



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 47 TO FACILITY OPERATING LICENSE NO. NPF-41

ARIZONA PUBLIC SERVICE COMPANY, ET AL.

PALO VERDE NUCLEAR GENERATING STATION, UNIT 1

DOCKET NO. STN 50-528

1.0 INTRODUCTION

By letter dated October 25, 1989 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 changes 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 amendments were requested on an emergency basis for Units 2 and 3 to prevent unnecessary delays in return to power. Emergency relief was granted by letter dated October 26, 1989, followed by their respective amendment dated December 4, 1989. No basis existed to process the application for Unit 1 on an emergency basis, and thus is being handled separately from Units 2 and 3.

The proposed changes would revise surveillance requirement 4.5.2.h to Technical Specification 3/4.5.2, "Emergency Core Cooling Systems," by specifying minimum flow requirements during simultaneous hot leg and cold leg injection. In addition, a maximum pump flowrate requirement would be specified to ensure pump protection against runout.

2.0 DISCUSSION AND EVALUATION

Surveillance requirement 4.5.2.h of Technical Specification (TS) 3/4.5.2, "Emergency Core Cooling Systems" currently specifies a flow rate requirement of 545 ± 20 gpm for high pressure safety injection (HPSI) pump simultaneous hot leg and cold leg injection flow balancing. The intent of the TS was to ensure approximately balanced flow to the hot leg and cold legs during post-LOCA recirculation, and to ensure that a maximum HPSI Pump design flowrate of 1130 gpm, as specified in the CESSAR FSAR, would not be exceeded.

On October 20, 1989, APS discovered that due to an error in the original installation of the flow measuring orifices in the "A" train HPSI pump hot leg injection lines, and the use of inappropriate flow calibration curves during system testing, the existing surveillance acceptance criteria could not be met.

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The orifices installed in the "A" train HPSI pump hot leg injection line for each of the three Palo Verde units were larger in diameter than specified in the instrument data sheets. This resulted in the HPSI hot leg injection flow indication reading less than the actual flow during the performance of the simultaneous hot leg and cold leg injection testing required by TS 4.5.2.h. Since the test was performed with the hot leg flow indicators reading lower than actual flow, the actual hot leg flows after correcting for the misinstalled orifices, were approximately 30 gpm higher than the indicated flow, thus exceeding the TS limit. These orifices only provide flow indication and do not provide a flow control function.

The proposed surveillance requirements would maintain the current minimum flowrate required for hot leg and cold leg injection (525 gpm) but would remove the upper limit on injection flowrate to the extent that total pump flowrate would not exceed 1200 gpm. This maximum total flow, to prevent pump runout, is based on the installed capabilities of the HPSI pumps rather than the design specification runout flow of 1130 gpm.

Based upon our review of the pump characteristic curves for the associated HPSI pumps and currently installed impellers, we find that the minimum simultaneous hot leg and cold leg injection flow requirements can be maintained, and that the maximum pump flowrate limit of 1200 gpm is sufficient to provide adequate pump runout protection. The proposed TS changes are therefore acceptable.

The proposed changes to the associated Bases, and the corrections to the typographical errors are also acceptable.

3.0 CONTACT WITH STATE OFFICIAL

The Arizona Radiation Regulatory Agency has been advised of the proposed determination of no significant hazards consideration with regard to these changes. No comments were received.

4.0 ENVIRONMENTAL CONSIDERATIONS

The amendment involves changes in the surveillance requirements of facility components located within the restricted area as defined in 10 CFR 20. The staff has determined that the amendment involves no significant increase in the amount, and no significant change in the type, of any effluent 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 amendment involves no significant hazards consideration, and there has been no public comment on such finding. Accordingly, the amendment meets 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 to be prepared in connection with the issuance of this amendment.

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 the amendment 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 changes are acceptable.

PRINCIPAL CONTRIBUTOR: T. Chan

DATED: February 22, 1990



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