

*Market Progress Evaluation Report* **Executive Summary**  
**Regional Building Operator  
Certification**

*prepared by*

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*FINAL REPORT*

**MARKET PROGRESS EVALUATION REPORT REGIONAL  
BUILDING OPERATOR CERTIFICATION VENTURE:  
MID-YEAR 1998**

*Submitted to*

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## **EXECUTIVE SUMMARY**

### **A BRIEF HISTORY OF THE BUILDING OPERATOR CERTIFICATION (BOC) VENTURE**

The BOC was first implemented in Idaho. The initial curriculum was developed through efforts by the Idaho Department of Water Resources, Idaho Power, and the Bonneville Power Administration, and the Idaho Building Operators Association (IBOA) in 1990. Prior to these efforts in Idaho, the Washington State Energy Office had developed a separate training program in 1987 called the Building Operators Training Program (BOT). The BOT offered a course to improve the energy management skills of building operators, but did not offer certification.

As a result of the success of the Idaho BOC, BOT implementation staff redesigned the BOT from a single course focus to a multi-course certification program. Though inspired by the Idaho BOC, the Washington BOC curriculum developed independently and began to offer a three-year certification. After closure of the Washington State Energy Office in 1996, the Washington BOC effort found a home with the Northwest Energy Efficiency Council (NEEC) and in late 1996, the Alliance provided NEEC funding for implementation of the BOC venture in 1997.

In late 1997, the Alliance provided NEEC with additional funding to expand the BOC into Oregon. The Alliance also provided funding to IBOA to evaluate their certification program, to conduct a market assessment of the building operators market in Idaho, and to coordinate regional cooperation with NEEC in expanding the BOC throughout the Pacific Northwest. Part of this effort would also include involving Montana in the both the BOC training and certification.

### **EVALUATION OVERVIEW**

This evaluation of the Regional BOC venture follows two market progress evaluation reports on the 1997 Washington BOC venture.<sup>1</sup> The results of the two market progress evaluation reports demonstrated steady progress for the Washington BOC both in terms of attracting students and in terms of improving and enhancing the curriculum to increase student and employer satisfaction with the course. No evaluation of the IBOA program has been conducted by the Alliance.

The evaluation focus is twofold: to assess the success of the BOC training program in Washington and Oregon and to assess the effectiveness of the regional coordinating process.

Our approach has four major activities:

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<sup>1</sup> See Alliance reports E97-001, and E98-007.

1. A biannual tracking survey in which we collect data from a sample of students and their employers for each course conducted by NEEC and IBOA during the course of the Alliance venture and completed at least three months prior to survey implementation;
2. Venture progress monitoring through a variety of activities: a review of reports prepared by NEEC and IBOA; observation of occasional meetings; biannual interviews with NEEC and IBOA staff involved in implementation in Washington, Oregon and Idaho; and tracking of participation data for the Washington and Oregon BOC efforts;<sup>2</sup>
3. A survey of nonparticipants will be conducted in Washington, Oregon and Idaho, in fall 1998 to assess awareness, market potential, and willingness to pay for the certification program; and
4. A sample of sites will be identified that can provide sufficient information to document benefits associated with the training. Once identified we will conduct case studies at those sites.

## **PURPOSE OF THIS REPORT**

The purpose of this report is to provide a first assessment of the market progress of the BOC venture. In this mid-year report we provide an assessment of progress toward the goals for the Regional BOC venture and make recommendations for program improvement.

## **PROGRAM GOALS**

The 1998 targets for the Washington and Oregon BOC are:

- Enroll an additional 150 Washington and 60 Oregon building operators for a first and second year total of 300;
- Certify an additional 50 Washington and 8 Oregon building operators for a first and second year total of 58;
- Transfer curriculum to two training providers for a first and second year total of three; and
- Earn annual revenue of \$60,000 in Washington and \$11,000 in Oregon from training and certification fees.

The number of students enrolling in the BOC continues to increase. As of July 15, 1998, there were 291 students enrolled in Washington and Oregon. Of these, 220 had registered and paid for

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<sup>2</sup> Implementation of Idaho's training program is not funded by the Alliance; therefore we do not routinely include data on enrollees for the Idaho program.

courses, 30 registered and will have paid by the time the courses they are taking are completed. Forty-one students, 14 in Washington and 27 in Oregon had enrolled and were waiting for a course in their area.

Eight series have been offered in Washington and Oregon since the first pilot at Boeing in 1996. The first course in Oregon began in spring 1998. As of July 15, 1998, four series have been completed in Washington and four are currently in session in Washington and Oregon. The series has also been transferred to Renton Technical College and is being offered as part of the college's two-year High-Rise Operations Program.

## **NUMBER OF PEOPLE CERTIFIED**

The Washington BOC course series that have been completed and, where certification was offered, resulted in a total of seventeen certified operators out of 61 students. Beginning with the third Washington BOC course in Everett, the rate of certification appears to be increasing. Nineteen of the 31 students who completed the Everett course series were certified at the end of the series.

This increase in certification appears to stem largely from three changes in the curriculum:

- Project requirements were dropped from seven to four;
- The order in which courses are offered was restructured so that project assignments were provided to students by mid-course series, rather than assigned on a course by course basis; and
- Students who have completed all requirements now complete their application for certification during the last course meeting, rather than completing it from their home or place of work and submitting it to NEEC for approval.

## **GENERAL PROGRAM STATUS**

### **Washington/Oregon**

NEEC continues to achieve both enrollment and certification targets for the BOC. Enrollment at mid-year is close to the annual goal in both Washington and Oregon. The rate of student certification is increasing and is likely to meet the cumulative goal of 58 in 1998. Changes made in the curriculum have resulted in an increase in the number of students completing their projects before the end of the course. Overall, students and employers find the program useful and relevant to their jobs.

The most important development this year is the expansion of the program into Oregon. The expansion into Oregon required increased marketing and the involvement of new instructors. This

has been challenging for staff in terms of time and energy needed to successfully implement the expansion. Some issues remain regarding marketing strategy and how to reach various locations in Oregon, but staff believes the launch has been a good one.

## **Idaho**

As part of our assessment of the regionalization process we surveyed Idaho Building Operators Association (IBOA) staff, Board members, students, and employers. The Idaho BOC is currently in a "critical phase." The Board and staff believe the program has saturated the public sector market for Level 1 training. A market study, funded by the Alliance will be completed by the Fall of 1998. It will be used to identify the needs of private sector employers and whether a certification program can meet these needs. Idaho's experience is one that both Oregon and Washington are hoping to learn from as they plan their own future efforts.

A second major activity for IBOA is coordination of the regional certification effort. This year activities included the development of the Regional Coordinating Committee and the beginning of a process toward a regional certificate for Idaho, Montana, Oregon and Washington.

## **IMPLICATIONS FOR LONG-TERM VIABILITY**

Long term viability of the program has become more complex with the move toward a regional certification program. The challenges are evident in the Idaho experience. According to IBOA, Idaho reached saturation of its public sector market after less than five years of program activity and has found it difficult to involve the private sector. The Executive Director believes that market research with private sector companies funded by the Alliance will provide information on why this sector has not participated in the program. In terms of geographic similarity and population, Idaho is more like Oregon than Washington. Idaho's experience suggests that Oregon might experience a similar downturn in registration if the public sector is the primary target. In Oregon, however, NEEC is taking a pro-active stance. They have funded a strategic marketing effort during Oregon's initial phase of implementation to reach out to the private sector using primarily trade associations and key contacts.

Washington's program continued to grow and demand remained high during the first half of 1998. As with the other states, however, Washington's program will need to continue to increase participation by the private sector to remain viable. Students and employers continue to express interest in Level 2 courses. NEEC staff anticipates that the Level 2 course offerings will begin in 1999. Our findings suggest that offering the Level 2 program as soon as possible is important as it will provide an opportunity for further student involvement.

Employers continue to respond positively to the program. Employers cited specific benefits of employee participation such as on the job problem solving and attitude improvement. We also found several planning to send additional employees through the course. Success stories such as these can be used to market the program to other employers.

The move toward regional certification is likely to improve the long-term viability of the BOC program. Staff and committee members from the states surveyed noted that regional certification will improve credibility and recognition, which will increase the chances that the venture can become self-sustaining in the future. This was further noted by Oregon's marketer who pointed out that citing IBOA's five-year old program as a success story gives the Oregon course series needed credibility.

## **TRANSFER OF CURRICULUM TO OTHER EDUCATION PROVIDERS**

The curriculum is being considered by the State (and National) Associations of Professional Energy Managers to meet their certification process. Highline Community College has also expressed interest in providing continuing education courses for re-certification. And, one major utility outside of the Pacific Northwest, Northern States Power, has expressed interest in the curriculum.

The critical barrier to transfer is "ownership" of the curriculum by other providers. NEEC is continuing to work on a strategy to transfer the curriculum while maintaining certification authority and control over course quality and content. This issue is also being discussed as part of the Regional Coordinating Committee's work, and efforts to resolve the issue are seen as important by all of the regional players.

## **SURVEY FINDINGS**

The 1997 Washington BOC evaluation revealed a need to wait at least three months after course completion to obtain a satisfactory assessment of the usefulness of the BOC course to students and employers. The only course series in Washington that met this criteria for this Mid-Year Market Progress Evaluation report was the Spokane series, which was also included in the Final BOC Evaluation for 1997 (#E98-007). Out of 39 students representing 23 unique organizations, a total of 13 Spokane students had not been interviewed. The Idaho BOC series that met the criteria were all courses completed in 1997, resulting in a pool of 40 students. However, 40 unique facilities were not represented; rather, 30 of these students were from a single facility and the remaining 10 were from five facilities.

We completed eight surveys with students in Washington (Spokane series) and 12 surveys with Idaho students who took the Level 1 or Level 2 course series in 1997. We also completed five surveys with supervisors of students in the Spokane series and two supervisors of Idaho students.

Overall, Spokane students were satisfied with the course series, although the issue of too much material in too little time surfaced again. This same finding was reported in the Washington report (#E98-007) completed for program year 1997.

The Idaho Level 1 course was offered to some students by video. Idaho students expressed disappointment with the video course format, and noted for the in-class series that there was too little time for material, a need for more variation in teaching techniques, and problems with test items not matching course content.

Spokane students gave high ratings of importance on the job to the HVAC systems and controls and the building systems overview courses. HVAC was also cited most frequently as being useful on the students' jobs. Idaho students also rated the area of heating and cooling high in importance on the job, as well as energy efficient lighting. Idaho students most often cited the course area "Energy Conservation Techniques" as useful on their job. The majority of both Spokane and Idaho students felt that almost all classes were useful in some way.

## **STATUS OF CASE STUDIES**

The purpose of the case studies is to develop, where possible, case histories showing energy savings resulting from BOC training that can be useful for marketing the program and will document savings for the program.

As noted in the Final Evaluation Report for the 1997 Washington BOC (#E98-007), the case study activity 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 of 1997, 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 facility 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. For example, 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 in Washington. We then conducted discussions with the students. From this investigation we identified two or three of these 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.

During this last period, we have identified three additional sites in Washington and two sites in Idaho that may provide sufficient data for the case studies. These sites will be investigated along with any additional sites that can be identified through the IBOA market research effort. A full discussion of the case study development process will be included in the 1998 year-end Market Progress Evaluation Report available in early 1999.



## RECOMMENDATIONS FOR PROGRAM IMPROVEMENT

Overall, the long-term viability of the BOC appears to be promising. Students and employers are very satisfied with the training and NEEC has made several changes that have enhanced student performance in the course. Still, opportunities remain for improvement. The following six recommendations emerged from our review.

1. Clarify the marketing strategy for Oregon, including delineation of roles and responsibilities for ensuring enrollment.
2. Continue efforts to reach the building operators market, especially in the private sector.
3. Capitalize on "success stories" in Idaho and Washington in marketing the BOC.
4. Continue incorporation and training of new instructors to ensure a competent, experienced staff for the regional effort.
5. Maintain changes in curriculum and continue making minor adjustments as needed.
6. Reconsider the value of video and continue exploring other distance learning techniques that permit student-teacher interaction.