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 FACIL: 50-261 H. B. Robinson Plant, Unit 2, Carolina Power and Light 05000261
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 RECIP. NAME: VARGA, S. A. RECIPIENT AFFILIATION: Operating Reactors Branch 1

SUBJECT: Forwards description of interim insp verifying corrosion rates established for U-bend region & region above tube sheet on outlet side of steam generators. Outage will be for shorter time than planned, due to dwindling coal supplies.

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Carolina Power & Light Company

May 8, 1981

FILE: NG-3514(R)

SERIAL NO.: NO-81-820

Office of Nuclear Reactor Regulation
Attention: Mr. Steven A. Varga
Operating Reactors Branch No. 1
United States Nuclear Regulatory Commission
Washington, D. C. 20555

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2
DOCKET NO 50-261
LICENSE NO. DPR-23
STEAM GENERATOR TUBE INSPECTION OUTAGE

Dear Mr. Varga:

SUMMARY

On October 22, 1980, Carolina Power & Light Company (CP&L) committed to conduct a steam generator tube eddy current inspection prior to exceeding six effective full power months subsequent to our resumption of power on October 25, 1980. On March 25, 1981, CP&L submitted a detailed description of the inspection program planned for the six month outage. However, due to the ongoing coal strike and its potentially serious impact on our system reliability, CP&L has reevaluated the safety criteria for the steam generator tube eddy current inspection. In light of the additional measures implemented by CP&L regarding steam generator operations, CP&L has determined that a smaller scope of inspection will satisfy the inspection requirements for verifying corrosion rates while having no serious safety significance. A revised inspection plan to that effect is attached. The outage for this inspection is presently scheduled to begin late this month. However, the start of this outage is dependent upon the return of our Brunswick Unit 2 to service from the forced outage which began May 6. We will keep your staff informed by telephone as soon as more definitive information is available concerning the Robinson outage schedule.

JUSTIFICATION FOR REVISION OF SCOPE OF INSPECTION

At the end of March 1981, the Company's coal supply stood at 104 days. As of April 27, 1981, the Company's coal supply had declined to a 79-day supply.

At the end of May we expect that the Company will have reached a 50-day supply which will trigger the state emergency plan.

Currently, there are no signs the strike will end before June and some reports indicate that the strike may not end until after the miners' vacation in late June and early July. Even if the strike ends in May or June, the Company's stockpile will be in a deteriorated position with recovery not possible until well after summer of this year. It is estimated that when agreement is reached in the coal strike negotiations, a 30 day time will

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elapse before CP&L's coal deliveries return to normal. Consequently, CP&L's coal supply situation will be tenuous throughout the summer peak. It is therefore imperative that any outage of our nuclear units be minimized.

JUSTIFICATION FOR CONTINUED SAFE OPERATION WITH REVISED SCOPE

Subsequent to the steam generator tube eddy current inspection conducted during the last refueling outage (August through October 1980), Westinghouse Electric Corporation conducted a statistical analysis of corrosion rates in the regions of concern identified in past inspections. The proposed inspection scope will provide sufficient data, applicable to all three S/G's, to allow performance of a statistical analysis to verify these corrosion rates.

Carolina Power & Light Company in letters dated October 22, 1980 and December 2, 1980, committed to additional leakage rate criteria in excess of those in the Technical Specifications. It is our conclusion that these additional criteria will result in even earlier detection of an abnormal degradation trend which, based upon the last inspection results, is not anticipated.

Additionally, CP&L has made numerous and substantial improvements to our steam generator chemistry control program which we feel have reduced the rate of degradation of our steam generators. These improvements were discussed in our letter dated April 6, 1981.

In light of the above, CP&L believes that continued operation until the refueling outage scheduled this fall is justified following the verification of corrosion rates. This inspection program while reduced in scope from that described in our March 25, 1981 letter, is adequate to verify the corrosion rates determined from previous data. A summary of the results will be provided to the NRC.

CONFIRMATION OF COMMITMENTS

Carolina Power & Light Company hereby commits to conduct the six month inspection in accordance with the attached plan and provide a summary of results to the NRC. Additionally, CP&L commits to the following conditions for continued operation following the inspection to extend through no later than November, 1981:


- (1) In addition to the primary to secondary leakage rate criteria in the Technical Specifications, the following additional criteria will apply until the next inspection has been performed. Specifically, the plant will be shutdown if the verified primary to secondary leakage in any one steam generator exceeds any of the following:
 - a. A sudden increase of 0.1 gallon per minute (gpm) if the total leakage rate in that steam generator exceeds 0.2 gpm.

- b. If the leakage rate in that steam generator exceeds 0.2 gpm and an upward trend in leakage rate in excess of 0.02 gpm per day is verified. This trend will be established using at least five valid consecutive daily samples.
- (2) Whenever the plant is shut down to repair a steam generator tube leak, an inspection will be performed as mutually agreed upon by the NRC Staff and CP&L.
- (3) The NRC Staff will be provided with a summary of the results of the eddy current examination performed under item 2 above.

CONCLUSION

In light of the continuing interruption of CP&L's coal supply and the potentially serious effects that interruption could have on system reliability, CP&L believes that it is in the best interest of public health and safety to minimize nuclear unit outages as much as possible. CP&L therefore intends to conduct a smaller scope inspection of steam generator tubes during the upcoming six month inspection outage. The smaller scope is adequate to determine corrosion rate while minimizing outage time. CP&L is confident that the results of that inspection coupled with our last inspection results, the improvements made in chemistry control and the commitments described above will ensure that H. B. Robinson Unit No. 2 can continue to be operated in a safe manner until the next refueling outage.

Yours very truly,


E. E. Utley
Executive Vice President
Power Supply and
Engineering & Construction

MVP/dk (N#54)

cc: J. D. Neighbors (NRC)

ATTACHMENT

ROBINSON #2 STEAM GENERATORS INTERIM INSPECTION

MAY 1981

PROGRAM

This interim inspection is not being performed under the requirements of the Technical Specifications or Regulatory Guide 1.121. The purpose of this inspection is to verify the corrosion rates established for the U-bend region and the region above the tubesheet on the outlet side of the Steam Generators. The in-service inspection requirements of the Technical Specifications will be met by the inspections scheduled for the fall refueling outage. Therefore, for this inspection only, the number of tubes to be inspected and the criteria for increasing this number are established as described below.

One steam generator, Unit A, is chosen for this inspection, because on the basis of the August-September, 1980 inspection, it contains a sufficient number of tubes with U-bend indications still unplugged and on its outlet side above the tubesheet SG/A was the only unit to exhibit a positive growth in average tubewall penetration. All tubes selected will be examined full length, so that the inlet side tubesheet zones and all support plate elevations can be sampled; however, the tubes have been selected on the basis of the 8/80-9/80 inspection results as follows:

1. All tubes with U-bend indications $\geq 20\%$: 64 tubes.
2. All tubes with outlet side indications $\geq 30\%$ near the top of the tubesheet: 112 tubes.
3. Forty (40) additional tubes have been included to provide a sampling of areas not covered by (1) or (2).

In the case of (1) above, all $\geq 20\%$ indications are taken to obtain a suitable population of prior indications; in (2) those $\geq 30\%$ are sufficient in number to provide a representative population.

EVALUATION AND ACCEPTANCE CRITERIA

The eddy current indications will be compared against the 8/80-9/80 results to determine the average rate of change over six months for:

- a. U-bends
- b. Top of tubesheet - Outlet side

As a minimum, all tubes with indications $\geq 48\%$ will be plugged.

If the results of this inspection reveal new corrosion rates, these new rates will be used to evaluate the need for additional inspections during the May outage. The need for expansion of the inspection program will be based on the following:

1. U-Bend Region - No expansion will be considered necessary if the calculated U-bend corrosion rate in "A" Steam Generator does not exceed 1% per month.
2. Above the Tubesheet Region (Outlet Only) - No expansion will be considered necessary if the calculated corrosion rate in "A" Steam Generator does not exceed 2.45% per month.

NOTE: The above criteria are based on not exceeding the minimum wall criteria (42% wall remaining for the U-bend and 26% remaining for straight section) for any degraded tube left in service following the August-September 1980 inspection assuming this degradation progresses at the newly established rate.

3. No expansion will be considered necessary if no previously undetected corrosion mechanism is identified.

If expansion of the inspection program is indicated, this expansion will be limited to the specific area or areas of concern, as defined by 1, 2 and 3 above.