Facilities Development Division www.oshpd.ca.gov/fdd
400 R Street. Suite 200, Sacramento, California 95811-6213 Phone (916) 440-8300 Fax (916) 654-2973

APPLICATION FOR PREAPPROVAL

SPECIAL SEISMIC CERTIFICATION OF EQUIPMENT AND COMPONENTS

For Office Use Only

APPLICATION NO.

OSP – 0231-10

Check whether application is: NEW [X] RENEWAL [ ]

1.0

APC by Schneider Electric — *Manufacturer*

Henrik Nicolaisen — *Manufacturer's Technical Representative*

Silcon Allé, 6000 Kolding, Denmark — *Mailing Address*

+45 72 19 02 54 — *Telephone*

Henrik.Nicolaisen@Schneider-Electric.com — *E-mail Address*

2.0

Galaxy 3500, Smart UPS VT — *Product Name*

Uninterrupted Power Supply (UPS) — *Product Type*

G35T, SBPSU, SUVT — *Product Model No. (List all unique product identification numbers and/or serial numbers)*

General Description: Galaxy 3500 and Smart UPS VT product line consists of maintenance bypass panels, battery frames, UPS frames, and transformers. The Maintenance Bypass Panels can be floor or wall mounted. All other units are floor mounted.

3.0

APC by Schneider Electric — *Applicant Company Name*

Henrik Nicolaisen — *Contact Person*

Silcon Allé, 6000 Kolding, Denmark — *Mailing Address*

+45 72 19 02 54 — *Telephone*

Henrik.Nicolaisen@Schneider-electric.com — *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

11/21/2011 — *Date*

R&D, Engineering Team Leader — *Title*

APC by Schneider Electric — *Company Name*

Registered Design Professional Preparing the Report

4.0 University of Alabama - Birmingham
Company Name

Lee Gholamreza Moradi | C41383
Contact Name | *California License Number*

4824 Sulphur Springs Rd, Hoover, AL 35226
Mailing Address

205-975-2718 | moradi@uab.edu
Telephone | *E-mail Address*

California Licensed Structural Engineer Review and Acceptance of the Report

5.0 Forell-Elsesser Engineers, Inc.
Company Name

Marco Scanu, SE | S4454
Contact Name | *California License Number*

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

415-837-0700 | m.scanu@forell.com
Telephone | *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 | Rod Thornberry
Company Name | *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) = 1.07

S_{DS} *(Spectral response acceleration at short period)* = 1.42g

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

R_p *(Equipment or component response modification factor)* = 6.0

I_p *(Importance factor)* = 1.5

z/h (Height factor ratio) = 1.0

Equipment or Component fundamental period(s) = See attachment, "Resonant Frequency Summary"

Building period limits (if any) = n/a

Overall dimensions and weight (or range thereof) = See attachment, "Product Range Summary"

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

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 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, Product Range Summary, CBC 2010 & AC156 Requirements Checklist

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

11/21/2011	**December 31, 2016**
Signature & Date	*Approval Expiration Date*
M. R. Karim, SHFR	S_{DS} (g) = **1.42** z/h = **1.0**
Name & Title	*Special Seismic Certification Valid Up to*

Condition of Approval (if any):

3/11

APC - Galaxy 3500/Smart UPS VT
Product Range Summary

	Width	Depth	Height	Weight	Notes	Testing Status
Galaxy 3500/Smart UPS VT System Units						
Wall Mounted Units						
Maintenance Bypass Panel (smallest wall mounted configuration)	22.0 in	9.0 in	24.0 in	58 lbs	1, 3	Tested
Maintenance Bypass with 42 position Distribution Panel	30.0 in	8.0 in	38.0 in	98 lbs	1, 3	Tested
Floor Mounted Units						
Maintenance Bypass with 42 position Distribution Panel	14.0 in	36.0 in	59.0 in	317 lbs - 330 lbs	2, 3	Tested
Battery Frame Enclosure	20.5 in	36.0 in	59.0 in	765 lbs -1779 lbs	2, 3	Tested
UPS Power Module Frame Narrow	14.0 in	36.0 in	59.0 in	714 lbs	2, 3	Tested
UPS Power Module Frame Wide	20.5 in	36.0 in	59.0 in	1,199 lbs	2, 3	Tested
Transformer with MCCB	14.0 in	36.0 in	59.0 in	728 lbs	2, 3	Tested

	Width	Depth	Height	Weight	Notes	Testing Status
Galaxy 3500/Smart UPS VT System Components						
Parallel Communications Kit Connection and Trip Board	2.44 in	1.69 in	4.33 in	0.9 lbs	3, 4	Tested
10kW Power Module	9.25 in	28.5 in	19.3 in	115.0 lbs	3, 4	Tested
30kW Power Module	16.54 in	28.5 in	19.3 in	185.0 lbs	3, 4	Tested
Battery Unit (C10)	4.3 in	24.0 in	7.0 in	50.71 lbs	3, 4	Tested

Notes:
1. Unit is constructed out of 0.059" cold rolled steel
2. Unit is constructed out of 0.0784" cold rolled steel
3. For Indoor Use only
4. Unit is an internal component of a system unit

APC - Galaxy 3500/Smart UPS VT
Product Range Summary

Internal Components	Manufacturer	Testing Status
125A 3p Circuit Breaker	Square-D	Tested
125A 3p Circuit Breaker	ABB	Tested
125A 4p Circuit Breaker	Square-D	Tested
125A 4p Circuit Breaker	ABB	Tested
250A 4p Circuit Breaker	APC	Tested
350A 3p Circuit Breaker	Square-D	Tested
Panel CKT BKR 42 POS 225A	Square-D	Tested
Breakers 1-pole 20A	Square-D	Tested
Breaker 2-pole 20A	Square-D	Tested
Breaker 2-pole 30A	Square-D	Tested
Terminal block 200A	Marathon	Tested
Switch, 3 Pole, 60A	ABB	Tested
Switch, 3 pole, 100A	ABB	Tested
Seismic Kit	APC	Tested
Fuseholder Class J 3pole 100A	Bussmann	Tested
Fuse, Fast 90A, 600Vac, Class J	Bussmann	Tested
Fuse Holder PII 27X60	APC	Tested
Battery Units	APC	Tested
12V – 7.2Ah VRLA Battery (C10)	CSB	Tested
Battery Shelves	APC	Tested
10 kw Power module	APC	Tested
30 kW Power Module	APC	Tested
PM Module Shelves	APC	Tested
Support Shelf PM Narrow	APC	Tested
Backplane Boards	APC	Tested
GUI	APC	Tested
Parallel Communications Kit	APC	Tested
Fan 225CFM	EBMPapst	Tested
Fan 225CFM	NMB Technologies	Tested
Transformer 30KVA 208/208V, Magnet Wire: Copper	First Philipine Power Systems INC.	Tested
SBP CAN I/O Board	APC	Tested
Copper Busbars	Various	Tested
Terminals	APC	Tested
Terminal Board	APC	Tested
Terminal block 200A	Marathon	Tested
Terminal block 310A	Marathon	Tested

APC - Galaxy 3500/Smart UPS VT
Resonant Frequency Summary

	UUT1a Maintenance Bypass Panel (min.)		UUT2 UPS with Battery Frame (min.)		UUT3 Complete System (max.)	
Direction	Frequency	Period	Frequency	Period	Frequency	Period
Front-Back	30.0 Hz	0.03 sec	24.0 Hz	0.04 sec	16.0 Hz	0.06 sec
Side-Side	12.5 Hz	0.08 sec	15.0 Hz	0.07 sec	12.0 Hz	0.08 sec
Vertical	N/A	N/A	N/A	N/A	25.0 Hz	0.04 sec

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

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TEST SUMMARY

Tested Unit #1 (UUT 1A, UUT 1B, UUT 1C)

UUT1A

Maintenance Bypass with 42 position Distribution Panel (smallest floor mounted configuration)

59"H x 14"W x 36"D, 0.0784" Cold Rolled Steel

330 lbs

Floor mounted with (16) M8 Class 8.8 bolts

UUT 1A on the right, UUT 1B center, UUT 1C on the left

Internal Components	Manufacturer
125A 3p Circuit Breaker	Square-D
Panel CKT BKR 42 POS 225A	Square-D
Breakers 1-pole 20A	Square-D
Breaker 2-pole 20A	Square-D
Breaker 2-pole 30A	Square-D
Seismic Kit	APC
Copper Bus bars	APC

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OSP APPLICATION
APC –Galaxy 3500/Smart UPS VT

Date: 11/7/2011

UUT1B

Maintenance Bypass Panel (smallest wall mounted configuration)
24"H x 22"W x 9"D, 0.059" Cold Rolled Steel
58 lbs
Wall mounted with (4) 3/8" – 16 Grade 5 bolts

Internal Components	Manufacturer
125A 3p Circuit Breaker	ABB
125A 4p Circuit Breaker	ABB
Terminal block 200A	Marathon
Copper Bus bars	APC

UUT1C

Maintenance Bypass with 42 position Distribution Panel (largest wall mounted configuration)
38"H x 30"W x8"D, 0.059" Cold Rolled Steel
98 lbs
Wall mounted with (4) 3/8" – 16 Grade 5 bolts

Internal Components	Manufacturer
Switch, 3 pole, 100A	ABB
Panel CKT BKR 42 POS 225A	Square-D
Fuseholder Class J 3pole 100A	Bussmann
Fuse, Fast 90A, 600Vac, Class J	Bussmann
Copper Bus bars	APC

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Tested Unit #2 (UUT 2)

UUT 2
UPS with Battery Frame (smallest configuration)
59"H x 35"W x 36"D
1479 lbs
Floor mounted with (20) M8 Class 8.8 bolts

System Unit	Width	Depth	Height	Weight	Material
Battery Frame Enclosure	20.5"	36"	59"	765 lbs	0.0784" Cold Rolled Steel
UPS power module frame narrow	14"	36"	59"	714 lbs	0.0784" Cold Rolled Steel

Internal Components	Manufacturer
Battery Units	APC
12V – 7.2Ah VRLA Battery (C10)	CSB
Battery Shelves	APC
10 kW Power module	APC
PM Module Shelves	APC
Support Shelf PM Narrow	APC
FUSE HOLDER PII 27X60	APC
250A 4p Circuit Breaker	APC
Switch, 3 Pole, 60A	ABB
Backplane Boards	APC
Terminals	APC
GUI	APC
Seismic kit	APC
Copper bus bars	Various

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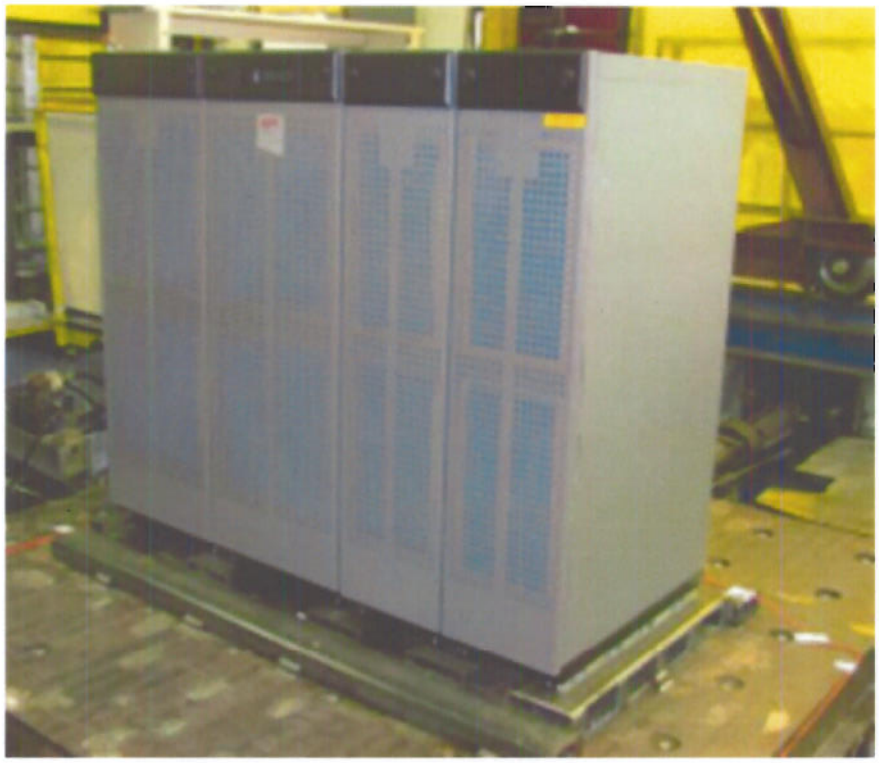
Tested Unit #3 (UUT 3)

UUT 3
Complete System (largest configuration)
59"H x 69"W x 36"D
4023 lbs
Floor mounted with (40)M8 Class 8.8 bolts



System Unit	Width	Depth	Height	Weight	Material
Battery Frame Enclosure	20.5"	36"	59"	1779 lbs	0.0784" Cold Rolled Steel
UPS Power Module Frame Wide	20.5"	36"	59"	1199 lbs	0.0784" Cold Rolled Steel
Transformer with MCCB	14"	36"	59"	728 lbs	0.0784" Cold Rolled Steel
Maintenance Bypass and Distribution Panel	14"	36"	59"	317 lbs	0.0784" Cold Rolled Steel

Tested Unit #3 (UUT 3)

Internal Components	Manufacturer
Battery Units	APC
12V – 7.2Ah VRLA Battery (C10)	CSB
Battery Shelves	APC
30 kW Power Module	APC
PM Module Shelves	APC
FUSE HOLDER PII 27X60	APC
125A 4p Circuit Breaker	Square-D
250A 4p Circuit Breaker	APC
350A 3p Circuit Breaker	Square-D
Backplane Boards	APC
GUI	APC
Parallel Communications Kit	APC
Terminal block 200A	Marathon
Terminal block 310A	Marathon
Terminal Board	APC
Switch, 3 pole, 100A	ABB
Fan 225CFM	EBMPapst
Fan 225CFM	NMB Technologies
Transformer 30KVA 208/208V, Magnet Wire: Copper	First Philipine Power Systems INC.
SBP CAN I/O Board (total 3)	APC
Seismic kit	APC
Copper bus bars	various