2023

Codes, Standards and New Construction Quarterly Newsletter

Q4 2023 Team Updates:

Q4 2023 Highlights:

What's New

The final quarter of 2023 proved to be as exciting as the rest of the year. State codes achieved significant milestones and standards continued to progress for several important products including water heaters and motors. A few highlights are listed below, and details are included in the rest of this newsletter.

Looking forward, 2024 should see new codes going into effect in Oregon and Washington and the ratification of a slightly amended code in Idaho. We also expect to see final rules for about 24 federal standards by the end of 2024; these final rules are the culmination of years of effort by the U.S. Department of Energy (U.S. DOE), energy efficiency advocates and industry representatives. These standards should benefit the Northwest for years to come.

Codes

Following two public hearings and a comment period, Idaho's Division of Occupational
and Professional Licenses (DOPL) recommended to the Governor's office to move the
building energy code updates to "pending." The Q1 2024 legislative session is expected
to approve the updates, which largely preserve the code, after a two-year process that
threatened to dramatically reduce the stringency of the code.

Standards

• The U.S. DOE published dockets for water heaters and motors, moving these two products closer to final rules.

Funding Opportunities

 The U.S. DOE released the second funding opportunity announcement (FOA) for code support included in the Inflation Reduction Act. \$540M is being offered via competitive bidding to all jurisdictions including cities, counties, and states. Applications are due February 9, 2024.

We hope you enjoy reading our quarterly newsletter. Please let us know if you have any questions or ideas on other information that would be helpful for you.

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For additional information on state codes and links to training resources, visit NEEA's website: https://neea.org/our-work/codes-standards/codes
Additional energy code training resources can be found on the BetterBuiltNW (BBNW) website: https://betterbuiltnw.com/training#energy-code



Questions about this newsletter may be addressed to:

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State	Sector	Code Version	Adopted Date	Effective Date
	COMMERCIAL	2018 IECC	4/2/2020	1/1/2021
IDAHO	RESIDENTIAL	2018 IECC with weakening amendments	4/2/2020	1/1/2021
	COMMERCIAL	2021 IECC	6/6/2022	9/8/2022
MONTANA	RESIDENTIAL	2021 IECC with weakening amendments	6/6/2022	9/8/2022
	COMMERCIAL	2021 Oregon Energy Efficiency Specialty Code (OEESC) (ASHRAE 90.1-2019)	4/1/2021	10/1/2021
OREGON	RESIDENTIAL	2021 Oregon Residential Specialty Code (ORSC) (2018 International Residential Code (IRC) heavily amended)	4/1/2021	10/1/2021
		2023 ORSC (2021 IRC heavily amended)	10/1/2023	4/1/2024
WASHINGTON	COMMERCIAL	2018 Washington State Energy Code (WSEC) (2018 IECC with strengthening amendments)	7/26/2019	2/1/2021
		2021 WSEC (2021 IECC with strengthening amendments)	11/28/2023	3/15/2024
	RESIDENTIAL	2018 WSEC (2018 IECC with strengthening amendments)	11/9/2019	2/1/2021
	RESIDENTIAL	2021 WSEC (2021 IECC with strengthening amendments)	11/28/2023	3/15/2024



International Energy Conservation Code (IECC)

The 2024 IECC development process was nearly completed in Q4 2023. After finishing the third and final round of reviewing code change proposals in Q3 2023, the Residential Consensus Committee and Commercial Consensus Committee IECC committees (and their subcommittees) voted to approve this final set of Residential Committee Action Report and Commercial Committee Action Report proposed amendments, which will be applied to the Residential Public Comment Draft and Commercial Public Comment Draft 2024 IECC Public Draft #2. The final step to finalize the 2024 IECC is the appeals process, and nine appeals were filed before the January 2, 2024 deadline. All appeals are scheduled to be processed in Q1 2024, and any resulting changes to the 2024 IECC will presumably be incorporated before it is expected to be published later in 2024.

The alliance participates in activities beyond simply submitting code change proposals; NEEA staff are voting members of the main Commercial code committee as well as the Residential and Commercial HVAC and Refrigeration (HVACR) and Water Heating subcommittees.



Commercial Code

General Updates

The 2021 Washington State Energy Code—Commercial (WSEC-C) revision process to reduce the risk of violating the federal Energy Policy and Conservation Act (EPCA) concluded in Q4 2023. After the State Building Code Council (SBCC) voted in Q3 2023 to approve the recommendations of its Mechanical, Ventilation and Energy (MVE) Committee and set March 15, 2024 as the new effective date for 2021 WSEC, a final draft of the 2021 WSEC-C EPCA revision was posted. A public comment period, including two public hearings, was conducted in Q4 to collect feedback on this final draft, and the SBCC voted to finalize adoption of the revised 2021 WSEC-C, including a few relatively minor amendments, at its November 28, 2023 meeting. While this revised 2021 WSEC-C mitigates risk of violating EPCA, it is expected to maintain the approximately 24% increase in efficiency over the 2018 WSEC-C of the pre-revisions version approved in 2022. An official final version of the 2021 WSEC-C is being developed, and the code is still scheduled to go into effect March 15, 2024.



Commercial Code (Continued)

Education and Training

NEEA provides training and technical assistance on the current WSEC-C provisions. Training attendees and recipients of technical support include design and construction professionals, building officials, plan examiners, home builders, contractors, field inspectors and fire marshals.

Educational resources and trainings about the current 2018 WSEC-C and the upcoming 2021 WSEC-C are available for on-demand viewing on NEEA's commercial WSEC website.

The WSEC-C trainings delivered and offered in Q4 2023 are listed in the table below.

Training Topic	Course Length	Attendees	Location	Date
2021 WSEC-C, Key Changes to the Solar/Renewable Energy Provisions	1.5 hours	189	Webinar	10/25/2023

Code Compliance Webtool

As of Q4 2023, the WSEC-C code compliance webtool had more than 10,100 registered users and more than 16,500 non-test projects submitted through the tool.

The webtool development contractor continues to work on updates and enhancements to support a new 2021 WSEC-C edition. The 2021 WSEC-C envelope and lighting consoles were launched in Q4 2023 and are live on the website. Compliance tools for mechanical and service water heating continue to be developed and will be ready for public use by the 2021 code effective date March 15, 2024.



Residential Code

General Updates

The 2021 Washington State Energy Code–Residential (WSEC-R) revision process to reduce the risk of violating EPCA concluded in Q4 2023. After the State Building Code Council (SBCC) voted in Q3 2023 to approve the recommendations of its Mechanical, Ventilation and Energy (MVE) Committee and set March 15, 2024 as the new effective date for 2021 WSEC, a final draft of the 2021 WSEC-R revision was posted. A public comment period, including two public hearings, was conducted in Q4 to collect feedback on this final draft, and the SBCC voted to finalize adoption of the revised 2021 WSEC-R, including a few relatively minor amendments, at its November 28, 2023 meeting. While the revised 2021 WSEC-R mitigates risk of violating EPCA, it is expected to maintain the approximately 38% increase in efficiency over the 2018 WSEC-R of the pre-revisions version approved in 2022. An official final version of the 2021 WSEC-R is being developed, and the code is still scheduled to go into effect March 15, 2024.

Residential Code (Continued)

Education and Training

NEEA provides training and technical assistance on the current WSEC-R provisions. Training attendees and recipients of technical support include design and construction professionals, building officials, plan examiners, home builders, contractors, field inspectors and fire marshals.

The WSEC-R on-demand trainings, training webinar schedule and additional resources can be found on the Washington State University Energy Program's website and BetterBuiltNW.

The WSEC-R live trainings delivered in Q4 2023, and available on-demand trainings, are listed in the table below.

Training Topic	Course Length	Attendees	Location	Date
Energy Code 2021	1.5 hours	44	King County Master Builders	11/21/2023
Energy Code 2021	5 hours	64	Kennewick, WA	11/29/2023
2021 WSEC-R Update	2 hours	300	Webinar	12/13/2023
2018 WSEC-R: Summary of the 2018 WA State Residential Energy Code	10 mins	529*	On Demand	Various
2018 WSEC-R: Residential Energy Code Compliance	2 hours	45*	On Demand	Various
2018 WSEC-R: Build Tight & Ventilate Right Options (short version)	1 hour	88*	On Demand	Various
2018 WSEC-R: Balanced Ventilation with HRVs & ERVs	1.5 hours	11*	On Demand	Various
2018 WSEC-R: Balanced Ventilation with ERVs & HRVs (short version)	1 hour	32*	On Demand	Various
2018 WSEC-R: Efficient Building Envelope Options	1 hour	62*	On Demand	Various
2018 WSEC-R: Heating & Air Conditioning System Inside Options	14 mins	118*	On Demand	Various
Using the C3 Calculator to Calculate Ventilation Rates	10 mins	132*	On Demand	Various
Filling out the Compliance Certificate for Ventilation Systems	10 mins	128*	On Demand	Various

^{*}On-Demand training attendance numbers are cumulative starting from January 1, 2023.



Commercial Code

General Updates

In Q4 2023, the Oregon Building Codes Division (BCD) nearly completed its 2024 Oregon Energy Efficiency Specialty Code (OEESC) update process. A first draft of the 2024 OEESC, which is based on the model standard ASHRAE 90.1 2022, was reviewed and approved at the October 17, 2024 Construction Industry Energy Board meeting. However, no further rulemaking steps have been taken because the COMcheck software version for ASHRAE 90.1-2022 is not yet available. Thus, the original target adoption date of January 1, 2024 was not achieved, and the 2024 OEESC is now expected to be finalized sometime in 2024 and go into effect six months later. While ASHRAE 90.1-2022 is expected to deliver an approximate 10% increase in energy efficiency from the current code (2021 OEESC), the approved draft includes weakening amendments.

Residential Code

General Updates

The 2023 Oregon Residential Specialty Code (ORSC) adoption process was completed early in Q4 2023. The 2023 ORSC was adopted on October 1, 2023 and will go into full effect on April 1, 2024. A final version of 2023 ORSC has been posted, and University of Oregon analysis found it to be about 12.5% more efficient than the 2021 ORSC. Compared to the model 2021 IECC, BCD reported the 2023 ORSC is at least as efficient, while U.S. DOE found it to be 5.6% less efficient.

BCD also continued the process of updating the Oregon Residential Reach Code (ORRC). In Q4 2023, BCD posted a 2023 ORRC first draft and solicited 2023 ORRC proposals from October 20 through December 18, 2023; NEEA staff submitted one code change proposal. These proposed code changes are scheduled to be first reviewed at a Regulatory Advisory Committee meeting on January 30, 2024, and the 2023 ORRC is expected to be finalized by July 1, 2024.



Residential Code (Continued)

Education and Training

NEEA partners with organizations across the state to provide technical assistance and training on the current and upcoming Oregon residential and commercial energy codes. Training attendees include design and construction professionals, building officials, plan examiners, home builders, contractors, field inspectors and fire marshals.

No Oregon energy code live trainings were delivered in Q4 2023.

Field Study and Evaluation

Oregon Residential Code Compliance Evaluation

NEEA is conducting a Oregon Residential Code Compliance Evaluation, which will kick off in February 2024. Through this study, NEEA will gather market data about homes built under the 2021 Oregon Residential Specialty Code (ORSC) to meet the following objectives:

- Calculate code compliance among single-family buildings constructed under the 2021 ORSC.
- Investigate whether and how new construction homes use natural gas for space and water heating as well as other end uses, including stoves and hearths, and the prevalence of gas hookups in homes with all-electric appliances.
- Document the proportion of new construction homes built with above-code elements.
- Provide an analysis of builders' choices and rationale regarding the efficiency level to which home is built (base code, reach code, ENERGY STAR® Homes) and selection and implementation of the 2021 ORSC-required Additional Measure.

A final report is anticipated in Q4 2024.



CODES UPDATES

After the Idaho Building Code Board voted into "proposed" status the updated IDAPA 24.39.30 document proposed by the Division of Occupational and Professional Licenses (DOPL) in Q3 2023, DOPL hosted the two required public hearings, the second in Q4 2023, and then provided the recommendation to the governor's office to go "pending" with the updates. The 2024 legislative session commenced on January 8, 2024, and will continue throughout Q1 2024. The decision on IDAPA 24.39.30 should be forthcoming as a result of this session.

During Q4 2023 and going into Q1 2024, the Idaho Code Collaborative has begun planning to open internal discussions via a code working group to review IECC 2021. The group will assess whether this new version of code is appropriate for Idaho and whether any amendments could be warranted.



Education and Training

NEEA provides training and technical assistance on the current Idaho energy code. Training attendees and recipients of technical support include design and construction professionals, building officials, plan examiners, home builders, contractors, field inspectors and fire marshals.

More information about the Idaho building energy code, trainings and resources can be found at the <u>Idaho Energy Code website</u>.

The Idaho energy code trainings delivered in Q4 2023 are listed in the table below.

Training Topic	Course Length	Attendees	Location	Date
Air Balance Certification Training	8 hours	13	Webinar	10/11/2023
Indoor Air Quality (IDL)	1 hour	18	Boise/Webinar	11/2/2023
HVAC & Lighting Commissioning (IDL)	1 hour	13	Boise/Webinar	11/29/2023
Emerging Technologies and Heat Pump Water Heaters	1 hour	13	Boise/Webinar	12/6/2023
Idaho Power Energy Advisor Training	6 hours	10	Twin Falls	12/7/2023
Idaho Power Energy Advisor Training	6 hours	14	Boise	
Manual J, S and D and the Energy Rating Index (for Building Energy Inc. & Avimor Management)	2 hours	8	Boise	12/5/2023
Air Balance Certification Training	8 hours	12	Webinar	12/6/2023
Indoor Air Quality, Attics, & Crawlspace (IDL)	4 hours	11	Boise/Webinar	12/12/2023
Energy Rating Index, Fireplaces in Tight Homes, & Remodels	4 hours	5	Boise/Webinar	12/19/2023
Duct and Envelope Tightness Testing Certification	16 hours	4	Webinar	12/12/2023 & 1/5/24



Field Study and Evaluation

Idaho Commercial Code Evaluation

CODES UPDATES

The Idaho Commercial New Construction Code (CNCC) evaluation study will assess the path(s) by which and the degree to which code compliance is achieved with the amended 2018 IECC in newly constructed buildings, while also measuring building energy performance compared with the average energy performance of buildings constructed under previous code. The results of the study will provide direction to the development and implementation efforts of the NEEA Codes team and will provide other regional code stakeholders guidance in targeting their energy efficiency work in the commercial new construction sector. NEEA has selected Opinion Dynamics to conduct this study; a kickoff meeting was held in August 2023 and a sampling plan was prepared in December 2023, with sample development currently underway. Data collection is scheduled to commence in Q1 2024 and continue into Q3 2024, with analysis and reporting to follow.

Idaho Residential Code Compliance Evaluation

NEEA is reviewing its assumptions underlying its estimation of energy savings resulting from NEEA's and its partners' involvement in the Idaho state code processes. Using data collected through permit review, site visits to residential new construction building sites, and interviews with market actors, this research will address the following objectives:

- 1) Assess statewide compliance with selected code requirements among single-family homes built under IECC 2018 with Idaho amendments.
- 2) Develop estimates of statewide energy code compliance and compliance within urban and rural jurisdictions separately using data collected on individual code requirements.
- Provide statewide findings regarding primary space and water heating fuel and above-code elements using data collected on individual code requirements.

This work kicked off in Q1 2023, and Idaho's residential energy code compliance evaluation report is expected in Q2 2024.



The Montana Homes Collaborative met with the Montana Department of Environmental Quality (MT DEQ) and discussed ideas for U.S. DOE/federal funding within the state including energy code marketing opportunities, small business energy efficiency incentives, weatherization and multifamily programs, and contractor training programs.

The National Center for Appropriate Technology (NCAT) recently created a new section on its website <u>for the Montana Homes Collaborative</u>. On that website, NCAT and MT DEQ published the <u>Fall 2023 Energy Code Compliance Best Practices newsletter</u>. Topics included ADUs in Montana (and how several new bills impact zoning and ADUs) and the 2021 IECC Residential ADU Code Provisions.

Education and Training

Montana energy code training providers developed and posted a virtual course for building and duct tightness training and are continuing outreach efforts to encourage participation. The training can be found on NCAT's website under the Residential Energy Services section.

Additional energy code resources can be found on the MT DEQ's Energy Program website.

No Montana energy code trainings were delivered in Q4 2023.



Field Study and Evaluation

Montana Commercial Code Evaluation

The Montana Commercial New Construction (MT CNC) evaluation field study focuses on assessing how and the extent to which code compliance is achieved with the 2018 IECC in newly constructed buildings in Montana. The study will include measurements of energy performance of these buildings as compared with the average energy performance of buildings constructed under previous code; the sampling frame will encompass all commercial buildings constructed in Montana under its version of the 2018 IECC, which was in effect from February 13, 2021, through June 5, 2022. NEEA's ultimate objective is to obtain results that will inform the development and implementation efforts of its Codes team, as well as to provide guidance for other regional stakeholders so that they can better target their energy efficiency work in the commercial new construction sector.

The contractor conducted a kickoff meeting in Q2 2022, and data collection is underway, focusing on review of permit data paired with visits to a subset of sites for data validation. Permit and on-site data collection and analysis is scheduled to run through Q1 2024, with billing data collection scheduled for completion by Q2 2024. A preliminary report from this study is anticipated by Q2 2024, with an addendum reflecting billing data analysis results anticipated by Q3 2024.



Field Study and Evaluation (Continued)

Montana Residential Code Compliance Evaluation

NEEA is reviewing its assumptions underlying its estimation of energy savings resulting from NEEA's and its partners' involvement in the Montana state code processes. Using data collected through site visits to residential new construction building sites, and interviews with market actors, this research will address the following objectives:

- 1) Assess statewide compliance with selected code requirements among single-family homes built under IECC 2018 with Montana amendments.
- 2) Develop estimates of statewide energy code compliance and compliance within urban and rural jurisdictions separately using data collected on individual code requirements.
- 3) Provide statewide findings regarding primary space and water heating fuel and above-code elements using data collected on individual code requirements.

This work kicked off in Q1 2023 and paused in Q3 2023 due to permit data collection challenges. The project will re-launch in early 2024 with a focus on on-site data collection. Montana's residential energy code compliance evaluation is expected in late 2024.

STANDARD UPDATES

General Updates

In Q4 2023, the U.S. DOE issued Requests for Information (RFI) and Notices of Proposed Rulemaking (NOPR) for 10 appliance and equipment standards.

NEEA staff collected data and conducted analyses for five appliance products to submit comment letters, or signed on to letters prepared by others, to the U.S. DOE in Q4 2023. Comments included regional sales data, lab testing results, field validation data and other technical data to support recommendations for enhanced test procedures and improved efficiency levels.

Below is a list of products for which NEEA submitted comment letters in Q4 2023:

Residential Products

Consumer Boilers

Commercial / Industrial Products

- Commercial Unitary Air Conditioners
- · Commercial Refrigeration Equipment

Evaluation

Battery Chargers Standard Evaluation

NEEA contracted with Michaels Energy to conduct a qualitative assessment of NEEA's influence on the standards process for battery chargers and to provide a quantitative estimate of the share of savings resulting from NEEA's and other efficiency organizations' efforts. The project kicked off in October 2023; Michaels Energy will review NEEA records and publicly available documents and conduct interviews with key stakeholders from NEEA, U.S. DOE and other organizations. A final report is anticipated in Q4 2024.

Non-Weatherized Gas Furnaces/Mobile Home Furnaces Standard Evaluation

NEEA contracted with Michaels Energy to conduct a qualitative assessment of NEEA's influence on the standards process for Non-Weatherized Gas Furnaces/Mobile Home Furnaces and to provide a quantitative estimate of the share of savings resulting from NEEA's and other efficiency organizations' efforts. The project began in October 2023; Michaels Energy will review NEEA records and publicly available documents and conduct interviews with key stakeholders from NEEA, U.S. DOE and other organizations. A final report is anticipated in Q2 2024.

STANDARD UPDATES

The CSA Group held its annual project planning meeting in Q4 2023. NEEA staff continue to coordinate with CSA Group on several projects that will benefit the Northwest, particularly with heat pumps and water heating.

Residential New Construction market activities focus on removing barriers to the adoption of above-code efficiency measures in new construction and collecting market evidence that supports future code advancement. To accelerate market adoption, these market activities influence builders and key subcontractors to adopt above-code technologies and best practices. The interventions focus on both gas and electric technologies and residential building measures.

Highlights of Q4 2023 include:

- Completion of more than 4,525 above-code home certifications year to date.
- Creation of 45L tax credit resources for builders. These resources are available on the BetterBuiltNW website.
- Delivery of monthly newsletters to more than 2,000 recipients with a year-to-date 32% open rate and 7% click-through rate.

Education and Training

The BBNW website offers several on-demand trainings and resources for builders on above-code building practices, including *Top 10*Best Practices for Today's Homebuilder and topic-specific trainings about envelope and HVAC measures. These on-demand trainings can be found on the BBNW Training website.

Additionally, 13 new no-cost on-demand training videos were made available on the BetterBuiltNW and Earth Advantage YouTube channels. More information and links to the trainings can be found on <u>BetterBuiltNW</u>.

NEW CONSTRUCTION UPDATES

Education and Training (Continued)

Residential new construction above-code trainings delivered in Q4 2023 are listed in the table below.

Training Topic	Length of Course	Attendees	Location	Date
EEBA Conference: 'Advanced Solutions for Air & Thermal Control Layers'	1 hour	70	Salt Lake City, UT	10/10/2023
45L: What You Need to Know	1 hour	123	Webinar	11/16/2023
Heat Pump Mastery: From Design to Commissioning - Mastering Design Principles	1 hour	130	Webinar	11/30/2023
Heat Pump Mastery: From Design to Commissioning - The Ultimate Installation Guide	1 hour	100	Webinar	12/7/2023
Heat Pump Mastery: From Design to Commissioning - The Art of Commissioning	1 hour	91	Webinar	12/14/2023
Top 10 Best Practices for Today's Homebuilder	3 hours	73*	On-demand	Various
Building with Ducts Inside Conditioned Spaces	3 hours	47*	On-demand	Various
Sustainable Homes Professional (SHP)	15-20 hours	67*	On-demand	Various
How to Cost Effectively Build Zero Energy Homes	3 hours	67*	On-demand	Various
On The Level: Balanced Ventilation Approaches for Healthy Indoor Air	1 hour	41*	On-demand	Various
On The Level: Exterior Air Barrier Details in the NW	1 hour	42*	On-demand	Various
On The Level: Installation Elements for ERVs & HRVs	1 hour	40*	On-demand	Various
On The Level: Design and Quality Control Best Practices for ERVs/HRVs	1 hour	34*	On-demand	Various
On The Level: Practical Solutions for Selecting & Installing Exterior Insulation	1 hour	69*	On-demand	Various
On The Level: Using Building Science to Inform Envelope Design	1 hour	48*	On-demand	Various
Zero Energy Homes: Updates & Cost-Effective Approaches	1 hour	84*	On-demand	Various
Simple Steps to Improve Ductwork Installations	1 hour	30*	On-demand	Various

^{*}On-Demand training attendance numbers are cumulative starting from January 1, 2023.

Program Updates

NEEA staff are finishing several projects to wrap up this program and prepare it for long-term monitoring and tracking (LTMT). These projects are operating under the updated U.S. DOE standard and ENERGY STAR specification. The U.S. DOE moved the effective date two years, to 2025, in response to manufacturers' concerns about enforcement. ENERGY STAR also changed its effective date for version 3.0, which is now set for January 2026. These delays will slow changes in the Northwest. Since the Northwest Energy-Efficient Manufactured Housing Program™ (NEEM program) is sustainable on its own, NEEA is exploring transitioning Manufactured Homes to LTMT in 2024, pending outcomes of the Market Progress Evaluation Report.

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