



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

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

OFFICE USE ONLY

APPLICATION #: OSP – 0103 – 10

OSHPD Special Seismic Certification Preapproval (OSP)

Type: New Renewal

Manufacturer Information

Manufacturer: Powell Industries

Manufacturer's Technical Representative: James Baker

Mailing Address: 7232 Airport Blvd., Houston, TX 77061

Telephone: (713) 383-5032

Email: James.Baker@powellind.com

Product Information

Product Name: Power/Vac Medium Voltage Switchgear

Product Type: MV Switchgear

Product Model Number: Power/Vac units are custom-made; switchgear units' product IDs are prefixed with "PV".
(List all unique product identification numbers and/or part numbers)

General Description: Switchgear in 11ga HRPO steel enclosures, containing copper bus bars, 1200-3000A breakers
porcelain or poly glass tubes, and current, potential, & control power transformers. One 48" metering section for EUSERC is included.

Mounting Description: Rigidly floor mounted

Applicant Information

Applicant Company Name: Powell Industries

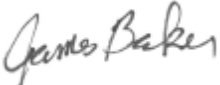
Contact Person: James Baker

Mailing Address: 7232 Airport Blvd., Houston, TX 77061

Telephone: (713) 383-5032

Email: James.Baker@powellind.com

I hereby agree to reimburse the Office of Statewide Health Planning and Development review fees in accordance with the California Administrative Code, 2016.

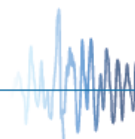
Signature of Applicant: 

Date: 2/21/2017

Title: Estimating Manager

Company Name: Powell Industries

"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): _____

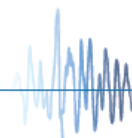
Testing Laboratory

Company Name: Wyle Laboratories

Contact Name: Don Davis

Mailing Address: 7800 Highway 20 West, Huntsville, AL 35806

Telephone: (256) 837-4411 Email: Don.Davis@wyle.com





**OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
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) = 1.42

S_{DS} (Design spectral response acceleration at short period, g) = 1.89

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

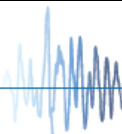
OSHPD Approval (For Office Use Only) – Approval Expires on December 31, 2022

Signature:  Date: 3/13/2017

Print Name: M. R. Karim Title: SHFR

Special Seismic Certification Valid Up to : S_{DS} (g) = 1.89 z/h = 1.00

Condition of Approval (if applicable): _____



Powell Industries - Power/Vac Medium Voltage Switchgear
I. Certified Product Table

Voltage Rating (kV)	Ampacity Rating (A)⁵	Sections	Width	Depth	Height	Weight	Construction Material¹	Notes	Test Status
4.76kV - 15kV	1200A - 3000A	2-High Breaker Sections	36"	94"	95"	4275 lbs	11 ga HRPO Carbon Steel	2, 3, 4	UUT-1A
		Auxiliary Vertical Section	36"	94"	95"	4125 lbs	11 ga HRPO Carbon Steel	2, 3, 4	UUT-1B & UUT-2A
		Metering Section (EUSERC)	48"	94"	95"	3875 lbs	11 ga HRPO Carbon Steel	2, 3, 4	UUT-2B

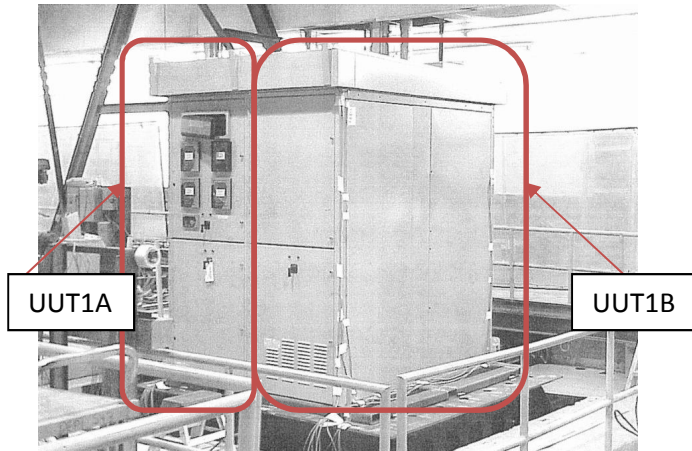
Notes

1. All enclosures are NEMA Types 1 or NEMA 3R. Type 3R differs by the addition of a drip proof roof.
2. All units are rigidly floor mounted
3. Copper bussing only.
4. Weights and dimensions are for individual section types. Section types may be installed individually or tied together to form a lineup
5. Certification is for sections including breakers with maximum 3000A continuous current.

Powell Industries - Power/Vac Medium Voltage Switchgear
II. Certified Subcomponents Table

Internal Components	Manufacturer	Part #	Testing Status
Circuit Breaker			
1200A Circuit Breaker	Powell Industries	PVED1A1A2A2202G1A1	UUT1A
2000A Circuit Breaker	Powell Industries	PVEA2A1A2A2202G1A1	UUT1A, UUT2A
3000A Circuit Breaker	Powell Industries	PVED4A1A2A2202G1A2	UUT1B
Control Power Transformer (CPT)			
15kVA Control Power Transformer	GE ITI	CPT3-60	Extrapolated ¹
15kV, 15kVA Control Power Transformer	GE ITI	CPT5-95	UUT1B, UUT2A
Current Transformer			
Standard Accuracy Current Transformer	GE ITI	780	UUT1A, UUT1B, UUT2A
Standard Accuracy Current Transformer (multi ratio)	GE ITI	781	interpolated
High Accuracy Current Transformer	GE ITI	785	UUT2A
High Accuracy Current Transformer (multi ratio)	GE ITI	786	interpolated
Bar Type Current Transformer	GE ITI	JKM-5C	UUT2B
Potential Transformer			
15kVA Potential Transformer	GE ITI	PTG5	UUT2A
Surge Suppressor			
15kV Surge Suppressor	Powell Industries	0144D2156	UUT1A
Lightning Arresters			
15kV Station Class Porcelain Lightning Arrester	GE Tranquell	9L11ZGB015S	UUT1B
EUSERC PT Ground/Disconnect Switch			
Mini-Rupter PT Ground/Disconnect Switch	S&C	255232R2	UUT2B
Breaker Tube			
Porcelain Primary Breaker Tube	Powell Industries	0209B5007	UUT1A, UUT1B, UUT2A
Poly Glass Primary Breaker Tube	Powell Industries	0144D2151	UUT1A
Rollout Tube			
Porcelain Primary Rollout Tube	Powell Industries	0209B4947G5	UUT1B, UUT2A
Poly Glass Primary Rollout Tube	Powell Industries	0209B4947G1	UUT2A
Notes			
1. Extrapolated units are identical except for rating.			

Test Report 52917-1 – UUT1



Powell Medium Voltage Switchgear – 2 Sections, Floor-Mounted

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	1.89	1.0	1.5	3.02	2.27	1.27	0.50
Natural Frequency (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.					
9.0	6.5	9.2						

Section 101 – 2-High Breaker Section (UUT1A)

36"W x 94"D x 95"H, 4,275 lbs
Floor Mounted using (4) ½" dia. Grade 5 Bolts.

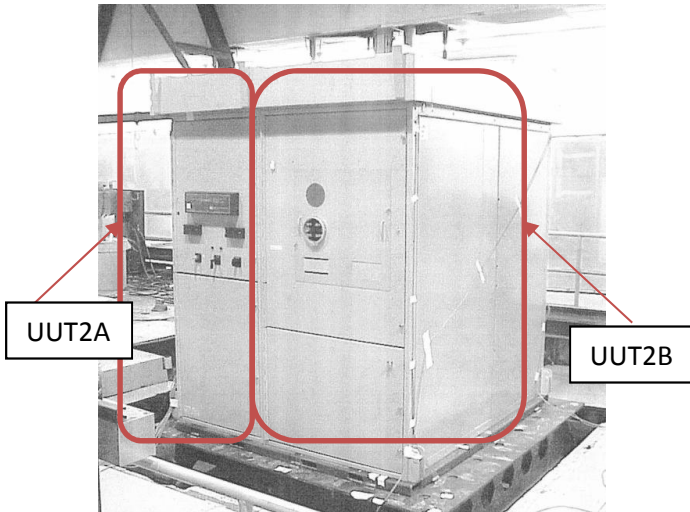
Subcomponents	Manufacturer	Part #
Porcelain Primary Breaker Tube	Powell Industries	0209B5007
Poly Glass Primary Breaker Tube	Powell Industries	0144D2151
1200A Circuit Breaker	Powell Industries	PVED1A1A2A2202G1A1
2000A Circuit Breaker	Powell Industries	PVEA2A1A2A2202G1A1
Standard Accuracy Current Transformer	GE ITI	780
15kV Surge Suppressor	Powell Industries	0144D2156

Section 102 – Auxiliary Vertical Section (UUT1B)

36"W x 94"D x 95"H, 4,125 lbs
Floor Mounted using (4) ½" dia. Grade 5 Bolts.

Subcomponents	Manufacturer	Part #
Porcelain Primary Breaker Tube	Powell Industries	0209B5007
Porcelain Primary Rollout Tube	Powell Industries	0209B4947G5
3000A Circuit Breaker	Powell Industries	PVED4A1A2A2202G1A2
Standard Accuracy Current Transformer	GE ITI	780
13.8kV 15kVA CPT	GE ITI	CPT5-95
15kV Station Class Porcelain Lightning Arrester	GE Tranquell	9L11ZGB015S

Test Report 52917-1 – UUT2



Powell Medium Voltage Switchgear – 1 Switchgear Section, 1 Metering Section, Floor-Mounted

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	2.03	1.0	1.5	3.25	2.44	1.36	0.54
Natural Frequency (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.					
8.9	5.1	9.2						

Section 201 – Auxiliary Vertical Section (UUT2A)

36"W x 94"D x 95"H, 4,125 lbs
Floor Mounted using (4) ½" dia. Grade 5 Bolts.

Subcomponents	Manufacturer	Part #
Porcelain Primary Breaker Tube	Powell Industries	0209B5007
Porcelain Primary Rollout Tube	Powell Industries	0209B4947G5
Poly Glass Primary Rollout Tube	Powell Industries	0209B4947G1
2000A Circuit Breaker	Powell Industries	PVEG2A2A2A2202G1A1
High Accuracy Current Transformer	GE ITI	785
13.8kV 15kVA CPT	GE ITI	CPT5-95
13.8kV 15kVA Potential Transformer	GE ITI	PTG5

Section 202 – PG&E Metering Section (UUT2B)

48"W x 94"D x 95"H, 3,875 lbs
Floor Mounted using (4) ½" dia. Grade 5 Bolts.

Subcomponents	Manufacturer	Part #
Bar Type Current Transformer	GE ITI	JKM-5
Mini-Rupter PT Ground/Disconnect Switch	S&C	255232R2