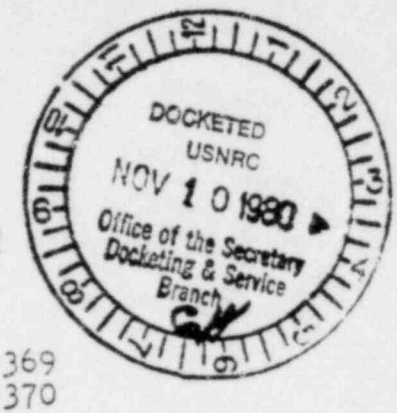
Nov 7, 1980

RELATED CORRESPONDENCE



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
(William B. McGuire Nuclear Station, Units 1 and 2)	)	

CESG'S REPLY TO APPLICANT'S MOTION FOR SUMMARY DISPOSITION REGARDING APPLICATION FOR LICENSE AUTHORIZING FUEL LOADING, ETC.; MOTION TO CONSOLIDATE NEAR TERM OPERATING LICENSE AND OPERATING LICENSE PROCEEDINGS; AND FURTHER CONTENTIONS

The Applicant has filed a motion for summary disposition of its application for authorization to load fuel, etc., a statement of material facts, and several supporting affidavits (September 30, 1980). The NRC staff counsel has approached CESG in regard to a stipulation which, if CESG's pending motion to reopen the operating license proceeding is granted, would have CESG withdraw its opposition to the authorization of fuel loading, low power testing, etc. The Staff proposed to stipulate that CESG's filing of August 15th met the requirements for reopening the proceeding. It did not find acceptable CESG's further requirement that the Staff waive it's right to file for summary disposition in the event that the Board ordered reopening of the record. In the course of these discussions, and the time required for NRC computer studies in regard to hydrogen release by a core only irradiated at low power, the Board approved several extensions of time. The final filing date is November 7th. In a telephone conference on November 4th CESG and the Staff informed the Board and the parties that they were unable to agree on a stipulation.

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CESG holds that the public interest will best be served by a reopened hearing. Facts in regard to the issues that CESG would

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raise, which are TMI related, are not part of the record. An adversary proceeding in which an opportunity is provided for the Board to examine witnesses, and in which there is cross-examination by the parties, is more likely to produce a sound record in this matter of great safety significance. CESG could not support a stipulation which would tend away from a hearing of the issues.

The Applicant in the instant motion requests expedited consideration. Applicant offers no good cause, alleging only that " . . . fuel loading is presently scheduled to commence on or about December 1, 1980",(p. 2) and "In light of the length of time already involved and in light of the fact that only one contested issue would remain if the hearing were reopened," (p. 3). Applicant does not indicate that construction has been drawn out because the capacity of McGuire has not been needed. In the FEIS Applicant anticipated a peak load of 10,157 MW in 1975 (Table K-8). This level of peak load was not reached until the summer of 1980. The Applicant then had an indicated reserve of about 20 percent. The providing of power is the sole benefit the plant offers (FEIS p. 13-1). With the greatly reduced growth in demand growth since the construction permit stage, and Applicant's 20% reserve, there is nothing in the public interest requiring an unduly hurried proceeding. As to the "one contested issue remaining", there is no more important and significant public issue--whetner a hydrogen explosion and reactor breach can occur and whether the public will be adequately safeguarded in that event. Applicant's plea for expedited consideration carries no promise of public benefit. It is clearly in the public interest that this matter of substantial concern, as evidenced by the number of letters sent by members of the public to the Board in regard to reopeneing, be given informed

and deliberate consideration.

Applicant seeks, in accord with NUREG-0694, Part 1, a license for operation at substantially less than full power. The only reason for obtaining such a license is that it is a step toward obtaining a full power license (id. Part 2). Under the present special circumstances involving a PWR in a low pressure containment, sited near a center of population, obtaining the low power license is a camel's-nose-in-the-tent approach to obtaining a full power license. All other factors being the same, it is obvious that low power operation for two weeks poses less hazard than full power operation for thirty to forty years. The threshold for approval of a near term operating license will presumably be lower than for an operating license. If the NTOL stage passes without incident a climate will have been generated which facilitates taking the next, connected step, issuing an operating license, however clear it may be that the cumulative risk at thirty times the power level, in a system experiencing wear and fatigue, for one hundred times as long is very substantially greater.

Accordingly, CESG moves that the matter of licensing McGuire operation be treated as a whole and that NTOL and OL matters be consolidated for hearing. If such a consolidated proceeding leads to a record supporting the decision that a license should not be granted the fuel will not have been irradiated, the reactor and fuel pool will not have become contaminated, costly decommissioning procedures will not be required. As there is no need for the capacity of McGuire unit 1 if the Applicant continues to operate its syatem competently, there is good cause for consolidating the NTOL and OL proceedings although it may result in a later date for

license issuance than Applicant seeks.

If the Applicant's motion for summary disposition succeeds, licensing action will devolve on NRC staff. Staff actions are not necessarily confirmed by hearing boards. Applicant's request for authorization to ship 300 Oconee spent fuel assemblies to McGuire for interim storage was supported by Staff but denied by a Board, Initial Decision, Docket 70-2623, October 31, 1980.

APPLICANT'S STATEMENT OF MATERIAL FACTS

CESG does not dispute certain of the sixteen "facts" alleged by Applicant. Some of the purported facts require amplification or amendment. CESG disputes others of the more consequential "facts" and notes the omission of still other relevant and material facts.

Not in dispute are the following of Applicant's numbered paragraphs in the Statement: 1, 2, 3, 6, 7, 10, 11, 12, and 16.

Fact #4 alleges that CESG's contentions in the initial OL proceeding have no bearing on Applicant's current application. There is a nexus in the need-for-power matter. As stated foregoing, Applicant greatly overforecast demand and growth in demand. Need-for-power is not a factor in the instant licensing. The Applicant's request for expeditious consideration rests on an undisclosed grounds.

If the hearing is reopened, Applicant may argue that denial of an OL will render it unable to meet customer requirements for electricity. Cost-benefit statements on such alternatives as cogeneration, load management, conservation, renewable resources, and solar power are relevant to such an argument and are, indeed, under mutual consideration by Applicant, North Carolina Utilities Commission, and the recently established North Carolina Corporation for Alternative Energy Sources.

Fact #5 alleges CESG's sole concern in its filing of June 9, 1980, was "the possibility of excessive hydrogen generation resulting from a TMI-type accident." This incorrectly states our concern. CESG's primary concern is with the consequences of the ignition of the hydrogen thus released, cf. CESG's Motion, p.1, ¶2, and contentions 1, 4, 5, and 6 which concern exposure of the public to "unacceptable risks of health, safety and property"; with "Consideration [which] has not been given to the environmental and safety and health consequences . . . "; with "emergency evacuation planning" for "a containment burst accident"; and with the absence of "crisis relocation planning in the event of an accident involving containment burst . . . "

Fact #8 states that the "possibility" is "extremely remote" "that hydrogen in excess of design quantities could be generated during low power (up to 5% full power) testing." Nothing could be farther from the results of NRC staff studies involving Robert Tedesco, Norman Laubman, and Sandia Laboratories, and communicated to CESG's representative during discussions related to a possible stipulation (Affidavit of Jesse L. Riley, attached). Absent the operation of the ECCS pumps or other coolant supply pumps, hydrogen would be evolved from the fuel pin sheaths and bring the containment air to a combustible level eighteen hours after accident initiation. The generation of "excessive hydrogen" is clearly shown by the Staff studies to be possible.

Fact #9 recapitulates the regulatory requirements for ECCS design. These requirements, including " . . . (3) clad metal-water reaction is limited to negligible amounts" were observed in the breach at TMI-2. Staff has the authority to impose "requirements".

The implementation of "requirements" by a licensee is another matter. CESG in its filing of August 15, p. 10, notes, in quoting the TMI Lessons Learned reports (NUREG-0578, 2.2.3, p. 14) " . . . (the requirements have existed, but the implementation has been unsatisfactory) . . . " and (NUREG-0585, pp. 1-2) "What we have found is that prescriptive and narrow licensing requirements only add to the quiltwork of regulatory practice and do little to directly address the nation's heightened concern for the safety of nuclear power plants."

Applicant's reliance on the fact of the existence of these ECCS requirements is not an adequate basis from which to infer that the requirements will be met, which is the only fact of functional significance.

Even if the Applicant meets all ECCS requirements, the absence of electrical power for pump operation during an 18 hour LOCA (see Affidavit) would result in a combustible level of hydrogen in the containment. Windstorms regularly damage transmission lines. The industry has had problems with Diesel generator starts. A no-power scenario during a LOCA, whatever the probability, is possible and would result in extreme hazard.

Fact # 13 declares that due to training programs, etc. (cf. Fact #12) "in the event of a loss of coolant accident, there will not be a premature operator termination of the ECCS." The Applicant has chosen a weak reed to support this "fact". The Staff finds that the major lesson learned from TMI was that "improved operation reliability is the most important lesson learned from the accident at TMI-2", (NUREG-0578, 2.2.1, p. 12).

The great reliance placed by Applicant on improved operation

certainly is not indicative of an intrinsically safe system. CESG does not question that Applicant has made changes at McGuire in response to the TMI experience. CESG does question Applicant's assertion that "there will not be" [emphasis supplied] a premature operator termination of ECCS operation for the simple reason that it is not within the Applicant's power to determine this possible future event, only to seek to influence it.

Fact #14 states that hydrogen evolution in the low power testing situation will begin one hour and five minutes (3900 seconds) after a postulated LOCA absent ECCS operation. An inflow to the coolant system of 15 gallons per minute of water will be, it is stated, sufficient to prevent core exposure and hydrogen generation. Any one of five pumps, it is further stated, can supply greater than 15 gallons per minute. CESG notes that the pumps will have to be energized. The redundant power sources are the transmission system interconnecting Applicant's generating units, and Diesel-electric generators. These will not necessarily be available, see foregoing (p. 6).

Fact #15, citing the NRC Commissioners, states that "the TMI-related operating license requirements list (NUREG-0694) . . . must be the principal basis for consideration of TMI-related issues and thus adjudicatory process." "Principal basis" does not denote sole basis. The hearing board remains the means by which the singular features of specific applications can be taken into account.

As to Fact #16, which CESG does not dispute, the issuance of the three low power licenses should be related to the specific cases. Only Sequoyah is a low pressure, ice condenser containment similar to McGuire. The Sequoyah application was not contested.

A number of material facts essential to summary deposition have been omitted by Applicant. The significantly changed circumstances may unsettle the CP decision and the stayed OL decision. A reopened OL proceeding provides a means for examining such changed circumstances.

17. (Continuing with Applicant's numbering system) "The NRC is revising its policy for considering the more severe kinds of very low probability accidents that are physically possible in environmental impact assessments required by the NEPA," Interim Policy Statement of June 9, 1980. This Statement announces the withdrawal of the proposed Annex to Appendix D of 10 CFR Part 50. It is now the Commission's position that the EIS include consideration of site specific environmental impacts including accident sequences that can result in inadequate cooling of reactor fuel and melting of the reactor core. In summary the McGuire FEIS requiresreconsideration in regard to Class 9 accidents, a matter to which the FEIS did not speak.

18. The emergency plan which was appropriate for the design basis accident is not appropriate for a core meltdown or containment breach accident. The McGuire plant is about 10 miles from the Charlotte city limit. Charlotte continues its demographic and areal growth.

19. A core melt accident would deliver impermissible doses of radioactivity to the public at distances greater than 10 miles (NUREG-0396; EPA 520/1-78-016, Fig. I-11, I-12, and I-13). The low probability of such an accident asserted at the time of publication (1978) was based on NUREG-1400. This low probability is no longer asserted, in the light of the Risk Assessment Review Group Report (NUREG-0400), the Proposed NRC Statement on Risk Assessment and the Reactor Safety Study Report (WASH-1400) (SECY-78-637), and the TMI

experience. A current appraisal of the environmental consequences of containment burst for a 1000-1200 MW reactor does not appear to have been published.

20. The NRC has upgraded emergency planning regulations (Fed. Reg./vol. 45, No. 162/Tuesday, Aug. 19, 1980) to be effective November 3, 1980. In consideration of the large population at risk, a special circumstance, the emergency planning zone radius of 10 miles is too small. An increase in this radius would make some provision for the evacuation of Charlotte in the event of a Class 9 accident. The plan currently under consideration makes no reference to Charlotte.

21. The TMI accident introduced the NRC and the industry to an unanticipated type of incident in which there were a sequence of functional difficulties (obstructed flow of feedwater due to faulty deionizer operation), improper operations (isolation of the auxiliary feed water supply loop), equipment failure (failure of the power operated relief valve to reseat), instrument reading misinterpretation (disregard of the high temperature of the pressurizer relief line) and accident mismanagement (premature reduction of ECCS flow for fear the primary loop would go "solid"), (NUREG-0578, NUREG-0585, NUREG-0600, the Kemeny Report, and the Rogovin Report).

There is really no assurance that present protective provisions will prove effective for some as yet unencountered accident sequence. The pre-TMI assurances as to the adequacy of analysis and computer codes as means of characterizing accident sequences and evaluating risks have been supplanted by the realization that it is improbable that all accident sequences have been discovered. The requirement of shift technical advisors (NUREG-0694, I.A.1.1, p. 10) is an attempt to deal with this reality.

The accidents at Fermi, Browns Ferry, and Three Mile Island work out to three totally unanticipated major accidents in about 450 reactor years, i.e. 150 reactor years per major accident. This actual probability does not provide reassuring odds for Charlotte which, if present plans are actualized, will have four nearby reactors with a projected operation of about 150 reactor years.

ARGUMENT

In response to Applicant's Memorandum, the omission of a number of material facts and the flaws in a number of those iterated show that there is a genuine issue as to material fact (p. 5). Applicant is not entitled to summary disposition on the basis of the facts alleged.

In that a low power license is an unavoidable way-stage in the pursuit of a full power license, changes in circumstances in regard to a full power license are material to a low power license application. The circumstances in regard to need for power have changed greatly since the CP stage. Actual peak demand is but two thirds what Applicant forecast it would be. The rate in growth of demand is a small fraction of the rate forecast. Alternative energy sources are no longer a subject for speculation. Wood stoves are in widespread and growing use in Applicant's service area. The North Carolina legislature has taken a leading role in matters of energy conservation, load management, and the development of alternative energy sources. It is now credible that Applicant's peak demand will become level in several years and fall well within Applicant's present reserve. Cogeneration will add to this reserve. The change in circumstances require a reexamination of the cost-benefit weighing.(id. p.7, B.1).

Applicant's assertion that "the ECCS will not fail" and that the EC[illegible] "will not be prematurely terminated by operator action" are worthwhile goals. It is simply a matter of common sense to recognize that good management level intentions are not sufficient to guaratee subsequent actions and events in operation (id. p. 10).

The Staff approvals on which Applicant relies to validate ECCS design all predate the learning period subsequent to TMI--NUREG-0422, March, 1978; Suppl. 2, March 1979. Similarly the CP stage testimony was proferred in the dark ages as concerns LWR accident experience. The conclusions of that period which have a significant bearing on the present and the future require scrupulous reexamination--best provided in an adversarial context. All that is needed to collapse Applicant's house of ECCS cards is a substantial electrical failure.

The Rasin affidavit also manifests an incautious, possibly desperate, prophetic certainty, "short term operation at power levels of no more than 5% presents no risk to the health and safety of the public due to hydrogen generation," (p.2).

"[I]nconceivable" is the term Applicant uses to describe an inability to provide coolant water at a rate of 13-15 gallons per minute. Only a few years ago Applicant lost steam Marshall for a long period because a high voltage transformer went out. Reference has been made foregoing to the poor record in nuclear industry of Diesel generator starts. A McGuire plant power blackout, although it may be of low probability, is certainly conceivable. A mindset which cannot consider the possible does not augur well for safety.

Applicant puts the time to begin hydrogen evolution in a LOCA with an inoperative ECCS at 3900 seconds (p. 13). This 1 hour and 5 minutes.

Applicant concludes that the Board should rule, "based on irrefutable facts noted herein", that "excessive amounts of hydrogen" will not be generated (pp. 13, 14). CESG believes that the facts are more correctly interpreted as signifying that if a LOCA occurs and the active part of the ECCS remains inoperable, and due to power loss other pumps will not operate, that an explosive concentration of hydrogen will develop (in about 18 hours, Riley Affidavit).

ADDITIONAL CONTENTIONS

CESG contends, in addition to its Revised Contentions of August 15, 1980:

5. Under current practice the NRC is required to issue an environmental impact statement as to the consequences of Class 9 accidents. Such an environmental impact statement is required for McGuire.

6. The emergency plan for McGuire must, due to the special circumstance of close proximity to a large population center, be revised to provide an emergency response for the city of Charlotte in the event of a Class 9 accident.

COMMISSION ACTION ON MOTION TO RECONSIDER CLI-80-16

The Commission ruled against UCS's motion for reconsideration of hydrogen questions in the TMI-1 restart proceeding (September 26, 1980). The basis for the ruling was that UCS had not shown special circumstances. In the present matter special circumstances exist, particularly the low pressure containment, the pre-TMI approval of siting, and the proximity of a population center.

Only two commissioners joined in this ruling. They were opposed by the other two. The appointment of a fifth member as chairman is pending and will result in rulings supported by a clear majority.

CONCLUSIONS

The facts alleged by Applicant in support of a motion for summary disposition requesting the authorization to grant a license for low power operation and testing are in part inaccurate and, additionally, incomplete.

There is an abundance of NRC documentation to indicate that a hydrogen explosion in a McGuire low pressure containment would be the cause of serious consequences to public health and safety (SECY-80-107, 107A, 107B).

It is a physical possibility, attested by NRC staff, that a core used at no more than 5 percent power can, in a LOCA absent the active ECCS components, generate sufficient heat to boil off coolant thereby exposing the core, and to raise the core temperature sufficiently to initiate the production of hydrogen. The amount of hydrogen produced can bring the hydrogen content of the containment to reach and exceed the lower explosive limit for hydrogen.

McGuire is close to Charlotte. Emergency planning for Charlotte does not exist. A Class 9 accident such as containment rupture by a hydrogen explosion could cause grave injury to health and property in that population center.

The hazards of a Class 9 accident are likely to be far greater for full power operation for thirty to forty years than for a few weeks of low power testing. As low power testing is only needed if full power operation is sought, a reopened hearing should consolidate consideration of the applications for both low and full power licenses.

The Board should deny Applicant's instant motion for summary disposition and hold a consolidated hearing regarding licensing.

Respectfully submitted,

Jesse L. Riley

Jesse L. Riley, President
Carolina Environmental Study Group
854 Henley Place
Charlotte, N. C. 28207

At Charlotte, N. C.
November 7, 1980