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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 OL  
(Proposed Renewal of  
Facility License)

CEG'S EXCEPTIONS TO THE ALTERNATE BOARD MEMBER'S RECOMMENDED DECISION AS TO  
CONTENTION II

I. Introduction

On July 12, 1983, Alternate Board Member James A. Laurenson issued a Recommended Decision regarding Contention II.

That Contention asserts, inter alia, that the original uses for which the UCLA reactor had received a Class 104 license, conduct of research and education, had radically shifted in recent years so that conduct of research had become non-existent and education but a few hours per year, with the primary usage being sale of services, other than research and education.

Judge Laurenson's Recommended Decision would find that UCLA had failed to keep accurate records demonstrating compliance with 10 CFR 50.21 and 50.22 and that even with alterations proposed by Judge Laurenson (though not suggested by any of the parties), UCLA was in violation for at least one year. Nonetheless, Judge Laurenson asserts that CEG has not met its burden to demonstrate that UCLA should apply for a Class 103 license and that the Board should condition grant of a Class 104 license, if any,

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upon a limitation of commercial use and adequate record-keeping in the future.

CEG takes exception to a number of portions of Judge Laurenson's Recommended Decision. These exceptions focus on the use of one accounting unit, "console hours" for measuring class use of the reactor, while failing to apply the same consistent unit for measuring commercial use; confusion of "console hours" with hours measured by the recently installed Running Time Meter; quadrupling the recorded educational hours by a method not proposed by any party and contradicted by the evidence; disregarding without even reference testimony and exhibits which demonstrate that the original uses of the reactor (education and research) have become almost non-existent; and defining research and educational uses of the reactor as any use not sale of service to a commercial, thus including a number of inappropriate hours (e.g., all maintenance) as research or education.

In addition, CEG takes exception to the shifting of the burden of proof from the Applicant. Judge Laurenson concludes (p. 22) that there are "no accurate or reliable data upon which to base an answer" to the Board's question concerning the extent of use of the reactor for commercial, education and research purposes. On that basis alone, UCLA's request for a Class 104 license should be denied, as it has not met its burden to demonstrate that it is entitled to such a license. Judge Laurenson goes on to conclude that the port-hour usage charts prepared by UCLA and submitted to NRC in its annual reports and interrogatory answers are the "only factual and objective data" available, and that these data indicate that in recent years more than 50% of the use was for commercial purposes. (22-23). Yet, Judge Laurenson rejects Applicant's own data, the "only factual and objective data available," as incorrect. If correct, Applicant is not entitled to a Class 104 license; if incorrect, Applicant has not met its burden, and thus is not entitled to the 104 license.

By his own calculation, Judge Laurenson determines UCLA has been in violation at least one year. Even so, he recommends grant of the 104 license with two conditions. The two conditions merely require UCLA to do what the regulations already require, comply with the substantial use test for commercial use and keep adequate records, requirements Judge Laurenson has determined they have not complied with. CBG takes exception to such a conclusion.

These exceptions, and related exceptions, are detailed below.

## II. Legal Standard

It has long been established that the burden of proof in an NRC proceeding on a request for issuance of a license rests with the Applicant in the case. 10 CFR 2.732. For a license to be issued, there must be reasonable assurance that the regulations will be complied with if the license is granted. 10 CFR 50.40.

A separate contention addresses the long history of regulatory non-compliance by this Applicant generally; the matter has yet to go to hearing. However, the best evidence whether UCLA is entitled to a Class 104 license and can be expected to comply with the related regulations is whether it has scrupulously complied in the past. Judge Laurenson, and the evidence of record, indicate that Applicant has failed to comply in the past; there can be no finding of reasonable assurance, thus, that it will comply in the future, absent some exceptional showing not made by Applicant in the record to date.

### III. Procedural History

UCLA received the license for its Argonaut reactor in 1960 for research and educational uses. In 1970 UCLA began reporting to the then-AEC annually reactor usage. Throughout the next decade these annual reports, and all other records of reactor usage, were in port-hours (a measure of use that takes into consideration concurrent uses) and in three categories: research, classroom instruction, and maintenance. No report was made of commercial use, which was lumped, without so indicating, in "research" uses.

CEG intervened in the relicensing proceeding, with one of its contentions an assertion that most of what UCLA called "research" was actually sale of commercial services. UCLA, in a series of interrogatory answers, denied there was any use of the reactor besides education, and denied the existence of any records indicating any commercial activity. Three Board Orders compelling truthful answers followed, including a threat of sanctions for Applicant and censure for its counsel when it was discovered that such data existed, in part in the form of a tabulation of commercial hours which showed for the most recent year tabulated 60% of the hours were indeed commercial in UCLA's own terms. This is now Applicant's Exhibit 1; it is important to recall that Applicant had previously denied the existence of this Exhibit or the facts contained therein.

Thereafter, UCLA began to include commercial usage in the use charts, though tried to hide its true nature by calling it "extramural" or "non-academic" use, although it stipulated that such uses were actually commercial. The report for the year following the last one on now-Exhibit 1 showed commercial activity growing even further, to 360 hours, with instruction again an order of magnitude lower.

UCLA and the NRC Staff moved for summary disposition of Contention II (and essentially all other contentions). Therein they argued that although actual use for commercial functions may exceed 50% in recent years, only 2% of the costs of owning and operating the reactor should be allocated to commercial use, the remaining 98% to instruction, which represented only 10% of actual use. They so argued on the basis that costs should be allocated on stated intent or purpose rather than the reality of actual operation.

CBG responded that that violated basic principles of accounting, which demand dollar accountability--that costs be allocated according to how they are actually used. CBG further pointed out that to accept such an interpretation of 10 CFR 50.22 would nullify it and the Atomic Energy Act provisions, because UCLA would have to run the reactor 24 hours a day commercially for more than 365 days per year in order to compensate, were such an interpretation accepted, for 30-40 hours of instructional use.

The Board rejected the Staff and Applicant arguments, asserting that it leads to an absurdity and that costs must be allocated on the basis of use, according to the regulation. It established an alternate proceeding to hear evidence on whether more than 50% of the use had been for non-research and non-educational purposes.

The procedural history, thus, has been one of cover-up by the Applicant of a basic fact: that instructional uses of the reactor were negligible, research had become non-existent, and that the vast majority of what the Applicant was reporting to the NRC was sale of ore-assaying services to a commercial firm, Uranium West. The facility is essentially useless for its licensed purposes any more, and is used almost exclusively for purposes not permitted by the law and regulation for this class of license.

IV. THE EVIDENTIARY HEARING

UCLA's attempt to cover-up its own data continued at hearing, as detailed below. Its own records indicate hundreds of hours of use for commercial use and only a few tens of hours for instruction. Applicant's response was characteristic: to attack the accuracy and veracity of its own official reports to the NRC, interrogatories under oath, and operating and use records: And to attempt to multiply thirty to fifty instructional hours per year by a fudge factor of roughly one hundred. If a class on chemistry meets for forty hours in a year, and for part of one hour comes to the Nuclear Energy Lab for a tour, Applicant dismissed its own records of one hour of instructional use and tried to call it forty hours of "reactor dependent" instruction, even if none of the rest of the class related to the reactor and the class could continue to be offered were the one-hour tour not part of the class. And in addition Applicant attempts to multiply even further, by multiplying those forty hours by the number of students in the class. Judge Laurenson rightly rejected these attempts to essentially add a multiplier of 100 to actual class use. Further discussion of the matter will occur in the CEG response to the Staff motion for reconsideration on Contention II.

In what follows, CEG summarizes the evidentiary record; where it takes exception to Judge Laurenson's description of said record, it is so indicated.

The Exhibits

CBG put forward twenty exhibits admitted into evidence.

These were all admissions against interest by the Applicant, who bears the burden of proof, as they were official business records of the Applicant or its witnesses. They demonstrate conclusively that essentially no research is performed anymore at the Nuclear Energy Lab, instruction is minimal, and commercial use predominant. Some of the key ones are summarized as follows:

- Exhibit C-2: portion of Application; shows NEL has a neutron generator for activation analysis, doesn't even need reactor for what it describes as reactor's primary use
- C-3 Commerical brochure by Dr. Kalil's Uranium West Labs advertising the commercial service he provides out of the shop he has set up at UCLA's Nuclear Energy Lab, indicating that he has even published the NEL phone as where to reach him for business.
- C-7 Experimental Safety Analysis for UCLA witness Charles Ashbaugh for "experiment" classed as "NEL research" which was actually gem coloration
- C-10 Experimental Safety Analysis for another so-called NEL "research", which was actually a maintenance attempt to reduce Argon-41 concentrations in effluent
- C-15 Interim Report from Nuclear Energy Laboratory Advisory Committee, 1975, indicating(p. 4) that the reactor can no longer, without being upgraded, be used for research, and that the possibility of it being useful for research in the future is "highly impossible." Also indicating very minimal educational use.
- C-18 UCLA Annual Reports, indicating UCLA has always reported instructional use in port hours, that such use was in recent years only a few tens of hours, and that what they call research "is a broad category dominated by service irradiations in which the reactor is used as a tool without reference to reactor theory or operational properties (see second to last page).
- C-20 1976 Annual Report (internal): "Technological changes influence reactor demand, and adaptability to change through finding new markets for reactor services continues to influence reactor productivity. The reactor is no longer new, and reactor physics research projects with the UCLA reactor have become non-existent. The advent of the Medical Cyclotron on the UCLA campus has displaced the reactor in the field of medical radioisotope production." (emphasis added.) p. 2 (See also p. 35, discussing

efforts to "attract more outside business and to eliminate our reactor users' shopping elsewhere.")

- C-21 financial ledgers documenting the extensive billing of outside users for irradiation services
- C-26 - C-28 Reactor Use Logs, demonstrating that Applicant's Exhibits 5 and 6, based on guesses by Applicant's staffs without checking the actual use logs, inflate actual reactor use for instructional purposes by a factor of 2-3 when compared with the actual use records.
- C-30 inspection report indicating in early 1960's use factor was 87%, indicating tremendous reduction in reactor use (and usefulness) since originally licensed.

EXCEPTION A: Judge Laurenson, in reaching his recommendation, failed to consider any CBG exhibit except C-18, even though nineteen other exhibits were admitted into the proceeding and provide reliable and probative evidence of a dramatic shift in use of the reactor from research and instruction to sale of irradiation services.

CBG recognizes that a judge, after considering all the evidence, may make determinations as to weight that should be attached to particular items of evidence. But the evidence must first be considered, and Judge Laurenson's recommended decision indicates a failure to consider any admitted documentation (all from Applicant's records) of the CBG Exhibits except # 18.

In addition to considering Applicant's exhibits, Judge Laurenson actually included three of Applicant's Exhibits in his Recommended Decision. Exhibit 2 had been shown to be unreliable, in that Applicant had included under 1981 "NEL Staff Users" 82 hours of maintenance involving radiation effluent control. (So-called "non-academic users" in that chart were commercial firms, primarily Uranium West.) (See Hirsch/Aftergood written testimony, p. 4, ff. TR 485, hereinafter H/A written testimony).

More importantly, Exhibit 6 was shown to be totally unreliable. Exhibits C-26 to C-28 showed the instructional hours vastly inflated when checked against the use records, and the testimony of Applicant's witness



Ashbaugh who sponsored the Exhibit showed the data to be pure guesswork. TR 305,8  
Ashbaugh testified that no enrollment records were checked, no reactor use  
records checked, and that if a class used the reactor for one hour per year,  
the entire hours the class met were put down as reactor dependent instruction.  
TR 381-4, 353-5. Ashbaugh testified that the entire table was based on no  
records or data, but "estimated from my experience," a "personal estimate"  
without even checking against available records. TR 363. Furthermore,  
Judge Laurenson refused to permit cross-examination or introduction of  
evidence which would show that Mr. Ashbaugh was found by NEL itself to be  
the most unreliable NEL staffperson with regards operating records. TR 766-7.

EXCEPTION B: Judge Laurenson erred in relying upon Applicant's Exhibits 2 and 6,  
where evidence of record showed them to be unreliable. He erred in not  
permitting inquiry or admission of evidence that would further demonstrate  
their unreliability. Exhibit 6 is purely unreliable guesses and estimates;  
Judge Laurenson's own report concludes that the only "factual and objective  
data upon which to base an answer" to the central question of the proceeding  
are the port-hour data taken from the actual use records, yet he instead  
relies upon non-factual and non-objective guesses of an unreliable witness,  
whose estimates were found to be considerably inflated when checked with the  
actual use records.

#### The Testimony

None of the Applicant or Staff's witnesses had actually reviewed  
the financial records or the use records for the reactor. Only CEG's witnesses  
Hirsch and Aftergood had done so. They were the only witnesses who could testify  
about what the actual records actually indicated about reactor use over the years.  
Additionally, the CEG compilation of reactor usage data appearing on page 4 of  
their testimony, the only reliable data based on actual records, was ignored in the  
consideration. It is attached here as Attachment A, and shows conclusively

that sale of services averaged 83.2% of reactor use in the last few years; if sale of services only to commercial firms, as opposed to sale of services to non-profit institutions is considered, Uranium West purchases of irradiation services constitutes 54.2% of reactor usage 1978-1981. By contrast, the supposed "sole" purpose of the reactor, education, represents only 11% of actual use. H/A written testimony, p. 4,6.

Yet, despite the fact that the only review of the actual records was performed by these CEG witnesses, who introduced a score of exhibits taken from these documents of the Applicant, both the exhibits and the testimony were not considered by Judge Laurenson in his report. While a judge need not agree with all testimony or evidence--nor indeed can he--he must consider all evidence of record in reaching his decision.

EXCEPTION C: Judge Laurenson erred in failing to consider the testimony of two of CEG's three witnesses, and in failing to consider the CEG compilation of reactor use data, in reaching his recommended decision.

EXCEPTIONS TO RECOMMENDED FINDINGS OF FACT AND CONCLUSIONS OF LAW

These exceptions are numbered to follow the numbered findings and conclusions in the recommended decision.

1. It should be clarified that the license condition is 438 full power operating hours; actual operating hours can and always is greater.
  
5. Judge Laurenson errs in confusing "running time" with "console hours." In February, 1983, according to Applicant's witnesses, UCLA installed a Running Time Meter, which records time automatically from when the control blades are engaged. This is different than "console hours", which include time when students are in the reactor control room observing activities prior to either at-power time or the beginning of the running time meter. TR 394,157-8. None of the records presented at hearing are based on the running time meter. TR 157-8.
  
6. This finding would more accurately represent the situation were it to read: UCLA reports reactor usage in educational, research, and other categories annually to the NRC in port-hours. That term is an accurate way of determining reactor usage for Contention II and is the method UCLA has always used in its annual reports. Exhibit c-18, TR 571-2,583, 653,662-3,707709, 703-4.
  
8. This finding should have the additional sentence added: Charging \$65/hour for an activity which costs \$13 per hour would mean a profit-making activity were occurring. TR89,91,587-8, 718
  
10. This finding should have the additional sentence added: This would constitute a taxpayer subsidy for commercial users of the reactor, as operating

costs would be hundreds of dollars per hour, with commercial users charged only \$65/hour. Peterson testimony for Staff, ff 448, p. 3; Baefsky testimony, supplemental, p. 2.

11. This finding should have the sentence added: The time spent by reactor operators or reactor operator trainees in getting the reactor to full power or shutting it down after the rods are dropped are not included in port-hour records for either educational or commercial uses of the reactor, both of which require such actions. TR 369.

12. This finding errs in including Applicant's Exhibit 2, which includes maintenance and non-research time under "NEL Staff Experiments". TR 115-6. Mr. Ostrander admitted much of the Argon reduction time should not be considered "research," and that anything that meets the fancy or interest of a staff person, such as gem coloring, is included under NEL staff users research, whereas none of it is truly research. TR 117, 118, 115-6.

13. This finding errs in relying on Exhibit 6, described above as unreliable, based purely on estimates, and determined by Judge Laurenson himself (p. 22) to not be part of the "factual and objective" data available. In addition, the use logs show the figures to be inflated in the reactor academic hours section, and the Applicant witness sponsoring the Exhibit said it would be inappropriate to compare data from Exhibit 6 with data from Exhibits 1 or 2, being "apples and oranges." CBC's accountant confirmed this, claiming that the exhibit was a "potpourri," with everything thrown in the pot. TR 656-7, 347-9, 369-373, 377-379, Exhibit C-26-28, TR488-493. This finding also errs in converting 139A from 1 to 12; the use logs indicate only 4-5 to 7.6 hours per year.  
id.

14. This finding errs in failing to make clear that these classes only use the reactor for one or two class sessions per year, the rest of the class being essentially unrelated. For example, Engineering 135 BL used the reactor 1.7 total hours in 1981-2; Engr. X 497.17 used it 1.7 hours the same year; Chemistry 184A used it only 3 hours; Physics 180A used it only .24 hours; and so on. The only class that uses the reactor more than a few hours per year, Engineering 135F, only has three students in it. Exhibit C-26 to 28, TR 488-493; Applicant's Exhibit 5, p. 1,2,4; TR 288-307, 346, 349. The bulk of the students are enrolled in 139A (75 students), who each use the reactor less than one hour for a total of 4.5-7.6 hours per year. id. Essentially, the reactor is used for small demonstrations of an hour or so for classes otherwise unrelated to the reactor, and for Engr. 139A, reactor operating training, for three students annually.

15. This finding errs in that Applicant's witness Ostrander admitted that actual use, as opposed to stated purpose, was just the reverse: commercial use being highest, and instruction the lowest. TR 98.

17. This finding errs in not making clear that this use is not research by NEL but a lab service UCLA sells. As UCLA witness Ostrander testified, NEL no longer does research, now it "sells neutrons." TR 121, 19, 135, 114

20. This finding errs because all the evidence of record suggests that maintenance is not a use of the reactor at all and should not be in either academic or commercial categories of use, or if it is, it must be pro-rated according to the use in that category. This error is fundamental, because it violates the Board's previous order that the costs of owning and operating the reactor must be allocated on the basis of use. The Recommended Decision, without providing any basis at all, and while admitting maintenance is necessary for both academic and commercial use, allocates it purely as academic. This is error, and skews the decisions on which all the independent calculations by the Alternate Board Member are based. TR 649-50,654; 574; Baefsky , P 5; TR 157.

21. This is in error. NEL Staffpeople testified that any use of the reactor to which a staffperson which to put it is classified as research, even though none of it is "scholarly research," and some includes such commercial matters are gem coloration with gems provided by jewelers. TR 114, 118, 117, 115-116. None of the hours in this category are research.

22. This finding should have added that Dr. Kalil is in private business, running an ore assaying company called Uranium West. Exhibit C-3.

23. This is a fundamental error. All hours for which academic credit is received for the reactor operating training class, Engr. 135 F, are already included in the port hour tabulations. That is 34 port hours, for example, in 1980-81. TR 489. Of the three students, some will take the licensing exam (several weeks after class completion). Approximately half of the reactor time is outside of the formal class hours, so only a fraction of the time the 3 students spend watching pre-start checkoffs or operations would not already

be counted. Ex 5, p.3. Of the time spent at the console, Mr. Ashbaugh testified that only 40-80% would be at power. TR 343. A senior Reactor Operator trainee "can get by with zero hours on the console because there's no operational part for a Senior Operator exam." id. Mr. Ashbaugh did not testify that the hours at power for reactor training would not be recorded in port hour listings, but merely that the time spent watching the operator at the console prior to going to power would not be included. TR 344. As he said, "if the reactor's used, then the hours at power or whatever are marked down." id. The figure 100 hours comes from Exhibit 6, based on a guess by Mr. Ashbaugh that he thinks in order to pass the exam one would probably need 20-60 hours, 40 of which would occur in class and the remaining of are already recorded, many of which involve time when the reactor is not on or when several students are at the console at the same time. Exhibit 5,6, TR 342-3. There are only three student reactor operators. TR 349. Most of their console operating time is included in the charts already under 135F. The remaining time they do not get academic credit for, may well be getting paid as a student operator for Uranium West. Any time out of class involving actual reactor operation is minimal, as witness Ashbaugh indicated that they would come to NEL, hang around and watch a start-up (console time meaning not that the student is at the controls but is nearby) and then leave when the reactor became operational "because there's not much educational value in watching a reactor at full power." TR 324. There are no data whatsoever as to how much time, outside Eng. 135F, the three students may "hang around" NEL. The 128 estimate was not even included in the total by Applicant. Port hours already thus include reactor operator training, all such hours for which credit is received are already included, and any educational benefit that the three or so students may get after class from hanging around NEL and watching an operator do part of a run for Uranium West, or being paid as an employee of Uranium West as a student operator, is not even considered

by the University instruction. And there are no reliable data whatsoever, even if having a couple of students come outside of class to watch Ashbaugh do a run for Uranium West is properly considered educational, as to how many hours there have been. Lastly, the 128 guess includes roughly 60 or so hours when the reactor is not operating, and should not be considered because Judge Laurenson has determined "down time" should not be counted; if pre-start check-off is counted for Engr. 135F, it must be for Uranium West, because it was made clear at hearing both depended upon such "non-run time" for their use.

26. The full weight of the evidence is that more than 50% of reactor funding was devoted to commercial activity.

27. This is the central error in the Recommended Decision. It was determined clearly that the units used to compare education, research, and sale of services must be comparable and measurable. Yet, the Recommended Decision would have us compare unmeasurable "console hours" (hours when a student was near the console watching someone either operate or prepare to operate the reactor) with port hours (which are tied to measured hours of operation.) Console hours are mistaken for hours measured by the Running Time Meter, which as mentioned in the Decision was not installed until February 1983. Thus all the numbers for "console time" are by necessity non-measured, unreliable guesses by self-interested parties. And by definition "console time" is larger than operating time used in port hours; Ashbaugh estimated actual run time is 40-80% of "console time." Yet a pre-start check-off must be done, whether the run is for a class or Uranium West; a reactivity check must be done, no matter whether the user is commercial or educational; the reactor must be brought to power for all categories. So the recommended decision, after rejecting the idea of a multiplier for the educational uses, ends up using one after all, comparing educational



uses in units larger than those used for the research or commercial uses, and in non-measurable units, ones for which no reliable data exist. Furthermore, this finding errs by calling "research" all non-class use of the reactor. First of all, at least 100 of the hours added into the class hours are not class hours at all, but non-credit time. This is due to the misunderstanding that Engr. 135F, all the for-credit reactor time, is already counted in port-hour charts. But to define all other uses (e.g. maintenance, sale of irradiation services to other institutions, NEL users fooling around with coloring diamonds) as research flies in the face of the definitions in the Atomic Energy Act. All of these errors skew the totalling of actual uses of the facility by essentially putting a fudge factor of four onto the measured classroom use and adding everything but the kitchen sink into the research category. The sponsor of the console hour concept and estimates, UCIA's Ashbaugh, explicitly testified that one could not use those estimates to compare other uses of the reactor such as research or commercial measured in port hours. He over and over again said it would be comparing apples and oranges. TR 369-373, 377-379. Yet the recommended decision attempts precisely that, comparing educational uses in apples and commercial uses in oranges, when the only "factual and objective" data available, by the Recommended Decision's own conclusion, are the port-hour data which conclusively show primarily commercial use for the last few years. And the use of Mr. Ashbaugh's console time guesses, which explicitly includes reactor "down time" flies in the face of the Decision's determination that non-operating time cannot be used in comparing the various uses. If a multiplier based on pre-start checkoffs and the like are to be included for class use, they must for commercial as well, for all users of the reactor require those pre-start functions. Ashbaugh, TR 369.

28. Because the previous finding errs, so too do the Alternate Member's calculations in this finding. It is to be noted that the method and resulting data employed by the Alternate Member were proposed by no party and thus subject to no scrutiny at the evidentiary hearing. Based on the actual, measurable, comparable, reliable data, the true results are as indicated in the attached table from the H/A testimony: 1979, 264/445 or 59%; 1980, 360/556, or 65%, 1981, 211/411, or 52%; for an average 1978-1981 of 54%. This only includes in the sale of service category sale of irradiation services to Uranium West.

The finding also errs because it does not recognize that whether the customer is a for-profit enterprise or a not-for-profit enterprise is irrelevant to a determination as to whether a sale of service has occurred. NEL does no research and does not sell education to any but the students already included in the educational category. It is in the business of "selling neutrons", as NEL Manager testified. TR 121. The service is exactly the same whether it sells those neutrons (for activation analysis) to Uranium West or to Cal Tech; UCLA is providing a simple, commercially-available lab service for a fee. The billing rate and procedure is precisely the same, the service is precisely the same. As accountant Baefsky made clear in his testimony, the fact that a tacomalesman sells to a university does not make the tacomalesman a university. TR 725. It is the nature of the service provided and whether it is sold. UCLA does no research anymore with the reactor; it sells a lab service. Thus, those other users beside Uranium West should be included in the sale of service category. Baefsky said other UCLA users were a grey area, but that all other users who purchase from UCLA the same service that Uranium West purchases should be so included. That makes the total for 1978-81 83% of the use sale of services, other than education or research. id.

Whether one includes just Uranium West or other users in the sale

of service category, Applicant has been in violation of the 50% standard for the last few years.

29. Commercial use of the reactor exceeded 50% for at least three of the most recent years. The fact that in previous periods the reactor was used properly is precisely CBG's point, that the research and educational uses in recent years have dried up so that there are only three reactor operator trainees using it for any educational purpose, plus an occasional visit by classes who use the reactor as only a very small portion of the course, with no research whatsoever being conducted there. The reactor is essentially now just a commercial lab service for analysis of samples, primarily for people outside the University of California and largely for one commercial ore assaying company.

Even if UCLA had been in violation for only one of the recent years, there is no provision in the Atomic Energy Act or the regulations that permits an Agency charged with enforcing the law and applying it to applications to essentially rule that full compliance is not necessary. The law does not say you can violate radiation standards 10 years out of 20 so long as the average over two decades is slightly below the limit. The law says you shall not violate the law, and says that a license cannot be granted unless there is reasonable, affirmative assurance that the regulations will be obeyed.

The Alternate Board Member has determined that the Applicant has violated this particular regulation in the past. He makes no determination, and the Applicant no showing, that there is reasonable assurance the regulations will be complied with in the future. In fact, the best possible evidence to the contrary is concluded by the Alternate Member: violations by this Applicant of this particular regulation. There is no provision of the regulation that says you can violate the regulation on occasion.

No citation of case law or other provision of law is given to support the contention that one must violate the provisions of 10 CFR 50.22 for x number of years before you become ineligible to have your license renewed.

30. This is most unclear. Does the Alternate Member propose that all uses of the reactor--as he appears to suggest--be recorded and reported in terms of the running time meter? Or does he intend to include all of the pre-start check-off, only half of which is included in the running time meter? Or include time students spend hanging around the console, which is how UCLA used the term originally, whether the reactor was on or not? And more importantly, it appears that the Recommended Decision is recommending that future determinations of compliance be made on the basis of a consistent unit for all uses, a principle violated by the previous findings which attempt to assert only one year of violation (and thus no need for a Class 103 license) on the basis of an unrecorded, unmeasured estimate of educational use in console hours compared to recorded, measured records of other uses in port hours.

31. Console hours of training needs to be defined. Does it intend to mean all hours of training, whether the reactor is on or not, including learning the plumbing, and lectures and rapping with Mr. Ashbaugh after class. This would appear to violate finding 16 which determines that reactor use does not include time when the reactor is not operating.

32. There is no definition of commercial use here, nor does that term find itself in the regulations. The question is sale of services, other than research and education or training, a question not addressed in the Decision.

Console hours is not defined also. Does it mean time as measured by the Running Time Meter, which would be acceptable? And it is unclear how two concurrent users would be counted, as is clear now from the port-hour method used by UCIA for the last decade.

More importantly, however, the Recommended Decision appears to be saying:

(1) UCIA has failed to keep adequate records to demonstrate compliance with the regulations, (2) UCLA has violated those regulations, (3) UCLA should have a license condition, if given a license renewal, to obey the regulations and record-keeping requirements it has violated.

The irony of this is that when CBG contended that removal of the ALARA requirement from the Tech Specs for this reactor was an unwise move, UCLA opposed that contention saying that the regulations require compliance with ALARA so there is no need for such a requirement in the Tech Specs. Now, when it is clear that non-compliance has been established and that no reasonable assurances of any sort have been given that compliance with the regulation will be assured, it is proposed that a license condition be put in that says, in essence, UCLA will obey this regulation in the future.

UCLA was required to obey the regulation in the past. License conditions are supposed to be specific additional conditions where no regulation exists but where the overriding duties of the Commission require some specific behavior unspecified in the regulations to be specified for a particular reactor. UCLA was always required to obey this regulation, and hasn't; it hardly seems to provide reasonable assurance as required to simply put the regulation into the license as a condition, particularly since no sanction whatsoever is proposed if UCLA once again violates the regulation.

the Recommended Order

1. This suggestion seems to completely abdicate the responsibility of a finding after an evidentiary hearing and passes on the authority to UCLA to define

and establish a uniform measurement of reactor use. This gives to UCLA, already found by this Board three times to have not been truthful in the past regarding commercial activity, the authority to once again redefine away its non-compliance. Remember that this is the same Applicant which reported for a decade all commercial activity as "research," denied under oath any commercial activity was taken place (disproven by this Recommended Decision if nothing else), tried then to call it "extramural" or "non-academic", then tried to claim 98% of the costs were devoted to 10% of the use, then tried to come up with new units (reactor-dependent instruction and student-reactor-related use, which multiplied actual use by a factor of 100). To tell the Applicant, found guilty of violating accurate record-keeping, truthfulness in reporting, and the regulation 50.22 itself, to come up with its own new system for determining compliance is passing onto the violator the duties of the regulator.

2. This does not make clear whether reactor down time can be counted. Console hours, as used by UCLA in opposition to the Running Time Meter concept apparently confused with it, includes substantial down time. Down time cannot be included in this measurement, or if it is, it must be uniformly included for commercial users too. This leaves a wide-open fuzziness for continued noncompliance by UCLA.

3. This, as indicated before, amounts to a determination by the Board that the Applicant is a violator, has provided no affirmative assurances that it has had a true change of attitude with regards respecting the regulations this agency is charged with enforcing, and telling UCLA they get everything they want with a so-called condition that they obey the regulation they were supposed to be obeying all along. The affirmative showing of reasonable assurance of compliance required by 10 CFR 50.40 has not been even attempted,

all evidence of record indicates the contrary in terms of likelihood of continued disrespect for the agency's regulations, and there is not even a sanction identified if the Applicant, should it obtain the requested license, continues to act with the same disrespect for law and regulation as it has in the past, acting as though possessing a license to operate a nuclear reactor were a game to see how far and how often over the regulatory limits one can step with impunity.

#### CONCLUSION

The Applicant is not entitled to a Class 104 license.

By its own admission, it has long ceased having a research use for the reactor, it being so outmoded, and educational uses consist of three half-courses with 5-8 students and four additional classes, which only use the reactor an hour or so a year. The only class which uses it much, 135F, currently has only three students, and even with including all the hours of reactor operation for which the University grants academic credit, the grand total of instructional hours utilizing the reactor is 30-50, or 10% of total use. More than 50% of use is for sale of services to an ore assaying company called Uranium West.

The Recommended Decision makes clear the Applicant has failed in its duty to maintain adequate records and to comply with the regulation in question.

Judge Laursen states under the "Conclusions" section of his report:

The primary problem in answering the Board's question concerning the extent of use of the reactor for commercial, educational, and research purposes is that there is no accurate or reliable data upon which to base an answer.

The Applicant's burden has thus not been met; the license must be denied.

Furthermore, Judge Laurenson goes on to conclude that "the only factual and objective data" available are the port-hour records which, as he indicates, demonstrate that for several of the recent years more than 50% of the use was for commercial purposes (p. 22-23). If the data available are not accurate, Applicant has not met its burden; if the available data which are the sole objective and factual data available indicate violation of the regulations, the Class 104 license should be denied. And if neither UCLA has attempted a showing of reasonable assurance of different behavior, nor the Alternate Board Member made such a determination, the license cannot issue. 10 CFR 50.40. All evidence points to sloppy record-keeping by UCLA, substantial commercial use in flagrant disregard for the provisions of the regulations in recent years, and an attitude of cat-and-mouse with limits imposed by NRC regulations. They have not met their burden.

The facts of record make clear that the reactor is obsolete for the purposes for which it was intended, and has attempted to find additional work in the sale of irradiation services field, the precise kind of activity expressly forbidden by the substantial use test of the Congress. The production of medical isotopes by the UCLA reactor has stopped, since the Medical School has its own device. All research physics experiments have long since been done, and research of the kind that can be done with an archaic Argonaut reactor just no longer exists. And student enrollments have shrunk in nuclear engineering at UCLA so much that UCLA is trying to count physics classes that use the reactor .24 hours a year as reactor dependent. The device is a dinosaur, no longer used for what it was licensed for; the license should be changed to Class 103 to reflect the changes that have taken place in its actual use. If UCLA doesn't want a license to operate if the license indicates accurately the uses to which the reactor is put, that is UCLA's business; but it is the business of the NRC to properly and legally classify licensees, and to make sure they are not given licenses

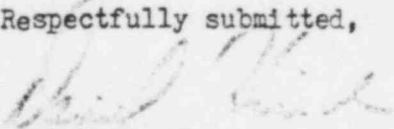


to which they are not entitled.

Applicant has failed to meet its burden to demonstrate it is entitled to a Class 104 license and can be entrusted to obey the regulations thereto; all of its own records indicate the contrary. The application for a Class 104 license must be denied. The proposed conditions are vague and inadequate, amounting to telling UCLA that a condition of its license renewal will be obeying the regulations they were always supposed to be obeying, and at the same time telling it not to worry about any consequences if it continues to disobey.

The device is useless for its licensed purposes, is not used more than a few hours a year for those purposes, and no redefining of units for the educational side of the equation while leaving un-fudged the commercial side can hide the fact. It isn't used primarily for research and education, and is not entitled to and cannot be entrusted with a Class 104 license.

Respectfully submitted,

  
Daniel Hirsch  
President

dated at Ben Lomond, CA

this 6th day of September, 1983

Category	<u>REACTOR USAGE</u>				<u>Average 1978-81</u>
	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	
CLASSROOM INSTRUCTION	52	31	46	61	47.5
DEMONSTRATIONS	7	5	2	3	4.25
NEL USERS	9	1	27	31	17
SALE OF SERVICES (TOTAL)	237	408	481	316	360.5
TO:					
UCLA USERS	105	91	101	67	91
COLLEGES & UNIVERSITIES	37	53	20	38	37
PRIVATE BUSINESSES.	95	264	360	211	232.5
TOTAL	305	445	556	411	429.25
SALE OF SERVICES AS PER CENT OF TOTAL	77.7%	91.7%	86.5%	76.9%	83.2%

Derived from: UCLA, NEL 1981 Annual Report, pages 2-3. Figures are in port hours. Since maintenance is not properly a reactor use, but only makes such use possible, it has not been included. For the same reason, 82 hours of "parametric variation" (valve adjustment to reduce Argon-41 emissions) have been deducted from "NEL Users" for 1981.

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 SERVICE

I hereby declare that copies of the attached:  
CEG's Exceptions to the Alternate Board Member's Recommended Decision  
as to Contention II

in the above-captioned proceeding have been served on the following by  
deposit in the United States mail, first class, postage prepaid, addressed  
as indicated, on this date: 6th day of September, 1983.

John H. Frye, III, Chairman  
Atomic Safety & Licensing Board  
U.S. Nuclear Regulatory Commission

Dr. Emmeth A. Luebke  
Administrative Judge  
Atomic Safety & Licensing Board  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Dr. Glenn O. Bright  
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Atomic Safety and Licensing Board  
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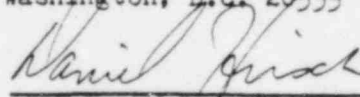
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Daniel Hirsch  
President  
COMMITTEE TO BRIDGE THE GAP