Declaration of Electric Storage Operation in Compliance with Non-Exporting Configurations as Outlined in Energy Storage Guidance 1, Configurations 1B and 1C

Purpose of Declaration

Historically, Distributed Energy Resources (DER) were assembled from discrete components or functional assemblies where the logic and operational approaches could be seen and analyzed. Today, much of the functionality is handled by an on-board computer following firmware instructions in order to achieve the desired results. To verify these actions requires extensive detailed review of the operating manuals and often inquiries with the manufacturer.

Declarations are used to provide the information to ensure the correct documentation and ratings are used for the first-use of a design review and to confirm subsequent applications for using an approved package matches the approved package in order to expedite approval. An update to the firmware which modifies or adds operation modes and changes the required functionality is considered a facility modification and may be subject to a partial or full interconnection review as stated in the Interconnection Agreement, Section VIII.G. This applies to all sources, whether generators or energy storage. Guidance Document 1, Configurations 1B and 1C require an interconnection review.

Definitions

"Parallel Operation of Energy Storage"- a source operated in parallel with the grid when it is connected to the distribution grid and can supply energy to the customer simultaneously with the Company's supply of energy.

"Energy Storage Guidance Documents"- Guidance documents for the interconnection of electric storage based on agreed to terms from CO PUC Proceeding No. 16AL-0048E, available on the Xcel Energy – Colorado web site.

"**Operating Mode"** - a combination of the functionality in the physical Configuration and the functionality in the software programming some of which is not shown in the Configuration diagram. Operating Mode is the combined function designed to achieve an Operating Objective that may vary with a change of settings. Operating Modes are established as a function, not by a diagram designation. Operating Modes include, but are not limited to, battery non-export, maximize self-consumption, maximize export, perform time shifting, and perform peak shaving. A change of Operating Mode may constitute a change of Operating Objective.

Configurations Covered:

Energy Storage Guidance 1, Configurations 1B and 1C

1B Non-Exporting Parallel Energy Storage System without Generation

1C Non-Exporting Parallel Energy Storage System and Non-Exporting Non-Renewable Generation

Key Requirements and Functionality:

1. Energy storage operates in parallel with the grid.
2. Generation, if present is non-renewable.
3. Metering is standard (non-net-metered).
4. Energy storage and generation, if present, are not allowed to export energy to the grid.[1]

The method of achieving #4 must be fully illustrated in the oneline diagram or described below. Any aspect that is imbedded in equipment and governed by firmware must be described, any additional equipment must be specified, and **specific settings needed to achieve #4 must be listed**.

System software and programming that is required to meet the Energy Storage Guidance provisions are inaccessible and/or password protected, with access restricted to manufacturer/developer/installer. This may include locks or other physical security or other means of securing the settings; or as mutually agreed upon on a case-by-case basis and identified in this Declaration.[2]

Xcel Energy has the right to conduct an inspection to verify compliance at a later date if problems arise or indications of possible non-compliance with the applicable Energy Storage Guidance Document provisions are present.

1. ESS Details:

This Declaration covers the following electric storage system (ESS) in whole or part as identified below:

[1] Subject to the Inadvertent Export requirements as stated in the Guidance.

[2] If the Operating Mode cannot be secured to ensure continued operation in a 1B or 1C compliant manner, as applicable, the facility will require full interconnection review that includes all operating modes that are readily selectable and establish operating restrictions and mitigations to cover all selectable modes.

Customer

Name: _____

Address:_____

City:_____ State:_____ Zip:_____

Phone:_____

Fax or Email Address:_____ (Optional)

ESS Information:

Location:_____

Customer Account Number:_____

Application OID:_____

ESS Equipment Details:

2. ESS Battery (B) Rating & ESS Inverter (I) Information

I Manufacturer	
I Model Numbers	
I UL Listings	
B Energy Capacity (kWh)	
I Maximum current at AC terminals (A)	
B Real Power, max continuous charge (kW)	
B Real Power, Recovery Charge Rate After Utility Outage (kW)	
B Real Power, max continuous discharge (kW)	
I Real Power, peak output (kW)	
I Apparent Power, max continuous for charging (kVA)	
I Apparent Power, peak during discharge (kVA)	
I Peak output duration capability (Sec)	
I Power Factor Output Range (+/- range)	
I Power Factor capability at full-rated real power (+/- range)	
I Charging Using Rectifier or Inverter	
I Firmware Version	
I Available Operating Modes	
I Operating Modes Enabled	

3. Additional ESS Hardware: description, model and part number and general specifications. (Examples: Charge controller, separate control panel, external auto transfer switch, export gateway controller, aux. house meter, etc.)

UL Listings	
Model Names	
Model Numbers	
Firmware Version	

I, (print name and title of Installer/Developer)_____certify that I have personal knowledge of the facts stated in this Declaration. I further certify that all of the statements and representations made in this attestation are true and correct.

Installer/Developer Signature_____

Date:_____