

Docket Nos.: 50-440
and 50-441

AUG 30 1984

Mr. Murray R. Edelman
Vice President - Nuclear Group
The Cleveland Electric Illuminating Company
P. O. Box 5000
Cleveland, Ohio 44101

Dear Mr. Edelman:

Subject: Request for Additional Information Regarding Hydrogen Control
for the Perry Nuclear Power Plant (Units 1 and 2)

As a part of its continuing review of hydrogen control for Mark III containment design plants during postulated degraded core accidents, the NRC staff has identified the need for additional information on several matters. The information being requested by the enclosed questions pertain to the CLASSIX-3 Code which has been used by the Hydrogen Control Owners Group to support the licensing activities associated with Mark III plants; e.g., determining the environmental conditions against which equipment survivability is to be evaluated.

Your response to the enclosed questions should be identified as answering Q.480.55 through Q 480.57 for eventual documentation in the Perry FSAR. Please advise the Project Manager when we may expect to receive your responses to the enclosed questions within 7 days after receipt of this letter.

Sincerely,

151
B. J. Youngblood, Chief
Licensing Branch No. 1
Division of Licensing

Enclosure:
As stated

cc: See next page

CONCURRENCES:

DL:LB#1

JStefano:es

8/30/84

DL:LB#1

BJYoungblood

8/30/84

DIST:

Docket File

NRC PDR

Local PDR

PRC System

NSIC

LB#1 Rdg

MRushbrook

JStefano

OELD, Attorney

ACRS (16)

EJordan

NGrace

RWHouston

WRButler

ANotafrancesco

CStahle

8409110182 840830
PDR ADOCK 05000440
A PDR

PERRY

Mr. Murray R. Edelman
Vice President, Nuclear Group
The Cleveland Electric Illuminating Company
P. O. Box 5000
Cleveland, Ohio 44101

cc: Jay Silberg, Esq.
Shaw, Pittman, Potts & Trowbridge
1800 M Street, N. W.
Washington, D. C. 20006

Donald H. Hauser, Esq.
The Cleveland Electric
Illuminating Company
P. O. Box 5000
Cleveland, Ohio 44101

Resident Inspector's Office
U. S. Nuclear Regulatory Commission
Parly at Center Road
Perry, Ohio 44081

U. S. Nuclear Regulatory Commission
Mr. James G. Keppler, Regional
Administrator, Region III
799 Roosevelt Road
Glen Ellyn, Illinois 60137

Donald T. Ezzone, Esq.
Assistant Prosecuting Attorney
105 Main Street
Lake County Administration Center
Painesville, Ohio 44077

Ms. Sue Hiatt
OCRE Interim Representative
8275 Munson
Mentor, Ohio 44060

Terry J. Lodge, Esq.
618 N. Michigan Street
Suite 105
Toledo, Ohio 43624

John G. Cardinal, Esq.
Prosecuting Attorney
Ashtabula County Courthouse
Jefferson, Ohio 44047

REQUEST FOR ADDITIONAL INFORMATION RELATED
TO DEGRADED CORE HYDROGEN CONTROL
FOR PERRY

480.55 It is the intent of the Mark III owners to use the HCOG quarter-scale tests (which focuses on diffusion-type burning within the wetwell region) and plant specific/HCOG CLASIX-3 analyses (which focuses on discrete-type burning within the containment), to determine the most severe thermal environment within the containment and drywell for purposes of demonstrating equipment survivability. Since the present passive heat sink modeling in CLASIX-3 tends to underestimate the compartment atmosphere temperatures and since CLASIX-3 appears to be in non-conformance with the provisions of NUREG-0588, the CLASIX-3 containment response sensitivity studies (correspondence No. HGN-001) should not be used as the basis for determining the most severe compartment temperature conditions. In view of this concern, the present version of CLASIX-3 is inappropriate.

Since the methodology described in NUREG-0588 is generally recognized as an acceptable approach for addressing equipment qualification, describe and justify if there are deviations from the provisions of NUREG-0588 with regard to the passive heat-sink and heat-transfer assumptions that will be used for plant specific analyses in the following areas:

- 1) the temperature difference used with the heat-transfer film coefficients for both saturated and super-heated atmospheres;

- 2) the analytical model and assumptions used to account for condensate removal from the heat sink surface; and
- 3) the energy removal associated with condensed mass.

480.56 For each postulated degraded core sequence, (i.e., SORV and drywell break initiated events), provide an evaluation of the impact on the drywell atmosphere environment when considering heat losses from the reactor vessel and its associated piping (e.g., SRV lines). Provide and justify assumptions used in your evaluation, e.g., convective and radiative heat transfer parameters.

480.57 According to the BWR/6 Standard Technical Specifications, periodic low pressure leak testing of the drywell is required. The acceptance criterion is that the leakage shall be less than or equal to 10% of the maximum allowable A/\sqrt{K} (i.e., approximately 1 ft^2). Thus, the maximum allowable leak rate is equivalent to roughly 4000 SCFM at 3 psi pressure differential. Provide an evaluation of the consequences within the drywell and the containment by the combustion of hydrogen when considering the drywell bypass leakage (include mechanistically the effects of upper pool dump and pool drawdown).