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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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BEFORE THE ATOMIC SAFETY AND LICENSING BOARD OF SECRETARY
DOCKETING & SERVICE
BRANCH
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 General Interrogatories and Interrogatories on
to Applicants Carolina Power & Light et al. Contentions 75AA,
(SIXTH Set) 8F1 & 8F2

Under 10 CFR 2.740, 2.741 and the Board's 8-18-83 + 3-10-83 +
9-22-82 Memorandum(s)
and Order^(s) Wells Eddleman requests Applicants to answer separately
and fully in writing, under oath or affirmation, each of the
following interrogatories, and to produce a permit inspection and
copying of the original or best copy of all documents identified
in response to interrogatories as set forth below.

These interrogatories are intended to be continuing in nature,
and I request each answer to be promptly supplemented or amended as
appropriate under 10 CFR 2.740(e), should CP&L, NCFMPA, any other
or any contractor or consultant to any, some or all of those,
Applicant, or any employee of any or some or all of them, or any
individual acting on behalf of any or some of all of them, obtain
or create any new or differing information responsive to these
(where "Them" refers to the preceding listing(s))
general interrogatories. The request for production of documents
is also continuing and requests Applicants to produce promptly if
not immediately any additional documents the Applicants and others
acting on their behalf or employed by them, as listed in the previous

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sentence, obtain which are responsive to the request(s) for production of documents below.

Where identification of a document is requested, please briefly describe the document (e.g. book, notebook, letter, memo, report, notes, transcript, minutes, test data, log, etc.) and provide the following information as applicable: document name, title, number, author(s), date of writing or of publication or both, addressee, date approved, by whom approved, and the name and address of the persons having normal custody of the document, and name and address of any person other than the preceding having actual possession of the document. When identifying documents in response to these interrogatories and requests, please state the portion or portions of the document (e.g. sections, chapters, pages, lines) upon which Applicants rely or which Applicants swear or affirm is/are responsive to the applicable interrogatory or request.

DEFINITIONS herein:

"Harris", "Harris Plant", "SHNPP", or "plant" where not specified otherwise, all mean the Shearon Harris Nuclear Power Plant.

"Applicants" means all of the persons, employees, consultants, contractors and corporations as listed in the first sentence of the second paragraph on page 1 of this document, above.

"FSAR" means the Harris Final Safety Analysis Report.

"ER" means the Harris Environmental Report.

"Document(s)" means all writings and records of every type, including electronic and computer records, in the possession, control or custody of Applicants or any individual(s) acting on Applicants' behalf, including, but not limited to: reports, books, memoranda, correspondence, notes, minutes, pamphlets, leaflets, magazines, articles, surveys, maps, bulletins, photographs, speeches, transcripts,

voice recordings, computer printouts, information stored in computers or computer peripheral devices such as disks, drums, etc., voice recordings, microfilm, microfiche and all other writings or recordings of any kind(s); and copies of any of the preceding even though the original(s) are not in the possession of Applicants or in their custody or control. Document(s) shall be deemed to be within the control of Applicants or ^{any} individual(s) acting on their behalf if they have ownership, possession, or custody of the document(s) or a copy thereof, or have the right to secure the document(s) or a copy thereof, from any person or public or private entity having physical possession thereof.

Each definition given above applies within all other definitions above.

GENERAL INTERROGATORIES

G1 (a) Which contentions of Wells Eddleman do Applicants agree are now admitted in this proceeding, NDC Dockets 50-400/401 O.L.?

(b) for each such contention, provide for any answers to interrogatories by Wells Eddleman which Applicants have previously or presently received (except those suspended by Board order, if any), the following information:

(c) Please state the name, present or last known address, and present or last known employer of each person whom Applicants believe or know (1) has first-hand knowledge of the facts alleged in each such answer; or (2) upon whom Applicants relied (other than their attorneys) in making such answer.

(d) please identify all facts concerning which each such person identified in response to G1(c)(1) above has first-hand knowledge.

(e) please identify all facts and/or documents upon which each person identified in response to G1(c)(2) above relied in providing information to respond to the interrogatory, including the parts of such documents relied upon.

(f) Please identify any other document(s) used ^{or relied upon} by Applicants in responding to the interrogatory.

(g) Please state which specific fact each document, identified in response to G1(e) and G1(f) above, supports, in the opinion or belief of Applicants, or which Applicants allege such document supports.

(h) Please state specifically what information each person identified in response to G1(c)(1) or G1(c)(2) above provided to or for Applicants' affiant in answering the interrogatory. If any of this information is not documented, please identify it as "undocumented" in responding to this section of General Interrogatory G1.

G2.(a) Please state the name, present or last known address, title (if any), and present or last known employer, and economic interest (shareholder, bondholder, contractor, employee, etc.) if any (beyond expert ^{or other} witness fees) such person holds in Applicants or any of them, for each person you intend ^{or expect} to call as an expert witness or a witness in this proceeding, if such information has not previously been supplied, or has changed since such information was last supplied, to Wells Eddleman. This applies to Eddleman and Joint Contentions as admitted, or stipulated by Applicants.

(b). Please identify each contention regarding which each such person is expected to testify.

(c) Please state when you first contacted each such person with regard to the possibility of such person's testifying for Applicants, if you have contacted such person.

(d) Please state the subject matter, separately for each contention as to which each such person is expected to testify, which each such person is expected to testify to.

(e) Please identify all documents or parts thereof upon which each such witness is expected to, plans to, or will rely, in testifying or in preparing testimony.

G3(a) Please identify any other source(s) of information which Applicants have used to respond to any interrogatory identified under G1 above, stating for each such source the interrogatory to which it relates, and what information it provides, and identifying where in such source that information is to be found.

(b) Please identify any other source(s) of information not previously identified upon which any witness identified under G2 above, or other witness, has used in preparing testimony^{or exhibits}, or expects to use in testimony or exhibits, identifying for each such source the witness who is expected to use it, and the part or part(s) of such source (if applicable) which are expected to be used, and, if not previously stated, the fact(s) or subject matter^(or both) to which such source relates.

G4(a) please identify all documents, ^{and which} pages or sections thereof Applicants intend or expect to use in cross-examination of any witness I call in this hearing. For each such witness, please provide on a timely basis (ASAP near or during hearings) a list of all such documents, the subject matter Applicants believe they relate to, and make the document(s) available for inspection and copying as soon as possible after Applicants decide ^{form intent} ~~to use~~ to use such document in cross-examination.

(b) please identify any undocumented information Applicants intend to use in cross-examination of each such witness for me.

G5 (a) for each contention Applicants state or admit is an admitted Eddleman contention under G1(a) above, or an admitted joint intervenor contention, please state whether Applicants have available to them experts, and information, on the subject matter of the contention.

(b) If the answer to (a) above is other than affirmative, state whether Applicants expect to be able to obtain expertise in the subject matter, and information on it, and if not, why not.

G-6(a) for each document identified in response to any interrogatory herein, or referenced in response to any interrogatory herein, please supply all the following information which has not already been supplied:

- (i) date of the document
 - (ii) title or identification of document
 - (iii) all authors of the document, or the author
 - (iv) all qualifications (professional, technical) of each author of the document
 - (v) the specific parts, sections or pages, if any, upon which Applicants rely of the document,
 - (vi) the specific information each part, section or page identified in response to (v) above contains.
 - (vii) identify all documents used in preparing the document, to the extent known (and also to the extent not identified in the document itself)
 - (viii) state whether Applicants possess a copy of the document
 - (ix) state all expert opinions contained in the document, upon which Applicants rely, or identify each such opinion.
 - (x) identify the contention(s) with respect to which Applicants rely upon (a) the expert opinions (b) the facts identified in the document
 - (xi) state whether Applicants now employ any author(s) of the document, identifying each such person for each document.
 - (xii) state whether Applicants have ever employed any author(s) of the document, identifying each such person for each document.
 - (xiii) identify all sources of data used in the document.
- Answers to all the above may be tabulated or grouped for efficiency.

G-7(a) Please identify all documents which Applicants plan, expect or intend to offer as exhibits (other than for cross-examination) with respect to each Eddleman contention admitted in this proceeding which (i) is included in your current response to G1(a), or (ii) is the subject of interrogatories in this set; please state for which contention or contentions each exhibit will be or is expected to be offered.

(b) Please identify all documents which Applicants plan, expect or intend to use in cross-examination of any other parties' witnesses or joint intervenor witness in this proceeding, with respect to (i) Eddleman contentions identified under G-7(a)(i) (or G1-(a)) above, or any other Eddleman contention which is the subject of interrogatories in this set; (ii) each Joint contention now admitted in this proceeding; (iii) per our agreement of 4-8-83, each contention of each other party to this proceeding which is currently admitted. Please identify for each such document the witnesses, or witness, and all contentions with respect to whom (or which) that document is planned, expected, or intended to be offered or used.

(c) Please identify which of the documents identified in response to (b) above will be offered into evidence by Applicants, and (ii) which of the same documents Applicants expect to offer into evidence or intend to offer as evidence or exhibits in this proceeding.

and/or specific interrogatories below,
G-10(a) Where the above general interrogatories, or any of them, call for identification of documents, (i) and no documents are identified, is that the same as Applicants stating that there are no documents responsive to this general interrogatory, in each case where no documents are identified? (ii) and documents are identified, is that the same as Applicants stating that the identified

documents are the only ones presently known which are responsive to the interrogatories? (iii) If your answer to G-10(a)(ii) is other than affirmative, please state all reasons for your answer. (iv) If your answer to G-10(a)(i) above is other than affirmative, please state all reasons for your answer.

(b) Where any interrogatory, general or specific, herein, calls for factual information (i) and an opinion is stated in response, is that the expert opinion of any person(s) identified as having contributed information to that response? (ii) and facts are given or identified (or a fact is) in response, but no documents are identified, does that mean Applicants have no documents containing such fact(s)?

(iii) If your answer to (i) above is affirmative, please state for each such response all qualifications of ^{each} expert upon whom Applicants rely for each such answer. The qualifications need be stated only once for each such person if they are clearly referenced in other answers. (iv) If your answer to (i) above is other than affirmative, please state which opinions, if any, given in response to interrogatories (general or specific) herein is the opinion of an expert, identify each expert whose opinion you used in response to each interrogatory, and state in full the qualifications of each such expert. (v) If your answer to (i) above is other than affirmative, please identify all opinions of non-experts used in your responses, and identify each non-expert whose opinion is included in each answer herein.

(vi) If your response to (ii) above is other than affirmative, please identify each document which contains a fact not previously documented in your response(s), stating what the fact is, and at what page, place, chapter or other specific part the document contains such fact.

G-11 For each answer to each interrogatory herein (or any subpart or part thereof), please identify each item of information in possession of Applicants (including facts, opinions of experts, and documents) which (a) contradicts the answer you made, (i) in whole (ii) in part (please identify each such part for each item of information identified); (b) casts doubt on your answer (i) in whole (ii) in part (please identify each such part for each item of information identified). (c) Please identify all documents not already identified in response to parts (a) and (b) above (and their subparts) which contains any item of information asked for in (a) or (b) above. Please identify for each such document what information item(s) it contains and what answer(s) each such item is related to.

SPECIFIC INTERROGATORIES

on Contention 15AA (note that #'s 20,25,28,29,37,38,39 are in 1st set)

15AA-(2d)-16: To the extent answers have not been previously provided, please answer each of the above General Interrogatories with respect to the interrogatories (and each of them, where applicable) you answered re 15AA in your filing of 9-16-83, entitled "Applicants' Answers to Wells Eddleman's Initial Interrogatories Relating to Eddleman Contention 15-AA".

15AA-(2d)-17(a) Does CP&L have an estimate of the length of refueling outages (or of a typical refueling outage) for the Harris plant? (b) If answer to (a) is affirmative, what is that estimate in terms of time per refueling outage? (c) Please state succinctly all significant bases CP&L relies upon in estimating the length of refueling outages for Harris. If the outages are estimated to differ in length, please explain all significant reasons for such variations in length of time per refueling outage. (d) Did anyone besides CP&L contribute to your estimate of length of refueling outage(s) for Harris? (e) If answer to (d) is affirmative, please identify each such person (or organization if the organization provided information but you don't know which person(s) provided the information. (f) How long do you estimate Harris will normally operate (hours or other units of time) between refueling outages? (g) Has anyone besides CP&L (e.g. Westinghouse, Ebasco, etc) estimated how long the Harris plant will normally operate between refueling outages? (h) If answer to (g) is affirmative, please state each such estimate you possess. (j) Please state all significant bases known to you for each estimate given in response to (f) or (h) above, identifying the person(s) (or organizations where no persons are known to you but the organization provided information for the estimate) who contributed to or made or provided (i) the estimate (ii) any basis for each estimate.

(l) Has CP&L or anyone else known to you estimated the frequency of (i) reactor trips (ii) turbine trips (iii) reactor scrams (iv) forced outages (v) deratings of output (electrical or thermal or both) (vi) partial forced outages, for Harris 1, Harris 2, or both units? (m) For each part of (l) above for which your answer is affirmative, please state the estimate, who made it, when it was made, what documents (if any) contain it, and state all significant bases for each such estimate, including any expert opinions, documents or portions thereof, and other information known to you which was used in making such estimate. Please provide all the above information (as requested in "(m)") for each estimate.

(n) Has CP&L or anyone else known to you estimated (i) the availability (ii) the equivalent availability of (aa) Harris 1 (bb) Harris 2 (cc) both Harris units? (o) If answer to (n) above is affirmative please (i) define the terms "availability" and "equivalent availability" as they were used for each such estimate (giving any different definitions used and stating the estimates to which each such definition applies), (ii) explain any authority or other basis for each definition of (3a) "availability" (3b) "equivalent availability" used; (iii) state who made the estimate, when, and state all significant basis for each such estimate which you know. (iv) give the estimate, in percent, hours per year or whatever other form you possess the estimate in, stating to which unit(s) it applies.

(p) Please identify each person you know of who contributed (i) information or (ii) expert opinion to each estimate given in response to (o) (iv) above, or otherwise made or known to you, with respect to (aa) availability (bb) equivalent availability, for Harris 1, 2, or both, stating for each such person what information or opinion or both each contributed, to which estimate(s).

(q) Exactly what information concerning planned maintenance did you use from the Robinson Plant (Robinson Unit 2) (see your 9-16-83 response to my interrogatory #25 on 15AA) in making estimates of planned maintenance for Harris? Please include in your answer (but do not limit it to) exactly what experience data was used, and exactly how it was used, including all relevant calculations or computations; exactly what projections were used, who made them, how each was made, when it was made, what calculations were made in making each such projection, what data was used in the calculations, and in each such calculation, where the data used came from (including identity of all documents containing it), and any other opinions or information you relied on making these projections, stating such data for each such projection. Please provide sufficient data and statement of calculations that the results of the calculations can be checked from the original data and calculational procedures given.

(r) Did you take the possibility or likelihood or consequences of additional NRC regulations into account in any way in preparing your estimates of Harris Planned Maintenance filed 6/30/82 (the "PURPA 133 document" referred to in your response to interrogatory 25 on 15AA)? (s) If answer to (r) is affirmative, please state what you took into account re NRC regulations, and exactly how you did it, including any data, documents, or expert opinions or other information you relied on, stating for each how it was used in making your estimate.

(t) Does CP&L have any estimates made since the estimates filed 6/30/82 under PURPA Section 133 (with NCUC and /or FERC) as to the amount of Planned maintenance for Harris? (u) If answer to (t) is affirmative, please provide (i) each such estimate (ii) who made it and when (iii) the purpose, if any, for which it was made (iv) for each estimate, all significant bases of such estimate, all data used in making it, all expert opinions or other information relied on in making it, and a statement of each calculation used in making it (including any data input to each calculation, giving the source of each datum (item of data) used as input to each such calculation).

(v) (i) Please define the term Equivalent Forced Outage Rate (EFOR) which you use in your response to item 17 in interrogatory 25 (9-16-83 at page 6 of your response) (ii) Does CP&L believe that Harris will have the same EFOR as an average nuclear unit during the period 1971-80? (iii) If answer to (ii) is affirmative, please state all basis for your belief, including all documents or portions thereof, conclusions, calculations, statistics or expert opinions or other information you rely on. (iv) Does CP&L possess EFOR data for nuclear units (a) pre-commercial operation (bb) in commercial operation, for (cc) 1979 (dd) 1980 (ee) 1981 (ff) 1982 (gg) any part of the period 1-1-79 to the present? (v) Please identify each document which contains EFOR data required under part (iv) above, identifying for each which units are new in commercial operation, and what time period the data covers.

(w) Did CP&L take into account NRC-ordered shutdowns in estimating (i) capacity factor (ii) planned maintenance (iii) forced outage rates (iv) EFORs (v) availability (vi) equivalent availability, for Harris? (x) Does CP&L have any estimates of any or all of the 6 items inquired about (ii-vi) in (w) above, for Harris, prepared by or made by anyone else? (y) Please give each estimate for which your answer to any part of (w) or (x) above (or to all of (x)) is affirmative, and please state

who made it, when, for what purpose (if known), and all significant bases of said estimate which you know.

15AA-(2d)-18(a) In response to Interrogatory 3 on 15AA, you cite "utility operating experience"; in response to Interrogatory 7 on 15AA you cite "nuclear industry experience for units similar to the Harris units"; in response to Interrogatory 8 thereon, you cite "industry experience"; in response to Interrogatory 13 thereon you cite "general industry experience"; in response to interrogatory 39 thereon, you cite "industry experience with units x similar to the Harris units." For each of these statements, are you referring to actual experience of capacity factors for nuclear units?

(b) If your answer to (a), for any quote cited therein, is other than affirmative, please explain for each such cited language excerpt, what the "experience" is you are referring to, stating whether it is for nuclear units or not, what time(s) if any you are referring to experience in, and what way you use this "experience" in estimating capacity factor.

(c) Does CP&L believe that actual capacity factors in commercial operating experience for nuclear power plants are useful in (i) projecting capacity factors of similar nuclear power plants (ii) projecting capacity factors of new nuclear plants made by the same manufacturer (iii) projecting capacity factors of new nuclear plants of the same type (i.e. PWR, BWR, HTGR, etc): please answer specifically for PWRs (iv) in making estimates of the net output of new nuclear plants?

(d) Please state the basis for your answer to each part of (c) above, including all expert opinions, documents, studies or facts or other information you rely on.

(e) Do you (or anyone working for you) recall whether CP&L was the one who provided the information to the NC Utilities Commission in its Docket E-2 sub 203 (Harris plant certificate of convenience and necessity) that Harris was similar to Beaver Valley and North Anna?

(f) If answer to (e) is affirmative, did CP&L provide the information that Harris was similar to (i) Beaver Valley (ii) North Anna (iii) both?

(g) Is Harris in fact similar in design to (i) Beaver Valley I (ii) North Anna I (iii) North Anna 2 (iv) VC Summer, to your knowledge?

(v) If your answer is affirmative to any part (i) thru (iv) above, please state the similarities of NSSS design, manufacturer of NSSS (Nuclear Steam Supply System), and any other characteristic you know which is relevant to capacity factor, for each such plant for which your answer is affirmative.

(h) If your answer to any part of (g) above is other than affirmative, please state all basis for your answer, including any opinions or documents you rely on.

(j) Does CP&L know what the average capacity factor of (i) Westinghouse nuclear plants of 800 MWe and up (lifetime, DER basis), (ii) Westinghouse nuclear plants of 900 MWe and up (lifetime, DER basis) is? If so, please state these averages and the date at which they are computed (e.g. as of 6-30-83).

(k) Does CP&L have any opinion as to why its Brunswick units have the lowest lifetime DER capacity factors of any two commercial electricity generating BWRs over 300 MWe (design capacity) in the US?

(l) If answer to (k) is affirmative, what is that opinion? Please state all facts you rely on to support that opinion.

(m) Does CP&L believe there are reasons for the poor performance (C.F.) of the Brunswick nuclear units it co-owns and operates that relate to (i) construction (ii) design (iii) operation (iv) management (v) NRC regulations (v) CP&L noncompliance with NRC regulations?

(n) If answer to any part of (m) above is affirmative, please state for each such part, each reasons CP&L believes the matter inquired about in that part has contributed to lower or poor performance of the Brunswick nuclear units, in terms of capacity factor over their operating lifetimes.

(o) If answer to any part of (m) above is other than affirmative, please state all basis for each such belief.

(p) Is the "industry experience" you refer to in the responses cited in 18(a) above always limited to the experience of the commercial LWR nuclear industry within the USA? (i) If not, please state what (aa) noncommercial (bb) non-LWR (cc) non-US experience you refer to in each such answer.

(q) Does CP&L now dispute the NC Utilities Commission's finding in its Order in Docket E-2 sub 203 (granting certificate of convenience and necessity to construct the Harris plant, 4 units) that (i) Harris is similar in design to Beaver Valley (ii) Harris is similar in design to North Anna (iii) Harris was expected to have an 80% capacity factor? (iv) If your answer to any of parts i, ii or iii immediately above is affirmative, please state (aa) whether CP&L took exception to this finding (bb) whether CP&L appealed this finding (cc) whether CP&L has ever sought otherwise to reopen the record in Docket E-2 sub 203 to change this finding, for each such finding. (v) If an answer to any part of (iv) above is affirmative, please provide details of each such exception, appeal, or attempt to correct or reopen the record, when filed, what the result was, and identifying all documents you possess relating to it. (vi) Has CP&L, in its annual reports to the NCUC on the Harris plant under its Order in Docket E-2 sub 203, ever told the NCUC that Harris is no longer expected to perform at an 80% capacity factor? If so, when, at what page(s)? (vii) Has CP&L ever informed the NCUC in any other filing of its in Docket E-2 sub 203 that Harris is no longer expected to perform at an 80% capacity factor? (viii) Has CP&L ever informed the NCUC of the Staff's estimate of Harris capacity factor for the DES? If so, when and how; please identify all documents used to so inform the NCUC, giving the date and author of each, and any response the NCUC has made thereto (documented or known to you).

(r) Does CP&L believe that the NRC Staff's 55% capacity factor for Harris is (i) right (ii) wrong (iii) close enough for use in the NRC operating license proceeding (iv) too low (v) too high? (vi) Please give the basis for your answers to each part (i) thru (v) above.

(s) With respect to your response to Interrogatory 11 on 15-AA, and attachment A thereof, please state (i) what the (aa) lifetime CF (DER) (bb) lifetime EFOR (cc) lifetime average weeks per year of planned maintenance are for Robinson 2, Brunswick 1 and Brunswick 2 respectively; (ii) How, if at all, the actual lifetime CF, EFOR or planned maintenance time for Robinson 2, Brunswick 1 or Brunswick 2 entered into the estimates of (aa) Capacity Factor (bb) EFOR (cc) planned maintenance (weeks/year) given for Harris (dd) 1 (ee) 2 (nuclear units) given in Attachment A re interrogatory 11 on 15AA. Please state any calculations made, and any assumptions made, in using information re actual lifetime EFORs, CFs and planned maintenance of CP&L's existing nuclear units, re Harris nuclear units' estimated CF, EFORs, and outage length for planned maintenance.

(t) Please state (i) the actual length, in x hours, or weeks, or any other time units you have the information in, for each refueling outage the Robinson 2 plant has had in commercial operation, giving the date and year on which each such outage commenced if known. (ii) the actual EFOR for Robinson 2 for (aa) its lifetime (bb) for each calendar year 1971-1982 and for 1983 when that data becomes available (iii) the actual CF for Robinson 2 for the years 1979, 1980, 1981, 1982 and 1983. Where your CF data differs from the NUREG-0020 CF data, please give any explanation known to you for the difference(s). (iv) the actually-achieved DER CF (annual) for North Anna 1 for the years 1979, 1980, 1981, 1982 and 1983 (v) the actually achieved DER CF (annual) for North Anna 2 for the years 1980, 1981, 1982 and 1983; (vi) the actual DER CF (annual) for Beaver Valley I for each of the years 1980, 1981, 1982 and 1983 (and 1979 also). (vii) do you know the lifetime EFOR for Beaver Valley I through 1982? to present? If so, please state each such lifetime EFOR. (viii) Do you know the lifetime EFOR of (aa) North Anna 1 (bb) North Anna 2, as of the end of 1982 or as of any other date? If so, please state each lifetime EFOR you know for a North Anna unit, giving the date it is through and the unit it applies to.

(u) (a) In your attachment B (9-16-83 responses to interrogatories on 15AA), related to interrogatory 29 thereon, are the Brunswick and Robinson 2 CF data different by more than 1% for any year (from) those shown in attachment A therein re Interrogatory 11? (b) Are the planned maintenance data for Brunswick, Robinson 2 and Harris the same in Attachment A and attachment B except for Brunswick 1 in 1983? (c) Are the EFORs for Brunswick 1 and 2 and for Robinson 2 always the same in Attachment A as in attachment B in each year? (d) Are the Harris 1 and 2 CFs, except for Harris 2 in 1989, at a 5% (or more) higher level in Attachment B than in Attachment A? (e) Are the Harris 1 and 2 EFORs shown in Attachment B maturing in one year from 29% to 16%? (f) Are the Harris 1 and 2 EFORs in Attachment A maturing over 3 years from 30% to 22%? (g) Does CP&L have any data concerning how long it takes the actual EFORs of Westinghouse PWRs to mature (i.e. stop declining)? (h) What EFOR data on Westinghouse PWRs does CP&L possess? (i) Does CP&L really believe that Harris 1 or 2 could actually mature in terms of EFOR within one year of commercial operation? (j) Does CP&L actually believe that the Harris 1 or 2 EFOR in operation will be 16 percent (or average 16%) in the second and following years of operation? (k) Please state all basis for your answers to (i) and (j) above including all information you rely on in making your answer to each of these 2 questions.

15-AA(2d)-19(a) Does CP&L have any data on the lifetime CF estimates used by AEC or NRC Staff for (i) Robinson 2 (CP, OL or both) (ii) Harris CP (iii) Brunswick CP or OL or both (iv) Beaver Valley I, CP, OL or both (v) VC Summer, CP, OL or both (vi) McGuire, CP, OL or both (vii) North Anna, CP, OL or both? (b) For each reactor for which your answer to (a) above is affirmative, please state the CF used at (i) the CP stage (ii) the OL stage, by NRC or AEC Staff, for that reactor. (c) If you know, for each reactor inquired about in (a) above, what CF did the ASLB adopt at the (i) CP (ii) OL stage? (d) Does CP&L dispute the ruling of the NC Utilities Commission in Docket E-2 sub 444 that CP&L management was at fault for the length of the Brunswick turbine outage? (e) Does CP&L dispute the ruling of the NCUC in Docket E-2 sub 461 that CP&L management was responsible for

the failure to test the Brunswick plant as required by NRC, which failure led to an extended shutdown in the summer of 1982? (f) Does CP&L dispute that the Brunswick turbine outage of 1981 reduced Brunswick's capacity factor for 1981? (g) Does CP&L dispute that the Brunswick testing shutdown of summer 1982 reduced Brunswick's capacity factor for 1982? (h) Please give all basis for your answers to (d), (e), (f) and (g) above, stating which basis applies to which answer.

Interrogatories on 8F1

8F1-4. This interrogatory may be answered by a set of columns for parts (i), (ii) and (iii) and (iv), with one row for each of the chemicals (aa)(bb) etc inquired about. A "yes" or "no" where applicable should appear at the intersection of each row and column. Or you can lay out your answer in any reasonable way you want:
Does CP&L have any opinion, knowledge or belief concerning
(i) the minimum amount which if inhaled can cause cancer (ii) the maximum safe concentration for breathing on a continuous basis (iii) the maximum safe concentration for breathing over an 8-hour period (iv) the maximum lung burden which assuredly will not cause cancer (v) the maximum lung burden which will not impair breathing, of:
(aa) arsenic (bb) cadmium (cc) chromium (dd) lead (ee) vanadium (ff) copper (gg) polycyclic aromatic hydrocarbons formed by coal combustion (hh) polycyclic aromatic hydrocarbons vaporized during coal combustion (jj) particulates from coal combustion, of any size (kk) particulates under 10 microns in size, resulting from coal combustion (ll) particulates under 5 microns in size, resulting from coal combustion (mm) coal-combustion particulates under 2 microns in size (nn) coal-combustion particulates under 1 micron in size (oo) coal-combustion particulates under 0.5 micron in size (pp) coal-combustion particulates under 0.2 micron in size (qq) coal-particulates formed by combustion of coal, over 10 microns in size (rr) arsenic on coal particulates of 10 microns or less in size (ss) cadmium on coal particulates of 10 microns or less in size (tt) chromium on coal particulates of 10 microns or less in size (uu) lead on coal particulates of 10 microns or less in size (vv) vanadium on coal particulates of 10 microns or less in size (ww) copper on coal particulates of less than 10 microns in size (xx) any other metals on or in coal particulates (yy) any other organic compounds on coal particulates (zz) any radioactive elements on or in coal particulates. Throughout this interrogatory, "coal particulates" means particulate matter formed by combustion of coal, such as occurs in coal-fired powerplant boilers, e.g. as referred to in Table S-3 of 10 CFR 51.20.

8F1-5. For each part of 8F1-4 above for which your answer is affirmative, please state (i) CP&L's knowledge (ii) CP&L's opinion (iii) CP&L's belief, if any, and please also identify each document upon which you rely or which contains the knowledge, opinion or belief you cite, stating for each such document which part of 8F1-4 it relates to and whether it relates to knowledge, opinion, belief about that matter, or some combination of knowledge, opinion and belief.

8F1-6 (a) Have Applicants ever (i) had on staff (ii) hired as a consultant (iii) had working for them ~~xxx~~ otherwise, any person whom you consider an expert on the health effects of coal-fired powerplant (aa) emissions (bb) particulate emissions (cc) particulate emissions interaction with other pollutants, e.g. SO₂, NO_x, acid

8F1-6 continued

precipitation)? (b) If answer to any part of (a) above is affirmative, please identify each such person, provide a statement of that person's qualifications if you possess one, and state which of the matters inquired about in (aa), (bb), (cc) above that person is an expert in, e.g. (aa) only, (bb) and (cc) only, all three.

(c) When did each expert identified in response to (b) above work for you? When did each begin work, and when did each end work for you?

(d) Was the work each such expert, identified in response to (b) above, did, related to health effects of coal-fired power plant emissions?

(e) If answer to (d) is other than affirmative, please list or identify each expert who did work for you on the health effects of coal-fired power plant emissions.

(f) Has CP&L made any inquiries of anyone during the year 1982 concerning the health effects of coal-fired power plant particulate emissions?

(g) Has CP&L made any inquiries of anyone during the year 1983 concerning the health effects of coal-fired power plant particulate emissions?

(h) If answer to (f) or (g) above is affirmative, please identify each such person, state the nature and content of any inquiries to each such person, and identify all documents containing (i) the inquiry (ii) any responses, for each such person.

8F1-8(a) Which, if any, of the EPRI studies identified by you in response to interrogatory 8F1-1(b), do you rely on with respect to contention 8F1? (b) Which, if any, of the draft documents identified by you in response to interrogatory 8F1-(d), do you rely on with respect to contention 8F1? (c) Does CP&L stand on or rely on (at present) (i) the statement of Charles Barham Jr for CP&L given to the NC Environmental Management Commission in March 1982 (ii) the statement of Charles Barham Jr for CP&L given to the NC Environmental Management Commission 9/30/82 (iii) all of the data CP&L submitted to the EMC for the rulemaking proceeding of 1982-83 concerning particulate emissions (iv) any testimony from the 1979 NC Enviro. Mgt. Commission variance hearing on coal particulates, whether presented by CP&L alone, or by CP&L and Duke Power Co. jointly, with respect to contention 8F1? (d) for any subpart of (c) for which your answer is affirmative, please identify each document concerning health effects of coal-fired power plant particulate emissions which was used in preparation of the material or statement you rely on.

8F1-9(a) Is CP&L or anyone working for CP&L or Applicants aware of any court decisions which you believe support your interpretation of the national ambient air quality standards (if met) ensure that particulate "emissions would not present any known public health impact", as you stated in response to interrogatory 8F1(xa)? (b) Is it CP&L's position or belief that any level of coal-fired powerplant particulate emissions which are within the national ambient air quality standards now in effect, would have or do have zero health effects?

(c) If answer to (b) is affirmative, please state all basis for your position or your belief and identify all documents you rely on to support your position or belief.

Interrogatories on 8F2

8F2-6(a) Do Applicants agree with NRC Staff that NUREG-0668 is a draft, not a final, position? (b) If answer to (a) is other than affirmative, please state all reasons for your position or disagreement. (c) Have Applicants or anyone working for them made any study of what the dose estimates would be if NRC Translation 520 were changed to reflect all the different estimates given in NUREG-0668 in criticism of Translation 520? (d) Do Applicants know if anyone else has calculated or studied what the dose estimates given in NRC Translation 520 would become if (i) any (ii) each (iii) all different estimate(s) in NUREG-0668 were used in place of the ones actually used in Translation 520? (e) If answer to any part of (d) is affirmative, identify each such person or group and all documents containing each such study. (f) Please state or identify any documents known to you which state estimates inquired about in (c) or (d) above, other than NUREG-0668 and NRC Translation 520. (g) Please state whether Applicants rely on NUREG-0668 in this proceeding, or any parts of it, stating which pages or parts (if any). (h) Please state whether Applicants rely on the letter from E.K.F. Bautz identified in response to my interrogatory 8F2-4(d), or any parts of it, in this proceeding, identifying any particular parts relied upon (j) Please state whether Applicants rely on the GRS "Comment" of March 1979, identified in response to my interrogatory 8F2-4(d), identifying any parts of it you rely on in this proceeding. (k) Please state whether (i) NUREG-0668 (ii) the letter of E.K.F. Bautz (iii) the GRS "Comment" cited above, has ever been (aa) published in a peer-reviewed scientific journal (abb) published in a peer-reviewed engineering journal (cc) published in the proceedings of any scientific society or group (dd) submitted for publication by any peer reviewed journal of science or engineering or any field of science or engineering. (l) For all parts or subparts of (k) above for which your answer is affirmative, please identify (i) the document publication date, if any (ii) the date of submittal, if known (iii) the journal or publication which published it, if any (iv) the date, volume, issue and page numbers where it was published, if known (v) the address of the editors of such publication, if known.

8F2-7(a) Do Applicants know if health effects of uranium fuel cycle emissions (as set forth in Table S-3) have been litigated in any other nuclear plant operating license proceeding? (b) Please identify each license proceeding in which these health effects were litigated. (c) Do Applicants know if the models, data, assumptions, or conclusions (or any of them) of NRC translation 520 have been litigated in any other NRC licensing proceeding? (d) Please identify each such proceeding known to you and state (if known) what matters relating to NRC translation 520, and what contention(s) relating to NRC translation 520 were litigated or are being litigated in each such proceeding. (e) Have Applicants participated in any NRC proceeding (i) related to determining the health effects of radioactive effluents given in Table S-3 (ii) related to the determination of the values for effluent emissions given in Table S-3? (f) for any part of (e) for which your answer is affirmative, please identify each such proceeding and state what position, if any, Applicants took in it, whether a decision has been reached in the proceeding, and if so, what that decision was as it related to Table S-3 emissions and their health effects.

(g) Are there other ongoing NRC proceeding known to Applicants in which the health effects of radioactive emissions as set forth in Table S-3 are at issue? (h) Please identify each such proceeding and state (if known) the contention(s) relating to health effects of radioactive emissions set forth in Table S-3 that are at issue therein, whose contention each is, and whether you possess any documents relating to that contention in that proceeding. Please list, for each such contention, the documents relating to it which Applicants possess.

PRODUCTION OF DOCUMENTS

Wells Eddleman hereby asks Applicants to make available for inspection and copying an original or the best copy of each document identified in response to interrogatories above, at a time and place mutually agreeable between us.