The description of a new section Curve:ChillerPartLoadCustom needs to be added into “Group – Performance Curves” (before section “Performance Curve Outputs” and after section “Curve:CubicLinear”, around Page 1834) \_\_\_Rongpeng Zhang, Feb. 19, 2015

### Curve:ChillerPartLoadCustom

A custom chiller part-load performance curve is a function of three independent variables, i.e., x, y, and z. Input consists of the curve name, the twelve coefficients, and min and max values for each of the independent variables. Optional inputs for curve minimum and maximum may be used to limit the output of the performance curve.

The equation represented by the custom curve is:

*EIRFPLR = C1 + C2\*x + C3\*x2 + C4\*y + C5\*y2 + C6\*x\*y +C7\*x3 + C8\*y3 + C9\*x2\*y + C10\*x\*y2 + C11\*x2\*y2 + C12\*z\*y3*

where,

x represents the normalized fractional lift (the delta of temperature across the leaving condenser water temperature and leaving evaporator water temperature of a chiller).

y represents the normalized deviation of leaving chilled water temperature from the reference condition.

z represents the part load ratio.

#### Field: Name

A user assigned unique name for an instance of a biquadratic curve. When a curve is used, it

is referenced by this name.

#### Field: Coefficient1

The constant coefficient (C1) in the equation.

#### Field: Coefficient2

The coefficient C2 in the equation.

#### Field: Coefficient3

The coefficient C3 in the equation.

#### Field: Coefficient4

The coefficient C4 in the equation.

#### Field: Coefficient5

The coefficient C5 in the equation.

#### Field: Coefficient6

The coefficient C6 in the equation.

#### Field: Coefficient7

The constant coefficient (C7) in the equation.

#### Field: Coefficient8

The coefficient C8 in the equation.

#### Field: Coefficient9

The coefficient C9 in the equation.

#### Field: Coefficient10

The coefficient C10 in the equation.

#### Field: Coefficient11

The coefficient C11 in the equation.

#### Field: Coefficient12

The coefficient C12 in the equation.

#### Field: Minimum Value of x

The minimum allowable value of x. Values of x less than the minimum will be replaced by the

minimum.

#### Field: Maximum Value of x

The maximum allowable value of x. Values of x greater than the maximum will be replaced by

the maximum.

#### Field: Minimum Value of y

The minimum allowable value of y. Values of y less than the minimum will be replaced by the

minimum.

#### Field: Maximum Value of y

The maximum allowable value of y. Values of y greater than the maximum will be replaced by

the maximum.

#### Field: Minimum Value of z

The minimum allowable value of z. Values of y less than the minimum will be replaced by the

minimum.

#### Field: Maximum Value of z

The maximum allowable value of z. Values of y greater than the maximum will be replaced by

the maximum.

#### Field: Minimum Curve Output

The minimum allowable value of the evaluated curve. Values less than the minimum will be

replaced by the minimum.

#### Field: Maximum Curve Output

The maximum allowable value of the evaluated curve. Values greater than the maximum will

be replaced by the maximum.

#### Field: Input Unit Type for x

This field is used to indicate the kind of units that may be associated with the x values. Select Dimensionless.

#### Field: Input Unit Type for y

This field is used to indicate the kind of units that may be associated with the y values. Select Dimensionless.

#### Field: Input Unit Type for z

This field is used to indicate the kind of units that may be associated with the y values. Select Dimensionless.

#### Field: Output Unit Type

This field is used to indicate the kind of units that may be associated with the output values Select Dimensionless.

Below is an example input:

Curve:ChillerPartLoadCustom,

EIRFPLR, !- Name

0.093291598, !- Coefficient1 Constant

-0.234322952, !- Coefficient2 x

0.426950368, !- Coefficient3 x\*\*2

0.188624721, !- Coefficient4 y

-0.608010978, !- Coefficient5 y\*\*2

0.992031248, !- Coefficient6 x\*y

0.000000E+00, !- Coefficient7 x\*\*3

0.502338322, !- Coefficient8 y\*\*3

0.000000E+00, !- Coefficient9 x\*\*2\*y

0.000000E+00, !- Coefficient 10 x\*y\*\*2

-0.360902326, !- Coefficient 11 x\*\*2\*y\*\*2

-0.097978985, !- Coefficient 12 z\*y\*\*3

0.2562, !- Minimum Value of x

1.0365, !- Maximum Value of x

0.1, !- Minimum Value of y

1, !- Maximum Value of y

-0.035, !- Minimum Value of z

0.3144, !- Maximum Value of z

, !- Minimum Curve Output

, !- Maximum Curve Output

Dimensionless, !- Input Unit Type for x

Dimensionless, !- Input Unit Type for y

Dimensionless, !- Input Unit Type for z

Dimensionless; !- Output Unit Type