

DOCKETED
USNRC

'82 OCT 18 P5:16

OFFICE OF PUBLIC AFFAIRS
DOCKETING & SERVICE
BRANCH
October 18, 1982

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

Before Administrative Judges:
Marshall E. Miller, Chairman
Gustave A. Linenberger, Jr.
Dr. Cadet H. Hand, Jr.

In the Matter of)
)
)
UNITED STATES DEPARTMENT OF ENERGY)
PROJECT MANAGEMENT CORPORATION)
TENNESSEE VALLEY AUTHORITY)
)
(Clinch River Breeder Reactor Plant))
)
_____)

Docket No. 50-537

RESPONSE OF INTERVENORS, NATURAL RESOURCES
DEFENSE COUNCIL, INC. AND THE SIERRA CLUB
TO APPLICANTS' SECOND SET OF ADMISSIONS
AND SEVENTH SET OF INTERROGATORIES
DATED OCTOBER 4, 1982

Pursuant to 10 CFR §§ 2.742 and 2.740b, and in accordance with the Board's Scheduling Order of August 31, 1982, Intervenor, Natural Resources Defense Council, Inc. and the Sierra Club, hereby respond to Applicants' Second Set of Admissions and Seventh Set of Interrogatories dated October 4, 1982.

REQUEST FOR ADMISSION

Admission

1. NUREG-0625 has not been adopted by the Nuclear Regulatory Commission as nuclear reactor siting requirements in regard to site isolation and population density.

Response

1. Intervenors admit that NUREG-0625 is included in the NRC Statement of Interim Policy regarding Nuclear Power Plant Accident Considerations Under the National Environmental Policy Act of 1967 (45 Fed. Reg. 40101, June 13, 1980).

Admission

2. At this time the Nuclear Regulatory Commission's siting requirements in regard to site isolation and population density are set forth in a) 10 CFR Part 100, and b) Regulatory Guide 4.7.

Response

2. Intervenors deny this statement. 10 CFR Parts 50 and 51 also contain relevant requirements, as does the Statement of Interim Policy noted in 1 above.

Admission

3. The Clinch River site meets the requirements of: a) 10 CFR Part 100, and b) Regulatory Guide 4.7.

Response

3. Intervenors deny that the Clinch River site meets the requirements of 10 CFR Part 100 with regard to site isolation and

population density, primarily for the reasons given in our testimony at the August 23-27, 1982 LWA-1 evidentiary hearing.

Regulatory Guide 4.7 does not establish breeder reactor plant standards for siting requirements. It specifically states it "should be used only in the initial stage of site selection because it it does not provide detailed guidance on the various relevant factors and format for ranking the relative suitability or desirability of possible sites." (4.7-1) (emphasis added). Additionally, it is intended for LWR and HTGR reactors and power stations, not experimental or untested designs, such as the CRBRP. (Id.)

Even were Regulatory Guide 4.7 intended for a breeder reactor such as CRBRP, the Clinch River Site does not meet its requirements. Considering accident consequences at CRBRP, 10 CFR Part 100 dose guidelines could not be met (see above). The distribution of the population in the LPZ is not such that "there is a reasonable probability tha appropriate measures could be taken in their behalf in the event of a serious accident." (4.7-4) No reasonable probability has been shown for the CRBRP at the Clinch River Site. Applicants have admitted the need for "actual operating experience" to achieve safety goals (Supplement to 10th Set of Interrogatories at AB-111.), yet no such experience exists.

At 4.7-9, ¶3., the Regulatory Guide states "areas of low population density are preferred. . . . If the population density

at the proposed site is not acceptably low, then the Applicant will be required to give special attention to alternative sites with lower population densities." The triggering limit of 500 persons/mi² should not apply to CRBRP, however, due to the special risks involved with breeder operation and fuel cycle, and the lack of experience with this reactor design. Thus alternative sites with lower populations than this upper limit must be compared, and low density weighted heavily.

Admission

4. The meteorological measurement program for CRBRP meets the requirements of Regulatory Guide 1.23.

Response

4. Intervenors can neither admit nor deny this statement, as it is uncertain what the "requirements" of Regulatory Guide 1.23 are for the CRBR. Intervenors admit that no "appropriate diffusion model" (23.1) has been shown for the measurement program at the Clinch River Site. Suggested programs in Regulatory Guide 1.23 include Safety Guides 3 and 4, for BWR's and PWR's (23.1, note 1). No program for the highly experimental LMFBR is indicated, either here or elsewhere.

Intervenors admit that Applicants' and Staff's assessments of potential dispersion due to DBAs are insufficiently conservative, as required in ¶B.1 (23.1), even without including CDA's within the design basis. All other assessments in this section are similarly nonconservative, especially regarding

severe and other accident radiological consequences and releases. Additional measurements to compensate for the hilly terrain must be performed for a period beyond one year sufficient to show accurate measurement of meteorology, to adequately and conservatively predict the movement of radionuclides to the site boundary and beyond. See Intervenors' Response to Applicants' Request for Admissions, June 4, 1982 (6/18/82), and Intervenors' Response to NRC Staff Second Round of Interrogatories and Request for Admissions (6/18/82).

As an additional matter, the meteorological measurement program for CRBRP does not appear to meet the requirements of Regulatory Guides 1.111 and 1.117. Intervenors' analysis is not yet complete.

Admission

5. The X/Q (chi over Q) values calculated for CRBRP and set forth in Section 2.3 of the PSAR meet the requirements of Regulatory Guide 1.145.

Response

5. Intervenors can neither admit nor deny this statement, but assert that X/Q values cannot be calculated adequately for the CRBR using this Regulatory Guide. Intervenors cannot determine exactly what the "requirements" of Regulatory Guide 1.145 are, as used by Applicants here. We note, on p. 1.145-2, that

Equations and parameters presented in this section should be used unless unusual siting,

meteorological, or terrain conditions dictate the use of other models or considerations.
(emphasis added)

We note additionally the occurrence of ridge and valley terrain, both at the Clinch River site and other TVA sites, that mandates use of "other models." Such unusual terrain would contribute to unusual meteorology, such as inversions, dense fog, and poor diffusion.

Admission

6. The background frequency of genetic disorders in the population is of the order of 100,000 per million live born offspring.

Response

6. Intervenors admit that this is the BEIR-III estimate.

Admission

7. A maximum estimate of the increased frequency of genetic disorders at equilibrium as a result of a dose of 1 rem of radiation to the population per generation is of the order of 1,000 per million live offspring.

Response

7. Intervenors admit that 60-1100 per million liveborn offspring per rem of parental exposure received in each generation before conception was the estimate made by BEIR-III (p. 96).

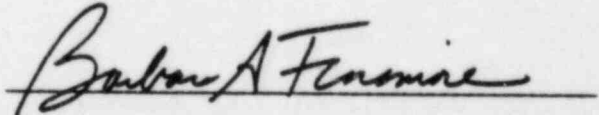
Admission

8. Estimates of the increase in genetic disorders as a consequence of 1 rem radiation per generation, based on information obtained directly from human exposure, show that such increases will be a very small fraction of the background frequency.

Response

8. If one were to equate "a very small fraction" with 11/1000, Intervenors admit that this is the BEIR-III estimate. However, others (e.g. Gofman) believe the official estimate of radiation-induced genetic damage is low by a factor between 6 and 100. See, e.g., John W. Gofman, Radiation and Human Health, Sierra Club Books, San Francisco, 1981.

Respectfully submitted,



Barbara A. Finamore
S. Jacob Scherr

Natural Resources Defense
Council, Inc.
1725 I Street, NW, #600
Washington, D.C. 20006
(202) 223-8210

Ellyn R. Weiss (BAF)

Ellyn R. Weiss

HARMON & WEISS
1725 I Street, NW, #506
Washington, D.C. 20006
(202) 833-9070

Attorneys for Natural Resources
Defense Council, Inc., and the
Sierra Club

Dated: October 18, 1982