APPLICATION FOR OSHPD SPECIAL SEISMIC CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY	
APPLICATION #:	OSP – 0517 – 10

OSHPD Special Seismic Certification Preapproval (OSP)

Type: ☒ New ☐ Renewal

Manufacturer Information

Manufacturer: GE Critical Power

Manufacturer's Technical Representative: Gerald Eubanks

Mailing Address: 601 Shiloh Road, Plano, Texas 75074

Telephone: (972) 244-9396 Email: Gerald.eubanks@ge.com

Product Information

Product Name: LP33 Series II UPS

Product Type: Uninterruptible Power Supply System

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

General Description: (3) Three-phase 208Vac UPS System with double conversion. 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: GE Critical Power

Contact Person: Gerald Eubanks

Mailing Address: 601 Shiloh Road, Plano, Texas 75074

Telephone: (972) 244-9396 Email: Gerald.eubanks@ge.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: Gerald Eubanks Date: 6/27/2017

Title: Lead Engineer/Technologist/NEBs Company Name: GE Critical Power

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

Contact Name: Kimberly Zavala

Mailing Address: 1701 E. Plano Pkwy. Suite 150, Plano, TX 75074

Telephone: (972) 509-2566 Email: Kimberly.zavala@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) = 1.53

S_{DS} (Design spectral response acceleration at short period, g) = 2.13

a_p (In-structure equipment or component amplification factor) = 1.0

R_p (Equipment or component response modification factor) = 2.5

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) =

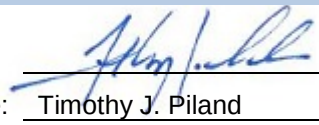
Tank(s) designed in accordance with ASME BPVC, 2015: ☐ Yes ☒ No

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: November 3, 2017

Print Name: Timothy J. Piland Title: SSE

Special Seismic Certification Valid Up to : S_{DS} (g) = 1.53 z/h = 1

Condition of Approval (if applicable):

GE Critical Power-LP33 Series II UPS
I. Certified Product Table

Unit	Width	Depth	Height	Weight	Enclosure Type	Model Number	Test Status
LP33 Series II UPS							
15kVA/13.5kW UPS LP33 SERIES II / Dual Input, Internal Batteries	22.3 in	30.7 in	50.4 in	938.0 lbs	NEMA 1, 16 ga. CFS	UPB315LP2242201-OSHPD	UUT 1
20kVA/18kW UPS LP33 SERIES II / Single Input	29.6 in	29.3 in	75.0 in	816.0 lbs	NEMA 1, 16 ga. CFS	UPB302LP2242100-OSHPD	Extrapolated
20kVA/18kW UPS LP33 SERIES II / Dual input	29.6 in	29.3 in	75.0 in	816.0 lbs	NEMA 1, 16 ga. CFS	UPB302LP2242200-OSHPD	Extrapolated
30kVA/27kW UPS LP33 SERIES II / Single Input	29.6 in	29.3 in	75.0 in	816.0 lbs	NEMA 1, 16 ga. CFS	UPB303LP2242100-OSHPD	Extrapolated
30kVA/27kW UPS LP33 SERIES II / Dual Input	29.6 in	29.3 in	75.0 in	816.0 lbs	NEMA 1, 16 ga. CFS	UPB303LP2242200-OSHPD	UUT 2
50kVA/45kW UPS LP33 SERIES II / Single Input	34.4 in	29.3 in	75.0 in	992.0 lbs	NEMA 1, 16 ga. CFS	UPB305LP2242100-OSHPD	Interpolated
50kVA/45kW UPS LP33 SERIES II / Dual Input	34.4 in	29.3 in	75.0 in	992.0 lbs	NEMA 1, 16 ga. CFS	UPB305LP2242200-OSHPD	Interpolated
60kVA/54kW UPS LP33 SERIES II / Single Input	34.4 in	29.3 in	75.0 in	1037.0 lbs	NEMA 1, 16 ga. CFS	UPB306LP2242100-OSHPD	Interpolated
60kVA/54kW UPS LP33 SERIES II / Dual Input	34.4 in	29.3 in	75.0 in	1037.0 lbs	NEMA 1, 16 ga. CFS	UPB306LP2242200-OSHPD	Interpolated
80kVA/72kW UPS LP33 SERIES II / Single Input	45.6 in	36.3 in	75.0 in	1323.0 lbs	NEMA 1, 16 ga. CFS	UPB308LP2242100-OSHPD	Interpolated
80kVA/72kW UPS LP33 SERIES II / Dual Input	45.6 in	36.3 in	75.0 in	1323.0 lbs	NEMA 1, 16 ga. CFS	UPB308LP2242200-OSHPD	Interpolated
100kVA/90kW UPS LP33 SERIES II / Single Input	45.6 in	36.3 in	75.0 in	1323.0 lbs	NEMA 1, 16 ga. CFS	UPB310LP2242100-OSHPD	Interpolated
100kVA/90kW UPS LP33 SERIES II / Dual Input	45.6 in	36.3 in	75.0 in	1323.0 lbs	NEMA 1, 16 ga. CFS	UPB310LP2242200-OSHPD	UUT 3

Notes

1. All enclosures are NEMA-1 rated.
2. CFS: cold-formed carbon steel.
3. All enclosures floor-mounted.
4. Enclosures do not include batteries unless specifically noted.

Test Report PR047316 – UUT 1
LP33 Series II UPS 15 KVA
16 ga. Cold Formed Carbon Steel
22.3”W x 30.7”D x 50.4”H, 938 lbs
Floor mounted using: (4) - 5/8” Gr. 5 bolts

Building Code	Test Criteria	S_{DS} (g)	z/h	I_p	Horizontal		Vertical	
					A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016	ICC-ES AC 156	2.13	1.0	1.5	3.41	2.56	1.43	0.57

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 testing.
11.0 Hz	8.3 Hz	21.7 Hz	

Test Report PR047316 – UUT 2
LP33 Series II UPS 30 KVA
16 ga. Cold Formed Carbon Steel
29.6”W x 29.3”D x 75.0”H, 816 lbs
Floor mounted using: (4) - 5/8” Gr. 5 bolts

The latches were revised for seismic applications

Building Code	Test Criteria	S_{DS} (g)	z/h	I_p	Horizontal		Vertical	
					A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016	ICC-ES AC 156	2.13	1.0	1.5	3.41	2.56	1.43	0.57

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 testing.
6.3 Hz	7.4 Hz	20.1 Hz	

Test Report PR047316 – UUT 3
LP33 Series II UPS 100 KVA
16 ga. Cold Formed Carbon Steel
45.6”W x 36.3”D x 75.0”H, 1,323 lbs
Floor mounted using: (4) - 5/8” Gr. 5 bolts

The latches were revised for seismic applications

Building Code	Test Criteria	S_{DS} (g)	z/h	I_p	Horizontal		Vertical	
					A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016	ICC-ES AC 156	2.13	1.0	1.5	3.41	2.56	1.43	0.57

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 testing.
6.5 Hz	6.3 Hz	20.1 Hz	