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January 29, 1986

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

Before the Atomic Safety and Licensing Appeal Board

In the Matter of	)	
	)	
THE CLEVELAND ELECTRIC ILLUMINATING CO. ET AL.	)	Docket Nos. 50-440 OL 50-441 OL
	)	
(Perry Nuclear Power Plant, Units 1 and 2)	)	

OCRE MEMORANDUM ON APPEAL BOARD QUESTIONS

In its January 3, 1986 Memorandum and Order the Appeal Board posed two questions to the parties to be answered in written memoranda by January 21, 1986.[1] Intervenor Ohio Citizens for Responsible Energy ("OCRE") hereby files its answers to the questions.

QUESTION 1

The first question asks whether, in light of the directive of 10 CFR 50.44(c)(3)(vi)(B)(3) that accident scenarios considered under the hydrogen control rule are to describe the behavior of the reactor system during and following a degraded core accident,

> was it proper for the Licensing Board, in connection with its assessment of the applicants' preliminary hydrogen control analysis, to admit and to consider evidence concerning assumptions related to specific details of the accident, such as containment spray availability, station blackout, and the operability of the Reactor Core Isolation Cooling System? If not, does the rule nevertheless require the applicants' final analysis to include a determination with respect to the appropriateness of such assumptions?

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[1] This deadline has been extended to January 29, 1986 by the January 17 order of the Appeal Board granting the NRC Staff's motion for an exension of time to respond.

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OCRE asserts that it was indeed proper for the Licensing Board to admit evidence regarding the specific details of the degraded core scenarios, such as station blackout, containment spray availability, and operability of RCIC, in its assessment of the preliminary analysis. Unfortunately, the Licensing Board did not really consider the evidence it had admitted, but instead contrived excuses for ignoring the evidence.

As addressed in OCRE's Appellate Brief (pp. 2-12), the Licensing Board lacks statutory authority to consider anything less than issues relating to a full-term, final, forty-year operating license, and the hearing (and resultant decision) must encompass all material issues raised by the requester. Union of Concerned Scientists v. NRC, 735 F.2d 1437, 1443 (D.C. Cir. 1984). Thus, regardless of whether Staff and Applicants considered matters such as station blackout (as it concerns degraded core hydrogen control) to be more appropriate for the final analysis, once OCRE raised the issue, the Licensing Board was required to consider it in its licensing decision.

Furthermore, the Supplementary Information in the Federal Register notice (50 FR 3498, January 25, 1985) on the hydrogen control rule indicates that such matters are properly considered in the preliminary analysis. At 50 FR 3502 the requirement of 10 CFR 50.44(c)(3)(vi)(B)(3) is discussed, with examples of scenarios found acceptable for Sequoyah, a PWR with an ice condenser containment. The Sequoyah applicant initially proposed one accident scenario, a small break LOCA with loss of ECCS, but broadened its studies in response to Staff concerns, such as steam inerting, hydrogen release after loss of the

containment heat sink (i.e., the ice had melted), and whether the steam and hydrogen release rates assumed were appropriate for other scenarios and the recovery period of the accident.

The additional Sequoyah calculations are said to bound "a representative selection of scenarios," including

> an intermediate break LOCA with loss of ECC [S1D], a small break LOCA with loss of containment heat removal [S2G], a transient loss of main feedwater and loss of all AC power [TBB2], and a transient loss of main feedwater, loss of auxiliary feedwater and loss of the ECC [TBLD].

Section (vii)(B) of the hydrogen rule indicates that the referenced analyses for Sequoyah are apparently equivalent to the preliminary analysis, so much so that similar (i.e., PWR ice condenser) plants need not provide a preliminary analysis to support operation at full power. While it is certainly true that BWRs have to address different scenarios due to obvious differences in plant design, the Sequoyah analyses show the general events and failures, specifically including station blackout and loss of containment heat removal (i.e., containment spray and/or RHR failure in the Mark III), to be considered in the preliminary analysis.

QUESTION 2

The second question posed by the Appeal Board asks

> what is the justification for applicants' and the staff's reliance on an analysis that apparently <u>requires</u> the operation of the containment spray system as a heat removal device in order to maintain containment integrity? Given this requirement, does not the containment spray become a necessary part of the hydrogen control system and hence fall within the scope of the new hydrogen rule?

OCRE does not know why Applicants and Staff have relied upon an analysis requiring the operation of containment sprays to

maintain containment integrity, especially in light of the Staff's previous statement that "it appears inconsistent to assume that components of a core cooling system would be available to provide containment spray flow" in a degraded core accident and "if spray availability is questionable, do not consider them in the containment analysis." OCRE Ex. 19 at 4.

But, since Applicants' analysis does rely upon containment spray operation (see, e.g., Notafrancesco I at 5-6; Applicants' Ex. 8-1 at 28 and Appendix A, p. 16), and since containment sprays, being the dominant heat transfer mechanism, are necessary to maintain containment integrity (see, e.g., OCRE Ex. 21 at 11 [questionable availability of containment sprays is a factor in Sandia's judgement of the igniter system as marginally adequate], 12, 17, 29, 94, and 196 [Sandia's recommendation that sprays be activated along with the igniters, apparently implemented at Grand Gulf (compare Applicants' Ex. 8-1 at 23)]), they should be considered a necessary part of the hydrogen control system and fall under the new hydrogen rule.

Applicants in fact concede the relevance of the containment spray and other systems to their hydrogen control analysis. "The containment systems relevant to the analysis of the HCS include the containment structure, containment heat removal systems, combustible gas control system, and the suppression pool make-up system." Applicants' Ex. 8-1 at 24. Under the standard provided in previous litigation of hydrogen control, this conceded relevance is an admission that these systems are to be considered part of the hydrogen control system. Duke

Power Co. (Wm. B. McGuire Nuclear Station, Units 1 and 2), LBP-81-13, 13 NRC 652, 669-70 (1981):

> the igniters work in combination with other containment systems, including the ice condenser system, the containment air return system, the hydrogen skimmer system, and the containment spray system[.]

which the Appeal Board in ALAB-669, 14 NRC 453, 467 (1982) characterized as:

> the hydrogen mitigation system consists of igniter assemblies (essentially electric power "glow plugs" similar to those used to assist initial ignition in diesel engines) strategically placed in various parts of the containment, air return fans, hydrogen skimmer fans, and containment sprays.

Thus, for Perry the containment spray system should be considered a necessary part of the hydrogen control system, contrary to the Licensing Board's finding (LBP-85-35 at 43-44, 55), and its availability is a proper matter for consideration under the new hydrogen control rule.

Respectfully submitted,

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CERTIFICATE OF SERVICE

This is to certify that copies of the foregoing were served by deposit in the U.S. Mail, first class, postage prepaid, this 29th day of Jan., 1986 to the Service List.

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