



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

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

OFFICE USE ONLY

APPLICATION #: OSP – 0186

**OSHPD Special Seismic Certification Preapproval (OSP)**

Type:  New  Renewal

**Manufacturer Information**

Manufacturer: Post Glover Resistors, Inc.

Manufacturer's Technical Representative: On File

Mailing Address: 1369 Cox Ave, Erlanger, KY 41018

Telephone: On File Email: On File

**Product Information**

Product Name: PulserPlus.net HRG Units

Product Type: High-Resistance Grounding Systems

Product Model Number: PL48DF3E00-HPS (480VAC Delta Conn.) and 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 ( PL48DF3E00-HPS) and stainless steel ( PL48YF3A00-HPS).

Mounting Description: Rigid Base Mounted

**Applicant Information**

Applicant Company Name: DCL Labs, LLC.

Contact Person: Kelly Laplace

Mailing Address: 1315 Greg Street, Suite 109, Sparks, NV 89431

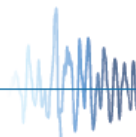
Telephone: (775) 358-5085 Email: [kelly@shaketest.com](mailto:kelly@shaketest.com)

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: 12/3/20

Title: Business Manager Company Name: DCL Labs, LLC.

"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: VMC Group

Name: Kenneth Tarlow California License Number: SE-2851

Mailing Address: 113 Main Street, Bloomingdale, NJ 07403

Telephone: (973) 838-1780 Email: [ken.tarlow@thvmcgroup.com](mailto:ken.tarlow@thvmcgroup.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): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

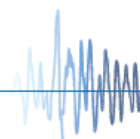
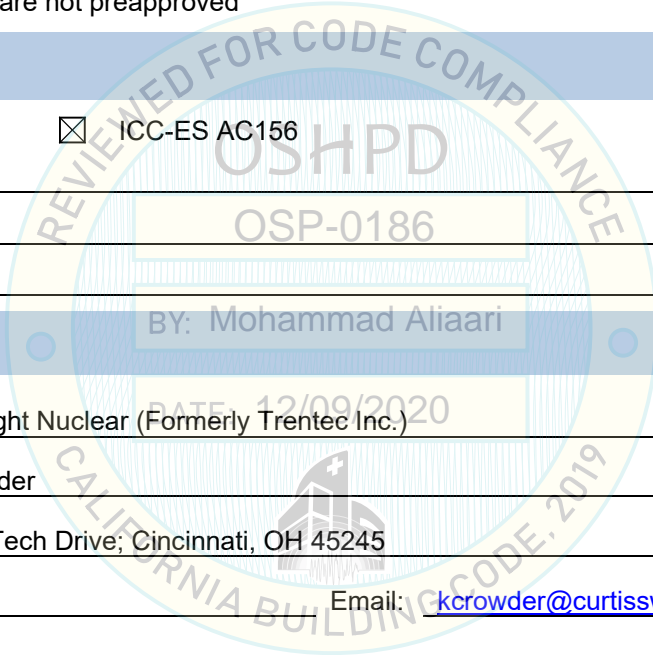
**Testing Laboratory**

Company Name: Curtiss-Wright Nuclear (Formerly Trentec Inc.)

Contact Name: Kevin Crowder

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

Telephone: (513) 528-7900 Email: [kcrowder@curtisswright.com](mailto:kcrowder@curtisswright.com)





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**Seismic Parameters**

Design in accordance with ASCE 7-16 Chapter 13:  Yes  No

Design Basis of Equipment or Components ( $F_p/W_p$ ) = 1.44

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

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

$R_p$  (Equipment or component response modification factor) = 2.5

$\Omega_0$  (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

Overall dimensions and weight (or range thereof) = See attachment

Equipment or Components @ grade designed in accordance with ASCE 7-16 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) = \_\_\_\_\_

$\Omega_0$  (System overstrength factor) = by: Mohammad Aliari

$C_d$  (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): Attachments

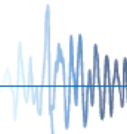
**OSHDP Approval (For Office Use Only) – Approval Expires on December 31, 2025**

Signature: M. Aliari Date: December 09, 2020

Print Name: Mohammad Aliari Title: Senior Structural Engineer

Special Seismic Certification Valid Up to :  $S_{DS}$  (g) = 2.00  $z/h$  = 1

Condition of Approval (if applicable): \_\_\_\_\_



**Special Seismic Certification  
Certified Components**



**Manufacturer:** Post Glover Resistors, Inc.

**Product Line:** PulserPlus.net High Resistance Grounding Units

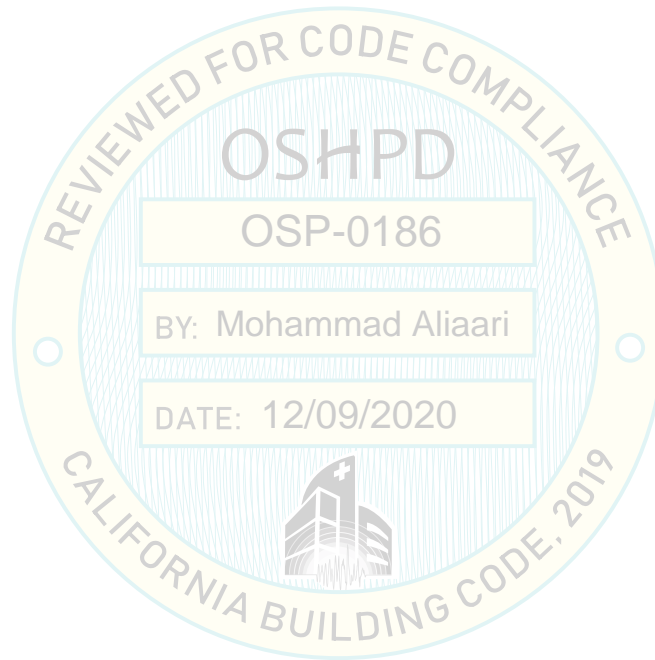
**Certified Product Construction:** Louvered, unpainted, NEMA 3R

**Certified Options:**

Enclosures, terminal blocks, transformers, fuses, alarms, and other electrical components

**Mounting Description:** Rigid Base Mount

Model Number	Description	Dimensions (inches)			Weight (lb)	Sds (g) z/h=1	Unit
		Length	Width	Height			
PL48DF3E00-HPS	480VAC Delta Connection High Resistance Grounding Unit	20.0	20.6	86.0	475.0	2.0	UUT1
PL48YF3A00-HPS	480VAC Wye Connection High Resistance Grounding Unit	20.0	20.6	86.0	380.0	2.0	UUT2



**Special Seismic Certification  
Certified Subcomponents**



**Manufacturer:** Post Glover Resistors, Inc.

**Product Line:** PulserPlus.net High Resistance Grounding Units

**ENCLOSURES**

Component Name	Component Manufacturer	Manufacturing Part Number	Description	Unit
Pulser Plus.Net, seismic, freestanding, galvaneal, painted	Post Glover	PLENF3E-S	NEMA 3R/IP23	UUT1
Pulser Plus.Net, seismic, freestanding, 304 SS	Post Glover	PLENF3A-S	NEMA 3R/IP23	UUT2
Pulser Plus.Net, seismic, freestanding, 316 SS	Post Glover	PLENF3B-S	NEMA 3R/IP23	Extrapolated*

\*Enclosure constructed from 304 SS was tested. The 304 SS enclosure and 316 SS enclosure have the same NEMA ratings and yield strengths.

**TERMINAL BLOCKS**

Component Name	Component Manufacturer	Manufacturing Part Number	Description	Unit
Terminal Block, 10 point, 30A	Kulka	310	600V, 10 pole, 30A	UUT1, UUT2
Terminal Block, 15 point, 12A	Phoenix Contact	FKC2,5/15-ST	300V, 10 point, 12A	UUT1, UUT2
Terminal Block Markers, 5mm	Phoenix Contact	0828734	UCT-TM, 72 per card	UUT1, UUT2

**TRANSFORMERS**

Component Name	Component Manufacturer	Manufacturing Part Number	Description	Unit
Transformer, voltage	Acme	TB-81217	1kVA, 240-480V	UUT1
Transformer, voltage	Acme	TB-81213	250VA, 240-480V	UUT1, UUT2

**FUSE RELATED**

Component Name	Component Manufacturer	Manufacturing Part Number	Description	Unit
Fuse holder, class CC	Faraz Shawmut	30322R	600V, 2 pole, 30A	UUT1, UUT2
Fuse holder, class CC	Faraz Shawmut	30323R	600V, 3 pole, 30A	UUT1, UUT2
Fuse, class CC	Faraz Shawmut	ATQR1-1/4	600V, 1.25A	UUT1, UUT2
Fuse, class CC	Faraz Shawmut	ATQR12	600V, 12A	UUT1, UUT2
Fuse, class CC	Faraz Shawmut	ATQR3-1/2	600V, 3.5A	UUT1, UUT2
Fuse, class CC	Faraz Shawmut	ATQR6	600V, 6A	UUT1, UUT2
Secondary fuse kit, class CC	Acme	PL112603	600V, 1 pole, 30A	UUT1, UUT2
Primary fuse kit, class CC	Acme	PL112702	600V, 2 pole, 30A	UUT1, UUT2

**ALARM RELATED**

Component Name	Component Manufacturer	Manufacturing Part Number	Description	Unit
Pilot light, amber	C3Controls	13SBLA120ST-13ARF	120V flat lens	UUT1, UUT2
Pilot light, green	C3Controls	13SBLG120ST-13GNF	120V flat lens	UUT1, UUT2
Pilot light, red	C3Controls	13SBLR120ST-13RDF	120V flat lens	UUT1, UUT2
Audio Alarm Piezo Buzzer	Floyd Bell	MC-09-201-Q	95dB(A), 120V, IP68	UUT1, UUT2

**OTHER COMPONENTS**

Component Name	Component Manufacturer	Manufacturing Part Number	Description	Unit
Insulator	NSI Industries	F 16-250-3V	#16/14 slipon disconnect	UUT1, UUT2
X-COM plug	Wago	769-107-021-000	7 pole	UUT1, UUT2
X-COM strain relief plate	Wago	769-413	6-9 pole	UUT1, UUT2
X-COM receptacle	Wago	769-607	7 pole	UUT1, UUT2
Tie Anchor Mounts	Panduit	TA1S8-C	n/a	UUT1, UUT2
Power Supply	Mean-Well	MDR-20-24	85-264VAC input/24VDC/1.0A output	UUT1, UUT2
Neutral Pole Module	C3Controls	PDNA230	30A	UUT1, UUT2
Disconnect Switch	C3Controls	PDS2-330-SPHBN11	3 pole, 30A, Series DS2	UUT1, UUT2
Electronics Module	Cartessa	PEM-AV	n/a	UUT1, UUT2
Relay	Wago	788-507	120V	UUT1, UUT2
Relay	Tyco	RELO06	120V coil, 480V contacts	UUT1, UUT2
Temperature Control Switch	Hoffman	SW012	30-140°F, NC	UUT1, UUT2
Ethernet Card	Unitronics	V100-17-ET2	Installs in V130-T4-TR6-PG1	UUT1, UUT2
Controller	Unitronics	V130-T4-TR6-PG1	HMI/PLC Controller	UUT1, UUT2
Heater	Post Glover	PLHTR48-S	Heater, 480V, 160W, Enclosed	UUT1, UUT2

# UNIT UNDER TEST - Summary Sheet



## UUT1

**Manufacturer:** Post Glover Resistors, Inc.

**Product Line:** High-Resistance Grounding Systems

**Model Number:** PL48DF3E00-HPS

**Lab Test Item Number:** Q0035-01-01-01

**Product Construction Summary:** NEMA 3R Galvannealed A653 Steel Enclosure

**Options / Subcomponent Summary:** 480V with Delta Connection, 8-18 gauge copper stranded resistor bank wires, enclosures, terminal blocks, transformers, fuses (Main Neutral Fuse), alarms, and other electrical components

**Unit Mounting Description:**

UUT1 was rigidly base mounted to the shake table. UUT1 was mounted directly to the shake table using (4) 5/8" diameter SAE Grade 5 bolts, flat washers, and lock washers. The manufacturer's mounting locations were used. The bolts were spaced 16.92 inches width-wise and 17.00 inches length-wise.

**UUT Properties**

UUT1	Operating Weight (lb)	Dimensions (in)			Lowest Natural Frequency (Hz)		
		Depth	Width	Height	Front-Back	Side-Side	Vertical
	475	20.0	20.6	86.0	14.4	20.8	N/A

**Seismic Test Parameters**

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2019	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	1.33	0.53



Photo of test setup (UUT1 is on the left)

**Note:** The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems were maintained.

# UNIT UNDER TEST - Summary Sheet

## UUT2



**Manufacturer:** Post Glover Resistors, Inc.

**Product Line:** High-Resistance Grounding Systems

**Model Number:** PL48YF3A00-HPS

**Lab Test Item Number:** Q0035-02-01-01

**Product Construction Summary:** NEMA 3R A304 Stainless Steel Enclosure

**Options / Subcomponent Summary:** 480V with Wye Connection, 8-18 gauge copper stranded resistor bank wires, enclosures, terminal blocks, transformers, fuses (Main Neutral Fuse), alarms, and other electrical components

**Unit Mounting Description:**

UUT2 was rigidly base mounted to the shake table. UUT2 was mounted directly to the shake table using (4) 5/8" diameter SAE Grade 5 bolts, flat washers, and lock washers. The manufacturer's mounting locations were used. The bolts were spaced 16.92 inches width-wise and 17.00 inches length-wise.

**UUT Properties**

UUT2	Operating Weight (lb)	Dimensions (in)			Lowest Natural Frequency (Hz)		
		Depth	Width	Height	Front-Back	Side-Side	Vertical
	380	20.0	20.6	86.0	16.0	20.8	29.7

**Seismic Test Parameters**

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2019	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	1.33	0.53



Photo of test setup (UUT2 is on the right)

**Note:** The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained.