

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

Glenn O. Bright
Dr. James H. Carpenter
James L. Kelley, Chairman

In the Matter of

CAROLINA POWER AND LIGHT CO. et al.
(Shearon Harris Nuclear Power Plant,
Units 1 and 2)

Dockets 50-400 OL
50-401 OL

Wells Eddleman's Initial Interrogatories
and Request for Production of Documents
relating to admitted Eddleman Contention 15

Under 10 CFR 2.740, 2.740b, 10 CFR part 2 Appendix A IV (a) (b) & (c) and the Board's Order of 9-22-82 admitting Eddleman Contention 15 and the Board's Memorandum and Order dated 1-11-83 which did not defer or modify the 9-22 Order with respect to Eddleman 15, I now serve upon Carolina Power and Light and NC Eastern Municipal Power Agency, through their attorneys, the following interrogatories.

I also include herewith a request to the same parties for production of certain documents in order that I may make copies of same, under 10 CFR 2.741, which documents relate to Eddleman 15 and these interrogatories. I understand that ^{photo-}copying of certain of the computer runs involved is contractually prohibited, and request the opportunity to physically inspect said runs and copy relevant input data and numerical results by hand.

INTERROGATORIES

1. Please state succinctly all significant bases for CP&L's adoption of a projected 80% capacity factor for all Shearon Harris

nuclear units, as stated in NCUtilities Commission Docket No. E-2 sub 203 (1971) by principal CP&L witness Wilson Morgan in the matter of a certificate of convenience and necessity to construct the Harris plant.

2. Please state any other information known to CP&L which significantly contributed to this 80% capacity factor figure.

3. Please list all documents from which the above information and the 80% capacity factor number were derived, indicating for each how the information was used in arriving at the 80% capacity factor.

4. Please list all experts, consultants or other persons consulted by Mr. Morgan or CP&L in arriving at the 80% capacity factor number. For each, please indicate whether the person is employed by CP&L, and the current or last address of said person known to CP&L.

5. Please explain briefly how and in what terms Mr. Morgan supported the said 80% capacity factor figure upon cross-examination in NCUC Docket No. E2 sub 203.

6. Please indicate whether CP&L intends to call Mr. Morgan as a witness in this NRC operating licensing proceeding, 50-400 etc. O.L.

7. Please state succinctly all significant bases used by CP&L or its witnesses in NCUC Docket No. E-100 sub 40 (1981 load forecast) to arrive at the 70% capacity factor ^{for Shearon Harris units} used by them therein.

8. Please list all documents used in arriving at said 70% capacity factor; indicating for each how it was used and what weight, if any, was given to the information contained therein, citing the page(s) where such information is contained.

9. Please list all experts, consultants and/or CP&L employees consulted by CP&L or its employees in arriving at said 70% capacity factor figure ^{used in} Docket No. E-100 sub 40, and the current or last

known address of each such person.

10. Please indicate whether CP&L expects to call Bobby L. Montague as a witness in this NRC licensing proceeding.

11. Please state all significant bases, including units' capacity factors (listed by unit), forced outage rates, availability factors, planned maintenance and/or refueling operations in terms of days or hours outage in each year, planned repair or refit operations in terms of days or hours outage in each year, discount rate, fixed charge rate, levelized fixed charge rate, plant cost escalation rate, partial forced outage rate, fuel cost, fuel cost escalation rate, fixed O&M (nonfuel) cost, variable O&M (nonfuel) cost, O&M cost escalation rate, and any other inputs to PROMOD or other computer programs or calculations used to derive the avoided fuel cost data presented by CP&L witness G. Wayne King in NCUC Docket No. E-100 sub L1 (December 1982 hearing). Please provide the discount, fixed charge and fuel escalation rates (for oil, coal, nuclear and any other fuels used in computing or deriving said data) on a systemwide basis unless they vary from plant unit to plant unit; please provide all other data requested above for each unit for each year 1983-1996. "Each unit" means each generating unit (coal or nuclear) CP&L has or expects to have in operation in any of the years 1983 through 1996. Data for IC turbine units need not be provided individually if there is no substantial variation in costs among ^{or other applicable items above} same.

12. Please give a full mathematical derivation of the discount rates, levelization rates, fixed charge rates, fuel cost escalation rates, O&M (nonfuel) cost escalation rates, and plant cost escalation rates used in the preparation of Mr. King's said testimony and exhibits.

13. Please identify all documents used in preparing the ^{requested} information in interrogatories 12 and 11 above, indicating for each

what page(s) were used, how the data was used, what weight was given to it, and whether the document is in the possession of CP&L.

14. Please identify all consultants, experts or CP&L employees who were consulted in preparing the information used to calculate or compute the information presented by witness King in Docket No. E-100 sub 41, listing for each a current or last known address and stating whether each is currently employed by CP&L.

15. Please state whether CP&L intends to call Mr. King as a witness in this NRC O.L. proceeding.

16. Please state the source(s) and the way the hourly loads projected for the CP&L system, which were used in deriving the information on avoided fuel costs presented by Mr. King, were derived. Please explain concisely how hourly loads were derived from peak load, total sales, total generation, or other data, and specify what other data was used to compute hourly loads projected, and how this data was used to project them.

17. Please state whether CP&L has approved a new or different load forecast since December 1981; if so, state what the growth rate of sales, winter peak, and summer peak are projected to be through 1995 in such forecast. Please also list the total system generation requirements, winter peak load and summer peak load for each year as projected in such forecast or forecasts.

18. Please provide a statement of how any such forecast or forecasts as referred to in Interrogatory 17 above were derived. Please include any assumptions as to appliance saturations, growth in numbers of residential, commercial, and industrial customers, change in power use per customer, cost increases of electricity and competing fuels, inflation rate(s), and other significant factors assumed in making such forecast. (Please provide for each forecast.)

19. Please state any assumptions about NCEMPA load growth, peak loads, or power demands of NCEMPA customers used in deriving any forecast information is requested on in Interrogatory 17.

20. Please state what, if any, warranty, guarantee or promise CP&L has provided to NCEMPA as to the capacity factor(s) of Harris nuclear units or other CP&L power plants NCEMPA purchased an interest in.

21. Please state ^{which}, if any, projected capacity factors for future operation of CP&L's Robinson, Brunswick, Roxboro, and Harris units were provided by CP&L to NCEMPA or NCEMPA's consultants R.W. Beck and Associates in connection with studies conducted for NCEMPA as to probable costs and benefits of NCEMPA's purchase of interests in CP&L generating units. If such projected capacity factors vary from year to year or unit to unit, please list them each year for each unit, beginning in 1982.

22. Please state the actual DER and actual MDC capacity factors achieved by each unit at CP&L's Robinson, Brunswick, and Roxboro plants for the calendar year 1982. Please also provide for each such unit, forced outage rates, fixed O&M costs, variable O&M costs per kilowatt-hour, and repair costs for the year 1982.

23. Please explain how the ER Amendment 5 fuel cost savings were computed, listing all significant assumptions CP&L used to derive same. If the assumptions were the same for each of the 5 sensitivity cases, please so state; if they differ from case to case (apart from the number and C.F. of Harris units therein), please state precisely how the assumptions differ in each case.

24. Please state how, if at all, the assumptions used in the computation of fuel savings in ER amendment 5 (filed December 1982) differ from the assumptions used by CP&L to derive or compute

the avoided fuel cost data presented by CP&L witness King to the NC Utilities Commission in Docket No. E-100 sub 41 in December 1982

25. Please state how CP&L arrived at each of the items of "production planning information" filed by CP&L ³⁰6/7/82 under FERC Order No. 48, PURPA Section 133, particularly item 22, Net Generation-GWH; Item 21, Hours connected to load; Items 16 and 17, Planned Maintenance, Days/Year and Equivalent Forced Outage Rate %; item 15, Non-fuel variable O&M ¢/kwh; Item 6, Estimated Unit Life; and items 10, 11 and 12, Fixed O&M \$/KW/Yr, Full Load Fuel cost ¢/KWH, and Average Cost of Fuel @/MBTU, each for each unit listed in said report for PURPA section 290.302(b)(1-2h).

26. Please state whether the PROMOD III computer program referred to in CP&L's 6/30/82 FERC Order 48 filing under section 290.302(d) was used in deriving the fuel cost savings computed for Mr. King's testimony and exhibits in Docket No. E-100 sub 41, and whether the same program was used in computing the fuel cost savings projected in EP Amendment 5.

27. Please state (if known to CP&L) the lifetime capacity factor in commercial operation of ^{each} Westinghouse PWR over 800 MWe in design electrical rating, to and including the following dates: 7/31/82; 9/30/82; 12/31/82; and the most recent quarter. If CP&L does not have the information, please state "unknown".

28. Please state (if known to CP&L) the lifetime capacity factor in commercial operation of each Westinghouse PWR in the world which has Westinghouse model D steam generators. Please list plants with D-4 steam generators (e.g. Krsko Yugoslavia) separately and state "unknown" if CP&L does not possess the information.

29. Please state concisely, for each unit CP&L operates, for each of the years 1986 through 1995, the assumed capacity factor, forced outage rate, fuel cost in ¢/KWH or ¢/MBTU, fixed O&M cost, variable O&M cost, planned days or hours of outages for maintenance, planned days or hours of outages for repairs, and all other significant data^{including system load data} used in order to derive or compute the fuel cost savings in the 5 sensitivity cases in ER amendment 5. If this data is exactly the same as that used for Mr. King's testimony in Docket No. E-100 sub 41 (December 1982) including that used to compute or derive his exhibits, please so state.

30. Please state the discount rate used to compute the Harris estimated fuel savings in constant 1986 dollars in each sensitivity case noted in ER Amendment 5. If all are the same, please say so.

31. Please state whether CP&L made any other^{studies of system operating costs, fuel costs} ~~sensitivity~~ studies of fuel savings with other assumptions concerning the capacity factor, O&M costs, fuel costs, or other significant variables affecting Harris operating costs or total system operating costs, than those whose results are stated in ER amendment 5, in connection with preparing ER Amendment 5, or in connection with this licensing proceeding.

32. If the answer to Interrogatory 31 is yes, please describe fully what assumptions were used in the other sensitivity studies or other fuel cost studies or system operating cost studies made, giving such a description for each such study.

33. Please indicate whether CP&L has ever compared PROMOD projections of system operating costs with actual system operating costs for any period projected previously by a PROMOD run.

34. If the answer to Interrogatory 33 is yes, please list all such comparisons CP&L has ever made, stating for each the period projected, the projected fuel cost, the actual fuel cost, the projected total system operating cost, the actual total system

operating cost, and the actual nuclear capacity factor for each CP&L unit during the period. If there is not data for any of these items for any such comparison, please state "no data" under that item if in fact CP&L does not possess that data.

35. Please state how accurately PROMOD computations of system fuel costs are when the actual data for a one year, 5 year, or 10 year period are used as inputs to the program and then compared with actual results for one year, 5 years, or 10 years respectively. If CP&L has no data or no opinion concerning this matter, please so state. If CP&L has not conducted such a comparison for a one year period, or for a 5 year period, or for a 10 year period, please so state.

36. Please identify the individual(s) at CP&L who make PROMOD runs for CP&L, and the individuals who provide the input data for those runs.

37. Please identify all witnesses ^(not identified previously) CP&L intends to call or is considering calling in this NRC proceeding with respect to Eddleman Contention 15.

38. Please state whether CP&L has ever considered the effect on system operating costs of Harris capacity factors lower than 50%.

39. Please describe or state succinctly all significant reasons why CP&L's estimate of Harris capacity factor declined from 80% originally (as testified to by Wilson Morgan) to 70% as stated by CP&L in Docket No. E-100 sub 40. For each such reason, state whether its effect is continuing or has ended to CP&L's knowledge.

40. Please state how CP&L computes the cost saving for small power production and co-generation of power that results from (a) lower fuel inventories; (b) less transmission plant required:

(c) less transformers and distribution plant required, e.g. as submitted by witness King in his exhibits in Docket No. E-100 sub 41.

41. Please state whether there would be any savings in cost of transmission plant, distribution plant, transformers, fuel inventories, ^{or} costs of preparing reports to NRC and other federal agencies, ^(a) if CP&L's load did not grow in terms of energy delivered to customers, as projected in ER Amendment 5 sensitivity case with zero load growth; and (b) if CP&L's peak load did not grow, even though more KWH might be delivered to customers.

42. Please state whether any savings referred to in interrogatories 40 and 41 above have been taken into account in the computation of system costs with or without the Harris units, at varying capacity factors, as presented in ER Amendment 5.

I believe CP&L has the above information, and it is needed to prepare my case and cross-examination re Contention 15.

REQUEST FOR PRODUCTION OF DOCUMENTS

I hereby request that CP&L make available to me for photocopying all documents requested in Interrogatories 3, 8, 13¹⁶ above + those used to prepare the ER amendment 5 fuel savings estimates referred to above. I further request that they make available to me the original PROMOD or other computer runs referred to in Interrogatories 11, 16, 23, 26, 29, 31, 34, 35 for hand copying or photocopying of information, whichever is permitted.

This 15th Day of January 1983

Wells Edelman
Wells Edelman

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the matter of CAROLINA POWER & LIGHT CO. Et al.)
Shearon Harris Nuclear Power Plant, Units 1 and 2)

Dockets 50-400
and 504401 O.L.

CERTIFICATE OF SERVICE

I hereby certify that copies of Motion for Clarification by W.E.
and of Initial Request for Production of Documents & Interrogatories

HAVE been served this 15th day of January 1983, by deposit in
the US Mail, first-class postage prepaid, upon all parties whose
names are listed below, except those whose names are marked with
an asterisk, for whom service was accomplished by _____

Judges James Kelley, Glenn Bright and James Carpenter (1 copy each)
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US Nuclear Regulatory Commission
Washington DC 20555

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