APPLICATION FOR OSHPD SPECIAL SEISMIC CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY	
APPLICATION #:	OSP – 0197-10

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: Smart-UPS On-Line

Product Type: Uninterruptible Power Supply (UPS)

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

General Description: Smart-UPS On-Line units consist of UPS units, battery packs, and transformers contained in commercial and 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

Testing Laboratory

Company Name: National Technical Systems, Inc.

Contact Name: Jeffrey Henn

Mailing Address: 1146 Massachusetts Avenue, Boxborough, MA 01719

Telephone: (978) 266-1001 Email: _____

Seismic Parameters

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

Design Basis of Equipment or Components (F_p/W_p) = 1.40

S_{DS} (Design spectral response acceleration at short period, g) = 1.86

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, UUT Summary Sheets

Overall dimensions and weight (or range thereof) = See attachment, 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) = _____

Ω_0 (System overstrength factor) = _____

C_d (Deflection amplification factor) = _____

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): Certified Products Table, Certified Subcomponents Table, UUT Summary Sheets

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

Signature: _____ Date: May 11, 2016

Print Name: Timothy J. Piland Title: SSE

Special Seismic Certification Valid Up to : S_{DS} (g) = 1.86 z/h = 1

Condition of Approval (if applicable): _____

APC - Smart-UPS On-Line
I. Certified Product Table

	Width	Depth	Height	Weight	Construction Material	Component No.	Testing Status
APC Racks							
APC NetShelter SX 42U Enclosure (Commercial)	23.6 in	43 in	78.4 in	275.8 lbs	14 GA CRS, NEMA 1	AR3100SP1	TR-PR040246-16 UUT2 TR63570-12-I RCK7
APC NetShelter VX Seismic 42U Enclosure (Seismic)	23 in	42.2 in	81.5 in	437.3 lbs	14 GA CRS, NEMA 1	AR2145BLK	TR-PR040246-16 UUT1, TR63570-12-I RCK6

Notes: 1. CRS=Cold Rolled Carbon Steel (ASTM A1008)

APC Racks are preapproved to be filled with UPS and Accessories 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 SX 42U Enclosure (Commercial)	800 lbs	28 in	850 lbs	28.5 lbs
APC NetShelter VX Seismic 42U Enclosure (Seismic)	1300 lbs	31.5 in	1650 lbs	37 in

APC - Smart-UPS On-Line
I. Certified Product Table

APC Products Preapproved for use in APC Racks

APC UPS	Width	Depth	Height	Weight	Construction Material	Component No.	Testing Status
APC Smart-UPS RT 1500VA Rack Tower 120V[5]	17 in	22 in	3.4 in	60.6 lbs	1.2 mm CRS	SURTA1500RMXL2U	TR63570-12-I RCK6
APC Smart-UPS SRT 2200VA RM 120V[3]	17 in	23 in	3.3 in	55.0 lbs	1.2 mm CRS	SRT2200RMXLA	Interpolated
APC Smart-UPS SRT 2200VA RM 120V w/Network Card[3]	17 in	23 in	3.3 in	55.0 lbs	1.2 mm CRS	SRT2200RMXLA-NC	TR-PR040246-16 UUT2
APC Smart-UPS SRT 3000VA RM 208V[2]	17 in	25 in	3.3 in	69.0 lbs	1.2 mm CRS	SRT3000RMXLT	Interpolated
APC Smart-UPS SRT 3000VA RM 208V[2]	17 in	25 in	3.3 in	69.0 lbs	1.2 mm CRS	SRT3000RMXLA	Interpolated
APC Smart-UPS SRT 3000VA RM 208V w/Network Card[2]	17 in	25 in	3.3 in	69.0 lbs	1.2 mm CRS	SRT3000RMXLT-NC	Interpolated
APC Smart-UPS SRT 3000VA RM 120V w/Network Card[2]	17 in	25 in	3.3 in	69.0 lbs	1.2 mm CRS	SRT3000RMXLA-NC	TR-PR040246-16 UUT1
APC Smart-UPS SRT 3000VA RM 208/230V IEC[2]	17 in	25 in	3.3 in	69.0 lbs	1.2 mm CRS	SRT3000RMLW-IEC	Interpolated
APC Smart-UPS SRT 5000VA RM 208V[1]	17 in	28.32 in	5.1 in	123.0 lbs	1.2 mm CRS	SRT5KRMXLT	Interpolated
APC Smart-UPS SRT 5000VA RM 208V IEC[1]	17 in	28.32 in	5.1 in	123.0 lbs	1.2 mm CRS	SRT5KRMXLT-IEC	TR-PR040246-16 UUT1, UUT2
APC Smart-UPS SRT 6000VA RM 208V[1]	17 in	28.32 in	6.85 in	135.0 lbs	1.2 mm CRS	SRT6KRMXLT	TR-PR040246-16 UUT1, UUT2
APC Smart-UPS SRT 6000VA RM 208V IEC[1]	17 in	28.32 in	6.85 in	135.0 lbs	1.2 mm CRS	SRT6KRMXLT-IEC	Interpolated
APC Smart-UPS SRT 8000VA RM 208V[1]	17 in	28.15 in	10.35 in	246.0 lbs	1.5 mm CRS	SRT8KRMXLT	Interpolated
APC Smart-UPS SRT 8000VA RM 208V IEC[1]	17 in	28.15 in	10.35 in	246.0 lbs	1.5 mm CRS	SRT8KRMXLT-IEC	Interpolated
APC Smart-UPS SRT 10000VA RM 208V[1]	17 in	28.15 in	10.35 in	246.0 lbs	1.5 mm CRS	SRT10KRMXLT	TR-PR040246-16 UUT1
APC Smart-UPS SRT 10000VA RM 208V IEC[1]	17 in	28.15 in	10.35 in	246.0 lbs	1.5 mm CRS	SRT10KRMXLT-IEC	Interpolated
APC Smart-UPS RT 14kVA RM 200V[4]	17 in	30.4 in	21 in	545.0 lbs	1.5 mm CRS	SURT14KRMXLJ	Interpolated
APC Smart-UPS RT 15kVA RM 208V[4]	17 in	30.4 in	21 in	545.0 lbs	1.5 mm CRS	SURT15KRMXLT	Interpolated
APC Smart-UPS RT 18kVA RM 200V[4]	17 in	30.4 in	21 in	545.0 lbs	1.5 mm CRS	SURT18KRMXLJ	Interpolated
APC Smart-UPS RT 20kVA RM 208V[4]	17 in	30.4 in	21 in	545.0 lbs	1.5 mm CRS	SURT20KRMXLT	TR63570-12-I RCK6
APC Accessories							
APC Smart-UPS RT 48V RM Battery Pack[5]	17 in	22.0 in	3.4 in	72.6 lbs	1.2 mm CRS	SURTA48RMXLBP2U	TR63570-12-I RCK7
APC Smart-UPS RT 72V RM Battery Pack[3]	17 in	23.4 in	3.4 in	74.4 lbs	1.2 mm CRS	SRT72RMBP	TR-PR040246-16 UUT1
APC Smart-UPS RT 96V RM Battery Pack[2]	17 in	23.4 in	3.4 in	89.5 lbs	1.2 mm CRS	SRT96RMBP	TR-PR040246-16 UUT2
APC Smart-UPS SRT 192V 5kVA and 6kVA Battery Pack[1]	17 in	26.9 in	5.1 in	200.4 lbs	1.2 mm CRS	SRT192RMBP	Interpolated
APC Smart-UPS SRT 192V 8kVA and 10kVA Battery Pack[1]	17 in	26.0 in	5.1 in	200.4 lbs	1.2 mm CRS	SRT192RMBP2	TR-PR040246-16 UUT1, UUT-2
APC Smart-UPS RT 192V RM Battery Pack[4]	17 in	26.0 in	5.1 in	200.4 lbs	1.2 mm CRS	SURT192RMXLBP3U	TR63570-12-I RCK1, TR63570-12-I RCK7
APC Smart-UPS RT 192V RM Battery Pack[4]	17 in	29.1 in	10.4 in	400.0 lbs	1.5 mm CRS	SURT192RMXLBP2	TR63570-12-I RCK6
APC Step-Down Transformer RM 2U 208V IN 120V OUT; w/5-20 Receptacle	17 in	24.0 in	3.5 in	95.2 lbs	1.5 mm CRS	AP9626	TR63570-12-I RCK1, TR63570-12-I RCK7

Notes:
1. APC UPS Units and Accessories contain Battery Module #1 (OM-816336) as listed in the Certified Sub- Components Table
2. APC UPS Units and Accessories contain Battery Module #2 (911-9012A) as listed in the Certified Sub- Components Table
3. APC UPS Units and Accessories contain Battery Module #3 (911-1086A) as listed in the Certified Sub- Components Table
4. APC UPS Units and Accessories contain Battery Module #4 (OM-1863B) as listed in the Certified Sub- Components Table
5. APC UPS Units and Accessories contain Battery Module #5 (911-0041A) as listed in the Certified Sub- Components Table

APC - Smart-UPS On-Line
II. Certified Subcomponents Table

Battery Module #1 (APC No. OM-816336)

Manufacturer	Width	Depth	Height	Weight	Component No.	Testing Status
Battery (APC No. 910-6003)						
Leoch	3.54 in	2.76 in	4.02 in	4.4 lb	LP12-5-4	TR-PR040246-16 UUT1, UUT2
CSB Battery	3.54 in	2.76 in	4.02 in	4.4 lb	HR1221WF2	TR-PR040246-16 UUT1, UUT2
Kung Long Batteries Industrial Co., LTD	3.54 in	2.76 in	4.02 in	4.4 lb	WP5-12	TR-PR040246-16 UUT1, UUT2
E-Power Trading Limited (B&B Battery Co.)	3.54 in	2.76 in	4.02 in	4.4 lb	BP5-12	TR-PR040246-16 UUT1, UUT2

Battery Module #2 (APC No. 911-9012A)

Manufacturer	Width	Depth	Height	Weight	Component No.	Testing Status
Battery (APC No. 910-6003)						
Leoch	3.54 in	2.76 in	4.02 in	4.4 lb	LP12-5-4	TR-PR040246-16 UUT1, UUT2
CSB Battery	3.54 in	2.76 in	4.02 in	4.4 lb	HR1221WF2	TR-PR040246-16 UUT1, UUT2
Kung Long Batteries Industrial Co., LTD	3.54 in	2.76 in	4.02 in	4.4 lb	WP5-12	TR-PR040246-16 UUT1, UUT2
E-Power Trading Limited (B&B Battery Co.)	3.54 in	2.76 in	4.02 in	4.4 lb	BP5-12	TR-PR040246-16 UUT1, UUT2

Battery Module #3 (APC No. 911-1086A)

Manufacturer	Width	Depth	Height	Weight	Component No.	Testing Status
Battery (APC No. 910-6003)						
Leoch	3.54 in	2.76 in	4.02 in	4.4 lb	LP12-5-4	TR-PR040246-16 UUT1, UUT2
CSB Battery	3.54 in	2.76 in	4.02 in	4.4 lb	HR1221WF2	TR-PR040246-16 UUT1, UUT2
Kung Long Batteries Industrial Co., LTD	3.54 in	2.76 in	4.02 in	4.4 lb	WP5-12	TR-PR040246-16 UUT1, UUT2
E-Power Trading Limited (B&B Battery Co.)	3.54 in	2.76 in	4.02 in	4.4 lb	BP5-12	TR-PR040246-16 UUT1, UUT2

Battery Module #4 (APC No. OM-1863B)

Manufacturer	Width	Depth	Height	Weight	Component No.	Testing Status
Battery (APC No. 910-6003)						
CSB Battery	3.54 in	2.76 in	4.02 in	4.4 lb	HR1221WF2	TR63570-12-I RCK1, TR63570-12-I RCK6, TR63570-12-I RCK7
Kung Long Batteries Industrial Co., LTD	3.54 in	2.76 in	4.02 in	4.4 lb	WP5-12	TR63570-12-I RCK6
E-Power Trading Limited (B&B Battery Co.)	3.54 in	2.76 in	4.02 in	4.4 lb	BP5-12	TR63570-12-I RCK6

Battery Module #5 (APC No. 911-0041A)

Manufacturer	Width	Depth	Height	Weight	Component No.	Testing Status
Battery (APC No. 910-1209)						
Shenzhen Center Power Tech Co. LTD (Vision)	2.55 in	5.94 in	3.70 in	5.7 lb	CP1290	TR63570-12-I RCK1, RCK6, RCK7
Exide Industries	2.55 in	5.94 in	3.70 in	5.7 lb	EP1234WFR	TR63570-12-I RCK1, RCK7

TR-PR040246-16 UUT1

Smart-UPS On-Line 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, 1300 lbs, Center of Gravity Height = 32”
Floor mounted using (8) M12-1.75x30mm bolts.

Building Code	Test Criteria	S_{DS} (g)	z/h	Horizontal		Vertical	
				A_{FLX-H}	A_{RIG-H}	A_{FLX-V}	A_{RIG-V}
CBC 2016	ICC-ES AC 156	1.86	1	2.98	2.23	1.25	0.51

Natural Frequencies			Test Results
F-B	S-S	V	The UUT maintained structural integrity and functionality after the AC156 test. Unit full of contents during test.
9.0	5.0	>33.3	

Test configuration is shown below:

42	**SRT3000RMXLA-NC** (69 lb) *uses module #2 - qty 1*	42
41		41
40	**SRT72RMBP** (78 lb) *uses module #3 - qty 2*	40
39		39
38		38
37		37
36		36
35		35
34		34
33		33
32		32
31	AR8122BLK Shelf	31
30		30
29		29
28		28
27		27
26		26
25		25
24		24
23		23
22		22
21		21
20		20
19	**SRT5KRMXLT-IEC (120 lb)** *uses module #1 - qty 2*	19
18		18
17		17
16	**SRT6KRMXLT** (4U) (132 lb) *uses module #1 - qty 2*	16
15		15
14		14
13		13
12	**SRT10KRMXLT** (246 lb) *uses module #1 - qty 4*	12
11		11
10		10
9		9
8		8
7		7
6	**SRT192RMBP2** (200 lb) *uses module #1 - qty 4*	6
5		5
4		4
3		3
2		2
1		1

TR-PR040246-16 UUT1

Smart-UPS On-Line 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, 1300 lbs, Center of Gravity Height = 32”
Floor mounted using (8) M12-1.75x30mm bolts.

APC Products in Test Configuration:

Item#	APC Part #	Description
1	SRT3000RMXLA-NC	APC Smart-UPS SRT 3000VA RM 120V w/Network Card
2	SRT5KRMXLT-IEC	APC Smart-UPS SRT 5000VA RM 208V IEC
3	SRT6KRMXLT	APC Smart-UPS SRT 6000VA RM 208V
4	SRT10KRMXLT	APC Smart-UPS SRT 10000VA RM 208V
5	SRT72RMBP	APC Smart-UPS RT 72V RM Battery Pack
6	SRT192RMBP2	APC Smart-UPS SRT 192V 8kVA and 10kVA Battery Pack
7	AR8122BLK	Shelf

Internal Components of APC Products:

Item #	Battery Module Part #	Description	Battery Manufacturer	Manufacture Part #
1	OM-816336	Battery Module #1	Leoch CSB Battery Kung Long Batteries Industrial Co., LTD E-Power Trading Limited (B&B Battery Co.)	LP12-5-4 HR1221WF2 WP5-12 BP5-12
2	911-9012A	Battery Module #2	Leoch CSB Battery Kung Long Batteries Industrial Co., LTD E-Power Trading Limited (B&B Battery Co.)	LP12-5-4 HR1221WF2 WP5-12 BP5-12
3	911-1086A	Battery Module #3	Leoch CSB Battery Kung Long Batteries Industrial Co., LTD E-Power Trading Limited (B&B Battery Co.)	LP12-5-4 HR1221WF2 WP5-12 BP5-12

TR-PR040246-16 UUT2

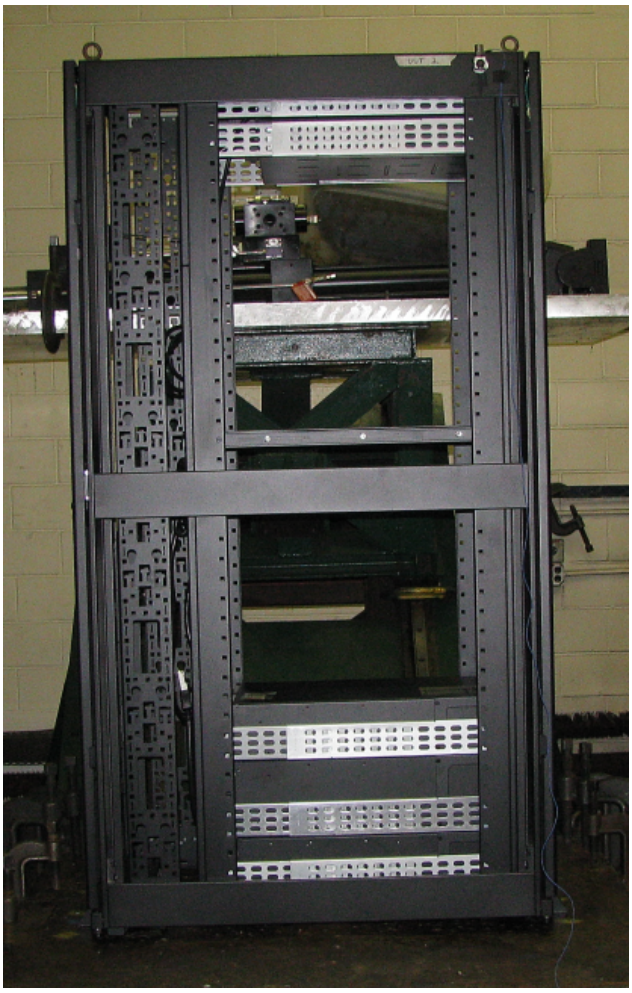
Smart-UPS On-Line in 4-Post Commercial Rack Enclosure (AR3100SP1)
14 ga Cold Rolled Steel, NEMA 1
23.63”W x 41.35”D x 78.4”H, 850 lbs, Center of Gravity Height = 28.5”
Floor mounted using (8) M12-1.75x30mm bolts.

Building Code	Test Criteria	S_{DS} (g)	z/h	Horizontal		Vertical	
				A_{FLX-H}	A_{RIG-H}	A_{FLX-V}	A_{RIG-V}
CBC 2016	ICC-ES AC 156	1.92	1	3.07	2.30	1.29	0.52

Natural Frequencies			Test Results
F-B	S-S	V	The UUT maintained structural integrity and functionality after the AC156 test. Unit full of contents during test.
4.5	2.7	>33.3	

Test configuration is shown below:

42	**SRT2200RMXLA-NC** (58 lb) *uses module #3 - qty 1*	42
41		41
40	**SRT96RMBP** (95 lb) *uses module #2 - qty 2*	40
39		39
38		38
37		37
36		36
35		35
34		34
33		33
32		32
31		31
30		30
29		29
28		28
27		27
26		26
25		25
24	AR8122BLK Shelf	24
23		23
22		22
21		21
20		20
19		19
18		18
17		17
16		16
15		15
14		14
13		13
12		12
11		11
10	**SRT5KRMXLT-IEC** (120 lb) *uses module #1 - qty 2*	10
9		9
8		8
7	**SRT6KRMXLT** (4U) (132 lb) *uses module #1 - qty 2*	7
6		6
5		5
4		4
3	**SRT192RMBP2** (200 lb) *uses module #1 - qty 4*	3
2		2
1		1



TR-PR040246-16 UUT2

Smart-UPS On-Line in 4-Post Commercial Rack Enclosure (AR3100SP1)
14 ga Cold Rolled Steel, NEMA 1
23.63”W x 41.35”D x 78.4”H, 850 lbs, Center of Gravity Height = 28.5”
Floor mounted using (8) M12-1.75x30mm bolts.

APC Products in Test Configuration:

Item#	APC Part #	Description
1	SRT2200RMXLA-NC	APC Smart-UPS SRT 2200VA RM 120V w/Network Card
2	SRT5KRMXLT-IEC	APC Smart-UPS SRT 5000VA RM 208V IEC
3	SRT6KRMXLT	APC Smart-UPS SRT 6000VA RM 208V
4	SRT96RMBP	APC Smart-UPS RT 96V RM Battery Pack
5	SRT192RMBP2	APC Smart-UPS SRT 192V 8kVA and 10kVA Battery Pack
6	AR8122BLK	Shelf

Internal Components of APC Products:

Item #	Battery Module Part #	Description	Battery Manufacturer	Manufacture Part #
1	OM-816336	Battery Module #1	Leoch CSB Battery Kung Long Batteries Industrial Co., LTD E-Power Trading Limited (B&B Battery Co.)	LP12-5-4 HR1221WF2 WP5-12 BP5-12
2	911-9012A	Battery Module #2	Leoch CSB Battery Kung Long Batteries Industrial Co., LTD E-Power Trading Limited (B&B Battery Co.)	LP12-5-4 HR1221WF2 WP5-12 BP5-12
3	911-1086A	Battery Module #3	Leoch CSB Battery Kung Long Batteries Industrial Co., LTD E-Power Trading Limited (B&B Battery Co.)	LP12-5-4 HR1221WF2 WP5-12 BP5-12

TR63570-12-I (Rack 1)

Smart-UPS On-Line 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, 1200 lbs, Center of Gravity Height = 32”
Floor mounted using (8) M12 8.8x30 bolts.

Building Code	Test Criteria	S_{DS} (g)	z/h	Horizontal		Vertical	
				A_{FLX-H}	A_{RIG-H}	A_{FLX-V}	A_{RIG-V}
CBC 2016	ICC-ES AC 156	1.92	1	3.07	2.30	1.28	0.51

Natural Frequencies			Test Results
F-B	S-S	V	The UUT maintained structural integrity and functionality after the AC156 test. Unit full of contents during test.
9.0	5.2	>33.3	

Test configuration is shown below:

42	SURTA2200RMXL2U UPS	42
41		41
40	SURTA48RMXLBP2U UPS Battery Pack	40
39		39
38		38
37		37
36		36
35		35
34		34
33		33
32		32
31	AR8122BLK Shelf	31
30		30
29		29
28		28
27		27
26		26
25		25
24	AR8122BLK Shelf	24
23		23
22		22
21		21
20		20
19		19
18		18
17	AP9626 Step Down Transformer	17
16		16
15	SURT6000RMXLT3U UPS	15
14		14
13		13
12	SURT10000RMXLT6U UPS	12
11		11
10		10
9		9
8		8
7		7
6	SURT192RMXLBP3U UPS Battery Pack	6
5		5
4		4
3		3
2		2
1		1

TR63570-12-I (Rack 1)

Smart-UPS On-Line 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, 1200 lbs, Center of Gravity Height = 32”
Floor mounted using (8) M12 8.8x30 bolts.

APC Products in Test Configuration:

Item#	APC Part #	Description
1	SURTA2200RMXL2U	APC Smart-UPS RT 2200VA RM 120V
2	SURTA48RMXLBP2U	APC Smart-UPS RT 48V RM Battery Pack
3	AP9626	APC Step-Down Transformer RM 2U 208V IN 120V OUT; w/5-20 Receptacles
4	SURT6000RMXLT3U	APC Smart-UPS RT 6000VA Rack Tower 208V
5	SURT10000RMXLT6U	APC Smart-UPS RT 10,000VA Rack Tower 208V
6	SURT192RMXLBP3U	APC Smart-UPS RT 192V RM Battery Pack
7	AR8122BLK	Shelf

Internal Components of APC Products:

Item #	Battery Module Part #	Description	Battery Manufacturer	Manufacture Part #
1	911-0041A	Battery Module #5	Exide Industries	EP1234WFR
2	911-0041A	Battery Module #5	Shenzhen Center Power Tech Co. LTD (Vision)	CP1290
3	N/A	N/A	N/A	N/A
4	OM-1863B	Battery Module #4	CSB Battery	HR1221WF2
5	OM-1863B	Battery Module #4	CSB Battery	HR1221WF2
6	OM-1863B	Battery Module #4	CSB Battery	HR1221WF2
7	N/A	N/A	N/A	N/A

TR63570-12-I (Rack 6)

Smart-UPS On-Line 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.

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

Natural Frequencies			Test Results
F-B	S-S	V	The UUT maintained structural integrity and functionality after the AC156 test. Unit full of contents during test.
6.92	4.09	>33.3	

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
2		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

TR63570-12-I (Rack 6)

Smart-UPS On-Line 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.

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	SURT192RMXLBP2	APC Smart-UPS RT 192V RM Battery Pack
6	SYA4K8RMP	APC Symmetra LX 4kVA

Internal Components of APC Products:

Item #	Battery Module Part #	Description	Battery Manufacturer	Manufacture Part #
1	911-0041A	Battery Module #5	Shenzhen Center Power Tech Co. LTD (Vision)	CP1290
2	OM-1863B	Battery Module #4	CSB Battery Kung Long Batteries Industrial Co., LTD E-Power Trading Limited (B&B Battery Co.)	HR1221WF2 WP5-12 BP5-12
3	OM-1863B	Battery Module #4	CSB Battery	HR1221WF2
4	OM-1863B	Battery Module #4	CSB Battery	HR1221WF2
5	SYBT5	10-Battery Module	CSB Battery Kung Long Batteries Industrial Co., LTD E-Power Trading Limited (B&B Battery Co.)	HR1234WF2 WP1234W HR1234W

TR63570-12-I (Rack 7)

Smart-UPS On-Line in 4-Post Commercial Rack Enclosure (AR3100SP1)
14 ga Cold Rolled Steel, NEMA 1
23.63”W x 41.35”D x 78.4”H, 800 lbs, Center of Gravity Height = 28”
Floor mounted using (4) M12 8.8x30 bolts.

Building Code	Test Criteria	S_{DS} (g)	z/h	Horizontal		Vertical	
				A_{FLX-H}	A_{RIG-H}	A_{FLX-V}	A_{RIG-V}
CBC 2016	ICC-ES AC 156	1.94	1	3.10	2.33	1.30	0.52

Natural Frequencies			Test Results
F-B	S-S	V	The UUT maintained structural integrity and functionality after the AC156 test. Unit full of contents during test.
5.98	2.79	>33.3	

Test configuration is shown below:

42	SURTA2200RMXL2U UPS	42
41		41
40	SURTA48RMXLBP2U UPS Battery Pack	40
39		39
38		38
37		37
36		36
35		35
34		34
33		33
32		32
31		31
30		30
29		29
28		28
27		27
26		26
25		25
24		24
23		23
22		22
21		21
20		20
19		19
18		18
17		17
16		16
15		15
14		14
13		13
12		12
11		11
10		10
9		9
8	AP9626 Step Down Transformer	8
7		7
6	SURT6000RMXLT3U UPS	6
5		5
4		4
3	SURT192RMXLBP3U UPS Battery Pack	3
2		2
1		1

TR63570-12-I (Rack 7)

Smart-UPS On-Line in 4-Post Commercial Rack Enclosure (AR3100SP1)
14 ga Cold Rolled Steel, NEMA 1
23.63”W x 41.35”D x 78.4”H, 800 lbs, Center of Gravity Height = 28”
Floor mounted using (4) M12 8.8x30 bolts.

APC Products in Test Configuration:

Item#	APC Part #	Description
1	SURTA2200RMXL2U	APC Smart-UPS RT 2200VA RM 120V
2	SURTA48RMXLBP2U	APC Smart-UPS RT 48V RM Battery Pack
3	AP9626	APC Step-Down Transformer RM 2U 208V IN 120V OUT; w/5-20 Receptacles
4	SURT6000RMXLT3U	APC Smart-UPS RT 6000VA Rack Tower 208V
5	SURT192RMXLBP3U	APC Smart-UPS RT 192V RM Battery Pack

Internal Components of APC Products:

Item #	Battery Module Part #	Description	Battery Manufacturer	Manufacture Part #
1	911-0041A	Battery Module #5	Exide Industries	EP1234WFR
2	911-0041A	Battery Module #5	Shenzhen Center Power Tech Co. LTD (Vision)	CP1290
3	N/A	N/A	N/A	N/A
4	OM-1863B	Battery Module #4	CSB Battery	HR1221WF2
5	OM-1863B	Battery Module #4	CSB Battery	HR1221WF2