SHOLLY, 6/9/80

UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of METROPOLITAN EDISON COMPANY (Three Mile Island Nuclear Station, Unit No. 1)	Docket No. 50-289 (Restart)

INTERVENOR STEVEN C. SHOLLY
MOTION REGARDING MEMORANDUM
AND ORDER ON HYDROGEN CONTROL
CONTENTIONS (Board, 5/30/80)

On 5/30/80, the Board responded to the Commission's Memorandum and Order of 5/16/80, CLI-80-16, which answered two questions certified by this Board to the Commission dealing with hydrogen gas control contentions. The Board responded to the Commission Order without benefit of input from any of the parties, especially from those parties whose interests are more directly involved, i.e., myself, UCS, and ANGRY.

I note from the outset that counsel for UCS, Ms. Ellyn Weiss, has moved the Commission to Reconsider their rulings made in CLI-80-16 (See UNION OF CONCERNED SCIENTISTS' MOTION FOR RECONSIDERATION OF CLI-80-16, 6/4/80), a motion which I support wholeheartedly. Nonetheless, I am compelled to respond to the Board's Order which goes beyond the Commission's decision and totally rewrites the Contention which I submitted, Sholly Contention #11.

The Commission's Order authorizes litigation of a contention which addresses the likelihood of an accident which would generate hydrogen in excess of 10 CFR 50.44 design basis limits. It would seem to me that it would be pointless to argue on this point, since the only conditions under which hydrogen

could be generated in excess of design limits would appear to be those conditions leading to the uncovering of the core (i.e., a loss-of-coolant-accident, LOCA). Assuming the engineered safeguards systems are capable of preventing core uncovery (although this is not entirely clear), the question would appear to resolve into a litigation of the likelihood of operator interference with ECCS systems. It would appear to be inconceivable that the participants in this proceeding could come to any reasonable estimate of the likelihood of this occurrence. The conditions which may lead to operator error in premature intervention in ECCS functioning are clearly so individualized with respect to the operators, the plant involved, and the "mindset" of the operators at any given time when a LOCA occurs, that it seems to me to be pointless to argue on this point.

Clearly, operator interference with ECCS function can lead to the production of hydrogen beyond the 10 CFR 50.44 limits; the TMI-2 accident is proof positive of this fact. Simple written instructions to operators from the NRC will not preclude such an occurrence from happening again in the future, since operators can misinterpret the instructions, misinterpret plant conditions, and since instrumentation can fail or produce erroneous readings, any one of which could lead again to a large generation of hydrogen gas. Plant operators, as human beings, can be <u>expected</u> to undergo "single failures" and intervene inproperly in ECCS function.

The question, in my view, comes down to this: In the event of the production of large quantities of hydrogen with the inherent risk of combustion or explosion in the containment, how is the public health and safety <u>best</u> protected? There are a number of choices for action in this regard:

1. Procedures and systems could be left unchanged, relying on containment purge to remove excess hydrogen, with the

implicit assumption of higher than 10 CFR 20 doses to the public, and perhaps higher than 10 CFR 100 doses (I view the latter doses as being immaterial in this instance--explanation later).

2. Procedures and systems could be left unchanged, relying on the hydrogen recombiner to remove what hydrogen it can, permitting the remainder to combust or explode and relying on containment integrity to prevent high radiation doses t the public.
3. Procedures and systems could be altered, adding additional engineered safeguards or other systems which would mitigate either the results of combustion or explosion in containment, the results of containment purge, or reduce the likelihood of hydrogen combustion or explosion.

In my view, the first two alternatives are pointless. The doses in 10 CFR 100 are not meant to be acceptable under any circumstance. The are present in the regulations more as an academic exercise for conservative assumptions; i.e., assuming the worst, prove that these doses are not exceeded. The doses in 10 CFR 100, if received by the general public, would result, almost certainly, in the shutting down of every nuclear facility in the country, if not in the world. Such doses would not be politically acceptable, at the very least.

In my view, the only appropriate choice of action, in the absence of realistic probabilities of occurrence, is to take the conservative action, which in the present case would result in additional safeguards. The wording of the Board's version of Sholly Contention #11 would appear to preclude following

such a path in the litigation of the issue. I am therefore, moving that the Board reconsider its ruling in its 5/30/80 Memorandum and Order and permit the substitution of the following as Revised Sholly Contention #11:

REVISED SHOLLY CONTENTION #11

It is contended that the TMI-2 accident clearly shows that the generation of hydrogen gas under conditions of a LOCA can, due to operator intervention, exceed the design limits specified in 10 CFR 50.44, and that such hydrogen generation is beyond the capabilities of presently available hydrogen recombiner systems to adequately eliminate the potential for hydrogen combustion and/or explosion in containment. It is therefore contended that, absent a showing that in the event of a LOCA at TMI-1:

a. Substantial quantities of hydrogen (in excess of the design basis of 10 CFR 50.44) will not be generated, and

b. That, in the event of such generation of hydrogen, the hydrogen will not combust or explode, and

c. That, in the event of such generation and combustion or explosion, the containment has the ability to withstand the pressure resulting from such combustion or explosion (whether the pressure is below or above containment design pressure), thereby preventing releases of radiation to off-site areas in excess of 10 CFR 100 guidelines,

additional measures are necessary to adequately protect the public health and safety. It is further contended that should additional

measures be necessary, these measures must be implemented and operational prior to Restart of TMI-1.

In view of the circumstances surrounding the hydrogen gas control contentions and the substantial changes which have been necessary in wording due to Commission rulings, I move the Board to permit an additional period of discovery on this issue, in line with the following guidelines:

a. A period of 14 days for original discovery requests to be submitted.

b. A period of up to 14 days to respond to these discovery requests.

c. A period of 7 days for follow-on discovery requests related to the original requests, with written explanation as to why the original response was inadequate, how the original response necessitated a follow-on discovery request, and if so, why the subject matter of that follow-on request could not have been anticipated at the time the original request was submitted.

d. A period of 7 days to respond to follow-on discovery requests.

This additional request for discovery will not materially alter the schedule for litigation, since this issue could easily be scheduled for late in the proceeding if necessary.

Respectfully submitted,

DATED: 9 June 1980

Steven C. Sholly

Steven C. Sholly

SHOLLY, 6/9/80

UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of METROPOLITAN EDISON COMPANY (Three Mile Island Nuclear Station, Unit No. 1)	Docket No. 50-289 (Restart)

CERTIFICATE OF SERVICE

I hereby certify that single copies of INTERVENOR STEVEN C. SHOLLY MOTION REGARDING MEMORANDUM AND ORDER ON HYDROGEN CONTROL CONTENTIONS (Board, 5/30/80), were served upon the following by deposit in the mail, postage prepaid, this 9th day of June 1980:

Mr. George F. Trowbridge, Esq.
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I further certify that a single copy of the aforementioned document was delivered to Mr. John Wilson of Licensee's staff at TMI for service to the remainder of the parties in this proceeding.

Steven C. Sholly

Steven C. Sholly
9 June 1980

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
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METROPOLITAN EDISON COMPANY	)	Docket No. 50-289
	)	(Restart)
(Three Mile Island Nuclear	)	
Station, Unit No. 1)	)	

CERTIFICATE OF SERVICE

I hereby certify that copies of Intervenor Steven C. Sholly Motion Regarding Memorandum and Order on Hydrogen Control Contentions (Board, 5/30/80) dated June 9, 1980, which was hand delivered to Licensee at Three Mile Island Observation Center, Middletown, Pennsylvania, on June 9, 1980, were served upon those persons on the attached Service List by deposit in the United States mail, postage paid, this 10th day of June, 1980.

John F. Wilson

John F. Wilson

Dated: June 10, 1980

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
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METROPOLITAN EDISON COMPANY	)	Docket No. 50-289
	)	(Restart)
(Three Mile Island Nuclear	)	
Station, Unit No. 1)	)	

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