



OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
FACILITIES DEVELOPMENT DIVISION

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

OFFICE USE ONLY

APPLICATION #: OSP – 0430 – 10

OSHPD Special Seismic Certification Preapproval (OSP)

Type: New Renewal

Manufacturer Information

Manufacturer: Teal Electronics

Manufacturer's Technical Representative: Roderick Harvey

Mailing Address: 10350 Sorrento Valley Rd, San Diego, CA 92121

Telephone: (858) 366-7540 Email: rod.harvey@teal.com

Product Information

Product Name: Siemens PDU Falcon

Product Type: Power Distribution Unit - PDU

Product Model Number: PDU-PDCC – 45kVA

(List all unique product identification numbers and/or part numbers)

General Description: Single configuration 45kVA power distribution unit.

Mounting Description: Rigid base mounted

Applicant Information

Applicant Company Name: Tobolski Watkins Engineering, Inc.

Contact Person: Matthew J. Tobolski, Ph.D., S.E

Mailing Address: 9246 Lightwave Avenue, San Diego, CA 92123

Telephone: (858) 381-5843 Email: mtobolski@tobolskiwatkins.com

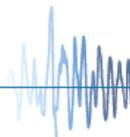
I hereby agree to reimburse the Office of Statewide Health Planning and Development review fees in accordance with the California Administrative Code, 2013.

Signature of Applicant:  Date: 04/09/2015

Title: President & CEO Company Name: Tobolski Watkins Engineering, 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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California Licensed Structural Engineer Responsible for the Engineering and Test Report(s)

Company Name: Tobolski Watkins Engineering, Inc.

Name: Matthew J. Tobolski, Ph.D., S.E. California License Number: S5648

Mailing Address: 9246 Lightwave Avenue, San Diego, CA 92123

Telephone: (858) 381-5843 Email: mtobolski@tobolskiwatkins.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: Environmental Testing Laboratory, Inc.

Contact Name: Paul E. Little

Mailing Address: 11034 Indian Trail, Dallas, TX 75229-3513

Telephone: (972) 247-9657 Email: paul@etldallas.com

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Seismic Parameters

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

Design Basis of Equipment or Components (F_p/W_p) = 1.69

S_{DS} (Design spectral response acceleration at short period, g) = 2.25

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) = 2.5

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 7-10 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, 2010: Yes No

List of Attachments Supporting Special Seismic Certification

Test Report(s) Drawings Calculations Manufacturer's Catalog

Other(s) (Please Specify): Attachment A, ISO 9001 Certificate

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

Signature:  Date: April 30, 2015

Print Name: Timothy J. Piland Title: SSE

Special Seismic Certification Valid Up to : S_{DS} (g) = 2.25 z/h = 1

Condition of Approval (if applicable): Approval is limited to components identical to tested unit.





Table 2

Special Seismic Certification Certified Subcomponent Matrix

TWEI Project No.: 2014-0786-CO-001

Manufacturer: Teal Electronics

Model Line: PDU Electrical Components

Building Code: CBC 2013

Seismic Certification Limits: $S_{DS} = 2.25g$ $z/h = 1.0$

$I_p = 1.5$

Component Type	Manufacturer	Model	Description	Notes	UUT
Transformer	Teal Electronics	TK0010	3P Delta-Wye		1
Thermal Cutout	Pepi	C-100456	170 degree		1
Power Supply	CUI Inc	VOF-30-24	24VDC, 1.3A		1
Terminal Block	Siemens	8WH2000-0AK00	65A, 600V 12MM		1
		8WH2000-0AF00	20A, 600V 5.2MM		1
		8WH2000-0AH00	50A, 600V 8.2MM		1
		8WH2000-0AM00	115A, 600V 16MM		1
	Marathon	1432559	2 Gang, 600V, 310A		1
Relay	ABB	1SVR405611R1000	12A, 24VDC, 2 SPDT, 250VAC		1
MOV Module	Phoenix	VAL-MS 500 ST	600V, 10kA	3 tested	1
Circuit Breaker	Eaton	EGE3090FFG	3P, 90A, 415/480VAC		1
		EGE3070FFG	3P, 70A, 414/480 VAC		1
		EGE3030FFG	3P, 30A, 414/480 VAC		1
		FAZ-D20/2-NA	2P, 20.0A, 277/480VAC		1
Switch	Eaton	M22-YED0055	24V		1
UPS	Eaton	9PX5000	5000VA/4500W	2 tested	1
Tower Computer	Siemens	IRS-FHU	110-240VAC, 5 - 2 A, 50-60 Hz		1
Power Strip	Eaton	EFLXI3000R-PDU1UIEC	110-240VAC, 50-60 Hz, 16 A		1
Workstation	Hewlett Packard	Z820	11A / 100-127 VAC, 5.5A / 200-240 VAC		1
KVM Module	Digital Multitools	DKX1004	100-240VAC, 50/60 Hz, 0.4A		1
Ethernet Switch	NETGEAR	JGS516	16 Port 10/100/1000		1



UUT - #1

**UNIT UNDER TEST (UUT)
Summary Sheet**

TWEI Project No.: 2014-0786-CO-001

Manufacturer: Teal Electronics

Model Line: PDU

Model Number: PDCC - 45kVA **Serial Number:** 174280

Product Construction Summary:
Painted 14 GA carbon steel enclosure.

Options/Subcomponent Summary:
Transformer: (1) Teal Electronics TK0010 with (1) Pepi C-100456 thermal cutout. **Power Supply:** (1) CUI VOF-30-24. **Terminal Blocks:** (2) Siemens 8WH2000-0AK00, (3) Siemens 8WH2000-0AF00, (1) Siemens 8WH2000-0AH00, (1) Siemens 8WH2000-0AM00. **Relay:** (2) ABB 1SVR405611R1000. **Circuit Breakers:** (2) Eaton FAZ-D20/2-NA, (1) Eaton EGE3030FFG, (1) Eaton EGE3070FFG, (1) Eaton EGE3090FFG. **MOV Module:** (3) Phoenix VAL-MS 500 ST. **Switch:** (1) Eaton M22-YED0055. **UPS:** (2) Eaton 9PX5000. **Tower Computer:** (1) Siemens IRS-FHU. **Power Strip:** (1) Eaton EFLXI3000R-PDU1UIEC. **Workstation:** (1) Hewlett Packard Z820. **KVM Module:** (1) Digital Multitools DKX1004. **Ethernet Switch:** (1) NETGEAR JGS516.

UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
1215	36	44	57.5	13.2	17.3	7.3

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 AC156	2.25g	1.0	1.5	3.6	2.7	1.5	0.6

Test Mounting Details:



Rigid base mounted with (4) 3/8 grade 5 bolts.
Unit maintained structural integrity and remained functional per manufacturer requirement.
Contents were included in testing per operating conditions.