Market Progress Evaluation Report Summary

Building Operators Certification Program

Washington State

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FINAL EVALUATION REPORT
BUILDING OPERATORS CERTIFICATION PROGRAM
WASHINGTON 1997

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SUMMARY OF RESULTS

In fall 1996, the Northwest Energy Efficiency Alliance (the Alliance) began sponsoring the Building Operators Certification (BOC) venture operated by the Northwest Energy Efficiency Council (NEEC).This Final Evaluation Report responds to a request by the Alliance to address eight points regarding the progress of the BOC venture as implemented in Washington State by NEEC in 1997. The purpose of the report is to provide a basis for assessing the success of the program in achieving its interim objectives for market transformation in the building operators market. The eight points the final report of the 1997 evaluation was asked to address are:

- Number and identification of registered students and enrollees.
- Number of people planning to be certified and when.
- Feedback on the program from students, the advisory board and other interested parties from both the fall and spring interviews.
- General status of the program and the market that may have implications for the long-term viability of the program.
- The number of instructors, colleges or communities to which the curriculum hasbeen transferred.
- Results of the case studies analysis (to the extent possible), including estimated energy savings (per square foot.)
- Findings and conclusions related to cost-effectiveness of the program.
- Recommendations for program improvement.

NUMBER OF STUDENTS

The first step for individuals interested in obtaining a building operators Level 1 certificate is to enroll in the program. Enrollment has no cost obligation and essentially means the individual wants more information about when the course series will be offered. The program target for 1997 was 100 students enrolled. We reviewed the BOC database as of March 31, 1998 and found 240 students had enrolled in the BOC.

Enrollment is followed by registration for a course series and payment of course fees. Excluding the pilot course at Boeing for which 37 students registered, 128 students had registered and paid for the BOC course and 53 had registered without yet paying for the course. In other words, of the 240 individuals expressing interest in the BOC course, 181 had registered for the course series by the end of March 1998. This clearly exceeds the 1997 goal.

The sector of the building market in which students work is primarily the institutional sector. However, as can be seen in Table A, there were more private sector students in the Spokane series. The balance between private and public sector employees will be an important factor to monitor as the BOC expands. Clearly meeting the needs in both sectors of the economy is important for long term sustainability of the BOC.

Table A
Sector in Which Students Are Employed

Sector	Kitsap Students	Spokane Students
Private Sector Building Maintenance	2	10
Private Sector Energy Service Providers	0	6

Local Government/Schools/Utility	11	10
State Government	1	8
Federal Government	15	4
Undetermined	1	1
Total	30	39

NUMBER OF PEOPLE PLANNING TO BE CERTIFIED

The 1997 target for operators to be certified was 12. As of March 31, 1998, five students have been certified—one from the Boeing series and four from the Kitsap series. Four more students from the Kitsap series and 15 students from the Spokane series are expected to apply for certification and be certified in the next few months.

The primary barrier to certification has been the need to complete seven out-of-class projects. Students in the Kitsap series reported that they were unable to find the time to do all seven projects. As a result, NEEC decided to reduce the barrier and change the certification requirement to focus on four specific out-of-class projects with three optional projects. While NEEC did not meet it target for 1997, it appears that barriers to certification have been reduced and certification rates are improving.

GENERAL PROGRAM STATUS AND STATUS OF MARKET

The venture has continued to closely adhere to its market plan and scheduled roll-out for courses. The program strategy is to market the BOC program through trade shows, publications, and word-of-mouth in targeted geographical areas. After sufficient interest is generated, a course series is offered. Interest is determined by the number of enrollments in a given geographical area. Once the enrollments are high enough a course series is offered for enrollees to register for and attend. The first five course series were offered on schedule, with the first series offered in Kitsap county and the second series in Spokane. In January 1998, a third series began in Everett; a fourth series began in Olympia in March and a fifth in Kent, in April. NEEC staff feel that this first year has been particularly useful in identifying those organizations most and least responsive to the BOC opportunity.

Registration for each of the series has been over 30, suggesting there is sufficient demand in the market. By January 1998, the curriculum for all of the Level 1 courses had been finalized such that course material could be easily compiled by NEEC office staff. Efforts are underway to copyright and publish the materials. Work is well along on the next level of courses (Level 2). These courses will provide both continuing education to Level 1 certified operators and provide a higher level of training to operators. The goal is to offer certification and continuing education classes leading to higher levels of certification.

One recent change in marketing has been to hire a marketing consultant to assist in developing a long-term marketing strategy for the BOC. This move reflects a recognition by NEEC staff that their primary target group, institutional sector facilities is finite. There must be a strategy in place to go beyond those facilities already interested in the training and prepared to include it as part of employee development. The marketing strategy will be of great interest in the 1998/99 evaluation of the regional BOC.

IMPLICATIONS FOR LONG-TERM VIABILITY

It is still too early to judge the long term viability of the BOC program with certainty. Based on our evaluation, four factors suggest that the program will be able to meet its long term objectives.

- The first factor is that NEEC is making diligent efforts to reach the building owners and the supervisors of building operators as well as the building operators themselves. The goal is to establish recognition for building operator certification. If NEEC can establish sufficient credibility for the certification, the probability of long-term viability for the BOC venture will be likely.

- The second factor is that employers are responding positively to the program. Students in the Kitsap and Spokane series indicate that their supervisors are interested in and supportive of the program. Supervisors report that the program has been useful; some specifically note improved attitudes of employees and an increased understanding of their jobs. Twelve of the 17 supervisors we spoke with in the fall and spring interviews felt that their employees obtained useful training with on-the-job benefits.

- The third factor is that NEEC appears to have sufficient credibility to offer the certification. Because the BOC is primarily an energy efficiency focused training program, NEEC's name, "Northwest Energy Efficiency Council," is seen as congruent with the purpose of the training. Two factors NEEC should keep in mind came out in the interviews. One is that NEEC has credibility with some facility managers because NEEC is not seen to be directly associated with utilities, other energy suppliers, or vendors. Second, NEEC has credibility with the institutional sector because NEEC has no bias toward the private or public sector.

- The fourth factor is NEECs demonstrated commitment to ensure the BOC is sustainable beyond Alliance funding. Two actions demonstrated this. The first was that NEEC took the evaluation findings, learned from them and immediately incorporated them into the program. The second is that NEEC hired a marketing consultant to assist in developing a marketing strategy for the BOC.

TRANSFER OF CURRICULUM TO OTHER EDUCATIONAL PROVIDERS

The curriculum has been adopted by Renton Technical College and is being included in the curriculum for the one and one-half year High Rise Engineering program. Thirteen students are registered for the BOC at Renton. Bates Technical college and Lake Washington Technical College are considering adopting the curriculum as they develop programs for building operators. However, this process will take two to five years due to their current course structure.

NEEC is currently developing a strategy on how to transfer curriculum and maintain certification authority and control over course quality and content. These issues are complex. Adoption of the curriculum by any of the four vocational technical colleges in Washington appears to pose few problems and will likely proceed. Adoption by other institutions, public or private, poses financial and policy issues that NEEC is currently addressing. In particular, transfer of the curriculum cannot come at the price of sustainability of the BOC. The fact that NEEC has stepped back and begun to reconsider the strategy for curriculum adoption, again appears to reflect a commitment to ensuring the BOC is sustainable beyond Alliance funding.

SURVEY FINDINGS

We completed 17 interviews with students in the Kitsap series and 10 with students in the Spokane series. We also completed 12 interviews with supervisors for students in the Kitsap series and five with supervisors of students in the Spokane series. While the Kitsap students reported a range of views—some feeling that courses were too easy while others felt the courses were over their head—Spokane students did not report similar concerns. Even with these concerns, all but one of the 27 students said they learned

something new and useful. The overall comment was that the "teachers are good professionals who know what they are doing." Most stated they thought it was a good idea to get certified and most of them indicated that they planned to be certified.

Many of the 27 were informed of the course by their supervisors, and though all but one had to get approval, this was mainly pro-forma once the student decided to take the course. Most of the students felt that the course work was useful to their current job and over 60% thought that others from their facility will enroll in the re, if there is funding available in their organization. Interestingly, when we spoke with Kitsap students and supervisors in follow-up interviews, they were even more likely to say someone else would take the course in the future. The following summarizes the results from the surveys.

- Both students and their supervisors expressed satisfaction with the program, especially with the courses. While Kitsap students reported improvement in the series over the seven-course period, Spokane students saw the series as uniformly good from beginning to end.

- There was disagreement among Kitsap students on the appropriateness of the level of information provided in the course series. Around one-third stated that the courses were too basic (and for three this led to non-completion of the certificate), while another third stated that courses move "too fast and provide too much information." The middle third thought the series was just right.

  Spokane students had fewer comments on the level of information or the pace of the course. This level of response suggests that pacing has improved and now better matches students' abilities. One supervisor thought the courses moved too fast for his staff, but students themselves did not complain.

- Kitsap students reported that the out-of-class projects required more time than they could allow. While most found the projects very useful, there were a very large number of students reporting past-due projects.

  Following the fall interview, NEEC modified certification requirements for the Spokane series (and applied these retroactively to Kitsap students). The modification reduced the number of required out-of-class projects from seven to four. Though some students in the Spokane series mentioned they were behind, none noted this as a problem.

- Most students believe the BOC course series is a good value for the current cost, but most also felt that they would not be able to afford the course on their own. Supervisors expressed some willingness to pay higher amounts for the course. This attitude may reflect their wider knowledge of the range of costs associated with staff training or the value they see in the training. However, several noted a rule of thumb they use in determining value, $100 per course. Given that view, charging more than $700 for the BOC series and certification could limit participation.

- NEEC is seen as an appropriate sponsor for this type of certification, primarily because the certification is related to energy efficiency. NEEC's independent status is also seen as a benefit and one that appeals to both public and private entities.

- The Kitsap interviews found both supervisors and students confused about the length of the certification and the requirements for recertification. We did not find a similar level of confusion for Spokane students, but did find that the Spokane supervisors were unfamiliar with these details.

STATUS OF CASE STUDIES

The case study activity has evolved in a very different direction than that anticipated at the outset of the evaluation. At the time the evaluation contract was signed, it was believed that students in the course would develop case studies of their facilities as part of their project work. In the fall, the evaluation team learned that students do not develop case studies, nor do they generate data suitable for case study analysis as part of the BOC course series.

The evaluation team worked closely with NEEC to develop an alternative strategy to using the course work. The first step was to ensure improved data on students would be available. This was done by recommending enhancements to the BOC Participant Questionnaire to ensure that there would be information on the students' facility for assessing impacts of the program. One item that is now asked from students is the square footage of their facility.

The second step was to begin to develop case studies through on-site work with students at selected locations. We reviewed the course work and identified four possible sites. We then conducted discussions with the students. From this investigation we identified two or three sites where case studies could be conducted. However, in all cases the activities being implemented at the site, as well as the data collection activities that will be critical to developing useful case studies, are just beginning and will take one to two years to complete. The case studies for the 1997 BOC, therefore, will be incorporated into the 1998/1999 evaluation of the regional BOC.

FINDINGS AND CONCLUSIONS RELATED TO COST-EFFECTIVENESS OF THE PROGRAM

An anticipated outcome from the case studies had been the development of an estimate of annual savings per square foot for building operations and maintenance actions taken following participation in the BOC. Results from case studies will not be available until late 1999. However, data on square footage of space for which BOC students are responsible has been collected using the Participant Questionnaire.

The average square footage reported by students reporting square footage was 111,186 square feet. Using these data, plus the planning assumptions developed by Alliance staff, we estimate that the annual savings per participant for these first course series is approximately 55,593 kWh. This estimate is 10 times the planning estimate, reflecting the fact that participants are responsible for much larger facilities than assumed in the planning estimates.

RECOMMENDATIONS FOR PROGRAM IMPROVEMENT

Given the success of the BOC, there are few improvements required for the BOC to continue to grow and expand. Those that have emerged follow:

Recommendation 1: Conduct a market assessment of the building operators market.

NEEC still does not fully know the size of its target market, where potential students are and the numbers in each location, nor how much training they would require. A survey will be included in the 1998/99 evaluation. The survey will help establish a baseline assessment of awareness and will be useful in developing an assessment of the baseline population.

Recommendation 2: Continue efforts to reach building operators market.

NEEC appears to have established its credibility as a training organization on energy related issues for building operators and facility managers with the students and employers involved in the first two course

series. In addition, NEEC has effectively coordinated efforts with the Operating Engineers Union, the Washington Association of Maintenance & Operations Administrators (WAMOA), and with federal and state facilities and is beginning to work with Building Owners Managers Association (BOMA). As they expand these efforts to include other building operators unions, trade organizations, and service companies new challenges are likely to emerge. One tool to assist NEEC would be additional knowledge of the building operators market, so that entry points for other organizations would be better understood.

Recommendation 3: Increase and expand awareness of the BOC.

Instructors who have talked to employers other than those sending employees to the course, indicate that there is little awareness of the BOC among Washington employers. While this is to be expected at this early stage of implementation, it highlights the need for NEEC to expand outreach efforts both to reach potential students and to enhance the credibility of BOC certification.

Recommendation 4: Develop information on BOC specifically to inform employers.

The supervisors for the students in the first two course series are generally unfamiliar with the details of certification and course requirements. Some effort to directly inform supervisors, either through a special class or meeting targeted to supervisors, or through written material targeted to supervisors, might improve their knowledge. In the long run, gaining support from supervisors/employers is likely to increase their interest in having more staff certified and in hiring certified operators.

Recommendation 5: Maintain changes in curriculum and continue making minor adjustments as needed.

The Spokane series students seemed much more content with the course series process than Kitsap students. Few students complained about the course being either too easy or too hard. The simplification of the certification requirements means that more students are likely to achieve certification, which may explain the reduced number of complaints about course and project difficulty.

A few suggestions have emerged for further adjustments to the course series. These include:

- Eliminate any trick questions and
- Provide a utility bill request form and name of utility contact for those students who need help obtaining utility bills.