



DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION
OFFICE OF STATEWIDE HOSPITAL PLANNING AND DEVELOPMENT

APPLICATION FOR HCAI SPECIAL SEISMIC
CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY

APPLICATION #: OSP-0658

HCAI Special Seismic Certification Preapproval (OSP)

Type: ☐ New ☒ Renewal

Manufacturer Information

Manufacturer: Industrial Electric Mfg.

Manufacturer's Technical Representative: Adrian Moreno

Mailing Address: 49205 Warm Springs Blvd., Fremont, CA 94539

Telephone: (629) 295-7060

Email: adrian.moreno-manzo@iemfg.com

Product Information

Product Name: 5-38kV Switchgear

Product Model Number(s): 5-38kV Switchgear

Product Category: Switchgear/Switchboards

Product Sub-Category: Switchgear - Medium Voltage

General Description: 5-38kV Switchgear NEMA 1 Indoor and NEMA 3R Outdoor Sections

Mounting Description: Base Mounted Rigid

Tested Seismic Enhancements: Seismic enhancements made to the test units and/or modifications required to address anomalies during the tests shall be incorporated into the production units.

Applicant Information

Applicant Company Name: Pre Compliance

Contact Person: Galen Reid

Mailing Address: 324 NW Hill St., Bend, OR 97703

Telephone: (541) 241-2310

Email: galen@go-pre.com

Title: Principal & Program Manager



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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: 324 NW Hill St, Bend, OR 97703

Telephone: (415) 635-8461

Email: Andy@go-pre.com

Certification Method

☐ GR-63-Core

☒ ICC-ES AC156

☐ IEEE 344

☐ IEEE 693

☐ NEBS 3

☐ Other (Please Specify): _____

Testing Laboratory

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: amarnath1@berkeley.edu

BY: Mohammad Karim

DATE: 11/03/2025



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Seismic Parameters

Certified Response Spectral Acceleration Factors:(F_p/W_p)

Horizontal (A Flx-H), g= 3.20 (A Rig-H), g= 2.15

Vertical (A Flx-V), g= 1.34 (A Rig-V), g= 0.54

S_{DS} (Design spectral response acceleration at short period, g) = 2.00

H_f (Force amplification height factor) = 1 @ z/h = 0; 3.5 @ z/h = 1

R_u (Structure ductility reduction factor) = 1 @ z/h = 0; 1.3 @ z/h = 1

I_p (Importance factor) = 1.5

z/h (Height ratio factor) = 1

HCAI Approval (For Office Use Only) - Approval Expires on 11/3/2031

Date: 11/3/2025

Name: Mohammad Karim

Title: Supervisor, Health Facilities

Condition of Approval (if applicable): _____

OSP-0658

BY: Mohammad Karim

DATE: 11/03/2025

SPECIAL SEISMIC CERTIFICATION CERTIFIED COMPONENTS

Manufacturer: Industrial Electric Manufacturing
Product Type: Switchgear – Medium Voltage
Model Line: 5-38kV Switchgear

Seismic Parameters

$S_{DS} = 2.00g$ for $R_{\mu}=1.3$, $H_f=3.5$ $I_p=1.5$

Building Codes

CBC 2025

TABLE 1

Mounting Configuration: Base Mounted - Rigid

Construction Summary

5-38kV Switchgear: NEMA 1 and NEMA 3R Sections.

Options Summary

Model Line	Model	Max. Dimensions (in)			Wt. (lb)	NEMA Rating ³	UUT
		D	W ²	H ¹			
5-15kV Switchgear	5-15kV 1200A - 3000A ⁵	98	72	91.5	4200	Type 1, 3R	Extrap.
		...	...	...	...	Type 1, 3R	Extrap.
		98	72	91.5	7500	Type 1, 3R	Extrap.
15kV Switchgear	15kV - 097950-0002-3000A ⁵	98	72	91.5	6080	Type 1	4
	15kV - 109828-2-3000A ⁴	99	72	94	3650	Type 1	5
	15kV - 097950-0001-2000A ⁵	98	72	96	7430	Type 1	3
	IEM-15kV-SWGR-NEMA 3R - 1200A-3000A	123	84	107	10500	Type 3R	Interp.
38kV Switchgear	IEM-38kV-SWGR-NEMA 1 - 1200A ⁵	123	42	95	4200	Type 1	2
	38kV - 1200A - 3000A	123	84	95	4200	Type 1, 3R	Interp.
	IEM-38kV-SWGR-NEMA 3R - 1200A ⁴	123	84	107	10500	Type 3R	1
	IEM-38kV-SWGR-NEMA 3R - 1200A-2000A	123	84	107	10500	Type 3R	Extrap.

Notes:

¹Height shown does not include optional 4" high steel channel under base of unit.

²72" & 84" wide units consist of (2) 36" or (2) 42" wide sections respectively in the typical breaker + aux configuration.

³NEMA-3R includes walk-in enclosure: This adds +9"H x +0"W x +12"D per section, which is included in UUT1's dimensions

⁴UUT1 and UUT5 consisted of two section of the same dimensions with differing weights.

⁵36" wide units must be ganged to a minimum of 72" wide. 42" units are only certified to be 4,200 lbs.

Manufacturer: Industrial Electric Manufacturing
Product Type: Switchgear – Medium Voltage
Model Line: 5-38kV Switchgear

Seismic Parameters

 $S_{DS} = 2.00g$ for $R_{\mu}=1.3$, $H_f=3.5$ $I_p=1.5$

Building Codes

CBC 2025

TABLE 2

Table Description: Electrical Components

Component (Manufacturer)	Model	Description	UUT
Digital Relays (Schweitzer)	0311LXXB4	SEL-311 Differential and Distance Protection Relay	Extrap.
	0351AXXB4	SEL-351A Protection Relay	Extrap.
	0387XXB4	SEL-387 Current Differ. and Overcurrent Relay	Extrap.
	045144151XXB4	SEL-451 Protection Relay	1
	0487BXXB4	SEL-487B Bus Differential Protection Relay	Interp.
	0501XXB4	SEL-501 Overcurrent Relay	Interp.
	0751AXXB4	SEL-751A Feeder Protection Relay	Interp.
	SEL-751-A02C0X0X7185	SEL-751A Feeder Protection Relay	4
Digital Relays (Basler)	0787EX1A1A0X	SEL-787 Transformer Differential Relay	1
	BE1-27-A3E-E1J	BE1 Voltage Protective Relay	2
	BE1-CDS240-0N5F	BE1 Current Differential Protective Relay	Interp.
	BE1-951-B3ED0N1F	BE1 Overcurrent Protection System	Interp.
	BE1-87B-ED0N1F	BE1 Bus Differential Relay	Interp.
	BE1-81O/U-XXX	BE1 Under/Over Frequency Protective Relay	Interp.
	BE1-32R-B3ED1PA	BE1 Directional Power Relay	2
Power Monitor (Allen Bradley)	BE1-51K1EZ10A2C6F	BE1 Overcurrent Relay	3
	1404-M405A-ENT	Power Monitor 3000	1
Power Monitors/Meters (GE)	PL53002A0A00	GE Electronic Power Monitor (EPM) 5300P	Extrap.
	783X9011001	GE Electronic Power Monitor (EPM) 783	2
	783X901001	GE Electronic Meter	2
Power Meters (Schweitzer)	0734009V1D11	SEL-734 Advanced Metering System	1
	735BX00944CXXXXX X16102XX	SEL-735 Power Quality and Revenue Meter	3
Power Meters (Square D)	S7330A0B0B0A	Powerlogic ION 7330 Power Meter	2
	PM-870	SQD Power Meter	4
Switch (ABB)	FT129A516G01	FT1 Test Switch 6 Pole	1
Switches (Electroswitch)	24202D	24 Control Switch	1,2,4
	2438D	Breaker Control Switch	5
	20KC-1101A8	20 Rotary Switch	3
Indicating Lights (GE)	CR104PLT93R	Heavy Duty Indicating Light Red	1,2
	CR104PLT93G	Heavy Duty Indicating Light Green	1,2
Potential Transformer (ABB)	1VLT5212003507	Potential Transformer	1



Manufacturer: Industrial Electric Manufacturing
Product Type: Switchgear – Medium Voltage
Model Line: 5-38kV Switchgear

Building Codes

CBC 2025

Table Description: Electrical Components

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SPECIAL SEISMIC CERTIFICATION TESTING SUMMARY

SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

UUT 1

Test Report# PEER/STI 2014-08

Manufacturer: Industrial Electric Manufacturing
Model Line: 5-38kV Switchgear
Model Number: IEM-38kV-SWGR-NEMA 3R - 1200A
Serial Number: 86045-3-TEST

11/26/2013

S _{DS}	R _μ	H _f	I _p	A _{flx-h}	A _{rig-h}	A _{flx-v}	A _{rig-v}
2.13	1.3	3.5	1.5	3.41	2.29	1.43	0.57

Dimensions/Weights

Depth (in)	Width (in)	Height (in)	Weight (lbs.)
123	84	107	10,500

Lowest Natural Frequency (Hz)

Front-Back	Side-Side	Vertical
10.2	4.7	14.3

Building Codes

CBC 2025

Test Criteria

ICC-ES AC156

Construction/Option Summary

Cold formed carbon steel

UUT Mounting Details:



List of Included Subcomponents

Description (Manufacturer)	Model #
SEL-451 Protection Relay (Schweitzer)	045144151XXB4
SEL-787 Transformer Differential Protection Relay (Schweitzer)	0787EX1A1A0X75850200
Power Monitor 3000 (Allen Bradley)	1404-M405A-ENT
SEL-734 Advanced Metering System (Schweitzer)	0734009V1D11
FT1 Test Switch 6 Pole (ABB)	FT129A516G01
Heavy Duty Indicating Lt Red (GE)	CR104PLT93R
Heavy Duty Indicating Lt Grn (GE)	CR104PLT93G
38kV 2000A Vacuum Breaker (Innovative Power Technologies)	VVAG-38240M-ABBBBBA
Potential Transformer (ABB)	1VLT5212003507
15kVA Transformer (IEM)	89067-AFP-CT
Current Transformer (ITI)	785-202
Control Switch (Electroswitch)	24202D

UUT was rigid base mounted using (10) 1/2" Grade 5 bolts.

Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test. All contents were included in the unit per operating conditions.



UUT 2

Manufacturer: Industrial Electric Manufacturing
Model Line: 5-38kV Switchgear
Model Number: IEM-38kV-SWGR-NEMA 1 - 1200A
Serial Number: 86045-1-TEST

S_{DS}	R_{μ}	H_f	I_p	$A_{\text{flx-h}}$	$A_{\text{rig-h}}$	$A_{\text{flx-v}}$	$A_{\text{rig-v}}$
2.05	1.3	3.5	1.5	3.28	2.2	1.37	0.55

Depth (in)	Width (in)	Height (in)	Weight (lbs.)
123	42	95	4,200

Front-Back	Side-Side	Vertical
7.5	14.1	25.9

CBC 2025

ICC-ES AC156

Cold formed carbon steel

(Manufacturer)

BE-127 Voltage Relay (Basler)	BE1-27-A3E-E1J
BE1-32R Directional Power Relay (Basler)	BE1-32R-B3ED1PA
Powerlogic ION 7330 Power Meter (Square D)	S7330A0B0B0A
KVV2C Electronic Switchboard Meter (GE)	783X901001
Heavy Duty Indicating Lt Red (GE)	CR104PLT93R
Heavy Duty Indicating Lt Grn (GE)	CR104PLT93G
38kV 1200A Vacuum Breaker (Innovative Power Technologies)	VVAG-38140MABB
Current Transformer (ITI)	785-122MR
Control Switch (Electroswitch)	24202D

Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test. All contents were included in the unit per operating conditions.



UUT 3

Manufacturer: Industrial Electric Manufacturing
Model Line: 5-38kV Switchgear
Model Number: 15kV - 097950-0001-2000A
Serial Number: 2017 097950-001

S_{DS}	R_{μ}	H_f	I_p	$A_{\text{flx-h}}$	$A_{\text{rig-h}}$	$A_{\text{flx-v}}$	$A_{\text{rig-v}}$
2.13	1.3	3.5	1.5	3.41	2.29	1.43	0.57

Depth (in)	Width (in)	Height (in)	Weight (lbs.)
72	98	96	7,430

Front-Back	Side-Side	Vertical
15.2	10.6	>33.3

CBC 2025

ICC-ES AC156

Cold formed carbon steel

Model

Siemens-15kV-1200A

Siemens-15kV-2000A

IEM-Siemens-PT-Rollout-Truck

IEM-Siemens-CPT-Rollout-Truck

20KC-1101A8

BE1-51K1EZ10A2C6F

735BX00944CXXXXXX16102
XX

Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test. All contents were included in the unit per operating conditions.



UUT 4

Test Report# PEER/STI 2017-18

11/26/2013

S_{DS}	R_{μ}	H_f	I_p	$A_{\text{flx-h}}$	$A_{\text{rig-h}}$	$A_{\text{flx-v}}$	$A_{\text{rig-v}}$
2.13	1.3	3.5	1.5	3.41	2.29	1.43	0.57

Dimensions/Weights			
Depth (in)	Width (in)	Height (in)	Weight (lbs.)
72	98	92	6.080

Lowest Natural Frequency (Hz)		
Front-Back	Side-Side	Vertical
13.5	12.1	>33.3

Building Codes	Test Criteria	Construction/Option Summary
CBC 2025	ICC-ES AC156	Cold formed carbon steel

UUT Mounting Details:

List of Included Subcomponents

[illegible]

Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test. All contents were included in the unit per operating conditions.



UUT 5

Test Report# PEER/STI 2020-11

Serial Number: 2019 109828-2

11/26/2013

2.00 1.3 3.5 1.5 3.20 2.15 1.34 0.53

Depth (in)	Width (in)	Height (in)	Weight (lbs.)
72	99	94	3,650

Front-Back	Side-Side	Vertical
17.4	8.1	21.6

CBC 2025

ICC-ES AC156

Cold formed carbon steel

List of Included Subcomponents



Model

2438D

Eaton-VCP-W-3000A

1A30133G22

15CLPT-5E

1A30269G03

1C1999G236

3A38303G08

Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test. All contents were included in the unit per operating conditions.