

## Description of Data Elements in PJM SGIWG Substation Template

The object model for the data elements in the PJM SGIWG Substation model are based on the EPRI Common Information Model (CIM) standard definition for substation object modeling. The generic model is fairly simple:

SubstationName  
VoltageLevel  
ObjectName  
MeasurementType

In the PJM SCADA implementation of the CIM model these data elements have a strict format and consistent naming convention.

SubstationName	Alpha-Numeric - Max 8 Characters
VoltageLevel	xxxKV – Max 5 Characters
ObjectName	Alpha-Numeric - Max 8 Characters
MeasurementType	Alpha-Numeric - Max 5 Characters

When the measurement object is presented to the Transmission owners EMS system ICCP link, the ICCP objects will be the concatenation of the SubstationName + VoltageLevel + ObjectName + MeasurementType using a “\_” between each element. The ICCP object from PJM will also be prefixed with the characters “PJM”. This creates an ICCP object with a maximum of 32 ICCP compatible Alpha-Numeric characters with the following format:

PJMSubstotonName\_VoltageLevel\_ObjectName\_MeasueementType

The ICCP data objects available to the Transmission Owner EMS can be analog plus quality or digital plus quality data objects.

The only deviation from this format is the Communications status object for each substation. The Substation Communications status object has the following format:

PJMSubstotonName\_Communications

The Substation Communications objects it digital plus quality data object. This object will reflect the current real-time status of the communications health of the information from that substation.

PJM has created a standard substations template with the data objects requested by the user group. All substations created as part of the PJM SGIWG standard will be based on this template. All real-time data objects in the substation template will be scanned at a 10 second rate, and revenue data objects are collected hourly at 30 minutes after the top-of-hour.

## Definition of Standard Template Objects

### Common Object Elements

NEWSUB_SGIWG	8 Character Substation Name
xxxKV	5 Character Voltage Level of Measurement
UNIT	8 Character Unit Name

### Specific Object MeasurementType Elements (Max 5 Characters if designated for ICCP)

MeasurementType	Description	User	ICCP Format
Communications	Substation Communication Status	ALL	Digital Plus Quality
AREG	Available Regulation	PJM	Analog Plus Quality
AREGFB	Available Regulation FB	PJM	Analog Plus Quality
COST	Generator Dispatch Lambda	PJM	Analog Plus Quality
COSTFB	Generator Dispatch Lambda FB	PJM	Analog Plus Quality
CREG	Calculated Regulation	PJM	Analog Plus Quality
ECON	Generator Econ Signal	PJM	Analog Plus Quality
ECONFB	Generator Econ Signal FB	PJM	Analog Plus Quality
GENCB	Generator Circuit Breaker	ALL	Digital Plus Quality
GENDS	Generator Disconnect Switch	ALL	Digital Plus Quality
GENHZ	Generator Frequency	TO	Analog Plus Quality
GENI	Generator Current	TO	Analog Plus Quality
GENKV	Generator Phase A-B LL KV	ALL	Analog Plus Quality
GENMR	Generator MVars	ALL	Analog Plus Quality
GENMW	Generator MWatts	ALL	Analog Plus Quality
GENTT	Generator Transfer Trip Status	TO	Digital Plus Quality
GNDRH	Generator Delivered Var Hours	TO	Discrete Plus Quality
GNDWH	Generator Delivered Watt Hours	TO	Discrete Plus Quality
GRRH	Generator Received Var Hours	TO	Discrete Plus Quality
GRRWH	Generator Received Watt Hours	TO	Discrete Plus Quality
MISC0-9	Generator Miscellaneous Status	TO	Digital Plus Quality
REGA	Regulation Bid in PJM Market	PJM	Analog Plus Quality
REGAFB	Regulation Bid in PJM Market FB	PJM	Analog Plus Quality
TREG	Total Regulation	PJM	Analog Plus Quality

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