

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

DOCKETED
USNRC

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

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In the Matter of)
)
CAROLINA POWER & LIGHT COMPANY))
)
(H.B. Robinson Steam Electric)
Plant, Unit 2))
)
)
)

Docket No. 50-261-OLA

May 16, 1983

THE HARTSVILLE GROUP
FIRST SET OF INTERROGATORIES
AND REQUESTS TO PRODUCE

Pursuant to 10 CFR Sections 2.720(h)(2)(ii), 2.740(b), 2.741, and 2.744, The Hartsville Group (Intervenor) hereby serves its First Set of Interrogatories and Requests to Produce upon the Applicant and the NRC Regulatory Staff. These interrogatories involve all of The Hartsville Group's contentions.

Each interrogatory shall be answered fully in writing, under oath or affirmation, and include all pertinent information known to the Regulatory Staff and the Applicants including their officers, directors, employees, agents, advisors or counsel. Each request to produce applies to pertinent documents which are in the possession, custody or control of the Staff or the Applicant, including their officers, directors, employees, agents, advisors or counsel. In answering each interrogatory and in responding to each request, please recite the interrogatory or request preceding each answer or response. Also, identify the person providing each answer or response.

These interrogatories and requests shall be continuing in nature. Thus, any time information is obtained which renders

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any previous response incorrect or indicates that a response was incorrect when made, the Staff or the Applicant, as appropriate, should supplement its previous response to the appropriate interrogatory or request to produce. Supplements should also be made to the responses as necessary with respect to the identification of each person expected to be called at the hearing as a witness, the subject matter of his or her testimony, and the substance of that testimony. Intervenor is particularly interested in the names and areas of expertise of witnesses, if any. Identification of such witnesses is necessary if Intervenor is to be afforded adequate time to depose them.

The term "document" shall include any writings, drawings, graphs, charts, photographs, and other data compilations from which information can be obtained. We request that at a date or dates to be agreed upon, you make available for inspection and copying all documents subject to the requests set forth below.

REQUESTS FOR DOCUMENTS

Pursuant to 10 CFR Sections 2.741 and 2.744, Intervenor requests you to make available for inspection and copying, at a time and location to be designated, any and all documents of whatsoever description identified in the responses to the Intervenor's interrogatories below; including, but not limited to:

- (1) any written record of any oral communication between or among Applicant, its advisors, consultants, contractors, agents, attorneys, and/or any other persons, including but not limited to the NRC Staff, the Intervenor, and their advisors, consultants, contractors, agents, attorneys and/or any other persons; and

- (2) any documents, correspondence, letters, memoranda, notes, diagrams, reports, charts, photographs, or any other writing of whatsoever description, including but not limited to work papers, prior drafts and notes of meetings.

If you maintain that some documents should not be made available for inspection, you should specify the documents and explain why such are not being made available. This requirement extends to any such document, described above, in the possession of the Applicant, NRC Staff, their advisors, consultants, agents or attorneys.

INTERROGATORIES

Pursuant to 10 CFR Sections 2.740(b) and 2.720(h)(2)(ii), the Intervenor requests Applicant and Staff by and through their attorneys to answer separately and fully in writing, under oath or affirmation, by persons having knowledge of the information requested, the following interrogatories.

A. General Interrogatories

The following interrogatories apply severally to each of the contentions admitted as issues in controversy in this proceeding.

1. State the full name, address, occupation and employer of each person answering the interrogatories and designate the interrogatory or the part thereof he or she answered.
2. Identify each and every person you are considering calling as a witness at the hearing in this matter on this contention, and with respect to each such person:
 - a. State the substance of the facts and opinions to which the witness is expected to testify;
 - b. Give a summary of the grounds for each opinion; and

- c. Describe the witness's educational and professional background.
3. Is your position on the contention based on one or more calculations? If so:
 - a. Describe each calculation and identify any documents setting forth such calculation.
 - b. Indicate who performed the calculation.
 - c. Indicate when each calculation was performed.
 - d. Describe each parameter used in such calculation and each value assigned to the parameter, and describe the source of your data.
 - e. Indicate the results of each calculation.
 - f. Explain in detail how each calculation provides a basis for the issue.
4. Is your position on this contention based upon conversations, consultations, correspondence, or any other type of communications with one or more individuals? If so:
 - a. Identify by name and address each such individual.
 - b. State the educational and professional background of each such individual, including occupational and institutional affiliations.
 - c. Describe the nature of each communication with such individual, when it occurred, and all other individuals involved.
 - d. Describe the information received from such individuals and explain how it provides a basis for the issue.
 - e. Identify each letter, memorandum, tape, note or other record related to each conversation, consultation, correspondence or other communication with such individual.

B. Specific Interrogatories Relating to Hartsville Contention 1 (Parts a & b)

1. Describe in detail the administrative structure of Carolina Power & Light Company (CP & L), including the Table of Organization and assignment of responsibilities for ensuring adherence to NRC operating and administrative procedures, rules and regulations.
2. Has the administrative structure of CP & L undergone changes in the past five years?
3. If the answer to Interrogatory 2 is affirmative, describe those changes.
4. Which officers or employees of CP & L have administrative responsibility for ensuring adherence to NRC operating and administrative procedures, rules and regulations?
5. For each of the officers or employees identified in response to Interrogatory 5:
 - a. Identify the person by name, title and business address;
 - b. Describe fully the person's job responsibilities.
6. Describe in detail CP & L policy, program and procedures, if any, for assuring adherence to NRC operating and administrative procedures, rules and regulations.
7. Describe in detail the experience of CP & L in designing, engineering, constructing, directing, and otherwise carrying out a project of the magnitude of the steam generator repair project.

8. Which components of CP & L will be responsible for designing, engineering, constructing, directing, and otherwise carrying out the steam generator repair?
9. Which individual in each of those components described in response to Interrogatory 8 is chiefly responsible for assuring adherence to NRC procedures, rules and regulations?
10. Describe in detail how corporate and plant responsibilities for assuring adherence to NRC procedures, rules and regulations relate to one another.
11. What is the documentary basis for your response to Interrogatory 10?
12. Are the relationships described in response to Interrogatory 10 the same for both Robinson, Unit 2, and the Brunswick nuclear facilities?
13. If the answer to Interrogatory 12 is negative, describe in detail how they differ.
14. What is the documentary basis for your response to Interrogatory 13?
15. Describe in detail CP & L's Quality Assurance program.
16. What is the documentary basis for your response to Interrogatory 15?
17. How does CP & L's Quality Assurance program relate to its engineering, design, construction, and health physics functions?
18. What is the documentary basis for your response to Interrogatory 17?
19. Describe in detail any CP & L personnel training, selection, performance evaluation or disciplinary procedures employed

to assure adherence to NRC operating and administrative procedures, rules and regulations.

20. What is the documentary basis for your response to Interrogatory 19?
21. Do you agree that CP & L has been responsible for a history of repetitive non-compliance with NRC rules and regulations?
22. If your response to Interrogatory 21 is negative, explain in detail the respects in which you do not agree.
23. Do you agree that CP & L has been responsible for breakdowns in corporate and facility management controls in the areas of corporate oversight, facility management and operations, and problem identification and correction which suggest a programmatic failure?
24. If your response to Interrogatory 23 is affirmative, describe each such breakdown in detail.
25. What is the basis for your response to Interrogatory 24? Identify all documents, testimony or oral statements by any person and legal requirements on which you rely in support of your position.
26. If your response to Interrogatory 23 is negative, explain in detail the respects in which you do not agree.
27. Describe in detail each CP & L violation of NRC operating procedures, rules and regulations categorized at Severity Level I pursuant to NRC Enforcement Policy.
28. Describe in detail each CP & L violation of NRC operating procedures, rules and regulations categorized at Severity Level II pursuant to NRC Enforcement Policy.
29. Describe in detail each CP & L violation of NRC operating

30. Describe in detail each CP & L violation of NRC operating procedures operating procedures, rules and regulations categorized at Severity Level III pursuant to NRC Enforcement Policy.
31. Describe in detail each CP & L violation of NRC operating procedures, rules and regulations categorized at Severity Level IV pursuant to NRC Enforcement Policy.
32. Describe in detail the corrective actions and management controls instituted by CP & L with respect to each instance of violation of NRC operating procedures, rules and regulations referred to in response to Interrogatories 28-31.
33. What are the bases for your responses to Interrogatories 28-32? Identify all documents, testimony or oral statements by any person on which you rely in support of your position.
34. Have any CP & L employees or contractor or subcontractor employees been warned, counseled, disciplined, transferred, demoted, penalized, suspended or terminated as a result of non-compliance with NRC operating and administrative procedures, rules or regulations at any licensed facility or for actions under any NRC license since January 1, 1978? Identify the name, title, dates of employment, address and telephone number of each such employee; describe in detail the action taken, the reason for each such action, the procedures, rules or regulations not complied with, and the safety significance of such non-compliance.

35. Has CP & L been the subject of requests for action, notices of proposed action, notices of violation, notices of proposed imposition of civil penalties, orders to show cause, proceedings to modify, suspend or revoke a license or to impose civil penalties pursuant to 10 CFR Part 2, Subpart B, any other provisions of AEC or NRC statutes or regulations, or any civil or criminal proceeding in the courts of the United States or any State, before any agency of the United States or any State with respect to activities under AEC/NRC license? Describe in detail each such instance, the violation or claim alleged, its date and place, the CP & L response including any evidence offered in answer, remission or mitigation, the proceedings had thereon and the outcome.
36. What are the bases for your responses to Interrogatories 34 and 35? Identify all documents, testimony or oral statements by any person and legal requirements on which you rely in support of your position.
37. Identify in detail any complaints made to the NRC regarding violations of NRC operating and administrative procedures, rules and regulations with respect to any activities under an AEC/NRC license issued to CP & L. For each such complaint, set forth the name, address and telephone number of the persons complaining or involved in the matter complained of and explain fully the manner in which Applicant learned of the complaint.
38. Identify in detail any instances in which allegations

have been made of pressure, intimidation, harrassment, encouragement, direct orders, suggestions, or inducement of any sort of employees of CP & L or its contractors or subcontractors intended to result in the violation of or non-compliance with NRC operating and administrative procedures, rules or regulations. For each such instance, set forth the name, address and telephone numbers of the person(s) making the allegation or involved in the matter alleged, describe fully any investigations made by CP & L or the NRC Staff, and describe in detail any actions taken.

39. Identify in detail all documents reflecting disagreements, disputes or differences of opinion between employees of CP & L and their supervisors or CP & L management regarding compliance or sufficiency of compliance with NRC operating and administrative procedures, rules or regulations. Include the subject, date, names of persons involved and resolution for each such instance.
40. What evaluations of CP & L or its nuclear facilities have been carried out by the NRC Systematic Assessment of Licensee Performance Review Group? Identify each such study or assessment and describe in detail its results and conclusions.
41. Describe in detail the basis for any rating of CP & L or any of its facilities by the NRC Systematic Assessment of Licensee Performance Review Group.
42. What are the bases for your responses to Interrogatories 40 and 41?

43. Have any audits or reviews conducted by NRC Staff or consultants to NRC Staff resulted in recommendation by one or more Staff members that sanctions be imposed upon CP & L for violation of or non-compliance with NRC operating and administrative procedures, rules or regulations where no sanctions were in the end imposed? If so, identify each such incident, describe in detail the violation or non-compliance, identify the staff member recommending imposition of sanctions, including that person's title and address, and the reason that no sanctions were imposed.
44. What is the basis for your response to Interrogatory 43? Identify all documents, testimony or oral statements by any person on which you rely in support of your position.
45. Do any NRC Staff members differ in any way from the Staff position on Contention 1a or Contention 1b in this proceeding?
46. If the answer to Interrogatory 45 is affirmative, identify each such NRC Staff member, including that person's title, address and telephone number.
47. If the answer to Interrogatory 45 is affirmative, identify in detail the differences of each such identified staff person with the NRC Staff position and the bases for that difference.
48. What are the bases for your responses to Interrogatories 45 - 47? Identify all documents, testimony or oral statements by any person on which you rely in support of your position.

49. Is the NRC Staff currently considering the imposition of any fines or sanctions on CP & L for violations of any NRC operating and administrative procedures, rules or regulations? If so, describe in detail the incident involved.
50. What is the basis for your response to Interrogatory 49? Identify any documents, testimony or oral statements by any person upon which you rely for support for your position.
51. Describe in detail how the procedures followed by the NRC Staff in conducting an investigation of alleged non-compliances.
52. What standards does the NRC Staff employ in determining which level of enforcement severity shall be assigned to each instance of violation or non-compliance?
53. Describe in detail the basis for Region II determinations which result in the notification of Washington NRC officials of items of non-compliance or violation.
54. Is Region II currently under NRC internal investigation or review for failure to adequately conduct inspections or audits or to apply sufficiently stringent severity levels to non-compliances or violations?
55. If the answer to Interrogatory 54 is affirmative, describe those investigations in detail and identify all documents, testimony or oral statements by any person upon which you rely.

C. Specific Interrogatories Relating
To Hartsville Contention 2

1. With which local, state and federal regulations cited at page 92 of the Final Steam Generator Repair Report (FSGRR) will CP & L be required to comply?
2. Has CP & L sought or will it seek any variance from or waiver of any local, state or federal regulation preliminary to or in order to carry out the proposed steam generator repairs?
3. If the answer to Interrogatory 2 is affirmative, please describe in detail each such request or application including the agency to which made, the activity involved, the regulation from which relief is sought, the date of the request or application was made or submitted, and any file or document number related to the request or application.
4. For each irretrievable building material set forth at 6.2.1 of the FSGRR, provide the basis for the estimate of required resource commitments. Identify all documents, testimony or oral statements by any person on which you rely in support of your position.
5. Do the estimates of irretrievable building materials set out at 6.2.1 of the FSGRR include resources to be used in constructing the vaults for the discarded steam generator lower assemblies (SGLAs)?
6. If the answer to Interrogatory 6 is negative, what irretrievable building materials will be used in constructing those vaults?

7. Provide a detailed description of the exact materials, alloys or compounds which comprise the non-ferrous metals described at 6.2.1 of the FSGRR, including the amount for each type.
8. Will any areas currently covered by grass, trees, shrubs, flowering plants or other flora be denuded or deprived of such plant life in the course of preparing the site, repairing the steam generators, or disposing of the discarded SGLAs?
9. If the answer to Interrogatory 8 is affirmative, describe in detail those flora to be removed, including the precise species, the number of specimens of each species, and the area covered by each species.
10. Will the repair of the steam generators result in the disruption of the habitat or breeding grounds of any rodents, fish, birds, reptiles or other fauna?
11. If the answer to Interrogatory 10 is affirmative, describe in detail:
 - a) each habitat or breeding ground to be disturbed;
 - b) the exact species of fauna inhabiting or employing those habitats or breeding grounds;
 - c) the number of members of each species set forth in response to Interrogatory 12b inhabiting or employing the habitat or breeding ground; and
 - d) the precise effect of the steam generator repair program on each species described in response to Interrogatory 12b.
12. Describe in detail the efforts which CP & L will undertake to restore the grounds, flora and fauna of the site following completion of the proposed steam generator repairs.

13. What are the bases for your responses to Interrogatories 8 through 12. Identify all documents, testimony or oral statements by any person on which you rely in support of your position.
14. Markers are being placed on trees at a line somewhat removed from the shore of Lake Robinson; is the lake level going to be raised?
15. If the answer to Interrogatory 14 is affirmative, how high will Lake Robinson be raised?
16. What is the basis for the statement in the FSGRR at 6.2.3 that water consumption during the steam generator repairs will be less than during normal plant operations? Identify all documents, testimony or oral statements by any person on which you rely in support your position.
17. How much water will be consumed during the steam generator repairs?
18. How much water is consumed on a weekly basis during normal operations?
19. What is the estimated length of time for the steam generator repairs?
20. What are the bases for your responses to Interrogatories 17 - 19? Identify all documents, testimony or oral statements by any person upon which you rely in support of your position.
21. Describe in detail the discharges from the sanitary and laundering operations during the repair effort, including, but not limited to, the total amounts of discharges, the chemicals to be discharged and the volume and concentration

of each chemical, the radioisotopic inventories of those discharges, and the impact of each chemical and radioisotope on the biota of Lake Robinson or other body of water into which discharges are made.

22. What is the basis for the statement in the FSGRR at 6.3 that "Sanitary and laundering operation discharges during the repair effort are the only potential waste water sources of significance." ? Identify all documents, testimony or oral statements by any person upon which you rely in support of your position.
23. What is the number of additional persons required for the repair program?
24. What permits are required for the steam generator repairs under the Federal Pure Water Control Act (FPWCA)?
25. Has each of those permits been obtained?
26. Identify and describe each application for permit under FPWCA.
27. Has any application for a permit for the steam generator repair program under the FPWCA been denied or rejected?
28. If the answer to Interrogatory 27 is affirmative, describe in detail the circumstances, the application, and the reason given for the rejection.
29. Will any chemical discharges be made into any body of water as a by-product of the chemical deconning of the steam generators or any part thereof?
30. If the answer to Interrogatory 29 is affirmative describe in detail how those chemicals will be discharged,

each chemical so discharged, and the amount of each chemical discharged.

31. What are the bases for your responses to Interrogatories 21 - 30? Identify all documents, testimony or oral statements by any person upon which you rely in support of your position.
32. What low-level radioactive wastes will be created by filtering of any water used in the steam generator repair program, including any water drained from the steam generators and then replaced? Identify the radioisotopes, the curie content and the volume of those wastes.
33. What is the basis for your response to Interrogatory 32? Identify all documents, testimony or oral statements by any person upon which you rely in support of your position.
34. Describe in detail the methodology, assumptions and data which provide the basis for the man rem assessment set forth at Table 3.4-2 of the FSGRR with sufficient detail and particularity to permit replication of the results.
35. What is the basis for your response to Interrogatory 34. Identify all documents, testimony or oral statements by any person upon which you rely for support of your position.
36. Describe in detail the results of the radiation surveys conducted as part of the man-rem-by-task assessment, including the precise place and point of each measurement and the reading recorded.
37. For how many man-hours during the repairs, will the protection afforded by water in the secondary side not be present because the secondary side will be drained, either fully

or partially?

38. The FSGRR at 3.4.8 asserts that the results of the surveys are shown in Figure 3.4.1; is this an error?
39. If the answer to Interrogatory 38 is affirmative, where are the survey results set out?
40. Provide for each task area, provide a frequency analysis of the readings recorded.
41. At 3.4.8 of the FSGRR, what is meant by "most typical"? Define this in statistical or quantitative terms.
42. What is the maximum possible error over the proposed 300,000 man hours which can result from the inaccuracies in the portable instruments employed in the radiation surveys?
43. What are the bases for your responses to Interrogatories 36 - 42. Identify all documents, testimony or oral statements by any person upon which you rely for support of your position.
44. How were variations in exposure rates factored in to achieve the end result man-rem estimates? Average? Worst case? Best case? Other?
45. Has the construction sequence been designed to achieve the lowest possible occupational exposures?
46. If the answer to Interrogatory 45 is affirmative, describe in detail:
 - a) the methodology, assumptions and data employed to make those determinations;
 - b) the sequences which will be followed to reduce occupational exposures; and,

c) the dose-savings which have been incorporated in the man-rem assessment results.

47. If the response to Interrogatory 46 is negative, identify each instance in which a different construction sequence would result in a lower dose to workers.
48. For each instance identified in response to Interrogatory 47, specify the expected exposure from the proposed construction sequence operation and the exposure that could be expected from a different construction sequence.
49. Explain each choice of higher exposure construction sequence described in response to Interrogatory 48.
50. What are the bases of your responses to Interrogatories 44 - 49? Identify all documents, testimony or oral statements by any person upon which you rely in support of your position.
51. What experience are you aware of with regards to the reliability of identical or essentially similar equipment in the same or similar operations and environments for items of equipment the repair, removal or replacement of which might result in higher than postulated exposures?
52. What is the basis of your response to Interrogatory 51? Identify all documents, testimony or oral statements upon which you rely in support of your position.
53. What skill level of craftspeople are the estimates of man-rem exposure postulated upon?
54. How many people of each craft will be employed in the repairs?
55. Describe in detail the provisions which CP & L has made to insure that the craftspeople employed on the repairs

- are of the highest possible skill level.
56. Describe in detail the proposed program to provide that "[p]roductive time will be maximized by insuring that the worker/supervisor ratio is optimized."
 57. What are the bases for your responses to Interrogatories 53 - 56? Identify all documents, testimony or oral statements by any person upon which you rely for support of your position.
 58. For each of the variables set forth at page 41 of the FSGRR as affecting the accuracy of the man-rem assessment through either the exposure levels or the person-hour estimates, estimate in numerical terms the range of total rem uncertainty introduced into the estimate of exposure by the variable.
 59. The FSGRR at 3.4.8 indicates that the variables listed at that place (sub-paragraphs a through i) are not exhaustive of the factors potentially affecting the accuracy of the man-rem assessments set forth in the FSGRR; identify and describe in detail all additional factors affecting the accuracy of the man-rem assessments as against what will actually be experienced and estimate in numerical terms the range of total rem uncertainty introduced into the estimates of man-rem exposure by each such variable.
 60. What are the bases for your responses to Interrogatories 58 - 59? Identify all documents, testimony and oral statements by any person upon which you rely for support of your position.

61. Do you maintain that rounding the man-remS associated with each task to the nearest 5 man-remS is consistent with conservative principles.
62. The description of the methodology employed to arrive at the man-rem assessments as set forth at 3.4.8.1 of the FSGRR sets forth four assumptions and techniques; for each of those (3.4.8.1, sub-paragraphs a-d) provide the basis for your use of that assumption or technique. Identify all documents, testimony or oral statements by any person upon which you rely for support of your position.
63. Provide a complete description of all techniques and assumptions employed in deriving the man-rem assessment estimates in the FSGRR.
64. What is the basis for your response to Interrogatory 63? Identify all documents, testimony or oral statements by any person upon which you rely in support of your position.
65. For each year, 1975 to the present, provide the number of man-remS exposure received by workers at the H.B. Robinson, Unit 2.
66. Describe in detail the different tasks (e.g. steam generator tube inspection, steam generator tube plugging, reactor refueling, etc) in which occupational exposures have occurred and for each year 1975 to the present the man-rem exposures incurred in each of those tasks at the H.B. Robinson, Unit 2.
67. How many times has CP & L been found to be in non-compliance with NRC operating procedures, rules or regulations because of activities which resulted in:
 - a) the unnecessary exposure of a worker to radiation, or

- b) exposure of a worker in excess of quarterly or annual exposure limits.
68. Describe in detail each incident identified in response to Interrogatory 67, including the date, the facility, the activity being engaged in, the name, address and phone number of the worker(s) involved, the amount of the exposure, and the action taken by the Applicant and the NRC Staff.
 69. What are the bases for your response to Interrogatories 65 - 68? Identify all documents, testimony or oral statements by any person upon which you rely for support of your position.
 70. What exposures were actually experienced by Virginia Electric & Power Company (VEPCO) and Florida Power & Light Company (FP & L) at each of their units in replacing steam generators?
 71. How many instances of over-exposure occurred in the process of repairing the steam generators at Turkey Point and at Surry? Identify each such incident, the activity involved, and the amount of the exposure.
 72. What are the bases for your responses to Interrogatories 70 - 71? Identify all documents, testimony or oral statements by any person upon which you rely in support of your position.
 73. What studies are you aware of which have been conducted to estimate the exposures to be incurred by workers during steam generator repairs? Identify each such document, study or report including the author, sponsoring agency, date of publication, title, and any identifying document or publication number.

74. Identify all reports, memoranda, studies or other documents produced by or on behalf of the Office of Analyses and Evaluation of Operational Data (OAEOD) relating to occupational exposure of workers during steam generator inspection, repair or replacement or other major repairs carried out within the reactor containment building or of other environmental impacts of steam generator repair, inspection or replacement or other major construction activities at a commercial reactor site after the completion of original construction.
75. Identify all memoranda or other correspondence from the Generic Issues Branch of the NRC to the Nuclear Reactor Regulation branch and all internal memoranda within the Generic Issues Branch relating to the inspection, repair or replacement of steam generators.
75. Describe in detail the process employed by the NRC Staff in making its determination of whether an activity represents a major federal activity significantly affecting the quality of the human environment.
76. What does the NRC Staff mean by "major federal activity"?
77. What does the NRC Staff mean by "Significantly affecting"?
78. What does the NRC Staff mean by "the quality of the human environment"?
79. For how many license amendments applications have Environmental Assessments been made by the NRC Staff?
80. Identify each License Amendment application, including the case and docket numbers, for which the Environmental Assessment has concluded that an Environmental Impact

Statement needed to be prepared?

82. Identify each License Amendment application for which the NRC Staff conducted an Environmental Impact Statement without first making an Environmental Assessment.
83. What standards does the NRC Staff employ in determining whether an Environmental Impact Statement is required?
84. What are the bases for your responses to Interrogatories 75 - 83? Identify all documents, testimony or oral statements by any person upon which you rely in support of your position.
85. Describe in detail the risk estimators employed by the NRC Staff in determining the significance of the impacts of occupational exposures on the quality of the human environment.
86. Describe the assumptions, methodology and data which provide the underlying support for the risk estimators described in response to Interrogatory 85 with sufficient specificity and particularity to permit replication of the results.
87. For the man-rem estimates set forth at Table 3.4-2 of the FSGRR, describe with particularity how many of those estimated man-rem are of the following characters:
 - a) external gamma radiation
 - b) external beta radiation
 - c) external alpha or neutron radiation
 - d) internal beta radiation
 - e) internal neutron or alpha radiation
 - f) other exposures.
88. What is the basis for your response to Interrogatory 87?

- Identify all documents, testimony or oral statements by any person upon which you rely in support of your position.
89. Do the man-rem estimates assume that all exposures are external gamma exposures?
 90. If the answer to Interrogatory 89 is affirmative, what is the basis for excluding internal doses from inhaled or absorbed radionuclides?
 91. What are the bases for your responses to Interrogatories 89 - 90? Identify all documents, testimony or oral statements by any person upon which you rely for support of your position.
 92. What do you mean by "typical" as used at 3.4.8.2 sub-paragraphs a, b, and c? Provide a statistical description of the term "typical".
 93. What is the basis for your use of the term "typical" in referring to the values utilized at 3.4.8.2 of the FSGRR?
 94. What are the bases of your responses to Interrogatories 92 - 93?
 95. Describe in detail the bases for the assertion at 3.4.8.3 of the FSGRR that the airborne release values set out are "typical of releases during refueling outages." Identify all documents, testimony or oral statements by any person upon which you rely for support of your position.
 96. Does the H.B. Robinson radwaste system remove tritium?
 97. Describe in detail the bases for the conclusions at 3.4.8.4 that the lung and whole body doses for off-site are 8.1×10^{-4} mRem and 1.8×10^{-6} mRem respectively, including the assumptions, data and methodology employed. Identify

- all documents, testimony or oral statements by any person upon which you rely for support for your position.
98. Which radionuclides in addition to tritium does the Robinson radwaste system not remove?
 99. Are those radionuclides released to the atmosphere?
 100. Are those radionuclides released through liquid effluents?
 101. Describe in detail each of the radionuclides to be released to the environment as a result of the steam generator repairs at Robinson, including the curies of each such radionuclide.
 102. Are the systems to contain airborne radionuclides at Robinson the same as were employed at Surry and Turkey Point?
 103. If the answer to Interrogatory 102 is negative, describe in detail the differences for each plant.
 104. Are you aware of the monitoring results for actual releases of gaseous effluents resulting from the steam generator repairs at Surry and/or Turkey Point?
 105. If the answer to Interrogatory 104 is affirmative, describe those results in detail.
 106. Are you aware of the monitoring results of actual liquid effluents resulting from the steam generator repairs at Surry and Turkey Point?
 107. If the response to Interrogatory 106 is affirmative, describe those results in detail.
 108. What are the bases to your responses to Interrogatories 98 - 107. Identify all documents, testimony or oral statements by any person upon which you rely for support of your position.

109. Do any NRC Staff members differ in any way from the Staff position on Contention 2 in this proceeding?
110. If the answer to Interrogatory 109 is affirmative, identify each such Staff person, including that person's title, address and telephone number.
111. If the answer to Interrogatory 109 is affirmative, identify in detail the differences of each such identified Staff person with the NRC Staff position and the bases for that difference.
112. What are the bases for your responses to Interrogatories 109 - 112? Identify all documents, testimony or oral statements by any person upon which you rely in support of your position.
113. Does the Staff intend to recommend that an Environmental Impact Statement be prepared?
114. Identify all documents, testimony or oral statements by any person relating to the Staff determination whether to recommend the preparation of an Environmental Impact Statement.

D. Specific Interrogatories Relating
To Contention 3

1. When do you maintain that Robinson, Unit 2, will exceed Pressurized Thermal Shock (PTS) screening criteria based upon current operation procedures and practices?
2. Describe in detail any proposed changes to operation of Robinson 2 which are designed to extend the period before which Robinson 2 would exceed PTS screening criteria.
3. For each of the proposed changes identified in response to Interrogatory 2, specify the reason that that change would extend the period before exceedance of PTS screening criteria.
4. For each of the proposed changes identified in response to Interrogatory 2, specify the length of time which that change would add to the period before which Robinson 2 would exceed PTS screening criteria.
5. What are the bases for your responses to Interrogatories 1 - 5? Identify all documents, testimony or oral statements by any person upon which you rely in support of your position.
6. Which of the proposed changes identified in response to Interrogatory 2 have been approved by the NRC Staff?
7. What is the basis for your response to Interrogatory 6? Identify all documents, testimony or oral statements by any person upon which you rely in support of your position.
8. If all currently planned and approved changes in operation of Robinson 2 are implemented, when do you maintain that Robinson 2 will exceed PTS screening criteria?
9. What is the basis for your response to Interrogatory 8?

Identify all documents, testimony or oral statements by any person upon which you rely in support of your position.

10. Has CP & L been issued a 10 CFR 50.54(f) letter with regard to PTS screening criteria or PTS at Robinson 2?
11. Is the NRC Staff considering issuing a 10 CFR 50.54(f) letter to CP & L with regard to PTS?
12. What is the basis for your response to Interrogatory 11? Identify all documents, testimony or oral statements by any person upon which you rely in support of your position.
13. Describe in detail the low leakage core and the mechanisms whereby it reduces flux.
14. What is your assessment of the fluence experienced to date by the welds and plates in the Robinson 2 pressure vessel and the rate of increase expected assuming the future fuel cycles to which CP & L has committed to the NRC.
15. What is the basis for your response to Interrogatory 14? Identify all documents, testimony or oral statements by any person upon which you rely for support of your position.
16. Using the fluence information set out in response to Interrogatory 14, what is your assessment of the RT_{NDT} presently existing in the Robinson 2 pressure vessel welds utilizing the methodology outlined in Appendix E to Enclosure A of SECY-82-465, the expected future rates of increase, and the expected dates when the applicable proposed screening criteria [RT_{NDT} of 270°F for plates

and axial welds and 300°F for circumferential welds] will be exceeded?

17. What are the bases for your response to Interrogatory 16? Identify all documents, testimony or oral statements by any person upon which you rely for support of your position.
18. Does the NRC Staff agree that the H.B. Robinson plant will not exceed the NRC Generic Screening Criteria until 1993?
19. Identify all letters, memoranda, notes of telephone conversations, minutes of meetings, correspondence, or other communications between CP & L, its contractors, suppliers or agents with the NRC Staff, its employees, or consultants with regard to PTS at the Robinson 2 facility.
19. Identify all reports, memoranda, studies or other documents prepared by or on behalf of the Office of Analyses and Evaluation of Operational Data of the NRC relating to PTS.
20. Identify all memoranda or other correspondence between the Generic Issues Branch of the NRC to the Nuclear Reactor Regulation branch and all internal memoranda within the Generic Issues Branch relating to PTS.
21. Do any NRC Staff members differ in any way from the Staff positions set forth in response to Interrogatories 1 - 18.
22. If the answer to Interrogatory 21 is affirmative, identify each such NRC Staff member, including the person's title, address and telephone number.
23. If the answer to Interrogatory 21 is affirmative, identify

in detail the differences of each such identified Staff member with the NRC Staff position and the bases for that difference.

24. Identify in detail all regulatory guides or other formal or informal guides, standards, rules of thumb or screening criteria employed by the Staff in reviewing the adequacy of proposed actions to reduce neutron flux in the reactor vessel or the safety margins in reactor vessels which have experienced levels of embrittlement from neutron bombardment.
25. Excluding PTS and steam generator tube degradation, has CP & L or the Staff identified other major reactor components utilized at the Robinson 2 facility which have demonstrated a tendency to degrade with age?
26. If the response to Interrogatory 25 is affirmative, identify each such component.
27. What are the bases for your responses to Interrogatories 25 and 26? Identify all documents, testimony or oral statements by any person upon which you rely for support for your position.
28. For each component identified in response to Interrogatory 27, what is your best estimate of:
 - a) the useful life of the component;
 - b) when CP & L will be required to undertake major repairs of the component;
 - c) when CP & L will be required to undertake replacement of the component;
 - d) what the estimated costs of repair and/or replacement will be.

29. What is the basis for your response to Interrogatory 28? Identify all documents, testimony or oral statements by any person upon which you rely.
30. Which operating reactors utilize the Westinghouse Model 44 steam generators?
31. How does the Model 44 F steam generator differ in design from other Model 44 steam generators?
32. Which operating reactors in the utilize the Westinghouse Model 44F steam generator?
33. What are the bases for your responses to Interrogatories 30 - 32? Identify all documents, testimony or oral statements by any person upon which you rely for support of your position.
34. How many Westinghouse Model 44F steam generators have experienced significant degradation of tubes resulting in tube leaks?
35. Identify each reactor utilizing Westinghouse Model 44F steam generators which has experienced tube leaks.
36. What data do you possess on the frequency and severity of tube leaks in reactors equipped with Westinghouse Model 44F steam generators? Identify the sources and bases for that data.
37. What are the bases for your responses to Interrogatories 34 - 36? Identify all documents, testimony or oral statements by any person upon which you rely for support of your position.
38. How many tube ruptures have occurred at reactors employing Westinghouse Model 44F steam generators?

39. At which reactors employing Westinghouse Model 44F steam generators, have:
 - a) steam generator tubes been plugged;
 - b) steam generator tubes been sleeved; or,
 - c) lower steam generator assemblies been replaced?
40. Identify any additional reactors employing Model 44F steam generators where the operators or owners anticipate:
 - a) plugging steam generator tubes;
 - b) sleeving steam generator tubes;
 - c) replacing the lower steam generator assemblies.
41. What are the bases for your responses to Interrogatories 39 - 40? Identify all documents, testimony or oral statements by any person upon which you rely for support for your position.
42. How many of the tubes in each of the Robinson 2 steam generators is plugged?
43. What percentage of tubes in each of the Robinson steam generators is plugged?
44. What is the allowable number of plugged tubes in the Robinson 2 steam generators?
45. Describe in detail the bases for the number of plugged tubes allowed at Robinson 2.
46. Has that tube plugging margin been changed?
47. If the response to Interrogatory 46 is affirmative, describe in detail each such change, including the date of the change, the size of the change, and the technical basis for the change.

48. What are the bases for your responses to Interrogatories 42 - 47? Identify all documents, testimony or oral statements by any person upon which you rely in support of your position.
49. Has the Robinson 2 plant been derated as a result of tube degradation?
50. Has the Robinson 2 plant been derated as a result of tube plugging?
51. If the response to Interrogatory 49 or 50 is affirmative, to what level has the plant been derated?
52. Is the current level of rating the only derating which has occurred?
53. If the answer to Interrogatory 52 is negative, describe each other derating, including the level to which derated, the date, and the reason for the derating.
54. Was the current derating required by the NRC?
55. What is All Volatile Treatment (AVT)?
56. What are the bases for the statement at 2.1 of the Final Steam Generator Repair Report (FSGRR) that AVT is the "preferred method" of secondary system control?
57. Describe in detail the "operating experience at approximately seventy operating stations" which the FSGRR asserts to be the basis for preferring AVT. Identify all documents, testimony or oral statements by any person upon which you rely for support of your position.
58. Has AVT eliminated tube cracking, thinning, and denting?

59. What does the FSGRR mean by "effectiveness" with regards to AVT treatment?
60. Has the employment of AVT treatment resulted in the occurrence of other problems in steam generator tubes?
61. If the response to Interrogatory 60 is affirmative, identify in detail what those problems are, where they have occurred, and the extent to which they have resulted in the need to plug or sleeve steam generator tubes.
62. What are the bases for your responses to Interrogatories 58 - 60? Identify all documents, testimony, or oral statements by any person upon which you rely in support of your position.
63. For each of the "Design Requirements to Minimize Potential for Corrosion" described at Section 2.4.1 of the FSGRR,
 - a) describe in detail the basis for asserting that the design change will "minimize potential for corrosion";
 - b) identify every other application of this design feature to a Model 44F steam generator;
 - c) describe in detail the experience at each of those other applications of the design change in reducing corrosion, including a description of any systematic analyses of test or inspection data and the results thereof; and
 - d) identify all documents, testimony or oral statements by any person upon which you rely in support of your position.
64. Do you estimate that the design changes outlined in the FSGRR will eliminate tube leaks?
65. If the response to Interrogatory 64 is affirmative, what is the basis for your response? Identify all documents, testimony or oral statements by any person upon which you rely for support of your position.

56. If the response to Interrogatory 64 is negative, describe in detail your estimates of the number of tubes which will leak during each year of operation from 1984 until decommissioning of Robinson 2.
67. What is basis for the response to Interrogatory 66? Identify all documents, testimony or oral statements by any person upon which you rely in support of your position.
68. Describe in detail the basis for the postulated 25 man-rem per year occupational exposure for inspection and repair set out at 3.4.8.1 of the FSGRR, including the assumptions, data and methodology employed to arrive at that result described with sufficient specificity to replicate the results.
69. How much of that 25 man-rem is received in inspections each year?
70. Does the 25 man-rem per year exposure figure assume a constant repair program or does that exposure increase over time?
71. What are the bases for your responses to Interrogatories 69 - 70? Identify all documents, testimony or oral statements by any person upon which you rely for support for your position.
72. Does Robinson 2 have loose parts monitors in the steam generators ?
73. What provisions does Robinson 2 have for dealing with loose parts in the steam generators?
74. Is the weld which will be made to rejoin the lower steam generator assembly and the upper steam generator assembly

the same weld as the girth weld which has cracked at Indian Point 3? [See Report to Congress on Abnormal Occurrences, April - June 1982, NUREG 0090, Vol. 5, No. 2, pp. 18 - 19]

75. If the response to Interrogatory 74 is affirmative, is there any basis for asserting that the same kind of crack is incredible in the repaired steam generators at Robinson 2?
76. If the response to Interrogatory 75 is negative, what is the likelihood of such a crack occurring in the weld at Robinson expressed in probabilistic terms?
77. What are the bases for your responses to Interrogatories 74 - 76? Identify all documents, testimony or oral statements upon which you rely in support of your position.
78. What studies are you aware of which have been conducted by CP & L, Westinghouse, the NRC or any other entity which examine the likelihood of steam generator degradation and tube leaks in circumstances involving Model 44F steam generators?
79. Identify all reports, memoranda, studies or other documents produced by or on behalf of the Office of Analyses and Evaluation of Operational Data relating to steam generator tube degradation in Westinghouse Model 44 steam generators.
80. Identify all memoranda or other correspondence from the Generic Issues Branch of the NRC to the Nuclear Reactor Regulation branch regarding tube degradation in Westinghouse Model 44 steam generators.
81. Identify all internal memoranda of the Generic Issues

Branch of the NRC relating to steam generator tube degradation in Westinghouse Model 44 steam generators.

82. Do any NRC Staff members differ in any way from the Staff positions set forth in response to Interrogatories 30 - 81 relating to tube degradation in Westinghouse Model 44F steam generators?
83. If the response to Interrogatory 82 is affirmative, identify each such Staff person, including the person's title, address and telephone number.
84. If the answer to Interrogatory 82 is affirmative, identify in detail the differences of each such Staff person with the NRC Staff position and the bases for that difference.
85. Identify in detail all regulatory guides or other informal or formal guides, standards, rules of thumb or screening criteria employed by the Staff in reviewing the adequacy of steam generator design and performance.
86. Has the NRC Staff published or is it preparing any reports on steam generators subsequent to the "Steam Generator Status Report" of February 1982?
87. If the answer to Interrogatory 86 is affirmative, identify each such document or draft document.

88. If the steam generators are replaced, what will be the period during which the work will be undertaken?
89. Please provide your estimates of monthly construction expenditures disaggregated into direct expenditures, AFUDC, and other overheads for replacing the steam generators.
90. What are you estimates of a) annual tax credits and b) normalized taxes associated with overheads during the construction period of replacing the SGLAs?
91. Please provide a schedule and the associated workpapers showing the annual required revenue impact of steam generator replacements disaggregated into the following items:
 - a) depreciation,
 - b) income tax,
 - c) deferred tax,
 - d) amortization of investment tax credits,
 - e) amortization of normalized tax credits associated with construction overheads,
 - f) returns to bond holders,
 - g) returns to preferred stock holders,
 - h) returns to common stockholders,
 - i) other taxes, and
 - j) other non-tax items.
92. For the items described in Interrogatory 91, please either furnish a separate workpaper on each item or make such workpapers available to Hartsville for copying.

93. Please describe thoroughly what is included in the "other taxes" and "other non-tax items" provided in response to Interrogatory 92.
94. Please provide a schedule and associated workpapers showing the annual revenue requirements associated with the undepreciated investment in the existing steam generators.
95. What are the bases for your responses to Interrogatories 88 - 94? Identify all documents, testimony or oral statements by any person upon which you rely in support of your position.
96. If CP & L were to choose the option of sleeving the tubes at Robinson 2, what would be the period during which the work would be carried out?
97. Please provide your estimates of monthly construction expenditures disaggregated into direct expenditures, AFUDC, and other overheads for replacing the steam generators.
98. What are your estimates of a) annual tax credits and b) normalized taxes associated with overheads during the construction period of sleeving the steam generator tubes?
99. Please provide a schedule and associated workpapers showing the annual required revenue impact of steam generator tube sleeving disaggregated into the following items:
 - a) depreciation,
 - b) income tax,
 - c) deferred tax,

- d) amortization of investment tax credits,
 - e) amortization of normalized tax credits associated with construction overheads,
 - f) returns to bond holders,
 - g) returns to preferred stockholders,
 - h) returns to common stockholders,
 - i) other taxes, and
 - j) other non-tax items.
100. For the items described in Interrogatory 99, please either furnish a separate workpaper on each item or make such workpapers available to Hartsville for copying.
101. If the tubes at Robinson 2 were to be sleeved, please indicate whether further sleeving, resleeving and/or steam generator lower assembly replacement would be necessary at some future date.
102. If the answer to Interrogatory 101 is affirmative:
- a) What further modifications or repairs are expected?
 - b) How much would those modifications or repairs cost?
 - c) What is the construction period during which those modifications or repairs would take place?
103. What are the bases for your responses to Interrogatories 96 - 102? Identify all documents, testimony or oral statements by any person upon which you rely for support of your position.
104. Please provide a schedule which shows expected annual plant output (in GWH) in each year at its remaining life assuming:
- a) steam generator replacement;

- b) sleeving of the tubes; or
 - c) neither steam generator replacement nor sleeving.
105. Please provide estimates of future operating costs, disaggregated into fuel and non-fuel costs, and annual fuel costs during the remainder of Robinson 2's life under each of the scenarios set out in Interrogatory 104.
106. Please either furnish copies of all workpapers, assumptions and computer outputs employed in developing the schedule requested in Interrogatory 105 or make them available to Hartsville for copying.
107. For each of the scenarios set out at Interrogatory 104, please provide estimates of future capital investments for the remainder of Robinson 2's life.
108. Under each of the scenarios set out in Interrogatory 104, please provide a schedule and associated workpapers showing the impact of any future capital investments at Robinson 2 on annual required revenues for each year until they are fully depreciated.
109. Please provide the following plant related cost information for Robinson 2 at December 31, 1982, as well as the test year rate base for CP & L's current rate increase applications before the North Carolina Utility Commission (NCUC) and the South Carolina Public Service Commission (SCPSC):
- a) Cost of (nuclear) Plant,
 - b) Accumulated Depreciation,
 - c) Accumulated deferred taxes (excluding investment tax credits and normalized taxes associated with construction overheads),

- d) Unamortized investment tax credits, and
 - e) Unamortized normalized taxes associated with construction overheads.
110. Please provide the actual or estimated values for the following Robinson 2 related expenses for 1982, for the test years in each of the current rate application proceedings before the NCUC and the SCPSC, and each year in the remaining plant life:
- a) book depreciation,
 - b) deferred taxes,
 - c) amortization of investment tax credits,
 - d) amortization of normalized taxes, associated with construction overhead,
 - e) property taxes, and
 - f) other taxes.
111. What is your estimate of decommissioning Robinson 2?
112. What is the basis for your response to Interrogatory 111? Please furnish or make available to Hartsville for copying any studies, workpapers or other documents employed in developing this estimate.
113. Is CP & L currently collecting revenues to recover decommissioning costs?
114. If the response to Interrogatory 113 is affirmative, describe the manner and the basis upon which these costs are collected.
115. If the response to Interrogatory 113 is affirmative, please provide a schedule showing, for each year from 1982 through decommissioning, the year and balance of the fund, the

- the annual contribution from ratepayers, any resultant income taxes, and any interest accrued by the fund.
116. If the Company expects any change in or imposition of collection of decommissioning costs, please describe those expected changes and provide a schedule similar to that requested in Interrogatory 115.
 117. Please provide an estimate of the costs of disposing of a) spent fuel and b) other radioactive waste annually for the remainder of Robinson 2's plant life.
 118. Please provide a list of capital investments in Robinson 2 since the date of commercial operation. For each investment, please indicate the date it was completed, the direct construction cost, the cost of AFUDC, and the cost of other overheads.
 119. Please provide a schedule and associated workpapers which shows the impact of any capital investments described in response to Interrogatory 118 on annual revenue requirements.
 120. Please show the year end balance of Robinson 2's contribution to each applicable Plant in Service Account of the Uniform System of Accounts for each year from commercial operation through 1982. Show how each investment referred to in Interrogatory 118 is reflected in those accounts and explain any and all changes in the year end balances not fully accounted for by the investments mentioned in Interrogatory 118.
 121. Please provide or make available to Hartsville for copying any long range financial forecasts of CP & L financial

statements, such as the output of the Company's computerized financial forecasting model.

122. For the forecasts provided in response to Interrogatory 121, please supply the input data employed in developing the forecast, all available support for the data values chosen, a description of the input data format sufficient to allow complete understanding of the input data file, and a description of the program employed to make the forecast.
123. Please provide copies of the Company's FERC Form 1 for each of the years 1978 through 1982.
124. Please provide the Company's latest long-range load forecast (both peak demand and energy sales) and supporting documentation.
125. Please provide annual peak demand and energy sales for 1973 through 1982.
126. Please provide the Company's most recent supply demand documents, including year by year power plant dispatch and production costing results. These should include, for each power plant in the Company's system:
 - a) maximum dependable capacity,
 - b) heat rate,
 - c) maximum availability,
 - d) projected capacity factor and net generation,
 - e) operating and maintenance costs, and
 - f) fuel costs.
127. Please provide all inputs and outputs to the computer models(s) used to produce the dispatch/production costing results.

128. What are the projected annual amounts and costs of purchased power and of power sold to other utilities?
129. What are the firm purchases and/or sales of capacity?
130. Please furnish a copy of or make available to Hartsville for copying the power interchange agreements filed with FERC as identified at Testimony of Mr. Eury, NCUC Docket E-2, Sub 461 (Eury Testimony), page 9, line 3.
131. Describe the process whereby a decision is made to enter into a power exchange.
132. Describe in detail how the cost of exchange power is determined.
133. How are split-savings modelled?
134. What determines the type of power exchanged?
135. Please provide the amount of energy and cost of each type of CP & L power interchange for each utility from January 1980 until the present month, separating the fuel from the fixed or demand charge.
136. Please furnish or make available to Hartsville for copying any forecasts of CP & L's power transactions, including the forecasted costs of these transactions by type for each utility source by month.
137. What forecasts of capacity purchases are available to CP & L. Please furnish copies of any such forecasts or make them available to Hartsville for copying.
138. Please describe in detail the survey of the industry conducted in October and November of 1981 to determine what capacity purchases would be available during the Summer of 1982 referred to at Eury Testimony, page 11, line 15.

139. Please furnish a copy of any documents resulting from the survey referenced in Interrogatory 138 or make them available to Hartsville for copying.
140. What is the basis of your conclusion at Eury Testimony, page 11, that the 225 MW from TVA was the most economical purchase available?
141. Please describe in detail the cost-benefit studies conducted to investigate the savings to be realized by purchasing capacity as a replacement for higher cost IC and fossil generation. Please furnish or make available to Hartsville for copying any documents resulting from these studies.
142. Please define the term "Comparable Units" used in Tables 3 and 4 of Eury Testimony.
143. Please provide the data used to compute the capacity factors and availability factors for both Robinson 2 and "Comparable Units" in Tables 3 and 4 of Eury Testimony for each year during the period 1977 - 1981.
144. Please define the term "Comparable Units" as used in Tables 5 and 6 of Eury Testimony and provide the names of the units included.
145. Please supply the data employed to compute the capacity factors and availability factors in Tables 5 and 6 of Eury Testimony for Brunswick 1, Brunswick 2, and "Comparable Units" for each year during the period 1977 - 1981.
146. What data documents your achievement of better maintenance and improved performance of plant systems and equipment at the Brunswick facilities resulting from your maintenance? Please provide that data.

147. Please provide documentation for the improvements in the Brunswick plant's availability and capacity factors resulting from "the more significant plant modifications" described at pages 21 - 26 of Eury Testimony.
148. For those modifications to Brunswick uncompleted at this time, please provide your estimate of the improvement in capacity and availability factors resulting from these modifications and an estimate of their costs.
149. What documentation do you have supporting the improved control of Radwaste Systems operations resulting from the establishment of a separate group responsible for all radwaste operations. Please provide that documentation.
150. Please document for each fossil-fired and nuclear unit the outages occurring between January 1979 and the present time, including the date of the outage, its duration, and cause, broken down by forced and planned outages.
151. What are your forecasts of future outages which indicate their predicted date, duration and cause?
152. What was the actual average CP & L cost of coal and oil as burned for each month from January 1980 to the present?
153. If the "as burned" price of coal and oil are not available, what was the actual average CP & L cost of coal and oil as purchased for each month from January 1980 to the present?
154. What are the data applicable to Robinson 2 unit for capital additions, past and future, as reported for Brunswick on page 28, lines 8-11, of Eury Testimony.

For both Brunswick and Robinson 2, please break the expenditures down by year incurred or expected to incur.

155. What are your capacity factor forecasts for all CP & L nuclear units for each year into the future for which they have been developed starting for 1983?
156. Do you expect that Robinson 2 will have to be further derated?
157. If the answer to Interrogatory 157 is affirmative, when and how much?
158. Please provide a complete description of the PROMOD model referenced at Testimony of Mr. Nevil, NCUC Docket E-2, Sub 461 (Nevil Testimony), page 9, including definitions of all variables.
159. Please describe PROMOD's treatment of power interchanges as used by CP & L.
160. Please furnish or make available for copying by Hartsville instructions for PROMOD's use.
161. Please furnish a computer generated copy and description of the input and output data from the PROMOD run used to recreate the test year as it actually occurred and that appears in Nevil Testimony, Exh. #2, p. 1.
162. Please describe how the changes in the generation mix due to the addition of Mayo Unit 1, kwh sales adjustments, and fossil fuel price levels expected as of June 1983 were added to the recreated test year simulation as per Nevil Testimony at page 10, line 5. Please furnish a computer generated copy and description of all of the input and

output for the PROMOD fully adjusted test year run that appears in Nevil Testimony, Exhibit 2, page 1.

163. Please provide all workpapers and calculations that lead to the derivation of the numbers in columns (3) and (4) of Nevil Testimony, Exhibit 3, p. 1. Provide a detailed narrative explanation of these calculations.
164. What power supplies from the CP & L system are available and plan to be used by the North Carolina Municipal Power Agency? Please include the names of the plants, the fractions owned by the Power Agency and all agreements as to how the costs of plant operation will be shared.
165. Describe in detail all the supplementary power that was sold to the Power Agency during the test year and its Cost (both fuel and fixed charges).
166. Describe the same data requested in Interrogatory 165 for data used for adjusting the test year power supply assumptions, as in the PROMOD run for the adjusted recreated test year as described at Nevil Testimony, p. 11, lines 12-15.
167. Describe the "additional Power Agency loads" mentioned at Nevil Testimony, p. 10, line 26 and their relevance.

E. Specific Interrogatories Relating to Hartsville Interrogatory 8

1. Describe in detail the design of the building in which the replaced steam generator lower assemblies (SGLAs) will be stored, including but not limited to:
 - a. the dimensions of the building;
 - b. the materials to be used to construct the several component parts of the building; and
 - c. any and all code requirements which are to be met and how they will be met.
2. What are the bases for your responses to Interrogatory 1? Identify all documents, testimony or oral statements by any person on which you rely in support of your position.
3. Describe in detail the floor to be used in the SGLA storage tomb.
4. What code requirements will the floor be built to meet, if any?
5. What is the basis for your response to Interrogatories 3 and 4. Identify all documents, testimony or oral statements by any person on which you rely in support of your position.
6. Describe in detail the access ports which will be installed in the the SGLA tomb, including, but not limited to, the design basis for the access ports, the dimensions, the materials to be used, and any code requirements which must be met.
7. What is the basis for your response to Interrogatory 6? Identify all documents, testimony or oral statements

- person on which you rely for support for your position.
8. How will the design of the SGLA vault differ from that employed by Florida Power & Light Company at Turkey Point?
 9. How will the design of the SGLA vault differ from that employed by Virginia Electric Power Company at Surrey?
 10. What is the basis for your responses to Interrogatories 8 and 9. Identify all documents, testimony or oral statements by any person on which you rely for support of your position.
 11. What is the seismic design basis for the SGLA vault?
 12. For the tectonic region in which the Robinson facility is located, what is the maximum historical earthquake?
 13. What would be the effect on the SGLA vault of the near-site occurrence of an earthquake of Modified Mercalli Intensity X and Magnitude 7?
 14. What is the basis for your responses to Interrogatories 11 - 13? Identify all documents, testimony or oral statements by any person on which you rely for support of your position.
 15. What is the normal water table level for the site of the proposed SGLA vault?
 16. What is the maximum water table level for the site of the proposed SGLA vault?
 17. Has the site of the proposed SGLA vault ever flooded? If so, what is the maximum flood level reached at that site and what is the recurrence interval for flooding?
 18. If the answer to Interrogatory 17 is negative, have

studies been conducted of the likely occurrence of flooding at the site? If so, describe in detail any such studies and their results.

19. What would be the effect on the SGLA vault and the stored SGLAs if there were a flood at the site of the vault?
20. What are the bases for your responses to Interrogatories 15 - 19? Identify all documents, testimony or oral statements by any person on which you rely for support of your positions?
21. What will be the dose immediately adjacent to the SGLA vault?
22. What will be the dose to workers from transfer, shipping and storage of the SGLAs to the SGLA vault?
23. Describe in detail the methods used to arrive at the responses to Interrogatories 21 and 22, including a description of the methodology, assumptions and data with sufficient specificity and particularity to replicate the results.
24. What will be the dose to the general public from the on-site storage of the SGLAs?
25. Describe in detail the methods, assumptions and data employed to arrive at the response to Interrogatory 24 with sufficient specificity to permit replication of the result.
26. What are the bases for your responses to Interrogatories 21 - 25? Identify all documents, testimony or oral statements upon which you rely for support of your positions.

27. Is the on-site storage of the SGLAs the preferable option for disposal of the SGLAs?
28. What are the bases for your response to Interrogatory 27? Describe in detail the methodologies, assumptions and data employed to make comparisons among the available options with sufficient specificity to permit replication of the results and identify all documents, testimony or oral statements by any person upon which you rely for support of your position.
29. What methods and materials will be used to seal the SGLAs?
30. How long are those seals designed to last?
31. What will be the source terms for the SGLAs before they are sealed?
32. What will be the exposure to workers in sealing the SGLAs?
33. What will be the exposure from the sealed SGLAs before they are placed in the vault?
34. Will the seals on the SGLAs be periodically inspected? If so, how often and by what methods?
35. What will be the effect on the contaminating film on the SGLAs of long-term dry storage in the vault?
36. Will heat in the SGLA vault ever be sufficient to over-pressurize the sealed SGLAs? If so, what would be the effect?
37. What are the bases for your responses to Interrogatories 29 - 36. Identify all documents, testimony or oral statements by any person upon which you rely for support of your positions.

38. What are the highest historic wind speeds experienced in the vicinity of the Robinson site?
39. What winds speeds, including tornadoes, hurricanes, and other severe weather conditions, is the SGLA vault designed to withstand?
40. What is the basis for your responses to Interrogatories 38 and 39? Identify all documents, testimony or oral statements from any person upon which you rely for support of your position.
41. What is the basis for the determination that no cask is needed for transporting the SGLAs from the Reactor Containment Building (RCB) to the SGLA vault?
42. What route will the truck take to haul the SGLAs from the RCB to the SGLA vault?
43. Describe in detail the design and construction of the special tractor trailer arrangement to be used to haul the SGLAs from the RCB to the SGLA vault?
44. Will permanent on-site storage of the SGLAs be a possibility?
45. What is the basis for your response to Interrogatory 44? Identify all documents, testimony or oral statements by any person upon which you rely for support for your position.
46. Describe in detail the circumstances under which CP & L will seek to ship the SGLAs off-site prior to decommissioning of Unit 2.
47. Describe in detail the passive ventilation system for the SGLA vault.
48. What is the basis for your response to Interrogatory

- 47? Identify all documents, testimony or oral statements by any person upon which you rely for support of your position.
49. What will be the total volume of the discarded SGLAs?
50. What will be the curie content of the discarded SGLAs:
- a. immediately;
 - b. after one year;
 - c. after 5 years; and
 - d. at the expected decommissioning date for Robinson, Unit 2.
51. What is the basis for your response to Interrogatory 50? Identify any documents, testimony or oral statements by any person upon which you rely for support for your position.
52. In evaluating the safety of disposal of the SGLAs, what standards will the NRC Staff employ?
53. Identify any studies, reports, or other documents upon which the NRC Staff will rely in making its determinations and reaching its conclusions regarding the safety of the proposed method for disposing of the SGLAs.
54. Do any NRC Staff members differ in any way from the Staff position on Contention 8 in this proceeding?
55. If the answer to Interrogatory 54 is affirmative, identify each such NRC Staff member, including the person's title, address and telephone number.
56. If the answer to Interrogatory 54 is affirmative, identify in detail the differences of each such identified Staff member with the NRC Staff position and the bases for that difference.

57. What are the bases for your responses to Interrogatories 54 - 56? Identify any documents, testimony or oral statements by any person upon which you rely for support for your response.
58. Identify any reports, memoranda, draft reports, studies, comments or other documents prepared by or on behalf of the Office of Analyses and Evaluation of Operational Data (OAEOD) regarding the disposal of SGLAs at Robinson, Unit 2, or any other reactor, including, but not limited to, material related to the design and construction of long-term storage vaults for the SGLAs or similar large contaminated components removed from reactor buildings.



B.A. Matthews
Authorized Representative for

The Hartsville Group
P.O. Box 1089
Hartsville, South Carolina 29550

May 14, 1983

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of:)
CAROLINA POWER & LIGHT COMPANY))
(H.B. Robinson Steam Electric)
Plant, Unit 2))
_____)

Docket No. 50-261 OLA

May 14, 1983

AFFIDAVIT OF SERVICE

Personally appeared before me, B.A. Matthews, who does affirm that he did on this 14th day of May, 1983, serve copies of the attached THE HARTSVILLE GROUP FIRST SET OF INTERROGATORIES AND REQUESTS TO PRODUCE and HARTSVILLE MOTION TO REQUIRE NRC STAFF RESPONSE TO INTERROGATORIES AND REQUESTS TO PRODUCE by placing them in the United States mail, U.S. postage prepaid at Columbia, South Carolina.

B.A. Matthews

B.A. Matthews
Authorized Representative

The Hartsville Group
P.O. Box 1089
Hartsville, South Carolina 29550

AFFIRMED before me this 14th

Day of May 1983.

Scott H. Drew
NOTARY PUBLIC FOR SOUTH CAROLINA (L.S.)

My Commission expires: 1 June 1987

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the matter of:)
)
CAROLINA POWER & LIGHT COMPANY))
)
(H.B. Robinson Steam Electric)
Plant, Unit 2))
_____)

Docket No. 50-261 OLA

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