APPLICATION FOR OSHPD SPECIAL SEISMIC CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY	
APPLICATION #:	OSP – 0196 – 10

OSHPD Special Seismic Certification Preapproval (OSP)

Type: ☐ New ☒ Renewal

Manufacturer Information

Manufacturer: APC by Schneider Electric

Manufacturer's Technical Representative: Bill Burks

Mailing Address: 800 Federal Street, Andover, MA 01810

Telephone: (978) 975-9451 Email: bill.burks@schneider-electric.com

Product Information

Product Name: Symmetra LX

Product Type: Uninterruptible Power Supply

Product Model Number: See I. Certified Product Table attached
(List all unique product identification numbers and/or part numbers)

General Description: Symmetra LX UPS units in seismic racks. Seismic enhancements made to the UUTs & modifications required to address anomalies observed during the tests shall be incorporated into the production units.

Mounting Description: Rigid floor mounted

Applicant Information

Applicant Company Name: APC by Schneider Electric

Contact Person: Bill Burks

Mailing Address: 800 Federal Street, Andover, MA 01810

Telephone: (978) 975-9451 Email: bill.burks@schneider-electric.com

I hereby agree to reimburse the Office of Statewide Health Planning and Development review fees in accordance with the California Administrative Code, 2016.

Signature of Applicant: Bill Burks Date: 2/5/16

Title: Compliance Manager Company Name: APC by Schneider Electric

California Licensed Structural Engineer Responsible for the Engineering and Test Report(s)

Company Name: Forell/Elsesser Engineers, Inc.

Name: Marco Scanu, SE California License Number: S4454

Mailing Address: 160 Pine St., 6th Flr., San Francisco, CA 94111

Telephone: (415) 837-0700 Email: m.scanu@forell.com

Supports and Attachments Preapproval

☐ Supports and attachments are preapproved under OPM- _____
(Separate application for OSHPD Preapproval of Manufacturer's Certification (OPM) of Supports and attachments is required)

☒ Supports and attachments are not preapproved

Certification Method

☒ Testing in accordance with: ☒ ICC-ES AC156

☐ Other (Please Specify): _____

Testing Laboratory

Company Name: National Technical Systems, Inc.

Contact Name: Steve Eisenberg

Mailing Address: 533 Main Street, Acton, MA 01720

Telephone: (978) 263-2933 Email: steve.eisenberg@nts.com

Seismic Parameters

Design in accordance with ASCE 7-10 Chapter 13: ☒ Yes ☐ No

Design Basis of Equipment or Components (F_p/W_p) = 1.42

S_{DS} (Design spectral response acceleration at short period, g) = 1.89

a_p (In-structure equipment or component amplification factor) = 2.5

R_p (Equipment or component response modification factor) = 6.0

Ω_0 (System overstrength factor) = 2.0

I_p (Importance factor) = 1.5

z/h (Height factor ratio) = 1.0

Equipment or Component Natural Frequencies (Hz) = See attachment, "III. UUT Summary Sheets"

Overall dimensions and weight (or range thereof) = See attachment, "I. Certified Products Table"

Equipment or Components @ grade designed in accordance with ASCE 7-10 Chapter 15: ☐ Yes ☒ No

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

S_{DS} (Design spectral response acceleration at short period, g) =

S_{D1} (Design spectral response acceleration at 1 second period, g) =

R (Response modification coefficient) = 1.0

Ω_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 Natural Frequencies (Hz) =

Overall dimensions and weight (or range thereof) =

Tank(s) designed in accordance with ASME BPVC, 2015: ☐ Yes ☒ No

List of Attachments Supporting Special Seismic Certification

☒ Test Report(s) ☐ Drawings ☒ Calculations ☒ Manufacturer's Catalog

☒ Other(s) (Please Specify): I. Certified Products Table, II. Certified Subcomponents Table, III. UUT Summary Sheets

OSHPD Approval (For Office Use Only) – Approval Expires on December 31, 2022

Signature: Date: 3/10/2016

Print Name: M. R. Karim Title: SHFR

Special Seismic Certification Valid Up to : S_{DS} (g) = 1.89 z/h = 1.0

Condition of Approval (if applicable):

APC - Symmetra LX
I. Certified Product Table

	Width	Depth	Height	Weight	Construction Material	Component No.	Testing Status
APC Racks							
APC NetShelter VX Seismic 42U Enclosure (Seismic)	23 in	42.2 in	81.5 in	437.3 lbs	14 GA CRS, NEMA 1	AR2145BLK	TR63570-12-I RCK6, TR-303808-09 UUT1

Notes: 1. CRS=Cold Rolled Steel

The APC NetShelter VX Seismic 42U Rack is preapproved to be filled with Symmetra LX products listed on the next page. Below are the maximum and minimum configurations tested. Intermediate weight configurations with center of gravity height below the tested center of gravity heights listed are preapproved by interpolation.

	Minimum		Maximum	
	Weight	CG height	Weight	CG height
APC Racks				
APC NetShelter VX Seismic 42U Enclosure (Seismic)	835 lbs	26 in	1650 lbs	37 in

APC - Symmetra LX
I. Certified Product Table

APC Products Preapproved for use in APC Rack

APC UPS[1]	Width	Depth	Height	Weight	Construction Material	Component No.	Testing Status
APC Symmetra LX 4kVA scalable to 8kVA N+1, 208/240V	18.6 in	27.1 in	22.5 in	295.0 lbs	0.075" CRS	SYA4K8RMP	TR63570-12-I RCK6
APC Symmetra LX 8kVA scalable to 8kVA N+1, 208/240V	18.6 in	27.1 in	22.5 in	392.0 lbs	0.075" CRS	SYA8K8RMP	Interpolated
APC Symmetra LX 8kVA scalable to 16kVA N+1, 208/240V	18.6 in	27.1 in	32.9 in	437.0 lbs	0.075" CRS	SYA8K16RMP	Interpolated
APC Symmetra LX 12kVA scalable to 16kVA N+1, 208/240V	18.6 in	27.1 in	32.9 in	534.0 lbs	0.075" CRS	SYA12K16RMP	Interpolated
APC Symmetra LX 16kVA scalable to 16kVA N+1, 208/240V	18.6 in	27.1 in	32.9 in	665.0 lbs	0.075" CRS	SYA16K16RMP	TR-303808-09 UUT1

Notes:

1. APC UPS Units contain 10-Battery Modules as listed in Certified Components Table

APC - Symmetra LX
II. Certified Components Table

Internal Components of APC Products

10 Battery Module (APC No. SYBT5)						
Manufacturer	**Width**	**Depth**	**Height**	**Weight**	**Component No.**	**Testing Status**
Battery (APC No. 910-1209-003)						
CSB Battery	2.56 in	5.94 in	3.70 in	5.7 lb	HR1234WF2	TR63570-12-I RCK6 TR-303808-09 UUT1
Kung Long Batteries Industrial Co., LTD	2.56 in	5.94 in	3.70 in	5.7 lb	WP1234W	TR63570-12-I RCK6
E-Power Trading Limited (B&B Battery Co.)	2.56 in	5.94 in	3.70 in	5.7 lb	HR1234W	TR63570-12-I RCK6

Test Summary

Tested Unit #1 (Rack 6 from Test Report TR63570-12I-RCK2b&6)

Symmetra LX 4kVA in 4-Post Seismic Rack Enclosure (AR2145BLK)
14 ga Cold Rolled Steel, NEMA 1
23.04”W x 42.2”D x 80.25”H, 1650 lbs, Center of Gravity Height = 37”
Floor mounted using (8) M12 8.8x30 bolts.

Test configuration is shown below:

42	SURTA1500RMXL2U UPS	42
41		41
40		40
39		39
38		38
37		37
36		36
35		35
34	SURTD3000RMXLT3U UPS	34
33		33
32		32
31	SURT8000RMXLT6U UPS	31
30		30
29		29
28		28
27		27
26		26
25	SURT20KRMXLT UPS SURT192RMXLBP2	25
24		24
23		23
22		22
21		21
20		20
19		19
18		18
17		17
16		16
15		15
14		14
13	SYA4K8RMP UPS	13
12		12
11		11
10		10
9		9
8		8
7		7
6		6
5		5
4		4
3		3
2		2
1		1

Building Code	Test Criteria	S_{DS} (g)	z/h	Horizontal		Vertical	
				A_{FLX-H}	A_{RIG-H}	A_{FLX-V}	A_{RIG-H}
CBC 2016	ICC-ES AC 156	1.89	1	3.02	2.27	1.27	0.51

Natural Frequencies (Hz)			Test Results
F-B	S-S	V	The UUT maintained structural integrity and functionality after the AC156 test. UUT full of contents during test.
6.92	4.09	n/a	

APC Products in Test Configuration:

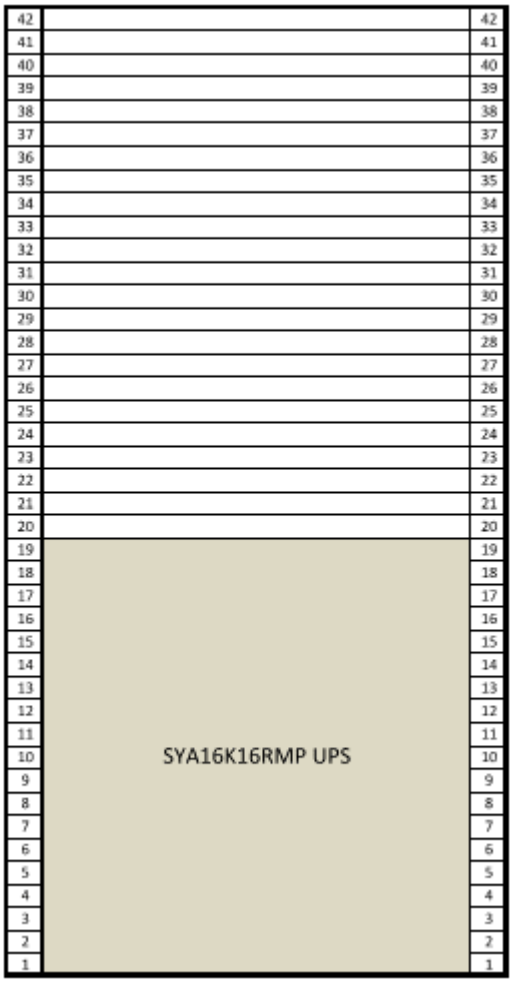
Item#	APC Part #	Description
1	SURTA1500RMXL2U	APC Smart-UPS RT 1500VA Rack Tower 120V
2	SURTD3000RMXLT3U	APC Smart-UPS RT 3000VA Rack Tower 208V
3	SURT8000RMXLT6U	APC Smart-UPS RT 8000VA Rack Tower 208V
4	SURT20KRMXLT	APC Smart-UPS RT 20kVA RM 208V
5	SYA4K8RMP	APC Symmetra LX 4kVA

Internal Components of APC Products:

Item #	Battery Module Part #	Description	Battery Manufacturer	Manufacture Part #
1	911-0041A	4-Battery Module	Shenzhen Center Power Tech Co. LTD (Vision)	CP1290
2	OM-1863B	8-Battery Module	CSB Battery Kung Long Batteries Industrial Co., LTD E-Power Trading Limited (B&B Battery Co.)	HR1221WF2 WP5-12 BP5-12
3	OM-1863B	8-Battery Module	CSB Battery	HR1221WF2
4	OM-1863B	8-Battery Module	CSB Battery	HR1221WF2
5	SYBT5	10-Battery Module	CSB Battery Kung Long Batteries Industrial Co., LTD E-Power Trading Limited (B&B Battery Co.)	HR1221WF2 WP1234W HR1234W

Tested Unit #2 (Unit SYA16K16RMPINAR2145BLK in Test Report TR-303808-09I)
Symmetra LX 16kVA in 4-Post Seismic Rack Enclosure (AR2145BLK)
14 ga Cold Rolled Steel, NEMA 1
23.04"W x 42.2"D x 80.25"H, 835 lbs, Center of Gravity Height = 26"
Floor mounted using (8) M12 8.8x30 bolts.

Test configuration is shown below:



Building Code	Test Criteria	S_{DS} (g)	z/h	Horizontal		Vertical	
				A_{FLX-H}	A_{RIG-H}	A_{FLX-V}	A_{RIG-H}
CBC 2016	ICC-ES AC 156	1.98	1	3.16	2.38	1.33	0.53

Natural Frequencies (Hz)			Test Results
F-B	S-S	V	The UUT maintained structural integrity and functionality after the AC156 test. UUT full of contents during test.
16.79	8.55	21.91	

APC Products in Test Configuration:

Item#	APC Part #	Description
1	SYA16K16RMP	APC Symmetra LX 16kVA

Internal Components of APC Products:

Item #	Battery Module Part #	Description	Battery Manufacturer	Manufacture Part #
1	SYBT5	10-Battery Module	CSB Battery	HR1221WF2