



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

ARIZONA PUBLIC SERVICE COMPANY, ET AL.

DOCKET NO. STN 50-528

PALO VERDE NUCLEAR GENERATING STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 32  
License No. NPF-41

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment, dated March 2, 1988, by the Arizona Public Service Company (APS) 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 (licensees), 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 1;
  - B. The facility will operate in conformity with the application, the provisions of Act, and the 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;
  - 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, paragraph 2.C of Facility Operating License No. NPF-41 is hereby amended to include the following additional condition:

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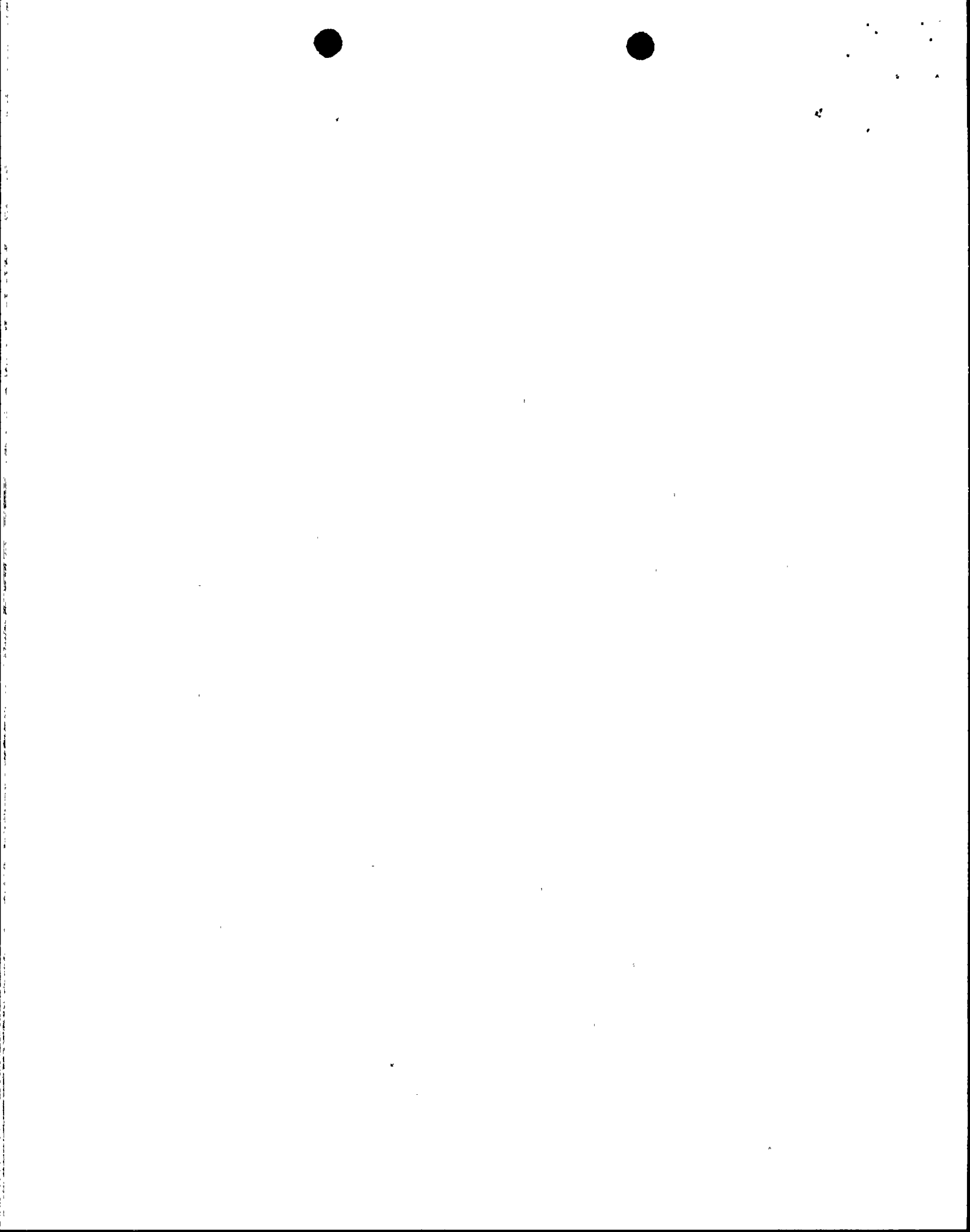
(13) RCP Shaft Vibration Monitoring Program (Section 5.4.1, SSER 12)

APS shall implement an augmented vibration monitoring program for each of the four reactor coolant pumps that includes the following elements:

- (a) Every four hours, monitor and record vibration data on each of the four reactor coolant pumps.
- (b) On a daily basis, perform an evaluation of the pump vibration data obtained in (a) above, by using an appropriately qualified engineering individual.
- (c) When any one vibration monitor on the reactor coolant pumps indicates a vibration level of 8 mils or greater, the Nuclear Regulatory Commission shall be notified within four hours via the Emergency Notification System. In addition, when the vibration on any pump exceeds 8 mils due to a shaft crack or unknown cause, within four hours the affected pump shall have its orbit and spectra continuously monitored and evaluated by an appropriately qualified individual.
- (d) When any one vibration monitor on the reactor coolant pumps indicates a vibration level of 10 mils or greater, within one hour, initiate action to place the unit in at least HOT STANDBY within the next six hours, and at least COLD SHUTDOWN within the following 30 hours. In addition, the affected pump shall be secured after entering HOT STANDBY.
- (e) On a daily basis a spectrum analysis shall be performed on the reactor coolant pump shaft vibration data and shall be evaluated for trends by using an individual qualified in that technique. The evaluation shall consist of comparing the running speed (1xRPM) and twice running speed (2xRPM) spectral components to limits computed from the baseline vibration. The limits shall be based on the lowest of: (i) 1.6 times the baseline value, (ii) the mean plus three standard deviations, (iii) 2 mils for the 2xRPM component, or (iv) 6 mils for the 1xRPM component <sup>1/</sup>. When the amplitude exceeds any limit, further analysis shall be performed. This analysis shall consist of an inspection of the amplitude versus time plots for a steadily increasing trend, and a review of other plant data which might explain the change in amplitude. If it is confirmed that the trend is not caused by plant or pump conditions unrelated to a shaft crack, the trend shall be extrapolated manually and/or by computer to predict the time at which the vibration is expected to reach 10 mils. If the projected time for reaching 10 mils is one week or

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<sup>1/</sup> In the event new limit methods are chosen, they shall be evaluated by the licensees to assure that the new methods are equal to or better than the above method. The Commission shall be advised within one week if new methods are chosen.




less, within one hour, initiate action to place the Unit in at least HOT STANDBY within the next six hours and at least COLD SHUTDOWN within the following 30 hours. In addition, the affected pump shall be secured after entering HOT STANDBY.

The Regional Administrator, Region V may relax or rescind, in writing, any of the above vibration monitoring conditions upon a showing by the licensees of good cause.

3. This license amendment is effective as of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

  
George M. Knighton, Director  
Project Directorate V  
Division of Reactor Projects - III,  
IV, V and Special Projects

Date of Issuance: May 10, 1988



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