



OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
FACILITIES DEVELOPMENT DIVISION

APPLICATION FOR OSHPD SPECIAL SEISMIC
CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY

APPLICATION #: OSP – 0186 – 10

OSHPD Special Seismic Certification Preapproval (OSP)

Type: New Renewal

Manufacturer Information

Manufacturer: Post Glover Resistors, Inc

Manufacturer's Technical Representative: Fred Schulkers

Mailing Address: 1369 Cox Ave.; Erlanger, KY 41018

Telephone: (859) 283-0778

Email: Fred.Schulkers@postglover.com

Product Information

Product Name: PulserPlus.net HRG Units

Product Type: High-Resistance Grounding Systems

Product Model Number: PL48DF3E00-HPS (480VAC Delta Conn.) & PL48YF3A00-HPS (480VAC Wye Conn.)
(List all unique product identification numbers and/or part numbers)

General Description: Floor mounted grounding units with NEMA 3R enclosures constructed of mill galvanized carbon steel (PL48D3E00-HPS) and stainless steel (PL48YF3A00-HPS).

Mounting Description: Rigid Floor Mounted

Applicant Information

Applicant Company Name: ZFA Structural Engineers, Inc.

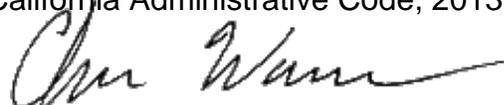
Contact Person: Chris S. Warner, SE

Mailing Address: 1212 Fourth Street, Suite Z; Santa Rosa, CA 95404

Telephone: (707) 526-0992

Email: chrisw@zfa.com

I hereby agree to reimburse the Office of Statewide Health Planning and Development review fees in accordance with the California Administrative Code, 2013.

Signature of Applicant: 

Date: 11/11/14

Title: Senior Principal & CFO

Company Name: ZFA Structural Engineers, Inc.

"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 10/21/14)



OSHPD

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

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

Company Name: ZFA Structural Engineers, Inc.

Name: Chris S. Warner California License Number: S 4613

Mailing Address: 1212 Fourth Street, Suite Z; Santa Rosa, CA 95404

Telephone: (707) 526-0992 Email: chrisw@zfa.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: Trentec Inc.

Contact Name: Marie Nemier

Mailing Address: 4600 East Tech Drive; Cincinnati, OH 45245

Telephone: (513) 528-7900 Email: mnemier@curtisswright.com

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STATE OF CALIFORNIA – HEALTH AND HUMAN SERVICES AGENCY
OSH-FD-759 (REV 10/21/14)





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Seismic Parameters

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

Design Basis of Equipment or Components (Fp/Wp) = 1.44g

Sds (Design spectral response acceleration at short period, g) = 2.00g

ap (In-structure equipment or component amplification factor) = 1.0

Rp (Equipment or component response modification factor) = 2.5

Omega_0 (System overstrength factor) = 2.5

Ip (Importance factor) = 1.5

z/h (Height factor ratio) = 1.0

Equipment or Component Natural Frequencies (Hz) = See Tables 2 & 3 Attached

Overall dimensions and weight (or range thereof) = See Table 1 Attached

Equipment or Components @ grade designed in accordance with ASCE 7-10 Chapter 15: [] Yes [X] No

Design Basis of Equipment or Components (V/W) =

Sds (Design spectral response acceleration at short period, g) =

Sd1 (Design spectral response acceleration at 1 second period, g) =

R (Response modification coefficient) =

Omega_0 (System overstrength factor) =

Cd (Deflection amplification factor) =

Ip (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, 2010: [] Yes [X] No

List of Attachments Supporting Special Seismic Certification

[X] Test Report(s) [X] Drawings [] Calculations [] Manufacturer's Catalog

[] Other(s) (Please Specify):

OSHPD Approval (For Office Use Only) - Approval Expires on December 31, 2019

Signature: [Handwritten Signature] Date: December 30, 2014

Print Name: Timothy J. Piland Title: SSE

Special Seismic Certification Valid Up to : Sds (g) = 2.00 z/h = 1

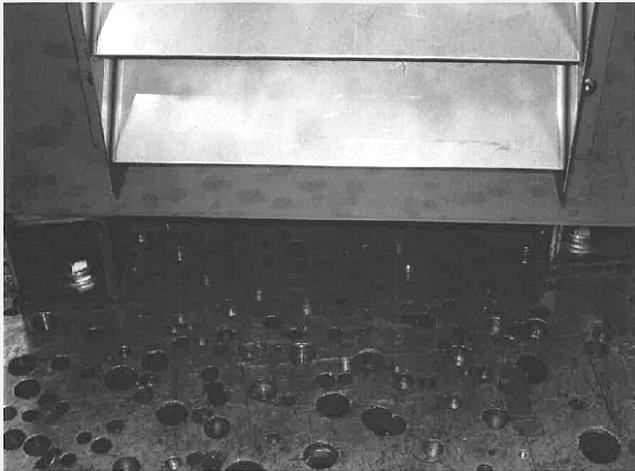
Condition of Approval (if applicable):



**OSHDP Special Seismic Certification
 Certified Product Info
 Table 1**

Manufacturer: Post Glover Resistors, Inc.						
Model Line: PulserPlus.net High Resistance Grounding Units						
Certified Product Construction Summary: Louvered, unpainted, NEMA 3R, see additional info below.						
Certified Options Summary: Acceptable resistor bank wires: 8-18 gauge (copper stranded). Wires as tested are as follows (All are copper stranded):						
W009AX-BLUE	wire, 18 ga, 600V, 90C/105C, MTW, navy blue					
W009AX-BW	wire, 18 ga, 600V, 90C/105C, MTW, white w/ navy blue stripe or navy blue w/ white stripe					
W009AX-GREEN	wire, 18 ga, 600V, 90C/105C, MTW, green					
W009AX-RED	wire, 18 ga, 600V, 90C/105C, MTW, red					
W009AX-WHITE	wire, 18 ga, 600V, 90C/105C, MTW, white					
W017AX	wire, 14 ga, 600V, 90C/105C, MTW, black					
W017AX-WHITE	wire, 14 ga, 600V, 90C/105C, MTW, white					
W8THHNG	wire, 8 ga, THHN, 90C, 600V, green					
W8THHNW	wire, 8 ga, THHN, 90C, 600V, white					
Certified Mounting Summary: Floor mounted using manufacturer's anchorage locations.						
Design Criteria						
Building Code: CBC 2013			$S_{DS} \leq 2.00g$		$z/h \leq 1.0$	$I_p = 1.5$
Model	UUT	Dimensions (in)			Weight (lb)	Notes
		Depth	Width	Height		
PL48DF3E00-HPS	1	20	20.62	86	475	480VAC Delta Connection Mill Galv. A653 steel Enclosure
PL48YF3A00-HPS	2	20	20.62	86	380	480VAC Wye Connection A304 Stainless Steel Enclosure

**OSHPD Special Seismic Certification
 Unit Under Test (UUT) 1 Summary
 Table 2**

Manufacturer: Post Glover Resistors, Inc.				UUT: 1				
Model: PL48DF3E00-HPS								
Lab Test Item No.: Q0035-01-01-01								
Product Construction Summary: NEMA 3R mill galvanized A653 steel enclosure								
Mounting Description: (4) 5/8" diameter SAE Grade 5 Bolts, flat washers, lock washers; direct to shake table								
Comments: Enclosed High Resistance Grounding System								
UUT Properties								
Weight (lb)	Dimensions (in)			Lowest Natural Frequency (Hz)				
	Depth	Width	Height	X-Direction (Side-Side)	Y-Direction (Front-Back)	Z-Direction (Vertical)		
475	20	20.62	86	20.8	14.4	None		
UUT Highest Passed Seismic Run Information								
Building Code	Test Criteria	S _{DS}	z/h	I _p	A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-V}
CBC 2013	ICC-ES AC 156	2.00g	1.0	1.5	3.20g	2.40g	1.33g	0.53g
Test Mounting Pictures:								
								
Testing Result Comments: Through shake table testing, the Post Glover Resistors PL48DF3E00-HPS High Resistance Grounding system met the requirements for maintaining structural integrity and operability for maximum seismic test level of S _{ds} = 2.0 with relative height factor of 1 (z=1,h=1).								

**OSHPD Special Seismic Certification
 Unit Under Test (UUT) 2 Summary
 Table 3**

Manufacturer: Post Glover Resistors, Inc. **UUT: 2**
Model: PL48YF3A00-HPS
Lab Test Item No.: Q0035-02-01-01
Product Construction Summary:
 NEMA 3R A304 stainless steel enclosure
Mounting Description:
 (4) 5/8" diameter SAE Grade 5 Bolts, flat washers, lock washers; direct to shake table
Comments:
 Enclosed High Resistance Grounding System

UUT Properties

Weight (lb)	Dimensions (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	X-Direction (Side-Side)	Y-Direction (Front-Back)	Z-Direction (Vertical)
380	20	20.62	86	20.8	16.0	29.7

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S _{DS}	z/h	I _p	A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-V}
CBC 2013	ICC-ES AC 156	2.00g	1.0	1.5	3.20g	2.40g	1.33g	0.53g

Test Mounting Pictures:



Testing Result Comments:

Through shake table testing, the Post Glover Resistors PL48YF3A00-HPS High Resistance Grounding system met the requirements for maintaining structural integrity and operability for maximum seismic test level of S_{ds} = 2.0 with relative height factor of 1 (z=1,h=1).