

DRAFT - Not Yet Approved by the Faculty Senate

Excerpted from the Minutes of the Faculty Senate Meeting

March 14, 2001

Agenda Item 9--Report on Ward Center and Discussion

Professor James Thorp, Chair of the Local Advisory Committee, for the review of Ward Center: "I'll try to be even faster, as I know that there are a lot of people who want to discuss this. I'm not going to read any of this to you, but I want to point out to you that among other things when Bob Richardson charged us with the study, he recognized that there was an overdue report. So there are two issues, one is that there was supposed to be a review in 1998-99 and second that the relicensing of the Ward reactor by the NRC was scheduled for November 2003. He wanted answers so that he could act on them in time. The criteria we used for the evaluation are sort of rank ordered in that the most important issues are at the top, the current and potential future faculty involvement in the center; the role the center plays in graduate and undergraduate training, but the other issues are things that do matter in terms of cost, other uses of the facility ...

"The process was to talk to all of the people who had some involvement from the Director of the Center to some of the principal users. We also visited the Ward Center and looked at all of the equipment that was there and we had a presentation from John Silcox and Jack Lowe about the details of the funding. We then interviewed 30 faculty members who had been identified as being involved as potential users of the Ward Center. In addition we tried to contact people who were mentioned in the 1996 report which created the Ward Center. The persons interviewed, the questions we asked, the items for discussion are all in the appendix of the review. We also received a lot of input solicited from users of the center, from people outside — the directors of other similar facilities — and from the Department of Energy (and I want to talk a little bit more about the details of that). The list of the people who wrote the letters is in the report and the letters themselves are now available on the web page.

"On December 20, pretty close to Christmas, three of us met with two representatives of the Department of Energy. The background to this is that there had been a meeting of engineering deans in September of 2000 where DOE's concern with the closing of many university reactors was expressed, and there were some suggestions that DOE had to do something more to keep these centers going. When they came here, they told us that it was probably appropriate that some of these centers be closed, but that they wanted to keep quality institutions like Cornell going. They wanted to try and figure out what they could do to make that happen. As a result of that conversation, there is more correspondence then with DOE that is also on the web page. Most recently a bill has been introduced in the Senate that has to do with funding of programs in Nuclear Science and Engineering which might (and I think might is the right word) have some impact on funding. In addition we talked repeatedly and didn't vote until very close to having to produce the minutes. We spent a great deal of time trying to gather information.

"These are our findings and I would like to speak a little bit to them; there are longer rationales in the document. Everything that is now going to be mentioned has two sides and we talked to people of differing opinions on everything. With the possible exception of the first almost no one close to the reactor had any concern about safety. Any mention of safety came from people who really had little information. It is true, however, that we recognize that money will be involved in maintaining that safety record into the future, that things have to be upgraded and maintained. We conclude that at the present there is not a substantial academic research presence in the field of nuclear fission engineering. I'm not talking about all other areas

but in nuclear fission. You may recall that the 1996 creation of the Center was because the Engineering College had eliminated the program in nuclear science and engineering. Of the five faculty who were then a part of the program, only three are still here, and they are in different departments. The graduate field still exists and it has six members, but only two of those six members do research having to do with fission engineering or with fission products. So there are few graduate students in the area. No compelling case has been found for a strong connection between the reactor and Cornell's future involvement in nuclear engineering. Two of the top four nuclear engineering programs in the country by *US News and World Report* do not have reactors. Four of the top fourteen do not. The difference of opinion of course--DOE feels it's nice to have students actually view the reactor. Reactors are being closed around the country. Twenty-eight of the original sixty university reactors remain. Berkeley and Illinois have either decommissioned or put their reactors into mothballs. Michigan announced in the fall that they were going to decommission their reactor. MIT is apparently one that DOE is frightened about although I have heard no announcement that they are intending to do this.

"Finally the cost--the cost was not foremost in the LAC's mind but it is an issue and is something we have to talk about. We came up with one set of figures, but Dr. Unlu and his correspondence with DOE came up with a slightly different figure, that the net cost to Cornell last year to operate the Ward Center was \$470,000. The estimated decommissioning cost that we have obtained by getting a very detailed study from Illinois and looking at an annual letter Cornell sends to the Department of Energy is 4.01 million dollars. Now we have been cautioned that these estimates increase, and there is evidence that at Georgia Tech and Texas that by the time they finished, prices were higher. Considerable time elapsed at Texas and Georgia Tech did it all in one year, because the reactor was deemed a threat by terrorists to the Olympics. So they did the whole process in a year which undoubtedly added to the expense. I think I covered all of that.

"The final conclusion--given the situation, we can not conclude that the TRIGA reactor is having a major impact as a user facility at Cornell. Now there are users, and our recommendation is that something be done to help them through this period. But when we talked to some of the users, the lacks of fees, the easy access and the helpful staff were given as reasons why they were using the reactor. If there were extensive fees, many of them suggested they would use it a lot less. We can identify no tenure track or tenured faculty who are willing to make commitments to expanding or enlarging the facility. Of course that's a "catch 22" because no one is being hired in the Engineering College in the area. So our ultimate conclusion is that the ^{60}Co source, which is used by more than half of the users more than half of the hours, which is not as expensive to maintain, be continued and be kept somewhere on campus for the kind of use it now enjoys, but that we decommission the TRIGA reactor and phase out the center activities. We recommend the administration be proactive in addressing the problems of the current users and the staff, and we recommend that the ^{60}Co source be maintained at an appropriate local facility. These recommendations are independent of the time frame of the decommissioning or removal of fuel from the reactor. There are other members of the committee present. Hopefully, I have saved you some time."

Speaker Howland: "Thank you very much. I'd like to call now on Dr. Unlu."

Dr. Kenan Unlu, MSE and Director of the Ward Center for Nuclear Science: "We have only five minutes, so therefore I would like to point out two things. One is that you should have a copy of the report which is over here and also excerpts from the support letters that is also listed in the back, but there is a copy over here, too. Some of you this morning got a letter from DOE, but if you don't have it, a copy is over there. Obviously, there are a lot of things to talk about, not just the report but the presentation, but we don't have time for that. I would like to call on Professor Kuniholm to make a few comments."

Professor Peter Kuniholm, History of Art: "We are limited to four minutes to try to do what ten faculty

members did over six months. The mission statement for the Ward Center is the one that was written by this faculty senate some years back and it's on page one of the annual report of Dr. Unlu which you either have in your hand or is available on these tables. The status of the research program at the Ward Lab is that the faculty have existing facilities which some people use. There are two facilities which are in the process of being developed which will be available Dr. Unlu hopes later this year and there are other ones which are in the process of happening. The notion is to have a facility where people can walk in off the campus and use the Ward Lab without wasting time. The people who are using the lab are not engineers by and large, they are from all over the university which is what the center was established to do—that is to say that it is not an engineering facility per se; it's a university wide facility for all of us. We went from under 10 faculty members at the time of Dave Clark's death several years ago to 17, and when I was in the lab yesterday, there were 21 dosimeters on the shelf indicating current users of the establishment. There is some course involved as you can see right here [List].

"The bill which was referred to by the previous speaker which is on the Senate floor at the moment, Senate Bill 245, completely dwarfs what Dr. Unlu was sent out to do when he came here two and a half years ago. His job was to improve the facilities, increase the budget and bring in users from both inside and outside the campus. This was the state of affairs of federal funding at the time of Dave Clark's death (\$3,000); this was Dr. Unlu's first year (\$29,000); of his second year (\$421,000), this year (\$623,000), and these are proposals which ought to be on top of that indicating these are things that are in the works (\$971,000 pending). We are asking the Feds for serious money. Our land grant mission statement includes servicing corporations from upstate New York. You can see some of them right here who use the place and pay money for doing it. Now the thing about this Senate Bill 245, which is a bipartisan bill on the floor of the US Senate, this has a bundle in there, almost \$240 million over the next five years [Show Chart]. This bottom block of items here is for the university reactors which currently exist and there is about \$120 million for the fourteen or fifteen active university reactors in this country. Dr. Unlu wrote to Magwood at DOE; there is a letter from him which came in today—Dr. Unlu's estimate was that we ought to be able to qualify for something in the order of \$1.6 million a year from this Bill. We asked whether this was a reasonable estimate; Magwood said "yes" and put his name on it and said that Unlu was more or less on target as to his expectations.

"Now why are we coming to such an extraordinarily different point of view from what the Local Advisory Committee did? Why could people who, as the Dean said, are of good will and intelligence come to such radically different conclusions. One bunch saying, "Close it"; the other one saying, "Keep it open". I would suggest is that what we are really trying to do here is maintain a facility that does things that are way outside the purview of engineering. I would suggest that the most interesting single thing is what Professor Kallfelz is up to in the Veterinary College. Would you say something as to what you do?"

Professor Francis Kallfelz, Clinical Science: "Thank you very much for the opportunity to say a few words. I would just really like to address one of the comments made in the report of the Local Advisory Committee, and that's found at the bottom of the third bullet on page five under Faculty and Administration Inputs. At the bottom of that third bullet they say that one of the reasons for recommending closure is that because of the absence of a local medical school and possible scientific uncertainties, neutron capture therapy is unlikely to be successful at Cornell. Just a minor correction—we do, in fact, have a local medical school—it's the College of Veterinary Medicine that exists at the east end of campus. Since we are way at the east end of campus, I'm not surprised that some people are not aware of the subject, although Professor Thorpe did find me up there to talk about this issue. Another issue is that the College of Veterinary Medicine has recently initiated a major new program in comparative oncology. "Comparative" meaning studying tumors and cancers that bear similarity between and among animals and people. Specifically there are many tumors in dogs and cats that indeed are occurring in the human population. Dr. Unlu and Dr. Rod Page, the head of the program of comparative oncology, and I are working towards developing, in fact, a neutron

capture therapy program here at Cornell to study modalities for studying treating both tumors in animals in our veterinary teaching hospitals and also modalities that would be of possible benefit to the human population as well."

Speaker Howland: "Thank you both."

Professor Kuniholm: "One sentence. We would like to request the Dean of the Faculty to hold an extra session of this group next week to iron out the differences between the two reports you just heard. One, which says, "trash it." One, which says, "For God's sake, keep it open. We would like to talk it over with more time than just five minutes."

Speaker Howland: "Discussion?"

Professor Richard Durst, Food Science & Technology, Geneva: "What is the alternative if this facility is closed down as far as alternate places where the investigators can go to have these kinds of analyses done or operations done?"

Professor Kuniholm: "I can respond to that. The nearest facility is Penn State. Since the gold which I am working has 2.7 days half life that is some very fast driving to get there and back."

Speaker Howland: "Would the committee like to comment on that?"

Professor Persis Drell, Physics: "There are other reactors waiting for applications to be done. There are also commercial firms where one can do this type of analysis."

Speaker Howland: "Additional comments?"

Dr. Kenan Unlu: "There are some other facilities around. However, the nuclear research reactor is not just for neutron activation analysis; this is the most powerful steady state neutron source available. Right now, our reactor is the only operating research reactor in New York State. Also only three are active throughout the entire Northeast, so I would like to make that point."

Speaker Howland: "In the back, Sir?"

Professor Robert Gilbert, Veterinary College: "The point is in support of Dr. Kallfelz's comments. We were successfully recruiting a new faculty member last year and one of the factors which weighed for Cornell in deciding was the neutron capture therapy with this group. It is important for some faculty members."

Professor J. S. Butler, Human Ecology: "There is no chance I'll ever use a nuclear reactor. I'm certainly perplexed by the two reports and I personally don't want to make any decision at the moment on the basis of this. But I would want to be reassured personally that closing it is not being motivated by the fear which nuclear reactors cause in some people. I do think that would be a sensible way to make policy for Cornell."

Professor Peter Stein, Physics: "It seems to me that the question really is a financial one. I mean everything is good, but the question is — is it \$400,000 (???) good? Of course, if you spend \$400,000 (???) unrecovered on this, it means you are spending \$400,000 (???) less on something else. One way of gauging that, if indeed it is important to the Veterinary Medicine College, then I suppose one measure of how important it is is how much money are they willing to contribute to run it. I know it's a mercenary way of looking at it, but it is very hard to balance benefits and costs without having some way to exchange the two. Dollars are often used in that way to measure someone's value of a particular benefit that something gives."

Speaker Howland: "I'll recognize one more speaker. Who had their hand up? It was you, sir, yes. Very briefly, please."

Professor Manfred Lindau, Applied & Engineering Physics: "As I understand it this is not a matter that there will be a renewal of nuclear engineering, but it's just a service for other purposes, so if it acts as a kind of resource for various research projects, I wanted to ask if a list of publications is available somewhere about what has been performed at this lab."

Speaker Howland: "A very brief yes or no."

Dr. Unlu: "Yes."

Speaker Howland: "I'm sorry our time is up on this discussion. ..."