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UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of THE REGENTS OF THE UNIVERSITY OF CALIFORNIA (UCLA Research Reactor)	Docket No. 50-142 (Proposed Renewal of Facility License Number R-71)

ANSWERS OF THE COMMITTEE TO BRIDGE THE GAP
TO APPLICANT'S FIRST SET OF INTERROGATORIES

Dated: May 20, 1981

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INTRODUCTION

On April 20, 1981, Applicant, the REGENTS OF THE UNIVERSITY OF CALIFORNIA, submitted to Intervenor, THE COMMITTEE TO BRIDGE THE GAP, sixty-nine interrogatories and their subparts. These interrogatories are answered in the responses that follow, as per the discovery schedule stipulated to by the parties and ordered by the Board.

Discovery is proceeding on all the matters touched on in the Applicant's interrogatories. The following answers are provided without prejudice to Intervenor's ability to introduce subsequently discovered material at a later date at hearing or related proceeding.

Intervenor objects to Applicant's requests, on page 1 and 2 of the introduction to the interrogatories, for information regarding affiliation of all persons, identified in any way in answer to the interrogatories, with so-called "anti-nuclear groups." The objection is based on constitutional grounds, as well as the burdensome, harrassing, vague and irrelevant nature of the questions. A protective order has been applied for by Intervenor on said grounds.

Mark Pollock
Attorney for Intervenor
COMMITTEE TO BRIDGE THE GAP

May 20, 1981

CONTENTION I

Interrogatory No. 1

Intervenor means by the term "the minimum standards for such applications," as used in Contention I:

a. That the information provided in the application is about the facility for which the license is requested.

b. That the information provided in the application is truthful, accurate, and not misleading.

c. That the application provides sufficient information for the Commission to determine that, if the license is granted, the Applicant will comply with the regulations, and that the health and safety of the public will not be endangered, as well as that the Applicant is technically and financially qualified to engage in the proposed activities, and that the issuance of the proposed license will not be inimical to the common defense and security or to the health and safety of the public.

Sources of said standards:

a. 10 CFR 50.34(b), 50.36, 50.40, 50.41 + 50.42 (depending upon Board decision regarding correct class of license), 50.57, 50.59, 50 Appendix D; Section 186 of the Atomic Energy Act of 1954 (42 U.S.C. § 2236); Virginia Electric & Power Co. (North Anna Power Station, Units 1 and 2), ALAB-324, 3 NRC 347, (1976).

b. Section 186 of the Atomic Energy Act of 1954 (42 U.S.C. § 2236); Virginia Electric & Power Co. (North Anna Power Station, Units 1 and 2), ALAB-324, 3 NRC 347, (1976)

c. 10 CFR 50.40

Interrogatory No. 2

The language of this contention, as summarized by NRC Staff in its proposed language, was that "UCLA failed to submit an original application as shown by..." Representatives of the Applicant, in conference calls designed to work out differences on language, proposed that language read "The application submitted by UCLA was not 'original' in all respects as shown by..." Intervenor at the time understood Applicant's intent as to show that Intervenor was not contending that the entire application was not original, only that parts of it were not original, which is indeed Intervenor's contention.

Thus, Intervenor does not contend that applicant's license renewal application must be original in all respects, but rather that in some material respects where it should be original, it is not.

(a) Intervenor takes the expression "original in all respects" as used in Contention I.2 to mean that in some material aspects the application is not

original where it should be original; i.e. the application language is written about other reactors rather than the reactor up for relicensing. As Intervenor stated in the Supplement (p. I.2): "An elementary requirement for an adequate application for facility license is that it be written about the facility for which the license is being applied."
The reactor as it was twenty years ago is not up for relicensing; the present reactor is. All research reactors are not up for a generic relicensing; this particular research reactor is.

b. See answer to Interrogatory No. 1.a., which is incorporated here by reference.

Interrogatory No. 3

See Supplement, Page I.1, which is incorporated here by reference

(b) The contention at this time is not based on the knowledge of individuals, but on documents.

(c) "Vibration Testing and Earthquake Response of Nuclear Reactors" by Craig R. Smith and R.B. Matthiesen, Nuclear Energy Laboratory, and Earthquake Engineering and Structures Laboratory, Los Angeles, California 90024, appearing in Nuclear Applications and Technology, Vol. 7, July, 1969. Also AEC Inspection Report, pages 7-9, CO Report No. 50-142/68-2, of Inspection by W.E. Vetter on November 7-8, 1968. The custodian of both records is the Applicant; copies are also in the custody of the Intervenor.

Interrogatory No. 4

(a) Control blade insertion time increased and eventually one of the blades stuck in the "out" position, requiring dismantling of the reactor core. The control blade problem was attributed to the vibration tests, thought to have caused reactor internals to have shift, binding the control blade shaft.

(b) a is based not on knowledge of individuals, but on documents.

(c) See 3(c) above. Specific language: "About 6 months after the vibration experiment routine tests indicated that one of the control blade insertion times had increased. A few months later safety blade No. 1 stuck in the 'out' position during a routine prestart checkout of the reactor control system. When the reactor was dismantled, we discovered that lead shielding bricks under the control blade drive shaft had been displaced upward, causing the shaft to bind." (Smith and Matthiesen, page 24). "On June 19, 1968, during a routine preoperational check of the reactor, control blade No. 1 did not return to the full-down position. An investigation revealed that the blade was stuck in the 60 percent withdrawn position. Further investigation indicated that the blade could be moved with application of blade drive power but that the blade drive shaft was binding within the biological shielding... it was noted that the lead bricks had shifted away from their original position such that several of them were resting on the No.1 safety blade drive shaft. Further investigation disclosed that a layer of lead shot under the control blade drive shaft had suffered considerable migration... According to the licensee, shifting of the lead shot was probably caused by, or at least aggravated by, an experiment during the previous year to determine the effect of

earthquakes on reactor operations. During this experiment, the reactor superstructure and core were subjected to relatively severe shaking." (CO Report No. 50-142/68-2, pg. 7-8).

Interrogatory No. 5

Contention I, to which this interrogatory is directed, makes no mention of omitted information. The contention does indicate that certain information provided is misleading, not shown to be relevant to the reactor in question as it is at this time, and inaccurate. By inference, misleading, irrelevant, or inaccurate statements can be seen as statements where correct, relevant, and accurate information has been omitted, but the contention as admitted does not deal with omissions.

The original proposed contentions contained in the Supplement did discuss "omission of essential information," but that language was removed from the final language approved by the Board. (See Supplement, I.1; and NRC Staff proposed language on Contention I.)

Interrogatory No. 6

Intervenor was not privy to the instructions of NRC Staff with respect to the information to be provided in the license renewal application, so Intervenor has no information at this time to provide in response to this question.

Interrogatory No. 7

No. Intervenor has proposed no such contention. Intervenor at this time has seen only two requests for additional information with respect to the license application coming from Staff, and has made no formal judgment one way or another as to the adequacy of Applicant's answers. Intervenor did not see Applicant's answers until recently, long after the deadline for submission of the original contentions. No new contentions on this matter are anticipated at this time.

Interrogatory No. 8

Yes. The statements Intervenor believes to be materially inaccurate are quoted in the contention as items I.3.a,b,c,d, e,f, and g.

a) The basis for each contention of inaccuracy is contained in the Supplement, pages I.3-6 (top), which is incorporated herein by reference. Additional basis for contention I.3.a. is found on pages II.1-3 of the Supplement, also incorporated herein by reference. Additionally, Intervenor's review of Applicant's financial ledgers and billings, as well as operating logs and the Applicant's response to NRC Staff questions April 17, 1980, all additionally provide basis for Intervenor's contention that the proposed function of the facility stated in the application on page 5 is not an accurate representation of its true function.

b) The basis for each contention identified above is from documents, not

individuals with personal knowledge of the facts.

c) The documents which support the above allegations are: the Application itself, Applicant's operating logs 1976-1980 (Intervenor has not yet been permitted to see other operating logs), Applicant's financial ledgers and billings shown to Intervenor by Applicant's custodian of records, the Annual (Specialized Activity) Report for 1965-68 and 1976 and 1977, as well as the Annual Reports for 1971-1979 (Intervenor has not yet seen the Annual Report for 1980), the documents identified in response to Interrogatory No. 3(c) above, the current Technical Specifications, the Borax test reports cited on page III/A-7 of the Application, and the well map U-05-A3 for Hydrologic Area 16, U.S. Geologic Survey Map, available from the State of California Water Resources Department, as well as individual well records (cards for each well) available from the Los Angeles County Flood Control District.

Interrogatory No. 9

We have to date made no such contention. We, at this time, neither affirm the accuracy nor deny the accuracy of statements made by Applicant to the NRC staff other than the false statements we have alleged appear in the Application.

Interrogatory No. 10

Yes.

The answer to this question is found in the answer to Interrogatory 8 above, which is incorporated herein by reference. Intervenor's answers to NRC Staff Interrogatories 8, 10, 13, 14 and 15 are likewise herein incorporated herein by reference.

d. The well map is identified in 8c above. It is obtainable from Edward J. Low, Associate Engineer, Planning Branch, Acting Director, Department of Water Resources, The Resources Agency, State of California, 849 South Broadway, Los Angeles, CA 90014, (213) 620-2516. Intervenor does not know for certain the date of the map, except that it is the most current map available from the Department of Water Resources. The map was made by the U.S. Geological Survey; the educational background of the mapmakers is not known to Intervenor. The depth, date of drilling, and whether each well is currently functional is not known to CBG at this time. Some of that information may be on the well cards provided by LA County Flood Control District, but Intervenor has to date not been able to correlate the well cards with the well map.

The wells identified on the well map that Intervenor at this time believes are in the vicinity of the campus are: 28-B2,3,4;H1, 27-N1,2,3; 29-G1; 32-B1,F1,D2, P1, Q2,A1,2,3,4,5,H1; 33-D2,3,4,B1,2,3,4,5,G1,K3,K2, J1,2,3,Q1,2,3,L1,N1,2,P1; 34C1,2,3,M1,N1,P1,2,3,4,5,6,7,Q1; 22N1; Intervenor at this time has no information one way or another as to which of these wells are functional (aside from two wells cluster on the border between square 32 and 33 known to be currently operational) and which are not. Nor does Intervenor at this time make a judgment that there are no wells besides those identified above which are potentially in the vicinity of campus.

Intervenor merely believes that sufficient basis has been shown that the assertion of no wells in the vicinity made by Applicant may be false that Applicant should prove its statement. Intervenor asserts that it is Applicant's burden to prove its statement; Intervenor has brought to the attention some basis that calls Applicant's statement into question.

Interrogatory No. 11

Yes. a) Response by Intervenor to NRC Staff's Interrogatory #17 is included herein by reference. Intervenor at this time has no specific cost figures, but believes that the burden rests with the Applicant to prove its assertion that there are no more suitable or economical alternatives.

b) This belief by Intervenor is not based on basis in the possession of an individual with personal knowledge of the facts but rather on documents and common sense. No expert witness has been arranged for at this time to give expert opinion about this belief.

c) evidence regarding other research reactors in California which might be suitable alternatives to continued use of the NEL reactor can be found in NRC Facilities License Application Record (FLAR) 06-30-77.

Interrogatory No. 12

Aside from the Contentions admitted into the proceedings by the Board on September 25, 1980 and on March 20, 1981, Intervenor at this time makes no formal contention regarding other "omissions, misleading statements, inaccuracies and inadequacies contained in the Application." This does not mean that Intervenor believes there are no other such problems with the Application, but merely at this time addresses itself to those inadequacies identified in the Contentions currently before the Board.

Contention II

Interrogatory No. 13

Yes.

(a) The facts upon which Intervenor bases its contention are included in the Supplement, pages II.1-3, which are incorporated herein by reference. Additional facts are that Applicant's May 13, 1980 chart of "Reactor Usage" indicates that 264 hours per year were commercial, while only 31 were for engineering classes and only 1 for NEL experiments in the year last reported; that the number of hours identified as commercial have been steadily increasing year by year. NEL financial ledgers and billings and operating logs likewise indicate that educational and research functions of the facility are minimal and that most of the activity is activation analysis of mining samples for a commercial ore assayer, with some additional activity being the coloring of commercial jewelry.

(b) The above facts come from documents, not individuals with personal knowledge of the facts.

(c) NEL operating logs 1976-1980; NEL financial ledgers and billings provided Intervenor by Applicant; 1965-1958 and 1976 and 1977 Annual (Specialized Annual) Activity Reports; 1971-1979 Annual Reports; UCLA May 13, 1980 letter to NRC Staff regarding commercial and other reactor usage; Applicant's Application for license renewal.

Interrogatory No. 14

Yes.

(a) (b) and (c) are answered in Interrogatory 13a,b,c above, which are included herein by reference.

Interrogatory No. 15

Yes.

By "education" Intervenor at this time is of the opinion that the term means a learning experience or situation for which the learnee a) receives academic credit from an accredited institution of learning, b) is evaluated and/or graded for the educational work he or she has done and that performance is judged against established academic criteria, c) receives at the end of the term a grade or other formal evaluation that is entered onto his or her academic record, d) is under the instruction of a faculty member in a formal course, worth academic units, and approved by the academic governing body of the institution and given a course name and number, e) must produce some scholarly product (e.g. term paper, final, midterm, etc.) in order to pass the course. While other activities may have an educational component to them (as do nearly all human enterprises if approached with an attitude toward learning), the term "education" as used in 10 CFR 50.22 is, Intervenor believes, used more narrowly. Otherwise, any reactor, whether used primarily for commercial purposes or not, would be considered educational, because people working there are hopefully learning all the time. A central difference between a commercial facility and an educational one is that the worker at the commercial facility gets paid for his or her activity and the work at an educational facility must pay for his or her educational experience, unless there is some form of scholarship.

By "commercial" Intervenor, at this time, is of the opinion that the term refers to activities which are primarily intended for the furthering of profit by sale of services or products.

By "research" Intervenor, at the present time, is of the opinion that the term refers to scholarly endeavors designed to further human knowledge. In a University setting, "research" has more specialized meaning: implying peer review, approval by committees of scholars, and publication in scholarly journals.

By "sale" Intervenor would include any transfer of money in exchange for a service or a product; the term would thus include "recharges."

By "services" Intervenor believes 10 CFR 50.22 means specialized services that can be provided by facilities with nuclear reactors, for example, neutron irradiation and activation analysis.

By "development" Intervenor believes 10 CFR 50.22 means the term as it usually is used when referring to "R&D"; i.e. development is the next step after research.

By "training" Intervenor is of the opinion that the term means "the education, instruction, or discipline of a person or thing that is being trained."

By "industrial" Intervenor believes the term to mean "of, pertaining to, of the nature of, or resulting from industry", with industry referring to trade, manufacture, or other technically productive enterprises. Industry is a division of commerce, in that what industry produces is produced for profit.

Definitions for "training" and "industrial" are from The Random House College Dictionary, 1975. Intervenor is the source of the remaining definitions, although the definition for "education" is strongly influenced by the University of California regulations regarding approval of courses, granting of diplomas, and requirements for grades. As discovery proceeds, Intervenor's opinion as to definitions may well alter.

Interrogatory No. 16

Yes.

(a) We know of no other way, and Applicant to date has proposed no other way of which Intervenor is aware, of determining the percent of the annual cost of owning and operating the facility which is devoted to commercial or education and research purposes than by assessing the facility's use, which appears to Intervenor to be primarily commercial.

(b) and (c) -- (a) above is not based on personal knowledge of any individual; the documents on which it is based are identified in 13 (c) which is included herein by reference.

The applicable regulations are 10 CFR 50.21 and .22.

Contention III

Interrogatory No. 17

Yes.

(a) 50.34(b) is required of "each application for a license to operate a facility." No exemption is given for research reactors or for license renewals. The source of the requirement is the regulation itself.

(b) Intervenor's answer comes from a reading of the regulation and not from personal knowledge of any individual.

(c) 10 CFR 50.34(b) supports Intervenor's allegation and can be found in any current version of Title 10 of the Code of Federal Regulations.

Interrogatory No. 18

Yes.

(a) The facts upon which Intervenor bases this allegation are included in part III of the Supplement, pages 1-10, which are included herein by reference. Where place, date, or time of each instance is not included in those pages, Intervenor is not currently aware of said place, date, or time. That information, however, is likely to be obtainable by Applicant in Applicant's maintenance and operating logs, abnormal occurrence reports, and supervisorial committee minutes, most of which have not yet been made available to Intervenor. Intervenor's answer to NRC Staff Question 26 is included herein by reference.

(b) The facts upon which Intervenor bases this allegation come from documents, and not from personal knowledge of any individual.

(c) The documents which support Intervenor's allegation are identified in the Supplement section included above by reference. Additional supporting documents are Applicant's operating logs 1976-1980

Interrogatory No. 19

Intervenor has made no contention one way or other regarding whether harm to the public health and safety has resulted due to the instances of administrative and managerial inadequate controls identified above (with one exception, to be explained below). Intervenor's contention is that these inadequacies make it impossible for the Board to find that Applicant's managerial and administrative controls are adequate to responsibly protect the public health and safety in the future, should the facility be relicensed.

People may have been harmed by these lax behaviors in the past; people may have been lucky and harm may have been minimal or non-existent. Intervenor has made no contention one way or the other. By analogy, Intervenor's contention is similar to that regarding non-renewal of a driving license for someone who has repeatedly driven while intoxicated; whether or not injuries have resulted from past behavior, there is insufficient evidence of responsibility to permit issuance of a license without undue risk that harm may be done in the future.

The one exception has to do with the administrative and managerial controls that permitted loss of the maintenance log & incorrect calibration resulting in many years of radioactive emissions far higher than Applicant was reporting.

(a) Exposure to radiation and radioactivity are clearly harmful; the extent of harm has to do with nature of the radiation and radioactivity, the amount of both, the age of the person exposed, the radiosensitivity of the organ involved, chance and other factors. The nature of the resulting harm can range from reduction in immune system response to cancers, leukemias, genetic defects, spontaneous abortion, and acute radiation syndrome. Aside from acute radiation syndrome, none of the other medical effects carry with them their etiology.

(b) These answers are based on documents, not personal knowledge of individuals. Should expert witnesses on these matters be necessary at hearing, Applicant will be so informed at the appropriate time.

(c) Documents include the various reports of the National Academy of Sciences Committee on the Biological Effects of Ionizing Radiation; the UNSCEAR 1972 report (UN Scientific Committee on the Effects of Atomic Radiation); and EPA's 1977 Radiological Quality of the Environment report.

Interrogatory No. 20

Yes.

(a) Intervenor contends that none of the administrative and managerial controls identified in response to Interrogatory No. 18 have improved and thus the current controls are as inadequate as the previous controls. These controls include: adequate recordkeeping, assurance that only licensed operators operate the controls; active involvement of lab director; adequate supervision of students and employees; basic good housekeeping practices; failure to hold administrative meetings and conduct reviews.

Whether administrative and managerial controls are adequate is obviously a subjective matter, difficult to quantify. The assertion of continued problems is based on the absence of facts which would indicate radically improved administration and management. In fact, the facts are on the other side: radioactive emissions have increased in recent years, the facility continues to be cited for violations of NRC rules, instances like the shipping incident of last June occur.

(b) These facts are based on records of continued problems and lack of records of improvement; the facts do not come from personal knowledge of individuals.

(c) Documents include: U.S. Department of Transportation report of November 18, 1980, regarding the shipment incident; Inspection Report 80-02 indicating recent non-compliance and continued log-keeping errors and failure of reactor supervisor to review Prestartup Checkoff Sheets; Application and 1979 Annual Report regarding increased emissions.

CONTENTION IV

Interrogatory No. 21

Yes, Intervenor contends that Applicant has consistently violated NRC regulations.

b. For each item listed below, information came from inspection reports identified, not from individuals with personal knowledge.

1.a. During Sept. 1967, an employee received a radiation dose of 23.8 rem to the hand (in excess of 10 CFR 20 limits) while performing a fuel element tie bolt examination.
b. CO Report No. 50-142/68-1 which refers to Section P. of CO Report 50-142/67-2.

2.a. "On at least two occasions, the secondary coolant fission product monitor scram circuitry was bypassed to facilitate a beam port experiment. Operation in this manner is inconsistent with the provision of Amendment No.3 to the facility license which states that, "A secondary coolant effluent monitor with a sensitivity of...will be provided... to provide final assurance that no activity is released to the storm drain".
b.CO Report No. 50-142/69-1

3.a. Excessive core excess reactivity during the performance of experiments. "Performance of the experiments in the manner involved is in noncompliance with Amendment No.2 to the facility license which states, for the experiment in question, the "Reactivity effects will be negative upon lowering the permitted to exceed 0.6%Δk/k."
b.CO Report No. 50-142/69-1

4.a. Non-routine reactor operation and experiments (which necessitated bypassing of the fission product monitor scram circuitry) without prior approval by the Reactor Hazards Committee or the Director, Engineering Nuclear Reactor,Section 4. of the Management Interview Section, of facility license.
b. CO Report No. 50-142/69-1

5.a. Failure of the Radiation Use Committee to meet at least semiannually, contrary to the Technical Specification VIII H.3 requirement.
b. RO Inspection Report No. 050-0142/73-01

6.a. Failure of Radiation Use Committee to make an in-depth review of facility operations at least annually, in violation of Technical Specification VIII H.3.
b. RO Inspection Report No. 050-0142/73-01

7.a. A change in the reactor logic system had not been reviewed and approved by the Reactor Use Committee, in violation of Technical Specification VIII H.1.
b.RO Inspection Report No. 050-0142/73-01

8.a. Failure of Reactor Operations Committee to meet at least quarterly, in violation of Technical Specification 6.2f.
b. July 24, 1973 letter from AEC to UCLA, Docket No. 50-326

9.a. "...records were not maintained during the period May 1971 to 1973 showing

that the transient rod drive cylinders and the air supply system had been inspected and cleaned and, when necessary, lubricated." This is in violation of Technical Specification 6.6a4.
b. July 24, 1973 letter from AEC to UCLA, Docket No. 50-326

10.a. Record of maintenance activities prior to May 1974 was missing, contrary to Section VIII K.3 of the Technical Specifications.
b.RO Inspection Report No. 50-142/74-01 and Docket No. 50-142 Oct.15,1974 letter to UCLA

11.a. Acceleration nozzle had been removed from the reactor exhaust stack, in violation of Section II B.3 of the technical specifications.
b. RO Inspection Report No. 50-142/74-01 and Docket No. 50-142 Oct.15,1974 letter to UCLA

12.a. "The Licensee had not calibrated the reactor room area radiation monitors and the radiation monitors and the radioactive gaseous effluent monitor at the frequency required by the Technical Specifications." This was in violation of Section V.C. of the Technical Specifications.
b. Inspection Report No. 050-142/75-01 and Docket No.050-142 letter from AEC to UCLA, Feb. 21, 1975.

13. a. "...air drawn from the reactor room was not being diluted to the specified flowrate and was not being exhausted at the specified height above ground level." This was in violation of Section 11.B.3 of the Technical Specifications.
b. Inspection Report No. 050-142/75-01 and Docket No. 050-142 letter from the AEC to UCLA, Feb. 21, 1975.

14.a. Faliure of Reactor Supervisor to approve in writing changes to the operating procedures. This was in violation of Technical Specification VIII.J.
b. Inspection Report 50-142/77-01.

15.a. "... on January 25, 1980, during an uncontrolled reactivity change no emergency procedure existed which delineated operator action on a dropped rod resulting in the failure to report the abnormal occurrence and a return to full power operation before the cause of the occurrence had been verified."
This event resulted in <u>three</u> violations of the Technical Specifications:
VIII.J, VIII.L.3.b., and VIII.M.1
b. Inspection Report 50-142/80-02

16.a."...neutron channels were not calibrated between Dec. 8, 1978 and Jan. 9, 1980, a period in excess of 13 months," This was a violation of Technical Specification III.D.3
b. Inspection Report 50-142/80-02

CONTENTION IV

<u>Interrogatory No. 22</u>

Yes, Intervenor contends that Applicant has been consistently cited for violation of its own technical specifications. Specific instances of violation are noted in answer to Interrogatory No. 21, numbers 5 through 16. See answer to b also in Interrogatory No. 21 above.

Interrogatory No. 23.

Intervenor has made no contention one way or another regarding harm to public safety and health that may have resulted from the violations identified in answer to Interrogatories No. 21 and 22 above. Intervenor's contention goes to whether reasonable assurance can be given that Applicant, should license be granted, will comply with the regulations in 10 CFR 20 and 50, as required by 10 CFR 50.40 before a license can be granted.

(a) Intervenor suspects harm may have occurred from two of the violations at least, but has made no contention to date regarding actual past harm. Those two incidents were the violations resulting in excessive emissions of Argon, and the shipment incident in which a contaminated truck was permitted to leave UCLA property. Both situations may have resulted in actual harm to people, but as explained in answer to interrogatory No. 20, cancers do not show their etiology.

(b) the information is not from persons with knowledge of supporting facts.

(c) the documents include those listed in response to 20c, included herein by reference.

Contention V

Interrogatory No. 24

Yes.

(a) The facts and analysis and calculations are found in Supplement, pages V.1-21. See in particular page 5 showing the calculation using the calculational form employed in Application Appendix A of part III. Supplement pages V.1-21 is included herein by reference. Intervenor at this time has no formal opinion as to the most credible accident scenario. This question asks for an organizational opinion not in the possession of the organization at this time.

Among the accident scenarios which Intervenor at this time believes are credible are: pneumatic tube insertion of large worth sample (negative) and shooting of sample out without first putting control blades back in; similar insertion of large worth positive sample; similar insertion of negative or positive sample through insertion in irradiation port; earthquake-induced pressure surge in pneumatic tube or earthquake-induced bursting of sample container, causing rapid loss of negative worth (i.e. rapid addition of reactivity); or earthquake-induced jumping of sample out of core area causing reactivity insertion. There may be other such scenarios; Intervenor asserts in this contention that it is Applicant's burden to thoroughly analyze potential reactivity accidents are prove that none are credible or dangerous.

(b) The facts and analysis and calculations are based on facts, analyses, and calculations contained in Application and Hazards Analysis, not from an individual with personal knowledge of these facts.

(c) The documents are the Application, Hazards Analysis, and Borax references contained in page III/A-7 of Application.

CONTENTION VI

Interrogatory No. 25

Yes. By "emitting excessive radiation" Intervenor means that Applicant's reactor has been releasing into the environment radiation in levels greater than are proper.

(a) The facts upon which Intervenor bases this contention are found in Supplement, pages VII-10 and in "The UCLA Reactor: Is it Safe?", submitted as part of the original Petition for Leave to Intervene, May 22, 1980, both of which are included herein by reference. In addition, the contention is based on the incident involving the allegedly contaminated shipment of spent fuel, in which a shipment of spent fuel originating at UCLA was found days later to have been contaminated with high levels of radioactive cobalt. The period during which excessive radiation was emitted is, in Intervenor's view, the entire last twenty years, although there may have been intervals of weeks or months when the reactor was not run when excessive emissions did not occur. The period during which the radiation from the truck incident occurred was June 20 to June 26, roughly; Intervenor is not at this time aware of precisely when the contamination occurred, nor precisely when the contamination was detected, however the truck was at UCLA around the 20th and arrived at GE at Valecito around the 26th, 1980.

(b) The facts are based on documents, not individuals with personal knowledge.

(c) The documents are identified in the two items referenced in (a) above; in addition, see Department of Transportation study on contamination incident, November 18, 1980.

Interrogatory No. 26

Yes. Term means same as defined for No. 25.

(a) Emissions have increased since 1975; occupancy factor on roof has likewise increased (or at least the occupancy Applicant has reported to the Commission). The emissions are excessive whenever facility runs at full power, although it is the cumulate emission that is most readily identified as excessive.

(b) The facts are based on records, not individuals with personal knowledge.

(c) The documents are identified in the reports referenced in 25a; in addition, 1979 annual report and the Application indicate increased emissions.

Interrogatory No. 27

Yes. The standards are identified in Contention VI.4, which is included herein by reference.

(a) The facts are included in the Supplement, pages VII-10, included herein by reference, and the "UCLA Reactor: Is it Safe", submitted as part of the original Petition for Leave to Intervene, May 22, 1980, likewise included herein by reference. In addition, new information regarding Applicant's statements to NRC Staff (identified in part c below) regarding occupancy factor on roof reinforce the previous allegations of violation of radiation standards. The shipment incident likewise demonstrates the violation of each standard identified in VI.4.

(b) The information comes from documents, not individuals with personal knowledge.

(c) The documents are identified in the two items referenced in (a) above; in addition, see DOT study of contamination incident, November 18, 1980. Also, see October 23, 1979, letter from Neill Ostrander to Director, NRC Division of Operating Reactors, regarding increased roof occupancy; also, NEL answers to NRC Staff questions on occupancy(Question 1, 8-22-80).

Interrogatory No. 28

Yes. The standards are identified in Contention VI.4, which is included herein by reference.

(a) see answer to interrogatory no . 26, included herein by reference.

(b) see (a) above

(c) see (a) above.

Interrogatory No. 29

Yes. By inadequate monitoring Intervenor means systems and procedures for detecting radiation and radioactivity sufficient to demonstrably and responsibly protect the public from radiation and radioactivity exposure.

(a) The facts and specific incidents are identified in the Supplement, pages VII-10 and "UCLA Reactor: Is It Safe", herein included by reference. In addition, the contamination incident regarding the spent fuel [illegible]ment is further basis for the contention regarding inadequate m[illegible]toring, as 100,000 cpm of CO-60 was apparently missed.

(b) The facts are based on documents, not individuals with personal knowledge.

(c) The documents are identified in the material included by reference in part a above; further support is found in the Application reports on TLD and film badge use; Applicant's answers to NRC questions regarding accuracy and method of calibration of radiation devices; and letter of 20 November 1980 from Jack Hornor of NEL to Bill Drain in the Math Science Addition at UCLA (one page letter, one page attachment). [The last items at this time do not provide "facts" in support of contention but rather raise useful questions about the matter of the contention.]

Interrogatory No. 30

Yes. Term means the same as for No. 29.

(a) Intervenor contends that the monitoring systems employed by NEL have in no way improved since the problems cited in answer to No. 29. In fact, at least two methods of estimating radiation release, flawed though they were (TLD placement and SF6) are not even in use at present, further reducing monitoring. In addition, there is new basis showing failure of the existing monitoring systems: independent samples taken by NEL of effluent do not correspond to the readings of the stack monitor. Either the monitor is inaccurate (again) or the sampling method of its monitoring method are inaccurate, or all methods are inaccurate. The inadequate monitoring is thus continuing, and on-going; not confined to a particular past period or particular current period.

(b) Information comes from records, not individuals with personal knowledge.

(c) Inspection report 50-142/80-03; plus all the documents identified in 29c.

Contention VII

Interrogatory No. 31

Yes. "Unscheduled shutdowns" are occurrences when the reactor operation is stopped in an unanticipated manner. The term is used by Intervenor in the same manner in which Applicant uses it in page 2 of 1974 Annual Report.

(a) The facts upon which this contention are based are included in Part VII on the Supplement, which is included herein by reference. The specific shutdowns of which Intervenor is currently aware are identified by date (though not time) in Applicant's Annual Reports, 1971-1979, of which Applicant has copies. The rate of unscheduled shutdowns in previous years is discussed in those years' inspection reports, copies of which Applicant must have. Intervenor at this time has no information about unscheduled shutdowns other than that included in the above-mentioned inspection reports and annual reports, and thus has no information not already in Applicant's possession.

(b) The information is from records, not individuals with personal knowledge.

(c) The documents are identified in Part VII of the Supplement; in addition, Applicant's Annual Reports 1971-1979 and inspection reports for the previous years.

Interrogatory No. 32

An abnormal occurrence is a non-standard incident at the facility. We do so contend.

(a) See Intervenor's answers to NRC Interrogatory No. 47c.

(b) The information is from records, not individuals with personal knowledge.

(c) See answer to a above.

Interrogatory No. 33

Yes. By "accident" Intervenor means an untoward incident such as a radiation spill, pipe break, coolant leak.

(a) The facts upon which this contention are based are contained in the Supplement, part VII, which is included herein by reference. In addition, the shipment incident involving contamination, and the cracked rabbit incident reported in Inspection Report 80-02 regarding January 25, 1980.

(b) The facts are based on documents, not individuals with personal knowledge.

(c) The documents are identified in the Supplement, part VII, referenced above; shipment incident detailed in DOT report; Inspection Report 80-02.

Interrogatory No. 34

Intervenor has made so such contention, one way or another, regarding past actual harm to public health and safety. Intervenor's contention is merely that these occurrences are so pervasive that they evince a pattern of unreliability which makes it impossible for Applicant to reasonably assure that the reactor can be operated, should it be relicensed, in a manner which does not endanger the public health and safety.

CONTENTION VIII

Interrogatory No. 35

Intervenor contends that the analysis of an accident and the calculations regarding the resultant radiation exposure to the public contained in the Applicant's Safety Analysis Report are based on unrealistic assumptions. Those assumptions are specified in VIII.1.a through d.

(a) The facts upon which Intervenor bases its allegation are found in the Supplement, part VIII, which is included herein by reference.

(b) Information is from documents, not individuals with personal knowledge.

(C) The documents are identified in (a) above. Intervenor at this time has not done a review of the nuclear safety literature regarding dose and dispersion models, but contends that that burden is the Applicant's.

Interrogatory No. 36.

CONTENTION IX

Yes. The contention goes to the issue of whether Applicant has adequately devoted the necessary time, money, and competence to over-all maintenance. Intervenor cannot at this time point to any piece of equipment that Applicant has adequately maintained.

(a) The facts upon which Intervenor bases its allegation are contained in Supplement, in Part IX, included herein by reference. The primary fact upon which this contention is currently based is the record of maintenance hours involving reactor operation, which Intervenor contends is too low to adequately maintain the facility. Specific instrument maintenance records have not yet been provided Intervenor, so comment on specific instruments cannot be made until those records are reviewed.

(b) The facts come from records, not individuals with personal knowledge.

(c) The documents are the Application and the list of maintenance hours involving reactor use filed by Applicant with NRC Staff on May 13, 1980.

Interrogatory No. 37

Yes. The instruments are identified in Supplement, Part IX. In addition, Intervenor at this time would include inadequate calibration of film badges and TLDs.

a) The facts are included in Supplement, Part IX, which is hereby incorporated by reference. In addition, failure of Applicant to choose adequate controls for both TLDs and film badges, to make sure that placement is such that confidence in their readings is assured and when questioned, redone, add to Intervenor's concern of inadequate calibration.

b) The facts come from records, not individuals with personal knowledge.

c) The documents are referenced in Supplement, Part IX, included in a) above; also Annual Reports 1975-1977; TLD data from Radiation Detection Company (PO Box 1414 Sunnyvale, CA 94088, 408-735-8700) sent to Jack Hornor at NEL quarterly; Inspection Report 80-02.

Interrogatory No. 38

Intervenor can at this time provide no information, one way or the other, about current (i.e. today) familiarity with applicable calibration requirements. Intervenor's contention goes to unfamiliarity evidenced in the past. Intervenor has no information to suggest these defects have been corrected.

Interrogatory No. 39

Intervenor has made no contention, one way or the other, about inadequately maintained equipment or improperly calibrated instruments causing any actual harm to the public health and safety. Intervenor's contention goes to the issue of whether, because of this past history, the NRC can conclude that the issuance of a license for this facility will not be inimical to the public health and safety in the future, should it be relicensed.

Interrogatory No. 40

Intervenor has no information about preceding year maintenance and calibration, having not seen the maintenance and calibration records as yet, and not having seen the 1980 Annual Report, if it has been published yet. Thus Intervenor has made no such contention, one way or the other. Applicant is reminded that said contention in question (IX) was written in the middle of the previous year.

Interrogatory No. 41

The quoted statement in this interrogatory is not a contention of Intervenor, but was part of the basis for the contention provided in the Supplement. The items in the "correspondence bibliography" upon which the statement were based are:

Letter dated Aug.12, 1963 from AEC to UCLA, pg WLR-5 (3-
Letter dated December 13, 1963 from AEC to UCLA
Letter dated Dec.24, 1963, from AEC to UCLA
Letter dated Jan. 17, 1964, from AEC to UCLA
Letter dated Feb.11, 1964, from AEC to UCLA

CONTENTION X

Interrogatory No. 42

Intervenor contends that there is an unacceptable likelihood of an accident at the reactor which would expose large numbers of people to dangerous radiation. Intervenor has made no specific contention as to what specific form that accident would take, should it occur, although in Contention XIX some scenarios are identified that Intervenor contends need to be reviewed in order to determine the maximum credible accident or design basis accident.

Among the accidents of concern are the following, alone or in combination: excess reactivity insertion sufficient to cause melting of the fuel, and/or the cladding; steam explosion; Wigner release; earthquake damage to core; damage to core initiated by plane crash or helicopter crash; sabotage, including use of explosives to dissemble the core; irradiation of explosives; stuck control blades and dump valve with damaged fuel still critical. A more complete list of possible accidents cannot be made until Applicant does a thorough safety analysis complete with review of all possible hazard scenarios, as contended in Contention XIX.

(a) The basis for this contention is included in Supplement Part X, included herein by reference. The basis for the concern that such an accident is likely has to do with the fact that it is a reactor run by students, sometimes operated by unlicensed operators, has a very large excess reactivity limit, has a pneumatic tube system (which has had problems) and irradiation ports, is open to thousands of visitors each year with minimal security, making sabotage too possible, has a history of violating NRC regulations and its own tech specs, calibration errors and poor maintenance, and inadequate managerial and administrative controls. The basis for the concern about radiation doses is lack of containment and Applicant's own radiation estimates from Application.

(c) The information comes from documents, not individuals with personal knowledge.

(b) Intervenor means by the term "design basis accident", as used in Contention X, the maximum accident that could occur at the facility, should the worst event or series of events credible occur.

(d) This contention, directed at Staff, is essentially a summary of all the other contentions directed at Applicant, arguing that because of the collective deficiencies, an EIS must be prepared. The documents on which it is based are thus those documents referenced in the Supplement throughout. No specific documents besides those referred to on other contentions was used in making this contention.

CONTENTION XII

Interrogatory No. 43.

Yes. The safety features are identified in the Supplement, Part XI, incorporated herein by reference, and in parts 1 through 9 of Contention XII as admitted, incorporated likewise by reference herein.

a) The facts upon which the contention is based are included in the Supplement, Part XI, incorporated by reference.

b) Intervenor has no knowledge of whether the safety systems are normally present at Argonaut-type research reactors, aside from graphite, which we understand is used; but we are not aware whether the other Argonauts have procedures for reducing the danger from graphite of concern to Intervenor about Applicant's facility.

c) Lack of adequate containment structure can result in fission product release to the environment should an accident occur. Should the high level radiation monitor system fail, the reactor can continue to operate when dangerous levels of radiation are present; it also is one more reduction in safety system designed to scram reactor in case of dangerous conditions. Should scram and dump valve systems fail, lack of boron injection system would make it difficult or impossible to make the reactor go subcritical; if compounded by fuel failures (if, for example, failure of other scram systems due to earthquake which also damaged cladding), safe shutdown cannot be achieved. In case of accident, lack of radioactivity removal systems, emergency liquid and gaseous emissions holding tanks and HEPA filters would mean far greater radioactivity exposure to the public than should those devices be in place. Lack of an emergency core cooling system in case of power excursion or other heat-up of the core could increase fuel melting, damage, release of fission products, and chance of fire. Spare control blade motors could make it impossible to shut down reactor should dump valve fail and control blade motors fail; with damaged fuel (say, all failures due to earthquake) reactor could not be brought to safe shutdown. Lack of shielding and access restrictions increases likelihood of harmful public radiation exposures. Lack of adequate interlock systems makes any accident more likely. Lack of missile shields means increased risk of serious damage in case of earthquake, sabotage, accidental explosion near reactor, plane crash, or other incident which involves potential for missiles. Graphite swelling can bind control blades and change core configuration and workings of other safety systems; Wigner energy, if unannealed, can add significantly to the effect of a power excursion, increasing the likelihood and effect of fuel melting. Fuel failures can cause reactivity changes and releases of fission products. Inadequate control blades can make it impossible to shutdown a reactor and can make reactivity insertions (for example, earthquake-induced jumping up or breaking off of control blades), which could cause significant fission product release.

d) These facts are from documents, not from an individual with personal knowledge.

e) The Technology of Nuclear Reactor Safety by Thompson and Beckerley, Vol. 1 and 2; A guidebook to Nuclear Reactors, Anthony Nero, UC Press, 1979; documents cited in Supplement Part XI;

Interrogatory No. 44

Intervenor's contention is that graphite used in reactors undergoes physical changes and thus poses a hazard to this facility. As basis for this contention, swelling and cracking were mentioned in the Supplement. Hallam: 82 MW_e . neutron flux 1×10^{13} thermal, 8×10^{13} fast (flux in fuel); Moderator (graphite) temperature--600°C. Piqua included by mistake.

(a) The Hallam reactor was shut down after only a year's operation. It was shut down because of swelling and cracking of the moderator cans, i.e. the graphite.

(b) This information comes from documents, not individuals with personal information.

(c) Sources: AI-AEC-12709, Atomics International publication for the Atomic Energy Commission

and Directory of Nuclear Reactors of the International Atomic Energy Agency.

CONTENTION XIII

Interrogatory No. 45

Intervenor contends that the information which Applicant has provided regarding the special nuclear materials license is inadequate to meet the requirements of 10 CFR 70.22(a)(7) and (a)(8) and 70.24(a)(1),(2) and (3).

a) The information required by those sections cannot be found by Intervenor in Applicant's Application for a special nuclear materials license.

b) The information comes from reading the Application and is not from an individual with personal knowledge.

c) The document in question is the Application.

CONTENTION XIV

Interrogatory No. 46

Intervenor contends that the Applicant has failed to provide an analysis of problems common to Argonaut-type reactors. Intervenor's contention is not that specific problems have been failed to be analyzed, but that no analysis whatsoever has been performed. It is not Intervenor's burden to do such an analysis; the contention precisely puts at issue the Applicant's burden to do such an analysis.

(a) As basis for this contention, Intervenor provided three examples of problems which other Argonauts have faced. These examples are provided, along with their substantiation, in the Supplement, Part XIII, included herein by reference.

(d) Intervenor at this time has no information, one way or the other, that would indicate harm to public health and safety or the lack of said harm.

(c) The documents are identified in the Supplement, Part XIII, included herein by reference.

Note: Question (b) appears to be a misprint from question 43(c), already answered; Interrogatory No. 46 does not deal with safety systems but problems common to Argonaut-type reactors.

CONTENTION XV

Interrogatory No. 47

(a) The bases of this contention are included as items 1,2, and 3 of the Contention, included herein by reference, and in Part XIV of the Supplement, likewise included herein by reference.

(b) The information comes from records, not individuals with personal knowledge.

(c) The documents are identified in the Supplement Part referenced in (a) above.

Interrogatory No. 48

Yes.

a) The adverse consequences from normal operation involve the exposure of the public to radiation and radioactivity generated by the operation of the facility. The increased density of population increases the total population dose and thus increases the adverse consequences; the degree of density even without increase are such as to make the adverse effects far greater than were the facility sited in an area of far less population density. The addition of buildings on top of and immediately around the reactor create additional problems, by increasing the immediate population nearby, and most specifically, by creating a new hazard--Argon uptake by the airvent on top of Math Sciences. The interface of the airsystems additionally create adverse consequences because Argon taken in from one airvent, or released through the NEL facility can readily migrate to other populated parts of these buildings.

b) the information comes from documents; not personal knowledge of an individual.

c) The documents are identified, Part XIV of Supplement; also NRC Inspection Report 75-01.

Interrogatory No. 49

The increased population density assertion are based on figures provided by Applicant at page III/3-3 of Application. Intervenor has no figures at this time regarding campus population increases; however the contention deals with the unrestricted area immediately surrounding the reactor and that population has significantly increased, due simply to the addition of Math Science and Boelter additions since reactor construction and other nearby buildings not present when reactor was first built. See NRC Inspection Report 75-01.

CONTENTION XVI

Interrogatory No. 50

Applicant's paraphrase is not quite correct. Intervenor's contention is stated in XVI, which is referenced here in answer. Intervenor, however, does not take issue with the statement.

(a) Intervenor identified the equipment in the contention: reactor instrumentation and console instrumentation. Until Applicant answers Intervenor's interrogatories in this matter, particularly with regards what Dr. Catton meant when he made the statement in the 1976 Annual Report regarding the problems described in the contention, and until Intervenor is provided access to what maintenance records have not been lost, Intervenor can add nothing to Supplement, Part XV, which is incorporated herein by reference.

(b) and (d) are answered in Supplement, Part XV, incorporated above.

(c) The facts are from records, not individuals with personal knowledge.

Interrogatory No. 51

Intervenor cannot answer this question affirmatively because at this time it has no knowledge whatsoever about whether applicant's currently employed reactor personnel "had knowledge that a serious hazard to the public could result by such operation" (emphasis added). What reactor personnel know and do not know is beyond the information Intervenor currently has, and could only be known through deposition or cross-examination at hearing.

Interrogatory No. 52

Yes.

(a) Reactor stack not raised, exhaust fans not replaced, gaseous effluent monitor not replaced until mid-70s, console instrumentation and activation analysis lab not updated (as of 1977 at least). The hazard from the first three involved excessive Argon emissions; console instrumentation involves increased chance for accident; activation analysis lab involves increased chance of contamination by inadequately contained "hot" samples. Lack of decay tanks also increase radiation exposures to public.
(b) The facts come from documents, not individuals with personal knowledge.

(c) 1976 Annual Report; Response to Notice of Violation, by Thomas Hicks, March 13, 1975.

CONTENTION XVIII

Interrogatory No. 53

Yes

(a) Answer to Interrogatory 52 is incorporated herein by reference, as is Supplement, Part XVII. The harm that resulted, or may have resulted, is impossible to demonstrate, as radiation is invisible, and except for acute radiation syndrome, the effects take some time to be manifest; the cancers and leukemias do not tell their etiology. The increased radiation emissions from these deferred maintenances have caused harm; the only question is how much harm, which Intervenor at this point cannot assess.

(b) Facts from documents, not individuals with personal knowledge.

(c) Documents listed in 52C above and Supplement, Part XVII.

Interrogatory No. 54

Intervenor has made no contention one way or another as to whether Applicant's financial situation is different from other state-supported universities which operate research reactors. The fact of state support alone could not support opposition to a license. But it is a factor to be taken into account, along with other specific financial characteristics of this institution, in determining whether reasonable financial assurances can be given. If Applicant has a means of compensating for the uncertainties posed by year-to-year state funding, the issue's importance dims; if the Applicant has shown other financial uncertainties, the issue's importance is increased.

CONTENTION XIX

Interrogatory No. 55

Intervenor's contention does not address itself to failure to comply with federal regulatory requirements but rather to a flaw in the Safety Analysis. Intervenor does believe, however, that under 10 CFR 50.40, grant of license cannot be made in this case without an adequate analysis of hazard scenarios for the facility. Intervenor likewise interprets 10 CFR 50.34(b)(1) to indicate that certain information about siting must be provided so that the Board can make a judgment about the adequacy of the siting characteristics; that includes an adequate postulation of a major accident, "hypothesized for purposes of site analysis or postulated from consideration of possible accidental events, that would result in potential hazards not exceeded by those from any accident considered credible. Such accidents have generally been assumed to result in substantial meltdown of the core with subsequent release of appreciable quantities of fission products." Intervenor contends no such adequate consider of major accidents has been done by Applicant in Application.

(a) The facts are contained in Supplement, Part XVIII, included herein by reference.

(b) Information from records and documents, not individuals with personal knowledge.

(c) 10 CFR; documents cited in Supplement referenced above.

Interrogatory No. 56

Intervenor contends that an analysis of various sabotage scenarios should have been done by Applicant. In absence of such analysis adequately proving no such scenario is credible, Intervenor believes such scenarios must be considered credible. Intervenor has made no contention as to which specific sabotage scenario ought to have been, contending instead it is the burden of the Applicant to produce an adequate analysis of such scenarios. As basis for its contention that such scenarios should have been considered, Intervenor gave the example of sabotage utilizing explosives near, on, or in the reactor, causing major damage to the core and breaking of fuel plates in a major way. Intervenor does not contend at this time that a specific sabotage scenario ought to have been considered, but merely that no analysis of sabotage scenarios whatsoever has been included in assessing the maximum or design basis accident.

Interrogatory No. 57

As with No. 56, Intervenor has to date made no contention regarding which specific airplane accident scenario ought to have been considered. Intervenor merely has contended that such an analysis to determine if such an accident is credible should have been done by Applicant. As basis for its contention that such an analysis should have been done, Intervenor has demonstrated in the basis to this Contention, provided Applicant and referenced here, that there are numerous nearby airports and that there is reason to believe helicopters, light planes, and even heavy commercial planes fly nearby. The contention goes to the issue of whether an analysis of such scenarios need be done, and cannot go to the adequacy of such an analysis until and unless it is done.

Interrogatory No. 58

Yes, except Intervenor contends such scenarios (plural) should have been considered.

(a) Intervenor means by the expression "multiple failure modes" scenarios in which not merely one thing goes wrong, but several which are interdependent. Thus, TMI was not a single failure mode, but was aggravated by a series of failures, i.e. multiple failures. "Worst possible series of events" was a phrase added by NRC Technical Staff in one of the stipulation conference calls as his way of defining "multiple failure modes". We take it to mean a series of events, the consequences of which are the worst possible. Intervenor intends that numerous scenarios should be considered to determine whether they are credible or not, and whether the results are among the most major possible, or not. Intervenor does not intend that only credible scenarios be initially considered, because there is no way of determining whether the scenario is credible until the kind of analysis is done that Intervenor has contended should be done. Analysis is required to determine which scenarios are credible and which not. Intervenor wishes that analyses to be done and believes absent it, a favorable ruling on the licensing request is made very difficult.

(b) Intervenor has not proposed a specific multiple failure mode for this reactor which should be considered, but contended instead that multiple failure modes should be considered. The Rasmussen report, even with all its criticisms, spent considerably time employing fault-tree analysis considering multiple failure modes. Common sense and reactor experience indicate that when things go wrong, it is not only one thing that goes wrong each time. Sometimes more than one thing goes wrong. See, for example, Thompson and Beckerley's descriptions of past accidents: numerous failures constituted many of the accidents. (Technology of Reactor Safety, Vol. 1; copies available at NEL).

Interrogatory 59

Yes, except Intervenor contends such scenarios (plural) should be considered.

(a) Intervenor had suggested the term "maximum credible accident" for this contention; in conference calls in stipulation on contention language, NRC technical staff said "maximum credible accident" was no longer the current term and was asked to propose the current term for what Intervenor intended. Intervenor means by the expression "design basis accident" as used in this Contention the accident that would result in potential hazards not exceeded by those from any accident considered credible. We intend that numerous scenarios be considered to determine which are credible and, of those, which would result in the maximum potential hazards.

(b) We have not described the "design basis accident" scenario implied in Applicant's question and thus cannot attest to whether it is credible or not. Intervenor has merely contended that a design basic accident should be included in Application based on detailed analysis of possible scenarios that could constitute the DBA.

CONTENTION XX

Interrogatory No. 60

Yes, however Intervenor does not contend that 73.67 is the only code section applicable.

(a) The facts upon which Intervenor makes that contention are included in the basis to Contention XX, which has been provided Applicant by Intervenor, and which is included herein by reference.
In addition, Intervenor bases its allegations on the fact that 73.67 requires that NEL's physical security protection system will minimize the possibilities for unauthorized removal of SNM consistent with the potential consequences of such actions. Since the material is bomb-grade, the potential consequences are awesome; NEL's physical security system in no way keeps the possibilities of unauthorized removal of SNM to a minimum. 73.67 is applicable (at least a,b,c,d) to both formula quantities and materials of moderate and low strategic significance.
(b) The information comes from documents, not individuals with personal knowledge.

(c) 10 CFR 73.67.

Interrogatory No. 61

Yes.

a) 10 CFR 73.60 applies to facilities with 5000 grams or more of U-235 of 20% or greater enrichment. U-235 which is not readily separable from other radioactive material and which has a total external radiation dose rate in excess of 100 rems per hour at a distance of three feet from any accessible surface without intervening shielding does not count toward the 5000 grams.

UCLA's license request is for 4700 grams fresh U-235 and 4700 irradiated U-235. There is no requirement in the license request, nor in the current license, of which Intervenor is currently aware, that no more than 299 grams of irradiated fuel ever be less than 100 rems per hour external dose rate at three feet without shielding. Thus it is quite possible, under past license and proposed license, for UCLA to have 4700 grams fresh fuel and at least 300 grams irradiated fuel at less than 100 rems, making a total of 5000 grams or more and thus requiring the licensee to meet the requirements of 10 CFR 73.60.

b) This information comes from a reading of the regulation and the Application and not from any individual with personal knowledge.

c) 10 CFR; Application.

Interrogatory No. 62

Yes.

(a), (b) and (c)The facts upon which this contention are made are found in the document on basis for this contention provided Applicant by Intervenor, which is incorporated herein by reference. The person(s) and documents supporting the contention are identified therein.

Interrogatory No. 63

Yes.

(a), (b), and (c) The facts upon which this contention are made are found in the document on basis for this contention provided Applicant by Intervenor, which is incorporated herein by reference. The person(s) and documents supporting the contention are identified therein.

Interrogatory No. 64

Yes.

(a), (b), and (c) The facts upon which this contention are made are found in the documents on basis for Contention XX and Contention XXIV, which are incorporated herein by reference. Intervenor has previously provided Applicant with both. The person(s) and documents supporting the contention are identified therein; additional support can be found in the DOT report.

Interrogatory No. 65

Yes.

(a), (b) and (c) The facts are found in the document on basis for Contention XXIV, incorporated herein by reference. The person(s) and documents supporting the contention are identified therein; additional support can be found in the DOT report.

Interrogatory No. 66

Yes

(a), (b) and (c) The facts facts are found in the documents on basis for Contentions XX and XXIV, incorporated herein by reference. The person(s) and documents supporting the contention are identified therein; additional support can be found in the DOT report.

Interrogatory No. 67

XX.1 a through e--10 CFR 73.2h,i,j

XX.2.a through f--10 CFR 73.2k

XX.3 a and b--10 CFR 73.60 and .67

XX.3.c.--10 CFR 73.60 and .67 and 73.2(f)
XX.3.d.--10 CFR 73.60 and .67 and 73.2(f)(2) and 73.2(m)
XX.3.e.--10 CFR 73.60 and .67 and 73.2(b)
In addition to the above, 73.40a and 73.37 and 73.1.

Interrogatory No. 68

Yes.

(a) (b) and (c) The facts upon which we base this contention are included in the basis for the contention, included herein by reference. No additional information is available at this time. The person(s) with knowledge of the facts and the documents which support those facts are identified in the document on basis for Contention XX.

CONTENTION XXI

Interrogatory No. 69

Yes

(a) (b) and (c) The facts upon which the contention is based are found in subparts 1 through 9 of the Contention and the Supplement, part XX, included herein by reference. The person(s) with knowledge of those facts and the supporting documents are identified in that material. No additional information is in Applicant's possession at this time.

Respectfully Submitted,

Mark Pollock
Attorney for Intervenor
COMMITTEE TO BRIDGE THE GAP

Dated at Los Angeles, California
this 20th day of May , 1981

VERIFICATION

I, DANIEL O. HIRSCH, say:

1. I am the President of the COMMITTEE TO BRIDGE THE GAP, Intervenor in this action, and I have been authorized to sign this verification on its behalf.

2. All of the information provided in the attached ANSWERS OF THE COMMITTEE TO BRIDGE THE GAP TO APPLICANT'S FIRST SET OF INTERROGATORIES represents the information currently possessed by the Intervenor relevant to those Interrogatories.

3. I have read all said ANSWERS and do believe them to be true and correct.

Signed on May 20, 1981, at Los Angeles, California.

I hereby affirm that the foregoing is true and correct.

Daniel O. Hirsch

Daniel O. Hirsch

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
	)	Docket No. 50-142
THE REGENTS OF THE UNIVERSITY	)	
OF CALIFORNIA	)	(Proposed Renewal of Facility License)
	)	
(UCLA Research Reactor)	)	
	)	

CERTIFICATE OF SERVICE

I hereby certify that copies of "ANSWERS OF COMMITTEE TO BRIDGE THE GAP TO APPLICANT'S FIRST SET OF INTERROGATORIES" in the above-captioned proceeding have been served on the following by deposit in the United States mail, first class, this 20th day of May, 1981.

Elizabeth S. Bowers, Esq., Chairman
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U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

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