



## APPLICATION FOR PREAPPROVAL SPECIAL SEISMIC CERTIFICATION OF EQUIPMENT AND COMPONENTS

*For Office Use Only*

<p style="text-align: center;"><b>APPLICATION NO.</b></p> <p style="text-align: center;"><b>OSP – 0310 – 10</b></p>
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Check whether application is: NEW  RENEWAL

1.0 APC by Schneider Electric Dan Lambert  
*Manufacturer* *Manufacturer's Technical Representative*

132 Fairgrounds Road, West Kingston, RI 02892, USA  
*Mailing Address*

(401)789-5735 [Dan.Lambert@schneider-electric.com](mailto:Dan.Lambert@schneider-electric.com)  
*Telephone* *E-mail Address*

2.0 Symmetra Battery Cabinets Battery Cabinet  
*Product Name* *Product Type*

Symmetra PX, Symmetra PW, and Symmetra SYMWB External Battery Cabinets  
*Product Model No. (List all unique product identification numbers and/or serial numbers)*

*General Description:* Rigid floor mounted external battery cabinets containing 12-450FT to 12-700FT batteries. Seismic enhancements made to the test units and modifications required to address anomalies observed during the tests shall be incorporated into the production units.

3.0 APC by Schneider Electric Dan Lambert  
*Applicant Company Name* *Contact Person*

132 Fairgrounds Road, West Kingston, RI 02892, USA  
*Mailing Address*

(401)789-5735 [Dan.Lambert@schneider-electric.com](mailto:Dan.Lambert@schneider-electric.com)  
*Telephone* *E-mail Address*

I hereby agree to reimburse the Office of Statewide Health Planning and Development for the actual costs incurred by the department for review.

*Signature of Applicant*

**Product Line Manager**  
*Title*

6/25/2013

*Date*

**APC by Schneider Electric**  
*Company Name*



**Registered Design Professional Preparing the Report**

4.0

University of Alabama - Birmingham

Company Name

Lee Gholamreza Moradi

Contact Name

C41383

California License Number

4824 Sulphur Springs Rd, Hoover, AL 35226

Mailing Address

205-975-2718

Telephone

moradi@uab.edu

E-mail Address

**California Licensed Structural Engineer Review and Acceptance of the Report**

5.0

Forell/Elsesser Engineers, Inc.

Company Name

Marco Scanu, SE

Contact Name

S4454

California License Number

160 Pine St., 6<sup>th</sup> Flr., San Francisco, CA 94111

Mailing Address

415-837-0700

Telephone

m.scanu@forell.com

E-mail Address

**Anchorage Pre-Approval**

6.0

- Anchorage is pre-approved under OPA-  
(Separate application for anchorage pre-approval is required)
- Anchorage is not Pre-approved

**Certification Method**

7.0  Testing in accordance with:  ICC-ES AC-156  Other (Please Specify):

- Analysis
- Experience data
- Combination of Testing, Analysis, and/or Experience Data (Please Specify):

**Testing Laboratory (if applicable)**

8.0

Wyle Laboratories

Company Name

Rod Thornberry

Contact Name

7800 Hwy 20, Huntsville, AL 35806

Mailing Address

(256) 837-4411

Telephone

E-mail



**Approval Parameters**

**9.0**

Design in accordance with ASCE 7-05 Chapter 13:  Yes  No

Design Basis of Equipment or Components ( $F_p/W_p$ ) = 0.99

- $S_{DS}$  (Spectral response acceleration at short period) = 1.38g
- $a_p$  (In-structure equipment or component amplification factor) = 1.0
- $R_p$  (Equipment or component response modification factor) = 2.5
- $I_p$  (Importance factor) = 1.5
- $z/h$  (Height factor ratio) = 1.0
- Equipment or Component fundamental period(s) = See attachments
- Building period limits (if any) = n/a
- Overall dimensions and weight (or range thereof) = See attachment, "I. Certified Product Table"

Equipment or Components @ grade designed in accordance with ASCE 7-05 Chapter 15:  Yes  No

Design Basis of Equipment or Components ( $V/W$ ) =

- $S_{DS}$  (Spectral response acceleration at short period) =
- $S_1$  (Spectral response acceleration at 1 second period) =
- $R$  (Response modification coefficient) = 1.0
- $\Omega_0$  (System overstrength factor) = 1.0
- $C_d$  (Deflection amplification factor) = 1.0
- $I_p$  (Importance factor) = 1.5
- Height to Center of Gravity above base =
- Equipment or Component fundamental period(s) =      Sec
- Overall dimensions and weight (or range thereof) =

Tank(s) designed in accordance with ASME BPVC, 2007:  Yes  No

**10.0 List of attachments supporting the special seismic certification of equipment or components:**

- Test Report  Drawings  Manufacturer's Catalog
- Calculations  Other (Please Specify): SE Acceptance Letter, Certified Product Table, Certified Subcomponents Table, UUT Summary Sheets, CBC 2010 & AC156 Requirements Checklist

**11.0 OSHPD Approval (For Office Use Only)**

<p style="text-align: center;">                   Signature &amp; Date                  Timothy J. Piland, SSE                  Name &amp; Title             </p>	<p>June 25, 2013</p>	<p>December 31, 2019 Approval Expiration Date</p>
<p>Condition of Approval (if any):</p>		<p> <math>S_{DS}</math> (g) = 1.38      <math>z/h</math> = 1.0                  Special Seismic Certification Valid Up to             </p>

OSP APPLICATION  
APC by Schneider Electric - Symmetra Batteries

<b>APC by Schneider Electric - Symmetra Battery Cabinets</b>							
<b>I. Certified Product Table</b>							
Symmetra Battery Cabinet	Height	Width	Depth	Max. Weight	Notes	Part #	Test Status
PX Battery Cabinet	78 in	36 in	26 in	2,664 lbs	1, 2	SYPBV250	UUT1
PW Battery Cabinet	82 in	48 in	35 in	6,152 lbs	1, 2	SYPWB	UUT2
SYMWB Battery Cabinet	78 in	46 in	26 in	4,904 lbs	1, 2	SYMWB	UUT3

<b>Notes</b>
1. All enclosures are NEMA 1 rated.
2. All enclosures are 0.1345" cold-formed carbon steel.

<b>APC by Schneider Electric - Symmetra Battery Cabinets</b>			
<b>II. Certified Subcomponents Table</b>			
Internal Components	Manufacturer	Test Status	Part No.
12-450FT batteries	NorthStar	UUT1	NSB12-450FT
12-590FT batteries	NorthStar	Interpolated	NSB12-590FT
12-600FT batteries	NorthStar	UUT2, UUT3	NSB12-600FT
12-700FT batteries	NorthStar	Interpolated	NSB12-700FT
12-450FT batteries	Enxergy	UUT1	BATT12450NS
12-590FT batteries	Enxergy	Interpolated	BATT12590NS
12-600FT batteries	Enxergy	UUT2, UUT3	BATT12600NS
12-700FT batteries	Enxergy	Interpolated	BATT12700NS
450A, 700VDC Fuse	Mersen	Interpolated	A70QS450-4IL
600A, 700VDC Fuse	Mersen	UUT1	A70QS600-4IL
600A, 600V Breaker	ABB	UUT2	T6N600TW-A3
		Interpolated	T6N600TW-A3U8
800A, 600V Breaker	ABB	Interpolated	T6N800TW-A3
		Interpolated	T6N800TW-A3U8
400A, 600V Breaker	Square D	Interpolated	MHL3640030DC-1352
		Interpolated	MHL3640030DC-1625
450A, 600V Breaker	Square D	Interpolated	MHL3645031DC-1352
		Interpolated	MHL3645031DC-1625
600A, 600V Breaker	Square D	UUT3	MHL3660033DC-1352
		Interpolated	MHL3660033DC-1625
800A, 600V Breaker	Square D	Interpolated	MHL3680036DC-1352
		Interpolated	MHL3680036DC-1625
400A Cable Kit	Enxergy	Interpolated	EVAC-10381
		Interpolated	EVAC-10454
		Interpolated	EVAC-10434
450A Cable Kit	Enxergy	Interpolated	EVAC-10382
		Interpolated	EVAC-10455
		Interpolated	EVAC-10435
600A Cable Kit	Enxergy	UUT1	EVAC-10383
		UUT2	EVAC-10456
		UUT3	EVAC-10436

FORELL/ELSESSER ENGINEERS, INC.  
160 Pine Street, 6th Floor  
San Francisco, CA 94111

**Test Summary**

**UUT1 (Smallest Unit)**

Symmetra PX Battery Cabinet  
 0.1345" Cold Rolled Carbon Steel  
 36"W x 26"D x 78"H,  
 2,664 lbs  
 Floor mounted with (6) ¾-10 Grade 5 bolts



Symmetra PX Battery Cabinet– UUT1 – Internal Components		
Description	Manufacturer	Part Number
12-450 FT Batteries	NorthStar	NSB12-450FT
12-450 FT Batteries	Enxergy	BATT12450NS
600A Cable Kit	Enxergy	EVAC-10383
600A, 700VDC Fuse	Mersen	A70QS600-4IL

**Shake Table Test Parameters**

BUILDING CODE	TEST CRITERIA	S <sub>DS</sub> (g)	z/h	HORIZONTAL		VERTICAL	
				A <sub>FLX-H</sub>	A <sub>RIG-H</sub>	A <sub>FLX-V</sub>	A <sub>RIG-V</sub>
CBC 2010	ICC-ES AC156	1.46	1.0	2.34	2.32	1.54	2.12

**Resonant Frequency Summary**

UUT Identification	RESONANT FREQUENCY (Hz)		
	Front-Back	Side-Side	Vertical
UUT1	8.1	6.0	25.0

**UUT2 (Largest Unit)**

Symmetra PW Battery Cabinet  
 0.1345" Cold Rolled Carbon Steel  
 48"W x 35"D x 82"H,  
 6,152 lbs  
 Floor mounted with (6) ¾-10 Grade 5 bolts



Symmetra PW Battery Cabinet – UUT2– Internal Components		
Description	Manufacturer	Part Number
12-600 FT Batteries	NorthStar	NSB12-600FT
12-600 FT Batteries	Enxergy	BATT12600NS
600A, 600V Breaker	ABB	T6N600TW-A3
600A Cable Kit	Enxergy	EVAC-10456

**Shake Table Test Parameters**

BUILDING CODE	TEST CRITERIA	S <sub>DS</sub> (g)	z/h	HORIZONTAL		VERTICAL	
				A <sub>FLX-H</sub>	A <sub>RIG-H</sub>	A <sub>FLX-V</sub>	A <sub>RIG-V</sub>
CBC 2010	ICC-ES AC156	1.38	1.0	2.20	2.45	1.59	3.70

**Resonant Frequency Summary**

UUT Identification	RESONANT FREQUENCY (Hz)		
	Front-Back	Side-Side	Vertical
UUT2	5.7	4.5	17.0

OSP APPLICATION  
 APC by Schneider Electric- Symmetra Battery Cabinets  
 III. UUT Summary Sheets

Date: 6/24/2013

**UUT3 (Intermediate Unit)**

Symmetra SYMWB Battery Cabinet  
 0.1345" Cold Rolled Carbon Steel  
 46"W x 26"D x 78"H,  
 4,904 lbs  
 Floor mounted with (6) ¾-10 Grade 5 bolts



Symmetra SYMWB Battery Cabinet – UUT3– Internal Components		
Description	Manufacturer	Part Number
12-600 FT Batteries	NorthStar	NSB12-600FT
12-600 FT Batteries	Enxergy	BATT12600NS
600A, 600V Breaker	Square D	MHL3660033DC-1352
600A Cable Kit	Enxergy	EVAC-10436

**Shake Table Test Parameters**

BUILDING CODE	TEST CRITERIA	S <sub>DS</sub> (g)	z/h	HORIZONTAL		VERTICAL	
				A <sub>FLX-H</sub>	A <sub>RIG-H</sub>	A <sub>FLX-V</sub>	A <sub>RIG-V</sub>
CBC 2010	ICC-ES AC156	1.41	1.0	2.25	2.26	1.61	2.65

**Resonant Frequency Summary**

UUT Identification	RESONANT FREQUENCY (Hz)		
	Front-Back	Side-Side	Vertical
UUT3	6.8	5.9	17.5