



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NOS. 101 AND 88 TO

FACILITY OPERATING LICENSE NO. NPF-4 AND NPF-7

VIRGINIA ELECTRIC AND POWER COMPANY

OLD DOMINION ELECTRIC COOPERATIVE

NORTH ANNA POWER STATION, UNITS NO. 1 AND NO. 2

DOCKET NOS. 50-338 AND 50-339

INTRODUCTION

By letter dated March 3, 1988, the Virginia Electric and Power Company (the licensee) requested changes to the North Anna Power Station, Units No. 1 and No. 2 (NA-1&2) Technical Specifications (TS). The proposed changes would revise the Limiting Condition for Operation (LCO) for TS 3/4.7.14 regarding the operation and surveillance requirements for the NA-1&2 diesel-driven fire pump. The proposed changes are specified below:

- a. A new action statement "b" would be added to TS 3.7.14.1 which requires the establishment and demonstration of the operability of the backup fire suppression system when the diesel-driven fire pump is not available for use during the 18-month inspection (TS 4.7.14.1.2.c).
- b. Surveillance requirement 4.7.14.1.2.c would be changed by deleting the phrase "during shutdown," and adding a reference to the new action statement "b" as specified above.
- c. A footnote would be added to surveillance requirements 4.7.14.1.1, 4.7.14.1.2, and 4.7.14.1.3 for Unit 2 which provides clarification that the fire suppression system is common to Unit 1 and therefore the surveillance need only be performed once per defined interval.
- d. Correct a typographical error in action statement "a".

DISCUSSION

The fire suppression system for NA-1&2 includes two high pressure fire water pumps, one motor-driven and the other diesel engine-driven. This suppression system is shared by both units. Currently, TS 4.7.14.1.2.c requires that an inspection of the diesel engine be performed at least once per 18 months, during shutdown, in accordance with procedures prepared in conjunction with the engine manufacturer's recommendations. The proposed changes would continue to require an inspection at least once per 18 months, but would

eliminate the restriction that the inspection be performed "during shutdown." Instead, the proposed changes would allow the 18-month inspection to be carried out with both units operating, but would require that a backup fire suppression water system be established and demonstrated operable within 24 hours from removing the diesel engine-driven fire pump from service for the purpose of performing this inspection. In the event that the diesel engine is not returned to operable status within 7 days, the proposed change imposes the requirement to submit a Special Report as called for by TS 3.7.14.1 Action "a."

The proposed changes were requested in order to eliminate the ambiguity of the "during shutdown" clause which is not specific as to whether one or both units must be shutdown, and allow flexibility with respect to the timing of the 18-month inspection while retaining the degree of fire suppression system redundancy appropriate for the operational status of the units. Although the 18-month inspection of the fire pump diesel engine will normally be performed during a unit outage, the flexibility afforded by the proposed changes would eliminate the need to (1) extend the surveillance interval beyond that allowed by the TS, or (2) shut down one or both units in the event of unforeseen changes to the outage schedules for both units.

The licensee has interpreted the clause "during shutdown" to mean that only one unit is required to be shutdown during the performance of the 18-month diesel engine inspection. This interpretation was based on the licensee's understanding that the purpose of the shutdown clause was to reduce the safety risk associated with a fire, while the diesel fire pump was unavailable for the NRC-approved fire suppression system design. That is, the increased risk associated with removing the diesel-driven fire pump from service for the purpose of performing a comprehensive inspection was balanced by the decrease in risk associated with having one unit in a shutdown condition. Furthermore, when the diesel-driven fire pump was removed from service for the purpose of performing the 18-month inspection, Action Statement "a" of TS 3.7.14.1 was applied. This Action Statement required that the inoperable equipment (in this case, the diesel-driven fire pump) be restored to operable status within 7 days or that the licensee would submit a Special Report to the NRC within the next 30 days outlining the plans and procedures to be used to provide the loss of redundancy in this system. To date, the 18-month diesel engine inspection has been routinely completed and the fire pump returned to service within 7 days.

With the proposed changes, the increased risk associated with removing the diesel-driven fire pump from service to perform the 18-month inspection while both units are operating would be offset by requiring the restoration of the same degree of redundancy that exists when both the motor- and diesel-driven fire pumps are operable. This would be accomplished by having the motor-driven fire pump and a backup fire suppression system (which includes pumps) operable. Also, a Special Report to the Commission would be required if the diesel-driven fire pump is not restored to operable status within 7 days. The proposed changes would allow the diesel-driven fire pump to be removed from service for the 18-month surveillance only if the motor-driven fire pump is operable. With the diesel-driven fire pump removed from service for the 18-month inspection, Action Statement "c" of LCO 3.7.14.1 would apply in the event that the motor-driven fire pump became inoperable.

Footnotes are being added to the surveillance requirements for NA-2 Specifications 4.7.14.1.1, 4.7.14.1.2, and 4.7.14.1.3 to clarify that the surveillances need only to be performed once per interval to satisfy both units' surveillance requirements, since the fire suppression system is common to both units. Presently, both units' specifications include the same requirements. Finally, a typographical error is being corrected in Action "a" of 3.7.14.1 for both units.

EVALUATION

As discussed above, the proposed changes will maintain an equivalent balance of risk associated with removing the diesel-driven fire pump from service that is maintained by the current NA-1&2 TS. Therefore, the consequences of previously evaluated accidents will remain unchanged since the proposed changes will result in an equivalent degree of fire suppression system capability as is currently required by the NA-1&2 TS. In addition, the proposed changes establish a degree of fire suppression system redundancy and therefore, capability for the operational status of NA-1&2 during the periods when the diesel-driven fire pump is removed from service for a specific inspection. Finally, the current margin of safety (as defined by the current TS requirements) is to have at least one unit shutdown and an electric motor-driven fire pump operable while performing the 18-month fire pump diesel engine inspection. The staff finds that the proposed changes would maintain an equivalent margin of safety with both units operable and by requiring that both the motor-driven fire pump and the backup fire suppression system be in an operable status whenever the 18-month diesel engine inspection is performed. Therefore, the staff finds the proposed changes do not involve any significant reduction in the margin of nuclear safety associated with a fire at NA-1&2. Therefore, based on all of the above, the staff finds the proposed changes to be acceptable.

ENVIRONMENTAL CONSIDERATION

These amendments involve a change in the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 or changes to a surveillance requirement. 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 published a proposed finding that the amendments involve no significant hazards consideration and there has been no public comment on such finding. 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.

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, and (2) such activities will

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

Date: May 9, 1988

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