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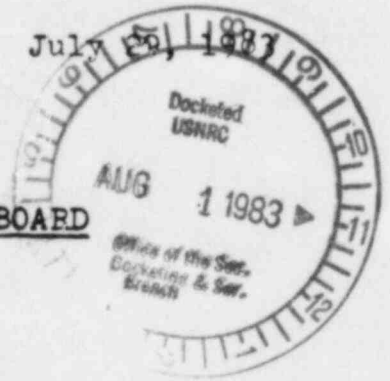
UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

July 29, 1983



BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

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

In the Matter of CAROLINA POWER AND LIGHT CO. et al. (Shearon Harris Nuclear Power Plant, Units 1 and 2)	Dockets 50-400 OL 50-401 OL ASLBP No. 82-468-01 OL

Wells Eddleman's filing re 5 factors and answer to Staff and Applicants re DEIS contentions and 15AA

This filing is made pursuant to a conference call of 7-14-83 and the Board's memorandum and order of 7-15-83 (pp 2,3). It addresses the 5 factors of 10 CFR 2.714(a)(1) per CLI 83-19 (served July 1 '83) for my DEIS contentions and contention 15AA filed prior thereto.[1] As discussed in the conference call, this also includes my answers to Applicants and Staff on these contentions, which cannot be made in the prehearing conference since it was called off.

Because there is much overlap among the above contentions with respect to the 5 factors, I first address each factor gnenerally for groups of contentions. Other information regarding some or all factors is later given for contentions, along with my answer to Applicants and Staff re admissibility of that contention.

[1]Emergency Plan (site) contentions and Control Room (DCRDR) contentions will have these 5 factors addressed in a separate submission due 8-31-83. 7-15-83 Order at 3.

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Where I do not explicitly accept an argument by Applicants or Staff, it can be assumed that I do not agree with it.

THE FIVE FACTORS

1. Good cause for failure to file on time:

The deferred Eddleman contentions were filed on time. Thus, particularly for those that I let stand, the 5 factors should not be applicable. (I address them anyway just to be safe).

The Board's 9-22-82 and 5-27-83 Orders are also, in my view, good cause since they provide[2] time deadlines for filing contentions or revising or withdrawing them when the DEIS comes out. These deadlines were met or (in the case of the DEIS) an extension of time was granted and the filing met that extension.

The Board's 5-27-83 Order also requires a paragraph saying why the contention couldn't be filed earlier. For contentions not deferred, such a paragraph is provided (Eddleman DEIS contentions, see e.g. at 17, 19,22), and I adopt it (and any other information re why any contention covered herein could not be filed earlier) as evidence of good cause for not filing "on time", i.e. 5-14-82.

For deferred contentions amended on the basis of information (or lack thereof) in the DES, the unavailability of that information is good cause for reformulating the contention (to give it more specificity), and for revising the basis to reflect the DES's actual content. The Board (9/22/82 Order at 4) has stated that the

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[2] See 5-27-83 Order at 8 (footnote 8) re Contention 15AA on capacity factor; same order at 25 re DES (DEIS) which requires statements on why the contentions on the DES (DEIS) could not be filed earlier; 9-22-82 Order at 4-8 (re Catawba, ALAB-687 and deferral of contentions) The filing deadlines are set in the 9-22-82 Order at 8; numbers of deferred contentions appear in the table, page 9 ibid.

specificity requirement is what leads to the idea of deferred contentions re documents not available at the original filing time for contentions. The Board went on to say (p.5) that if "all contentions had to be filed before the first prehearing conference, even if essential documents were not available. Many intervenors would then file necessarily vague contentions that were vulnerable to exclusion for lack of specificity." (emphasis original)

Thus, making up for the lack of specificity in a deferred contention is clearly permissible. This is a conclusion reinforced by the fact that the Board went on to pose the alternative to such a non-specific but timely filing as vulnerability to a claim of "lateness" and possibly being required to meet the five factors of 10 CFR 2.714. Revision in the light of more specific information (e.g. the exact content, words, or lack of consideration or lack of analysis in the DES) is clearly not "lateness" and was specifically contemplated and allowed (p.8) in the Board's 9-22-82 Order. (Note that Eddleman 15AA can be viewed as a revision of Eddlema 15 and 15A, and that such a view comports with NRC's CLI-83-19 (at 12-13) where contentions based on the ER (like 15 and 15A) are to be filed based on the ER, but those based on the DES "cannot be expected to be proffered at an earlier stage of the proceeding before the documents (DE S or FES) are available" (p.12). This last applies to contention 15AA.

As to new contentions, my new contentions question the adequacy of the DES. Under CLI-83-19 as cited above, the fact that the DES was not available (I got mine May 19, 1983) is good cause for not filing these contentions on 5-14-82 ("timely"). The new contentions were all timely filed under the Board's 5-27-83 and 9-22-82 orders.

Further, as to new environmental contentions based on the DES, (and 15AA if it is considered to be such a contention), the Staff's actual failure to comply with section 102 of NEPA (cited by me in my original contentions supplement, see at 12-13 and at 244) does not occur until they actually issue the DES without giving the consideration "to the fullest extent possible" to "alternatives to its action which would reduce environmental damage" as required by NEPA under Calvert Cliffs, 449 F 2d 1109 at 1128. The staff's failure to actually give this consideration, which must be "full and fair", violates my rights as an interested party and resident within 50 miles of Harris, under NEPA. Such a violation, allowed to stand unchallenged (i.e. without contentions on such violation(s) being admissible) violates my right to equal protection of the laws under the U.S. Constitution. I think the requirements of NEPA section 102, as elucidated in Calvert Cliffs, supra, are just what is addressed as the "adequacy" of the DES in CLI 83-19 (see at 12). Thus, the non-existence of the DES is good cause for not filing a specific contention about the adequacy of the DES, such as the contentions in the class described at the top of this page, "on time."[3]

FACTOR 2. The availability of other means whereby the petitioner's interest will be protected.

I am the only party pursuing DEIS, capacity factor, DCRDR and site emergency plan contentions. The Staff, in its DES and

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[3]Even where there was some warning that the Staff would violate the requirements of NEPA and Calvert Cliffs as cited above, e.g. as to the environmental impact of spent fuel, (2-24-83 transcript at 540), any contention alleging that the Staff would in fact violate the law by omitting analysis of the issue (or alternatives to reduce the environmental damage therefrom) would have been held premature most likely, and deferred. Then it would have to be made specific based on the DES. (This issue further discussed re spent fuel contentions.)

in its pleadings on Contention 15AA and the DEIS contentions, opposes my position on all DEIS contentions. (I seem not to have their response to 15AA yet, but Staff counsel indicated they do not wish to have a capacity factor contention in the proceeding.)

Applicants likewise oppose my position on everything except some parts of contention 8F. Even on that contention, Applicants are extremely unlikely to act to protect my interests, based on their reaction to Joint Contention II, Eddleman 29, Eddleman 37B and other health effects contentions.

So, for all the DES contentions (DEIS contentions) and 15AA, there are no other means whereby my interest will be protected. please note the language of the rule is "will be", not may be or could be.

FACTOR 3. The extent to which the petitioner's participation may reasonably be expected to assist in developing a sound record.

First, without contentions admitted, there will be no record on any of these issues. The adequacy of the DES, the extent of benefits from the plant (as expressed by capacity factor) and the issues of the deferred/revised contentions, are all quite important in an NRC operating license proceeding. (Adequacy of the DES is what the new contentions are about.) Obviously the record is more sound if all these issues are explored by litigation: the adversary process is considered a very important tool of fact-finding in the USA's judicial system. More facts mean a sounder record.

I think my handling of Eddleman 15 and other environmental contentions, my ability to pursue discovery thereon, and my ability to conduct technical cross-examination and possibly to find witnesses of my own demonstrate that I can assist in developing a sound record on each of these issues.

To summarize, then, without admitted contentions there will be no record on these important issues (covered by the DES new contentions, deferred contentions, revised/reformulated contentions deferred (including "resurrected" old contentions), and 15AA). I have demonstrated ability in discovery and cross-examination to be of assistance in developing a sound record on these sorts of issues (environmental and capacity factor). My abilities and resources are applicable to each such contention as described above.

FACTOR 4. The extent to which the petitioner's interest will be represented by existing parties.

As with factor 2 above, the key point here is that I am the only party pursuing these issues. In the conference call of July 14, 1983, it was made clear that all other parties, by not filing DES contentions and/or by not addressing their deferred contentions on DES matters as the Board had ordered (9/22/82 and 5/27/83), had dropped their pursuit of these matters.

The Staff opposes all the DES contentions and doesn't like the idea of litigating 15AA. Applicants oppose all of these contentions except some parts of 8F, but it is very unlikely that they will represent my interests with respect to 8F or anything else, given their consistent opposition to my interests on all other environmental issues.

The above shows that no existing party will represent my interests on any of the DES contentions or on 15AA. Again, the test is "<u>will</u>", not "may", "might", or "could". There is no showing that any other party will represent my interests on any of these matters.

FACTOR 5. The extent to which the petitioner's participation will broaden the issues or delay the proceeding.

Capacity factor (15 AA, see original contention 15 and the admitted version 9/22/82) and all the deferred contentions have been issues since this proceeding began, so admitting them (or revisions of deferred contentions) cannot broaden the issues. Even where a revision might be read as "broader" than the original deferred contention, the broadening is not significant in a case of this complexity. I would say that the revisions are more specific and thus "narrower" than the original deferred contentions on which they are based (or from which they derive).

As to the new contentions, they go to the adequacy of the DES. 10 CFR 2.104(b)(3)(i) provides that compliance with NEPA sections 102(2)(A),(C) and (E) must be established in this proceeding. The DES is how the NRC Staff complies with NEPA (CLI 83-19 at 12, Appendix thereto at 4). Thus, challenges to that compliance (which must be very full and fair under Calvert Cliffs, supra, at all stages of NRC review including the OL stage) have been at issue in this proceeding from the beginning also.

Assuming, arguendo, that any new contention (or all of them) is considered to be broadening of the issues, again, one or a few is very little broadening in a proceeding where about a dozen environmental contentions are already at issue. And the other factors are unanimously in favor of admission of each contention, so the broadening factor is outweighed, particularly for issues important for a sound record to be established. (Additional information on this issue may be found for specific contentions below.)

As to the question of delaying the proceedings, virtually all the delay in getting the DES contentions and 15AA to the stage of Board consideration has been due to delays in issuing the DES, which had been scheduled for 12-17-82, was then revised to 2-21-83, and which finally issued May 11, 1983. Compared to this delay of nearly 5 months, assuming that rulings on contentions could issue by 8-15-83 and allowing 60 days for filing discovery, 30 more days for getting in all requested production of documents, and perhaps another 3 weeks to prefile testimony, the current hearing schedule on environmental matters could be met, though barely. Putting the DES contentions and 15AA (such as may be admitted) at the end of this hearing would give a little more time; another alternative would be a split hearing with perhaps a week or two break between the other environmental hearings and hearings on any of these issues admitted. In any of these cases, the delay is not significant in a proceeding that will last about 3 years. The Staff expects CP&L to load fuel 6 months later than CP&L schedules it, so even a month delay would not be significant in this proceeding as far as impacting operation dates for the Harris plant.

Obviously, the potential for delay is greater the more contentions are admitted, but the split-hearing proposal above should handle the case where all of them are admitted. Even then the delay is modest and outweighed by other factors, particularly the need for a sound record and that the contentions were timely filed or have good cause in the lateness of the DES (and etc, see factor 1 above, pp. 2-4); the fact that only myself, the Staff and the Applicants are involved in all these issues may also streamline the proceeding with respect to them, limiting delay.

GENERAL CONCLUSION: A balancing of the 5 factors, as addressed above generally for contention 15AA, deferred contentions unrevised, deferred contentions revised, and new contentions, shows that the 5 factors favor acceptance of each contention. Further discussion of some of the factors, where given for any contention below, is intended to lend further basis to this conclusion.

ANSWER TO APPLICANTS AND STAFF ON CONTENTIONS

In my June 20 filing, pp.1-5, I list contentions the DES (qua DEIS)does not affect: Eddleman 150-161; Joint I,IV,VI,and VII; Eddleman 41,45,64f,65,67,9,11,116 and 132; Eddleman 2,24,32(except 32(3)),26,29&30 (re emergency planning), 54, 56,57,63,64A,99,100, 117,118,121,124,133,35,88,103,107, 137,139 and 140. Possible continued deferrals also include 57B, 81 and 97. Except as noted below, Applicants and Staff do not appear to challenge any of these contentions as being affected by the DES. Thus, those deferred in the above list should remain deferred, and those not ruled on should go through the normal process of being ruled on, but independently of the DES. That is 21 deferrals, 3 possible deferrals, 14 not yet ruled on, 9 admitted Eddleman safety contentions and 4 Joint Contentions not on environmental matters.

Since they did not challenge my analysis in their responses to my DEIS (DES) contentions, I assume Applicants and Staff agree that Joint Contentions II and V are also not affected by the DES; and, on the same basis, I assume they agree 37B is not affected.

Eddleman 57D was deferred. Applicants point out an evident oversight in that the part about emergency plan costs was with a separate "# "before it. Applicants, Staff and I all overlooked this and I assumed (in setting objections to the Board's 9/22/82 Order)

that this was part of Eddleman 57D and therefore deferred.

At any rate, this part was timely filed, and even if we all did overlook it, it's a good contention even by Staff and Applicants' view, in that it identifies (from analysis missing in the ER) a failure that shows up in the DES. Why should this be included? It's a cost (emergency planning) caused by running the plant. If the plant doesn't run, you don't need an emergency plan. I thought it obvious that the Staff needs to fully consider all the costs and benefits of Harris operation. To do otherwise would violate NEPA. If you throw out some costs in your analysis, you are stacking the deck of the cost-benefit analysis. That's wrong.

Of course, the cost of emergency planning doesn't depend on need for power or load forecasts or anything like that. It only depends on the plant getting an operating license, which is the main issue in this case. Therefore the cost of emergency planning should be included in the Staff's analysis under NEPA, as Contention 57D ("# ") asks. (See page 12 for additional info and re 5 factors on this contention.)

As to 57B and 81, I have no objection to continuing to defer them to the emergency plan stage. The Staff does not address them. Nor do Applicants appear to. (See middle of page 2 of my 6-20 filing). I do not assume that Applicants or Staff approves these contentions. I think the basis for Staff's underestimating the probability of severe accidents (UCS, Nuclexus,"the probability of a core-melt accident", odds around 1333:1 (vs. 10^4 to 1 or so for Staff) DES at p. 5-78 by UCS' analysis, or 1000:1 to 2000:1 by Okrent and Moeller for ACRS) is clear enough as basis for admitting them both if they are ruled on now. They appear to be adequately specific.

Eddleman 97: Again, I have no objection to further deferral re the emergency plan. But the Staff's failure to analyze very rapid accidents is plain on its face. Staff & Applicants do not address #97.

I think the citations to the DES (6-20 filing at 2-3) show how the Staff has failed to make such an analysis. Why is it needed? Because very rapid accidents are possible and their environmental effects are very very bad. The Staff assumes effective evacuation with respect to accidents (see p. 5-62, "Early evacuation within and early relocation of people from outside the plume exposure pathway zone ... and other protective actions as mentioned above are considered essential sequels to serious reactor accidents involving significant release of radioactivity to the atmosphere. Therefore, the results shown for Shearon Harris include the benefits of these protective actions."

Yet, as noted (6-20 at p -3) by me, the Staff really didn't take very rapid accidents that could preclude such protective actions into account. It remains to show that such accidents are possible. They are. One scenario (incorporated into Eddleman 97 by reference, see my 5-14-82 submission at 205, referencing last part of Eddleman 96 on page 204) is an ATWS event, followed by a power excursion that blows the lid off the reactor vessel and through the containment, releasing the reactor contents to atmosphere (American Physical Society, 1975 Supplement, beginning p. S 1, describes how this accident works). This is obviously a very fast, very serious accident (potential to release the entire core inventory to the environment under considerable pressure). Its scenario is set in original Eddleman 97 (by reference), timely filed. Staff should assume near 100% core release & no protection to analyze it. I believe the above, original Eddleman 97 and the 6-20 filing show plenty of basis for a specific contention which may be phrased:

Eddleman 97A The DES does not sufficiently account for the environmental effects of very rapidly developing nuclear accidents in which emergency plans could not take effect or would have limited effect.

The above is the rewording of 97 I'd have put forward at a prehearing conference if we'd had one (the 7/20-21 one was called off). In the conference call of 7/14/83 I understood that this pleading can include any responses that would (or could) have been made at that prehearing conference.

More on the 5 factors: Eddleman 97 was timely filed, and does not broaden the issues. The potential for delay from this contention is modest since the Staff can address it in the FES which they hagve to produce anyway. No other party is pursuing this issue and there are no other means to protect my interest in it.

NOTE re Eddleman 57D (see page 10):
The Staff (DES section 5.8) considers other socioeconomic costs (if you can call their 2-paragraph ipse dixit conclusions consideration), but they omit this cost, which is clearly caused by Harris operation. Emergency planning is now paid for by the taxpayers, so it's a socioeconomic cost of the Harris plant. It is clear that emergency planning costs will be incurred, and the Staff's failure to include them biases the cost-benefit analysis required by NEPA. This analysis must give the full and fair consideration required by NEPA. Calvert Cliffs, supra, at 1128.

More re 5 factors: This contention was timely filed, and thus cannot broaden the issues since it's always been an issue (even if it has been overlooked in the past). Delay potential is modest because Staff must issue the FES anyway, and as noted under the general discussion of the 5 factors (see p.8 above) there is time to do discovery and litigate contentions like this with either no delay in the environmental phase hearing, or modest delay. No one else pursues this issue, and there are no other means to represent my interest on it.

Joint II, Eddleman 37B, and Joint IV, V and VI and Eddleman 2 (discussed at pages 3-5 in my 6-20 filing) are not affected by the DES. Staff and Applicants do not question this view in pleadings so far.

Eddleman 88 (6-20 at pp 5-6): The Staff response (Staff at 4-5) shows they may not have read beyond the first sentence of Eddleman 88 (5-14-82 at 198). I mention (6-20 at 6) that the " 'benefits'(of public use of places inside the exclusion area) should continue to be excluded from the cost-benefit analysis in section 6 of the (DES)." In negotiations I have also agreed to withdraw the part of 88 which alleged that such benefits were counted in the DES, since they aren'T. I think my 6-20 filing is quite consistent with that position.

However, there remain 88(A) and (B) (5-14-82 at 198), the first of which asserts that there should be no public use of the areas inside the exclusion area boundary due to accident risk. (This may be viewed as a safety contention and remain deferred, but the basis for it exists now. See radiation release and dose discussion in my 6-20-83 filing at 5-6.) Staff does not address this issue. The Board noted (9-22-82 Order at 63) that Eddleman 88 alleges deficiencies in the forthcoming environmental statement and emergency plans. It was thus deferred.

Applicants assert (their response at 33-34) that 88A re the DES "ignores the assessment of severe accidents"; it does not, and in fact references discussion of severe accidents. That is the basis the DES supplies. Citing that basis simply provides greater specificity for 88A. It gives official estimates of the "risk of radiation exposure to persons in (the exclusion) area (whole body and thyroid)" as stated in original 88A. (Whether I have also challenged Applicants' ability to evacuate the exclusion

area re the Site Emergency Plan is irrelevant, since I have elsewhere challenged the ability to evacuate this area safely (Eddleman contention 88B & 32)). Applicants (p.34) show they haven't read the end of 88A correctly. It says "should continue to be excluded" for recreation "benefits".

88B: The Staff doesn't address this one either. Applicants (response at 34) misread 88B. The "costs it discusses" are those of "establishing adequate transport, warning, medical treatment and other emergency response facilities, means, plans and the hiring of trained personnel to carry them out, which are all necessary to assure the prompt evacuation and/or other protection of the health and safety of those engaged in hunting, fishing and recreation within the LPZ in the event of a nuclear accident at Harris" (original contention 88B, 5-14-82 at 198). Above the quoted words on p.198 it is clear the exclusion area is included in this zone.

Applicants say, correctly but irrelevantly, that the only benefits of Harris in the DES are electricity and additional generating capacity. So what? 88B addresses COSTS left out of the analysis. I never said commercial fishing and local fishing was counted as a benefit, only that the staff had bothered to consider that, but had not bothered to consider that in the event of an accident, folks fishing (or otherwise engaged in recreation in the exclusion area) might be killed by radiation releases. I still think the best way to handle this problem is to prohibit such use of the exclusion area. (See original contention 88A at lines 4 thru 10) But if you're going to allow people into the area, then the cost of planning and preparing to evacuate them has to be included. The planning and preparations are not "remote and speculative"; they are required by NRC. These costs (inside the Exclusion Area for contention 88B) are what the Staff has failed to consider. (5-14-82, at 198, lines 15 and following, "the ES fails to consider").

I can find no basis in the Board's 5-27-83 Order for Applicants' naked and unreferenced assertion that the Order bars consideration of such costs. Costs of emergency planning and preparation in no way depend on need for power, plant performance, or energy alternatives or load forecasts.

In sum, 88B is fully supported by the DES. (6-20-83 at 6, lines 7-8 thru "DEIS" (DES)). What the Staff should have done instead is to figure out the costs of emergency evacuation plans and preparations and include them in its cost-benefit analysis. They are a socioeconomic cost and there's no excuse for leaving such costs out of their analysis, especially when they have included costs they characterize as "none" (DES pp 6-2 and 6-3, e.g. at top line of table on 6-3 and several lines on page 6-2).

5 factors addenda for 88A and 88B: The contentions were timely filed and also cannot broaden issues, since they've been issues from the start. The revisions to them above reflect simply the exact content (or lack thereof) of the DES, consistent with CLI 83-19 at 12-13 (challenges to the adequacy of the DES cannot be expected to be proffered at an earlier stage, i.e. before the DES is prepared. This covers the revisions that explain how 88A and 88B relate= to the DES). CLI 83-19 (at 13) says that the filing of an environmental concern based on the ER should not be deferred ... in this case, a guess addressed to the ES (DES) based on information available a year before it was issued, proves correct on two counts (88A and 88B). While intervenors should not be expected to make such accurate guesses about everything (or even most things), it's been done. NOte that CLI 83-19 says that if the Staff provides a differing analysis in the DES, "there will be ample opportunity to amend or dispose of the contention." (p.13)

Staff has had Eddleman 88A and 88B in hand for nearly a year before issuing the DES, yet provided no different analysis. That's their fault, not mine. Applicants & Staff say I need to say what they should do instead. With respect to 88A, I've said that Applicants or Staff should not permit use of the exclusion area for recreation, or in the alternative should analyze the risk to people in it due to accidents. With respect to 88B, Staff should figure out the costs of LPZ and exclusion area emergency planning and take them into account as socioeconomic costs in their cost-benefit analysis. I've explained why above; to summarize, it's not consistent with NEPA or protecting the health and safety of the public to not analyze the effects of accidents on folks inside the exclusion area if people (the public) are allowed in there. (They are, see DES 5-54/55). (88A). For 88B, NEPA requires all the known costs to be considered. This should take care of the "specific critique" requested by Staff (response at 3-4) and Applicants' (their response at 9-11) for a rationale.

Coming back to the 5 factors (begun above, 3d paragraph p.15), the no-other-means and no-other-parties are the same as the general situation for these contentions. As to a sound record, I'd add that I have experience in cost-benefit analysis and cost estimation, and have access to considerable data on radiation health effects (see e.g. responses to interrogatories on Eddleman 37B and Joint II). With this information, I can assist in developing a sound record on the issues of (88A) accident effects on people very near Harris in the exclusion area, and (88B) cost of evacuation plans/preparedness to take care of people in the LPZ and exclusion area.

Eddleman 105 (6-20 filing at 5, 6-7) had been rejected (9/22/82 Board order at 66) in part because if it alleged a more severe accident should be used in setting the LPZ and exclusion area sizes, it was not sufficiently specific. That is exactly what Eddleman 105 alleges. The Staff says at pages 5-55/56 of the DES that it has not reviewed the emergency plan for taking care of people in the LPZ and exclusion area. (see also at 5-54/55). They do go on to say, page 5-57, that they have not done the analysis of very serious events (nuclear accidents) doses of radiation to individuals under 10 CFR 100. Thus, at minimum, this revived contention 105 should be deferred until the SER issues. The SER is where the Staff will present those 10 CFR 100 calculations. (DES at 5-57).

NOTE: The staff methodology is a bit strange in that they assume no evacuation/protection for design basis accidents (DES p. 5-58, top), which are lesser accidents. But on 5-62 they do assume protective action for the more severe accidents, and they assume it will be taken and work. These more severe accidents are the ones Eddleman 105 is concerned with. The assumption, however, hasn't been justified by NRC, especially inside the LPZ. NRC says review of Applicants' plans isn't complete, so the ability to take protective action inside the LPZ isn't demonstrated.

The Staff DES claims that 10 CFR 100.11(a) allows them to assume only the leak rate from containment demonstrated by tests. (Note, p.5-57). But 100.11(a) actually says to use the "expected demonstrable leak rate" for containment. This could be virtually 100% for an accident that blew the containment open. 10 CFR 100.11 requires consideration of an accident not exceeded in its effects by any other accident considered credible. I believe Staff should therefore consider the worst accident shown

credible so far, which in my tentative view is the blown-open containment (overpressure blowing off reactor vessel lid, forcing lid through containment) demonstrated possible by the American Physical Society in 1975. There may be worse accidents, but that's a bad enough one to start with as "worst". It's credible, according to APS. This is the "what should be done" or "basis for what 'ought to be' " that Staff & Applicants ask for, re 105.

The Staff's position (response at 5) is confusing. They do not address what I was citing as new in the DEIS (DES). Without reference to this design-basis business, they assert that their methodology is like that of the ER. (Even if this is true, I've already asserted the ER was wrong too on this. The Board found such assertion lacked specificity. The DES supplies the specifics.)

The footnote 1 to 10 CFR 100.11 says nothing about a 1% core meltdown. It says meltdown with subsequent release of "appreciable quantities of fission products", but it also says the accident used should have effects not exceeded by any accident considered credible. As noted above, the containment breach accident is credible (can happen).

The Staff then cites TID 14844 (typo-dated March '82 instead of the actual date of March 1962) in the note at the end of 10 CFR 100. I thank the Staff for a very clear citation. At the place cited, the note says that calculations used in this document "may be used as a point of departure for consideration of particular site requirements which may result from evaluation of the characteristics of a particular reactor, its purpose and method of operation" (10 CFR 100.11(b)(3) note, 1983 edition, page 742, at 2d col.) In the DES Staff says they have not yet performed this evaluation. So it's very clear the requirements of the rule aren't met yet.

Applicants assert re 105 (response at 37) that it could have been advanced earlier with the requisite degree of specificity, but they do not suggest how. As stated above, in my view the DES provided the needed specificity. Specificity is evidently the bulk of their argument (see 37-38).

I think it's being plenty specific to describe the accident that should have been used in setting the LPZ and exclusion area sizes. Nothing prohibits their being changed. The Staff admits (in DES) it hasn't even done the analysis, but will in the SER. (So much for Applicants' claim that the draft SER covers this.) As noted (6-20-83 at 7) unless one assumed the Staff wouldn't do its duty (and a contention to that effect was rejected), the format of the Staff's analysis, and their failure to perform it, could not have been known 5-14-82.

(6-20-83 at 8; 37B already discussed above)
Eddleman 29, as it addresses meeting Appendix I limits for radioiodines, is unaffected by the DES; Eddleman 29/30 as they affect emergency plans, likewise. See Staff statement, DES at 5-57. Neither Applicants nor Staff address either of these.

Eddleman 75 (6-20-83 at 8), evidently stands OK in Staff's view. (Staff response at 5, "has already been admitted"). Applicants, in a footnote (#8, response at 30) dispute this idea a bit correctly (i.e. Staff did have a method of getting Corbicula into the reservoir, which I did not notice, DES at 5-20), and more incorrectly. They say that the Staff's expectation that Corbicula will get into the main and auxiliary reservoirs (DES at 5-20) contradicts my statement that Staff hasn't shown that Corbicula won't get into the auxiliary reservoir. I view these statements as confirming each other.

Finally Applicants assert that Corbicula will have no adverse impact on reservoir biota. What this has to do with Eddleman 75 (or 75B) is beyond me. (Bd Order 9/22/82 at 60-61, no mention of other biota. Ditto Eddleman 75 original, 5-14-82 at 181.)

Concerning Eddleman 75B, Staff says (response, pp5-6) that it adds "nothing of substance to the contention but only additional prolixity". If Staff is saying that including Corbicula in the auxiliary reservoir in Eddleman 75 adds nothing to it, I will agree, though of course from the auxiliary reservoir the ultimate heat sink, RHR and so on may be directly blocked by infestations of Corbicula or debris (e.g. dead Corbicula). "Prolixity" means long-windedness, and if the 25-word contention 75B is "additional prolixity" then the Staff must expect intervenors to be most laconic. (I could try: Eddleman (joking) catchall contention 1: Plant's no good.)

Applicants (pp 28-32 of response) raise a more substantive objection to Eddleman 75B, that the presence of Corbicula near Harris was known in 1981. This is only part of the "what's new" for 75B, however. (6-20-83 at 9). The Staff's opinion that Corbicula will eventually get into the auxiliary reservoir (as cited by Applicants)(fn 8, response at 30, cited above on p.19) is new and Applicants do not assert otherwise.

Contrary to Applicants, I think the 5 factors are covered for this contention 75B. Corbicula has been an issue in the proceeding from the beginning. 75B's basis in the Staff thinking Corbicula will get into the auxiliary reservoir is new, and this inclusion is clearly an amendment within the terms of CLI 83-19 at 13. There will be no delay from including the auxiliary reservoir in the contention. There's plenty of time for discovery on this as noted above in the general comments on the 5 factors. No other party is representing my interest on this, and NRC staff, the only "other means" to protect my interest, doesn't seem very interested in exploring Corbicula problems in the auxiliary reservoir. Applicants' repeated failure to chlorinate their RHR at Brunswick is clearly

cause for concern here. The Staff's assumption that Corbicula can be controlled in the reservoir and auxiliary reservoir (DES 4-3,4-11 and 5-20 as cited by Applicants, response at 29), does not translate into a reasonable assurance that Corbicula will be controlled, in view of Applicants' negligence at Brunswick for over 2 years (the breakdown resulting was discovered in April and May 1981 for both Brunswick units and is in the documents supplied under FOIA 82-261. There are other NRC reports on this event which describe how chlorination was omitted for over 2 years for the systems which became so full of organisms (mussels and mollusks) that they were inoperable and damaged. I presume Applicants are bluffing when they fail to admit that such events occurred.)

In sum, there is less that is new for 75B if the documents Applicants cite (response at 31)[3], but still enough to add it to existing 75 or accept it as an amendment of 75 under CLI 83-19. The 5 factors on balance weigh in favor of this latter course.

Eddleman 80 and 83/84 (6-20-83 at 10-12) are unaffected by the DES. Applicants and Staff do not address them.

Eddleman 8F is filed specifically under the Board's 9/22/82 Order, see at 38. This is surely good cause for its filing now. (6/20/83 at 11) The parts Applicants approve of admitting, 8F(1) and (2) as they redraft it (underestimation of health effects) which I think should continue to include the part about inaccuracy because models are based on faked experiments (see 6/20/83 at 15, top), have all been issues from the beginning. They can't broaden the

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[3] Rules are rules, and intervenors and others in this proceeding are bound by them. But I can't help noting that the burden on intervenors to know everything in every existing document is much more burdensome than any requirement on Applicants or Staff. If license applications had to reflect perfect knowledge of everything known at the time of docketing, I suspect there wouldn't be any.

issues or delay the proceeding much (similar issues re plant operation being litigated already as Joint II and Eddleman 37B and Eddleman 80, less discovery will be needed on these). No one else is pursuing these issues or protecting my interests in them (Staff can't be expected to, since its models are the ones where deficiencies are pointed out). I think my work on Joint II and 37B so far shows that I can assist in developing a sound record on all the Eddleman 8 issues, also.

Staff's objection (response at 6) is confusing to me. I can't find an assertion on page 12 of my 6-20 filing that says Table S-3 is defective. I can't find such an assertion anywhere on pages 13 to 16 either, which is all of Eddleman 8. I am getting at the health effects of these effluents and the validity of the methods of estimating them. Staff gives no reason for rejecting 8F, and makes no reference to original 8A, 8C, 8D and 8E. Without some explanation, their opposition can't count much.

Applicants do challenge the assertion that doses from wastes were not considered. (Response at 15-16). I referenced specifically low-level wastes (6-20-83 at 14), and pointed out (p.15) that Table S-3 only says there will be no "significant releases to the environment" for LLW. That means to me that there will be releases. This is what S-3 says, not a challenge to it. The health effects of releases (including from LLW) in Table S-3 are thus litigable. I also reference studies done since the S-3 rulemaking that show that LLW can and does leak from burial sites. (I agree that HLW consideration is barred because table S-3 says there'll be no HLW releases and the Supreme Court in Baltimore Gas #82-254, 6/6/83, slip opinion, upheld it. I surely hope the Court can enforce this decision upon reality.)

These studies do not challenge S-3's statement that there will be releases from LLW associated with the nuclear fuel cycle. (Again, to the extent they say these releases are significant, they may be barred by the rules, but some releases are still assumed under Table S-3). The Table S-3 assumption that LLW radioactive releases will not be significant still does not bar litigating this part of 8F(2), for both Applicants and Staff assert that all radioactive releases from Harris will be insignificant, yet the health effects of these are being litigated right now.

As to 8F(3), the Staff does not respond. Applicants assert that there is more information in Appendix C of the DES, but they don't say what information is there. The rest of Appendix C, which I have re-reviewed, is about radon, technetium-99, and other matters not covered in S-3. At pages 2 and 3 of Appendix C (ref. p. 15 of 6-20-83 pleading by me) there is no reference to what model(s) were used . The staff gives no reason for its choice of only 100-year dose commitment from the nuclear fuel cycle (I think they should have used a minimum of 30 half-lives of the longest-lived nuclide emitted in the cycle to air or water, as 30 half-lives decays the emission of radiation down to a billionth of its original value. Even that is not a "safe dose" as there is no safe dose of nuclear radiation). The Staff gives no details of how its dose commitments were calculated. In Eddleman 80, Joint II, Eddleman 37B, and Eddleman 8 I have made criticisms of their dose-determining methods and the under-estimation of health effects from radiation doses. Those cast doubt on NRC's conclusions in Appendix C of the DES, e.g. at C-3, but without knowing what models NRC used I can't specify a contention more fully now. The contention that the information needed to justify these models and results is not provided, has

basis in the lack of such information in the DES.

Why should that information be provided? Health effects of effluents in Table S-~~x~~3 are litigable. Environmental costs (e.g. radiation health effects) are litigable under NEPA. To allow NRC Staff to escape litigation because it has not provided information about how it made its calculations would make a sham of both NEPA and of NRC's allowing these health effects to be litigated.

Applicants' assertion (response at 16-17) that section 5.10 of the DES gives the information requested, is wrong. That section states twice (pp5-83 and 5-84) that the NEPA consideration is given in Appendix C only for Harris. Nowhere else. Appendix C references none of the documents Applicants cite. But Appendix C is where the NRC did its NEPA calculations for Harris (or presents results of them). Without knowing what they used to make those calculations, I can't assess their accuracy. I do not know if they do or do not conform to any of the sources cited by Applicants, because the Staff doesn't say in either DES section 5.10 (of one page or so) or anywhere in Appendix C.

If Applicants truly represent the recent Supreme Court decision in Baltimore Gas, it appears that 8F(4) would be out except as to low-level waste, which Table S-3 admits could be released. Staff may mean this part when they say I challenge Table S-3. As discussed above, no challenge to S-3 is made, since the rules don't allow that (I don't think S-3 is right, but that isn't litigable under the rules and nothing above is based on my opinion that S-3 is not right).

Eddleman 22C: Staff's opposition(response at 6-7) seems to assert that this contention violates the need-for-power rule. It says nothing about need for power. It does say that the NFP rule appears to preclude considering additional capacity as a benefit. The Appeal Board cases cited by the Staff (p.7) talk about electricity need, not need for capacity. Missing entirely from Staff's discussion is the allegation that Staff underestimated the probability and consequences of serious reactor accidents. Nor does the Staff argue that the capacity of Harris will be a benefit. (The contention should be amended as benefits are classed as large, none or small, as are costs. 6-20-83 at 16, line 12). The costs of emergency planning and preparation do not depend on need for power (see discussion above re Eddleman 88, ppl3 ff). They are socioeconomic costs and socioeconomic costs should count against the "benefits to society", i.e. the net benefit to society is what should be balanced against net environmental costs. Otherwise, a plant with minor benefits to society, non environmental impact, but huge socioeconomic costs, would get approved. This is a ridiculous perversion of the NEPA requirement of cost-benefit analysis for projects affected by major federal action. Since the Staff's view leads to an absurd result, it cannot hold.

Applicants appear to first raise the Staff's arguments (response at 19-21) and then assert that the contention could have been filed earlier (it was, but wasn't OK'd because the FES wasn't issued.). To the extent that the FES only is the relevant document, 22C could be deferred. But I think it is clear that basing the contention on the available info in the DES is OK under CLI 83-19, and is an "amend" action under that (see at 13).

Applicants also assert, pp20-21, that litigation of the magnitude of the benefits vs. costs of Harris is barred by the Board's 5-27-83 Order. I cannot read the order that way. The Order says that quantitative costs that depend on load forecasts or need for power cannot be considered in this proceeding, nor can quantitative benefits (e.g. fuel savings) that depend on the same factors.

But I think it is clear that any cost or benefit in a DES can be litigated under NEPA. Since I had no way to predict how the Staff would do its cost-benefit analysis (they changed it entirely under questioning from the Board in this case, March and April 1983, but did not say how they were going to do the analysis until they issued the report on May 11, 1983 (DES); I didn't get it til May 19), I had no way to challenge that analysis until the report existed. This is exactly the type of challenge to adequacy of the DES that CLI 83-19 contemplates (see at 12).

I also think the need for power rule does not bar a challenge to additional capacity as a benefit, since that rule is adopted under the assumption that additional capacity may not be needed. See 47 FR 12942 and 12941. Certainly the magnitude of the benefit of additional capacity is subject to challenge, simply as a matter of fact. The need-for-power rule only assumes the use of the electrical output of the plant, not the use of its capacity. NRC assumed that if additional capacity wouldn't be needed, the nuclear output would be used to displace generation from fossil fuels. By putting that assumption into the need-for-power rule discussion, NRC divorced the benefits of capacity from the benefits of power.

As to the 5 factors, even if you consider 22C an ordinary late-filed contention, they on balance favor its adoption. Adequacy of cost-benefit analysis has been an issue since this proceeding began, e.g. in Eddleman 15, 16 and 22. Good cause for not filing on time is that the FES isn't out yet (Bd. 9/22/82 Order at 43-44); filing now is justified because of CLI 83-19 which contemplates filing before a critical document appears if the info needed to give it specificity exists. (That info is the DES cost-benefit analysis, which would be hard if not impossible to challenge with adequate specificity before it existed. Staff's changing the analysis after starting to write the DES for Harris, which the Board is aware of via the March conference call on the need-for-power rule where Staff mentioned intent to include many other benefits and to do quantitative analysis, is further a reason why a challenge to the present method could not be made with basis earlier.) No other party is pursuing the issue of overall cost-benefit balance for Harris. There are no other means to represent my interests on this issue. Staff is opposed to me, Applicants support the Staff, and other parties are not involved on this issue.

As to a sound record, clearly the overall cost-benefit analysis is a crucial issue in this or any other licensing proceeding. I believe my experience in cost-benefit analysis will be helpful in developing a sound record on this issue. I have done such analysis of nuclear plants under contract with Palmetto Alliance Inc. (Catawba project), and for Public Research Inc. of Columbia SC re southeastern states' energy needs. Staff must do the FES anyway. This contention cannot significantly delay the proceeding. That completes the 5 factors, and all favor admission of 22C.

There may also arise the issue of whether 22C is specific enough. I think it is, since it clearly references the Staff's analysis, but it could be delimited clearly by an addition to p16 l. 7 6-20-83 "In the following respects: (i) underestimation of the probability and consequences of severe nuclear accidents (ii) ignoring costs of emergency planning and preparation (iii) overestimating the benefits of capacity from the plant; (iv) showing that when the (iv-a) justifying assignment of costs as "small" above errors are corrected, the benefits of Harris operation still outweigh the costs." So reworded, I think 22C is plenty specific. It is clear from the basis (6-20-83 at 16-17) that the above are the areas of concern in it.

Insofar as Staff or Applicants assert that "need for power is assumed" or that the "benefits of power ... are immeasurable", they are going to the merits of this contention. That they can't do. I've shown basis, and whether this is a late-filed regular contention or a DES contention, the 5 factors favor its admission on balance. Specificity in detail is given above as I would have had we had a prehearing conference.

Eddleman 25 has basis contrary to Staff response at 8, in the Staff's failure to consider fully alternatives (such as discussed in it and 25B) to action (allowing spent fuel to be shipped to Harris) that have less environmental impact. Calvert Cliffs, supra, at 1128, clearly requires this. I assumed the Staff would do its duty under NEPA and this decision. When they failed to do so, I have basis to challenge the adequacy of the DES under CLI 83-19, see at 12. While I might have guessed this would happen earlier, any earlier contention would logically have been premature. You can't critique the DES without seeing what the DES says. CLI 83-19, ibid.

Shipping spent fuel once has less impact than shipping it twice (to & from Harris)

Applicants respond to all my spent fuel filings, including 25, with a motion and brief ('8 July 1983, received July 13). I think it most efficient to respond here to that with a "mini-brief" which will apply to all the spent fuel contentions (25,25B,64D,64E, 126X etc). This also addresses a number of the Staff's concerns.

MINI*BRIEF re spent fuel.

Applicants'position on spent fuel is fundamentally illogical. First, if they really have no firm plans to ship spent fuel to Harris, the remedy is to sever the question of authority to possess spent fuel from other reactors (in storage at Harris) from this proceeding. If they're not planning to do it, why should a license to keep spent fuel at Harris even be considered at this time? It would be a waste of time and energy to consider something Applicants have no plans for (storing other plants' spent fuel at Harris) now.

Second, they begin by saying the Board would reconsider the spent fuel issues in the light of the Staff's analysis, and then use the fact that the Staff has done no analysis as a reason for reconsideration. In fact, the Staff has not addressed any alternatives of less environmental impact, but not shipping to Harris is such an alternative. Table S-4 addresses impacts of shipping spent fuel from one reactor to another receiving site. Thus, shipment to Harris involves the previously unconsidered impact of shipping FROM Harris to ultimate disposal. That is in addition to the environmental impact of storing spent fuel at Harris and the environmental impact of Harris' own spent fuel.

Obviously, if Harris were not licensed to receive spent fuel from other reactors and store (possess) it, no shipments to Harris would take place. That would certainly lower the environmental impact on the area around the Harris plant.

Spent fuel MINI*BRIEF continued

This request for three authority to store other reactors' spent fuel at Harris is part of CP&L's application in this case. Granting such authority surely has additional environmental impact on the area around Harris, not just because the shipments will come here, but because the spent fuel must then be unloaded at Harris, and later reloaded for shipment to ultimate disposal.[4] Loading and unloading nuclear fuel increases the potential for fuel handling accidents that can have significant environmental impact. The more you load and unload, the more likely you make an accident. This additional environmental impact (as well as the impact of more transshipment, 3 reactors' worth for the spent fuel stored at Harris from other reactors, to ultimate disposal, and 2 reactors' worth from Harris itself) is clearly litigable under the decision in Calvert Cliffs, 449 F. 2d 1109 at 1128, that federal agencies must throughout their review processes give ful and fair consideration to alternatives which have less environmental impact. In this case those alternatives are (1) not transshipping and storing spent fuel at Harris, and (2) not operating Harris (so it would produce no spent fuel). Staff has considered neither and its failure to do so in the DES is a basis for litigating the spent fuel contentions.

I distinguish the Catawba case relied on by Applicants (e.g. at 4, 5,8-9, 12,14 of July 8 Motion and Response re spent fuel) from this one

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[4] Neither Applicants nor anyone else proposes Harris as a high-level waste ultimate disposal site so far as I know, so the waste (spent fuel) must go elsewhere for ultimate disposal.

Spent fuel MINI*BRIEF continued

because in that proceeding an extensive record, the Oconee-McGuire case specifically on spent fuel transportation by the utility in Catawba (Duke Power) was available. No such record has been developed on CP&L's plans to transship spent fuel, or the additional environmental impact caused by transshipment. That impact, as noted above, is that of having to reship the spent fuel after it gets to Harris.

Finally I note that the IF-300 cask CP&L owns is one of a series that appear to have been taken out of service in December, 1982, because the fuel could not be guaranteed not to have criticality in the basket in the cask under all conditions. (M. Resnikoff, The Next Nuclear Gamble, footnote to p. 164) Thus it appears that at present Applicants lack means, as well as plans, to bring any spent fuel to Harris for storage. This is all the more reason to simply remove the license authority for storing spent fuel from this case. As long as that license authority is part of this case, the impacts of spent fuel transport from Harris (from Harris reactors and for fuel from other reactors being stored at Harris) need to be litigated in this case.

END of MINI*BRIEF

I do ask a ruling on Eddleman 25. I think it might be superseded by 25B if that is admitted, and I would not object to letting it stay deferred if 25B is not admitted. The part of Eddleman 25 that may be ripe for ruling here is that the "various alternatives should be considered under NEPA in the ES, including re-racking and saving all the spent fuel for transportation in a single train when the license expires" (Applicants' motion/response at 11).

Eddleman 25 was timely filed, does not broaden the issues (because it was an issue from the beggining), and its admission

now would not significantly delay the proceeding since the Staff has to do the FES anyway and could prepare responsive analysis in that. Applicants have not so far suggested that admission of any of the Eddleman spent fuel contentions would delay the proceeding. Although other parties (CCNC and CHANGE) are involved on this issue, I am not sure to what extent they will (or will be able to) represent my interests. Other than a contention, there are no other means whereby my interest in environmental impacts of spent fuel will be protected. This entire discussion also applies to the 5 factors for Eddleman 64D, 64E and 126X. Eddleman 25B differs only re good cause for not filing on time, which is discussed below re that contention.

The Staff is wrong (response at 7, bottom), to say that Eddleman 25 has been ruled on. Applicants recommend deferral. I do not oppose continued deferral, but as noted above, think that part of 25 as set forth by Applicants (responsex at 11) is ripe for ruling. The above 5-factors discussion covers that part of Eddleman 25.

Eddleman 25B. This contention should read "storing spent fuel from other reactors at, shipping spent fuel FROM Harris, including spent fuel from other plants stored at Harris", after the words "cost-benefit of". See Applicants response at 12, middle) This rewording merely clarifies the concern. 25B then reads,

> THE DEIS has improperly failed to consider the radiological impacts and NEPA alternatives to storing spent fuel from other plants at Harris, and of shipping spent fuel from Harris, including spent fuel from other plants stored at Harris.

Contrary to Applicants, 25B is wholly dependent on the DES (resp at 12-13) since only the DES's contents give it basis. Even if I took Staff at its word (I had not recalled this statement about not considering spent fuel from the 2-24 conference when filing the June 20 pleading), they were proposing to violate the law, which I see no reason to take seriously. And if any contention had been

made based solely on this statement by Staff's attorney, it would have been vulnerable to rejection for lack of basis in that the DES didn't exist, and perhaps lack of specificity (what is the "no analysis" the Staff intended to include?). Such a contention at best would have been simply deferred to the present. CLI 83-19 is clear that a critique of the adequacy of the DES depends on having the DES. (see at 12). This contention does not depend on the ER, though the lack of such analysis in the ER actually underlies the discussion in Eddleman 25, see at 90-91, 5-14-82. To that extent, 25B can be seen as an amendment of Eddleman 25 (which did refer to the inadequacies of the ER in respect to spent fuel transport alternatives) which simply takes into account the new information in the DES. This is clearly allowed by CLI 83-19, see at 13.

Applicants address the merits of 25B (motion/brief at 13-15), but it is clear the merits are not to be reached in ruling on contentions.

They note a failure to address the 5 factors for 25B. All of the above 5 factors discussion (pp31-32, the "generic spent fuel 5 factors) applies to 25B except the good cause. Good cause for 25B is the new info in the DES, which would allow it as an amendment to 25 under CLI 83-19 if not as a new contention; also the Board's 5-27-83 Order and my discussion (6-20-83 at 19) as to why it couldn't have been filed earlier are good cause. 25B does not broaden the issues, it simply clarifies the criticism of the DES and ER made in original Eddleman 25 (5-14-82 at 89-91) which was timely filed.

Eddleman 24 and 26, deferred, are not addressed by Staff or Applicants (6-20-83 at 19). Also at page 19 of my 6-20-83 pleading, Eddleman 29/30 is discussed to note that the evaluation of accident-mitigation systems awaits the SER (DES at 5-54). The DES also says that analysis of the emergency plan is incomplete, as is analysis of severe accident doses per Appendix I (DES 5-55/56,5-57). So 29/30 re emergency planning should remain deferred.

I am going to depart from the order of this discussion of contentions (which is the order of the 6-20 pleading) to wrap up discussion of all the spent fuel contentions here.

Eddleman 64D and 64E (6-20 at 25) were timely filed and are ripe for ruling now. The reasons the Staff needs to consider alternatives are given above in the MINI*BRIEF (29-31) and the 5 factors applicable to both these contentions are at 31-32.

The Staff needs to consider 5 times the Table S-4 values because shipment from Harris of fuel from 5 reactors (2 Harris, and 2 Brunswick and 1 Robinson which have spent fuel stored at Harris if Applicants are allowed to possess and store the fuel there). The Staff needs to use correct numbers in its DES and hasn't done so. That's plenty of basis and says what the Staff should have done (64D).

As to 64E, re estimation of effects of transport accidents, since Table S-4 says the probability of transport accidents cannot be estimated (fn.4), the Staff needs to either assess this probability (and consequences of such accidents), or at least assess the combination of estimated probability and consequences. The consequences of spent fuel transport accidents can be quite severe. See Resnikoff, TheNext Nuclear Gamble, chapter 6 and 1st box especially; studies referenced therein, particularly Sandia and PNL.

Staff's suggestion (response at 9) that these 2 contentions attack Table S-4 is simply unfounded. Table S-4 gives no transport accident costs and says accident probabilities can't be estimated. So calling for an estimate and cost data in no way violates the rules allowing S-4 to be used. (64E). AS to 64D, it says that the use of Table s-4 <u>once</u> is improper because Harris involves more than one reactor and Table S-4 is for one reactor by its own statement. The Staff has made a silly error, but one that should be corrected. Such an estimate by the staff is subject to litigation under NEPA

as to the proper application of Table S-4, surely.

Applicants make basically the same arguments the Staff does (motion/response at 15-18), but in more detail. Applicants concede that some multiple of the Table S-4 values may reflect the impact of spent fuel transport from Harris. (17-18) But then they jump to the merits of the contention (64 D) after thus conceding its basis. Merits are irrelevant to admission of contentions, as Applicants should know.

Applicants other arguments are also mostly on the merits -- how much fuel will be at Harris, what the impact is, see at 15-16. I do not dispute the use of Table S-4 in the DES, but its misapplication by underestimating impacts from the transport of fuel from two Harris reactors and 3 other reactors.

Table S-4 does indeed have a footnote about the radiological risks of accidents (10 CFR 51.20 at p.504, 1983 edition), which says that the overall risk is small. I take that to mean that the probability, though incapable of being quantified, as Table S-4 says in the same footnote, is assumed to be low enough to make the probability x consequences product small for such accidents. Applicants are wrong about this addressing the radiological effects.

Applicants' argument about what other analysis the Staff may have in a rulemaking record does not excuse their not referencing it or including it in the DES. It only mentions transport at pages 5-23 (3 lines) and 5-30 (10 lines plus Table S-4) and makes no analysis of number of reactors involved (64D) or accidents (64E). Yet, without the reactors operating (and license to store spent fuel from other plants at Harris), there would be no spent fuel to transport from Harris and no environmental impact therefrom. Likewise, there'd be no risk of accidents from such transport.

The Staff should have at least figured out how many times Table S-4 should be used in evaluating impacts for Harris; they should have analyzed accidents or at least referenced a discussion of them or some other analysis they did. Spent fuel transport accidents are a possible consequence of Harris operation (and of a license to store spent fuel from other plants there) and need to be considered under NEPA. The NRC language quoted by Applicants (motion/response at 16-17) doesn't say no accidents should be considered, just that improbable ones require no further analysis.

Eddleman 126X (6-20-83 at 29-30). The Staff's failure to use a multiple of Table S-4 gives basis to this contention. Catawba is a distinct case where an extensive record on spent fuel transport for the utility involved is available. The fact that wording of a contention may come from another proceeding is irrelevant. Applicants (motion/response at 18) raise no arguments against 126X not dealt with above. The MINI*BRIEF at 29-31 and discussion of 25,25B and 64D and E above cover their objections. The generic 5 factors for spent fuel, pp31-32 above, cover this contention also. The Staff does not appear to address 126X.

As to Applicants' view that Eddleman 126X should be dismissed along with CCNC 4 and CHANGE 9, I think that the only valid way to do that is to remove the authority to store spent fuel at Harris from their (Applicants') application in this case. Only if they are definitely planning to store spent fuel from other plants at Harris should the parties and Board spend time on this issue. Applicants say they have no such plans, only a "possibility" (L.H. Martin affidavit, appended to motion/response re spent fuel, at 1-2). Thus, the issue should be removed from the proceeding.

But if this issue is left in, these contentions should be left in also: they allege deficiencies in analysis and compliance

with NEPA and other rules.

This concludes all the spent fuel contentions of mine. 64F is safety and not affected by the DES.

Eddleman 34, deferred to the FES, was addressed 6-20 just in case the DES was meant or the DES were ruled under ALAB-687 to trigger the need for filing or re-filing such contention. I have no objection to its remaining deferred to the FES, but I think it has sufficient basis to be admitted now. As a timely-filed contention, it is covered by the initial discussion of the 5 factors in this pleading. The revision (6-20-83 at 21) is simply an amendment of the type contemplated by CLI 83-19 (at 13).

Eddleman 34 is about NEPA consideration of the effects of sabotage and terrorism (9/22/82 Board order at 47-48). The Staff simply goofed in not analyzing these effects. See DES 5-58/59. Staff recommends deferral, but do not commit to ever analyze these effects in the FES. Therefore Eddleman 34 as amended should be admitted; basis is given on pp 20-21 and 21-22 of 6-20-83 pleading.

Applicants defend the Staff better than the Staff did (response at 22-23). However, the Staff submits no analysis and no reasoning as to why sabotage cannot cause more serious events than those they analysed. I had thought it obvious that more serious events could be caused by sabotage, e.g. by disabling key safety systems like the ECCS while rigging indicators to show them still operable, jamming the SCRAM relays for automatic and manual shutdown, cutting off power to the control rod drives, and so on. These are the kinds of things that could be done to cause "Class X events" as described in my original contention 34 (5-14-82 at 102). The very designation "Class X" implies greater severity than the Class IX

events considered by Staff in the DES. Freeing the spent fuel pool's contents to atmosphere by explosion (5-14-82 at 102) is surely beyond Class IX for a single reactor, as many reactors' worth of spent fuel could thus be released to the environment.

But there is another problem with the Staff's analysis also. Having said (without basis) that the sabotage events are no worse than what they've already considered, and ditto for weather, seismic, and offsite-caused events (also w/o basis)(these are unanalyzed by Staff) they don't add anything to their risk, probabilities or consequences due to these events. I point this out at 20-21, see at 21 top. (6-20-83 filing). This is the failure of the Staff and I give reasons why they should have considered these additional consequences and cite sources that propose such consideration. That consideration is what Staff should have given, and did not. Therefore Eddleman 34 as revised should be admitted.

(Additional info re 5 factors for Eddleman 34 is on 22. WHAT'S NEW and WHY COULDN'T FILE EARLIER)

Eddleman 36, also deferred to the FES (6-20 p.22) is addressed because the DES might be considered the trigger document for its "being able to be filed" under ALAB 687 even though it was filed 5-14-82. The staff, response at 8-9, says that it should remain deferred under the Board's 9/22/82 Order at 48 (i.e. until the FES issues) I would not object to this course.

Applicants (response at 22-23) treat 34 and 36 the same. I stand on my rewording (an amendment under CLI 83-19 at 13) of 36 (6-20-83 at 23) particularly the lack of consideration of attacks on the spent fuel pool and DES pp 5-58/59 are basis, if it's considered ripe for ruling now.

Applicants appear to allege that 36 isn't specific enough, but I think the rewording (amendment) on page 23 is clear as to its concerns, and is reasonably specific. Since 36 original (5-14-82 at 103-104) discusses its NEPA rationale in some detail, the specifics are there. Class X accidents are the main one. Applicants simply ignore all this.

Eddleman 57D (p.23 6-20-83) is covered above, pp 9-10 and p.12 note re 57D. The "WHAT'S NEW" on p.23 of 6-20-83 filing shows how it depends on the DES (per CLI 83-19, p.12). Where a deficiency is projected (guessed) and the Staff produces that deficiency, the contention must be admissible. Contrary to Applicants (response at 25), the contention was raised earlier. Staff's response (at 9) simply admits the basis of 57D"# " is correct -- there's nothing in the DES about this . But emergency planning is a socioeconomic cost, and to consider socioeconomic benefits without their offsetting costs biases the DES.

Eddleman 57B should remain deferred. DES at 5-55/56, 6-20-83 at 24.

Eddleman 61A and B (6-20-83 at 24): If Applicants represent accurately the Commission policy (CLI 83-14), either continued deferral to the FES (per Board 9-22-82 Order at 54-55 in this case) or rejection is appropriate for these. I think the Board's language in rejecting 61B as redundant of 61A shows that including 61B's concern with synergistic effects of radon with tobacco smoke and other chemical carcinogens into Eddleman 61A, is reasonable. Neither Staff nor Applicants show how these issues are addressed in the Perkins record or the Peach Bottom proceeding re radon (where CLI 83-14 and ALAB-701 are the cases). Deferral for this issue may be the best course pending a decision by NRC whether to review ALAB-701.

Please note that Eddleman 64D and E (6-20-83 at 25) are covered above at pp 34-36. Continuing in the order of the 6-20-83 filing:

Eddleman 85-86 (ibid at 26) are opposed by Staff (pp 10-11) and Applicants (response at 32-33). I'll stand on what's said in my 6-20-83 pleading (p.26) and the generic 5 factors at the first of this pleading (since 85 and 86 were filed timely, 5-14-82). Unless the Board finds that the Staff's failure to document its modeling of the Harris reservoir temperatures, and to actually compare these temperatures with the tolerance of fish species in the reservoir, a deficiency in the DES, then I think both of these could now be rejected. The Staff hasn't shown how its calculations are made for reservoir temperatures; if Applicants' were really presumed "reasonable" (Applicants at 32), then the original 85 and 86 would apply since Applicants' ER temperature calculations are included in them.

Eddleman 88A and B (6-20 note at 27 top) are covered at pp. 13-16 of this pleading.

The Staff's critique of Eddleman 80 as discussed 6-20 (Staff response at 8-9) does not seem to oppose the position that Eddleman 80 is unaffected by the DES. Staff distinguishes its CRAC code (DES p.5-82, staff resp. at 10) (which it apparently admits have some of the defects of the models critiqued in Eddleman 80) from Eddleman 80.

However, Eddleman 80 as admitted states its concern with exactly such deficiencies in the mixing and dispersion models used re Harris, including those used in estimating doses from accidents. Staff admits (response at 10) that CRAC lacks the ability to handle rainout or "washout" (see also DES, p.5-82).

While I don't think this admission requires revising Eddleman 80, which refers to "models" without specifying Applicants' or Staff's, it does show the CRAC code is one of the models Eddleman 80 applies to.

Eddleman 95 (6-20-83 at 27) was timely filed, and the whole discussion of the 5 factors for contentions that were timely filed (above in this pleading), and the "filed earlier" paragraph at p.27 of the 6-20 pleading adequately cover the 5 factors for it. It accurately guessed a failure Staff made in its DES. The "What's new" simply adds basis, an amendment reasonable under CLI 83-19 since the DES is needed to identify specifically a failure of the DES. I think such may have been the rationale for deferring Eddleman 95. (It is called "premature", 9/22/82 Bd. Order at 65).

Applicants are simply wrong that 10 CFR 51.53(c) or the Board's 5-27-83 memorandum and order could bar this contention. / The cost of property insurance for Harris does not depend on capacity factor, need for power, load forecasting, or any such thing. Nevertheless, this is a cost that must be paid if Harris operates. Thus it is a socioeconomic cost (stockholders or ratepaers will pay it) that reduces the NET socioeconomic benefits of the plant. Whether the Staff did actually ignore the insurance benefits in its accident analysis is not very relevant (App resp at 35-36) since I've shown the discussion of such benefits by the Staff is inconsistent with their accident probability estimates. (Indeed, this is more basis for Eddleman 22C: The insurance companies don't buy the Staff's probabilities when their money is at risk: They must not believe the numbers.) Staff's response (at 11) asks for a law or regulation that requires this analysis. How about NEPA, which requires costs and benefits to be compared in a DES? Basis is in the original 95 (5-14-82 at 203) and at 27 of 6-20-83 pleading, where it is given by the DES, consistent with CLI 83-19 at 12-13. The basis in the DES is an amendment to Eddleman 95 that was only possible to specify when the DES became available (5-19-83).

Eddleman 110X (6-20-83 at 28) is deferred (Brd. 9/22/82 at 68), not proposed as Applicants say (response at 38). Applicants ignore the request of 110X to include health effects for 11 million years (the period or increased radiotoxicity of nuclear fuel cycle products compared to uranium ore left in the ground). The Staff likewise ignores this (response at 11-12).

As to the rebaselined RSS (the other item in 110X Applicants do not claim is redundant of other contentions), the DES says, p.5-58, that the re-baselined RSS was the starting point for Harris-specific calculations that the staff made by (some unspecified method). It doesn't say how the differences between Harris and the rebaselined RSS were taken into account. Appendix E to the DES (referenced by Applicants) fails to take into account virtually all of the criticisms of the RSS (see, e.g. UCS critiques of Reactor Safety Study) except for the smoothing. Lack of data base on actual occurrences in nuclear plants, assumed probabilities of events or parts of sequences that are (for the RSS) set much less than their actual occurrence rates, and obviously absurd results (e.g. the RSS - method probability of 10^{-18} or so for the wiring-fault/control-setting fault event (with multiple triple faults) that actually happened at Oak Ridge, see UCS critique), are some of the obvious failures not addressed. The fact that the rebaselined RSS does not use a complete failure modes and effects analysis (FMEA) is a significant fault. RSS-type methodology was rejected by the space program (NASA) because it underpredicted accidents; they turned to FMEA (see UCS critique). I think these are sufficient specific criticisms of the rebaselined RSS to detail the basis for this contention. Lack of FMEA is in original 110X, 5-14-82 at p. 221, bottom, so this basis for critiquing the RSS (rebaselined or not) has been in 110X all along.

I would, of course, be willing to drop the "redundant" parts of 110X if contentions of which those parts were redundant were admitted (and the redundant parts would likely be rejected if the contentions they are redundant of are rejected).

Eddleman 126 (6-20-83 at 29) was deferred by the Board until the FES 99/22/82 Order at 70). I addressed it here in case ALAB-687 were interpreted to require filing on it now, since the DES and FES are often very similar. While I would not hold that state government or university students are inherently more valuable than other members of the public, conventional analysis of the "value" of lost lives includes earning potential (high for university students, due to their education, selection, and long working lives before them), earning power (high for university personnel who teach or administrate), and this value should include the losses to society of disrupted education of, or the deaths of, such people. The cost of disrupting state government, or killing its personnel, include the resulting disarray in the state. That would disrupt normal business and lead to large economic losses.

Contrary to the Staff (response at 12), I don't have to show that the DES contains anything new for this contention, where the contention was timely filed and the DES doesn't analyze the impacts (e.g. on university students) stated in the contention. (see 5-14-82 at 233, medical facilities, state govt and univ. students are referred to there).

Applicants attempt to address the merits of the contention. That's no good. Where the DES lacks analysis I said a year ago it would lack, that's basis of the contention. The 5 factors for Eddleman 126 are as stated for the general case, for a contention timely filed, at the start of this pleading. 126 should be admitted.

Eddleman 126X (6-20-83 at 29-30) is treated above in this pleading at pages 36-37.

Eddleman 162 (6-20-83 at 30-31) has a 5-factors consideration attached for it as if it were a regular late-filed contention. That discussion, together with the "why couldn't file earlier" (p.31, 6-20-83) and the general 5-factors above for new contentions (beginning of this pleading), I stand on.

The Staff discusses this under a (typo?) heading of Eddleman 126, response at 12-14. The Staff does not appear to allege that NUREG/CR 2591 includes corr..ion of the groundwater problems alleged in Eddleman 162 (see at 12-13). Staff also alleges that there is an error in the DES which I base my concern on (pp13-14). Section 5.9.44 (3) which the Staff cites, is about emergency plans, not airborne doses. I think they meant 5.9.4.5($\frac{3}{8}$), DES p 5-62, but it only says that the calculations were performed. It says nothing about how possible releases to atmosphere were calculated or all possible pathways being considered. It only says it weights the Table 5.7 accidents by associated probabilities.

Even if Staff were correct on all the above points, they have not sufficiently analyzed vaporization of water ahead of a molten core. Applicants (pp42-43) give no real reasons for denying this contention, which indeed is based on the STaff's description of the site geology. (see response at 43, and my 6-20-83 at 30).

Dr. Michio Kaku's statements about the mud volcano effect appear in a speech I heard him give; in a conversation I had with him, and, I believe, on videotape and in his article in Technology Review. Dr. Kaku is a physicist and has been an expert witness in NRC proceedings, e.g. V.C. Summer.

Eddleman 163 (6-20-83 at 32): Applicants' objections (response at 43-44) appear to attack the merits and quibble with the basis, while admitting the basis exists. As to specificity, Contention 163 is quite specific in its basis as to what the Staff should have taken into account.

Staff response (at 14) is that a data base not cited in the DES was used, and I should have known that. Are intervenors expected to have ESP and clairvoyantly know what data base the Staff will use? Is it reasonable to think I should know what they use for their projections when they don't cite it and it ISN'T the ER or other "predecessor document"? I hope not. Staff appears to suggest deferral to the FES, or opportunity to make a new contention then. I wouldn't object to either course, if I could revise this based on the FES.

Applicants claim 163 is "untimely" (without any reason why) (response at 44). Under CLI 83-19 I couldn't be expected to specify the inadequacy of the DES until I saw it. (see at 12). If a contention like this is ruled out, intervenors would seem to have no choice but to allege every conceivable defect possible in the DES and FES (and by similar logic, in the SER and ACRS letter and emergency plan) at the outset of the proceeding, in order to cover themselves against such claims.

I addressed the 5 factors for Eddleman 163 (6-20 at 32) and the generic 5 factors discussion for new contentions at the beginning of this pleading also applies to 163. I think the basis is clear particularly for Apex and Cary (6-20 p.32 at lines 9-13).

Eddleman 15AA (filed separately 6-30-83 under Bd. Order of 5-27-83). The 5 factors for Eddleman 15AA are discussed at the start of this pleading. I don't seem to have Staff's objections to it.

Applicants filed a 7-page pleading challenging 15-AA. Their argument that the basis may be redundant of the basis of other contentions (ibid at 1-2) is thoroughly irrelevant. Several contentions could have similar facts or the same facts as basis. In CP&L's case, the Brunswick plant (which they had a much larger role in building than in the Robinson plant, which was a turnkey plant built by Westinghouse for them) is the worst two BWRS in terms of design-rating capacity factor in the nation. That depression brings them well below the C.F. ratings of many larger plants, despite the well-known tendency of capacity factors to be lower for larger reactors.

Applicants appear to attack the merits of the basis. I cited the worst plants, but there are other westinghouse PWRs below 55% lifetime C.F. B eaver Valley 1, as of 6-30-82 (data in NUREG-0020, at p. 2-010) had a lifetime C.F. of 31.4% (MDC net) or 29.8 percent (DER net) after operating nearly 7 years. Trojan, at the same time, was 50.8% DER net. DER net is how Applicants and Staff have been calculating Harris capacity factors. (id. at 4)

Contrary to Applicants, McGuire 1 has held in the 40% C.F. range for a year and a half after startup; the other plants cited above had operated quite a while. We don't have 30 or 40 year lifetime CFs for any large Westinghouse PWRS built mostly by utilities/contractors yet.

The low site stringency of the Robinson plant (CP&L's other PWR), and the tendency of NRC not to impose backfit requirements on older nuclear plants where the same requirements or stricter ones are imposed on new plants or plants not yet finished, are well known. Applicants (p4) seek to obscure this issue.

As to similarity of steam generators, the restrictions on

power level at plants with D4's (Krsko, V.C. Summer) were the same as at McGuire unless and until a steam-generator "fix" was implemented at each.

Applicants next try to confuse the ISSUE of 15-AA with its BASIS (5-6). This is simple obfuscation. The issue is, has the Staff overestimated Harris' likely capacity factor. To the extent that the "CP&L factor" depressed Brunswick's capacity factor, that would be at issue in this contention, legitimately so. But that doesn't make capacity factor into solely a management capability (or steam generator) issue.

At pp 6-7, Applicants argue the merits of 15-AA. They ignore the obvious fact that the lower the capacity factor, the less are the benefits of Harris. NRC has assumed need-for-power, but I know of no NRC assumption (or guarantee) as to the output that must necessarily be expected from any nuclear plant. Applicants' suggestion that I have to wipe out the whole Staff cost-benefit analysis goes far beyond what the Board's 5-27-83 Order asked about contentions on capacity factor. The Board is going to have to weigh those benefits against the costs, and capacity factor is one thing that gives weight to (or subtracts weight from) the benefits of Harris. In that sense the contention is litigable.

I think it obvious that 15-AA couldn't have a specific figure to challenge until the Staff DES estimated capacity factor. A timely contention (15),admitted, did challenge the ER estimate. This contention 15-AA would supersede admitted contention 15 (and revised 15A) because if 55% capacity factor is too high, 70% surely is.

That's all,folks.

PS. Ms. Greenblatt only worked on security. She had nothing to do with the DES contentions, 15AA, or any other Eddleman contentions. Applicants (response at 8) should know this and are silly to raise this.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the matter of CAROLINA POWER & LIGHT CO. Et al.) Dockets 50-400
Shearon Harris Nuclear Power Plant, Units 1 and 2) and 50-401 O.L.

CERTIFICATEOP SERVICE

I hereby certify that copies of July 29 letter (re Baxter 7-22 letter), of Certificate of Negotiations, and of WE filing re 5 factors and Answer to Appl'cants & staff re DEIS contentions and 15AA HAVE been served this 29 day of JULY 1983, by deposit in the US Mail, first-class postage prepaid, upon all parties whose names are listed below, except those whose names are marked with an asterisk, for whom service was accomplished by _____

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