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| Model Name: NG\_CHP\_lib/NG\_CHP | | |
| Name and affiliation of author or POC:  Ed Corbett, MIT Lincoln Laboratory | Model Symbol: | Accreditation:  Model composed of two pre-existing library models in EPHCC repository: “NG\_3\_5\_MVA\_Generator” and “CHPThermalModel” |
| Date of Publication:  8/17/2016 |
| Version Information:  1.0 |
| Model accessibility (open source, license, …):  HIL Members Only |
| Model Description and Theory of Operation:  This model combines the functions and features of two pre-existing library models (“NG\_3\_5\_MVA\_Generator” and “CHPThermalModel”) into a single block that can be used to represent a CHP plant with a natural gas fueled IC engine prime mover. Refer to the documentation for the two constituent models for a detailed description of the functions and features.  The model provides a Modbus interface block that is derived from the OPAL-RT Modbus driver that provides communications capability to an external controller. An example Modbus configuration is given in the Interfacing Information section below. | | |
| Model Specifications:   1. NG Genset: See ..\Genset\NGGensetDocumentation.docx 2. CHP Thermal Model: See CHPThermalDocumentation.docx   Assumptions and Limitations   1. The NG\_CHP library link must be disabled to allow building the internal Modbus block for OPAL-RT execution. | | |
| Interfacing Information (platform, input requirements, possible outputs): | | |
| Diagrammatic Representation of Model Internals: | | |
| Model Validation (technique used, evidence): N/A | | |
| Simulation Platform, Solvers:  Matlab 2013a with Simscape. A discrete solver with 100 us time step was used. | | |
| Known Issues: | | |
| Models which use this block:  Energy/HIL/Components/CHP and Thermal/CHP\_Test\_Model.mdl | | |