

Recommended Minimum Qualifications of Submittal Reviewer for ASHRAE Standard 90.1 Performance-based Compliance

The Submittal Reviewer is a professional responsible for reviewing the compliance documentation on behalf of the authority having jurisdiction or rating authority for projects following ASHRAE Standard 90.1 Section 11 and Appendix G. The Submittal Reviewer responsibilities include the following:

1. Verifying that submittal meets ASHRAE Standard 90.1 Section 11 or Appendix G reporting requirements, including that the [ASHRAE Standard 90.1 Performance Based Compliance Form](#) and other required documentation is submitted and complete.
2. Verify that design meets the mandatory requirements of ASRHAE Standard 90.1.
3. Verifying that the specified systems and components reported in the Compliance Form reflect design documents.
4. Verifying that the budget/baseline systems and components are established correctly following the rules of ASHRAE Standard 90.1 Section 11 and Appendix G.
5. Verify that project meets general simulation requirements of ASHRAE Standard 90.1 Section 11 and Appendix G.
6. Verify that the simulation inputs for the budget/baseline and proposed design reflect information reported in the compliance form.
7. Communicating uncovered deficiencies and requested corrective actions to the Energy Modeler.
8. Review Energy Modeler responses to confirm that the deficiencies are resolved.
9. Approve the submittal once it is demonstrated that the compliance outcome is established correctly.

The Submittal Reviewer or the individual supervising the work of the Submittal Reviewer should meet the qualifications in Table 1.

Table 1: Recommended Reviewer Qualifications

1. Energy Modeling Experience (waived for professionals holding BEMP certification)	Minimum	3rd Party Reviewer
Full-time equivalent experience with whole building energy simulation of commercial or multifamily buildings of four or more stories. (Note 1) OR	1 year	3 years
Successfully completed the following number of modeling projects. (Note 2)	3 projects	5 projects
2. Submittal Review Experience (Note 3)		
Number of completed submittal reviews of projects modeled following ASHRAE 90.1 Section 11 or Appendix G	3 reviews	10 reviews
3. Training (Note 4)	Hours Completed in Last 3 Years	
	Minimum	3rd Party Reviewer
Required viewing	<ul style="list-style-type: none"> • Performance Based Compliance Documentation for ASHRAE 90.1 Section 11 and Appendix G (9/29/2020) • Performance-based Compliance for Submittal Reviewers (12/8/2020) 	
ASHRAE 90.1 Section 11 or Appendix G	2hr minimum	4hr minimum
Review of Modeling Submittals	-	4hr minimum
Total including required viewing	8 hours	16 hours
4. One of the listed professional certifications		
ASHRAE Certifications: <ul style="list-style-type: none"> ▪ Building Energy Modeling Professional (BEMP) ▪ High-Performance Building Design Professional (HBDP) ▪ Building Energy Assessment Professional (BEAP) ▪ Commissioning Professional (BCxP) Association of Energy Engineers Certifications <ul style="list-style-type: none"> ▪ Building Energy Simulation Analyst (BESA) ▪ Certified Energy Auditor (CEA) ▪ Certified Energy Manager (CEM) ▪ Existing Building Commissioning Profession (EBCP) ▪ Certified Building Commissioning Professional (CBCP) 		

Notes

1. Submit resume highlighting the required experience
2. The applicant must have performed 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.
3. The applicant must have reviewed submittals for the specified number of projects modeled following ASHRAE Standard 90.1 Section 11 or Appendix G within the last three years while acting

independently or under the supervision of a senior reviewer. For each project, provide information listed in Table 2.

Table 2: Project Details

	Energy Modeling Experience	Model Review Experience
Applicant role	<ul style="list-style-type: none"> • Lead or sole modeler on project • Worked under supervision of a lead modeler • Other (please describe) 	<ul style="list-style-type: none"> • Lead or sole reviewer on project • Worked under supervision of lead reviewer • Other (please describe)
Compliance path followed	<ul style="list-style-type: none"> • Edition of 90.1 (2007, 2010, 2013, 2019) • Compliance path (90.1 Section 11, 90.1 2010 Appendix) 	
Project context	<ul style="list-style-type: none"> • Above-code program (indicate which one, e.g., LEED NC v4.0) • Minimum code compliance (indicate jurisdiction) 	
Project overview	Building type (e.g., multifamily, office, hospital), floor area and location	
Simulation Program	E.g. eQUEST, IES-VE, TRACE 3D, EnergyPlus	
References	<ul style="list-style-type: none"> • Reference contact information 	

4. The recommended training content is summarized below. Proof of attendance may include training completion certificates or the name of the training provider, course name, date, and number of hours.

ASHRAE Standard 90.1 Section 11 or Appendix G Training

The training should meet the following learning objectives:

- Articulate the energy modeling requirements of the ASHRAE 90.1 Appendix G Performance Rating Method and Section 11 Energy Cost Budget Method 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.

Review of ASHRAE 90.1 Section 11 and Appendix G Modeling-based Submittals

The training should meet the following learning objectives:

- Understand how to check submittals for completeness
- Confirm that building systems and components shown in the Compliance Form reflect design documents
- Verify that the configuration of the baseline (budget) design model is established correctly based on the applicable rules of ASHRAE 90.1 Section 11 or Appendix G
- Use simulation reports to verify that the baseline (budget) and proposed designs were modeled as described in the Compliance Form
- Verify that the compliance outcome was established correctly based on the simulation results.