

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

12/6/79

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of )  
HOUSTON LIGHTING & POWER COMPANY ) Docket No. 50-466  
(Allens Creek Nuclear Generating )  
Station, Unit 1) )

NRC STAFF'S RESPONSES TO JOHN F. DOHERTY'S  
SECOND SET OF INTERROGATORIES

The NRC Staff responds as follows to second set of interrogatories propounded by John F. Doherty to the Staff in the captioned proceeding:

1. Have you evaluated Applicant's combustible gas control system, as you reported in Supplement #1 to the Safety Evaluation on Page 18.2, (Section 18.2)? If you have, where is it? You may send it now if available.

Response

a. Yes. It is in Sections 6.2.5 and 18.2 of Supplement No. 2 to the Safety Evaluation Report, NUREG-0515, March 1979.

b. See a. NUREGs may be purchased from the National Technical Information Service, Springfield, Virginia 22161, or Staff will make available for inspection and copying at offices in Bethesda. You should have copies of the SER and Supplement #2.

c. None.

d. Contentions dealing with containment systems will be addressed by J. Kudrick and/or M. Fields.

1591 047

7912170 208

e. As reported in Supplement No. 2 to the SER, Section 6.2.5, the Applicant has committed to provide a testing program to demonstrate the operability of the recabiners, and we, the Staff, will review the testing program and operating procedures at the operating license stage of review.

f. See d.

2. Has staff evaluated Applicant's modified design for Combustible Gas Control?

Response

Yes. See answer to Interrogatory #1.

3. What changes has Applicant proposed for eliminating large (18 in.) drywell penetrations which are part of the Combustible Gas Control System?

Response

a. On page 6.3 of Supplement No. 2 to the SER we state that the Applicant has proposed a drywell vacuum relief system consisting of redundant ten-inch lines containing a check valve in series with a normally-closed butterfly valve. As is indicated in Figure 6.2.65 of the PSAR the line from the butterfly valve through the drywell wall is still an 18-inch line. However, as stated on page 6.3 of Supplement No. 2 to the SER, the valve arrangement reduces the potential for open lines, and due to the limited vacuum relief line size, an open line would

1591 048

still be within the bypass capability of the containment. Therefore, we concluded that the drywell vacuum relief system design is acceptable. Thus, the Applicant's proposal provides for the flow restriction without actually reducing the size of the penetration.

b. See a.

c. None.

d. See 1 d.

e. None planned.

f. See 1 f.

4. Is Regulatory Guide 1.7 still believed to make conservative assumptions in regard to radiolytic generation of hydrogen?

Response

a. Yes, for design basis loss-of-coolant accidents and performance of emergency core cooling systems in accordance with 10 CFR §50.46.

b. Regulatory Guide 1.7, 10 CFR §50.46. Reg. Guides may be ordered by writing to the U.S. Nuclear Regulatory Commission, Washington, D. C. 20555, Attention: Director, Division of Technical Information and Document Control.

c. None.

d. See 1 d.

e. No further research has been identified. The Staff continually reviews operating experience, including TMI-2, to assess whether research and/or changes in licensing requirements are appropriate. If any are identified prior to a decision in this proceeding, the hearing board, and all parties would be notified. If changes in requirements were to be identified after issuance of a construction permit for Allens Creek, Unit 1, appropriate changes in the Allens Creek design would be imposed by the Staff. (Note that TMI-2 is not expected to change the assumptions of Regulatory Guide 1.7 in regard to radiolytic generation of hydrogen. Rather changes in assumptions for hydrogen generation, if any, will likely be due to changes in other sources, i.e., metal water reaction and reactions with surface coatings.)

f. The Staff does not plan to prepare testimony on the adequacy of Reg. Guide 1.7 unless the Board is notified of changes in Staff requirements as discussed above.

6. Applicant states on Pg. 6.3-17 of the Preliminary Safety Analysis Report (PSAR) that it and the following pages provide information on steam line breaks and liquid line breaks in the emergency Core Cooling System (ECCS). However these pages have been deleted and the reader is referred to the PSAR. Please provide a copy of these pages for Intervenor's use.

1591 050

Response

Copies of pages 6.3-17 through 6.3.30a of the GESSAR 238 NSSS are enclosed.  
These pages include all of the text of Section 6.3.3, Performance Evaluation.

1591 051

Dated at Bethesda, Maryland,  
this 6th day of December, 1979.

JOHN A. KUDRICK  
PROFESSIONAL QUALIFICATIONS

I am a Section Leader in the Containment Systems Branch, Division of Systems Safety of the Office of Nuclear Reactor Regulation. I have held this position since September, 1974. In this capacity, I provide technical supervision over and coordinate the activities of a group of specialized nuclear system and analytical engineers engaged in performing safety analyses and evaluation of containment related systems.

Responsibility of the section includes the review and evaluation of containment related systems for all BWR applications for both construction permits and operating licenses. As a result, all Mark III applications including Black Fox, Unit Nos. 1 and 2, were reviewed within my group. In addition, the review of the related pool dynamic testing programs conducted by the General Electric Company in support of the Mark III containment design was performed within my group.

From September 1972 to September 1974, I was a senior reviewer in the Containment Systems Branch. My responsibilities included the lead review of the River Bend Nuclear Station as well as a number of containment-related generic issues. From November 1965 to September 1972, I was employed as a Senior Engineer with Hittman Corporation with technical responsibilities on a wide variety of nuclear related programs. They

1591 052

included thermal design and analyses of radwaste shipping containers, radioisotope thermoelectric generators, artificial heart power supply, and radioisotope battery for an implant pacemaker.

Prior to November 1963, I was employed in various nuclear-related projects (Martin-Marietta and MacDonald-Douglas Corporation). Most notable was the nuclear rocket program. During the five years on the program, I was involved with hydro-fluid flow and heat transfer analyses associated with the rocket flow cycle.

My academic training includes a Bachelor of Science in Mechanical Engineering Degree received in 1959 from Drexel University followed by a Master of Science Degree in Mechanical Engineering also from Drexel University in 1962. Throughout my career I have authored or coauthored numerous technical publications in the field of heat transfer and fluid flow.

1591 053



Professional Qualifications  
Mel B. Fields

I am a Systems Engineer in the Containment Systems Branch of the Office of Nuclear Reactor Regulation. In this position I am responsible for the review and technical evaluation of safety aspects of containment systems.

I graduated from the University of Arizona with a Bachelor of Science Degree in Nuclear Engineering in 1974. I am currently enrolled as a part-time graduate student in the Mechanical Engineering Department of the Catholic University of America in Washington, D. C.

In 1975 I accepted a position as a Reactor Engineer (Intern) in the Containment Systems Branch, Division of Systems Safety, Nuclear Regulatory Commission. My responsibilities included the review and technical evaluation of the safety aspects of containment systems. In this position, I have been responsible for the evaluation of the health and safety aspects related to containment systems for the following nuclear power plants: Black Fox Station, Units Nos. 1 & 2, Grand Gulf Nuclear Station, Units Nos. 1 & 2, North Anna Power Station, Units Nos. 1 & 2, Jamesport Nuclear Station, Units Nos. 1 & 2 and Cherokee and Perkins Nuclear Station, Units Nos. 1, 2 & 3. For the Black Fox Station, I was responsible for

1591 054



reviewing the staff positions and writing the section of the Safety Evaluation Report on the Mark III containment system. In early 1977, I was transferred to another branch, the Power Systems Branch, in the same division where I remained for approximately 1-1/2 years before returning recently to the Containment Systems Branch. I am currently involved in the review of the Mark III Containment Test Program being conducted by General Electric.

1591 055