

**CP&L**

Carolina Power & Light Company

July 20, 1979

Central File

FILE: NG-3513 (R)

SERIAL: GD-79-1861  
JUL 27 1979 26

Mr. James P. O'Reilly  
U.S. Nuclear Regulatory Commission  
Region II  
101 Marietta Street, Suite 3100  
Atlanta, GA 30303

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2  
DOCKET NO. 50-261  
LICENSE NO. DPR-23  
SUPPLEMENTAL RESPONSE TO IE BULLETIN 79-02

Dear Mr. O'Reilly:

As requested on July 18, 1979, during our telephone conversation with members of your staff and the staff of IE Headquarters, this letter is submitted to clarify our response to IE Bulletin 79-02. Specifically, this letter is submitted to explain in detail the numerical data accumulated during our inspection program and our position concerning plant operability/safety as a result of this data.

During the past two days our Architect Engineer, Ebasco Services Incorporated, has re-reviewed and retabulated/reduced all inspection and test data from the original inspection. The raw data and the data reduction has been reviewed by members of the plant staff to a degree sufficient to provide high confidence that the data is accurate. Enclosure (1) is a tabulation, with appropriate explanation, of the reduced data. You will note there are some very minor differences in the data from that in our initial submittal; however, the data included herein has, as stated above, been verified to be accurate. In summary, based on Enclosure (1) results we have a high degree of confidence that 92.6% of all Seismic Class I anchor bolts are satisfactory. There is some additional maintenance work relative to base plate anchor bolts to be performed as noted in Enclosure (1); however, none of this work in our opinion will jeopardize plant safety under a seismic event.

In view of our discussion of last Wednesday, July 18, 1979, and based on discussions with your inspector on site on July 17 and 18, 1979, we have remobilized our inspection teams for an expanded inspection program (all accessible plates will be completed as soon as possible and the plates inaccessible at power (containing fewer than 4% of the total bolts) will be completed at the next extended outage). However, we are at this time satisfied that we have met the intent of IE Bulletin 79-02 and its supplement and that the plant is safe for continued escalation to power operation.

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Mr. James P. O'Reilly

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July 20, 1979

Upon completion of our expanded inspection programs, we will submit a supplemental response to IE Bulletin 79-02 to close out any additional items encountered.

Yours very truly,



B. J. Furr

Manager

Generation Department

CSB/jnh\*

Enclosure

# DATA REDUCTION

1.	Total number of base plates:		717
2.	Total number of anchor bolts contained in the 717 base plates:		2091
3.	Total number of anchor bolts inspected and/or tested:		1010
4.	Total number of modifications (repairs) to anchor bolts documented:		298
5.	To determine, on a statistical basis, the status of the 1081 anchor bolts which were not inspected/tested during the initial program, the data may be reduced as follows:		
a.	Total modifications (repairs) done for <u>all</u> reasons:		298
b.	Less modifications (major) performed due to overstress analytical results:	24	
c.	Less modifications (minor) performed due to missing bolts:	9	
d.	Less modifications (minor) performed due to loose bolts, etc.:	24	
e.	Less modifications (minor) identified due to failure of the visual examinations, but a tension test was satisfactory:	34	
f.	Less modifications (minor) identified erroneously:	69	
g.	Less modifications (minor) identified which were necessary due to the inspection techniques themselves:	<u>19</u>	
	Subtotal	179	
h.	Number of anchor bolts out of the total 2091 anchor bolts which were modified (repaired); these repairs should not recur in the remaining <u>not</u> inspected/ tested bolts:		<u>179</u>
i.	Number of anchor bolts out of the selected sample of 831 (1010 - 179) which contained failures determined by inspection/testing which could occur in those bolts remaining to be inspected/tested:		119
j.	Percentage (119/831) of anchor bolts out of the selected sample which could occur in bolts remaining to be inspected/tested:		14.3%
k.	Statistical number of failures possible in the remaining 1081 anchor bolts, which have not been inspected/ tested (14.3% of 1081):		155
l.	Possible failure rate of all 2091 anchor bolts (155/2091):		7.4%

6. Following is a discussion of each of the above items (5.b to 5.e) which require added explanation:

a. Item 5.b

These were modifications performed due to overstress analytical results. As discussed in our original submission, any overstressed (by analysis) bolts were replaced as necessary. These repairs were categorized as "modifications."

b. Item 5.c

During a visual examination of approximately all (actually 717 less 7 base plates) base plates any missing bolts were identified and replaced. These repairs were categorized as "modifications."

c. Item 5.d

Again during a visual examination of approximately all (actually 717 less 7 base plates) base plates any loose bolts and other minor deficiencies were noted and corrected. These repairs were categorized as "modifications" on the data sheets.

d. Item 5.e

During the course of the inspection/test, 34 bolts were identified which did not pass the visual examination for one reason or another, but when tension tested they passed satisfactorily. Although, in hindsight we should, and will, go back to these for additional maintenance work. We are satisfied, based on the tension test results that these bolts and hence their respective base plates would perform their intended function. The reason for deleting these from the above tabulation is that although they might recur during future inspecting, they would not render the base plates inoperable; however, they would require maintenance action.

e. Item 5.f

There were some potential, minor problems which were identified as modifications because our initial acceptance criteria was too stringent. Specifically, anchor bolt thread engagement criteria was established based on the ultimate strength of the bolt. However, the ultimate strength of the sleeve is considerably less than the bolt. Therefore the criteria previously established would theoretically assure bolt integrity far beyond the yield point of the sleeve. This was viewed as overly conservative and revised.

6. (continued)

f. Item 5.g

There were 19 bolts identified as requiring a modification but the problems were created by the inspectors (e.g. stripped bolt threads, bolt sheared upon removal, etc.). These were not problems with the bolts or base plates per se. These were self-inflicted failures.