



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 95 TO FACILITY OPERATING LICENSE NO. NPF-51
ARIZONA PUBLIC SERVICE COMPANY, ET AL.
PALO VERDE NUCLEAR GENERATING STATION, UNIT NO. 2
DOCKET NO. STN 50-529

1.0 INTRODUCTION

By letter dated March 26, 1996, the Arizona Public Service Company (APS or the licensee) submitted a request for changes to the Technical Specifications (TS) for the Palo Verde Nuclear Generating Station, Unit 2 (Appendix A to Facility Operating License No. NPF-51). The Arizona Public Service Company submitted this request 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. The proposed amendment would revise TS 3/4.9.6 to allow the refueling machine overload cutoff limit to be increased to as much as 2000 pounds in an effort to free the stuck fuel assembly from core location A-06.

2.0 EVALUATION

PVNGS Unit 2 is currently in their sixth refueling outage, performing the Cycle 6 core offload. The refueling machine is not able to fully withdraw fuel assemblies in core locations A-06 and A-07. The fuel assemblies were discovered to be stuck on March 22, 1996, at approximately 2:30 pm mountain standard time (MST), and on March 24, 1996, at approximately 3:00 pm MST, respectively. Subsequently, APS and Combustion Engineering personnel have been evaluating the condition in order to determine the proper course of action to free the stuck assemblies. These activities have included video taping of the assemblies to identify potential causes for the assemblies being stuck.

TS 3/4.9.6 identifies the overload cutoff limit which protects the core internals (i.e., fuel assemblies, reactor vessel internals) and pressure vessel from possible damage in the event a fuel assembly binds mechanically as it is withdrawn from the reactor vessel.

The TS amendment would increase the refueling machine overload cutoff limit from 1600 pounds to 2000 pounds for the purpose of removing the fuel assembly at core location A-06. The additional 400 pound increase will be applied in 50 pound increments. This TS change will expire when the fuel assembly located at core location A-06 is successfully withdrawn. The refueling

machine overload cutoff limit ensures that the core internals and pressure vessel are protected from an excessive lifting force in the event they are inadvertently engaged during lifting operations. At the request of APS, ABB-CE has reviewed the current situation in order to assist APS in its effort to free the fuel assembly from core location A-06. ABB-CE has concurred with increasing the refueling machine overload cutoff setpoint in 50 pound increments to 2000 pounds (400 pounds above the current setting of 1600 pounds). At each of the increased overload cutoff setpoints, attempts will be made to withdraw the stuck assembly. Engineering analyses verify that the revised limit (2000 pounds) is within the structural capacity of the fuel assembly. During attempts to withdraw the fuel assembly in location A-06, the assembly in core location A-07 will be restrained to prevent moving or falling.

3.0 EXPLANATION OF THE EMERGENCY CIRCUMSTANCES

During the current Unit 2 sixth refueling outage, refueling personnel were not able to fully withdraw fuel assemblies in core locations A-06 and A-07. The fuel assemblies were discovered to be stuck on March 22, 1996, at approximately 2:30 pm MST, and on March 24, 1996, at approximately 3:00 pm MST, respectively. Subsequently, APS and Combustion Engineering personnel have been evaluating the condition in order to determine the proper course of action to free the stuck assemblies. These activities have included video taping of the assemblies to identify potential causes for the assemblies being stuck. The emergency circumstances exist because the fuel assemblies cannot be withdrawn using the current limits of LCO 3.9.6, thereby preventing completion of fuel movement and the resumption of power operations. The suspension of fuel movement would leave the core partially unloaded.

The LCO of TS 3/4.9.6 currently specifies that the refueling machine be operable with an overload cutoff limit of less than or equal to 1600 pounds. Increasing the refueling machine overload cutoff limit to as much as 2000 pounds for the fuel assembly located at core location A-06, may result in freeing the fuel bundle, thereby allowing continuation of fuel movement. The additional 400 pound increase will be applied in 50 pound increments.

The emergency circumstances exist because the fuel assembly cannot be withdrawn within the current limits of LCO 3.9.6. The emergency circumstances could not be avoided because the stuck fuel assembly in Unit 2 was unexpected.

4.0 NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility does not involve a significant hazards consideration if operation of the facility in accordance with a proposed amendment would not (1) involve a significant increase in the probability or consequences of an accident previously evaluated; or (2) create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) involve a significant reduction in a margin of

safety. A discussion of these standards as they relate to this amendment request follows:

Standard 1 -- Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

The proposed change increases the refueling machine overload cutoff limit from 1600 pounds to 2000 pounds for the purpose of attempting to remove the fuel assembly at core location A-06. The change to the limit is based on engineering analyses by ABB-CE. Palo Verde is currently analyzed for a design basis fuel handling accident inside containment which is described as the dropping of a single fuel assembly during fuel handling. Engineering analyses verify that the revised limit is within the structural capacity of the fuel assembly. Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

Standard 2 -- Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

The proposed change increases the refueling machine overload cutoff limit from 1600 pounds to 2000 pounds for the purpose of attempting to remove the fuel assembly at core location A-06. The proposed change to the overload cutoff does not introduce any new modes of plant operation or new accident precursors, involve any physical alterations to plant configurations, or make any changes to system setpoints which could initiate a new or different kind of accident. The proposed change does not affect the design or performance characteristics of the refueling machine or the fuel assembly. No new failure modes have been defined nor new system interactions introduced for any plant system or component, nor has any new limiting failure been identified as a result of the proposed change. The configuration and use of the refueling machine will be maintained as described in CESSAR 9.1.4.2.2.1 and 9.1.4.3.4.b. The change to the overload cutoff limit is well within the acceptable axial fuel assembly load of 5000 pounds described in the UFSAR 4.2.3.1.5.B. The consequences of a fuel handling accident as previously analyzed, bound any possible malfunction during fuel movement. The only possible equipment that could malfunction are the fuel assembly and the refueling machine. The malfunction of this equipment has been previously analyzed. Therefore, the proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

Standard 3 -- Does the proposed change involve a significant reduction in a margin of safety.

Under the proposed temporary change, the refueling machine will remain capable of performing its safety function. The change does not affect the design or performance of the refueling machine or the fuel assembly, but may allow APS to remove a stuck fuel assembly from core location A-06. The worst case fuel handling accident as previously evaluated, remains the limiting event even with the use of the increased overload cutoff setpoint. The margin of safety will not be reduced since one of the primary reasons for the setpoint is to

prevent damage to the core internals and the pressure vessel. The change to the overload cutoff limit is well within the acceptable axial fuel assembly load described in UFSAR 4.2.3.1.5.B. Therefore, the proposed change does not involve a significant reduction in a margin of safety.

5.0 STATE CONSULTATION

In accordance with the Commission's regulations, an attempt was made to notify the Arizona State official of the proposed issuance of the amendment. The State official was not available. The State official will be contacted during the week of March 26, 1996.

6.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes a surveillance requirement. The NRC staff has determined that the amendment involves 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 made a final no significant hazards consideration determination finding with respect to this amendment. 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 be prepared in connection with the issuance of the amendment.

7.0 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 amendment will not be inimical to the common defense and security or to the health and safety of the public.

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Date: March 26, 1996