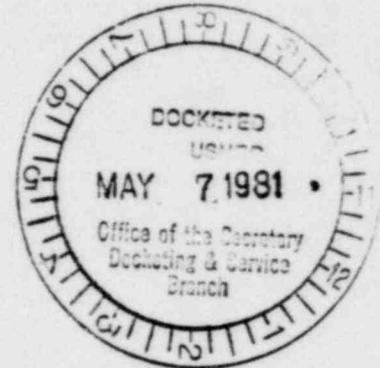




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UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION  
ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:  
Robert M. Lazo, Esquire, Chairman  
Emmeth A. Luebke, Ph.D.  
Richard F. Cole, Ph.D.



In the Matter of  
DUKE POWER COMPANY

Docket Nos. 50-369 OL  
50-370 OL

(William B. McGuire Nuclear Station,  
Units 1 and 2--Reopened Operating  
License Proceeding)

May 6, 1981

MEMORANDUM AND ORDER REGARDING APPLICANT'S  
MOTION FOR LICENSE AUTHORIZING OPERATIONS  
UP TO AND INCLUDING 35 PERCENT RATED POWER OPERATIONS

On March 24, 1981, Duke Power Company (Applicant) filed a "...Motion for License Authorizing Operations Up To and Including 35 Percent Rated Power Operations" pursuant to the provisions of 10 C.F.R. §50.57(c).<sup>1/</sup> On April 2, 1981, the Intervenor, Carolina Environmental Study Group (CESG), filed a reply in opposition to the motion and requested that it be denied. In its response dated April 8, 1981, the Nuclear Regulatory Commission Staff

<sup>1/</sup> Applicant's motion for authorization to ascend to a 35 percent power level was first presented orally at the close of the evidentiary hearings on March 19, 1981. At the request of the NRC Staff, the Board directed that the motion be in writing.

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(Staff) raised no objection to Applicant's motion. However, the Staff requested leave to respond to objections raised by CESG's reply to the motion. The Atomic Safety and Licensing Board (Licensing Board) granted the Staff's request on April 10, 1981 and afforded Applicant a like opportunity to respond. Pursuant to the Licensing Board's Order, Applicant and Staff filed responses to CESG's reply on April 17, 1981. Both urge the Board to grant Applicant's 35 Percent Rated Power Operations Motion.

The only issue in controversy and subject to resolution in this proceeding is whether a small break LOCA event, such as the TMI accident, resulting in excessive hydrogen generation leading to offsite doses in excess of Part 100 limits is credible at the McGuire facility.

In support of its motion, Applicant cites the testimony of witness R. A. Muench for the proposition that, at 35 percent rated power, a TMI event generating sufficient hydrogen to threaten containment, cannot occur. Specifically, the Muench testimony relied on in Applicant's motion, asserts that for the specific scenario analyzed by Mr. Muench--a loss of feedwater event, with circulation in four steam generators, with auxiliary feedwater not resumed for over an hour, at 35 percent power operation--power operated relief valves (PORV) would not be opened. Thus, there would be no loss-of-coolant accident. Nor would metal-water reaction beyond 2 percent of core inventory occur. Therefore, Applicant argues, within the limits of

this scenario, the matters raised by the issue in controversy<sup>2/</sup> are not relevant since no substantial amount of hydrogen is generated. According to Applicant, this situation results from (1) the reduced volume of steam that would be generated at 35 percent power in a TMI accident at McGuire, and (2) the increased size of the Westinghouse Steam generators (as compared to the smaller Babcock and Wilcox steam generators present at TMI) which generators provide a heat sink of such volume that injection of auxiliary feedwater is unnecessary for periods well in excess of the time auxiliary feedwater was supplied in the TMI accident.

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<sup>2/</sup> Contentions 1 and 2 read as follows:

Contention 1 - The licensee has not demonstrated that, in the event of a loss-of-coolant accident at McGuire:

1. Substantial quantities of hydrogen (in excess of the design basis of 10 C.F.R. section 50.44) will not be generated;
2. That, in the event of such generation, the hydrogen will not combust; and
3. That, in the event of such generation and combustion, the containment has the ability to withstand pressure below or above the containment design pressure, thereby preventing releases of off-site radiation in excess of Part 100 guideline values.

Contention 2 - Neither licensee nor NRC staff has demonstrated that a McGuire ice containment will not breach as the result of the rapid combustion of quantities of hydrogen which a dry containment would withstand.

In its reply, CESG has raised two objections to Applicant's motion:

1. That CESG contentions 3 and 4<sup>3/</sup> raise matters in controversy concerning protection of the public health and safety and that an initial decision on these matters must be rendered under §50.57(a)(3) before the partial power operation requested may be authorized.
2. That the testimony of Mr. Muench, relied on in Applicant's motion, relates only to a replay of the TMI-2 accident and does not address the broader spectrum of loss-of-coolant accidents which are raised by CESG Contention 1.

CESG has therefore asserted that Contentions 1, 3 and 4 have been raised as matters in controversy and argues that findings must be made on each under §50.57(a)(3) prior to authorization of partial power operation.

Applicant, in its response to CESG's reply, notes that CESG does not challenge the authenticity of the testimony of Applicant's witness Muench, but instead raises three concerns regarding (1) the possibility of loss of power coupled with a TMI accident; (2) the possibility of failure to reinitiate auxiliary feedwater in 4000 seconds; and (3) the possibility of steam generators at McGuire boiling dry during the scenario. Applicant

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<sup>3/</sup> Those contentions read as follows:

Contention 3 - Neither licensee nor NRC staff has demonstrated that the emergency planning radius of 10 miles is sufficient for protecting the public from the radioactive releases of a low pressure, ice condenser containment ruptured by a hydrogen explosion.

Contention 4 - Licensee and NRC planning do not provide for crisis relocation which would be required as a result of containment breach and radioactive particle release.

argues that because during the TMI accident there was no loss of power, and auxiliary feedwater was established within approximately 480 seconds, CESG's first two concerns are well beyond the scope of a TMI accident. With regard to CESG's third concern regarding McGuire steam generators boiling dry, Applicant states that its testimony shows that McGuire steam generators are significantly larger and of a different design than those at TMI and that at 35 percent power, assuming auxiliary feedwater was not restored for 10 minutes, the steam generator level would have only dropped to approximately 75 percent of its original value.

As for Contentions 3 and 4, relating to insufficiency of emergency response in the event of a breach of containment resulting from a hydrogen explosion, Applicant simply argues that because excessive hydrogen will not be generated with regard to the matter in controversy (a TMI accident) at 35 percent power operation, these contentions do not come into play.

In its response to CESG's reply, the Staff agrees with the Applicant that Contentions 3 and 4 are contingent upon a showing that such a pressure increase and resulting breach of containment are credible events, which in turn, is the specific issue placed in controversy by Contentions 1 and 2. Staff argues therefore, that a finding favorable to CESG on Contentions 1 and 2 is a necessary predicate to the assertion postulated by Contentions 3 and 4 and, for Contentions 3 and 4 to be "relevant" to the partial power motion, there must be an initial determination by the Licensing Board in favor of CESG on Contentions 1 and 2. We agree and hold accordingly, that the simple interposing by CESG of Contentions 3 and 4 as objections to the partial power license does not raise these issues to the level of contentions relevant to the requested partial power license.

The Staff agrees with CESG that Contention 1 is not limited to an exact replay of the TMI-2 loss of feedwater event, but has encompassed other small break LOCA events (with a significant emphasis on S2D). The Staff concludes that the Muench testimony, standing alone, does not demonstrate that substantial quantities of hydrogen cannot be generated as a result of a small break LOCA event, other than the specific event addressed by Mr. Muench, occurring while the facility is at 35 percent power.

While the Staff is of the opinion that the specific testimony cited in Applicant's motion is not sufficient for the Board to make needed findings, it notes that there is an extensive record of evidence in this proceeding addressed to the issue raised by Contention 1 and invites the Board to look to this entire record in determining whether to grant Applicant's motion.

We agree that the Muench testimony fails to demonstrate that Contention 1 is not relevant to 35 percent power operation. Simply stated, Mr. Muench's testimony, standing alone, cannot convince us that there is not a credible accident sequence at McGuire which could lead to a breach of containment. Mr. Muench's responses to questions by counsel for parties and by the Board are in the nature of summary statements and infer that supporting studies and analyses were made for the 35 percent of rated power case.<sup>4/</sup> However, reports of these supporting studies and analyses are not a part of the record. For several questions, the witness testified that he did not recall the numbers,<sup>5/</sup> and when questioned regarding the

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<sup>4/</sup> Tr. 3046-51, 309-98, 3083 and 3104.

<sup>5/</sup> Tr. 3049-50 and 3097.

McGuire steam generators, testified that he had not done the calculation regarding water volume.<sup>6/</sup>

For the reasons set forth above, Applicant's motion for license authorizing up to 35 percent rated power operations must be denied. The motion may well have merit. However, we are disinclined to put aside our current endeavors involving consideration of a full-power license for the McGuire facility in order to embark on a search of the extensive record in this proceeding seeking evidence that would expand upon the Muench testimony sufficiently for the Board to make the needed findings regarding a 35 percent power license.

ORDER

For all the foregoing reasons and based upon a consideration of the record in this matter, it is this 6th day of May, 1981

ORDERED

That Applicant's March 24, 1981 motion for license authorizing operations up to and including 35 percent rated power operations, is denied.

ATOMIC SAFETY AND  
LICENSING BOARD

Emmeth A. Luebke  
Emmeth A. Luebke  
ADMINISTRATIVE JUDGE

Richard F. Cole by R.M.L.  
Richard F. Cole  
ADMINISTRATIVE JUDGE

Robert M. Lazo  
Robert M. Lazo, Chairman  
ADMINISTRATIVE JUDGE