

*Market Progress Evaluation Report* **Executive Summary**  
**Regional Building Operator  
Certification, No. 2**  
**Volume 1**

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*report #E99-027*

**May 1999**



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***FINAL REPORT***

**REGIONAL BUILDING OPERATOR CERTIFICATION  
MARKET PROGRESS EVALUATION REPORT**

**YEAR-END 1998**

**Volume 1**

*Submitted To:*

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## EXECUTIVE SUMMARY

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

The BOC, first implemented in Idaho, used an initial curriculum developed in 1990 through the efforts of the Idaho Department of Water Resources, Idaho Power, Bonneville Power Administration, and the Idaho Building Operators Association (IBOA). Prior to these efforts in Idaho, in 1987 the Washington State Energy Office developed a separate training program 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, the 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 was launched as a pilot three-year certification program. After closure of the Washington State Energy Office in 1996, the Washington BOC effort found a home with the Northwest Energy Efficiency Council (NEEC). 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. In 1998, the Alliance provided additional funding to expand BOC training and certification into Montana. In January 1999, IBOA officially became the Northwest Building Operators Association (NWBOA), with membership open to building operators in the states of Idaho, Montana, Oregon, and Washington. It is expected that NWBOA will offer BOC courses in Montana as well as Idaho.

### EVALUATION OVERVIEW

This 1998 Year End Market Progress Evaluation Report (MPER) of the Regional BOC venture follows three previous MPEs, two addressing the results of the 1997 Washington BOC venture and a mid-year MPER of the 1998 Washington and

Oregon ventures.<sup>1</sup> The results of the three MPERs demonstrated steady progress for the 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. The Alliance has not conducted an evaluation of the NWBOA program.

The evaluation focus is threefold: to assess the success of the BOC training program in Washington and Oregon; to assess the effectiveness of the regional coordinating process; and to conduct a baseline market assessment. The evaluation approach includes four major activities:

1. A tracking survey in which we collect data from a sample of students and their employers for each course conducted by NEEC and NWBOA subsequent to Alliance funding and completed at least three months prior to survey implementation;
2. Venture progress monitoring through a variety of activities: review of reports prepared by NEEC and NWBOA; observation of occasional meetings; biannual interviews with NEEC and NWBOA staff involved in implementation in Washington, Oregon, Idaho and Montana; and tracking of participation data for the Washington and Oregon BOC efforts;<sup>2</sup>
3. A baseline survey of nonparticipants conducted in Washington, Oregon, Idaho (public-sector only), and Montana in 1999 to assess awareness, market potential, and willingness to pay for the certification program; and
4. Identification of a sample of sites that can provide sufficient information to document benefits associated with the training. Once identified, we will gather data on operations and maintenance actions resulting from the training and estimate savings associated with these actions.

## PURPOSE OF THIS REPORT

The purpose of this report is threefold. First, the report provides a year-end market progress assessment of the 1998 BOC venture. Second, the report provides an assessment of progress toward the goals of the Regional BOC venture and includes

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<sup>1</sup> See Alliance reports E97-001, E98-007, and E98-015 [www.nwlliance.org](http://www.nwlliance.org).

<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.

recommendations for program improvement. Third, this report provides a market assessment and measurement of baseline for the BOC in all four states of the region. Volume 1 addresses the first two purposes and Volume 2 addresses the third.

## **PROGRAM GOALS**

The 1998 targets for the Washington and Oregon BOC were to:

- Enroll an additional 150 Washington and 60 Oregon building operators for a first and second year total of 300;
- Certify 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 revenues 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 and to surpass the goals. As of December 31, 1998, there were 341 students who had attended at least one class in Washington and Oregon. Of these, 228 completed the course series, with 48 of these from Oregon.

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 December 31, 1998, four series had been completed in Washington, three were currently in session in Washington, and one in Oregon had just been completed. Ten organizations now publicly recognize the BOC as a professional training opportunity for their employees or members.

NEEC far exceeded the 1998 revenue goals for Washington and Oregon with revenues respectively of \$67,769 and \$31,985.

## **NUMBER OF PEOPLE CERTIFIED**

As of December 31, 1998, certified operators total 50 (22%) of the 228 people who fully completed one of the eight course series in Washington and Oregon where certification was offered. Beginning with the third Washington BOC course in Snohomish, the per-series rate of certification appeared to be increasing. Seventeen (54%) of the 31 students who completed the Snohomish/Everett course series were

certified at the end of the series, a substantial increase from the previous Spokane course, which had ten certifications (25%) out of 39 who completed the course.

We believe that this increase in certification resulted largely from three changes in the curriculum:

- Project requirements were dropped from seven to four;
- Project assignments were provided to students by mid-series, rather than assigned on a course by course basis; and
- Students who have completed all requirements now complete and submit their application for certification during the last course meeting, rather than completing it subsequent to the course and submitting it to NEEC for approval.

As of December 31, 1998, four months had passed since the Snohomish course was completed. Staff reported that many of the applications for certifications were finalized in this time period, with others expected to “trickle” in later. The rate of certification appears to be slower for the Kent and Olympia series; however, the Kent and Olympia series ended in October and November 1998, respectively, precluding a direct comparison to the rate for Snohomish four months after course completion. In the next evaluation cycle, we will be able to provide a more accurate assessment of the rate of certification for BOC courses.

## GENERAL PROGRAM STATUS

### Washington/Oregon

NEEC continues to achieve enrollment targets for the BOC. Enrollment at year-end exceeded the annual goal in Washington and very nearly met the goal in Oregon. The rate of student certification has increased but still fell short of 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 developments this year included the expansion of the program into Oregon and the efforts toward regional certification. The expansion into Oregon required increased marketing and the involvement of new instructors. Seven new instructors were hired in Oregon and three in Washington. The Oregon courses were well received and a third series will be offered in Oregon in 1999. While there

has been turnover of staff in the Oregon venture, goals are still being reached and marketing efforts continued.

A distance learning pilot planned during 1998 was not realized. The videoconference format, to be based at the Eugene course with transmission to Idaho Falls, ID and Missoula, MT, did not succeed due to low registration in the distance sites. Through planning this effort staff learned that this training option is as costly as on-site delivery, requires re-thinking the curriculum which is designed for site-based instruction, and requires additional training for instructors in this method of teaching and in regional differences in course materials.

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

Long-term viability of the program appears more solid in Washington and Oregon than in Idaho. Increased private sector participation, the number of students who report plans to be re-certified or to attend the Level 2 series, and employers who are enthusiastic about sending multiple employees, all point to a more robust program.

Regional certification, however, is more complex. All staff members agree that regional recognition will enhance the program's long-term potential. The Regional Coordinating Committee completed a great deal of work to establish a common curriculum and testing procedure to be used in Washington, Oregon, and NWBOA's membership area. Doing so required agreement on a bi-annual re-certification requirement, sharing of instructors, and pricing. In 1998, the development of a common curriculum and testing procedure was completed. Decisions remained to be made, however, about the role of a regional association, the organizations that would do the certification, the price of training, and the ownership of the BOC materials.

Resolution of these outstanding issues are central to the long-term viability of the program in Idaho, where the program has had difficulty maintaining enrollment and finding instructors, and where fewer and fewer students are applying for re-certification. Except for pricing and copyright issues on the BOC materials, we believe the resolution of these issues are less central to the program's viability in Washington and Oregon. In these states, NEEC's efforts to build support among employers (both public and private), utilities, and government and professional organizations is building a solid base for the future.

Clarification of "ownership" of the BOC curriculum through copyright is essential to the future of the BOC as a self-supporting enterprise. Through development of a business plan and research into copyright/fee structures, NEEC is making progress toward this goal. NEEC is also raising the price of the course series in 1999, based on evaluation findings and an analysis of course costs. Response to the price

increase will provide another indication of whether NEEC can provide the BOC at a profitable margin in the future.

## TRANSFER OF CURRICULUM TO OTHER EDUCATION PROVIDERS

In 1998, NEEC broadened its criteria for determining whether the course has been successfully “transferred” to other education providers to include organizations that:

- **ACCREDIT** the BOC for their membership rather than adopting the curriculum and teaching it internally. Accreditation means the organization offers credit hours or continuing education units for BOC courses
- **RECOGNIZE** the course. Recognition means that the organization has publicly endorsed the program as a professional development opportunity for members or for employees.

By the end of 1998, five organizations had accredited the curriculum. In addition, five other organizations had recognized the BOC as a professional development program for their members involved in facility O&M. NEEC staff plans to work toward more of these arrangements in the coming year.

The curriculum is still 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.

The critical barrier to transfer is still “ownership” of the curriculum by other providers. As noted above, NEEC is continuing to work on copyright issues, fee structures, and quality control strategies to ensure that certification remains centralized and course quality and content is maintained.

## SURVEY FINDINGS

For the final 1998 BOC evaluation, we conducted interviews with students and their employers from the Olympia, Snohomish/Everett and Kent courses. Overall, students and their employers continue to express very positive assessments of the course series. Compared with previous evaluation findings, no students expressed dissatisfaction with the project requirements, and indeed, many more noted that completion of the projects increased their understanding of their own facilities.



Students report that the HVAC, indoor air quality, and facility electrical systems classes are most useful on the job. In assessing benefits, students in this evaluation period cited the overall comprehensiveness of the course and its impact in raising their general awareness. In a change from previous findings, several students also noted that the course conferred credibility to them or enhanced their position within their organization or with management. Almost all students said the course has improved their job performance and more than three-quarters said they believe the certification would help them in finding a new job if necessary.

Employers rated the building systems overview and the HVAC classes as most important for their employees. Employers also noted that a major benefit of the course was improved self-esteem and self-confidence for their employees. More than half of the employers surveyed said they plan to send additional staff to the course and most said it would be a positive factor in reviewing resumes of future employees.

### **STATUS OF CASE STUDIES**

After contacting students and reviewing survey findings, we concluded that students are not returning to their facilities and conducting projects that can be studied to assess program impact (in terms of direct energy savings). They are, however, making changes in their daily operations and maintenance activities, which is what is expected to occur as a result of Level 1 training. As an alternative to case study assessments, we will conduct follow-up surveys, in late 1999, with a random sample of students who completed the course at least six months prior to our contact. The survey will ask students to report, using a checklist format, operations and maintenance actions they have taken as a result of course attendance. We will use their responses, combined with facility data collected during the course pre-test, to estimate program savings.

### **RECOMMENDATIONS FROM YEAR-END REPORT**

Overall, the long-term viability of the BOC appears 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 to ensure this positive program response persists. The following recommendations emerged from our review.

**Recommendation 1:** Continue to investigate opportunities for marketing to the private sector in Oregon and Washington.

The later 1998 courses in Washington show increased participation by private sector businesses. From the surveys conducted for this evaluation, private sector employers are willing to pay for the course and support employee involvement. Their response strengthens the willingness to pay that we project for the potential market as a whole. While we cannot verify this until looking at all data across all course series, we believe that continuing to involve private businesses will increase the long-term viability of the program.

**Recommendation 2:** Continue efforts to secure "accreditation" and "recognition" for the BOC, in addition to working on efforts to transfer the curriculum to other organizations.

NEEC's efforts to secure accreditation of and public recognition for the BOC have been very successful. While full transfer of the curriculum has to wait for "ownership" issues to be resolved, including copyright, usage fees, and other issues around certification, NEEC can continue to work with organizations and businesses that want to recognize the BOC as a professional development opportunity for members and employees. Doing so will increase NEEC's marketing potential and enhance market image of the program.

**Recommendation 3:** Continue to explore options for including students from rural areas, particularly in Oregon.

During 1998, NEEC discovered that the distance learning option is neither cost-effective nor well suited to the BOC curriculum. However, some means of including students from remote sites is needed. NEEC should continue to explore the feasibility of different technology options for delivering the BOC course in remote areas.