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Docket No. 50-261

Mr. E. E. Utley, Executive Vice President
Power Supply and Engineering & Construction
Carolina Power and Light Company
Post Office Box 1551
Raleigh, North Carolina 27602

Dear Mr. Utley:

Your letter dated January 6, 1983 submitted a "Final" report providing your assessment of activities involved in repairing/replacement of the H. B. Robinson Unit No. 2 steam generators.

We have completed our review and our comments are contained in the enclosure. This information has been previously given to you by telecopy on March 9, 1983.

Your letter dated February 9, 1983 requested, among other things, an integrated schedule that would include a possible hearing. We cannot integrate a potential hearing into the schedule because hearings and their schedules are determined by the ASLB. We have met with our staff, however, and have determined that the schedule can be improved by about two months provided sufficient and complete information is received by our staff by March 22, 1983 as a result of our RAI's (enclosure) initially telecopied to you the morning of March 9, 1983. After our review of your responses our plan is to hold a technical review meeting with you about April 5, 1983. The schedule revision has been discussed with and agreed to by your staff.

As noted above the improved schedule is predicated on the completeness of your report and responses to the RAI's. We are mindful that your "Final" report is not complete as it currently stands (see Section 8 for example); additionally our responses to the draft report are not completely incorporated into your "Final" report.

Sincerely,
Original signed by:
S. A. Varga

Steven A. Varga, Chief
Operating Reactors Branch #1
Division of Licensing

Enclosure:
Request for Additional
Information

cc w/enclosure:
See next page

OFFICE	ORB#1:DL	ORB#1:DL				
SURNAME	GRequa:dm	SVarga				
DATE	03/21/83	03/21/83				

NRC FORM 318 (10-80) NRCM 0240 OFFICIAL RECORD COPY USGPO: 1981—335-960

Mr. E. E. Utley
Carolina Power and Light Company

cc: G. F. Trowbridge, Esquire
Shaw, Pittman, Potts and Trowbridge
1800 M Street, N.W.
Washington, D. C. 20036

U. S. Nuclear Regulatory Commission
Resident Inspector's Office
H. B. Robinson Steam Electric Plant
Route 5, Box 266-1A
Hartsville, South Carolina 29550

James P. O'Reilly
Regional Administrator - Region II
U. S. Nuclear Regulatory Commission
101 Marietta Street - Suite 3100
Atlanta, Georgia 30303

ENCLOSURE

REQUEST FOR ADDITIONAL INFORMATION

H. B. ROBINSON UNIT 2

"FINAL" STEAM GENERATOR REPAIR REPORT

DOCKET NO. 50-261

1. Section 3.4.1.1, "Decontamination", of the report states that two different decontamination methods were being evaluated (fill and soak, and mechanical) for primary surface decontamination. Indicate the method selected and decontamination solution chosen.

2. Section 3.4.7.1, "Radioactive Waste Volume and Activity", of the report states that various solid radwaste volume reduction techniques are being investigated. Describe in detail the technique selected including volume reduction ratio, solid radwaste process control program, activity content, and temporary storage area.

3. What are the processes and procedures to be used to preclude the probability of foreign materials entering the steam generators during construction activities?

4. What are the processes and procedures to be used to conduct search and retrieval inspection of the secondary side of the steam generator to assure cleanliness, and absence of foreign materials after construction is completed?

5. Describe whether any areas not previously disturbed during site preparation and plant construction will be needed to effect steam generators repairs.

6. Discuss any change in the amount of demineralizer wastes or steam generator blowdown discharged during operation of the new steam generators.

7. Discuss any changes to the NPDES waste permit anticipated as a result of this action.

8. Provide a description of the treatment and disposal of steam generator blowdown.

9. Describe the areas/components that will be decontaminated and subsequently placed back in service as referenced in section 3.55 of the Steam Generator Repair Report. Describe the decontamination process including the decontamination fluid. Describe the tests that have been performed to show that decontamination fluids are benign and will not cause future corrosion.

10. Provide the details of the lower steam generator assembly sealing prior to storage as related in Section 4.0 of the repair report discussion concerning on-site storage of components. Address the thickness of the seal plates and welds and the preparation of the interior of the assembly, i.e. drying, gas cover, etc.

11. Provide a description of the secondary water chemistry control program including practices and changes to reduce future corrosion of the steam generator tubes. (EPRI NP-2704-SR, Special Report October 1982 "PWR Secondary Water Chemistry Guidelines" is recommended as guidance in preparing the program).

12. Locked Rotor Analysis - Justify using the ENC analysis as the base case for the safety evaluation of the locked rotor accident, and clarify the differences between the two analyses. Also justify the assumption that the non-affected RCPs keep operating, and that LOOP does not occur. In particular justify how thier locked rotor analysis complies with GDC-17. The results of sensitivity analyses regarding the effect of LOOP should be provided if available.

    The FSAR locked rotor analysis provide more conservative results than the ENC analysis. Thus, the FSAR values for peak pressure are 2440 psia for three loops operation and 2540 psia for two loop operation, while the ENC value for three loop operation is 2332 psia. ENC did not perform an analysis for two loop operation. The FSAR was more specific than the ENC analysis in terms of the results provided for DNBR and clad temperatures. For the DNBR analysis, the FSAR provided plots of minimum DNBR achieved by 90% and 95% of the fuel rods, and the hottest fuel rod, versus time. Slightly less than 10% of the rods reach a DNBR lower than 1.3 for both two and three loop operation. The ENC analysis provides a plot of DNBR versus time, showing a minimum DNBR of 1.4, but is not specific regarding percentage of fuel rods represented. We would normally assume this to be the 95/95 DNBR. The RSAR provides plots for hot spot clad temperatures versus time, which show a steep increase during the transient. The peak clad temperature is 1810°F and a small amount of zirconium reacts with water. The ENC analysis evidences almost no rise in a plot of what appears to be average clad temperature versus time. Neither analysis assumes loss of offsite power (LOOP) in accordance with GDC 17 and both assume that all but the seized reactor coolant pump (RCP) keep operating.

13. Steam Line Break (SLB) Analysis - Commit to providing additional information that justifies the adequacy and conservatism of the ENC model utilized in the SLB analysis prior to the next refueling. As noted in our SER for the HPR-2 Cycle #9 fuel reload, the ENC SLB model appears deficient in not considering asymmetric core temperatures, nor the mass input and primary system cooldown due to accumulator actuation or SIS input.

14. Discuss the radiological consequences of accidents that could take place during the repair effort from; drops, solution leakage, accidental destruction of filters during cutting operations.

15. Regulatory Guide 8.8 recommends preparation and planning actions be completed before workers enter radiation areas (Section C.1.b; C.3.a). Verify that the planning and preparations will be completed prior to the initiation of the steam generator replacement task for the following ALARA measures planned for the steam generator replacement task:

    a. general area decontamination
    b. primary surface decontamination
    c. use of temporary shielding
    d. use of specialized tools
    e. removal of selected valves and piping
    f. establishment of low background wait areas
    g. establishment of laydown areas
    h. training for plant and contractor personnel
    i. access control
    j. equipment decontamination

    This verification should ascertain that outage sequences will be or have been reviewed by ALARA coordinators prior to work initiation to determine the specific applications of the above measures, and that manpower, materials and work direction will be planned and committed. By example, laydown and "wait areas" should be clearly identified and prepared for the task start, including provisions for decontamination, temporary shielding, posting and access. Radiation, contamination, and airborne radioactivity surveys will be conducted as necessary to determine radiation protection measures.

16. Identify the number of portable air sampling instruments available for the replacement task as discussed in Regulatory Guide 8.8, Section C.4.

17. Verify that the H. B. Robinson counting facility will be adequate for the anticipated increased surveillance activities as in Regulatory Guide 8.8, Section C.4.

18. Provide a commitment to satisfactorily resolve the outstanding defiencies noted in Inspection Report 50-261/82-34 prior to commencing the steam generator replacement task.

19. Discuss the use of engineering controls which preclude the need for respiratory protection equipment (e.g. contamination control devices, local HEPA ventilation, flexible ducting, tents) as recommended in Regulatory Guide 8.8, Section C.2.d and identify specific applications.

20. Provide a commitment to establish a program for ALARA internal and external contamination consistent with Section C.2.d of Regulatory Guide 8.8 in order to reduce the numbers of workers who receive detectable internal contamination, as well as to minimize the number of workers who become externally contaminated.

21. Describe how decontamination facilities, to be provided for the replacement task, meet the criteria of Regulatory Guide 8.8, particularly Sections C.2.f and C.4.e.

22. Verify that adequate training facilities and training personnel will be available to conduct the committed training prior to initiation of the related tasks. The training program planned by the licensee includes measures to familiarize workers with their tasks, tools, equipment, and operational and radiological procedures by use of job-specific training, dry-run training, and mock-up training. Methods for handling and processing radioactive wastes, and the impacts of these wastes have been evaluated. Radwaste reduction techniques are being investigated.

23. Provide a commitment to measure and evaluate the progress of the steam generator replacement task trhough dose tracking and on-going radiological assessment of specific tasks by radiological engineers/ALARA coordinators as is recommened in Regulatory Guide 8.8, Section C.1 and C.3.

24. In order for the NRC staff to evaluate the radiological results of the replacement project, and to determine if additional or different radiological controls need to be considered, commit to performing a radiological assessment as follows:

    A. The collective occupational dose estimate shall be updated weekly. If the updated estimate exceeds the person-rem estimate by more than 10%, the licensee shall provide a revised estimate, including the reasons for such changes, to the NRC within 15 days of determination.

    B. A final report shall be provided to the NRC within 60 days after completion of the repair. This report will include:

        1. a summary of the occupational dose received by major task,

        2. a comparison of estimated doses with the doses actually received,

        3. a discussion of ALARA measures employed, and

        4. a summary of decon efforts and radwaste generation.

    C. Interim reports which summarize each 90-day period of the repair effort shall be provided to the NRC within 60 days of the completion of each such period.