

DOCKETED  
USNRC

'82 SEP 28 11:11

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

OFFICE OF SECRETARY  
DOCKETING & SERVICE  
BRANCH

-----  
In the Matter of

Consumers Power Company  
(Big Rock Point)

Docket Number  
50-155-OLA

-----  
PROPOSED FINDINGS OF FACT  
AND CONCLUSIONS OF LAW ON  
O'Neill Contention II C: THE  
CASK DROP ISSUE

I. INTRODUCTION

O'Neill Contention IIC, as reworded by the Licensing Board is its "Memorandum and Order (Concerning Motions for Summary Disposition)", reads:

"Is the spent fuel pool safe from a rupture which might be caused by a drop of a spent fuel pool transfer cask or of the overhead crane?"

At the licensing Board Hearing in June of this year, the parties agreed to "split" this issue by discussing only those issues relevant to the drop of a transfer cask. Argument on issues dealing with the overhead crane was reserved until the hearing resumes at a later date.

DS03

However, it is Intervenor's contention that these two issues necessarily overlap, and that a reasoned discussion of cask drop issues cannot proceed entirely independent of considerations related to the overhead crane. For this reason, Intervenor would request to reserve the right to amend or expand upon findings of facts noted herein related to "cask drop" issues until the completion of argument on "overhead crane" issues. Because of the obvious similarity inherent between these "two" issues, this request is only fair and will not prejudice the hearing process in any way. For these reasons, Intervenor will propose findings only on "safety sling" mechanism.

## II. Discussion

An analysis of a cask drop accident necessarily involves an analysis of the "safety sling" mechanism proposed by Licensee. The NRC Staff has indicated that it needs more information before Big Rock uses the safety sling on loads exceeding 24 tons. This is not surprising since the proposed use of the "safety sling" has never been tested. In fact, the safety sling mechanism proposed by Licensee has never been used before in nuclear plant operations. (Transcript, p. 2464)

Assuming a failure of the primary cask lifting sling, the safety sling, which consists of two wire ropes suspended from the trolley of the semi-gantry crane, would presumably "catch" the transfer cask. The total drop, as estimated by MPR

Associates, before the cable is engaged by the lifting device, is on the order of inches (2.98). The dynamic loading on the safety sling assembly is entirely dependent on the size of that number. Based in the 2.98 drop figure, MPR calculated that the dynamic load in the safety sling assembly would be 148 tons (design is 150 ; 75 for each sling) assuming that the load on the safety sling assembly is shared equally between the two individual wire ropes. Of course, in an accident in which the safety sling mechanism would be engaged, it is highly likely that one sling would be more highly loaded than the other. Mr. John Johnson, of MPR Associates, testified that, according to the 1980 MPR analysis, the maximum load of the highest loaded sling would be 8% higher than the design of 75 tons (per sling). Of course, this percentage could be much higher given a deviation of even one-half inch (to 3.5) in the total drop before the cable is engaged by the lifting device.

It is apparent that a deviation from the 2.98 drop figure could cause even more significant loading in a situation where an unequal dynamic loading occurs. The "safety-sling" proposed by Licensee is deficient to perform its intended safety function because an unequal dynamic loading on one of the two ropes would exceed the design load of 75 tons (assuming a drop of 2.98) by at least 8 percent. This leaves practically no room for error. And the consequences of a failure of the safety sling mechanism far outweigh the risk that the design load of the sling will be exceeded.

Hence, Intervenors request that the Board find that the "safety sling", as proposed by Licensee, is not sufficiently designed to perform its intended safety function and prevent the transfer cask from dropping in case of a primary sling failure. In the alternative, Intervenors would request that the Board order <sup>copy</sup> Licensee to insure that the total drop before the sling is engaged by the lifting device be decreased to a number substantially under 2.98, and that proper administrative controls be instituted to check all applicable clearances to insure a drop distance below that figure.

Also, it should be noted that Licensee must meet the guideline requirements of NUREG - 0612, and in particular, those guidelines dealing with safe load paths. The NRC staff notes that movement of the 24 ton transfer cask from the storage area to the refueling area is not treated as a safe load path by Licensee. Intervenors respectfully request that the Board order Licensee to treat this movement as a safe load path and to <sup>label</sup> label this route as such before any operation in this area proceeds.

### III. Conclusion

For the reasons stated above, the Intervenors request that the Board reject Licensee's proposed use of a "safety-sling" mechanism, or, in the alternative, impose restrictions which will insure that it can withstand all dynamic load situations. Also, movements of the 24 ton transfer cask from the storage area to the refueling area should be treated as a safe load

path and designated as such.

Respectfully Submitted,

*Herbert Semmel*

Herbert Semmel  
Counsel for Intervenors

On the Memorandum,

*Matthew C. Mackre*

Matthew C. Mackre  
Legal Intern

HS, MM/k1

CERTIFICATE OF SERVICE

DOCKETED  
USNRC

'82 SEP 28 A11:11

I certify that on the 24 day of September, 1982, the foregoing Intervenor's Proposed Finding of Fact was served on the attached list by mailing copies thereof by United States Mail, First Class, postage prepaid.

OFFICE OF SECRETARY  
DOCKETING & SERVICE  
BRANCH

*Herbert Samuel*  
Counsel for Intervenor's

Atomic Safety and Licensing  
Board Panel  
U.S. Nuclear Regulatory  
Commission  
Washington, D.C. 20555

Peter B. Bloch, Esq., Chairman  
Atomic Safety and Licensing  
Board Panel  
U.S. Nuclear Regulatory  
Commission  
Washington D.C. 20555

Dr. Oscar H. Paris  
Atomic Safety and Licensing  
Board Panel  
U.S. Nuclear Regulatory  
Commission  
Washington D.C. 20555

Mr. Fredrick J. Shon  
Atomic Safety and Licensing  
Board Panel  
U.S. Nuclear Regulatory  
Commission  
Washington D.C. 20555

Janice E. Moore, Esq.  
Counsel for NRC Staff  
U.S. Nuclear Regulatory  
Commission  
Washington, D.C. 20555

Joseph Colic, Esquire  
Isham, Lincoln and Beale  
1120 Connecticut Ave, N.W.  
Suite 325  
Washington, D.C. 20036

---

Docketing and Service Section  
Office of the Secretary  
U.S. Nuclear Regulatory  
Commission  
Washington, D.C. 20555

John O'Neill, II  
Route 2, Box 44  
Maple City, MI 49664