6/18/82

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of	)	
	)	
UNITED STATES DEPARTMENT OF ENERGY	)	
PROJECT MANAGEMENT CORPORATION	)	Docket No. 50-537
TENNESSEE VALLEY AUTHORITY	)	
	)	
(Clinch River Breeder Reactor Plant)	)	
	)	

APPLICANTS' RESPONSE TO
NATURAL RESOURCES DEFENSE COUNCIL, INC.
AND THE SIERRA CLUB TENTH
REQUEST TO APPLICANTS FOR ADMISSIONS

D503

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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UNITED STATES DEPARTMENT OF ENERGY PROJECT MANAGEMENT CORPORATION TENNESSEE VALLEY AUTHORITY	)	Docket No. 50-537
(Clinch River Breeder Reactor Plant)	)	

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NATURAL RESOURCES DEFENSE COUNCIL, INC.
AND THE SIERRA CLUB TENTH
REQUEST TO APPLICANTS FOR ADMISSIONS

Pursuant to 10 CFR 2.742, and in accordance with the Board's Prehearing Conference Order of February 11, 1982, the Department of Energy and Project Management Corporation, acting for themselves and on behalf of the Tennessee Valley Authority (the Applicants) hereby submit their Responses to Intervenors, Natural Resources Defense Council, Inc. and the Sierra Club, Tenth Request to Applicants for Admissions, dated June 4, 1982.

NRDC TENTH REQUEST TO APPLICANTS FOR ADMISSIONS

ADMISSIONS

Contention 1

Preamble to Admissions 1-8:

For the purpose of these statements, Applicants are responding on the basis that "CDA" as used by NRDC can be understood to be a term applied to fast neutron reactors to designate an accident condition in which either of the following occurs:

(a) the relocation of materials has the potential to produce a positive reactivity feedback that causes the neutronic state to approach or reach a prompt-critical condition, or

(b) whole core melting and relocation.

ADMISSION

1. The NRX reactor at Chalk River experienced a core disruptive accident (CDA) on or about December 12, 1952.

RESPONSE

1. The Applicants deny this statement.

ADMISSION

2. The No. 1 pile, an air-cooled graphite-moderated reactor at Windscale, UK, experienced a core disruptive accident on or about October 9, 1957.

RESPONSE

2. The Applicants deny this statement.

ADMISSION

3. The SL-1 reactor at NRTS (now INEL) experienced a CDA on or about January 3, 1961.

RESPONSE

3. The Applicants deny this statement.

ADMISSION

4. The HTRE-3 reactor at NRTS (now INEL) experienced a CDA on or about November 18, 1958.

RESPONSE

4. The Applicants deny this statement.

ADMISSION

5. The WTR reactor at Waltz Mill, PA, experienced a CDA on or about January 3, 1961.

RESPONSE

5. The Applicants deny this statement.

ADMISSION

6. The FERMI-1 reactor experienced a CDA on or about October 5, 1966.

RESPONSE

6. The Applicants deny this statement.

ADMISSION

7. EBR-1 reactor experienced a CDA, a core meltdown, on or about November 25, 1955.

RESPONSE

7. The Applicants admit this statement.

ADMISSION

8. The Three Mile island Unit 2 reactor experienced a CDA on March 28, 1979.

RESPONSE

8. The Applicants deny this statement.

ADMISSION

9. The TMI-2 accident had significant safety implications.

RESPONSE

9. The Applicants admit this statement.

ADMISSION

10. If the information now available had been known when the Fermi reactor was constructed, design changes would have been made to take account of the currently known data.

RESPONSE

10. The Applicants admit this statement for the Fermi-I reactor.

ADMISSION

11. If the information now available had been known when the TMI-2 reactor was constructed, design changes would have been made to take account of the currently known data.

RESPONSE

11. The Applicants can neither admit nor deny. The Applicants do not have sufficient specific design details and information.

Preamble to Admission 12-21:

For the purposes of responding to these statements, Applicants see no difference between "reactor of the general size and type as the CRBR" as used herein and "the CRBR" as used in Intervenors' January 14, 1977, set of Admissions.

ADMISSION

12. With respect to a reactor of the general size and type as the CRBR, the determination of Applicants that a CDA need not be included in the spectrum of DBAs is a subjective determination.

RESPONSE

12. The Applicants deny this statement. See response to No. 13.

ADMISSION

13. With respect to a reactor of the general size and type as

the CRBR, the determination of Applicants that a CDA need not be included in the spectrum of DBAs is an objective determination.

RESPONSE

13. The Applicants admit this statement on the assumption that an objective analysis of the design of systems and components and application of recognized deterministic criteria to the design, coupled with reliability and probability analyses and sound engineering judgment falls within the definition of the term "objective determination" utilized in the admission request.

ADMISSION

14. With respect to a reactor of the general size and type as the CRBR, the determination of Applicants that a CDA need not be included in the spectrum of DBAs is based upon qualitative judgments.

RESPONSE

14. The Applicants admit this statement to the extent that both quantitative and qualitative judgments form the basis for the objective determination that a CDA need not be included in the spectrum of DBAs. See response to No. 13.

ADMISSION

15. Applicants have not determined the probability of a CDA in a reactor of the general size and type as the CRBR in quantitative terms such as, for example, less than one chance in 10^4 reactor years.

RESPONSE

15. The Applicants deny this statement. The Applicants "have

determined this probability in quantitative terms" to the extent shown in the assessments which were previously submitted providing an estimate of the probability of occurrence of certain initiating sequences leading to an HCDA. See WARD-D-0118, Rev. 1, "CRBRP Nuclear Island Reliability Assessment of CRBRP Reactor Shutdown System" (Nov. 1975); NEDM-14082, "An Update of the Preliminary Reliability Prediction for CRBRP Shutdown Heat Removal System" (Jan. 1976). As stated in the response to Interrogatory Number 25 of Set 19, the Applicants do not intend to rely on either of the above documents in the LWA-1 proceeding.

ADMISSION

16. Applicants have not quantitatively determined that the probability of a CDA in a reactor of the general size and type as the CRBR is less than one chance in 10^4 reactor years with a confidence level greater than 90 percent.

RESPONSE

16. The Applicants admit this statement insofar as Applicants have not attempted to place confidence levels on probability assessments of the initiation of HCDAs.

ADMISSION

17. Applicants have not quantitatively determined that the probability of a CDA in a reactor of the general size and type as the CRBR is less than one chance in 10^6 reactor years with a confidence level greater than 90 percent.

RESPONSE

17. The Applicants admit this statement insofar as Applicants have not attempted to place confidence levels on probability assessments of the initiation of HCDAs.

ADMISSION

18. While some probabilistic criteria have been employed, the ultimate decision that a CDA for a reactor of the general size and type as the CRBR does not have to be considered as a DBA is based upon engineering judgment.

RESPONSE

18. The Applicants admit this statement to the extent that engineering judgment, objective evaluations of the design, and deterministic application of design criteria are employed in concert with probabilistic evaluations. See reponse to No. 13.

ADMISSION

19. The decision that a CDA for a reactor of the general size and type as the CRBR does not have to be considered as a DBA was made in a deterministic manner as distinguished from a probabilistic manner.

RESPONSE

19. The Applicants admit this statement insofar as their decision was not at the time based on quantitative probabilistic evaluations. Both deterministic and probabilistic evaluations were used to preclude HCDAs from DBAs.

ADMISSION

20. Since the decision that a CDA for a reactor of the general size and type as the CRBR does not have to be considered as a DBA was made in a deterministic manner, it is not possible to quantify the probability of the occurrence of a CDA.

RESPONSE

20. The Applicants deny this statement. See response to Nos. 15 and 19.

ADMISSION

21. Since the decision that a CDA for a reactor of the general size and type as the CRBR does not have to be considered as a DBA was made in a deterministic manner, the chance of occurrence of a CDA can only be stated in subjective terms such as highly improbable or extremely unlikely.

RESPONSE

21. The Applicants deny this statement. See response to Nos. 15 and 19.

ADMISSION

22. Respond to Intervenors' Request for Admission 2, dated August 12, 1976, for the Enrico Fermi I plant and the Indian Point I reactor.

RESPONSE

22. The Applicants admit this statement for Fermi I; see reposnse to No. 10. The Applicants can neither admit nor deny this statement for Indian Point I; the Applicants do not have sufficient specific design details and information.

Contention 2

ADMISSION

23. The discussion of the consequences of Class 8.5 accidents in the FES is based on assumptions used in the Parallel Design only, which has been withdrawn by Applicants.

RESPONSE

23. The Applicants deny this statement.

ADMISSION

24. The discussion of the consequences of Class 9 accidents in the FES is based on assumptions used in the Parallel Design only, which has been withdrawn by Applicants.

RESPONSE

24. The Applicants deny this statement.

Contention 4

ADMISSION

25. In general, consideration of the internal threat to nuclear facilities must be based on the following assumptions:

1) One person operating alone will probably remain undetected.

2) Instances of collusion involving 2-3 persons have been encountered in industry.

3) Most hijackings involve internal collusion.

4) Key internal persons can be influenced by threats against

their families or other forms of blackmail.

RESPONSE to 1

Applicants deny this statement. Nuclear facilities can be designed such that individuals are not allowed access to vital areas except under surveillance, for safety reasons as well as for safeguards. Surveillance may involve a two-man rule, surveillance by CCTV, or equivalent.

RESPONSE to 2

Applicants admit this statement insofar as the term industry is assumed to include any and all groups of manufacturers or businesses who in aggregate produce similar products or provide a similar service.

RESPONSE to 3

Applicants cannot admit or deny this statement. Applicants do not have the necessary information to make a determination.

RESPONSE to 4

Applicants admit this statement.

Contention 6

ADMISSION

26. The transportation of SNM in the CRBRP fuel cycle will not comply with the provisions of 10 CFR Part 71.

RESPONSE

26. The Applicants deny this statement. While 10 CFR Part 71 does not apply to transportion of SNM by the DOE, the transportation of SNM in the CRBRP fuel cycle will comply with measures equal to or greater than those given in 10 CFR Part 71.

ADMISSION

27. The high-level waste from processing fuel at the Hanford PUREX plant would be classified as defense waste and managed in the same manner as other high-level defense waste at Hanford.

RESPONSE

27. The Applicants admit that waste from processing fuel at the Hanford PUREX plant would be managed in the same manner as high-level defense waste at Hanford. CRBRP fuel is planned to be reprocessed in a Developmental Reprocessing Plant and the waste will be classified as commercial waste.

ADMISSION

28. A comparison of the overall environmental impacts associated with the Hanford PUREX operation with the model reprocessing plant discussed in WASH-1535 and DOE/EIS-0085-D has not been made.

RESPONSE

28. The Applicants admit this statement.

ADMISSION

29. In the course of transporting SNM in the CRBRP fuel cycle, Applicants will not prenotify state authorities as required under 10 CFR Part 71.

RESPONSE

29. The Applicants admit this statement. Transportation of SNM by the DOE is not subject to the prenotification requirements of 10 CFR Part 71. Prenotification by DOE would be unlawful because schedules and itineraries for specific shipments of Category I quantities of SNM are classified as "Confidential/National Security Information."

ADMISSION

30. In the transportation of SNM in the CRBRP fuel cycle, Applicants will not necessarily comply with routing requirements under Department of Transportation regulations in order to avoid populated areas.

RESPONSE

30. The Applicants can neither admit nor deny this statement. Routing requirements under DOT regulations will generally be complied with. Exceptions may be made because of security considerations.

ADMISSION

31. The Hanford PUREX plant does not currently meet the requirements of 40 CFR 190.

RESPONSE

31. The Applicants deny this statement. The requirements of 40 CFR 190 do not apply to the Hanford PUREX plant.

ADMISSION

32. Current DOE plans for the Hanford PUREX plant do not include incorporation of systems designed to capture and contain noble gases or other techniques necessary to meet 40 CFR 190 requirements.

RESPONSE

32. The Applicants deny this statement. The requirements of 40 CFR 190 do not apply to the Hanford PUREX plant.

ADMISSION

33. The Hanford PUREX plant is the most likely facility for supplying fuel for the CRBRP plant (see updated response to Interrogatory V-4 (Contention 6) of Intervenors' Eighteenth Set of Interrogatories to Applicants).

RESPONSE

33. The applicants admit this statement.

Contention 11

ADMISSION

34. Provide an updated response to Intervenors' Request for Admission 42, dated September 16, 1976 (21-42) (April 30, 1982, updated response missing).

RESPONSE

34. The applicants regret that the updated response to the Intervenor's Request for Admission 42, dated September 16, 1976 (21-42), was inadvertantly omitted from the Applicants' submission of April 30, 1982. The Applicants' response to Admission 42, dated September 29, 1976, remains valid except for the last sentence, which should be omitted.

ADMISSION

35. Respond to Intervenors' Request for Admission 9, dated July 28, 1976 (1-33), where "critical tissue mass" is defined as a mass of tissue of sufficient size to have the ability to trigger a carcinogenic response when subjected to ionizing radiation.

RESPONSE

35. The Applicants cannot truthfully admit or deny Admission 9, dated July 28, 1976 (1-33), even if "critical tissue mass" is defined "as a mass of tissue of sufficient size to have the ability to trigger a carcinogenic response when subjected to ionizing radiation". Although NRDC's definition of critical tissue mass presumes a carcinogenic capability, it does not necessarily follow that "the probability of tumor production is high."

ADMISSION

36. For purposes of protecting the health of workers and their progeny, it would be prudent to assume that irradiation of workers in the nuclear industry increases the risk of deleterious alteration in the germ cells of the workers and that those deleterious alterations may result in genetic defects in the progeny of those workers.

RESPONSE

36. The Applicants admit this statement. Current radiation protection practices are based on such prudent assumptions.

ADMISSION

37. For purposes of protecting the health of workers and their progeny, it would be prudent to assume that irradiation of a female worker who is pregnant may result in the induction of cancer and in deleterious aberration in the germ cells of the developing fetus.

RESPONSE

37. The Applicants admit this statement. Current radiation protection practices are based on such prudent assumptions.

ADMISSION

38. Please provide an updated answer to Intervenors' Request for Admission 42, dated September 16, 1976 (no updated answer provided on April 30, 1982).

RESPONSE

38. See response to Admission number 34.

UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

In the matter of ,)

Department of Energy ,)

PROJECT MANAGEMENT CORPORATION and,)

TENNESSEE VALLEY AUTHORITY ,)

DOCKET NO. 50-537

AFFIDAVIT OF Thomas H. Isaacs, being duly sworn, deposes and says as follows:

1. That he is employed as Deputy Director, Office of Safeguards and Security, U.S. Department of Energy, and that he is duly authorized to answer item 25 in the NRDC's Tenth Request to Applicants for Admission.
2. That the above-mentioned and attached answer is true and correct to the best of his knowledge and belief.

Thomas H. Isaacs
Signature

SUBSCRIBED and SWORN to before me this 18 day of June, 1982.

Mary B. Fletcher
Notary Public

My Commission expires July 1, 1986

UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

In the matter of ,)

Department of Energy ,)

PROJECT MANAGEMENT CORPORATION and,)

TENNESSEE VALLEY AUTHORITY ,)

DOCKET NO. 50-537

AFFIDAVIT OF Larry A. Forsythe, being duly sworn, deposes and says as follows:

1. That he is employed as Chief, Environment, Safety and Health Branch, Division of Safety, Environment and Emergency Actions, Office of Military Application, U.S. Department of Energy, and that he is duly authorized to answer items 26, 29, and 30 in the NRDC's Tenth Request to Applicants for Admission.
2. That the above-mentioned and attached answers are true and correct to the best of his knowledge and belief.

Larry A. Forsythe
Signature

SUBSCRIBED and SWORN to before me this 18 day of June, 1982.

Notary Public

My Commission expires July 1, 1986

UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

In the matter of

U.S. ENERGY RESEARCH AND DEVELOPMENT ADMINISTRATION

PROJECT MANAGEMENT CORPORATION and

TENNESSEE VALLEY AUTHORITY

AFFIDAVIT OF ROY C. THOMPSON, Ph.D.

Roy C. Thompson, Ph.D., being duly sworn, deposes and says as follows:

1. That he is employed as Senior Staff Scientist, Biology Department, Pacific Northwest Laboratory, and that he is duly authorized to answer 6-4-82 Admissions, Contention 11, Nos. 35-37, and 6-4-82 Interrogatories, Contention 11, No. 51.

2. That the above-mentioned and attached answers are true and correct to the best of his knowledge and belief.

Roy C. Thompson

Roy C. Thompson, Ph.D.

SUBSCRIBED and SWORN to before me this 16th day of June, 1982.

Notary Public

My commission expires 4/20/86.

Barbara Cowley

UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

In the matter of

U.S. ENERGY RESEARCH AND DEVELOPMENT ADMINISTRATION

PROJECT MANAGEMENT CORPORATION and

TENNESSEE VALLEY AUTHORITY

AFFIDAVIT OF JOHN W. HEALY

John W. Healy, being duly sworn, deposes and says as follows:

1. That he is employed as a Staff Member, Los Alamos National Laboratory, and that he is duly authorized to answer 6-4-82 Admissions, Contention 11, Nos. 35-37, and 6-4-82 Interrogatories, Contention 11, No. 51.

2. That the above-mentioned and attached answers are true and correct to the best of his knowledge and belief.

John W. Healy

John W. Healy

SUBSCRIBED and SWORN to before me this 10th day of June, 1982.

Notary Public

My commission expires 4/30/86.

UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

In the Matter of	)	
UNITED STATES DEPARTMENT OF ENERGY	)	
PROJECT MANAGEMENT CORPORATION	)	Docket No. 50-537
TENNESSEE VALLEY AUTHORITY	)	
(Clinch River Breeder Reactor Plant)	)	

CERTIFICATE OF SERVICE

Service has been effected on this date by personal delivery or first-class mail to the following:

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for Thomas A. Schmutz
George L. Edgar
Attorney for
Project Management Corporation

DATED: June 18, 1982

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