APPLICATION FOR HCAI SPECIAL SEISMIC CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY

APPLICATION #: OSP-0053

HCAI Special Seismic Certification Preapproval (OSP)

Type: ☐ New ☒ Renewal

Manufacturer Information

Manufacturer: Square D by Schneider Electric

Manufacturer's Technical Representative: Scott Littler

Mailing Address: 6700 Tower Circle, Suite 700, Franklin, TN 37067

Telephone: (615) 267-9407 Email: Scott.Littler@se.com

Product Information

Product Name: HVL/cc (2.4V to 38kV) Metal-Enclosed Load Interrupting Switchgear systems with bus Ampacity ratings from 600A to 1200A (see Certified Product Listing tables).

Product Model Number(s): Varies. See Attachment

Product Category: Switchgear/Switchboards

Product Sub-Category: Switchgear - Medium Voltage

General Description: Distribution and Auxiliary/Meter bay Metal-Enclosed Load Interrupting Switchgear sections.

Mounting Description: Base Mounted Rigid -

Tested Seismic Enhancements: None

Applicant Information

Applicant Company Name: Pre Compliance

Contact Person: Galen Reid

Mailing Address: 36 Southwest Wall Street, Bend, OR 977023425

Telephone: (541) 241-2310 Email: galen@go-pre.com

Title: Principal and Program Manager

HCAi
OSP-0053
BY: Mohammad Karim
DATE: 10/02/2024

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

Company Name: PRE COMPLIANCE

Name: Andrew Coughlin California License Number: S6082

Mailing Address: 36 SW Wall Street, Bend, OR 97702

Telephone: (415) 635-8461 Email: Andy@go-pre.com

Certification Method

- [ ] GR-63-Core
- [x] ICC-ES AC156
- [ ] IEEE 344
- [ ] IEEE 693
- [ ] NEBS 3
- [ ] Other (Please Specify):

Testing Laboratory

Company Name: ENVIRONMENTAL TESTING LABORATORIES, INC. (ETL)

Contact Person: Jeremy Lange

Mailing Address: 11034 Indian Trail, Dallas TX 75229-3513

Telephone: (972) 247-9657 Email: Jeremy@etldallas.com

Company Name: UNIVERSITY OF CALIFORNIA, BERKELEY (PEER)

Contact Person: Amarnath Kasalanati

Mailing Address: 325 Davis Hall, Berkeley CA 94720-1729

Telephone: (510) 642-3437 Email: peer_center@berkeley.edu

Company Name: UNIVERSITY OF BUFFALO (SEESL)

Contact Person: Mark Pitman

Mailing Address: 212 Ketter Hall, Buffalo NY 14260

Telephone: (716) 645-4377 Email: mpitman@buffalo.edu

Company Name: WYLE LABORATIORIES

Contact Person: Greg Mason

Mailing Address: 7800 Highway 20 West, Huntsville AL 35806

Telephone: (256) 837-4411 Email: greg.mason@nts.com

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BY: Mohammad Karim
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Seismic Parameters

Design Basis of Equipment or Components (F_p/W_p) = 1.34(SDS = 1.78); 0.90(SDS = 2.00)

S_{DS} (Design spectral response acceleration at short period, g) = 1.78(z/h = 1); 2.00(z/h = 0)

a_p (Amplification factor) = 2.5

R_p (Response modification factor) = 6.0

Ω_0 (System overstrength factor) = 2.5

I_p (Importance factor) = 1.5

z/h (Height ratio factor) = 1 and 0

Natural frequencies (Hz) = See Attachment

Overall dimensions and weight = See Attachment

REVIEWED FOR CODE COMPLIANCE
HCAi
OSP-0053
BY: Mohammad Karim
DATE: 10/02/2024
CALIFORNIA BUILDING CODE, 2022

HCAI Approval (For Office Use Only) - Approval Expires on 10/02/2030

Date: 10/2/2024

Name: Mohammad Karim Title: Supervisor, Health Facilities

Special Seismic Certification Valid Up to: S_{DS} (g) = 1.78 z/h = 1

Condition of Approval (if applicable):

SPECIAL SEISMIC CERTIFICATION CERTIFIED COMPONENTS

Manufacturer: Square D by Schneider Electric
Product Type: Switchgear – Medium Voltage
Model Line: HVL/cc

Seismic Parameters
S_{DS} = 1.78g for z/h=1
S_{DS} = 2.00g for z/h=0
I_p = 1.5

Building Codes
CBC 2022

TABLE 1a

Mounting Configuration: Base Mounted - Rigid

Construction Summary

NEMA Type 1 and 3R enclosures constructed of carbon steel. Copper bus.

Options Summary

Voltage ratings from 2.4 kV to 38 kV. Bus ampacity ratings from 600A to 1200A. See tables 2-5 for a complete listing of optional components.

Model Line	Model	Max. Dimensions (in)			Wt. (lb)	Notes	UUT
		D	W	H			
Load Interrupting MV Switchgear - Distribution and Auxiliary/Meter Bay	14.75W	37.25	14.75	90	609		Extrap.
		47.25	14.75	90	609		9
	20W	37.25	20	90	750		Interp.
		47.25	20	99.75	900		Interp.
	29.5W	37.25	29.5	90	1100		Interp.
		47.25	29.5	99.75	1389		10
		59.12	29.5	108	1150		Interp.
		69.25	29.5	118.45	1200		Interp.
	39.37W	59.12	39.37	108	1685		8

Note: External mounting clips limited to section weight of 1388 lbs. of less

REVIEW FOR CODE COMPLIANCE
FINAL
OSP-0053
BY: Mohammad Karim
DATE: 10/02/2024
CALIFORNIA BUILDING CODE, 2022

SPECIAL SEISMIC CERTIFICATION CERTIFIED COMPONENTS

Manufacturer: Square D by Schneider Electric
Product Type: Switchgear – Medium Voltage
Model Line: HVL/cc

Seismic Parameters
S_{DS} = 1.78g for z/h=1
S_{DS} = 2.00g for z/h=0
I_p = 1.5

Building Codes
CBC 2022

TABLE 1b

Mounting Configuration: Base Mounted - Rigid

Construction Summary

NEMA Type 1 and 3R enclosures constructed of carbon steel. Copper bus.

Options Summary

Voltage ratings from 2.4 kV to 38 kV. Bus ampacity ratings from 600A to 1200A. See tables 2-5 for a complete listing of optional components.

Model Line	Model	Max. Dimensions (in)			Wt. (lb)	Notes	UUT
		D	W	H			
Load Interrupting MV Switchgear - Distribution and Auxiliary/Meter Bay	11W	37.25	11	90	210		Extrap.
		47.25	11	99.75	440		Extrap.
	14W	60	14	90	310		Extrap.
	14.75W	37.25	14.75	90	609		6a,6b[1]
		47.25	14.75	99.75	545		3a[1]
		47.25	14.75	99.75	700		Interp.
	17.75W	37.25	17.75	90	210		Interp.
	20W	37.25	20	90	750		Interp.
		47.25	20	99.75	900		Interp.
	24W	56.12	24	108	510		Interp.
		56.12	24	118.45	710		Interp.
	29.5W	37.25	29.5	90	1100		Interp.
		47.25	29.5	99.75	1325		3b[1]
		59.12	29.5	108	1150		Interp.
		69.25	29.5	118.45	1200		Interp.
	39.37W	59.12	39.37	108	1685		Interp.

Note:
[1] The total weight of the ganged units is on the UUT summary

HCAI OSP-0053 BY: Mohammad Karim DATE: 10/02/2024 REVIEW FOR CODE COMPLIANCE CALIFORNIA BUILDING CODE, 2022

SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENTS

Manufacturer: Square D by Schneider Electric
Product Type: Switchgear – Medium Voltage
Model Line: HVL/cc

Seismic Parameters
S_{DS} = 1.78g for z/h=1
S_{DS} = 2.00g for z/h=0
I_p = 1.5

Building Codes
CBC 2022

TABLE 2

Table Description: Enclosure Extensions

Component (Manufacturer)	Model	Description	Notes	UUT
Rear Extension (Square D)	24"	24" Rear Depth Extension		Extrap.
	30"	30" Rear Depth Extension		7
Top Extension (Square D)	12"	12" Top Mounted Enclosure Extension		Interp.
	24"	24" Top Mounted Enclosure Extension		Interp.
	36"	36" Top Mounted Enclosure Extension		Interp.
	48"	48" Top Mounted Enclosure Extension		7

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OSP-0053
BY: Mohammad Karim
DATE: 10/02/2024
CALIFORNIA BUILDING CODE, 2022

Manufacturer: Square D by Schneider Electric
Product Type: Switchgear – Medium Voltage
Model Line: HVL/cc

Seismic Parameters
S_{DS} = 1.78g for z/h=1
S_{DS} = 2.00g for z/h=0
I_p = 1.5

Building Codes
CBC 2022

TABLE 3

Table Description: Voltage Transformers

Component (Manufacturer)	Model	Description	Notes	UUT
Voltage Transformer (ITI/GE)	PTG3160242FGC1	2400V/120V; Cu Windings; 34 lbs.		1
	PT*	3000V/120V; Cu Windings; 34 lbs.		Interp.
	PT*	4200V/120V; Cu Windings; 34 lbs.		Interp.
	PT*	7200V/120V; Cu Windings; 85 lbs.		Interp.
	PT*	8400V/120V; Cu Windings; 85 lbs.		Interp.
	PT*	12000V/120V; Cu Windings; 85 lbs.		Interp.
	PTG52SD02293FFG	12470V/120V; Cu Windings; 85 lbs.		5
	PT*	13200V/120V; Cu Windings; 125 lbs.		Interp.
	PT*	13800V/120V; Cu Windings; 125 lbs.		Interp.
	PT*	16500V/120V; Cu Windings; 125 lbs.		Interp.
	PT*	20780V/120V; Cu Windings; 125 lbs.		Interp.
	PT*	22860V/120V; Cu Windings; 125 lbs.		Interp.
	PT*	23000V/120V; Cu Windings; 125 lbs.		Interp.
	PT*	24940V/120V; Cu Windings; 125 lbs.		Interp.
	PT*	26400V/120V; Cu Windings; 125 lbs.		Interp.
	PTG61125SD03591	27000V/120V; Cu Windings; 125 lbs.		2
Voltage Transformers (Amran)	V9*	2400V/120V; Cu Windings; 35 lbs.		Interp.
	V9-422FFGC2-01	4200V/120V; Cu Windings; 35 lbs.		11
	V9*	4200V/120V; Cu Windings; 35 lbs.		Interp.
	V9*	4800V/120V; Cu Windings; 35 lbs.		Interp.
	V21*	4200V/120V; Cu Windings; 90 lbs.		Interp.
	V21*	4800V/120V; Cu Windings; 90 lbs.		Interp.
	V21*	6600V/110V; Cu Windings; 90 lbs.		Interp.
	V21*	7200V/120V; Cu Windings; 90 lbs.		Interp.
	V21*	8400V/120V; Cu Windings; 90 lbs.		Interp.
	V21.1-2-123FF	12000V/120V; Cu Windings; 90 lbs.		11
	V21*	12000V/120V; Cu Windings; 90 lbs.		Interp.
	V21*	12470V/120V; Cu Windings; 90 lbs.		Interp.
	V21*	13200V/120V; Cu Windings; 90 lbs.		Interp.
	V21*	13800V/120V; Cu Windings; 90 lbs.		Interp.
	V21*	14400V/120V; Cu Windings; 90 lbs.		Interp.
	V22*	10200V/120V; Cu Windings; 125 lbs.		Interp.
	V22*	12000V/120V; Cu Windings; 125 lbs.		Interp.
	V22*	13200V/120V; Cu Windings; 125 lbs.		Interp.

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OSP-0053
BY: Mohammad Sarah
DATE: 16/03/2024
CALIFORNIA BUILDING CODE 2022

SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENTS

Manufacturer: Square D by Schneider Electric
Product Type: Switchgear – Medium Voltage
Model Line: HVL/cc

Seismic Parameters
S_{DS} = 1.78g for z/h=1
S_{DS} = 2.00g for z/h=0
I_p = 1.5

Building Codes
CBC 2022

TABLE 3

Table Description: Voltage Transformers

Component (Manufacturer)	Model	Description	Notes	UUT
Voltage Transformers (Amran)	V22*	13800V/120V; Cu Windings; 125 lbs.		Interp.
	V22*	14400V/120V; Cu Windings; 125 lbs.		Interp.
	V22*	18000V/120V; Cu Windings; 125 lbs.		Interp.
	V22*	21000V/120V; Cu Windings; 125 lbs.		Interp.
	V22*	23000V/120V; Cu Windings; 125 lbs.		Interp.
	V22*	24000V/120V; Cu Windings; 125 lbs.		Interp.
	V22.6-2492	24900V/120V; Cu Windings; 125 lbs.		11
	V22*	24940V/120V; Cu Windings; 125 lbs.		Interp.
	V22*	25000V/120V; Cu Windings; 125 lbs.		Interp.

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BY: Mohammad Karim
DATE: 10/02/2024
CALIFORNIA BUILDING CODE, 2022

SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENTS

Manufacturer: Square D by Schneider Electric
Product Type: Switchgear – Medium Voltage
Model Line: HVL/cc

Seismic Parameters
S_{DS} = 1.78g for z/h=1
S_{DS} = 2.00g for z/h=0
I_p = 1.5

Building Codes
CBC 2022

TABLE 4

Table Description: Control Power Transformers

Component (Manufacturer)	Model	Description	Notes	UUT
Control Power Transformers (ITI/GE)	CPTS3605242A	5kVA, 2400V/120V; Cu Windings; 165 lbs.		2
	CPTS36054161A	5kVA, 4160V/120V; Cu Windings; 165 lbs.		Interp.
	CPTS3605482A	5kVA, 4800V/120V; Cu Windings; 165 lbs.		Interp.
	CPTS5955722A	5kVA, 7200V/120V; Cu Windings; 165 lbs.		Interp.
	CPTS5955123A	5kVA, 12000V/120V; Cu Windings; 165 lbs.		Interp.
	CPTS59551242A	5kVA, 12470V/120V; Cu Windings; 165 lbs.		Interp.
	CPTS59551322A	5kVA, 13200V/120V; Cu Windings; 165 lbs.		Interp.
	CPTS36010242A	10kVA, 2400V/120V; Cu Windings; 250 lbs.		Interp.
	CPTS360104161A	10kVA, 4160V/120V; Cu Windings; 250 lbs.		Interp.
	CPTS36010482A	10kVA, 4800V/120V; Cu Windings; 250 lbs.		Interp.
	CPTS59510722A	10kVA, 7200V/120V; Cu Windings; 250 lbs.		Interp.
	CPTS59510123A	10kVA, 12000V/120V; Cu Windings; 250 lbs.		Interp.
	CPTS595101242A	10kVA, 12470V/120V; Cu Windings; 250 lbs.		Interp.
	CPTS595101322A	10kVA, 13200V/120V; Cu Windings; 250 lbs.		Interp.
	CPTS36015242A	15kVA, 2400V/120V; Cu Windings; 290 lbs.		Interp.
	CPTS360154161A	15kVA, 4160V/120V; Cu Windings; 290 lbs.		Interp.
	CPTS36015482A	15kVA, 4800V/120V; Cu Windings; 290 lbs.		Interp.
	CPTS59515722A	15kVA, 7200V/120V; Cu Windings; 290 lbs.		Interp.
	CPTS59515123A	15kVA, 12000V/120V; Cu Windings; 290 lbs.		Interp.
	CPTS595151242A	15kVA, 12470V/120V; Cu Windings; 290 lbs.		5
	CPTS595151322A	15kVA, 13200V/120V; Cu Windings; 290 lbs.		Interp.
	CPTS36025242A	25kVA, 2400V/120V; Cu Windings; 411 lbs.		Interp.
	CPTS360254161A	25kVA, 4160V/120V; Cu Windings; 411 lbs.		2
	CPTS36025482A	25kVA, 4800V/120V; Cu Windings; 411 lbs.		Interp.

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ICC-ES
OSP-0053
B.C. Muhammad Kamal
DATE: 16/03/2024
CALIFORNIA BUILDING CODE

SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENTS

Manufacturer: Square D by Schneider Electric
Product Type: Switchgear – Medium Voltage
Model Line: HVL/cc

Seismic Parameters
S_{DS} = 1.78g for z/h=1
S_{DS} = 2.00g for z/h=0
I_p = 1.5

Building Codes
CBC 2022

TABLE 5

Table Description: Electrical Components

Component (Manufacturer)	Model	Description	Notes	UUT
Load Interrupter Switch - OTM or SEM (Schneider Electric)	44046-754-66 / 44046-753-66	5kV/600A; 35 lbs.	UUT: OTM and SEM	6
	44*	5 - 17.5kV/600 - 1200A; 35 lbs.		Interp.
	44044-241-51	17.5kV/1200A; 35 lbs.	UUT: OTM	3
	44*	25.8 - 38kV/600A; 35 lbs.		Interp.
	44044-123-51	27kV/600A; 35 lbs.	UUT: SEM	8
Motor Operator (Schneider Electric)	44046-123-54	Load interrupter switch motor operator		8
Surge Arresters - Distribution Intermediate or Station Class (GE)	9L20FX003XHS	3kV; 2.9 lbs.		1
	9L*	6-12kV; 3.3 - 4.3 lbs.		Interp.
	9L20FX015XHS	15kV; 5.6 lbs.		5
		18-21kV; 5.6 - 6.2 lbs.		Interp.
	9L20FX024XHS	24kV; 8.3 lbs.		2
	9L*	27kV; 8.7 lbs.		Interp.
High Frequency Transient Surge Suppressors (Simotech)	M*	3.3-7.2kV; 35.3 lbs.		Extrap.
	M3-4.16kV	4.16kV; 35.3 lbs.		4
	M*	11-13.8kV; 41.9 lbs.		Interp.
	M3-12.5kV	12.5kV; 41.9 lbs.		4

Notes:
1. Switch type is either OTM (over-throw mechanism) or SEM (stored energy mechanism). Both switch types can be manually or motor operated.

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BY: Mohammad Karim
DATE: 10/02/2024
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SPECIAL SEISMIC CERTIFICATION TESTING SUMMARY

UUT	Model	Test Report	Test Laboratory	S_{DS}	z/h	I_p
1	1-15 kV, NEMA 3R, Non Walk-in Masterclad Switchgear	SEESL-2014-11 Rev 4 (UUT1)	Structural and Earthquake Engineering and Simulation Laboratory (SEESL)	1.92 2.11	1 0	1.5
2	27-38 kV, NEMA 3R, Non Walk-in Masterclad Switchgear	SEESL-2014-11 Rev 4 (UUT2)	Structural and Earthquake Engineering and Simulation Laboratory (SEESL)	1.88 2.00	1 0	1.5
3	2.4-17.5 kV, NEMA 3R, HVL/cc Load Current Interrupter Switchgear	SEESL-2014-11 Rev 4 (UUT3)	Structural and Earthquake Engineering and Simulation Laboratory (SEESL)	1.86 2.10	1 0	1.5
4	1-15 kV, NEMA 1, HVL Load Interrupter Switchgear	SEESL-2014-11 Rev 4 (UUT4)	Structural and Earthquake Engineering and Simulation Laboratory (SEESL)	1.88 2.10	1 0	1.5
5	5-15 kV, NEMA 3R, Non Walk-in Masterclad / HVL Switchgear	PEER-STI/2014-04R Rev01 (UUT1)	Structural and Earthquake Engineering and Simulation Laboratory (SEESL)	1.88 2.70	1 0	1.5
6	2.4-17.5 kV, NEMA Type 1, HVL/cc Load Current Interrupter Switchgear	50246-1 (UUT1, Config 1)	Wyle (NTS Huntsville)	2.06 2.38	1 0	1.5
7	2.4-17.5 kV, NEMA Type 1, HVL/cc Load Current Interrupter Switchgear	58835R11 (UUT1)	Wyle (NTS Huntsville)	1.78 3.30	1 0	1.5
8	27-38 kV, NEMA 1, HVL/cc Load Current Interrupter Switchgear	71369R13 (UUT1)	Wyle (NTS Huntsville)	1.98 2.07	1 0	1.5
9	2.4-17.5 kV, NEMA Type 1, HVL/cc Load Current Interrupter Switchgear	50246-1 (UUT1, Config 4)	Wyle (NTS Huntsville)	2.46 2.46	1 0	1.5
10	15 kV, NEMA 3R, HVL/cc Load Current Interrupter Switchgear	15602 (UUT3)	Environmental Testing Laboratory (ETL)	2.00 2.50	1 0	1.5
11	15 kV Main & Feeder Masterclad Switchgear	TR241399-01-R1 (UUT2)	Environmental Testing Laboratory (ETL)	1.86 2.98	1 0	1.5

Notes:

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SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 1

Test Report# SEESL-2014-11 Rev 4 (UUT1)

Manufacturer: Square D by Schneider Electric
Model Line: Masterclad
Model Number: FO# 34089617-006
Serial Number: N/A

Highest Passed Test Level

S_{DS}	z/h	I_p	A_{flx-h}	A_{rig-h}	A_{flx-v}	A_{rig-v}
1.92	1	1.5	3.07	2.30	1.41	0.57
2.11	0					

Dimensions/Weights

Depth (in)	Width (in)	Height (in)	Weight (lbs.)
109	36	109	4240

Lowest Natural Frequency (Hz)

Front-Back	Side-Side	Vertical
13.9	7.5	22.0

Building Codes

CBC 2022

Test Criteria

ICC-ES AC156

Construction/Option Summary

NEMA Type 3R outdoor, non walk-in enclosure constructed of carbon steel

UUT Mounting Details:

Unit was rigid base mounted using (4) 1/2" Grade 8 bolts with Belleville conical spring washers torqued to 107 ft.-lbs.
Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test. All contents were included in the unit per operating conditions.

List of Included Subcomponents

Description	Model #
1200A Copper Main Bus	N/A
Relay	SEL-300G
Relay	SEL-849
Relay	GE 239
Relay	S42
Power Meter	S7750A0C0B6C1A0A
Voltage Transformer	PTG3160242FGC1
Voltage Transformer	PTG42SD03823FFB
Circuit Breaker	VR-05025-12
Surge Arrester	9L20FXX003XHS

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Mohammad Kamal
DATE: 10/02/2024
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SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 2

Test Report# SEESL-2014-11 Rev 4 (UUT2)

Manufacturer: Square D by Schneider Electric
Model Line: Masterclad
Model Number: FO# 34089617-001
Serial Number: N/A

Highest Passed Test Level

S_{DS}	z/h	I_p	A_{flx-h}	A_{rig-h}	A_{flx-v}	A_{rig-v}
1.88	1	1.5	3.01	2.26	1.34	0.54
2.00	0					

Dimensions/Weights

Depth (in)	Width (in)	Height (in)	Weight (lbs.)
127	72	109	9690

Lowest Natural Frequency (Hz)

Front-Back	Side-Side	Vertical
10.3	5.1	16.0

Building Codes

CBC 2022

Test Criteria

ICC-ES AC156

Construction/Option Summary

NEMA Type 3R outdoor, non walk-in enclosure constructed of carbon steel

UUT Mounting Details:

Unit was rigid base mounted using (6) 1/2" Grade 8 bolts with Belleville conical spring washers torqued to 107 ft.-lbs.
Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test. All contents were included in the unit per operating conditions.

List of Included Subcomponents

Description	Model #
2000A Copper Main Bus	N/A
Relay	GE C60
Relay	7805D
Power Meter	870
Circuit Breaker	VR-27040-20
Surge Arrester	9L20FXX024XHS
Control Power Transformer	CPTS3605242A
Control Power Transformer	CPTS360254161A
Fuse	9F60DNJ007
Circuit Breaker	JDL26250C
Voltage Transformer	PT611255D03591

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SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 3

Test Report# SEESL-2014-11 Rev 4 (UUT3)

Manufacturer: Square D by Schneider Electric
Model Line: HVL/cc
Model Number: FO# 34206074-001
Serial Number: N/A

Highest Passed Test Level

S_{DS}	z/h	I_p	A_{flx-h}	A_{rig-h}	A_{flx-v}	A_{rig-v}
1.86	1	1.5	2.98	2.23	1.41	0.57
2.10	0					

Dimensions/Weights

Depth (in)	Width (in)	Height (in)	Weight (lbs.)
57.25	44.25	99.75	1870

Lowest Natural Frequency (Hz)

Front-Back	Side-Side	Vertical
15.2	10.3	>33.3

Building Codes

CBC 2022

Test Criteria

ICC-ES AC156

Construction/Option Summary

NEMA Type 3R outdoor, non walk-in enclosure constructed of carbon steel

UUT Mounting Details:

Unit was rigid base mounted using (4) 1/2" Grade 5 studs with Belleville conical spring washers and nuts torqued to 75 ft.-lbs.
Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test. All contents were included in the unit per operating conditions.

List of Included Subcomponents

Description	Model #
1200A Copper Main Bus	N/A
Fuse	175GDMSJD10E
Fuse	175GXMSJD100E
Switch	44044-241-51

REVIEWED FOR CONFORMANCE TO HCAi OSP-0053 Mohammad Kamal 10/02/2024 BUILDING CODE: 2022

SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 4

Test Report# SEESL-2014-11 Rev 4 (UUT4)

Manufacturer: Square D by Schneider Electric
Model Line: HVL
Model Number: FO# 34206074-002
Serial Number: N/A

Highest Passed Test Level

S_{DS}	z/h	I_p	A_{flx-h}	A_{rig-h}	A_{flx-v}	A_{rig-v}
1.88	1	1.5	3.01	2.26	1.41	0.57
2.10	0					

Dimensions/Weights

Depth (in)	Width (in)	Height (in)	Weight (lbs.)
54.5	76	90	2975

Lowest Natural Frequency (Hz)

Front-Back	Side-Side	Vertical
15.5	8.9	>33.3

Building Codes

CBC 2022

Test Criteria

ICC-ES AC156

Construction/Option Summary

NEMA Type 1, enclosure constructed of carbon steel

UUT Mounting Details:

Unit was rigid base mounted using (6) 3/8" Grade 8 bolts with Belleville conical spring washers torqued to 44 ft.-lbs.
Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test. All contents were included in the unit per operating conditions.

List of Included Subcomponents

Description	Model #
2000A Copper Main Bus	N/A
Switch	44036-340-50
Switch	44040-803-50
Surge Suppressor	M3-12.5kV
Surge Suppressor	M3-4.16kV
Fuse	155GXQSJD200E
Fuse	423D815A47
Surge Arrester	9L20FXX018XHS
Relay	T87
Motor Operator	44038-650-50

REVIEWED FOR CODE COMPLIANCE
HCAi
OSP-0053
Mohammad Kamal
10/02/2024
BUILDING CODE 2022

SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 5

Test Report# PEER-STI/2014-04R Rev01 (UUT1)

Manufacturer: Square D by Schneider Electric
Model Line: HVL/36W Masterclad
Model Number: FO# 17-30209756-002
Serial Number: N/A

Highest Passed Test Level

S_{DS}	z/h	I_p	A_{flx-h}	A_{rig-h}	A_{flx-v}	A_{rig-v}
1.88	1	1.5	3.01	2.26	1.41	0.57
2.70	0					

Dimensions/Weights

Depth (in)	Width (in)	Height (in)	Weight (lbs.)
109	76	90	2975

Lowest Natural Frequency (Hz)

Front-Back	Side-Side	Vertical
7.0	5.1	17.8

Building Codes

CBC 2022

Test Criteria

ICC-ES AC156

Construction/Option Summary

NEMA Type 3R outdoor, non walk-in enclosure constructed of carbon steel

UUT Mounting Details:

Unit was rigid base mounted using (6) 0.12" by 12" long tie down filet welds, (3) in front and (3) in back. Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test. All contents were included in the unit per operating conditions.

List of Included Subcomponents

Description	Model #
2000A Copper Main Bus	N/A
Circuit Breaker	VR-15050-20
Surge Arrester	9L20FXX015XHS
Control Power Transformer	CPTS595151242A
Voltage Transformer	PTG52SD02293FFG
Relay	S24
Power Meter	S7330A0B0B0E0A0
Switch	44039-398-52

REVIEWED FOR CONFORMANCE TO CALIFORNIA BUILDING CODE
HCAi
OSP-0053
Mohammad Kamal
10/02/2024
CALIFORNIA BUILDING CODE 2022

SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 6

Test Report# 50246-1 (UUT1, Config 1)

Manufacturer: Square D by Schneider Electric
Model Line: HVL/cc
Model Number: FO# 17440675-007
Serial Number: N/A

Highest Passed Test Level

S_{DS}	z/h	I_p	A_{flx-h}	A_{rig-h}	A_{flx-v}	A_{rig-v}
2.06	1	1.5	3.30	2.74	1.59	0.64
2.38	0					

Dimensions/Weights

Depth (in)	Width (in)	Height (in)	Weight (lbs.)
37.25	29.5	90	1218

Lowest Natural Frequency (Hz)

Front-Back	Side-Side	Vertical
11.5	5.3	17.0

Building Codes

CBC 2022

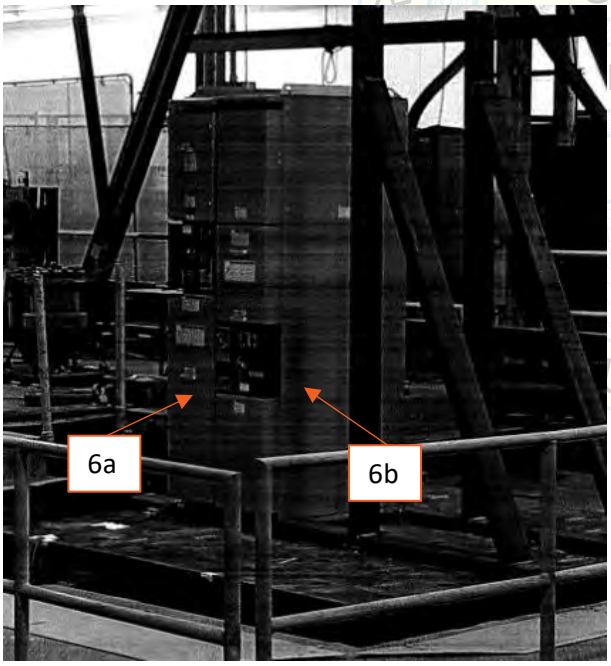
Test Criteria

ICC-ES AC156

Construction/Option Summary

NEMA Type 1 enclosure constructed of carbon steel

UUT Mounting Details:



Unit was rigid base mounted using (8) 3/8"-16 Grade 5 bolts and Belleville conical spring washers torqued to 35 ft.-lbs.
Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test. All contents were included in the unit per operating conditions.

List of Included Subcomponents

Description	Model #
1200A Copper Main Bus	N/A
Fuse	55GDMSJ100E
Fuse	55GDMSJD50E
Switch	44046-754-66
Switch	44046-753-66

REVIEWED FOR CODE COMPLIANCE
HCAi
OSP-0053
Mohammad Kamal
10/02/2024
BUILDING CODE 2022

SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 7

Test Report# 58835R11 (UUT1)

Manufacturer: Square D by Schneider Electric
Model Line: HVL/cc
Model Number: FO# 17-30373199-001
Serial Number: N/A

Highest Passed Test Level

S_{DS}	z/h	I_p	A_{flx-h}	A_{rig-h}	A_{flx-v}	A_{rig-v}
1.78	1	1.5	2.85	2.14	2.21	0.89
3.30	0					

Dimensions/Weights

Depth (in)	Width (in)	Height (in)	Weight (lbs.)
67.25	29.5	142	1555

Lowest Natural Frequency (Hz)

Front-Back	Side-Side	Vertical
15.0	4.0	14.5

Building Codes

CBC 2022

Test Criteria

ICC-ES AC156

Construction/Option Summary

NEMA Type 1 enclosure constructed of carbon steel

UUT Mounting Details:

Unit was rigid base mounted using (10) 3/8" Grade 5 bolts and Belleville conical spring washers torqued to 35 ft.-lbs.
Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test. All contents were included in the unit per operating conditions.

List of Included Subcomponents

Description	Model #
600A Copper Main Bus	N/A
30" Rear Depth Extension	30"
48" Top Mounted Enclosure Extension	48"
Fuse	175GFMSJD65E
Switch	44044-241-51

REVIEWED FOR CODE COMPLIANCE
HCAi
OSP-0053
Mohammad Kamal
DATE: 10/02/2024
BUILDING CODE 2022

SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 8

Test Report# 71369R13 (UUT1)

Manufacturer: Square D by Schneider Electric
Model Line: HVL/cc
Model Number: FO# 17-32879443-235
Serial Number: N/A

Highest Passed Test Level

S_{DS}	z/h	I_p	A_{flx-h}	A_{rig-h}	A_{flx-v}	A_{rig-v}
1.98	1	1.5	3.17	2.38	1.39	0.56
2.07	0					

Dimensions/Weights

Depth (in)	Width (in)	Height (in)	Weight (lbs.)
59.12	39.37	108	1685

Lowest Natural Frequency (Hz)

Front-Back	Side-Side	Vertical
10.5	6.1	>33.3

Building Codes

CBC 2022

Test Criteria

ICC-ES AC156

Construction/Option Summary

NEMA Type 1 enclosure constructed of carbon steel

UUT Mounting Details:

Unit was rigid base mounted using (6) 3/8" Grade 5 bolts and Belleville conical spring washers torqued to 35 ft.-lbs.
Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test. All contents were included in the unit per operating conditions.

List of Included Subcomponents

Description	Model #
600A Copper Main Bus	N/A
Fuse	258GXQSJD65E
Surge Arrester	9L20FXX027XHS
Switch	44044-242-51
Motor Operator Assembly	44046-123-54

REVIEWED FOR CODE COMPLIANCE
HCAi
OSP-0053
Mohammad Kamal
DATE: 10/02/2024
BUILDING CODE: 2022

SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 9

Test Report# 50246-1 (UUT1, Config 4)

Manufacturer: Square D by Schneider Electric
Model Line: HVL/cc
Model Number: FO# 17-32879443-235
Serial Number: N/A

Highest Passed Test Level

S_{DS}	z/h	I_p	A_{flx-h}	A_{rig-h}	A_{flx-v}	A_{rig-v}
2.46	1	1.5	3.94	2.95	1.64	0.66
2.46	0					

Dimensions/Weights

Depth (in)	Width (in)	Height (in)	Weight (lbs.)
47.25	14.75	90	609

Lowest Natural Frequency (Hz)

Front-Back	Side-Side	Vertical
11.5	10.0	33.0

Building Codes

CBC 2022

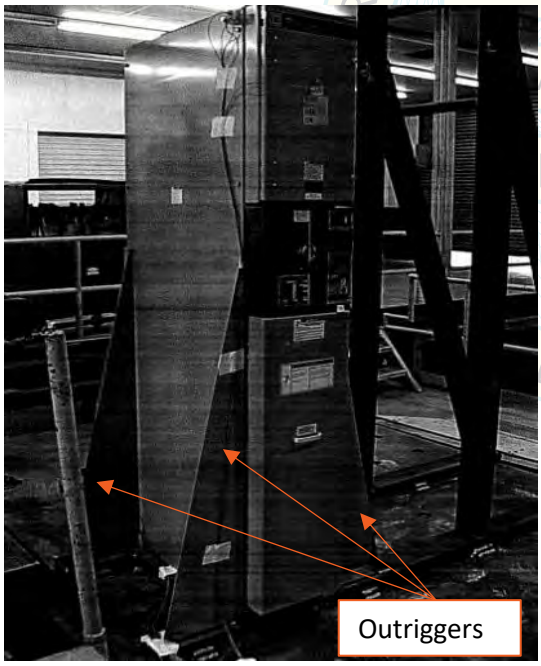
Test Criteria

ICC-ES AC156

Construction/Option Summary

NEMA Type 1 enclosure constructed of carbon steel

UUT Mounting Details:



Unit was rigid base mounted using (4) 3/8" Grade 5 bolts and Belleville conical spring washers torqued to 35 ft.-lbs. Outriggers mounted to UUT at each corner (see next page for details).
Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test. All contents were included in the unit per operating conditions.

List of Included Subcomponents

Description	Model #
1200A Copper Main Bus	N/A
SEM Switch	44046-753-66

REVIEWED FOR CODE COMPLIANCE
HCAi
OSP-0053
Mohammad Kamal
DATE: 10/02/2024
BUILDING CODE: 2022

SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 9

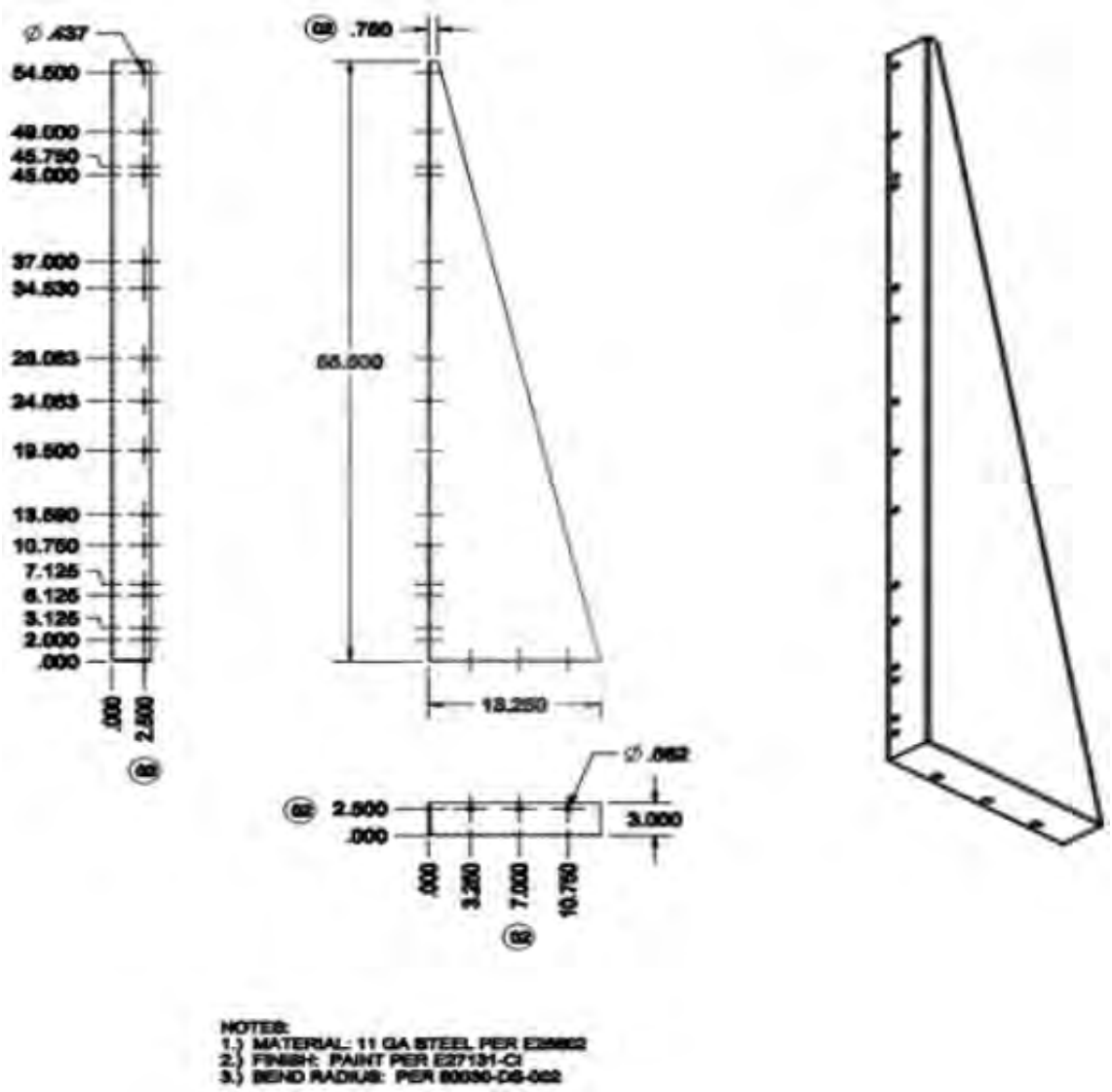
Test Report# 50246-1 (UUT1, Config 4)

Manufacturer: Square D by Schneider Electric
Model Line: HVL/cc
Model Number: FO# 17-32879443-235
Serial Number: N/A

Highest Passed Test Level

S_{DS}	z/h	I_p	A_{flx-h}	A_{rig-h}	A_{flx-v}	A_{rig-v}
2.46	1	1.5	3.94	2.95	1.64	0.66
2.46	0					

Support Fabrication Drawings:



NOTES:
1.) MATERIAL: 11 GA STEEL PER E25862
2.) FINISH: PAINT PER E27131-CI
3.) BEND RADIUS: PER 80030-DS-002

SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 10

Test Report# 15602 (UUT3)

Manufacturer: Square D by Schneider Electric
Model Line: HVL/cc
Model Number: 42191916-003
Serial Number: N/A

Highest Passed Test Level

S_{DS}	z/h	I_p	A_{flx-h}	A_{rig-h}	A_{flx-v}	A_{rig-v}
2.00	1	1.5	3.20	2.40	1.67	0.67
2.50	0					

Dimensions/Weights

Depth (in)	Width (in)	Height (in)	Weight (lbs.)
47.25	29.5	99.75	1388.5

Lowest Natural Frequency (Hz)

Front-Back	Side-Side	Vertical
26.0	6.2	>33.3

Building Codes

CBC 2022

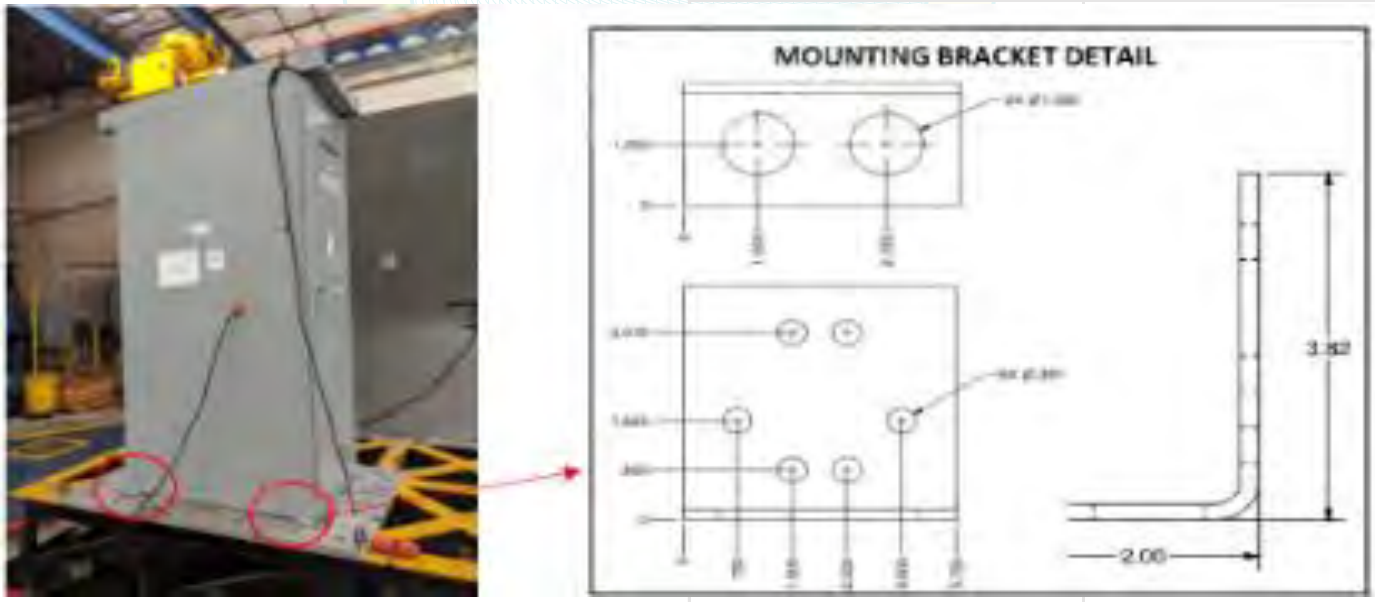
Test Criteria

ICC-ES AC156

Construction/Option Summary

NEMA Type 3R, non walk-in enclosure constructed of carbon steel

UUT Mounting Details:



List of Included Subcomponents

Description	Model #
Surege Arrester	9L11XPM015S
OTM Switch Mechanism	44044-241-51

Unit was rigid base mounted using (4) 7 ga. external mounting brackets with (1) 1/2" Grade 5 bolt each, torqued to 65 ft.-lbs.
Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test. All contents were included in the unit per operating conditions.

REVIEWED FOR CONFORMANCE TO HCAI OSP-0053 BY: Mohammad Kaan

SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 11

Test Report# TR241399-01-R1 (UUT2)

Manufacturer: Square D by Schneider Electric
Model Line: Masterclad
Model Number: 201900911-001
Serial Number: N/A

Highest Passed Test Level

S_{DS}	z/h	I_p	A_{flx-h}	A_{rig-h}	A_{flx-v}	A_{rig-v}
1.86	1	1.5	2.98	2.23	2.00	0.80
2.98	0					

Dimensions/Weights

Depth (in)	Width (in)	Height (in)	Weight (lbs.)
91	72	95	5979

Lowest Natural Frequency (Hz)

Front-Back	Side-Side	Vertical
6.49	6.97	9.15

Building Codes

CBC 2022

Test Criteria

ICC-ES AC156

Construction/Option Summary

15kVAC rated medium voltage swithchgear system packaged in NEMA Type 1 carbon steel enclosure.

UUT Mounting Details:

Unit was base mounted using (9) 1/2"-13 Grade 5 bolts and flat washers torqued to 65 ft.-lbs.
Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test. All contents were included in the unit per operating conditions.

List of Included Subcomponents

Description	Model #
Amran Transformer	V9-422FFGC2-01
Amran Transformer	V21.1-2-123FF
Amran Transformer	V22.6-2492

REVIEWED FOR CODE COMPLIANCE
HCAi
OSP-0053
Mohammad Karim
DATE: 10/02/2024
BUILDING CODE: 2022