NEAT/MHEA Steady State Efficiency (SSE) Data Input

Purpose: For use in modifying the measured or nameplate steady-state efficiency (SSE) of existing gas-fired space heating equipment before entering it into NEAT and MHEA.

Currently, measured or nameplate values are entered into the audit software for older, existing gas furnaces. NEAT/MHEA takes SSE and converts it to estimate Annual Fuel Utilization Efficiency (AFUE), which is how newer equipment is rated. The software uses this to assess the savings potential of a furnace replacement. The current software process does not convert the SSE of older gas-fired furnaces to a realistic estimated AFUE. The following will allow for a more accurate analysis.

Criteria:

- In site-built homes – **only** draft hood equipped gas furnaces
- In mobile homes – **only** standard low efficiency (no draft inducer fan) gas furnaces
- Must be standing pilot
- No vent damper
- Cannot be used in conjunction with the Part Load Reduction Factor for oversized equipment

NEAT Formula:

In NEAT, under the "Heating" tab, there will be a section called "Gas Furnace Details." In the box titled "Steady State Efficiency" input an efficiency for the existing unit based on the following formula:

(Measured SSE OR nameplate efficiency x .80) / .95 = SSE entered into NEAT

Meas/Calc %	72	73	74	75	76	77	78	79	80
NEAT input	60.6	61.5	62.3	63.2	64	64.8	65.7	66.5	67.4

MHEA Formula:

In MHEA, under the "Heating" tab, there will be a sub-tab labeled "Primary." Select "AFUE" in the box titled "Efficiency Units." In the box titled "Efficiency" input an efficiency for the existing unit based on the following formula:

(Measured SSE OR nameplate efficiency x .80) = AFUE entered into MHEA

Meas/Calc %	72	73	74	75	76	77	78	79	80
MHEA input	57.6	58.4	59.2	60	60.8	61.6	62.4	63.2	64

Examples:

Existing equipment efficiency can be measured by a combustion analyzer (78% SSE for example) or calculated (nameplate states 90,000 Btuh input and 70,000 Btuh bonnet/output capacity – 70K divided by 90K = 78%).

NEAT: 78% measured or calculated on a draft hood furnace – you would input an SSE of 65.7% into NEAT.

MHEA: 78% measured or calculated on a standard low-efficiency furnace – you would input an efficiency of 62.4% into MHEA after selecting "AFUE" in the "Efficiency Units" field.