**Heat Pump Code Change Log**

1. Issue – Variable “DTVAL” is being used without initialization

Fix – Initialized the variable to 0.00

Description – Looks like DTVAL refers to the previous guess of temperature used when the temperature is higher than 80F Sub-cooling. Needs to verify if, 0.00 is right initial value during the testing phase later.

File Name – ChargeLoop.f90

Line Number- 81, 84

1. Issue – Function call IssueRefPropError(RefPropErr, 'Distributor', 2, ErrorFlag) Does Not match with the definition FUNCTION IssueRefPropError(RefPropErrValue, CallingRoutine, ValueIfErrorFound, VariableToSet1, VariableToSet2)

Fix – Including the Error Flag as Dummy Variable to Match the Call.

Description – Method is used to print a warning/Error. Currently not sure why they used 2 sets of *Variable Sets*. Need to check other dependencies on this method and update this later.

File Name – Distributor.f90 And Line Number- 116

File Name – UtilityRoutines.f90 And Line Number- 105

Repeated Issues – Line 128

1. Issue – Variable “CFnoz” is being used without initialization

Fix – Initialized the variable to 1.00 (Assumed Value)

Description – CFnoz defines the Correction factor for liquid temp other than 100F. There is an IF case which defines the value but, IF that conditions fails, then later the variable is used without initialization.

File Name – Distributor.f90

Line Number- 317

Repeated Issues – Line 375

1. Issue – Variable “TimeStep1” is being used without initialization

Fix – Initialized the variable to 0

Description – Looks like Rachel is testing on some time count.

File Name – HPDesignMod.f90

Line Number- 120

1. Issue – Variable “TAISV” is being used without initialization

Fix – Initialized the variable to 1 (Assumed Value)

Description – Unable to figure out use of the Variable. Need to Test for the Divide by Zero Exception/Error Later on Testing Phase

File Name – HPDesignMod.f90

Line Number- 135, 586, 592

1. Issue – Variable “IsSizeDiameter” is always true.

Fix – NOT Fixed yet

Description – Variable which is always true is used in various IF conditions. Need to rewrite some parts of the code and verify the impact on result calculations.

File Name – HPDesignMod.f90

Line Number- 762

1. Issue – Variable “Wintrans” has been initialized, but NOT used

Fix – In Progress

Description – The variable also known as Magic Number has been given a value. But some of the equations where it is used have been commented, but no description is given on why they commented the equations . Need to analyze more on this later.

File Name – ORNLsolver.f90

Line Number- 171