



**OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
FACILITIES DEVELOPMENT DIVISION**

**APPLICATION FOR OSHPD SPECIAL SEISMIC
CERTIFICATION PREAPPROVAL (OSP)**

OFFICE USE ONLY

APPLICATION #: **OSP – 0256 – 10**

OSHPD Special Seismic Certification Preapproval (OSP)

Type: New Renewal

Manufacturer Information

Manufacturer: Industrial Electric Mfg.

Manufacturer's Technical Representative: Ashok Kulkarni

Mailing Address: 48205 Warm Springs Blvd., Fremont, CA 945369

Telephone: 510-360-1247 Email: ashok.kulkarni@iemfg.com

Product Information

Product Name: Vesta-AR Switchgear and CDP Panels

Product Type: Medium Voltage Switchgear

Product Model Number: Vesta-AR Switchgear rated 1200A to 2000A and CDP Panels rated 250A to 1200A. See attached "Product Range Summary"
(List all unique product identification numbers and/or part numbers)

General Description: Medium voltage switchgear rated 1200A to 2000A in NEMA Type 1 or 3R (non-walk-in) floor mounted enclosures. Wall mounted CDP panels (NEMA Type 1 or 3R) rated 250A to 1200A.

Mounting Description: Vesta-AR Switchgear Rigid Floor Mounted and CDP Panels Rigid Wall Mounted

Applicant Information

Applicant Company Name: Industrial Electric Mfg.

Contact Person: Ashok Kulkarni

Mailing Address: 48205 Warm Springs Blvd., Fremont, CA 945369

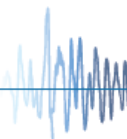
Telephone: 510-360-1247 Email: ashok.kulkarni@iemfg.com

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: 3/9/2016

Title: Vice President of Engineering Company Name: Industrial Electric Mfg.

"Access to Safe, Quality Healthcare Environments that Meet California's Diverse and Dynamic Needs"





OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT FACILITIES DEVELOPMENT DIVISION

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: Southwest Research Institute

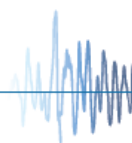
Contact Name: Mark Orłowski

Mailing Address: 6220 Culebra Road, San Antonio, TX 78238

Telephone: 210-522-2624 Email: mark.orłowski@swri.org

"Access to Safe, Quality Healthcare Environments that Meet California's Diverse and Dynamic Needs"

STATE OF CALIFORNIA – HEALTH AND HUMAN SERVICES AGENCY
OSH-FD-759 (REV 12/16/15)



OSHPD

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FACILITIES DEVELOPMENT DIVISION**

Seismic Parameters

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

Design Basis of Equipment or Components (F_p/W_p) = 1.31

S_{DS} (Design spectral response acceleration at short period, g) = 1.75

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

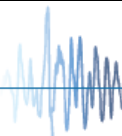
OSHPD Approval (For Office Use Only) – Approval Expires on December 31, 2022

Signature:  Date: March 28, 2016

Print Name: Timothy J. Piland Title: SSE

Special Seismic Certification Valid Up to : S_{DS} (g) = 1.75 z/h = 1

Condition of Approval (if applicable): _____



**IEM - Vesta-AR Switchgear and CDP Panels
Product Range Summary**

Vesta-AR Switchgear

	Width	Depth	Height	Weight	Construction Material	Component No.	Testing Status
1200A Switchgear	24"	60"-72"	96"	1,970 lbs	Walls 12 GA CRS, base 7 GA CRS, doors 11 or 12 GA CRS, NEMA 1	VESTA-AR-15 kV-1200A	UUT-1
1200A Non-Walk-In Switchgear	26"	63"-76"	99"	2,050 lbs	Walls 12 GA CRS, base 7 GA CRS, doors 11 or 12 GA CRS, NEMA 3R	VESTA-AR-15 kV-1200A-NEMA3R	Interpolated
2000A Switchgear	30"	72"	96"	2,670 lbs	Walls 12 GA CRS, base 7 GA CRS, doors 11 or 12 GA CRS, NEMA 1	VESTA-AR-15 kV-2000A	UUT-2
2000A Non-Walk-In Switchgear	32"	76"	99"	2,790 lbs	Walls 12 GA CRS, base 7 GA CRS, doors 11 or 12 GA CRS, NEMA 3R	VESTA-AR-15 kV-2000A-NEMA3R	Interpolated

- Notes: 1. Switchgear Units are floor mounted
2. CRS = ASTM-A-1011-00-CS TYPE B/SAE-1008 Cold Rolled Carbon Steel

CDP Panels

	Width	Depth	Height	Weight	Construction Material	Component No.	Testing Status
250A CDP Panel	38"	10.5"	54"	365 lbs	12 GA CRS, NEMA 1	CDP-W-250A	UUT-4
250A CDP Panel (NEMA 3R)	40"	14"	55"	380 lbs	12 GA CRS, NEMA 3R	CDP-W-250A-NEMA 3R	Interpolated
400A CDP Panel	38"	10.5"	54"	365 lbs	12 GA CRS, NEMA 1	CDP-W-400A	Interpolated
400A CDP Panel (NEMA 3R)	40"	14"	55"	380 lbs	12 GA CRS, NEMA 3R	CDP-W-400A-NEMA 3R	Interpolated
600A CDP Panel	38"	10.5"	54"	365 lbs	12 GA CRS, NEMA 1	CDP-W-600A	Interpolated
600A CDP Panel (NEMA 3R)	40"	14"	55"	380 lbs	12 GA CRS, NEMA 3R	CDP-W-600A-NEMA 3R	Interpolated
800A CDP Panel	38"	14"	79"	680 lbs	12 GA CRS, NEMA 1	CDP-W-800A	Interpolated
800A CDP Panel (NEMA 3R)	40"	17.5"	80"	710 lbs	12 GA CRS, NEMA 3R	CDP-W-800A-NEMA 3R	Interpolated
1000A CDP Panel	38"	14"	79"	680 lbs	12 GA CRS, NEMA 1	CDP-W-1000A	Interpolated
1000A CDP Panel (NEMA 3R)	40"	17.5"	80"	710 lbs	12 GA CRS, NEMA 3R	CDP-W-1000A-NEMA 3R	Interpolated
1200A CDP Panel (NEMA 3R)	40"	17.5"	80"	710 lbs	12 GA CRS, NEMA 3R	CDP-W-1200A-NEMA 3R	Interpolated
1200A CDP Panel	38"	14"	79"	680 lbs	12 GA CRS, NEMA 1	CDP-W-1200A	UUT-3

- Notes: 1. CDP Panels are Wall Mounted
2. CRS = ASTM-A-1011-00-CS TYPE B/SAE-1008 Cold Rolled Carbon Steel

**IEM - Vesta-AR Switchgear and CDP Panels
Product Range Summary**

Vesta-AR Switchgear Internal Components			
Component	Manufacturer	Component No.	Testing Status
1200A, 15kV Breaker	ABB	IEM-VM1-1200A	UUT-1
2000A, 15kV Breaker	ABB	IEM-VM1-2000A	UUT-2
Potential Transformer	IEM	IEM-VESTA-PT	UUT-1
Control Power Transformer	IEM	IEM-VESTA-CPT	UUT-2
Schweitzer Protective Relay	IEM	IEM-VESTA-SEL-RELAY	UUT-2
Current Meter	IEM	IEM-VESTA-AMMETER	UUT-1
Voltmeter	ABB	IEM-VESTA-VOLTMETER	UUT-1
Infra-red Window	ABB	IEM-VESTA-IR-WINDOW	UUT-2
Illuminated Push Button Relay	ABB	IEM-VESTA-IL-PB	UUT-2
LED Pilot Light Relay	ABB	IEM-VESTA-LED-PILOT	UUT-1

CDP Panels Internal Components			
Component	Manufacturer	Component No.	Testing Status
150A Breaker	GE	SEL-150A	UUT-3, UUT-4
250A Breaker	GE	SFL-250A	UUT-4
600A Breaker	GE	SGL-600A	UUT-4
1200A Breaker	GE	SKL-1200A	UUT-3
150A Power Pact Breaker	Square D	HDP-150A	UUT-3, UUT-4
150A Power Pact Breaker	Square D	HGP-150A	UUT-3, UUT-4
150A Power Pact Breaker	Square D	HJP-150A	UUT-3, UUT-4
150A Power Pact Breaker	Square D	HLP-150A	UUT-3, UUT-4
250A Power Pact Breaker	Square D	JDP-250A	UUT-4
250A Power Pact Breaker	Square D	JGP-250A	UUT-4
250A Power Pact Breaker	Square D	JJP-250A	UUT-4
250A Power Pact Breaker	Square D	JLP-250A	UUT-4
600A Power Pact Breaker	Square D	DGP-600A	UUT-4
600A Power Pact Breaker	Square D	DJP-600A	UUT-4
600A Power Pact Breaker	Square D	DLP-600A	UUT-4
800A Power Pact Breaker	Square D	MGP-800A	UUT-3
800A Power Pact Breaker	Square D	MJP-800A	UUT-3
1200A Power Pact Breaker	Square D	PGP-1200A	UUT-3
1200A Power Pact Breaker	Square D	PJP-1200A	UUT-3
1200A Power Pact Breaker	Square D	PKP-1200A	UUT-3
1200A Power Pact Breaker	Square D	PLP-1200A	UUT-3

Test Report 18.18163.01.101.FR1

UUT 1 (Smallest Vesta AR)

Vesta-AR 1200A Switchgear

(Part # VESTA-AR-1200A)

Walls 12 GA CRS, base 7 GA CRS, doors 11 or 12 GA CRS, NEMA 1

24"W x 60"D x 96"H, 1970 lbs,

Floor mounted using (8) ½" dia bolts.

CRS = ASTM-A-1011-00-CS TYPE B/SAE-1008 Cold Rolled Carbon Steel



Building Code	Test Criteria	S _{DS} (g)	z/h	Horizontal		Vertical	
				A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-H} (g)
CBC 2016	ICC-ES AC 156	2.31	1	3.70	2.77	1.55	0.62
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 test.				
19.1	7.0	<33.3					

Subcomponent	Manufacturer	Part #
1200A, 15kV Breaker	ABB	IEM-VM1-1200A
Potential Transformer	IEM	IEM-VESTA-PT
Current Meter	IEM	IEM-VESTA-AMMETER
Voltmeter	ABB	IEM-VESTA-VOLTMETER
LED Pilot Light Relay	ABB	IEM-VESTA-LED-PILOT

Test Report 18.18163.01.101.FR1

UUT 2 (Largest Vesta AR)

Vesta-AR 2000A Switchgear

(Part # VESTA-AR-2000A)

Walls 12 GA CRS, base 7 GA CRS, doors 11 or 12

GA CRS NEMA 1

30"W x 72"D x 96"H, 2670 lbs

Floor mounted using (8) ½" dia bolts.

CRS = ASTM-A-1011-00-CS TYPE B/SAE-1008 Cold Rolled Carbon Steel



Building Code	Test Criteria	S _{DS} (g)	z/h	Horizontal		Vertical	
				A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-H} (g)
CBC 2016	ICC-ES AC 156	1.75	1	2.80	2.10	1.17	0.47
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 test.				
15.8	6.1	20.1					

Subcomponent	Manufacturer	Part #
2000A, 15kV Breaker	ABB	IEM-VM1-2000A
Control Power Transformer	IEM	IEM-VESTA-CPT
Schweitzer Protective Relay	IEM	IEM-VESTA-SEL-RELAY
Infra-red Window	ABB	IEM-VESTA-IR-WINDOW
Illuminated Push Button Relay	ABB	IEM-VESTA-IL-PB

Test Report 18.18163.01.101.FR1

UUT 3 (Largest CDP Panel)

1200A CDP Panel

(Part # CDP-W-1200A)

12 GA CRS, NEMA 1

38"W x 14"D x 79"H, 680 lbs

Wall mounted using (4) ½" dia bolts.

CRS = ASTM-A-1011-00-CS TYPE B/SAE-1008 Cold Rolled Carbon Steel



Building Code	Test Criteria	S _{DS} (g)	z/h	Horizontal		Vertical	
				A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-H} (g)
CBC 2016	ICC-ES AC 156	2.40	1	3.84	2.88	1.61	0.64
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 test.				
N/A	N/A	N/A					

Subcomponent	Manufacturer	Part #
150A Breaker	GE	SEL-150A
1200A Breaker	GE	SKL-1200A
150A Power Pact Breaker	Square D	HDP-150A
150A Power Pact Breaker	Square D	HGP-150A
150A Power Pact Breaker	Square D	HJP-150A
150A Power Pact Breaker	Square D	HLP-150A
800A Power Pact Breaker	Square D	MGP-800A
800A Power Pact Breaker	Square D	MJP-800A
1200A Power Pact Breaker	Square D	PGP-1200A
1200A Power Pact Breaker	Square D	PJP-1200A
1200A Power Pact Breaker	Square D	PKP-1200A
1200A Power Pact Breaker	Square D	PLP-1200A

Test Report 18.18163.01.101.FR1

UUT 4 (Smallest CDP Panel)

250A CDP Panel

(Part # CDP-W-250A)

12 GA CRS, NEMA 1

38"W x 10.5"D x 54"H, 365 lbs

Wall mounted using (4) ½" dia bolts.

CRS = ASTM-A-1011-00-CS TYPE B/SAE-1008 Cold Rolled Carbon Steel



Building Code	Test Criteria	S _{DS} (g)	z/h	Horizontal		Vertical	
				A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-H} (g)
CBC 2016	ICC-ES AC 156	2.40	1	3.84	2.88	1.61	0.64
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 test.				
N/A	N/A	N/A					

Subcomponent	Manufacturer	Part #
150A Breaker	GE	SEL-150A
250A Breaker	GE	SFL-250A
600A Breaker	GE	SGL-600A
150A Power Pact Breaker	Square D	HDP-150A
150A Power Pact Breaker	Square D	HGP-150A
150A Power Pact Breaker	Square D	HJP-150A
150A Power Pact Breaker	Square D	HLP-150A
250A Power Pact Breaker	Square D	JDP-250A
250A Power Pact Breaker	Square D	JGP-250A
250A Power Pact Breaker	Square D	JJP-250A
250A Power Pact Breaker	Square D	JLP-250A
600A Power Pact Breaker	Square D	DGP-600A
600A Power Pact Breaker	Square D	DJP-600A
600A Power Pact Breaker	Square D	DLP-600A