Project Name - Balance of Substation (BOS)
Project No. - 1-107120-01-01

VLA Batteries

Battery Monitoring System Comparison Chart

NERC parameters for VLA are listed below.	NERC		Battery DAQ (Sentry 6002 system)	Eagle Eye (CGS3-100-02V system)	Franklin Grid (Cellguard Gen. 3 is same as Franklin Grid)	Btech (S5H-102060-C0-WM-A0 system)	Cellwatch (NSDL system)	Btech's S5 from Dynamic Ratings	Alber UXIMe (1x60x2)	SBS Equalink
	Verify	Inspect								
4 Calendar Months										
Station dc supply voltage	X		Yes	Yes	Yes	Yes		Yes, but need clarity	Yes	Yes
Electrolyte level		X	extra cost	Need more info.	Need more info. - we need separate hardware	Yes	extra cost	Need more info.	extra cost	extra cost
Unintentional grounds		X	extra cost	Yes	Yes, but need add-on	Yes	extra cost	Need more info.	Yes	extra cost
18 Calendar Months										
Float voltage of battery charger	X		Yes	Yes	Need more info. Included in the VTC and VTC is included in the base system if requested.	Yes	Yes	Yes	Yes	Yes
Battery continuity	X		Yes	Need more info.	Need more info. Included in the base system with cell hardware, if requested.	Yes	extra cost	Need more info.	Need more info.	Need more info.
Battery terminal connection resistance	X		Yes	Yes	Need more info. - same as row 16.	Need more info.	extra cost	Yes	Yes	Yes
Battery intercell or unit-to-unit connection resistance	X		Yes	Yes	Yes	Yes	Yes	Need more info.	Yes	Yes
Cell condition of all individual battery cells where cells are visible – or measure battery cell/unit internal ohmic values where the cells are not visible		X	Yes	Need more info. - this can also be included in the base system, If requested.		Yes		Need more info.	Need more info.	Yes
Physical condition of battery rack		X	Manual test							
Verify that the station battery can perform as manufactured by evaluating cell/unit measurements indicative of battery performance (e.g. internal ohmic values or float current) against the station battery baseline.	X		Also check manually to ensure it matches with monitoring system							
6 Calendar Years										
Verify that the station battery can perform as manufactured by conducting a performance or modified performance capacity test of the entire battery bank.	X		DC load bank will be used to perform performance testing.							

Project Name - Balance of Substation (BOS)
Project No. - 1-107120-01-01

VRLA Batteries

Battery Monitoring System Comparison Chart

NERC parameters for VRLA are listed below.	**NERC**		**Battery DAQ (Sentry 6002 system)**	**Eagle Eye (CGS3-100-02V system)**	**Franklin Grid (Cellguard Gen. 3 is same as Franklin Grid)**	**Btech (S5H-102060-C0-WM-A0 system)**	**Cellwatch (NSDL system)**	**Btech's S5 from Dynamic Ratings**	**Alber UXIMe (1x60x2)**	**SBS Equalink**
	Verify	Inspect								
4 Calendar Months										
Station dc supply voltage	X		Yes	Yes	Yes	Yes		Yes, but need clarity	Yes	Yes
Unintentional grounds		X	extra cost	Yes	Yes, but need add-on	Yes	extra cost	Need more info.	Yes	extra cost
6 Calendar Months										extra cost
Condition of all individual units by measuring battery cell/unit internal ohmic values.		X	Yes	Need more info.		Yes		Need more info.		Yes
Verify that the station battery can perform as manufactured by evaluating cell/unit measurements indicative of battery performance (e.g. internal ohmic values or float current) against the station battery baseline.	X		Also check manually to ensure it matches with monitoring system							
18 Calendar Months										
Float voltage of battery charger	X		Yes	Yes	Need more info.	Yes	Yes	Yes	Yes	Yes
Battery continuity	X		Yes	Need more info.	Need more info.	Yes	extra cost	Need more info.	Need more info.	Need more info.
Battery terminal connection resistance	X		Yes	Yes	Need more info.	Need more info.	extra cost	Yes	Yes	Yes
Battery intercell or unit-to-unit connection resistance	X		Yes	Yes	Yes	Yes	Yes	Need more info.	Yes	Yes
Physical condition of battery rack		X	Manual test							
3 Calendar Years										
Verify that the station battery can perform as manufactured by conducting a performance or modified performance capacity test of the entire battery bank.	X		DC load bank will be used to perform performance testing.							

Project Name - Balance of Substation (BOS)
Project No. - 1-107120-01-01

Ni-Cad Batteries

Battery Monitoring System Comparison Chart										
NERC parameters for Ni-Cad are listed below.	**NERC**		**Battery DAQ (Sentry 6002 system)**	**Eagle Eye (CGS3-100-02V system)**	**Franklin Grid (Cellguard Gen. 3 is same as Franklin Grid)**	**Btech (S5H-102060-C0-WM-A0 system)**	**Cellwatch (NSDL system)**	**Btech's S5 from Dynamic Ratings**	**Alber UXIMe (1x60x2)**	**SBS Equalink**
	Verify	Inspect								
4 Calendar Months										
Station dc supply voltage	X		Yes	Yes	Yes	Yes		Yes, but need clarity	Yes	Yes
Electrolyte level		X	extra cost	Need more info.	Need more info.	Yes	extra cost	Need more info.	extra cost	extra cost
Unintentional grounds		X	extra cost	Yes	Yes, but need add-on	Yes	extra cost	Need more info.	Yes	extra cost
18 Calendar Months										
Float voltage of battery charger	X		Yes	Yes	Need more info.	Yes	Yes	Yes	Yes	Yes
Battery continuity	X		Yes	Need more info.	Need more info.	Yes	extra cost	Need more info.	Need more info.	Need more info.
Battery terminal connection resistance	X		Yes	Yes	Need more info.	Need more info.	extra cost	Yes	Yes	Yes
Battery intercell or unit-to-unit connection resistance	X		Yes	Yes	Yes	Yes	Yes	Need more info.	Yes	Yes
Cell condition of all individual battery cells - (this is taken from VLA table measure battery cell/unit internal ohmic values where the cells are not visible)		X	Yes	Need more info.		Yes		Need more info.	Need more info.	Yes
Physical condition of battery rack		X	Manual test							
6 Calendar Years										
Verify that the station battery can perform as manufactured by conducting a performance or modified performance capacity test of the entire battery bank.	X		DC load bank will be used to perform performance testing							