UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
	)	
DUKE POWER COMPANY	)	Docket Nos. 50-369
	)	50-370
McGuire Nuclear Station Units 1 and 2	)	

CESG'S OPPOSITION TO MOTION TO TERMINATE STAY OF INITIAL DECISION

On May 20, 1980, Applicant Duke Power Company filed a motion to terminate the stay of the Initial Decision. Applicant states the stay was placed by the Atomic Safety and Licensing Board "until further order by the Board following the issuance of a Supplement to the NRC Staff's Safety Evaluation Report addressing the significance of any unresolved generic safety issues," Initial Decision, April 18, 1979. Applicant contends that the issuance on May 23, 1980, of "Supplement No. 3 to the Safety Evaluation Report" adequately and properly addresses generic safety issues in compliance with the Board's directive and that the Board should terminate the stay.

The advent of the accident at Three Mile Island-2 after the closing of the McGuire operating licensing record makes it apparent that there are significant safety and health considerations which were not addressed in the Initial Decision. The Staff has under review a number of considerations for applicants including upgrading emergency evacuation plans, operator training, control room characteristics, and a variety of design features, for example the March 10, 1980 letter to all pending operating license applicants of nuclear steam supply systems designed by Westinghouse and Combustion Engineering. The subject: "Actions Required From Operating License Applicants of Nuclear Steam Supply Systems Designed by Westinghouse

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and Combustion Engineering Resulting From the NRC Bulletins and Orders Task Force Review Regarding the Three Mile Island Unit 2 Accident".

Supplement No. 3 to the SER indicates that Staff review of McGuire is not yet complete in this respect.

> Nonetheless, the specific TMI-related requirements for licensing McGuire Units 1 and 2 will be identified and will be discussed in a supplement to the SER. Many of these are related to the program areas listed above. Long-term "Unresolved Safety Issue" tasks that may be undertaken in the same program areas could provide a basis for further improvements that may or may not be applicable to the McGuire plant.

Until this TMI related supplement is docketed, the Board's intent in ordering a stay will not have been met.

CESG, in accompanying filings, moves the admission of TMI-2 related contentions and the reopening of the evidentiary hearing. Clearly with the supplementation of the SER incomplete and TMI-2 related motions before the Board the time has not arrived for termination of the stay. Intervenor urges the Board to deny Applicant's motion.

Respectfully submitted,

Jesse L. Riley

Jesse L. Riley
President, Carolina Environmental Study Group

At Charlotte, N.C.
June 9, 1980

THE CAROLINA ENVIRONMENTAL STUDY GROUP

June 9, 1980

William L. Porter, Esq.
Associate General Counsel
Duke Power Co.

Re Docket Nos. 50-369
50-370

Dear Mr. Porter:

In the event that CESG's motion to admit new contentions in the instant matter is granted, it will be, as discussed previously with you and Mr. McGarry, in Duke's interest to proceed expeditiously. The following discovery requests are being transmitted to you at this time to provide Duke with an early notice as to CESG's interests. Mr. Ketchen may wish to note.

1. Is there any empirical data relating Westinghouse pressure suppression containment performance in response to sufficient over pressure to cause failure? If so, provide. If there are empirical model studies or analytical studies, provide. The variance and confidence limits are of particular interest.

2. What design safety factor was taken for the steel containment shell in regard to failure from internal pressure? Is the steel shell designed to withstand full vacuum. Provide work papers.

3. What design safety factor was used for the external, concrete element of the containment regarding internal pressure?

4. Are firm data available in regard to the air leakage rate from the steel shell of McGuire containment 1 under internal pressure? For containment 2? If so, provide data.

5. As in question 3 foregoing, what design basis assumptions were made for leakage from the concrete outer containment?

6. Are firm data available for the air leakage rate from the outer concrete containment under internal pressure? If so, provide data.

7. What is the designed rate of air leakage through the concrete containment?

8. What is the proposed pressure cycle for the containments during operation?

9. Are the Oconee dry containments essentially similar to those at Three Mile Island 1 and 2?

10. What is the design pressure for the Oconee containments? For the McGuire containments?

11. What is the internal containment pressure cycle at Oconee?

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12. How many recombiners are there in a McGuire containment?

13. What is the air circulation rate through a recombiner?

14. What are the specifics on recombiner design such as operating temperature, catalyst type and amount, flame propagation stop devices, etc.? Provide manufacturer's specifications.

15. What is the gaseous volume of a McGuire containment, i.e. total containment volume less volumes of primary system, steam generators, ice baskets, etc.? Provide work papers.

16. What convection rates of gaseous containment content have been assumed in a TMI-2 hydrogen release scenario? Provide work papers.

17. What total amount of hydrogen was calculated as being released in the TMI-2 accident? How many pounds of zirconium were calculated as reacting to form zirconium oxide? How many pounds of zirconium were in the TMI-2 core? How much TMI-2 hydrogen was calculated as being formed by radiolysis of water? Provide as a function of time. How much hydrogen was attributable to zinc reaction with water as a function of time? Was any hydrogen release attributable to organic finishes and sealers? To the corrosion of aluminum or other metals?

18. Provide whatever information you have as to hydrogen concentrations in the TMI-2 containment starting with the March 28 accident.

19. What concentrations of hydrogen would be present in a McGuire containment for the same hydrogen release patternas at TMI-2? Provide work papers if this calculation has been made.

20. How much zirconium is present in a McGuire core? How much hydrogen would be released by the complete hydrolytic reaction of this zirconium? Has the resultant concentration in the McGuire containment been calculated? If other, related calculations have been made, provide the work papers.

21. Provide work papers on any calculations made in regard to other mechanisms of hydrogen release such as radiolysis of water, the hydrolysis of zinc, aluminum, and other metals, and the decomposition of organics. State the conditions of temperature and moisture exposure assumed.

22. Has hydrogen concentration been calculated for such scenarios as the foregoing assuming recombiner operation? What vertical gaseous circulation mechanism was assumed? Provide work papers. State the hydrogen release rates. Was a case essentially similar to the TMI-2 accident among the cases studied?

23. Provide whatever information Duke may have regarding possible or hypothesized mechanisms of hydrogen ignition at TMI-2.

24. What means were used in joining the steel pieces in the McGuire containment: welding, riveting, other?

25. What are the nominal thicknesses of the steel plate corresponding to increments in elevation? What plate thickness is the top?

26. What is the means of joining the top plate to the wall plate in the containmnet? Are gussets or similar elements used? Provide detail drawing of juncture of top and side.

27. What, precisely, does Duke take to be the lower and the upper explosive limits (LEL and UEL) of hydrogen/air mixtures? What does Duke take to be the effect on LEL and UEL of a) total absolute pressure in the range 0 to 100 psia? b) R.H. in the range 0 to 100% over the 0 to 100 psia pressure range? If Duke does not have this data, provide whatever data base it has.

28. What is Duke's information in regard to ignition conditions for combustible hydrogen/air/water vapor systems? What is the relation of minimum ignition temperature to gas composition? What is the relation of minimum electrical energy (spark) to cause ignition to gas composition?

29. Provide any correspondence or reports received or generated by Duke relating to the rapid combustion of hydrogen prior to March 28, 1979.

30. What information has Duke in regard to substances which reduce the ignition requirements for hydrogen/air/water vapor mixtures? Identify data sources.

31. What, to Duke's best knowledge, caused the ignition of the hydrogen in the TMI-2 atmosphere? Identify point of ignition and source of energy. Include any work papers or correspondence.

32. Has Duke calculated the pressure development for hydrogen burning or explosion in a McGuire containment? in an Oconee containment? If so, provide work papers, including scenarios and assumptions considered.

33. Has Duke considred mechanisms of radioactive particle formation and release in an event initiated by loss of core cooling and hydrogen generation by the zirconia reaction? If so, provide result, including work papers.

34. Has Duke developed the radiological consequences for safety, health, and the environment of a postulated McGuire containment rupture initiated by a TMI-2 type of accident? If so, provide work papers and detailed conclusions.

35. Does Duke's Emergency Plan include dealing with a containment rupture? witha hydrogen explosion inside the reactor? Provide if available.

36. Provide Duke's Crisis Relocation Plans in response to a major particulate release and/or condensible volatiles release.

Yours sincerely,

Jesse L. Riley for CESG

cc: Board and parties