

Minutes*

Senate Committee on Finance and Planning Subcommittee on Physical Plant and Space Allocation March 31, 1992

Present: Burton Shapiro (chair), David Berg, William Gerberich, Virginia Gray, Craig Kissock, David Kittelson, Jeff von Munkwitz-Smith, Irwin Rubenstein, Mary Sue Simmons, Charles Speaks

Guests: Dean Abrahamson (Humphrey Institute), Senior Vice President Robert Erickson, Ken Janzen (Regents' Office), Aric Nissen, Roger Paschke, Garrett Webber (Daily)

1. Approval of Schedule

Professor Shapiro convened the meeting at 3:15 and asked for approval of the draft 1992-93 meeting schedule that had been sent out with the agenda. The Committee unanimously approved it.

2. Discussion of Steam

Professor Shapiro next reviewed the discussion of the purchase of steam that took place at the last meeting of the Committee and turned to Ms. Simmons for an introduction of two faculty members who had been deeply involved in the evaluation of the proposals. Ms. Simmons introduced Professors Abrahamson and Kittelson, both of whom served on the Steam Advisory Committee and made a presentation to the Board of Regents on its behalf.

Professor Kittelson began the discussion by explaining the term co-generation and why it is important. In the normal case, generation of electricity is only about 30% efficient; the rest of the energy produced is waste heat released into the environment. This is not because of particularly poor design; it is the consequence of the Second Law of Thermodynamics. The normal fuel efficiency for production of steam in a plant is about 80%. The combined efficiency of the two plants is about 58%.

With co-generation (simultaneous production of steam for heat and of electricity in the same plant), much of the waste heat from power production can be used. The overall efficiency is then typically about 80%, which reduces fuel use and pollutant formation more than 25% compared to generation of steam and electricity in separate plants. With well-designed co-generation plants, even greater reductions in emissions may result, Professor Kittelson said.

The disadvantage to co-generation, he said, is that it requires a greater capital investment and there is added complexity in the plant operation. In addition, the rate structure for electricity (particularly in Minnesota) is such that it makes it hard for co-generation to be economically competitive. Professor Kittelson said that he believed, however, that both of the University's co-generation proposals would be competitive; the administration believes that only the Foster-Wheeler co-generation proposal would be

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competitive.

Professor Abrahamson next explained the background of the Steam Advisory Committee and told the Committee that if one assumes co-generation, the single most important element of the decision is the choice of fuel. He said that the "reference" cases of both Arkla and Foster-Wheeler are unacceptable to the Steam Advisory Committee, as is the "clean coal" option of Foster-Wheeler, because of fuel consumption and pollution considerations. The clean coal option is the LEAST desirable, he said, because it relies on environmental technology designed to reduce SO₂ (the primary cause of acid rain); the specifications already call for reduced SO₂ emissions, and for the use of low-sulfur coal, so the additional reduction is very small--but the process consumes more fuel and emits greater quantities of other gases.

Professor Abrahamson then reviewed the co-generation options contained in the two contracts that have been negotiated; the Arkla contract, he said, is clearly superior from the standpoint of emissions. It is not clear if it would meet the same economic tests because there are errors, omissions, and ambiguities in the documents which do not permit accurate analysis; they are still awaiting clarification of those points, he said.

Some of this information has been provided to the Board of Regents, Professor Abrahamson told the Committee; Mr. Erickson then said that the administration still does not plan on taking a position. Professor Abrahamson confirmed that if the only choices are those now available (and ideally it would be best to start over again), it is only the co-generation proposals that are acceptable to the Steam Advisory Committee, and of those two, the Arkla proposal is much better. He said the only request they have made of the administration is that it issue a formal addendum to the report in order to clear up the technical errors and omissions.

Mr. Paschke explained to the Committee that the errors and omissions are being resolved. To start over again would not be a good idea; the guarantees in the contracts are extraordinary and will not again be available. In addition, there is the expectation that a vendor will be selected; if the University were to start over again, no one would take it seriously.

The main obstacle to co-generation, he continued, are financial, and mainly capital costs. There are debt capacity problems as well as whether or not co-generation would repay for itself over the life of the contract. This is not to say that the University should not rely on co-generation, but there are additional costs that must be considered. To bear additional capital costs could affect the University's credit rating and affect its flexibility to issue bonds for other projects.

Professor Abrahamson observed that most environmental questions have been resolved. The Steam Advisory Committee is interested in additional financial analyses because it believes that they will show the Arkla co-generation proposal to be cost-effective. The University could be at risk for up to an additional \$2 million per year in increased carbon taxes under the Foster-Wheeler proposal. It is difficult to predict the size of those taxes, he said, although they are almost certain to be imposed.

The decision about co-generation must be made in the beginning, Mr. Paschke said in response to a query, because it affects the size of boilers that are ordered for the plants. It would be hard, without excessive additional cost, to move to co-generation once the plants are already built.

Another factor which led the Steam Advisory Committee to favor the Arkla proposal, Professor Kittelson reported, is because the University might go to electric chillers for air conditioning (which is being seriously considered). Because of the proposed balance between steam and electricity contained in the Arkla proposal, it could accommodate the use of chillers. The Foster-Wheeler system may not be able to generate enough electricity in the summer, when steam flows are low.

It was then moved that the Committee adopt a resolution concerning the provision of steam. After brief deliberation, **the Committee unanimously approved the following motion:**

The Senate Committee on Finance and Planning: 1) applauds the process leading to the steam proposals; 2) finds the analysis of the competitive proposals thorough; 3) concludes that the apparent savings should be significant; 4) appreciates the consideration given to the environmental impact; 5) commends Mr. Paschke and the Steam Advisory Committee for an excellent job; and 6) concludes that each of the two proposals forwarded to the Board of Regents appears sound.

Some Committee members had expressed disagreement with a proposed seventh clause: "and [the Committee] 7) has not had time to become sufficiently informed about differences in the two competitive proposals to enable it to endorse, or to take issue with, the preference for one proposal expressed by the Steam Advisory Committee"; they urged that a positive recommendation be made. Other Committee members, however, voiced reservations about expressing an opinion on a subject about which they knew so little. One commented that "I believe, if we support one or the other, that the Regents may listen--and they may wonder where we got an expertise that others do not have." Another commented that "the sheer fact that the Board of Regents may pay attention makes me nervous."

Senior Vice President Erickson said the Board DOES listen to the Committee and that it--the Committee--is in a legitimate position to express a value judgment--that is the prerogative of the Committee.

Clause number 7 was moved; there was no second. Committee members then discussed a number of additional issues surrounding the two contracts and deliberated whether or not they should at least urge the Regents to consider certain values as it makes its decision, such as responsible approaches to the environment, the riverbank, retention of the option of co-generation, the possibility of unforeseen environmental regulations (such as a carbon tax), and capital investment and recurring cost calculations. Communicating a set of values to the Board, it was argued, would be of little value unless followed by a "therefore" statement--which, at this point, might be an uninformed statement.

It was agreed that the Committee would meet again next Tuesday, in advance of the Regents meetings, will review the additional information to be provided to the Steam Advisory Committee, and will strive to adopt a resolution favoring one alternative or the other.

Professor Shapiro thanked Professors Abrahamson and Kittelson for joining the meeting.

3. University Energy and Environmental Policy

Professor Shapiro next welcomed Mr. Aric Nissen to the meeting to discuss the draft Energy and

Environmental Policy. Mr. Nissen explained how the draft policy had been developed and who had been involved in writing it. He was now asking groups of faculty and administrative units to comment on it; the intention is that the draft will be brought to the Senate for discussion at its meeting of April 16.

Asked if other institutions had adopted such a policy, Mr. Nissen said the only one he knew of was Tufts, which has a one-page statement with vague goals. The University has an opportunity to be a leader in the area; the National Wildlife Federation was provided a draft of the policy and sent it out to their members.

Other points made by Committee members were these:

- Caution should be exercised about such statements as "unless the cost is prohibitive"; they do acknowledge trade-offs that must be considered.
- The issue of increasing parking rates so they equal the cost of commuter transportation is troublesome (also for students, Mr. Nissen acknowledged).
- Will a requirement of purchasing reduced ozone-depleting cleaning products affect Facilities Management (Mr. Nissen is meeting with them; products at present do not indicate the extent to which the contents are ozone-depleting).

The Senate and the Board of Regents will be asked to endorse or adopt the policies, Mr. Nissen told the Committee, but not the specific recommendations; those need to be "bureaucratized" and implemented over time. The Committee emphasized that it will be important to separate the principles from the recommendations.

One Committee member offered the suggestion that the policy could be restructured to resemble a planning document, with a mission, a series of goals, and objectives to achieve them.

Committee members expressed support for the draft policy generally and commended Mr. Nissen for the efforts which have led to its preparation. They also cautioned against trying to move the policy too quickly through the governance and administrative system; it is high time for such a statement, but it is also important that it be thoughtful and adopted in an appropriate way. Mr. Nissen agreed.

The Committee adjourned at 4:45.

-- Gary Engstrand

University of Minnesota