Comments on the IES Software submitted for Approval

IES seems to report only the Annual Energy Cost for the proposed and budget building and components in a generic fashion. Appears not to produce any other compliance reports.

Reporting Information and Format:

Sample compliance report forms provided and those generated by IES are incomplete. Some of the reporting listed in the 2017 TAM are missing. These include:

(C-1) The report form does not include input fields and results for the following categories:

- Number of Stories: Doesn't appear in the report and missing entry field
- Builder Name: Doesn't appear in the report and missing entry field
- Permit Office/Jurisdiction: No or missing entry field
- Permit Number: Doesn't appear in the report and missing entry field
- FL jurisdiction field and data does not appear to be included as the weather indicator. User has to know which weather file applies to a particular jurisdiction.

(C-2) The following compliance test results are missing or cannot not generated:

- External lighting Compliance
- Lighting controls Compliance
- System report Compliance
- Water Heating System Compliance
- Plant Compliance
- Piping System Compliance
- Other Required Compliance

(C-2) Compliance Summary for each major category are missing or cannot be generated:

- Exterior Lighting
- Lighting controls
- HVAC System
- Plant
- Water Heating System
- Piping System

(C-3) Compliance Certification Box

Check box and signature box for Owner, Builder, registered design professional, and Building Commission Code Official are missing from the compliance report form. Version Number of the software is also missing in the compliance report.

(C-4) Building Input Summary Report

No minimum building input summary report is included in the sample compliance report.

(C-5) Energy Code Compliance Checklist

No energy code compliance check list is included in the sample compliance report.

Baseline Model Creation

The program does create the baseline model automatically; however, it also allows users to import the baseline model for editing. Some of the baseline HVAC system input characteristics such as cooling and heating coils capacity, heat recovery Heat Exchanger efficiency and auxiliary power, and fan power and efficiency can be modified by users.

For example, one is able to modify the baseline HVAC model heat recovery heat exchanger efficiency and auxiliary power, fan power, fan efficiency, and cooling and heating coil capacity input values just to mention a few. One is able to modify the budget building model input assumption and reverse the compliance whole building compliance.

Allowing users to modify the baseline parameters, knowingly or unknowingly, could lead to erroneous compliance that a building official will be hard pressed to uncover.

The IEC ECB Guidance 2013 document is available in the link below.
https://help.iesve.com/ve2018/ecb_guidance_2013.htm?ms=HwBACAAAAAAACAIAAAAAAAAAAAAAAAAABxCQGAESAwIQA%3D%3D&q=RUNCIE1ldGhvZA%3D%3D&st=Mg%3D%3D&sct=MA%3D%3D&mw=NTM2

Help document is incomplete (sometimes referring to ASHRAE standard 90.1-2010 instead of 2013). In addition, it provides guidance how to modify the baseline model. This is a concern. See below sample excerpts from the ECB Guidance document link shown in *italics*.

"3. Budget model geometry
Tip: The Budget model fenestration can be manually modified post budget model generation if deemed necessary to comply with ASHRAE 90.1-2010 table 11.3.1 "Building Envelope" Colum B "C". Once the "Generate Baseline" model action has been executed, the user can return to ModelIT and access the budget model geometry by clicking View > Model > PRM Baseline. This will toggle the current model view to the Baseline model geometry where modifications can be made."

"5. Budget model Opaque Construction Assembly edits
*In order to address this issue the budget model constructions must be manually edited after the budget model has been generated." **Improve Baseline** menu under "**Envelope Thermo-Physical Properties**" allows users to modify construction U-value of R-value.*

For example, one is able to modify the conductivity of roof insulation of the budget-building model and thereby increase the budget building annual cooling and heating energy end uses. It is preferable users not be allowed to modify the budget building parameters since such access could enable users to manipulate the budget building model results in their favor.

"6. Budget system Fan power requirements
Action: Because the Budget model system fan power requirements differ from those of the PRM Baseline, the Budget system fan inputs must be manually edited after system auto sizing has been completed.

Note: The calculation of the fan power density for the Budget system should include for all proposed fan power items (supply, return/relief, exhaust & fan powered terminal units). Also in order to be allowed edit the PRM baseline system fan dialog the fan reference name must be edited."

For example, for test case B1, one is able to modify baseline supply fan power and efficiency, which alters the budget-building model's annual energy use. Again, it is preferable users not be allowed to modify the budget building parameters since such access could enable users to manipulate the budget building model results in their favor.

"General Notes:

i. *The VE does not automatically produce reportage in a ECB specific format*
ii. *Care should be taken to ensure all Budget system rules are been met as per table 11.3.2A notes."*

IES Help or Guidance documentation seems incomplete.