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(Contention XX)  
6 COMMITTEE TO BRIDGE THE GAP

OFFICE OF SECRETARY  
DOCKETING & SERVICE  
BRANCH

7  
8 UNITED STATES OF AMERICA NUCLEAR REGULATORY COMMISSION  
9 BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

10 In the Matter of

11 THE REGENTS OF THE UNIVERSITY )  
OF CALIFORNIA )  
12 (UCLA Research Reactor) )

Doc. No. 50-142 OL

Proposed Renewal of Facility License No. R-71

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15 COMMITTEE TO BRIDGE THE GAP'S  
16 ESTIMATE OF THE LEVEL OF THREAT FACING THE  
17 UCLA REACTOR FACILITY SUBMITTED IN RESPONSE  
TO THE APRIL 20, 1984 PRE-HEARING CONFERENCE ORDER

18 A. INTRODUCTION

19 In response to the Licensing Board's April 20, 1984 Pre-  
20 Hearing Conference Order, Committee to Bridge the Gap (CBG) submits the  
21 following summary of the estimated levels of sabotage, theft and  
22 diversion threats facing the UCLA reactor facility. The level of  
23 threat to the UCLA reactor facility is dependent upon the value of the  
24 facility as a terrorist target or source of nuclear material. This  
25 differs when analyzing sabotage and theft, and thus will be treated  
26 separately below; however, a common conclusion is possible: The UCLA  
27 reactor facility is an attractive target for both potential thieves and  
28 saboteurs.

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1 B. THEFT OR DIVERSION THREAT

2 The level of threat of theft or diversion occurring at the  
3 UCLA facility is directly related to the value of the SNM on site either  
4 for use in the manufacture of weapons, as a means of making threats for  
5 blackmail purposes, or for sale on the black market.

6 UCLA possesses at least 4.92 kilograms of 93% enriched  
7 uranium. Any group capable of making weapons with 93% enriched fuel  
8 would be capable of separating the uranium from the UAL eutectic in the  
9 MTR-type fuel at UCLA. This is true for both the irradiated and  
10 unirradiated fuel. Furthermore, the irradiation levels that exist in  
11 the UCLA reactor core are not sufficient to provide a significant  
12 deterrent to dedicated thieves.

13 The value of the 4.92 kilograms of 93% enriched uranium at  
14 the facility can be described in three basic ways: its dollar value,  
15 its weapons potential, and its blackmail or threat potential. Although  
16 it is difficult to state the precise dollar value of the 4.92 kilos,  
17 it is reasonable to assume a value on the black market of at least one  
18 hundred thousand dollars (\$100,000.00) per kilogram, or nearly one  
19 half million dollars worth of nuclear material at the UCLA facility.

20 4.92 kilograms of U-235 is an extremely significant quantity  
21 in terms of weapons manufacture. The critical mass of uncompressed  
22 U-235 with a thick reflector made of beryllium is approximately 11  
23 kilograms. However, if both the core and the reflector are compressed,  
24 the critical mass may be reduced by the square of the compression. John  
25 S. Foster, weapons specialist and former director of the Lawrence  
26 Berkeley Labs, has stated in the public literature that compression of  
27 several times normal density is achievable by use of conventional  
28 explosives. Indeed, if the compression is merely two times, the

1 critical mass would drop from 11 kilograms to less than 4 kilo-  
2 grams. Furthermore, the potential consequences of theft of 4.92  
3 kilograms of U-235 is very nearly that of the theft of 5.0 kilograms,  
4 the level at which the Nuclear Regulatory Commission has explicitly  
5 required greater theft protection.

6 4.92 kilograms of bomb-grade uranium is also significant for  
7 its blackmail or threat value. A group possessing such a significant  
8 quantity of SNM could make an extremely effective blackmail threat by  
9 sending threatened authorities kilogram quantities of U-235. Having  
10 the capability to make such a grandiose demonstration would give a  
11 blackmailer tremendous leverage and credibility.

12 The PuBe sources possessed by UCLA also add to the value of  
13 the UCLA facility as a theft target. The 32 grams Pu-239 contained  
14 therein, if released, could potentially result in lethal doses  
15 throughout 15,000 square meters of building and significant contamin-  
16 ation in 1,600,000 square meters of building. As a direct act or as  
17 a threat, the theft of the Pu-239 at the facility could create  
18 significant terrorist or blackmail potential. Thus, the PuBe source  
19 adds directly to the value of the UCLA facility as a theft or diversion  
20 target.

21 In sum, whether one considers the monetary value of the  
22 U-235, the fact that it is a significant quantity in terms of manu-  
23 facturing weapons, or its blackmail value, the value of the 4.92  
24 kilograms of U-235 on site at the UCLA facility and the potential  
25 consequences of its theft or diversion are such that one must assume  
26 the possibility of a theft attempt being undertaken by a dedicated  
27 group of persons acting in concert and willing to use violent means.  
28 One must also assume that they will be well-armed and equipped and

1 versed in defeating detection systems.

2 C. SABOTAGE THREAT

3 Like theft or diversion, the level of threat of sabotage  
4 facing the UCLA facility is related to its value as a terrorist target.  
5 Much more than theft or diversion, however, postulating a level of  
6 threat from terrorists is at best uncertain and speculative due to the  
7 irrationality or fanaticism which characterizes terrorist actions  
8 such as nuclear sabotage, a fact which demands utilization of conserv-  
9 ative assumptions.

10 Terrorist activity is on the rise. The numbers of people  
11 killed by terrorist activity is also rising along with the apparently  
12 increasing willingness of terrorists to engage in actions which result  
13 in large numbers of deaths. Nuclear terrorism, i.e., incidents  
14 involving nuclear facilities, is also on the rise: Thus, there are  
15 terrorist groups which consider nuclear facilities, such as UCLA's,  
16 potential targets.

17 In assessing the potential sabotage threat at a nuclear  
18 facility, one must account for the qualitative difference between  
19 nuclear targets and most other industrial type targets. Nuclear  
20 facilities, the nuclear power industry and nuclear weapons are the  
21 object of intense public fascination in this country. They are the  
22 subject of considerable public and media attention. This public  
23 visibility and media attention makes nuclear facilities prime terrorist  
24 targets by providing the element of theater which is the center of the  
25 terrorist act.

26 The UCLA facility is itself a potential sabotage target.  
27 During the upcoming Olympic Games, the attention of the entire world  
28 will be focused on Los Angeles. As was brutally demonstrated at Munich

1 in 1972, the Olympic Games offer the perfect stage for terrorist  
2 activity. Furthermore, the UCLA reactor has already gained national  
3 and international attention as a potential terrorist target. Thus,  
4 during the Olympics one must assume a maximal threat from all types of  
5 national and international terrorists who will be capable of staging an  
6 extremely well-equipped, well-armed and sophisticated violent attack.

7 After the Olympics, the value of the UCLA facility as a  
8 terrorist target will obviously diminish. It will, however, remain a  
9 significant potential target. The UCLA facility has already, and will  
10 continue to, receive publicity and notoriety as a potential target.  
11 Los Angeles is a major urban center and one of the most active points  
12 of immigration in the United States. All manner of national, sub-  
13 national, political and social groups are represented in the Los  
14 Angeles area. It is also one of the world's major media centers. The  
15 UCLA facility may be even more attractive than other nuclear targets  
16 in the Los Angeles area because of its inherently weaker security due  
17 to its location on a university campus. All of these factors make UCLA  
18 an attractive terrorist target.

19 In sum, terrorism is on the rise as is nuclear terrorism.  
20 Even after the Olympics, given the notoriety of the UCLA facility and  
21 its location in Los Angeles, one must assume a significant level of  
22 threat to the facility from sabotage. One must assume significant  
23 resources and sophistication will be brought to bear in a violent  
24 terrorist attack by a group of persons acting in concert. It must be  
25 assumed that the participants will be well-armed, well-equipped,  
26 versed in detection systems and the use of explosives.



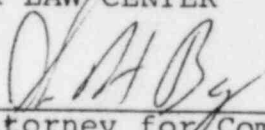
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2 D. CONCLUSION

3 As both a theft target and a sabotage target, the UCLA  
4 facility has significant value to perpetrators of such action. There-  
5 fore, one must postulate and protect against a well-equipped, sophis-  
6 ticated attack, assault or diversion effort.

7 DATED: May 1, 1984

8 Respectfully submitted,

9 JOHN H. BAY  
10 DOROTHY H. THOMPSON  
11 NUCLEAR LAW CENTER

12 By   
13 Lead Attorney for Committee to  
14 Bridge the Gap on Contention XX  
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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 )	Docket No. 50-142 OL
OF CALIFORNIA )	(Proposed Renewal of Facility
(UCLA Research Reactor) )	License)
_____ )	

CERTIFICATE OF SERVICE

I hereby certify that copies of the attached COMMITTEE TO BRIDGE THE GAP'S ESTIMATE OF THE LEVEL OF THREAT FACING THE UCLA REACTOR FACILITY SUBMITTED IN RESPONSE TO THE APRIL 20, 1984 PRE-HEARING CONFERENCE ORDER in the above-captioned proceeding have been served on the following by deposit in the United States mail, first class or express mail, postage prepaid, addressed as indicated, on this date: May 1, 1984

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Administrative Judge  
Atomic Safety & Licensing Board  
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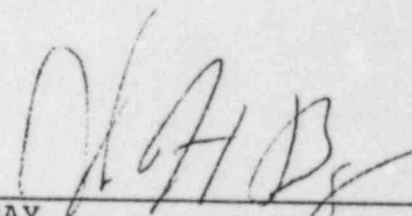
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