**eQuest Model Review Checklist – Level 1**

July 21, 2017

This model check list is recommended for model review prior to 60% CD.

BEPU: Building end use breakdown by fuel type

ES-D: Utility costs

LV-B: Summary of Spaces

LV-D: Details of Exterior Surfaces

LV-H: Details of windows

LV-I: Details of Constructions

**REPORT: BEPU**

| **Mark** | **Test** | **Reference #** |
| --- | --- | --- |
|  | Is the “Weather file” consistent with the building location? | 1 |
|  | “Task Lighting” is the same between the Baselines and Proposed? | 3 |
|  | “Misc Equipment” is 20-35% of the Total Electricity? If outside of the range, is the reason documented in the report? | 4 |
|  | All differences in “Misc Equipment” proposed & baseline values are documented in the report? | 4 |
|  | “Domest Hot Wtr” is not more than 20% if work includes a new cafeteria and no more than 10% without? If yes, is there a reason documented in the report? | 5 |
|  | Is Proposed “Space Cooling” more than 30% Total Electricity? If yes, is there a reason documented in report? | 7 |
|  | Is Proposed “Vent Fans” more than 30% Total Electricity? If yes, is there a reason documented in report? | 10 |
|  | “Hours any zone above cooling throttling range” plus “Hours any zone below heating throttling range” are less than 300, and the sum of the proposed hours is no larger than the baseline hours plus 50 hours? | 14 |
|  | Is the sum of the hours above cooling throttling range and heating throttling range above 300? | 14 |
|  | Does the total amount of hours the design is out of range (heating + cooling) differ from the GSG baseline by more than 50 hours? | 14 |
|  | Does the total amount of hours the design is out of range (heating + cooling) exceed the LL86 baseline by more than 50 hours? | 14 |
|  | “Percent of hours any plant load not satisfied” more than 0%? If yes, is a reason documented in report?Notes:If this value is greater than 0% then it is indicative of an undersized plant, or oversized cooling/heating load. | 14 |
| NA | General Report Notes:The usage by area (kWh/sqft-yr) may include unconditioned areas like plenums. The EUI should be determined using the project area.  |  |

**REPORT: ES-D**

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| --- | --- | --- |
| **Mark** | **Test** | **Reference #** |
|  | Do the utility costs match the values in the report?  | 1 |

**REPORT: LV-B**

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| --- | --- | --- |
| **Mark** | **Test** | **Reference #** |
|  | Are the lighting power densities consistent with the design requirements and code requirements? Are the occupancy sensor controls accounted for in the LPD?Note:The lighting power density may be entered as averages for a space type, or may be entered as a space specific value. | 1 |
|  | Are the equipment power densities reasonable? | 2 |
|  | Is the modeled project area within 5% of the design area?Note:The total area may include plenums or other unconditioned spaces that are not part of the design, but are required for proper modeling. The areas for each space do not take into account the floor multipliers, but the total area does. | 3 |

**REPORT: LV-D**

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| --- | --- | --- |
| **Mark** | **Test** | **Reference #** |
|  | Is the “Window Area” divided by the “Window+Wall Area” for the “All Walls” line consistent with the report window to wall ratio?Note:Door areas and U-values are not accounted for in the LV-D report. The wall area includes the doors. | 1 |
|  | Roof area consistent with the footprint of the building? | 2 |

**REPORT: LV-H (Select a few representative window definitions)**

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| --- | --- | --- |
| **Mark** | **Test** | **Reference #** |
|  | Is the weighted average U-value ([Frame U-value \* Frame area + Center-of-Glass U-value \* {Glass Area – Frame Area}]/Glass Area) consistent with the report values?Note:It is common to see a frame area of zero. Many modelers do their own weighted average calculation outside the software or get the overall U-value from the manufacturer’s rep so enter the values in a simplified form than trying to calibrate a layered input to match manufacturer data. | 1 |
|  | Is the “Glass Shading Coeff” and “Glass Visible Trans” consistent with the report values? | 2 |

**REPORT: LV-I**

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| --- | --- | --- |
| **Mark** | **Test** | **Reference #** |
|  | Are the “U-values” within the acceptable range of the report values? Note:Please see note in LV-D report section regarding U-value calculations. The U-value from the LV-I report will be higher than the reported value, but the variation is dependent on the thermal properties of the wall.

|  |  |
| --- | --- |
| Reported U-value | LV-I deviation |
| <0.07 | < 5% higher |
| 0.07-0.13 | 5-10% higher |
| 0.13-0.17 | 10-15% higher |
| 0.17-0.2 | 15-20% higher |

 | 1 |