Recommended Minimum Qualifications of Energy Modelers Completing ASHARE Standard 90.1 Energy Simulations

The Energy Modeler is a professional responsible for performing energy modeling and facilitating completion of the DOE/PNNL ASHRAE Standard 90.1 Performance Based Compliance Form on projects following ASHRAE Standard 90.1 Section 11 and Appendix G. The Energy Modeler responsibilities include the following:

1. Documenting specified systems and components in the Compliance Form based on the design documents.
2. Establishing configuration of the budget/baseline systems and components following the rules of ASHRAE Standard 90.1 Section 11 and Appendix G and documenting them in the Compliance Form.
3. Performing energy simulations for the baseline/budget and proposed design based on the parameters reported in the Compliance Form and following requirements of ASHRAE Standard 90.1 Section 11 and Appendix G.
4. Establishing compliance outcome based on the simulation results and as required in ASHRAE Standard 90.1 Section 11 and Appendix G.
5. Performing quality control of the information included in the Compliance Form to ensure that it is complete and consistent with the design documents and 90.1 requirements.
6. Performing quality control of the energy simulations to ensure that they are error free and aligned with the information provided in the Compliance Form.
7. Responding to comments from submittal reviewer and implementing all required corrective actions.

The Energy Modeler or the individual supervising the work of the Energy Modeler should meet the minimum qualification requirements in Table 1.

Table 1: Modeler Qualification Requirements

1. Energy Modeling Experience (waived for professionals holding BEMP certification)	**Recommended Minimum**
Full-time equivalent experience with whole building energy simulation of commercial or multifamily buildings of four or more stories. (Note 1) **OR**	3 years
Successfully completed the following number of modeling projects. (Note 2)	5 projects
2. Training (Note 3)	**Minimum Hours Completed in Last 3 Years**
Required viewing	Performance Based Compliance Documentation for ASHRAE 90.1 Section 11 and Appendix G (9/29/2020)
ASHRAE 90.1 Section 11 or Appendix G	2hr
Energy modeling	-
Total including required viewing	8 hours
3. One of the listed professional certifications	
ASHRAE Certifications: • Building Energy Modeling Professional (BEMP) • High-Performance Building Design Professional (HBDP) • Building Energy Assessment Professional (BEAP) • Commissioning Professional (BCxP) Association of Energy Engineers Certifications • Building Energy Simulation Analyst (BESA) • Certified Energy Auditor (CEA)Certified Energy Manager (CEM) • Existing Building Commissioning Procession (EBCP) • Certified Building Commissioning Professional (CBCP)	

Notes

1. Submit resume highlighting the required experience
2. The applicant must perform most of the work from project inception to completion for the specified number of projects modeled following ASHRAE Standard 90.1 Section 11 or Appendix G within the last three years that were reviewed and approved by rating authority or jurisdiction. For each project, provide information listed in Table 2.

Table 2: Project Details

Applicant role	• Lead modeler • Worked under supervision of a lead modeler • Other (please describe)
Compliance path followed	• Edition of 90.1 (2007, 2010, 2013, 2019) • Compliance path (90.1 Section 11, 90.1 2010 Appendix)
Project context	• Above-code program (indicate which one, e.g. LEED NC v4.0) • Minimum code compliance (indicate jurisdiction) • Number of review iterations before the final approval
Project overview	Building type (e.g., multifamily, office, hospital), floor area and location
Simulation Program	E.g., eQUEST, IES-VE, TRACE 3D, EnergyPlus
References	• Reference contact information

3. Proof of attendance may include training completion certificates or the name of the training provider, course name, date, and number of hours. ASHRAE 90.1 Section 11 and/or Appendix G training should meet the following learning objectives:
    - Articulate the energy modeling requirements of the ASHRAE 90.1 for building envelopes, lighting, HVAC, service water heating, and miscellaneous other systems.
    - Name similarities and differences between the two compliance options.
    - Differentiate between design elements and systems that do and do not qualify for performance trade-offs.
    - Describe 90.1 mandatory requirements that projects must meet
    - Describe how to establish the configuration of the baseline and proposed design models for renovation, core and shell and tenant fit-out projects when following Section 11 and Appendix G.
    - Understand how to use energy modeling results to establish compliance.