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OFFICE OF SECRETARY
DOCKETING & SERVICEBEFORE THE ATOMIC SAFETY AND LICENSING BOARDGlenn 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)

Docket 50-400 OL

ASLBP No. 82-468-01
OLJoint Intervenor's Response to Applicants' Sixth Set
of Interrogatories (on Joint I and VII)

This response is timely filed because (as Applicants' counsel O'Neill informed us) Washington's Birthday (observed) was yesterday. We subsequently asked a further extension til Feb. 23d, due to W.F. getting Answers to General Interrogatories a cold.

1(a) Both joint I and joint VII were formulated based on contentions of various intervenors, which Joint I and Joint VII respectively superseded. Wells Eddleman relied on the FSAR and updates thereto in formulating his contention 3. The basis documents for Eddleman contentions 112, 113 and 114, if any were used, would include the FSAR. We presume you mean name each person who you (1) know has first-hand knowledge of any facts alleged in this contention, and (2) relied on in formulating these contentions. We don't recall any such persons.

(b) see (a) response above.

(c) We presume you mean the facts alleged in each contention. The only facts alleged in Joint Contention I are that Applicants' record of safety and performance at their other nuclear power facilities does not demonstrate the adequacy of Applicants' managing, engineering,

operating and maintenance personnel to safely operate, maintain and manage the Harris plant; and that a pattern of management inadequacies and unqualified and/or inadequate staff is likely to be reproduced at the Harris plant and result in health and safety problems. As to Applicants' record, we presume Applicants have much of the information, as does NRC staff. We are filing discovery soon (CP&L has agreed to accept hand service of same at its Raleigh offices, subject to some flexibility if they cannot respond to it within 14 days) to both to get more information. We believe the record adduced at the 1979 CP remand hearing on CP&L management capability contains some of the record, as do NRC's files, including records of LERs, SALPs, fines proposed and levied against CP&L, open items, violations, deficiencies, noncompliances, nonconformances, repeated problems, management failures, comments by inspectors (e.g. Board Exhibit 8 of 1979 remand hearings, testimony of CP&L officials before the NCUC, NRC, SC Public Service Commission, Federal Energy Regulatory Commission, Congress or its committees or subcommittees, etc. Joint Intervenor anticipate depositions will be needed to obtain further information concerning CP&L's record, particularly in the areas of management, safety, qualification of personnel, operations, maintenance, quality assurance/quality control, management controls, policy and procedures. We believe further information concerning CP&L's safety and performance record is in the files of the NC Utilities Commission (NCUC) and/or its public staff, including testimony from cases involving CP&L, statements made by CP&L officials in connection with staff conferences, stock sales, bond sales, and other matters; also including records of outages, capacity factor, causes of outages,

predictions and commitments made by CP&L; and in orders of the NCUC finding CP&L management at fault in certain ways, particularly as regards 1981 and 1982 problems at Brunswick dealt with in NCUC Dockets E-2 sub 444 and E-2 sub 461. We believe other information concerning CP&L management and its nuclear policies and attitudes is contained in filings with the SCPSC, FERC, Securities and Exchange Commission, Atomic Energy Commission, made by CP&L; and perhaps in other files of those bodies. We respectfully point out that the burden of proof as regards management capability is on the Applicants.

As to the pattern of management inadequacies and unqualified and/or inadequate staff, we believe the attitude of Robinson plant management (Board Exhibit 8, NRC Dkt 50-400, 1979 remand hearings) describing them as doing only what is required by NRC, favoring production over safety, and impeding NRC inspectors' access to facilities; the pattern of radiation exposures and overexposures to workers at Robinson; the pattern of health physics problems at both Robinson and Brunswick; the failure to curb tube leaks in the Robinson steam generators; the record of severe accident precursors at both Robinson and Brunswick (one of the most serious sets of any utility, and, we believe, the most serious group of such precursors attributable to any utility operating as few as 3 reactors); the pattern of extensive QA/QC problems at Brunswick, Robinson and Harris; the repeated and heavy fines levied by NRC against CP&L in numerous areas; the security problems at Brunswick, and at Robinson 2; defects in the Harris security plans; CP&L's attitude toward fines and security problems as evidenced by its repeated attempts to get out of fines, to downplay security problems, and by its outright rejection of the suggestions made by Joint Intervenor's security experts (which

were not contentions)¹; CP&L's failure to meet commitments, as shown by its repeated violations of NRC rules and regulations, its repeated quality assurance and quality control failures, violations and deficiencies; CP&L's extensive record of failure to follow procedures at nuclear plants, including failures to establish adequate procedures as well as failure to follow existing procedures; CP&L's unwitting offsite radiation release(s) at Brunswick; CP&L's release of LLRW (low level radioactive waste) from Brunswick to local landfills and scrap yards; CP&L's repeated claims that it had solved most of its problems at Brunswick, which were followed by more problems (including many of the same ones claimed to be solved, e.g. high numbers of LERs, high employee turnover, large backlogs of unfinished work required for safety or health, poor maintenance, lack of adequate numbers of qualified personnel, lack of adequate supervision, lack of sufficient management attention, violations of NRC regulations and rules, etc); CP&L's extraordinarily poor performance in operating the Brunswick plant; other Brunswick problems alleged, including moving the site of taking samples for Sr-90 away from a place where higher Sr-90 levels had been detected, having to call in General Electric experts from the nearby nuclear factory on an emergency basis to help CP&L operators control the Brunswick plant, inadequate supervision of contractors; failure to properly

¹In hiring our security experts, Joint Intervenors contracted for an objective review of Applicants' Harris security plans and instructed our experts not to make any contentions concerning any possible flaw(s) in such plans which were not serious, but rather to take any minor defects or possible minor improvements and make them into a list of suggestions. This list of suggestions was submitted to CP&L and all the suggestions were rejected.

design, build or operate the Augmented Offgas system at Brunswick; contamination of Brunswick auxiliary boilers (which led to them having to be replaced), failure to adequately maintain the RHR heat exchangers at Brunswick (the Brunswick RHR failure resulting was considered among the most serious nuclear plant problems of 1981 by ORNL), failure to place indicator lights in the Brunswick control room to show whether the watertight doors to the RHR compartment were closed, repeated problems with leaving said doors open; operating Brunswick with excessive amounts of failed fuel, which apparently led NRC staff to impose a license condition on Brunswick in 1979; rushing Brunswick 2 into operation in 1974 for financial reasons, and committing to rush Harris into operation early in 1986 (in spite of being 4% behind schedule by their own admission to NCUC, and in spite of NRC staff's 1983 judgment that CP&L would be 6 months behind its scheduled fuel load date); consistent low SALP ratings at Brunswick for years after both CP&L and NRC staff told the ASLB in 1979 that the Brunswick problems were basically being solved, or had been solved; poor cable layout and fire protection at Brunswick, e.g. as indicated in 8-21-74 memo from C.E. Murphy (AEC, later NRC) Region II construction inspector; unsupported public statements touting CP&L's record as good in the nuclear field; a relatively consistent attitude of refusing to admit mistakes, defending past actions and saying to NRC, "you have to make us do it", instead of admitting mistakes and taking action beyond what NRC requires to ensure safety and reliability and adequate staffing and training at its nuclear plants; being a company whose major decisions are basically made by lawyers and others totally lacking in nuclear experience; and other factors. Joint Intervenors don't allege that this is the whole pattern, just

some of the more significant features of it which we have so far been able to identify.

* * *

The facts alleged in Joint VII are that vibration problems have developed in Westinghouse model D-4 steam generators (cf. Krsko plant in Yugoslavia, for example); that tube corrosion and cracking occurs in other Westinghouse steam generators with Inconel-600 tubes and/or carbon steel support plates and AVT water chemistry (cf. Robinson 2 when it used AVT); that tube failure analyses do not show Harris steam generators can be operated consistent with ALARA and the Public Health and Safety (cf. Secy 82-72; NUREG-C909; record of radiation exposure to steam generator jumpers at Robinson 2 and other Westinghouse PWRs); and that loose parts detection capability does not ensure operation consistent with ALARA and the public health and safety (e.g. record of loose parts in other Westinghouse steam generators; description of Harris loose parts detection gadgets in the FSAR as it was in spring 1982). These last 2 aren't exactly "facts" of the contention since it doesn't explicitly say they are facts; they may be considered allegations. We have tried to answer this somewhat broadly in that regard.

2(a). Joint Intervenors are seeking expert witnesses on Contentions I and VII but have retained none as yet. To the extent we rely on nonwitness experts' opinions or judgment we may identify that person by a pseudonym. (b) Information supplied by a person will be referenced in specific responses.

3(a) and (b) see 2(a) response above.

4(a) because you used the word "and" between the phrases "pertaining to the subject matter of" and "upon which Joint Intervenors relied in formulating allegations in the contentions", a literal

answer might encompass only a few documents. CCNC and Kudzu Alliance do possess considerable information from NCUC cases concerning CP&L management, and we believe both may possess some concerning steam generators. Wells Eddleman possesses a boxful of information concerning steam generators, and considerable information concerning CP&L management including some records and testimony from the 1979 Harris CP remand hearing on management. We have not catalogued the information possessed by CHANGE or any other intervenor, nor of all members of the intervenor groups, concerning these matters. we make the OBJECTION that it would be burdensome to do so, and beyond our resources, and that most of the information came from CP&L and NRC Staff anyway, and is thus in the possession of CP&L or available to them from their records of legal cases, statements their employees have made, testimony their employees gave, or from NRC records publicly available.

(b) Joint Contentions I and VII; see above answer.

(c) Joint Intervenors have conducted no inventory of all these documents as to which specific allegation each supports. There are numerous documents and we believe it would be burdensome to undertake this research.

5(a) Where we have identified a specific page citation to a document in the process of answering interrogatories herein, we will identify it; where we identify the document only, that information will be provided.

(b) the information will be listed for specific response(s).

6(a) Possibly opinion of nonwitness experts.

(b) where such opinion is used, that fact will be noted.

7(a) Joint Intervenors have not yet identified exhibits to be offered; however, we anticipate asking the Board to take judicial notice of the testimony and exhibits introduced in the 1979 remand

hearings on the Harris CP; and using the testimony and exhibits of witness A. Ronald Jacobstein in NCUC Docket E-2 sub 444 (he investigated the Brunswick plant in 1981 for the Public Staff of the NCUC), the NCUC Order in that docket, the testimony and exhibits of Thomas Lam of NCUC Public Staff concerning Brunswick in Docket E-2 sub 461 before the NCUC, and the order in that docket, or portions of the preceding, either as exhibits or cross-examination exhibits or both. In cross-examining the NRC Staff, we may use statements various NRC Staff members made in other NRC hearings or to the ACRS, of portions thereof. We stress that these identifications are preliminary and possible and not intended to be all-encompassing. We have not determined which documents or things we will actually use as exhibits yet.

RESPONSES TO SPECIFIC INTERROGATORIES

I-1. You evidently misunderstand Joint Contention I. It is not about "incidents", but about Applicants' record and pattern of management (or mismanagement). Joint Intervenor believe that specific incidents can indeed tell something about management that is dealing with them or involved in them, but we also believe that good management (and the management required for safe operation and maintenance of a nuclear plant, which in our view would be extremely if not superhumanly excellent management) is much more than just the handling of incidents. It includes attitudes, mindsets, philosophies, practices, procedures, patterns and overall performance judged not just by what the regulations or the NRC requires, but by the often-stronger standard of how well management anticipates, ^{prevents}, admits, and deals with all problems, whether it was required by some rule to deal with any of them or not, and of how well management does in putting together a fully qualified, sufficiently capable and flexible group of

employees to operate and maintain its plants and equipment, always in sufficient numbers and with sufficient experience and sense and knowledge to continually assure the protection of the health and safety of the public.

I-2. The FSAR gives a sort of paper outline of CP&L's top management, with boxes and charts and resumes. Some of its inadequacies are outlined in contentions superseded by Joint I, e.g. by Eddleman 3; however, the great weakness of all such paper outlines, including the "Management Capability Report" is the illusion that good management can be reduced to, or demonstrated by, paper organizational charts and qualifications statements. Although such charts and qualifications can do much to demonstrate the inadequacy of management, they can never show that the management is adequate to safely operate and maintain a nuclear power plant. That CP&L makes such submissions is thus an indication to us of less-than-good management, and of only doing (in general) what the rules require.

Good management is demonstrated in part by what it does, in part by how it handles people (including recruiting, training and retaining them and ensuring they can work together well), in part by its procedures and practices (particularly how well it anticipates difficulties and complexities and makes sure sufficient and sufficiently capable personnel and resources are in place to adequately handle difficult or complex matters before problems arise, this preventing many problems), in part by its handling of ^{problems and} mistakes (does it readily admit them? does it learn from them? does it effectively prevent their recurrence? does it try to get off cheap in dealing with a problem or does it do what it takes to solve the problem solidly?), in part by its integrity, honesty and truthfulness, including the extent to which it keeps commitments (and avoids making

commitments it may not be able to keep), in part by its actively seeking excellence and improvements at all times, in part by its resilience and ability to respond to unusual challenges without in part by its not retaining or covering for "bad apples" panic or falling apart, and in part in many other ways. But no mere description or categorization or cookbook can encompass good management, nor can any chart or resume show it.

Our review of the FSAR, SER and "MCR" is not yet complete. We note that the SER (p.13-1) states that it contains a proposed organization setup, which Staff hasn't finished its review of. CP&L's need to reorganize, particularly at Brunswick, indicates a continuing management failure to place adequate management and staff resources, and adequate organization, in place to manage the Brunswick plant safely. The more nuclear plants CP&L operates, the more its resources will be stretched in the nuclear field. While cancelling Harris 2,3 and 4 may reduce this strain on nuclear resources, the use of personnel who have experienced the poor operation and "brushfire-fighting" style of the Brunswick plant may significantly weaken the Harris plants staff in the all-important area of attitude. What CP&L has done is more important than what CP&L has said about its attitude toward safety, and its actions do not indicate the sort of excellent attitude of "safety first" that safe nuclear operations obviously would require. For example, CP&L refused to shut down a Brunswick unit in summer 1983 when NRC Staff urged a shutdown to check for pipe cracks. The NRC did not compel CP&L to shut down. When CP&L did shut the unit down, cracks were found, and overlay welds (a "band-aid" approach) were used on them even though CP&L had already ordered replacement piping. CP&L's large number of serious accident precursors also shows this inadequate attitude for seeking safety first. Other problems are discussed in response to I-3 below.

I-3. Joint Intervenors wish to emphasize again that Joint Contention I concerns patterns of mismanagement and of management; it also concerns the overall record of safety and performance at Applicants' nuclear facilities. We reaffirm that the burden of proof is on Applicants to show that they can safely operate, maintain and manage the Shearon Harris plant without allowing or creating health and/or safety problems. While incidents or specific problems may help to show inadequacy, they do not show a pattern of adequacy of the type that anticipates and prevents problems and is able to deal effectively with unexpected as well as expected difficulties.

Joint Intervenors also note that we are unable to list all of CP&L management's inadequacies or problems. We continue to research them. The following should not be considered an exhaustive list of inadequacies or problems CP&L management has.

(a) one specific inadequacy is having and/or using the idea that organizational charts, resumes, totals of years persons have spent in a given line of work, or a paper management capability report can demonstrate that management at CP&L is adequate to maintain, operate and manage nuclear plants (or Harris) safely. Another is the use of people without commercial PWR experience in top construction positions at Harris: if the plant's not built right, it can't be operated safely or without risk to the public health. A third inadequacy is CP&L management's tendency to take a legalistic approach to nuclear management and nuclear problems, challenging regulators to prove management was wrong, denying problems or covering them up, and apparently trying to get their act more together prior to significant licensing hearings (e.g. Harris CP and CP remand, Harris OL) with a pattern of slacking off or getting

into more problems thereafter. A fourth inadequacy is CP&L's tendency to make inflated commitments and fail to keep its commitments. A fifth is CP&L's record of large numbers of precursors to serious nuclear accidents. A sixth is CP&L's large number of violations, deficiencies, noncompliances and open items dealing with NRC and AEC regulations. A seventh is inadequate security and security planning. An eighth is CP&L's failure to follow up many operating and other nuclear problems properly or adequately. A ninth is CP&L's mismanagement of low - level radioactive wastes at Brunswick, which we believe to be the only nuclear power plant in the nation to allow LLRW to be improperly disposed of in local landfills and to local scrap dealers. A tenth is CP&L's extensive problems with quality assurance and quality control: although Robinson 2 was a turnkey plant (CP&L didn't have to do anything to get it built) CP&L's construction and other work at Brunswick has been shot through with QA/QC problems from the beginning, and Harris has often matched this pattern, e.g. in the area of hangers and pipe supports, materials QA, etc. CP&L's charts show direct access to top management to call attention to such problems, but apparently these channels have not been used, even in cases such as the Harris pipe hangers where a near-total breakdown of QA/QC and inspection integrity is evident (e.g. 95% failure rate of a sample of 400 pipe hangers already OK'd by inspectors at Harris).

An eleventh is CP&L's tendency to place financial considerations first, above quality or safety or taking adequate time to be sure a job is done right, e.g. Robinson attitude of "production first" as reported in Board Exhibit 8 of 1979 remand hearings on management capability before the ASLB for Harris, rushing Brunswick 2 into operation in 1974 for financial reasons (which rush resulted in many later problems), committing to meet the current schedule

to operate Harris in a similar rush, apparently for similar reasons.

A twelfth is inability to retain qualified employees in sufficient numbers. Here the Brunswick plant is a prime example with its high turnover problems, lack of enough qualified people to either make or supervise needed repairs or modifications, as shown e.g. in statements of F.S. Cantrell, NRC inspection & enforcement, and of A. R. Jacobstein, consultant to NCUC Public Staff.

Joint Intervenorers are pursuing discovery concerning most of these patterns and other patterns and events in Applicants' record. We wish to emphasize again that we cannot produce a complete list of CP&L management's problems; this is due in part to our lack of resources to check everything, and in part to CP&L's apparent tendency to be less than responsive about its problems (and, apparently, to be less than forthcoming with certain information, even simple things like reports of power plant costs, or load forecasts, which might conceivably be used to cast doubt on the general capability or performance of its management; we recall a statement (we believe it is in Board Exhibit 8 of 1979 remand) that CP&L only reports the conspicuously reportable problems (at Robinson 2). We continue to look into the problems of CP&L management.

VII-1. Joint Intervenor's review of NUREG-1014 is incomplete. A nonwitness expert, "Alice Ace", believes that NUREG-1014 does not provide basis to assure that multiple tube failures will not occur. We also believe that the expanded tubes at Harris will be thinned and put into a more stressed condition by the expansion involved in the NUREG-1014 "fix". We and "AA" believe that more analysis is needed to determine the magnitude and significance of such stresses. We believe the effect of the thinning is clear: it weakens the tubes; it will also make them more subject to denting. We believe that the burden of proof is on Applicants to show that the NUREG-1014 "fix" is adequate in all respects to protect the public health and safety.

VII-2: See above answer; when you expand a tube, its wall volume doesn't change significantly but its wall area does. Thus the tube is thinned in the area where the expansion takes place. When you cold-work metal, you leave residual stresses. Tube expansion of the NUREG-1014 "fix" type appears to us to be a form of cold working of the tube metal. The stresses therefrom may weaken the tube or part of it or make it more subject to corrosion.

VII-3. First, we point out that if the NUREG-1014 modifications are made and weaken the tubes or make them more subject to failure, corrosion, denting, rupture due to loose objects in the steam generator, etc., further modifications may not be able to solve the problem. To the extent that these modifications cause problems, they should not be made; replacement of the Harris steam generators with models not subject to the type D4/D5/E (or type D) vibration problems should be considered. It may not be possible to sleeve a tube which has only been expanded at certain points, (e.g. at tube support plates or baffles), and if the tube has not been expanded evenly sleeving may not work at all.

Joint Intervenors have not completed our review of NUREG-1014 and the modifications it proposes. We do believe that any fix should be made prior to ~~xxxxxxixix~~ operation of Harris or radioactive water flowing through the steam generators, in order to minimize radiation exposure to workers. We are seeking expert help on this contention.

VII-4: Not applicable.

VII-5: Yes, to the extent that it does not prevent corrosion, cracking, multiple tube failures, damage caused by loose parts in the steam generators, tube leaks and other problems.

VII-6: We haven't calculated a number for the added exposure, but it is clear that steam generator problems are significantly increasing radiation exposure to nuclear plant workers. See the booklet "Tube Leaks" at page 29; see *ibid* at 28-36 re radiation exposure and problems associated with it. In referencing this we do not endorse the BEIR radiation death estimates related to occupational exposure given on p.31. We believe Dr. Gofman's estimates of such deaths are more accurate, and that Dr. Gofman's deaths per person-rem estimate would give a more accurate picture of one health effect of such radiation exposure.

VII-7. It would be nice to be able to specify such actions which you could then take (although your failure to think of them first and carry them out may bespeak less-than-good management). SECY 82-72 at 4 (cf. Tube Leaks at 21) says that it is "Virtually impossible" to prevent tube leaks and that "There are no simple corrective actions." Steam generators with tubes that resist both corrosion and vibration much better than the D-4s do, and which do not pinch their tubes or dent them due to plate corrosion, and which would really last for the useful life of the nuclear plant, would be things you should consider. We don't believe that the proposed modifications are consistent with ALARA.

VII-8. Not Applicable.

VII-9. Of course it's inadequate. Did AVT water chemistry stop the corrosion of steam generator tubes at Robinson 2? SeCY-82-72 points out (p.5) that AVT water chemistry is linked to denting of steam generator tubes (cf. Tube Leaks at 19). We have not made a more complete analysis of this problem yet, and "AA" points out that AVT will not stop corrosion. The question is, will it slow it down enough? It did not appear to do so at Robinson #2 when AVT was first used there.

VII-10. Analysis not complete. See above response.

VII-11. We are not sure that any available water chemistry ~~exonim~~ controls by themselves will be sufficient to minimize or prevent tube corrosion or cracking and satisfy this contention. We are not certain that any water chemistry can prevent corrosion caused by the use of different metals in the steam generator and the turbine and the condenser and associated piping, pumps, and equipment in contact with the steam, feedwater, or both. Changes in the steam generator materials, use of sacrificial anodes or other modifications or outright replacement of the steam generator may be required. Expanding the tubes may actually increase susceptibility to corrosion for those tubes.

VII-12. Not applicable.

VII-13. We don't know at present in any detail. Robinson 2 is cooled by fresh water (lake Robinson) and still experienced steam generator corrosion and problems with AVT water chemistry. We know that seawater cooling, or brackish water cooling, can have adverse effects on condensers and heat exchangers and other equipment exposed to the seawater or brackish water.

VII-14. Yes.

VII-15. With AVT you have corrosion and leaks. The leaks require repairs which increase occupational exposure. The corrosion

requires flushing, and that involves radiation exposure. In steam generators of this design, some areas may not be able to be adequately flushed. Corrosion will build up in them, leading to more leaks or tube ruptures which also require fixing.

VII-16. Not Applicable.

VII-17. The question refers to a "program" whereas the SER at 4.4.4 refers to a metal impact monitoring "system" or just loose parts monitoring "system". Our review of this matter is not complete, but we believe that both the sensors and the system's other components should be safety grade. ("AA" called our attention to this safety grade issue).

VII-18. Review incomplete. The whole system should be safety grade and tested for large weights (cf. SER 4.4.4) as well as small ones.

VII-19. Analysis currently incomplete.

VII-20. Analysis currently incomplete. See VII-17 above. We are not now willing to withdraw part (3) of contention VII.

VII-21. If it finds loose parts, occupational exposure will be required to get them out, though the safety consequences of leaving them in could well be worse. If it needs repair or replacement, occupational exposure will come with this work once the steam generators and primary loop are "hot" (radioactive).

VII-22. We presume you mean "contend" not "content". We know that increases can result from the situations described in the above answer. We have not determined their magnitude. When people work near radioactive things like the Harris steam generators will be, they incur radiation exposure.

VII-23. Not applicable.

VII-24. Which counsel did you serve? John O'Neill indicated to Wells Eddleman II-16-84 that Applicants had been serving such documents on all the intervenors (or at least on Eddleman).

At any rate, we haven't located this document yet in our files. We will be continuing to seek expert analysis on this question. We believe that recommendations in a report by Science Applications Inc (SAI) concerning steam generators are also relevant to this question, but we have not obtained or reviewed this report yet. We have not completed our own review of this question.

VII-25,26,27,28,29: See response to VII-24. We also believe NUREG-0909 provides basis for believing that a steam generator tube rupture analysis based on a maximum of one ruptured tube in any steam generator at any time is inadequate both for safety and to protect the public health and safety (VIII-27).

VII-30. Not Applicable.

VII-31. We have not completed an analysis of the radiological consequences of SGTR. We do believe that multiple tube ruptures are a credible event and should be analysed (cf. SECY-82-72, which points out that multiple tube ruptures can occur; NUREG-0909, which shows they did). We do not believe that ALARA is consistent with events like SGTRs that release radioactivity inside containment.

VII-32. See above. VII-33. Not Applicable.

Production of Documents

Joint Intervenors agree to make available for inspection and copying (1) Wells Eddleman's file of steam generator documents; (2) any other documents referenced in the above responses which CP&L does not already possess. We also reference, and will produce, those parts of the NC Anvil series on the Brunswick plant entitled "An Accident In The Making", as relevant to management capability (or lack thereof) by CP&L.

AFFIRMATION

Wells Eddleman hereby affirms that the above responses are true to the best of his present knowledge and belief. This 22^d day of February 1984.

Wells Eddleman