Element Assemblies

The licensee states the part-length CEAs will be replaced by functionally equivalent part-strength CEAs. In its February 20, 2004, response letter to an NRC staff request for additional information (RAI), the licensee referenced a Westinghouse report which concluded the reactor operation with the new part-strength CEAs would be the same as the existing part-length CEAs since the similarity in physical design requires no change to any operating limitations. In addition, the licensee described the methodology used to compare the part-length CEAs and the part-strength CEAs. The staff verified that the methodology used to compare the part-length CEAs and the part-strength CEAs was an approved methodology and was implemented appropriately to prove that the CEAs will be functionally equivalent once inserted in the core. The licensee used CASMO-4/SIMULATE-3 to determine the potential impact in part-strength CEA worth and found the rod worth difference is less than 2 percent between the part-length CEA and the part-strength CEA. The staff verified the licensee also determined the effects the new part-strength CEA would have on peaking factors, rod worths, and shutdown margin. Cases run with SIMULATE-3 found only a small difference in rod worths and also found no significant changes affecting the peaking factors and other CEA reactivity worths. The difference between the two CEAs was within the  $k_{\text{eff}}$  convergence criteria of two to five pcm, which was judged to be acceptably small. The part-strength CEAs will be in the same location as the existing part-length CEAs with no change in subgroup assignments. The PDIL for the part-strength CEAs will be the same as the current PDIL for the part-length CEAs, which limits insertion to 50 percent. The new part-strength CEA design will detect and suppress axial power oscillations, and is capable of controlling reactivity in the same way the part-length CEAs do. The staff finds that the requirements of GDCs 10, 12, 26, and 28 continue to be met, and that the replacement of part-length CEAs with part-strength CEAs is therefore acceptable.

The staff verified the licensee reviewed its analyses of record for each accident in Chapter 15 of the PVNGS Updated Final Safety Analysis Report (UFSAR) related to the impact of the new part strength CEA design. UFSAR Section 7.2.2.1.1.C discusses an incident of moderate frequency introduced by the original part-length CEA design. The part-length CEA introduces flux peaking in the top of the core when inserted beyond the 50 percent PDIL due to the steel opening on the upper 40 percent of the assembly. The new part-strength CEA design contains the neutron absorber Inconel 625 throughout the control section for each CEA finger, which prevents the core axial flux redistribution caused by an insertion beyond the PDIL or a rod drop of a part-length CEA. Although the part-strength CEA design contains Inconel 625 throughout



the control section, the part-strength CEA has less negative reactivity than the full-strength CEA design containing boron carbide throughout its control section, and the CEA drop event that focuses on the full-strength CEAs will bound a part-strength CEA drop. In addition, neither the part-length CEAs nor the part-strength CEAs are considered for shutdown margin or for accident mitigation. The full-strength CEAs are the only ones considered under the current design, and they remain capable of reliably controlling reactivity changes to assure that under postulated accident conditions and with appropriate margin for stuck rods the capability to cool the core is maintained. The staff finds that the requirements of GDCs 11, 27 and 29 continue to be met. As a result, the staff finds it acceptable to remove the analysis associated with the undesired flux redistribution due to misoperation of the part-length CEA from the PVNGS UFSAR safety analyses.

Additionally, the staff also verified that the licensee performed a review of the physics and transient analyses and that the necessary input modifications to the core reload process were made. No changes to the reload analysis methodology were necessary. The licensee provided a list of specific input modifications resulting from the replacement in its February 20, 2004, submittal. The licensee evaluated all safety-related concerns discussed in the licensing bases documents which focus on mitigation of the accidents. The staff verified the full-length CEA drop event remains the bounding event for the UFSAR Chapter 15 analyses. The staff agrees that since the part-strength CEA has less negative reactivity than the full-length CEA, the drop event focused on full-length CEAs remains the bounding event.

As part of its review, the staff requested the licensee verify that the 6.6 inch CEA alignment limit currently required in TS 3.1.5 is appropriate for the new part-strength CEA design. In its response, the licensee stated the 6.6 inch limit for misalignment prevents the limit on the departure from nucleate boiling ratio from being exceeded for any CEA. Since all part-strength CEAs are less reactive than the full-strength CEAs and would result in lower peaking factors, the 6.6 inch insertion limit is conservative for the part-strength CEAs. The staff finds it acceptable to keep the limit at 6.6 inches.

### 3.3 Full-Length CEAs to Full-Strength CEAs

The licensee's amendment request proposes to change the name from full-length CEAs to full-strength CEAs so that the terminology for CEAs will be consistent. The staff finds this acceptable since there will be no change to the design or operation of the full-length CEAs.

## 4.0 STATE CONSULTATION

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

## 5.0 ENVIRONMENTAL CONSIDERATION

The amendments change requirements with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and change surveillance requirements. The NRC 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 a proposed finding that the amendments involve no significant hazards consideration, and there has been no public comment on such finding (68 FR 68657). 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 need be prepared in connection with the issuance of the amendments.

## 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) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: Martha Barillas, NRR/SRXB

Date: March 23, 2004

UNITED STATES NUCLEAR REGULATORY COMMISSION  
ARIZONA PUBLIC SERVICE COMPANY, ET AL.  
DOCKET NOS. STN 50-528, STN 50-529, AND STN 50-530  
NOTICE OF PARTIAL WITHDRAWAL OF APPLICATION FOR  
AMENDMENT TO FACILITY OPERATING LICENSE

The U.S. Nuclear Regulatory Commission (the Commission) has granted the request of Arizona Public Service Company (the licensee) to partially withdraw its September 17, 2003, application for proposed amendments to Facility Operating License Nos. NPF-41, NPF-51, and NPF-74 for the Palo Verde Nuclear Generating Station, Units 1, 2, and 3, respectively, located in Maricopa County, Arizona.

A portion of the September 17, 2003, license amendment request proposed a change to Limiting Condition for Operation 3.1.5, Condition B, concerning control element assembly position indicators.

The Commission had previously issued a Notice of Consideration of Issuance of Amendment published in the FEDERAL REGISTER on December 9, 2003 (68 FR 68657). However, by letter dated February 20, 2004, the licensee partially withdrew the proposed change.

For further details with respect to this action, see the application for amendments dated September 17, 2003, and the licensee's letter dated February 20, 2004, which partially withdrew the application for license amendments. Documents may be examined, and/or copied for a fee, at the NRC's Public Document Room (PDR), located at One White Flint North, Public File Area O1 F21, 11555 Rockville Pike (first floor), Rockville, Maryland. Publicly available records will be accessible electronically from the Agencywide Documents Access and Management Systems (ADAMS) Public Electronic Reading Room on the internet at the NRC Web site,

<http://www.nrc.gov/reading-rm/adams/html>. Persons who do not have access to ADAMS or who encounter problems in accessing the documents located in ADAMS, should contact the NRC PDR Reference staff by telephone at 1-800-397-4209, or 301-415-4737 or by email to [pdr@nrc.gov](mailto:pdr@nrc.gov).

Dated at Rockville, Maryland, this 23rd day of March 2004.

FOR THE NUCLEAR REGULATORY COMMISSION

**/s/**

Mel B. Fields, Senior Project Manager, Section 2  
Project Directorate IV  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation