# BOC 2022 Updates

The Building Operator Certification program team is looking forward to another year of elevating the careers of operations and maintenance staff through professional training and credentialing. Annually, our team sits down and reviews what we call our "Vision Board," a list of each of our high-level goals for the program, and how we can drive the mission of BOC forward. It is a great way to stay in tune with why we do what we do! We want to share with you some of the key accomplishments from the past year, as well as the vision we have for the program in 2023.

## New Vision and Mission for the Northwest Energy Efficiency Council

In October of 2022, the national administrator of the BOC program announced a new mission for the organization: "NEEC's mission is to remove all carbon emissions from building energy use through market-based thought leadership, education, and advocacy." This new mission enables the organization to keep pace with the evolution of the energy efficiency industry and build partnerships with key partners with a shared goal of a cleaner energy future for all.

## BOC strategic planning

Complementing the work of NEEC, the BOC program is also undergoing its own strategic planning process. The goal of this process is to establish priorities for the program and allow us to focus resources on tangible objectives to ensure the program continues to meet the needs of our audience: professionals who operate and maintain buildings. The committee established three objectives in 2022 and will continue to work through meeting these in 2023:

- Update the BOC Skills Standard
- Publish a Curriculum Design Guide
- Establish and maintain a curriculum assessment/roadmap to guide short and long-term curriculum updates

## Curriculum Assessment and Updates

Since the BOC program's launch, we have been committed to keeping the content current; and to do so, we perform an annual review of existing curriculum, releasing updated editions in Q1 of each year. Below is a brief summary of the class updates resulting from our 2022 curriculum feedback cycle that will be released in Q1 of 2023:

- 1004 HVAC Controls Fundamentals – Full edition update to address rapidly evolving controls technology, including advanced sensors, smart technology, and integration with distributed energy resources.
- 1006 Common Opportunities for Operational Improvement – Minor update including new video resources to better demonstrate data logging strategies.
- 1013 Smart Buildings Fundamentals – Minor update based on feedback from pilot.
- 2001 Building Scoping for Operational Improvements – Update to incorporate a deeper hands-on experience with data analysis and scoping strategies.

- 2002 Optimizing HVAC Controls for Optimal Performance – Update to clarify sequence of operation concepts and expand on DDC network architecture.

With the accelerated pace of change in our buildings and because of our strategic planning efforts, BOC's Director and Training Manager finalized the 2022 Curriculum Assessment, attached here.

## Electrification Curriculum

One of the areas identified in the curriculum assessment as an increasing part of a building operator's responsibility is electrification, as many jurisdictions are adopting decarbonization initiatives, a trend that is expected to continue. This topic was addressed in 2022 with the development and pilot of a new supplemental class curriculum, Electrification and Building Operations. This class provides an overview of the fundamentals of electrification technologies, including implementation benefits and barriers, as well as maintenance and troubleshooting of key assets and systems.

## Building Operator: Grid and Occupant (BOGO) Curriculum

NEEC has partnered with Northeastern University (NEU) and Washington State University (WSU) to develop some new curriculum called Building Operators: Grid and Occupant (BOGO) Training. This is a DOE project with funding through BENEFIT which stands for Building Energy Efficient Frontier Technology. Northeastern University is the prime recipient, and NEEC and WSU are a subcontractor to them.

The project will develop and demonstrate the value of a formal 14-hour supplemental curriculum to the Building Operators Certification Fundamentals program for pre-entry-level building operators that improves their literacy of grid-interactive efficient buildings (GEBs) and occupant-centric controls (OCC).

This building operators' grid and occupant (BOGO) curriculum will accelerate the adoption of GEBs and OCCs.

A transformational component of this project is the development of a Building Operation Emulator (BOEm). This real-time building energy simulation with an interactive dashboard will be used for teaching both building automation system (BAS) fundamentals, and how decisions made in the BAS affect occupants' comfort and energy use/costs for the building and its consequences on the grid.

This curriculum will be scalable to vocational-technical high schools and community colleges nationwide, as illustrated by at least 75 students from at least two institutions who will have completed the BOGO study, pilot, and trial in total.

## Multifamily Pilot

With funding from the BOC program's licensed partner, the Midwest Energy Efficiency Alliance, the BOC program has developed a multifamily specific BOC Level I training. The existing BOC curriculum has been adapted to address the unique challenges and opportunities in the multifamily sector. Under the guidance of an advisory group, a curriculum subcommittee has modified the BOC curriculum to create a version for multifamily, which was piloted in three courses in 2022. After the pilot courses are completed, the curriculum will be revised based on feedback from instructors and students and then rolled out nationally.

This training is intended for building professionals with two or more years' experience operating and maintaining multifamily facilities with 20 or more units. Students who complete the training will earn a BOC Level I Multifamily Training Certificate of Completion. The BOC program will honor and apply the overlap of material toward the eligibility requirements for the standard BOC Level II TCOC and the Certified Building Operator (CBO) certification exam.

The multifamily curriculum consists of seven classes, a test for each class, and assigned projects relevant to the students' own facilities, for a total of 74 hours. Group activities and discussion are emphasized. Instructors are encouraged to include onsite tours or other hands-on learning activities where possible. As suggested by the advisory committee, resident engagement concepts are woven into each class.

BOC Multifamily class titles:

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| MF1001 | Energy Efficient Operation of Multifamily Building HVAC Systems |
| MF1002 | Measuring and Benchmarking Energy Performance in Multifamily Buildings |
| MF1003 | Efficient Lighting Fundamentals in Multifamily Buildings |
| MF1004 | Multifamily Facility Electrical Systems, HVAC Controls, and Smart Buildings Fundamentals |
| MF1005 | Indoor Environmental Quality in Multifamily Buildings |
| MF1006 | Common Opportunities for Low-Cost Operational Improvement in Multifamily Buildings |
| MF1008 | Operations & Maintenance Practices for Sustainable Multifamily Buildings |

## Fundamentals of Energy Efficient Building Operations (FEEBO) Rollout

In 2021, NEEC announced the launch of the Fundamentals of Energy Efficient Building Operations training and in 2022, the course was rolled out nationally. The training has been well received with 127 students attending the training in seven different courses in 2022. The training was also integrated into the Clean Energy Pathways internship program in Massachusetts.

## 2022 Honorable Mention Award for an Exemplary Training Organization from the International Association of Continuing Education and Training

As an IACET Accredited Provider, NEEC is dedicated to quality education and training and provides accredited Continuing Education Units (CEUs) accepted for the renewal of industry certifications, certificates and licenses. This award was presented at the IACET annual conference in 2022.

## Recruiting for BOC Certification Advisory Commission

The BOC program is currently recruiting for its Certification Advisory Commission (CAC) and subcommittees (Exam Development & Maintenance, Scheme, Nominating, Appeals). The CAC represents a broad spectrum of industry leaders whose goal is to advise the Northwest Energy Efficiency Council (NEEC) on its process to align the BOC program with the ANSI/ISO/IEC standard 17024. Any subject matter experts, stakeholders, or others involved in the operations and maintenance industry

who may have interest in serving on the CAC can contact Britton Rife (britton.rife@neec.net) for more information.

## What's Next for BOC

The BOC program will continue to serve our students, stakeholders, and supporters with training in the field of operating buildings at optimal efficiency, even as what makes buildings efficient and smart evolves. We are committed to listening and learning from what our audience faces in the day-to-day operations of their facilities as well as how training and credentialing can serve the long-term goals of these professionals' careers and their buildings' energy goals. We are appreciative and honored to have your support of our mission.

Melanie L. Danuser

Director of Education and Training

Northwest Energy Efficiency Council and Smart Buildings Center