APPLICATION FOR OSHPD SPECIAL SEISMIC CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY	
APPLICATION #:	OSP – 0261-10

OSHPD Special Seismic Certification Preapproval (OSP)

Type: ☐ New ☒ Renewal

Manufacturer Information

Manufacturer: Schneider Electric IT Business

Manufacturer's Technical Representative: Jesse Smith

Mailing Address: 1660 Scenic Ave., Costa Mesa, CA 92626

Telephone: (714) 557-1636 x 43445 Email: Jesse.smith@schneider-electric.com

Product Information

Product Name: MGE Galaxy 4000/5000

Product Type: UPS

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

General Description: MGE Galaxy 4000/5000 products consist of UPS, Distribution Cabinets, Maintenance and System By-Pass Cabinets, Top Entry Cabinet, and Transformer Cabinets, and rigidly wall mounted Maintenance By-Pass and Critical Bus Synchronization Box. Seismic enhancements made to the UUTs & modifications required to address anomalies observed during the tests shall be incorporated into the production units.

Mounting Description: Rigidly floor or Wall mounted

Applicant Information

Applicant Company Name: Schneider Electric IT Business

Contact Person: Jesse Smith

Mailing Address: 1660 Scenic Ave., Costa Mesa, CA 92626

Telephone: (714) 557-1636 x 43445 Email: Jesse.smith@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: Date: 10/6/2016

Title: Mechanical Designer Company Name: Schneider Electric IT Business

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: Wyle Laboratories

Contact Name: Rod Thornberry

Mailing Address: 7800 Hwy 20, Huntsville, AL 35806

Telephone: (256) 837-4411 Email: _____

Seismic Parameters

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

Design Basis of Equipment or Components (F_p/W_p) = 1.02

S_{DS} (Design spectral response acceleration at short period, g) = 1.36

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: [signature] Date: 11/28/2016

Print Name: M. R. Karim Title: SHFR

Special Seismic Certification Valid Up to : S_{DS} (g) = 1.36 z/h = 1.0

Condition of Approval (if applicable):

Schneider Electric IT Business - MGE Galaxy 4000/5000
I. Certified Product Table

Unit	Width	Depth	Height	Max. Weight	Part No.	Construction Material[1,2]	Notes	Test Status
Galaxy Uninterruptable Power Supply (UPS)								
Galaxy 4000								
40 KVA 208V UNITARY	33.5 in	35.6 in	72.1 in	1004 lbs	0M-G4TU40F	0.108" CFS	3	Extrapolated
50 KVA 208V UNITARY	33.5 in	35.6 in	72.1 in	1004 lbs	0M-G4TU50F	0.108" CFS	3	58696R11-UUT2C
65 KVA 208V UNITARY	33.5 in	35.6 in	72.1 in	1210 lbs	0M-G4TU65F	0.108" CFS	3	Interpolated
75 KVA 208V UNITARY	33.5 in	35.6 in	72.1 in	1210 lbs	0M-G4TU75F	0.108" CFS	3	58696R11-UUT2A
Galaxy 5000								
40 KVA 480V UNITARY	28 in	33.5 in	75 in	850 lbs	0M-G5TU40G	0.06" CFS	3	Extrapolated
40 KVA 480V PARALLEL	28 in	33.5 in	75 in	850 lbs	0M-G5TP40G	0.06" CFS	3	Extrapolated
50 KVA 480V UNITARY	28 in	33.5 in	75 in	850 lbs	0M-G5TU50G	0.06" CFS	3	58696R11-UUT3A
50 KVA 480V PARALLEL	28 in	33.5 in	75 in	850 lbs	0M-G5TP50G	0.06" CFS	3	Interpolated
60 KVA 480V UNITARY	28 in	33.5 in	75 in	850 lbs	0M-G5TU60G	0.06" CFS	3	Interpolated
60KVA 480V PARALLEL	28 in	33.5 in	75 in	850 lbs	0M-G5TP60G	0.06" CFS	3	Interpolated
80KVA 480V UNITARY	28 in	33.5 in	75 in	850 lbs	0M-G5TU80G	0.06" CFS	3	Interpolated
80KVA 480V PARALLEL	28 in	33.5 in	75 in	850 lbs	0M-G5TP80G	0.06" CFS	3	Interpolated
100 480V UNITARY	28 in	33.5 in	75 in	1146 lbs	0M-G5TU100G	0.06" CFS	3	Interpolated
100 480V PARALLEL	28 in	33.5 in	75 in	1146 lbs	0M-G5TP100G	0.06" CFS	3	Interpolated
130KVA 480V UNITARY	28 in	33.5 in	75 in	1146 lbs	0M-G5TU130G	0.06" CFS	3	58923R11-UUT1A
130KVA 480V PARALLEL	28 in	33.5 in	75 in	1146 lbs	0M-G5TP130G	0.06" CFS	3	Extrapolated
Galaxy Distribution Cabinets								
Galaxy 4000								
42P DISTRIBUTION CABINET, 40-75 KVA	19 in	33.5 in	72 in	290 lbs	0M-G4TA75F	0.108" CFS	3	58696R11-UUT2B
Galaxy 5000								
ADJACENT DISTRIBUTION CABINET 208V	42.5 in	32.5 in	75 in	670 Lbs	0M-G5TPDUF42	0.108" CFS	3	Interpolated
ADJACENT DISTRIBUTION CABINET 480V	42.5 in	32.5 in	75 in	670 Lbs	0M-G5TPDUG8	0.108" CFS	3	58923R11-UUT2A

Notes

1. All enclosures are NEMA 1 rated.
2. CFS= cold-formed carbon steel
3. Floor mounted with seismic kits.
4. Wall mounted.
5. ADJ Mainentance By-Pass and System By-Pass Cabinets are intended to be installed side-by-side with other Galaxy units. REMOTE Maintenance By-Pass and System By-Pass Cabinets are stand-alone units.

Schneider Electric IT Business - MGE Galaxy 4000/5000
I. Certified Product Table

Unit	Width	Depth	Height	Max. Weight	Part No.	Construction Material[1,2]	Notes	Test Status
Galaxy Maintenance By-Pass Boxes (MBC-Wall mounted)								
Galaxy 4000								
MBC 2CB 40-50KVA 480V 80A	24.5 in	9.25 in	43 in	104 lbs	0M-G4TH50G2	0.079" CFS	4	Extrapolated
MBC 2CB 40-50KVA 208V 175A	24.5 in	9.25 in	43 in	104 lbs	0M-G4TH50F2	0.079" CFS	4	Extrapolated
MBC 3CB 40-50KVA 480V 80A	24.5 in	9.25 in	43 in	104 lbs	0M-G4TH50G3	0.079" CFS	4	58696R11-UUT3C
MBC 3CB 40-50KVA 208V 175A	24.5 in	9.25 in	43 in	135 lbs	0M-G4TH50F3	0.079" CFS	4	Interpolated
MBC 2CB 65-80KVA 480V 125A	24.5 in	9.25 in	43 in	125 lbs	0M-G4TH75G2	0.079" CFS	4	Interpolated
MBC 2CB 65-75KVA 208V 300A	24.5 in	9.25 in	43 in	146 lbs	0M-G4TH75F2	0.079" CFS	4	Interpolated
MBC 3CB 65-80KVA 480V 125A	24.5 in	9.25 in	43 in	135 lbs	0M-G4TH75G3	0.079" CFS	4	Interpolated
MBC 3CB 65-75KVA 208V 300A	24.5 in	9.25 in	43 in	146 lbs	0M-G4TH75F3	0.079" CFS	4	58696R11-UUT3B
Galaxy 5000								
MBC 2CB 40-50KVA 480V 100A WM	24.5 in	9.25 in	43 in	125 lbs	0M-G5THOPTEXT007	0.079" CFS	4	Extrapolated
MBC 2CB 60-80KVA 480V 150A WM	24.5 in	9.25 in	43 in	125 lbs	0M-G5THOPTEXT008	0.079" CFS	4	Extrapolated
MBC 2CB 100-130KVA 480V 250A WM	24.5 in	9.25 in	43 in	125 lbs	0M-G5THOPTEXT009	0.079" CFS	4	Extrapolated
MBC 3CB 40-50KVA 480V 100A WM	24.5 in	9.25 in	43 in	135 lbs	0M-G5THOPTEXT010	0.079" CFS	4	Extrapolated
MBC 3CB 60-80KVA 480V 150A WM	24.5 in	9.25 in	43 in	135 lbs	0M-G5THOPTEXT011	0.079" CFS	4	Extrapolated
MBC 3CB 100-130KVA 480V 250A WM	24.5 in	9.25 in	43 in	135 lbs	0M-G5THOPTEXT012	0.079" CFS	4	Extrapolated

Notes

1. All enclosures are NEMA 1 rated.
2. CFS= cold-formed carbon steel
3. Floor mounted with seismic kits.
4. Wall mounted.
5. ADJ Mainentance By-Pass and System By-Pass Cabinets are intended to be installed side-by-side with other Galaxy units. REMOTE Maintenance By-Pass and System By-Pass Cabinets are stand-alone units.

Schneider Electric IT Business - MGE Galaxy 4000/5000

I. Certified Product Table

Unit	Width	Depth	Height	Max. Weight	Part No.	Construction Material[1,2]	Notes	Test Status
Galaxy Maintenance By-Pass Cabinet (MBC) and System By-Pass Cabinet (SBC)[5]								
Galaxy 5000								
AUX MBC STD 600A ADJ 208-220V 100-130KVA	28 in	32.5 in	75 in	614 Lbs	0M-G5TH100K130FADJ	0.108" CFS	3	Extrapolated
AUX MBC KAIC 600A ADJ	28 in	32.5 in	75 in	614 Lbs	0M-G5TH100K130FADJ65	0.108" CFS	3	Extrapolated
AUX MBC STD 600A REMOTE	28 in	32.5 in	75 in	614 Lbs	0M-G5TH100K130FSA	0.108" CFS	3	70284R12-UUT2
AUX MBC KAIC 600A REMOTE	28 in	32.5 in	75 in	614 Lbs	0M-G5TH100K130FSA65	0.108" CFS	3	Interpolated
AUX MBC STD 350A 208-220V ADJ 60-80KVA	28 in	32.5 in	75 in	510 Lbs	0M-G5TH60K80FADJ	0.108" CFS	3	Interpolated
AUX MBC KAIC 350A ADJ	28 in	32.5 in	75 in	510 Lbs	0M-G5TH60K80FADJ65	0.108" CFS	3	Interpolated
AUX MBC STD 250A 480-600V ADJ 100-130KVA	28 in	32.5 in	75 in	510 Lbs	0M-G5TH100K130GADJ	0.108" CFS	3	Interpolated
AUX MBC STD 250A 480-600V REM 100-130KVA	28 in	32.5 in	75 in	510 Lbs	0M-G5TH100K130GSA	0.108" CFS	3	59040R11-UUT1C
AUX MBC KAIC 250A 480-600V ADJ 100-130K	28 in	32.5 in	75 in	510 Lbs	0M-G5TH100K130GADJ65	0.108" CFS	3	Extrapolated
AUX MBC KAIC 250A 480-600V REMOTE	28 in	32.5 in	75 in	510 Lbs	0M-G5TH100K130GSA65	0.108" CFS	3	Extrapolated
AUX MBC STD 250A 208-220V ADJ 40-50KVA	28 in	32.5 in	75 in	510 Lbs	0M-G5TH40K50FADJ	0.108" CFS	3	Extrapolated
AUX MBC KAIC 250A 208-220V ADJ	28 in	32.5 in	75 in	510 Lbs	0M-G5TH40K50FADJ65	0.108" CFS	3	Extrapolated
AUX MBC STD 150A ADJ 60-80KVA	28 in	32.5 in	75 in	510 Lbs	0M-G5TH60K80GADJ	0.108" CFS	3	Extrapolated
AUX MBC STD 150A REMOTE 60-80KVA	28 in	32.5 in	75 in	510 Lbs	0M-G5TH60K80GSA	0.108" CFS	3	Extrapolated
AUX MBC KAIC 150A ADJ 60-80KVA	28 in	32.5 in	75 in	510 Lbs	0M-G5TH60K80GADJ65	0.108" CFS	3	Extrapolated
AUX MBC KAIC 150A REMOTE	28 in	32.5 in	75 in	510 Lbs	0M-G5TH60K80GSA65	0.108" CFS	3	Extrapolated
AUX MBC STD 100A ADJ 40-50KVA	28 in	32.5 in	75 in	510 Lbs	0M-G5TH40K50GADJ	0.108" CFS	3	Extrapolated
AUX MBC STD 100A REMOTE 40-50KVA	28 in	32.5 in	75 in	510 Lbs	0M-G5TH40K50GSA	0.108" CFS	3	Extrapolated
AUX MBC KAIC 100A ADJ 40-50KVA	28 in	32.5 in	75 in	510 Lbs	0M-G5TH40K50GADJ65	0.108" CFS	3	Extrapolated
AUX MBC KAIC 100A REMOTE	28 in	32.5 in	75 in	510 Lbs	0M-G5TH40K50GSA65	0.108" CFS	3	Extrapolated
4 MODULE SBC, 480V, 2CB, 1200A, MONITOR	32.5 in	39 in	82 in	960 Lbs	0M-GWTA675G	0.108" CFS	3	58696R11-UUT5

Notes

1. All enclosures are NEMA 1 rated.
2. CFS= cold-formed carbon steel
3. Floor mounted with seismic kits.
4. Wall mounted.
5. ADJ Mainentance By-Pass and System By-Pass Cabinets are intended to be installed side-by-side with other Galaxy units. REMOTE Maintenance By-Pass and System By-Pass Cabinets are stand-alone units.

Schneider Electric IT Business - MGE Galaxy 4000/5000
I. Certified Product Table

Unit	Width	Depth	Height	Max. Weight	Part No.	Construction Material[1,2]	Notes	Test Status
Galaxy Top/Bottom entry Cabinet								
Galaxy 5000								
BOTTOM ENTRY CAB KAIC 16W	16.3 in	32.5 in	75 in	200 Lbs	0M-G5TAB	0.108" CFS	3	58923R11 -UUT1B
Galaxy Transformer Cabinet								
Galaxy 5000								
XFMR CAB 28W 40-50 KVA	28 in	32.5 in	75 in	470 Lbs	0M-G5TT40K50G	0.108" CFS	3	Extrapolated
INP/BYP XFMR CAB 28W 40-50KVA	28 in	32.5 in	75 in	740 Lbs	0M-G5TT40K50F	0.108" CFS	3	59040R11-UUT1B
INP/OUT XFMR CAB 28W 40-50KVA	28 in	32.5 in	75 in	740 Lbs	0M-G5TT40K50G2	0.108" CFS	3	Interpolated
XFMR CAB 28W 60-80 KVA	28 in	32.5 in	75 in	960 Lbs	0M-G5TT60K80G	0.108" CFS	3	Interpolated
INP/BYP XFMR CAB 28W 60-80KVA	28 in	32.5 in	75 in	1720 Lbs	0M-G5TT60K80F	0.108" CFS	3	Interpolated
INP/OUT XFMR CAB 28W 60-80 KVA	28 in	32.5 in	75 in	1720 Lbs	0M-G5TT60K80G2	0.108" CFS	3	Interpolated
AUX CAB XFMR SINGLE 28W 130KVA	28 in	32.5 in	75 in	1465 Lbs	0M-G5TT100K130G	0.108" CFS	3	Interpolated
AUX CAB XFMR IN/OUT 28W 130KVA	28 in	32.5 in	75 in	2700 Lbs	0M-G5TT100K130G2	0.108" CFS	3	Interpolated
AUX CAB XFMR IN/BYP 28W 130KVA	28 in	32.5 in	75 in	2700 Lbs	0M-G5TT100K130F	0.108" CFS	3	70284R12-UUT3
Galaxy Critical Bus Synchronization Boxes (Wall mounted)								
Galaxy 5000								
CRITICAL BUS SYNCHRONIZATION MODULE	16 in	8.5 in	20 in	37 Lbs	0M-GWTACBSUPS	0.06" CFS	4	58040R10-UUT2A

Notes

1. All enclosures are NEMA 1 rated.
2. CFS= cold-formed carbon steel
3. Floor mounted with seismic kits.
4. Wall mounted.
5. ADJ Mainentance By-Pass and System By-Pass Cabinets are intended to be installed side-by-side with other Galaxy units. REMOTE Maintenance By-Pass and System By-Pass Cabinets are stand-alone units.

Schneider Electric IT Business - MGE Galaxy 4000/5000
II. Certified Subcomponents Table

Internal Components	Manufacturer	Component No.	Testing Status
80A 3P Circuit Breaker	Square D	039-000039-0000	58696R11-UUT3C
175A 3P Circuit Breaker	Square D	530-1488	58696R11-UUT2C
225A 3P Circuit Breaker	Square D	039-000049-0003	58923R11-UUT2A
	Square D	04-15300-407	58696R11-UUT2B
250A 3P Circuit Breaker	Square D	039-000049-0001	59040R11-UUT1C
300A 3P Circuit Breaker	Square D	530-1482	58696R11-UUT2A
	Square D	04-15300-121	58696R11-UUT3B
600A 3P Circuit Breaker	Square D	039-000052-0001	70284R12-UUT2
1200A 3P Circuit Breaker	Square D	530-2208	58696R11-UUT5
125A 3P Service switch	Schneider Electric	530-1426	58696R11-UUT3A
150A 3P Service switch	Square D	530-1483	58696R11-UUT2C
150A 3P Service switch	Square D	530-1491	Interpolated
250A 3P Service Switch	Square D	530-1487	58696R11-UUT2A
	Schneider Electric	530-1428	58923R11-UUT1A
SCR	Semikron	320-0065	58696R11-UUT2A
		320-0066	58696R11-UUT2A, UUT2C
		320-0069-Z	58923R11-UUT1A
	Powerex	325-0218	58696R11-UUT2A
		325-9978A-001	58696R11-UUT2C
	Ixis	320-0068-Z	58696R11-UUT3A
DC Converter Power Filter	Schneider IT	0N-1135, 0N-1139, 0M-3400109800AA, 0M-3400110400AA	58696R11-UUT2A, UUT2C, UUT3A 58923R11-UUT1A
AC Converter Power Filter	Schneider IT	0N-1125, 0N-1132, 0N-1133, 0N-1136, 0M-3400251400AB, 0M-3400251600AB, 0M-3400251800AB, 0M-3400252000AB	58696R11-UUT2A, UUT2C, UUT3A 58923R11-UUT1A
Driver PCB	Schneider IT	72-171001-00, 72-171000-02, 0P3830, 0P3836, 0P3842, 0P3847	58696R11-UUT2A, UUT2C, UUT3A 58923R11-UUT1A
Acquisition PCB	Schneider IT	0P3320, 0P3327, 0P3823, 0P3829, 0P3833, 0P3834	58696R11-UUT2A, UUT2C, UUT3A 58923R11-UUT1A
Control PCB	Schneider IT	0P2611, 0P2612, 0P3341, 0P3342, 0P3343	58696R11-UUT2A, UUT2C, UUT3A 58923R11-UUT1A
Input Line Filter 200µH 170A	Onyx Power Inc.	422-0042	58696R11-UUT2C
Input Line Filter 125µH 273A	Pacific Transfomer	422-0041	58696R11-UUT2A
Input Line Filter 385µH 180A	Tamura	420-3400123300AH	58923R11-UUT1A
Input Line Filter 410µH 180A	Eurotrafo	420-3400226700AL	58696R11-UUT3A
Output Line Filter 53µH 283A	Pacific Transfomer	420-0505	58696R11-UUT2A
Output Line Filter 84µH 177A	Onyx Power Inc.	420-0506	58696R11-UUT2C
XMFR 50 kVA 600/480 V	Onyx power Inc.	8-97050-12	59040R11-UUT1B
XMFR 160 kVA 480/480 V	Onyx power Inc.	8-220-016044-00	70284R12-UUT3
Fuse 450A 700V	Bussmann	038-000007-0001	58923R11-UUT1B
Critical Bus Synchro module	Schneider IT	72-133156-00	58040R10-UUT2A

Test Report Test Report 58696R11 – UUT 2C
Galaxy 4000 Single Module UPS 50kVA
Part No.: 0M-G4TU50F
0.108" Cold Formed Carbon Steel
33.50"W x 35.50"D x 72"H, 1004 lbs
Floor mounted using: (8) ½"-13 Grade 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	1.36	1.0	1.5	2.18	1.63	0.91	0.37

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.
6.2	4.5	23.5	

58696R11 – UUT 2C – Internal Components		
Description	**Manufacturer**	**Part Number**
175A 3P Circuit Breaker (Q5N)	Square D	530-1488
150A 3P Service switch (Q1, Q4S)	Square D	530-1483
DC Converter Power Filter	Schneider IT	0N-1139
AC Converter Power Filter	Schneider IT	0N-1136, 0N-1133
SCR	Semikron	320-0066
	Powerex	325-9978A-001
Driver PCB	Schneider IT	72-171001-00, 72-171000-02
Acquisition PCB	Schneider IT	0P3327
Control PCB	Schneider IT	0P3341, 0P3342, 0P3343
Input Line Filter 200µH 170A	Onyx Power Inc.	422-0042
Output Line Filter 84µH 177A	Onyx Power Inc.	420-0506

Test Report 58696R11 – UUT 2A
Galaxy 4000 Single Module UPS 75kVA
Part No.: 0M-G4TU75F
0.108" Cold Formed Carbon Steel
33.50"W x 33.50"D x 72"H, 1210 lbs
Floor mounted using: (8) ½"-13 Grade 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	1.36	1.0	1.5	2.18	1.63	0.91	0.37

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.
5.3	4.2	20.5	

58696R11 – UUT 2A – Internal Components		
Description	**Manufacturer**	**Part Number**
300A 3P Circuit Breaker (Q5N)	Square D	530-1482
250A 3P Service switch (Q1, Q4S)	Square D	530-1487
DC Converter Power Filter	Schneider IT	0N-1135
AC Converter Power Filter	Schneider IT	0N-1132, 0N-1125
SCR	Semikron	320-0065
		320-0066
	Powerex	325-0218
Driver PCB	Schneider IT	72-171001-00, 72-171000-02
Acquisition PCB	Schneider IT	0P3320
Control PCB	Schneider IT	0P3341, 0P3342, 0P3343
Input Line Filter 125µH 273A	Pacific transformer	422-0041
Output Line Filter 53µH 283A	Pacific transformer	420-0505

Test Report 58696R11 – UUT 3A
Galaxy 5000 Single Module UPS 50kVA
Part No.: 0M-G5TU50G
0.06" Cold Formed Carbon Steel
28"W x 33.50"D x 75"H, 850 lbs
Floor mounted using: (12) 3/8"-16 Grade 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	1.38	1.0	1.5	2.21	1.66	0.92	0.37

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.
16.5	8.5	>33.3	

58696R11 – UUT 3A – Internal Components		
Description	**Manufacturer**	**Part Number**
125A 3P Service switch (Q1, Q4S, Q3BP,Q5N)	Schneider Electric	530-1426
DC Converter Power Filter	Schneider IT	0M-3400109800AA
AC Converter Power Filter	Schneider IT	0M-3400251400AB, 0M-3400251600AB
SCR	Ixis	320-0068-Z
Driver PCB	Schneider IT	0P3842, 0P3847
Acquisition PCB	Schneider IT	0P3823, 0P3834
Control PCB	Schneider IT	0P2611, 0P2612
Input Line Filter 410µH 180A	Eurotrafo	420-3400226700AL

Test Report 58923R11 – UUT 1A
Galaxy 5000 130kVA UPS
Part No.: 0M-G5TU130G
0.06" Cold Formed Carbon Steel
28"W x 33.50"D x 75"H, 1146 lbs

Floor mounted using: (12) 5/16"-18 Grade 5 bolts

Unit on Left

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	1.48	1.0	1.5	2.37	1.78	0.99	0.40

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.
15	10	>33.3	

58923R11 – UUT 1A – Internal Components		
Description	**Manufacturer**	**Part Number**
250A 3P Service switch (Q1, Q4S, Q3BP,Q5N)	Schneider Electric	530-1428
DC Converter Power Filter	Schneider IT	0M-3400110400AA
AC Converter Power Filter	Schneider IT	0M-3400251800AB, 0M-3400252000AB
SCR	Semikron	320-0069-Z
Driver PCB	Schneider IT	0P3830, 0P3836
Acquisition PCB	Schneider IT	0P3833, 0P3829
Control PCB	Schneider IT	0P2611, 0P2612
Input Line Filter 385µH 180A	Tamura	420-3400123300AH

Test Report 58696R11 – UUT 2B
Galaxy 4000 Distribution Cabinet
Part No.: 0M-G4TA75F
0.108" Cold Formed Carbon Steel
19"W x 33.50"D x 72"H, 286 lbs
Floor mounted using: (8) ½"-13 Grade 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	1.36	1.0	1.5	2.18	1.63	0.91	0.37

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.
9.2	4.5	>33.3	

58696R11 – UUT 2B – Internal Components		
Description	**Manufacturer**	**Part Number**
225A 3P Circuit Breaker	Square D	04-15300-407

Test Report 58923R11 – UUT 2A
Galaxy 5000 Distribution Cabinet 480V
Part No.: 0M-G5TPDUG8
0.108" Cold Formed Carbon Steel
42.50"W x 32.50"D x 75"H, 670 lbs

Floor mounted using: (6) ½"-13 Grade 5 bolts

Unit on Left

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	1.51	1.0	1.5	2.42	1.81	1.01	0.41

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.
6.7	7.3	>33.3	

58923R11 – UUT 2A– Internal Components		
Description	**Manufacturer**	**Part Number**
225A 3P Circuit Breaker	Square D	039-000049-0003

Test Report 58696R11 – UUT 3C
Galaxy 4000 80A Maintenance By-Pass Cabinet
Part No. : 0M-G4TH50G3
0.079" Cold Formed Carbon Steel
24.5"W x 9.25"D x 43"H, 104 lbs
Wall mounted using: (6) 3/8"-16 Grade 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	1.36	1.0	1.5	2.18	1.63	0.91	0.37

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.
N/A	N/A	N/A	

58696R11 – UUT 3C – Internal Components		
Description	**Manufacturer**	**Part Number**
80A 3P Circuit Breaker	Square D	039-000039-0000

Test Report 58696R11 – UUT 3B
Galaxy 4000 300A Maintenance By-Pass Cabinet
Model No.: 0M-G4TH75F3
0.079" Cold Formed Carbon Steel
24.5"W x 9.25"D x 43"H, 146 lbs
Wall mounted using: (6) 3/8"- 16 Grade 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	1.36	1.0	1.5	2.18	1.63	0.91	0.37

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.
N/A	N/A	N/A	

58696R11 – UUT 3B – Internal Components		
Description	**Manufacturer**	**Part Number**
300A 3P Circuit Breaker	Square D	04-15300-121

Test Report 70284R12 – UUT 2

Galaxy 5000 600A Maintenance By-Pass Cabinet
Model No.: 0M-G5TH100K130FSA
0.108" Cold Formed Carbon Steel
28"W x 32.5"D x 75"H, 614 lbs
Floor mounted using: (7) 1/2"- 13 Grade 5 bolts

UUT 2 on the right

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	1.42	1.0	1.5	2.27	1.70	0.95	0.38

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	7.1	12.0	

70284R12-UUT2– Internal Components		
Description	**Manufacturer**	**Part Number**
600A 3P Circuit Breaker	Square D	039-000052-0001

Test Report 59040R11 – UUT 1C

Galaxy 5000 100-130kVA 250A Maintenance By-Pass Cabinet
Model No.: 0M-G5TH100K130GSA
0.108” Cold Formed Carbon Steel
28”W x 32.5”D x 75”H, 300 lbs
Floor mounted using: (6) 1/2”- 13 Grade 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	1.39	1.0	1.5	2.22	1.67	0.93	0.38

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	8.5	>33.3	

59040R11-UUT1C– Internal Components		
Description	**Manufacturer**	**Part Number**
250A 3P Circuit Breaker	Square D	039-000049-0001

Test Report 58696R11 – UUT 5
Galaxy PW 1200A System By-Pass Cabinet
Model No.: 0M-GWTA675G
0.108” Cold Formed Carbon Steel
32.5”W x 39”D x 82”H, 960 lbs
Floor mounted using: (8) 1/2”- 13 Grade 5 bolts

UUT 5 at the right rear

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	1.36	1.0	1.5	2.18	1.63	0.91	0.37

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	5.2	31.5	

58696R11-UUT5– Internal Components		
Description	**Manufacturer**	**Part Number**
1200A 3P Circuit Breaker	Square D	530-2208

Test Report 58923R11 – UUT 1B
Galaxy 5000 KAIC 16W Top/Bottom Entry Cabinet
Model No.: 0M-G5TAB
0.108” Cold Formed Carbon Steel
16.3”W x 32.5”D x 75”H, 198 lbs
Floor mounted using: (6) 1/2”- 13 Grade 5 bolts

UUT 1B in the center

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	1.48	1.0	1.5	2.37	1.78	0.99	0.40

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.
10.0	11.5	>33.3	

58923R11-UUT1B– Internal Components		
Description	**Manufacturer**	**Part Number**
Fuse 450A 700V	Bussmann	038-000007-0001

Test Report 59040R11 – UUT 1B
Galaxy 5000 40-50kVA Transformer Cabinet
Model No.: 0M-G5TT40K50F
0.108" Cold Formed Carbon Steel
28"W x 32.5"D x 75"H, 740 lbs
Floor mounted using: (6) 1/2"- 13 Grade 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	1.39	1.0	1.5	2.22	1.67	0.93	0.38

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.
12.0	12.0	>33.3	

59040R11-UUT1B– Internal Components		
Description	**Manufacturer**	**Part Number**
XMFR 50 kVA 600/480 V	Onyx power Inc.	8-97050-12

Test Report 70284R12 – UUT 3

Galaxy 5000 130-160kVA Transformer Cabinet
Model No.: 0M-G5TT100K130F
0.108” Cold Formed Carbon Steel
28”W x 32.5”D x 75”H, 2632 lbs
Floor mounted using: (7) 1/2”- 13 Grade 5 bolts

UUT 3 on the left

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	1.42	1.0	1.5	2.27	1.70	0.95	0.38

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.
4.0	4.8	17.0	

70284R12-UUT3– Internal Components		
Description	**Manufacturer**	**Part Number**
XMFR 160 kVA 480/480 V	Onyx power Inc.	8-220-016044-00

Test Report 58040R10 – UUT 2A
Galaxy 5000 Critical Bus Synchro
Model No.: 0M-GWTACBSUPS
0.06" Cold Formed Carbon Steel
16"W x 8.5"D x 20"H, 37 lbs
Wall mounted using: (4) 1/4"- 20 Grade 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	1.41	1.0	1.5	2.26	1.69	0.94	0.38

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.
N/A	N/A	N/A	

58040R10-UUT2A– Internal Components		
Description	**Manufacturer**	**Part Number**
Critical Bus Synchro module	Schneider IT	72-133156-00