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Docket Nos. 50-413
and 50-414

MEMORANDUM FOR: R. H. Vollmer, Director, Division of Engineering
R. J. Mattson, Director, Division of Systems Integration
H. L. Thompson, Acting Director, Division of Human Factors Safety
S. H. Hanauer, Director, Division of Safety Technology

FROM: R. L. Tedesco, Assistant Director for Licensing
Division of Licensing

SUBJECT: CONTENTIONS - CATAWBA ASLB HEARING

As a part of our staff preparation for the forthcoming Catawba ASLB Hearing which will be contested, we have been provided with copies of amended petitions to intervene submitted by the Carolina Environmental Study Group, the Charlotte-Mechlenburg Environmental Coalition, and the Palmetto Alliance. Copies of these petitions are enclosed and are being distributed to each of your branches with a request for each responsible branch to review the petitions to determine technical validity, acceptability or rejectability (with basis), keeping in mind that the subject of each contention must be addressed in your input to the Catawba SER or EIS (your early notice). Also, the associated technical reviewer will be responsible to appear as a staff witness on the respective contention. At that time, it will be too late to have NRR declare that we should have rejected the contention at the time it was submitted. We need your comments (annotations on petition copies is very acceptable) no later than December 22 (keeping the Holidays in mind, can we try for December 18 - Friday?).

Your personal cooperation in assigning the required priority to your branches in meeting the above (ASLB) dates is respectfully requested. OELD (E. Ketchen, X27502) and DL (E. Adensam, X27832) stand ready to provide assistance and guidance in completing this very important task that will have long term consequences.

Robert L. Tedesco, Assistant Director
for Licensing
Division of Licensing

Enclosure: As stated

cc: NRR Assistant Directors
NRR Branch Chiefs

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DATE	12/16/81	12/17/81					

TO: MIKE MCGARRY
FROM: AL CARR
6 pages

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
	)	
DUKE POWER COMPANY, et al.,	)	Docket Nos. 50-413
	)	50-414
(Catawba Nuclear Station, Units 1 and 2)	)	

CESG'S CONTENTIONS

In accord with the Board's Order of Nov. 5, 1981 CESG herewith amends its petition of July 27, 1981 and contends:

1. The Board should dismiss Applicant's Application for an Operating License. The Catawba plant is not needed now. Both Applicant's and Staff's need forecasts made at the CP stage have proved grossly defective as to level of need and rate of growth. CESG's forecast, in contrast, has proved accurate. The earliest possible date of justifiable operation of Catawba is a decade hence, unless, as appears likely, growth in need decreases further. A realistic, favorable, cost/benefit consideration is rescinding the CP and mothballing the plant until and unless the cost/benefit consideration for continuing construction becomes favorable.

2. The license should not issue until and unless the hydrogen release consequences from that range and variety of LOCA's which the Applicant is required by the NRC to consider have been dealt with so as to make impossible damage to public health and safety. The igniter system cannot perform this function.

3. The license should not issue because the risk evaluation made by the Staff is inadequate. The totality of risks,

Dupe 8112170287

including those demonstrated at TMI-2, in relation to the possible consequences for this specific site, have not been considered. The operating risks, plus those associated with decommissioning, the transport, and both interim and long term storage of radioactive substances resulting from generation, must be taken into consideration in striking a cost/benefit balance vis-a-vis alternatives. These risks are significant and greater by far than those assumed at the CP stage. It is not within the capability of Applicant nor NRC to prove the absence of substantial risks to public health and safety over the period of time which radioactive materials formed by generation remain hazardous.

4. Motions by Applicant or Staff to dismiss CESG as an Intervenor should be denied. There are sufficient differences in the McGuire and Catawba stations, and sufficient changes in both the cost/benefit and safety and health matters for collateral estoppel or res judicata to be inapplicable.

SAB AEAB

5. The license should not issue because the cost/benefit statement has become grossly defective. Slow construction, due primarily to Applicant's erroneously high forecast of growth in electrical demand, will result in Catawba power being more expensive than a number of alternatives, including conservation and renewable energy sources. This has been demonstrated by Applicant's 10% increase in rate with declaring McGuire, a plant similarly affected by slow construction, commercial.

SAB AEAB

6. The license should not issue because it will, contrary to the intent of cost/benefit considerations, further burden

SAB AEAB

the consumer, not only with construction costs and the interest on construction borrowing, but with an entirely undeserved earning on an unneeded facility. The CP stage cost/benefit statement is grossly defective.

7. The Board should require the Staff to provide the Environmental Impact Statement at least 90 days before the prehearing conference. This is essential to permit CESG and other petitioners to take into consideration Staff's views in regard to environmental and health and safety matters. The existence of an EIS will aid the Board in its consideration of the matters which should be at issue.

LB4

8. If a license issues, it should require that emergency planning for the EPZ include the city of Rock Hill. Because the plant is a low pressure, ice condenser containment type, and because the consequences of severe accidents are estimated to extend to at least 25 miles, a radius of 30 miles should be the basis for emergency planning. This would include the city of Charlotte.

EPLS

9. The EIS should explicitly consider the consequences for the specific site of the entire spectrum of serious release accidents, including PWR-1 to PWR-9 as formulated in the Reactor Safety Study. This consideration should include the recognition that local officials and resources are not qualified to assure protection of the public health and safety in the event of a serious accident.

SAB
AEAB

10. If a license issues, an adequate crisis relocation plan should be a condition for issuance. The nature of particulate releases in serious accidents, such as PWR-1, is such that

EPLD

relocation of the affected population is required. Present plans are deficient in that no consideration is given crisis relocation.

AEB ASB 11. The operating license should not issue because part of the construction was not covered in the CP and the CP was amended without due process. The fuel pool was greatly expanded by an amendment. The Intervenor, CESG, was not, at the time, apprised of this (. Enlargement of the fuel pool significantly increases the source term for fuel pool accidents, including boiling dry followed by fuel melt.

SAB AEAB 12. A license should not issue because, since the CP stage, in response to the mandates of North Carolina legislation, the Applicant has embarked on a variety of programs designed to decrease load growth such as load management, special rates for conservers, and a program to assist homeowners in reducing thermal loss. The cost/benefit statement of the CP stage was struck absent these considerations.

MTEB 13. The license should not issue because irregularities in the welding practices on safety related systems endanger the public health and safety.

LB4 14. The prehearing conference should not be held until at least 90 days after the Safety Evaluation Report has issued. CESG has concerns, reflected in some following contentions, which should be addressed by the SER.

PSB 15. The license should not issue because / Catawba was designed and is being constructed without appropriate consideration of electromagnetic pulse. EMP will knock out most of the power grids on which Applicant could rely for backup power, knock out

most if not all electronic and electric communications systems on which Applicant routinely relies, knock out all control systems relying on solid state components, knock out all computers including the off site computer used for monitoring the ECCS thereby making possible a variety of reactor accidents not forseen including the boiloff of water in the fuel pool.

16. The license should not issue because the design of the control room preceded knowledge of the essential role of human factors considerations in design, a factor in the TMI-2 accident and in other operatingproblems having in common avoidable operator error.

17. The license should not issue because no consideration has been given to the effects of Corbicula, known to infest the Catawba River and Lake Wylie, on the performance of the cooling tower system.

18. The license should not issue because reactor degradation in the form of a much more rapid increase inreference temperature than had been anticipated has occurred at a number of PWR's including Applicant's Oconee unit 1. Until and unless the NRC and the industry can avoid reactor embrittlement, Catawba should not be permitted to operate.

19. The license should not issue until and unless the loosening of reactor neutron shield bolting and the loss of such bolts in understood and prevented. Dropping of the neutron shield from its support, RESAR Fig. 4.2-7, would result in blockage of the coolant system flow path and, despite the ECCS, lead to a major LOCA.

20. The license should be withheld as no provision has been made for the release of substantial amounts of radioactivity to Lake Wylie, the source of potable water for many down stream communities. Such a loss can occur in an accident such as happened at Oconee, in which the quantity of radioactive water resulting from washing down a contaminated area exceeded the holding capacity, or from any one of a variety of as yet unencountered operational errors.

H GEB

21. The license should not issue because Applicant's Environmental Report is deficient in that it does not consider the health effects of tritium, considers only airborne volatiles as a source of dosage, ignoring water pathways, and does not consider the consequences of the release of radioactive particulates.

EEB

22. The licenseshould not issue because the dilution of ownership was not considered at the CP stage and presents a series of problems in connection with responsibility and liabilitty. A 75% interest in Catawba has already been sold. It is Applicant's intention to dispose of the ramainder. As the terms of purchase are unfavorable to the buyers unless Applicant's unrealistic forecast of sales eventuates, the owners of the plant will be unable to meet the burdens of ownership, including a proper assumption of liability.

AEAB

Respectfully submitted,

Owen L. Riley

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December 9, 1981

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of
DUKE POWER COMPANY, et al.,

(Catawba Nuclear Station,
Unites 1 & 2)

Docket Nos. 50-413
50-414

CONTENTIONS OF THE CHARLOTTE-MECKLENBURG ENVIRONMENTAL COALITION

In accord with the Board's Order of Nov. 5, 1981 CMEC herewith amends its petition and contends that the applicant's Application for an Operating License should be denied on the following grounds:

1. The Applicant's Environmental Report (ER) does not adequately project the radioactive emissions, both liquid and gaseous, which will result from normal operation of the Catawba Nuclear Station (Catawba) in the following respects:

AEB

(a) The projections set out in the ER are understated in that they do not reflect the fact that during the operating life of a LWR such releases will become progressively greater.

(b) The projections set out in the ER are based on assumptions which lack proper scientific foundation in that there are wide divergences between such projections for the McGuire Nuclear Station (as shown in the ER and FES for the McGuire operating license) and Catawba (as shown in the Catawba ER), notwithstanding the fact that the Catawba reactors and the McGuire reactors are essentially similar in design.

2. The projections of radioactive emissions set out in the ER for normal operation of Catawba fail to take into account the actual accidential releases of radionuclides which have occurred at operating nuclear power plants with the United States.

AEB

3. The Applicants' ER does not adequately project the concentrations of radionuclides which will occur in the Catawba River from normal operation of Catawba, and releases of the nature specified in Contention 2, in the following respects:

AEB

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(a) The models and methods used in the EA underestimate the resulting concentration of radionuclides in that they project an erroneous and overly optimistic dilution effect in the discharge canal and in the lake. We contend that the only suitable and realistic model is one that, in respect to any particular radionuclide, calculates the resulting concentration by dividing the e.g. annual projected release into the total annual amount of water leaving the lake. A 'feed and bleed' model, such as that proposed in the EA, that results in a lower figure for the concentration than that yielded by our model, can only result in much higher concentration in the lake itself.

(b) The calculated concentrations of radionuclides in the Catawba River downstream of Catawba from liquid releases fail to take into account the cumulative impact of radionuclides released to the Catawba River from McGuire Nuclear Station during normal operation of both the McGuire and Catawba Nuclear Stations. Such cumulative impact should be taken into account in calculating concentrations of radionuclides in water drawn from the Catawba River by communities downstream from Catawba.

(c) The calculated concentrations of radionuclides, particularly tritium, drawn from the Catawba River upstream of Catawba into the water supply of the City of Charlotte does not take into account the fact that gaseous releases from normal operation of Catawba will be carried up to 50 miles from Catawba and will brought back into the Catawba River watershed through rainfall.

4. The EA inadequately assesses the long-range genetic and somatic health effects of routine releases of radioactivity within applicable NRC guidelines during normal operation, and releases of the nature specified in Contention 2, of the Catawba Nuclear Station, in that it fails to take into account recent work which shows the long-term genetic and somatic health effects of such releases to be damaging to adults and extremely hazardous to the human embryo and fetus.

SAB

As part of the 'stipulation process' Petioner has had discussions with J. M. McGarry and A. V. Carr, attornies for Applicant. It is my understanding that, on the basis of these discussions, Applicant agrees to the above four contentions being brought before the Board by CMEC.

Submitted,

Henry A. Presler

Henry A. Presler, Chairman
Charlotte-Mecklenburg Environmental Coalition
945 Henley Place, Charlotte, N.C. 28207
Telephone: 704-333-8589

December 9, 1981

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	Docket Nos. 50-413
	)	50-414
DUKE POWER COMPANY, ET AL.	)	
	)	December 9, 1981
(Catawba Nuclear Station, Unit 1 and 2)	)	

PALMETTO ALLIANCE SUPPLEMENT
TO PETITION TO INTERVENE

Pursuant to 10 CFR Section 2.714(a) (3)(b) and the Board's Order of November 5, 1981, Petitioner Palmetto Alliance hereby files this Supplement to its Petition to Intervene listing the contentions which it seeks to have litigated in this matter, and the bases therefor, fully reserving its right to amend or expand this filing on the basis of information not now known to Petitioner, such as may be contained in amendments to the Applicants' Final Safety Analysis Report, Environmental Report, or Application, or in the Commission Staff's Safety Evaluation Report or Environmental Statements, which have yet to be filed in this proceeding; or for other good cause as provided for by 10 CFR Section 2.714(a)(1). Should the Board construe any of these contentions as an attack upon any rule or regulation of the Commission, or any provision thereof, Petitioner requests that such rule or regulation be identified and that Petitioner be permitted to seek an exception to or

Dupe 8112170146

waiver of the application of such rule or regulation with respect to this particular proceeding.

Petitioner Palmetto Alliance would respectfully show that the Application for the necessary licenses to own, use and operate the utilization facilities known as the Catawba Nuclear Station, Units 1 and 2, should be denied or appropriately conditioned since the grant of such licenses would contravene the National Environmental Policy Act of 1969 (NEPA), Pub. L. 91-190, 42 U.S.C.A. Section 4332, where the environmental costs will outweigh the economic, technical or other benefits, new and additional information now being available which alters the consideration made at the Construction Permit stage for the facility; and the requirements of 10 CFR Section 50.57 can not be met where the Applicants can not demonstrate that the facility has been constructed in conformity with the construction permit, that it has been constructed and will be operated in conformity with the Application, the Atomic Energy Act, and the rules and regulations of the Commission; the Applicants are not technically or financially qualified to engage in the activities for which they seek licensing; and there is a lack of reasonable assurance that license activities will be conducted in compliance with Commission regulations or that such activities can be conducted without endangering or being inimical to the health and safety of the public; in support of which Petitioner Palmetto Alliance would contend:

1 The long term somatic and genetic health effects of radiation releases from the facility during normal operations and from the uranium fuel cycle even where such releases are within existing guidelines, have been underestimated by Applicants and Staff. The work of K. Z. Morgan, Bernd Franke of Heidelberg, and others calls into serious question the analysis relied upon including that of the BEIR III report and the Commission's food chain analysis, strongly suggesting that the health effects of ionizing radiation have been seriously underestimated.

SAB
EEB

2 The Applicants and Commission Staff have failed to adequately assess the impacts of a serious accident at the facility, beyond design basis. The probabilistic analysis employed in the Reactor Safety Study (WASH 1400) has been so seriously criticized as to make its use in licensing proceedings as a basis for decision-making entirely inappropriate. "The consequence model used in WASH 1400 should be substantially improved, and its sensitivities explored, before if is used in the regulatory process." NUREG CR 0400, "Risk Assessment Review Group Report to the U.S. Nuclear Regulatory Commission, H.W. Lewis, Chairman," p xi. The design of this facility differs from that of the reference reactor considered in WASH 1400 in such significant manner as to adversely affect the probabilistic risk assessment employed in that study and relied upon by Applicants. "Reactor Safety Study Methodology

AEB
SAB

Application Program: Sequoyah #1PWR Power Plant," NUREG CR 1659/1 of 4 (February 1981), ER-OL 7.1-1. Environmental consequences of serious accidents specifically including "(H)ealth and safety risks" and "(S)ocioeconomic impacts that might be associated with emergency measures during or following an accident should also be considered" in the environmental impact consideration in licensing. "Nuclear Power Plant Accident Considerations Under the National Environmental Policy Act of 1969, Statement of Interim Policy", 45 FR 40101 (June 13, 1980).

EPLB

3 The Applicants have not provided reasonable assurances that adequate measures can be taken in the event of a radiological emergency as required by 10 CFR Section 50.47 and Appendix E, by including in the plume exposure pathway EPZ for the facility at least the communities of Charlotte, NC, Gastonia, NC, and all of Rock Hill, SC. Local emergency response needs resulting from large population concentrations, the design of the facility and prevailing meterology make a 10 mile EPZ inadequate in the event of a radiological emergency. The design of the facility is such that the planning basis which underlies the 10 mile standard is inappropriate for applicaiton to the facility. NUREG 0396, Planning Basis for the Development of State and Local Government Radiological Emergency Response Plan in Support of Light Water Nuclear Power Plant, (December 1978); NUREG CR 1659, Supra.

The major metropolitan population is situated downwind from the facility. ER Table 2.3.0-1.

EPLB

4 Applicants have not provided reasonable assurance that adequate protective measures can and will be taken by state, local and utility emergency preparedness officials and other enities and persons, such as medical facilities, fire fighting and law enforcement organizations and social service agencies, in the event of a radiological emergency as required by 10 CFR Section 50.47 and Appendix E, and the specific criteria as set forth in NUREG 0654, Rev. 1 The facility is located in South Carolina near the North Carolina border. Rock Hill, South Carolina, is approximately 5.8 miles from the plant and had a 1975 population of 35,346. Nearby Charlotte, North Carolina, had a population of 281,417 within the city and lies only 10.5 miles from the plant. The Charlotte-Gastonia SMSA had a 1975 population of 592,706, the bulk which lies within 20 miles of the plant, FSAR, 2.1-1, Table 2.1.3-2. U.S. Department of Commerce, Bureau of the Census, County and City Data Book 1977: A Statistical Abstract Supplement, (Washington, GPO, 1978), pp. 548, 720 and 744. Recreational use of Lake Wylie, adjacent to the facilitiy and Carowinds amusement park, 8 miles from the plant, and religious gatherings at Heritage, USA, facilities of the PTL Club, and other nearby activities introduce transient populations in excess of 60,000

on a peak day. FSAR, Tables 2.1.3-17 and 2.1.3-19, p. 2.1-3. Applicants are apparently unaware of the Heritage, USA, facilities. Neither state nor local emergency preparedness plans have been developed with respect to the plant to protect people living within either the plume exposure or ingestion pathway EPZs. Although Applicants may anticipate the preparation and development of plans meeting the paper requirements of NUREG 0654, Rev. 1,"a good well written plan is an important step toward achieving a preparedness capability, but it is only that." FEMA, Report to the President: State Radiological Emergency Planning and Preparedness in Support of Commercial Nuclear Power Plants (June 1980), p. VI-2. Applicants have no intention of conducting the "full-scale exercise," called for by 10 CFR Part 50, App. E (f)(1), but only well-rehearsed drills involving no significant movements of population.

RRB 5 No reasonable assurance can be had that the facility can be operated without endangering the health and safety of the public through occurrence of a serious accident, beyond design basis. The probabalistic risk assessment which might serve as a basis and standard for finding a reasonable assurance of an acceptable risk to the public can not be carried out because human errors and common mode failures are not susceptible to that method of analysis and because the complexity and number of nuclear plant

systems defies such analysis. Such serious issues have been raised and shown regarding the conceptual, methodological, statistical, and data underpinnings of the RSS that its use in licensing proceedings for decision-making is entirely inappropriate. NUREG CR 0400, the Lewis Report, Supra; Union of Concerned Scientists, "The Risks of Nuclear Power Reactors: A Review of the NRC Reactor Safety Study WASH 1400" (NURGE 75 014), pp. 113-130. Serious accidents with releases of radioactivity to the environment inimical to the health and safety of the public are now plainly credible after Three Mile Island.

QAB

6 Substandard workmanship and poor quality control strongly suggest that actual plant construction is substantially below NRC standards in many safety related areas. Applicants have failed to provide a Quality Assurance program which meets the requirements of 10 CFR Part 50, App. B, and no reasonable assurance exists that the plant can operate without endangering the health and safety of the public. The Commission has noted that "the regulated industry . . . bears the primary responsibility for the proper construction and safe operation of licensed nuclear facilities." Federal Tort Claim of General Public Utilities Corp., et al, CLI 81-10, 13 NRC 773, 775-776 (1981). The NRC's Systematic Assessment of Licensee Performance Review Group found the Catawba facility "Below Average" among power reactor facilities

under contruction particularly "in the areas of quality assurance including management and training." NUREG 0834, NRC Licensee Assessments, August 1981, p. B-1. A number of former Duke Power Company construction workers, including a certified Quality Control Inspector, have complained of systematic deficiencies in plant construction and company pressure to approve faulty workmanship.

LQB

7 No reasonable assurance can be had that the facility can be operated without endangering the public health and safety because of Duke's consistent failure to adhere to required Commission operating and administrative procedures provided for in Commission rules and regulations. "The Nuclear Regulatory Commission has the statutory responsibility for prescribing licensing standards to protect public health and safety and for inspecting the industry's activities against these standards. The Commission does not thereby certify to the industry that the industry's designs and procedures are adequate to protect its equipment or operations." Federal Tort Claim of General Public Utilities, Corp., et al, CLI-81-10, 13 NRC 773, 775-776 (1981). At both Oconee and Catawba facilities of Duke Power Company the Systematic Assessment of Licensee Performance Review Group found "weaknessess in personnel adherance to operating and administrative procedures" and "failure to follow procedures." NUREG 0834, Licensee Assessments, August 1981,

pp. A-3, B-1. As long ago as 1977 Duke, Licensee for the Oconee facility, was assessed civil penalties of $21,500 where:

"the history of repetitive and chronic non-compliance, when considered in conjunction with failure to institute effective corrective action and management controls, demonstrates that management is apparantly not conducting licensed activities with adequate concern for the health, safety or interest of its employees or the general public." Ernst Volgennau, Director, Office of Inspection and Enforcement, USNRC, to Carl Horn, Jr. President, Duke Power Company, March 29, 1977, Docket nos. 50-269, 50-270, 50-287.

LQB

8 No reasonable assurance can be had that the facility can be operated without endangering the public health and safety because the Applicants' reactor operators and shift supervisors lack sufficient hands-on operating experience with large pressurized water reactors. The resumes of Catawba Plant Supervisors show that only a very few of these individuals who will have primary management responsibility for safe operation of the plant, FSAR, Table 1.9-1, p.2, have experience at large PWR's like Catawba. NUREG 0737, Clarification of TMI Action Plan Requirements, I.C.3. Resumes of Senior Reactor Operators and Reactor Operators show similar lack of experience.

9 Applicants have failed to demonstrate that during the time period following a postulated LOCA but prior to effective operation of the combustible gas control system, either (i) an uncontrollable hydrogen-oxygen recombination would not take place in the containment, or (ii) the plant could withstand the consequences of that hydrogen-oxygen recombination without loss of safety function.

CSB
RSB

The containment of Catawba is a thin-walled, dry ice condenser containment designed to withstand internal pressures of only 15 psi. (FSAR, 6.2-1.) Hydrogen release consequences of much higher pressure have been experienced at TMI and are likely to occur at Catawba in the event of a range and variety of LOCAs.

Failures in Quality Assurance undermine confidence in the quality of construction of the containment and ice condenser systems so that no "built in" conservatisms beyond the design basis should be relied upon to provide a margin of safety.

QAB

10 The economic costs of a severe accident with release of radiation to the environment (a so-called Class 9 accident) were not considered in the CP review for Catawba. Such an accident could have enormous cost consequences especially in the event of an atmospheric release with the winds blowing in the direction of the major population of Charlotte, NC, or Rock Hill, SC.

SAB

11 The costs of construction of Catawba have risen from an estimated $699.4 million in 1972 (CP Application, July 1972, p.8) to an estimated actual cost of $2,287.0 million (OL Application, June 1981, p.13), including original fuel cost. A tripling of actual over estimated costs can only adversely affect the putative Cost-Benefit balance struck earlier.

SAB AEAB

12 The need for funds for a capital-intensive form of energy production has placed added burdens on a tight capital market and increased interest rates in the economy as a whole.

AEAB

13 Investment in capital intensive, rather than labor intensive, approaches to dealing with energy needs reduced monies available in the market to create jobs for residents of the Catawba area. The 845 jobs projected for Catawba will have been at a capital cost of some $2.7 million per job. Investments in conservation would have created more jobs.

AEAB

14 The Applicant's Environmental Report should provide a full description and detailed analysis of the environmental effects of the transportation of spent fuel shipments to the Catawba Plant from other Duke Power Company facilities and of the contribution of such effects to the environmental costs of licensing Catawba, the values determined for such analysis for the environmental

impact under normal conditions of transport and the environmental risk from accidents in transport as required by 10 CFR 51.20(g)(1)(a)(ii).

The values set forth in Summary Table S-4 do not apply here because those values apply to the shipment of a reference quantity of spent fuel from a reactor to a fuel reprocessing plant or of solid radioactive wastes to a waste burial ground as set forth in 10 CFR 51.20(g)(1)(a)(i) and not those likely to an Away From Reactor (AFR) storage facility.

Applicants seek such additional source, special nuclear, and by-product material licenses as may be necessary to allow the storage of spent fuel from other Duke nuclear facilities. (OL Application, pp. 11-12).

15 Failure to estimate the environmental costs of operation of Catawba as an Away From Reactor (AFR) storage facility for spent fuel from other Duke nuclear facilities and transportation of that irradiated fuel to Catawba compromises the validity of the favorable Cost-Benefit balance struck at the construction permit phase of this hearing.

SAB
AEAB

Since the CP stage hearing, Applicant Duke Power has considerable expanded the Catawba spent fuel pool capacity and provided for denser storage of irradiated fuel. FSAR Table 1.2.2-1.

Applicants intend to use Catawba as an AFR for irradiated

fuel from the McGuire and Oconee nuclear facilities of Duke Power Company. (FSAR 9.1.2.4, OL Application, pp. 11-12.)

ASB 16 Applicants have not demonstrated their ability safely to transport and store irradiated fuel assemblies from other Duke nuclear facilties so as to provide reasonable assurance that those activities did not endanger the health and safety of the public.

ASB 17 Applicants have made no provisions for the safe storage of irradiated fuel at Catawba after expiration of the license for the faciltiy and have not demonstrated their ability to safely accomplish that storage for an indefinite term.

To date, no available temporary or permanent off-site spent fuel storage or reprocessing facility is available.

PSB 18 The Applicants have failed to demonstrate that the diesel generators which are critical to the safe shutdown and control of the reactor in the event of loss of off-site power are designed, constructed and operated at standards sufficiently high that they may be relied upon to reasonably assure that the health and safety of the public will not be endangered.

The FSAR does not give adequate information or assurance that all regulatory requirements have been or will be met prior to operation. See FSAR 8.3.

Petitioner Palmetto Alliance is informed that Applicant Duke Power Company installed used generators in its McGuire Nuclear Station.

19 The Catawba Emergency Core Cooling System has not been RSB demonstrated to meet the requirements of 10 CFR Part 50, Appendix K and 10 CFR 50.46.

Models used to predict ECCS performance have not been proven accurate. The American Physical Society review of the Reactor Safety Study (WASH 1400) in Review of Modern Physics (Summer Supplement, 1975) noted the poor representation by two dimensional models of three dimensional interactions of steam with ECCS water, compounded by the vast uncertainties in steam binding.

The loosening and loss of neutron shield bolting experienced at other reactors could result in a LOCA and failure of effective cooling by the ECCS through blockage of the coolant system flow path if the neutron shield were dropped from its support. RESAR, Figure 4.2-7.

20 The license should not be granted until Applicants have RAB demonstrated that radiation exposure levels will be maintained as-low-as-reasonably achievable as required in 10 CFR 20.1. The FSAR does not adequately consider occupational radiation

exposures to be expected from either the normal operation of Catawba or that which may occur during an abnormal occurence, servere accident, or maintenance once thought unusual but now understood to be reasonably expectable.

Catawba utilizes Westinghouse steam generators which have shown a generic tendency to denting, cracking, leaking and rupturing. Extensive repairs at a number of plants have been required as well as complete replacement of steam generators at Surry Power Station 1 and at Turkey Point Plant, Units 3 and 4. Experience and estimates of steam generator replacement occupational exposures have ranged from 1730 man-rems/units to 5,840 man-rem/unit (NUREG/CR 0199, NUREG 0692, p. 4-1, NUREG 0756, pp. 2-6,7). Steam generator repairs and/or replacement at Westinghouse reactors have become so common that they must be assumed as normal maintenance.

Likewise premature embrittlement of reactor vessels and loosening and loss of reactor neutron shield bolting will result in increased occupational exposures.

21 Applicants have failed to develop new procedures and training guidelines for controlling or mitigating small break LOCAs, incidents of inadequate core cooling, and certain anticipated transients consistent with and as required by NUREG 0737, I.C.1.

PTRB

22 The Catawba control room fails to meet regulatory requirements in NUREG 0660, NUREG 0694, and NUREG 0737 in that the control room lacks sufficient instrumentation for detecting inadequate core cooling in case of abnormal events, Applicants have not demonstrated their ability to comply with current NRC requirements for overall control room design standards. The Catawba control room design and instrumentation have not been subjected to a comparative evaluation of the interaction of human factors and efficiency of operation, and the FSAR fails to document how the plant can or will be modified to meet the new criteria imposed after TMI.

HFEB

23 Catawba should not be licensed to operate until the Applicants have developed and demonstrated an adequate security plan which complies with 10 CFR 73.55. The FSAR does not give adequate assurance that all regulatory requirements have been or will be met prior to operation. See FSAR, p. 13-6.1, Regulatory Guide 1.17, Rev. 1.

SSPB
NMSS

24 The sale of major portions of Catawba to consortiums of municipal power authorities and rural electrical cooperatives places an unknown and potentially impossible burden on municipalities and other entities which lack the resources and ability to raise the significant funds which will be required to safely operate,

AEAB

maintain, and decommission the plant in conformity with NRC rules and regulations.

As the experience of the Washington Public Power Supply System has shown, miniscule to modest size municipalities and rural electrical cooperatives cannot be relied upon as unlimited revenue resources for construction and operation of nuclear facilities. An accident with the clean-up and liability costs of a magnitude equal to or greater than those experienced at Three Mile Island would cause many of these municipalities to default. Moreover, local voters may at any time refuse authorization to their elected representatives to expend funds on Catawba.

AEAB

25 Applicants have made no plans for ensuring that funds will be available to safely decommission Catawba in conformance with NRC rules and regulations.

Duke Power Company utilizes an unfunded reserve for depreciation expense. Since Duke claims to have failed to match earnings to inflation, an unfunded reserve, which constitutes an investment in Duke plant, cannot be viewed as the safest investment which could be made to ensure the presence of adequate funds when needed. (William H. Grigg, Testimony for Duke Power Company, SC Public Service Commission, Docket No. 80-378-E, p. 14). Further, a planned unfunded reserve calculated upon present value

assumptions will not match future cash requirements.

Attempts to collect decommissioning funds from a myriad municipalities and electrical cooperatives after Catawba has ceased generating revenues will prove fruitless in many cases.

Early decommissioning resulting from an accident such as at Three Mile Island or Fermi I, premature embrittlement of the reactor vessel, or unsupportable costs of steam generator replacement would threaten to bankrupt each and every participant among the several Applicants.

26 Because of continuing cut-backs in funding for the South Carolina Department of Health and Environmental Control, that body cannot fulfill its responsibilities of monitoring the environmental effects of operation of Catawba to provide reasonable assurance that the health and safety of the public is not being endangered, or adequately perform its responsibilities in the event of a radiological emergency.

27 The Applicants should be required to place real time monitors capable of reading gamma radiation levels around the site in order to provide emergency operations personnel with the information required to make decisions necessary to reasonably assure the health and safety of the public under conditions of radiological release to the environment.

Thermoluminescent dosimeters are only accurate within about ±30% and only provide a post hoc assessment of conditions.

28 The applicants have failed to demonstrate that the risk from an ATWS event is sufficiently reduced by interim measures prior to resolution of generic issues and Commission direction on corrective actions provides reasonable assurance that the Catawba plant can be operated prior to that resolution without endangering the health and safety of the public.

RRAB

NUREG 0460 "Anticipated Transients Without Scram for Light Water Reactors" forth the Staff position that "the reliability of current scram systems cannot be shown to be adequate to meet the safety objective considering the rate at which these systems are challenged by anticipated transients" (p.39). The Staff position articulated in 1973, (NUREG 1270) was that the likelihood of an ATWS event was acceptably small given existing in 1973. Since that time, the number of reactors has increased dramatically.

It is simply irrational and inconsistent to argue, at once, that there is a problem of sufficiently high risk that changes ought to be made and that those changes can be made down the road somewhere. Probabalistic arguments that an event is likely to occur only once in x many reactor years do not make it any less likely that at y plant that event will occur this year.

29 The potential impacts of systems interactions and particularly the safety implications of control systems and plant dynamics have not been sufficiently accounted for by Applicants in order that the safety and health of the general public can be reasonably assured during the operation of the Catawba plant.

SIB

Demetrios L. Basdekis of the NRC Staff has, in a number of memoranda and appearances, addressed the inadequacy of current understanding of the safety implications of control systems and plant dynamics. Those concerns should be addressed with specific reference to this plant.

In the ACRS study of LERs (NUREG 0572, "Review of Licensee Event Reports"), the ACRS found a number of systems interactions which only were revealed by their actually occuring.

30 The Board should dismiss Applicant's Application for an Operating License. The Catawba plant is not needed now. Both Applicant's and Staff's need forecasts made at the CP stage have proved grossly defective as to level of need and rate of growth. CESG's forecast, in contrast, has proved accurate. The earliest possible date of justifiable operation of Catawba is a decade hence, unless, as appears likely, growth in need decreases further. A realistic, favorable, cost/benefit consideration is rescinding the CP and mothballing the plant until and unless the cost/benefit consideration for continuing

SAB
AEAB

construction becomes favorable.

CSB 31 The license should not issue until and unless the hydrogen release consequences from that range and variety of LOCA's which the Applicant is required by the NRC to consider have been dealt with so as to make impossible damage to public health and safety. The igniter system cannot perform this function.

RSAB 32 The license should not issue because the risk evaluation made by the Staff is inadequate. The totality of risks, including those demonstrated at TMI-2, in relation to the possible consequences for this specific site, have not been considered. The operating risks, plus those associated with decommissioning, the transport, and both interim and long term storage of radioactive substances resulting from generation, must be taken into consideration in striking a cost/benefit balance vis-a-vis alternatives. These risks are significant and greater by far than those assumed at the CP stage. It is not within the capability of Applicant nor NRC to prove the absence of substantial risks to public health and safety over the period of time which radioactive materials formed by generation remain hazardous.

SAB AEAB 33 The license should not issue because the cost/benefit

statement has become grossly defective. Slow construction, due primarily to Applicant's erroneously high forecast of growth in electrical demand, will result in Catawba power being more expensive than a number of alternatives, including conservation and renewable energy sources. This has been demonstrated by Applicant's 10% increase in rate with declaring McGuire, a plant similarly affected by slow construction, commercial.

SAB AEAB

34 The license should not issue because it will, contrary to the intent of cost/benefit consideration, further burden the consumer, not only with construction costs and the interest on construction borrowing, but with an entirely undeserved earning on an unneeded facility. The CP stage cost/benefit statement is grossly defective.

EPLB

35 If a license issues, it should require that emergency planning for the EPZ include the city of Rock Hill. Because the plant is a low pressure, ice condenser containment type, and because the consequences of severe accidents are estimated to extend to at least 25 miles, a radius of 30 miles should be the basis for emergency planning. This would include the city of Charlotte.

AEB

36 The EIS should explicitly consider the consequences for the

specific site of the entire spectrum of serious release accidents, including PWR-1 to PWR-9 as formulated in the Reactor Safety Study. This consideration should include the recognition that local officials and resources are not qualified to assure protection of the public health and safety in the event of a serious accident.

EPLB

37 If a license issues, an adequate crisis relocation plan should be a condition for issuance. The nature of particulate releases in serious accidents, such as PWR-1, is such that relocation of the affected population is required. Present plans are deficient in that no consideration is given crisis relocation.

ASB
AEB

38 The operating license should not issue because part of the construction was not covered in the CP and the CP was amended without due process. The fuel pool was greatly expanded by an amendment. Enlargement of the fuel pool significantly increases the sources term for fuel pool accidents, including boiling dry followed by fuel melt.

AEAB

39 A license should not issue because, since the CP stage, in response to the mandates of North Carolina legislation, the Applicant has embarked on a variety of programs designed to decrease load growth such as load management, special rates for

conservers, and a program to assist homeowners in reducing thermal loss. The cost/benefit statement of the CP stage was struck absent these considerations.

MEB 40 The license should not issue because irregularities in the welding practices on safety related systems endanger the public health and safety.

PSB 41 The license should not issue because Catawba was designed and is being constructed without appropriate consideration of electromagnetic pulse. EMP will knock out most of the power grids on which Applicant could rely for backup power, knock out most if not all electronic and electric communications systems on which Applicant routinely relies, knock out all control systems relying on solid state components, knock out all computers including the off site computer used for monitoring the ECCS thereby making possible a variety of reactor accidents not forseen including the boiloff of water in the fuel pool.

HFEB 42 The license should not issue because the design of the control room preceded knowledge of the essential role of human factors considerations in design, a factor in the TMI-2 accident and in other operating problems having in common avoidable operator error.

43 The license should not issue because no consideration has been given to the effects of Corbicula, known to infest the Catawba River and Lake Wylie, on the performance of the cooling tower system. EEB

44 The license should not issue because reactor degradation in the form of a much more rapid increase in reference temperature than had been anticipated has occurred at a number of PWR's including Applicant's Oconee unit 1. Until and unless the NRC and the industry can avoid reactor embrittlement, Catawba should not be permitted to operate. AEB

45 The license should not issue until and unless the loosening of reactor neutron shield bolting and the loss of such bolts in understood and prevented. Dropping of the neutron shield from its support, RESAR Fig. 4.2-7, would result in blockage of the coolant system flow path and, despite the ECCS, lead to a major LOCA. MEB

46 The license should be withheld as no provision has been made for the release of substantial amounts of radioactivity to Lake Wylie, the source of potable water for many down stream communities. Such a loss can occur in an accident such as happened at Oconee, in which the quantity of radioactive water resulting HGEB

from washing down a contaminated area exceeded the holding capacity, or from any one of a variety of as yet unencountered operational errors.

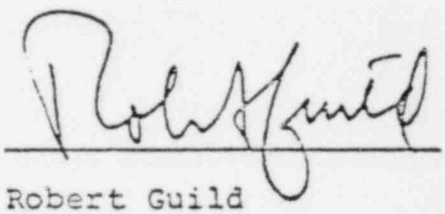
47 The license should not issue because Applicant's Environmental Report is deficient in that it does not consider the health effects of tritium, considers only airborne volatiles as a source of dosage, ignoring water pathways, and does not consider the consequences of the release of radioactive particulates.

EEB

48 The license should not issue because the dilution of ownership was not considered at the CP stage and presents a series of problems in connection with responsibility and liability. A 75% interest in Catawba has already been sold. It is Applicant's intention to dispose of the remainder. As the terms of purchase are unfavorable to the buyers unless Applicant's unrealistic forecast of sales eventuates, the owners of the plant will be unable to meet the burdens of ownership, including a proper assumption of liability.

AEAB

WHEREFORE: having supplemented its Petition to Intervene with this list of the contentions which it seeks to have litigated in this proceeding, and the bases therefor, Petitioner Palmetto Alliance requests that its Petition be granted, that it be provided an opportunity to be heard in support of its interest in this matter, and that the Application of Duke Power Company, et al., for licenses with respect to the Catawba Nuclear Station, Units 1 and 2 be denied, or so conditioned as to protect the health, safety and economic interest of Palmetto Alliance and the public.



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