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UNITED STATES
NUCLEAR REGULATORY COMMISSION

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

Docket No. 50-537

APPLICANTS' RESPONSE TO INTERVENORS',
NATURAL RESOURCES DEFENSE COUNCIL, INC.,
AND SIERRA CLUB, SEVENTEENTH SET
OF INTERROGATORIES AND REQUEST TO PRODUCE
TO THE APPLICANTS



Pursuant to 10 CFR § 2.740b., the United States Department of Energy and Project Management Corporation, acting for themselves and on behalf of the Tennessee Valley Authority (the Applicants), hereby respond to Intervenor's, Natural Resources Defense Council, Inc., and the Sierra Club, Seventeenth Set of Interrogatories to the Applicants, dated March 26, 1982.^{*/}

^{*/} The Applicants' April 2, 1982 Motion for a Protective Order objected to and sought relief from Interrogatories 2-18 and the associated document requests. The Board's April 6, 1982 ruling during the prehearing
Continued

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Answers to General Questions (a) - (f)

(a) Provide the direct answer to the question.

ANSWER: See the direct answers below under heading "ANSWER".

(b) Identify all documents and studies, and the particular parts thereof, relied upon by Applicants, now or in the past, which serve as the basis for the answer. In lieu thereof, at Applicants' option, a copy of such document and study may be attached to the answer.

ANSWER: See the direct answers below under heading "DOCUMENTS".

(c) Identify principal documents and studies, and the particular parts thereof, specifically examined but not cited in (b). In lieu thereof, at Applicants' option, a copy of each such document and study may be attached to the answer.

ANSWER: Unless otherwise indicated below in regard to the answer under the heading "DOCUMENTS"; none.

meeting of counsel granted Applicants' Motion as to interrogatories 2-18 and the accompanying document requests. Applicants' response to the document request accompanying Interrogatory 1 is due on or before April 30, 1982.

- (d) Identify by name, title and affiliation the primary Applicant employee(s) or consultant(s) who provided the answer to the question.

ANSWER: See the attached affidavits.

- (e) Explain whether Applicants are presently engaged in or intend to engage in any further, ongoing research program which may affect Applicants' answer. This answer need be provided only in cases where Applicants intend to rely upon ongoing research not included in Section 1.5 of the PSAR at the LWA or construction permit hearing on the CRBR. Failure to provide such an answer means that Applicants do not intend to rely upon the existence of any such research at the LWA or construction permit hearing on the CRBR.

ANSWER: If not in Section 1.5 of the PSAR and the direct answer below; none.

- (f) Identify the expert(s) if any, which Applicants intend to have testify on the subject matter questioned, and state the qualifications of each such expert. This answer may be provided for each separate

question or for a group of related questions. This answer need not be provided until Applicants have in fact identified the expert(s) in question or determined that no expert will testify, as long as such answer provides reasonable notice to Intervenor.

ANSWER: Applicants have not yet identified the expert(s) in question.

Answers to Specific Questions

1. Which of the following new technologies, techniques or safeguards systems, referred to in DOE, Draft Environmental Impact Statement (Supplement to ERDA-1535, December 1975) Liquid Metal Fast Breeder Reactor Program (December 1981), are planned to be utilized at the CRBR plant and supporting fuel cycle facilities:

- (a) Electronic (fiberoptic and/or acoustically read) seals;
- (b) Microwave, ultrasonic and/or buried cable motion detectors;
- (c) Computerized alarm display systems;
- (d) Continuous surveillance (video -- closed circuit television) cameras;
- (e) Automated computerized measurement systems;

- (f) Multiple integrated laser engagement systems;
- (g) DYMAC and RETIMAC systems;
- (h) Burnup calculations and isotopic correlation techniques;
- (i) Non-destructive analysis (NDA techniques)?

ANSWER:

In regard to CRBRP and the supporting fuel cycle facilities, the answers and documents directly related to the answers, respectively, are as follows:

(a) Fiber optic and acoustically read seals are being developed for possible use by the IAEA. It is not now anticipated that these would be used for domestic safeguards. Continuing R&D should not affect the answer.

L. G. Fishbone and B. Keisch: Safeguards Instrumentation, a Computer Based Catalog, Brookhaven National Lab., Upton, N. Y. 11973 (1981), pp. VII 24, 25, 158-163. Sandia National Lab., SAND 80-0499, 0002. First Seminar on Containment and Surveillance Techniques for International Safeguards, Ispra. Sept. 17-19, 1980, published by ESARDA.

(b) Some or all of the listed motion detectors will be used at the DOE fuel fabrication facilities. Microwave systems are planned for use at the CRBRP.

Continuing R&D on this subject for improving cost-effectiveness should not affect the response.

Intrusion Detection Systems Handbook, SAND 76-0554 (revised).

(c) Yes. Continuing R&D on this subject for improving cost-effectiveness should not affect the response.

(d) Yes. Fishbone, Keisch cited above. Entry Control Systems Handbook, SAND 77-1033 (revised). Intrusion Detection Systems Handbook, SAND 76-0554 (revised).

(e) This would apply to fuel fabrication and reprocessing, but not at CRBRP. Continuing R&D on this subject for improving cost-effectiveness should not affect the response.

J. J. Malanify, et al., An Operational Materials Control and Accountability System, Jour. INMM, IX, No. 4, p. 30, 1980. J. H. Ellis, Development and Testing of a Near-Real-Time Accounting System for the Barnwell Reprocessing Facility, Jour. INMM, X Proceeding Issue, p. 402, 1981. D. D. Cobb, et al., Development and Demonstration of a Near-Real-Time Accounting System for Reprocessing Plants, Jour. INMM, X, Proceeding Issue, p. 411, 1981.

(f) The Multiple Integrated Laser Engagement System is developed. Applicants have not determined whether and the extent to which this will be used at CRBRP and supporting facilities.

R. L. Wilde, Small Force Engagement Experiment, Jour. INMM, Proceeding Issue, IX, p. 310, 1979.

(g) See response in (e) above.

(h) Reactor operators are required to calculate burnup, U-depletion and Pu-production and burnup. Isotopic correlation techniques may be used by the IAEA for verification purposes, but not by the Applicants.

P. J. Persiani, et al., Nuclear Material Safeguards Surveillance and Accountancy by Isotope Correlation Techniques, Argonne National Lab., ANL-81-80, (1981), and Jour. INMM, X, No. 4, p. 42, 1981.

(i) NDA techniques will be employed for near-real-time accounting at fuel fabrication facilities, for measuring finished fuel rods, scrap and wastes, but not at CRBRP. Continuing R&D on this subject should not affect the response.

R. Sher and S. Untermeyer, The Detection of Fissionable Materials by Nondestructive Means, Amer. Nuc. Soc. publ., 1980.

DOCUMENTS:

See the documents discussed in the ANSWER above.

19. What system, if any, has been developed to provide for continuing, timely review of safeguards and physical security requirements to take into account "dynamic factors at work in society?" If such a system has been

developed, explain how it has been applied with reference to events occurring since April 25, 1977. What do the Applicants consider to be a reasonable time in a dynamic system to respond to changes in the nature and scope of the threat to nuclear facilities?

ANSWER:

The Department of Energy continually uses the results of studies and analyses on the nature of the threat and information from the intelligence community in reviewing its safeguards and security requirements to account for "dynamic factors at work in society." In addition, relevant information is made available to responsible safeguards and security individuals as it is received. Depending on the magnitude and seriousness of the change in threat, requirements are modified, when necessary, as the new requirements are determined. The time to respond to changes in threat perception can vary from immediately to a rather lengthy period, depending on whether one is responding to a potential real time threat or is preparing to meet changes which trends indicate may occur in the future.

DOCUMENTS

1. Bass, G. et. al., "Motivations, and Possible Actions of Potential Criminal Adversaries of U.S. Nuclear Programs," Rand, February 1980, R.2654-SL.

2. "Nuclear Incidents Abroad," Rand, Santa Monica, California, 1980, ND. 809.
3. Nuclear Regulatory Commission, "Safeguards Summary Event List (SSEL). NUREG-0525, Rev. 4, Sept. 1981.
4. DeLeon, P., Jenkins, B., Kellen, K., and Krofcheck, J.: Attitudes of Potential Criminal Adversaries of U.S. Nuclear Programs. Rand, February 1978, R-2225-SL.
5. Bass, G. et al., "Motivations, Capabilities, and Possible Actions of Potential Criminal Adversaries of U.S. Nuclear Programs," Rand, May 1981, Report 208.

None

Continuing research would not change the answer to this question.

In the matter of ,)
Department of Energy ,)
PROJECT MANAGEMENT CORPORATION and,)
TENNESSEE VALLEY AUTHORITY ,)

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

- Thomas H. Gross
Signature

Patricia G. Robinson
Notary Public

PATRICIA G. CILIMBERG
NOTARY PUBLIC STATE OF MARYLAND
My Commission Expires July 1, 1992

In the matter of ,)
Department of Energy ,)
PROJECT MANAGEMENT CORPORATION and,)
TENNESSEE VALLEY AUTHORITY ,)

AFFIDAVIT OF William A. Higinbotham, being duly sworn, deposes and says as follows:

- Signature

Joseph P. Indusi
Notary Public

JOSEPH P. MOUSI
New York, N.Y.
Quitted N.Y. County
Commissioner, Expires March 30, 1967

UNITED STATES OF AMERICA
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UNITED STATES DEPARTMENT OF ENERGY
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Docket No. 50-537

CERTIFICATE OF SERVICE

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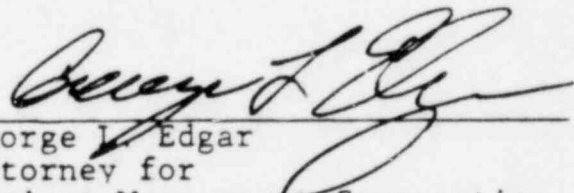
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DATED: April 9, 1982

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