

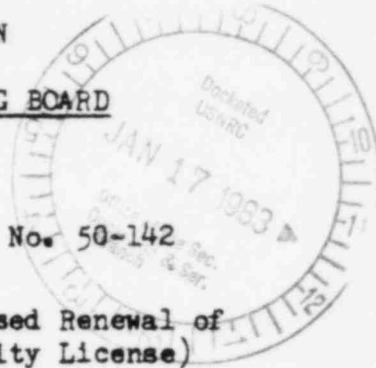
UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

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)



DECLARATION OF DR. SHELDON C. PLOTKIN AS TO CONTENTION I

I, Sheldon C. Plotkin, do declare as follows:

1. I am President of S.C. Plotkin and Associates, a consulting engineering firm specializing in safety and systems engineering. A statement of professional qualifications is attached.
2. I am also a member of the Executive Committee of the Southern California Federation of Scientists, and have participated in and coordinated the activities of the SCFS review group assessing reactor safety matters related to the UCLA reactor, particularly with respect to providing technical assistance to the Committee to Bridge the Gap in responding to Staff and Applicant motions for summary disposition.
3. That review has included site visits to the Nuclear Energy Lab and its environs; examination of the architectural and mechanical drawings for the Boelter Hall/Math Sciences complex; review of the 1980 application, 1982 amendments thereto, and the 1960 Hazards Analysis, as well as the current Technical Specifications; and an examination of the calibration, maintenance, Radiation Use Committee, engineering change order, operating logs, and related records for the reactor.
4. The purpose of this declaration is to respond to the Staff and Applicant motions for summary disposition as to Contention I.
5. It is my opinion, and the opinion of my colleagues at SCFS who have participated in this review, that insufficient information was provided by UCLA in its application for license renewal for a proper review and determination of the safety and environmental impacts of continued operation. Furthermore, much of this information that is provided is materially false and/or misleading.

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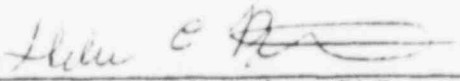
6. The reference to the vibration test is misleading. Significant damage had occurred, which demonstrates structural weaknesses in the reactor of importance in safety analysis. Significant additional damage occurred in the 1971 earthquake, demonstrating further seismic vulnerability of significance. False or misleading statements made about these events have the potential for leading astray reviewers and decisionmakers from consideration of an aspect of the reactor facility of safety significance.

7. The technical specification changes referenced in Contention I.3.c. are significant matters. The change in calculation method can affect both reactivity limits and invalidate conclusions of past safety analyses. The relaxation of calibration requirements, permitting more time to pass between calibration, increases in a significant way the likelihood of and magnitude of calibration errors, which can seriously affect public safety due to improper operation of key safety equipment and monitors. The fact that the calibration interval should be shortened rather than lengthened at the facility is underscored by the history of calibration errors caused or compounded by failure to calibrate at the required intervals; these errors have had the potential to impact upon public safety in a significant way. The heat balance calibration method, now removed from the proposed technical specifications, is important for safety in maintaining reactor operation within the power limitations established by the license and necessary for safe operation of the facility as designed. ALARA is a principle repeatedly violated at the facility; because the facility staff has been shown so often to be unfamiliar with the regulations, and because students unlikely to have read or be able to interpret 10 CFR 20 are involved in operation of the facility, the principle of and requirement for ALARA should be taught, posted, repeated over and over again. Removing it from the Technical Specifications is poor practice from a safety standpoint; the Technical Specifications should include detailed procedures for obeying ALARA. Removing the discussion from the current Tech Specs of how ALARA is specifically required to be implemented at the UCLA facility is significant from a safety standpoint and poor practice. The Boelter Hall roof is not a restricted area and nothing in the proposed technical specifications provides for means of so restricting access to that area. The lack of specification of stack height is important because the stack is already too short; lack of a Tech Spec can permit further shortening, increasing public exposures. Flow rate is important to reducing effluent concentrations; failure to specify that the actual flow will be at capacity, and to provide surveillance and calibration requirements to routinely confirm that actual flow meets the specifications, can result in increased public exposures.

8. The presence of deep wells in the vicinity of UCLA is significant in that there are numerous credible accident scenarios which can result in contamination of ground water, the presence of oil wells in the area could yield important seismic data of relevance to safety analysis of the reactor, and false statements about environmental features forecloses important safety and environmental avenues of inquiry, whatever the final result.

9. In conclusion, the changes which CEG has alleged have been made in the Technical Specifications have indeed been made, UCLA did deny in the application that the changes had been made, and they are significant changes. The statements cited by CEG as false are indeed false; they are also quite material to a thorough safety and environmental review. And lastly, the application as a whole is quite inadequate, particularly because of the failure of the university to in any fashion verify the information it submitted, or even to identify the fact that it had no personal knowledge of the information and analyses included and had copied them from other sources without verification.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

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Sheldon C. Plotkin, PhD

Executed at Los Angeles, California, this 12<sup>th</sup> day of January, 1983

DR. SHELDON C. PLOTKIN

PROFESSIONAL QUALIFICATIONS

My name is Sheldon C. Plotkin. I am President of S.C. Plotkin & Associates, a consulting engineering firm specializing in accident analysis. I am also a member of several review panels established by the Southern California Federation of Scientists to assess fundamental safety aspects of the UCLA nuclear reactor.

I have over thirty years experience in analysis and design of electronic, electro-mechanical, mechanical, human factors, chemical and computer systems, as well as combinations thereof. My previous employers include:

Los Alamos Scientific Laboratory, Los Alamos, New Mexico -- 1946-7,  
design and construction of electronic equipment

U.S. Naval Air Missile Test Center, Point Mugu, California -- 1949-50.  
conducted and evaluated missile flight tests

University of California, Berkeley--1950-56  
1950-54, teaching assistant in Engineering Department  
1954-56, Project Engineer, in charge of operation of the  
Cosmic Ray Laboratory

Energy Systems (formerly Levinthal Electronics), Palo Alto, California -- 1956-68  
Senior Project Engineer for design and safety of high voltage,  
high power pulse modulators.

Hoffman Electronics Corporation -- 1959 to 1961  
Consultant in the Communications Systems Department

University of Southern California -- 1958 to 1961  
Assistant Professor of Engineering

Hughes Aircraft Company, Culver City, California -- 1961 to 1967  
Staff Engineer for G&C Advanced Systems Laboratory

TRW Systems, Redondo Beach, California -- 1967 to 1969  
Senior Staff Engineer, ESD Systems Engineering Laboratory

RAND Corporation, Santa Monica, California -- 1969 to 1971  
Senior Engineer in the Engineering Sciences Department.

From 1971 to the present I have run a consulting engineering firm which specializes in safety engineering and systems approaches to accident analysis.

I have published several hundred papers, reports, and intra-company documents. Accident and Product Failure Analyses. (book). "Introduction to Accident, Safety, and Forensic Engineering" (seminar).

I am a Registered Professional Safety Engineer, and a member of I.E.E.E., Pi Mu Epsilon, Eta Kappa Nu, Sigma Xi, and the Executive Board of the Southern California Federation of Scientists.