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Subcommittee Tracking Sheet
Subcommittee Name: Measure Complexity
Meeting #1: January 29, 2015

I. Agenda Items for Discussion/Materials
- Review/refine subcommittee plan.

II. Meeting Attendees

Jenny Roecks, Cal TF staff
Alejandra Mejia, Cal TF staff
Annette Beitel, Cal TF staff

Pierre Landry, TF Member, Subcommittee Champion
Steven Long, TF Member

Mark Gaines, Independent
Alastair Hood, Verdafero
Bhaskar Vempati, Enernoc

III. Key Issues Discussed
- It might help to look at other parametric analyses, such as those done for the TRC test. In many cases, one precise parameter is multiplied by a less precise/certain parameter, making the effort to achieve precision for only some of the inputs seem unnecessary.
  - Multiplying a precise number by a "guesstimate" results in a "guesstimate".
- Key outputs are kWh, kWh, TRC, and cost
  - Need to determine key inputs to focus on.
  - What is the greatest source of error?
  - What is an acceptable band of error?
  - Are error bands put in EM&V reports?
- The time involved in making information more accurate should be considered.
- Error bands for the major contributing data in a calculation may provide an appropriate level of precision for other parameters.
- Best available information is very relevant. False precision may result if the information or data you're using to get results is not very precise to start with.

- The end user of the data should be discussed. Different audiences affect the outcomes.
    - The IOUs and Pas use the TRC, the CEC uses load impacts.
    - Are simpler approaches really less robust than more complex computer simulations, considering how the data is being used?
- Simulation models have many calculations and assumptions.
    - Perhaps order of magnitude error bands should be considered
    - Uncertainty analysis of all assumptions in a building computer model would be too time-consuming.
    - Weather data is probably a major factor in error.

- For each measure consider whether varying values by different building types is useful considering the level of effort and similarity of results in many cases.
- Observations on building types:
    - Too many incorrect building types
    - Not enough flexibility in current structure
    - Eliminate some building types
    - Flexibility to add others when needed
- There is a need to simplify dual baselines as this doubles the number of measures.
- Considering the lack of familiarity among key players in ex ante process of statistical terms and tools, it may be beneficial to develop a primer on statistical concepts related to accuracy and precision.
- Consider how error bands and statistical analysis used in EM&V (IPMVP) and other related efforts (such as UMP)
- In considering engineering equations versus building modeling:
    - Modeling enables a uniform approach to measures
    - Building models are only as good as the inputs, and the models must be calibrated properly.
    - Calibration is as much an art as a science.
    - Approved tools are generally easier to rely on than one-off engineering calculations

IV. Action Items
- ACT: Consolidate subcommittee plans for "Measure Complexity" and "Best Available Data"
- ACT: Follow up on NYSERDA approach to simplifying dual baseline.
- ACT: Research whether CA EM&V Reports include error bands in any values

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- ACT: Research how related efforts use statistics in evaluating data (California methods, IPMVP, Uniform Methods Protocol) to see if these could be used in this effort.