

# Tools and Resources for Rating Authorities and Jurisdictions that Adopt ASHRAE 90.1 Section 11 or Appendix G

This document provides recommendations for organizing effective and efficient submittal reviews of projects that follow ASHRAE 90.1 Section 11 and Appendix G.

## 1. Adopt a standardized reporting format

Requiring all projects to submit a filled-out reporting template communicates the level of details that must be captured in the model and helps streamline and standardize submittal reviews. [DOE/PNNL ASHRAE Standard 90.1 Performance Based Compliance Form](#) (Compliance Form) available from DOE Energy Codes Program website meets documentation requirements of ASHRAE Standard 90.1 Section 11 and Appendix G and ensures that the information necessary for a meaningful submittal review is provided to the building official or beyond-code program administrator. There is a [two-hour training](#) on using the compliance form available at the DOE Energy Codes Program website.

In addition to the detailed information about the project and modeling inputs, the Compliance Form includes a Submittal Checklist detailing the supporting information that must be provided by the modeler and Quality Control Checks tab with a comprehensive list of specific verifications that may be performed to verify that 90.1 rules were followed. To help improve initial quality of submittals and reduce the number of review iterations, jurisdictions and rating authorities may require that modelers perform specified checks listed on the Quality Control Checks tab before submitting documentation for review.

## 2. Set energy modeler qualification requirements

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. To minimize mistakes and overhead associated with review of poor submittals, the energy modeler or the individual supervising the energy modeler, that signs off on the submittals, should meet the [Recommended Minimum Qualifications of Energy Modelers](#) document.

## 3. Set model reviewer qualification requirements

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 recommended reviewer experience, training and professional certifications are described in the [Recommended Minimum Qualifications of Submittal Reviewer](#) document.

#### 4. Decide whether external reviewers will be engaged

Some jurisdictions and beyond-code programs may engage external technical experts (third party reviewers) for performing submittal reviews. This may be desirable due to the following:

- Low volume of performance-based submittals does not justify having professionals with the necessary qualifications on staff.
- Insufficient financial resources for performing reviews in-house.
- Encouraging a market-based submittal review business model

Jurisdictions and beyond-code programs that chose to rely on third party reviewers should follow the steps below:

- a. Identify companies or professionals authorized to perform reviews based on the [Recommended Minimum Qualifications of Submittal Reviewer](#) requirements and use 90.1 [Performance Based Compliance Third Party Reviewer Scope of Work](#) template to communicate the scope of services that must be performed.
- b. Decide on how third-party reviews will be funded. For example, permit applicants may bare the review cost.
- c. Decide whether reviews completed by other programs may be accepted. For example, when a project uses 90.1 Appendix G for both code compliance and incentive program participation, the review performed by the incentive program may be deemed sufficient. The decision depends on whether the submittal requirements, modeler and reviewer qualification requirements and review rigor adopted by the candidate program are equivalent to the policies set in #1-4 above.

#### 5. Establish submittal review process and scope

To ensure consistency of review rigor between different reviewers, determine the desired scope of the reviews utilizing recommendations in the Review Methodology section of the [ASHRAE 90.1 Section 11 and Appendix G Submittal Review Manual \(the Manual\)](#). This may include identifying a subset of checks included in the Review Check section of [the Manual](#), using their CheckID, that must be performed on all projects, the additional checks that must be performed on projects based on certain criteria (e.g. building type, size, modeler or building systems), and any custom checks. The Quality Control Checks tab of the Compliance Form has built-in functionality to automatically select some of the checks for inclusion in the review. AHJ and RA may choose to follow this default logic in lieu of defining the custom scope. With this approach, all review checks automatically selected in the Quality Control Checks tab of the Compliance Form would be required to be performed.