APPLICATION FOR OSHPD SPECIAL SEISMIC CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY	
APPLICATION #:	OSP – 0462 – 10

OSHPD Special Seismic Certification Preapproval (OSP)

Type: ☒ New ☐ Renewal

Manufacturer Information

Manufacturer: Teal Electronics Corporation

Manufacturer's Technical Representative: Rod Harvey

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

Telephone: 858.366.7540 Email: Rod.harvey@teal.com

Product Information

Product Name: HET Transformers

Product Type: Dry-Type Transformer

Product Model Number: See Attachment
(List all unique product identification numbers and/or part numbers)

General Description: 15-300kVA copper winding transformers enclosed in carbon steel cabinets. Seismic enhancements made to the test units and modifications required to address the anomalies observed during the tests shall be incorporated into the production units.

Mounting Description: Rigid base mounted.

Applicant Information

Applicant Company Name: TRU Compliance, LLC – A Tobolski Watkins Affiliate

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

Mailing Address: 960 SW Disk Dr., Ste. 104, Bend, OR 97702

Telephone: 844-878-0200 Email: mtobolski@trucompliance.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: 03/18/2016

Title: President & CEO Company Name: TRU Compliance, LLC

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

Company Name: TRU Compliance, LLC – A Tobolski Watkins Affiliate

Name: Derek J. Manwill, S.E. California License Number: S6266

Mailing Address: 960 SW Disk Dr., Ste. 104, Bend, OR 97702

Telephone: 844-878-0200 Email: dmanwill@trucompliance.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: Clark Testing

Contact Name: Robert Francis

Mailing Address: 1801 Route 51 South, Jefferson Hills, PA 15025

Telephone: 412.387.1001 Email: rfrancis@clarktesting.com

Seismic Parameters

Design in accordance with ASCE 7-10 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) = 2.0g (z/h = 1.0); 3.2g (z/h = 0.0)

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

R_p (Equipment or component response modification factor) = 2.5

Ω_0 (System overstrength factor) = 2.0

I_p (Importance factor) = 1.5

z/h (Height factor ratio) = 1.0 (S_{DS} = 2.0g); 0.0 (S_{DS} = 3.2g)

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, 2015: ☐ Yes ☒ No

List of Attachments Supporting Special Seismic Certification

☒ Test Report(s) ☐ Drawings ☐ Calculations ☐ Manufacturer's Catalog

☒ Other(s) (Please Specify): Attachment A

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

Signature: _____ Date: April 19, 2016

Print Name: Timothy J. Piland Title: SSE

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

Condition of Approval (if applicable): _____

SPECIAL SEISMIC CERTIFICATION
CERTIFIED COMPONENT MATRIX

TRU PROJECT NO. 15047

TRU COMPLIANCE

Manufacturer: Teal Electronics Corporation
Model Line: HET Transformers

TABLE 1

Certified Product Construction Summary:
Carbon steel enlcosure: top - 14 GA.; sides - 12 GA.; base - 7 GA. (15kVA - 10 GA. base allowed), copper windings.

Certified Options Summary:
Carbon steel rain hood.

Mounting Configuration:
Base mounted - rigid
Note: Installed mounting configuration must be of similar configuration and equivalent strength and stiffness to those tested.

Building Code: CBC 2016 ***Seismic Certification Limits:*** S_{DS} = 2.0 z/h=1.0; S_{DS} = 3.2 z/h=0.0 I_P = 1.5

Model Line	Model	Dimensions (in)			Weight (lb)	Notes	UUT
		Depth	Width	Height			
HET Transformers	HET-015-480-208	16.0	17.5	25.0	289	*15kVA*	1
	HET-030-480-208	17.1	25.0	31.9	500	*30kVA*	
	HET-045-480-208	17.0	25.0	31.9	625	*45kVA*	
	HET-075-480-208	21.4	26.7	35.0	950	*75kVA*	
	HET-112-480-208	22.0	30.5	34.9	1,200	*112kVA*	
	HET-150-480-208	22.0	30.5	35.0	1,450	*150kVA*	
	HET-225-480-208	30.0	34.5	44.9	2,050	*225kVA*	
	HET-300-480-208	30.0	37.0	50.0	2,588	*300kVA*	2

UNIT UNDER TEST (UUT) SUMMARY SHEET

TRU PROJECT NO. 15047

UUT 1

Manufacturer: Teal Electronics Corporation
Model Line: HET Transformers
Model Number: HET-015-480-208 ***Serial Number:*** 463017

Product Construction Summary:
Carbon steel enlcosure: top - 14 GA.; sides - 12 GA.; base - 10 GA., copper windings.

Options/Subcomponent Summary:
15kVA transformer.

UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
289	16.0	17.5	25.0	16.7	18.2	15.7

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H}	A_{RIG-H}	A_{FLX-V}	A_{RIG-V}
CBC 2016	ICC-ES AC156	2.0	1.0	1.5	3.20	2.40	1.33	0.53
		3.2	0.0	1.5	3.20	1.28	2.13	0.85

Test Mounting Details:

Rigid base moutned to shake table 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.

UNIT UNDER TEST (UUT) SUMMARY SHEET

TRU PROJECT NO. 15047

UUT 2

Manufacturer: Teal Electronics Corporation
Model Line: HET Transformers
Model Number: HET-300-480-208 ***Serial Number:*** 462863

Product Construction Summary:
Carbon steel enlcosure: top - 14 GA.; sides - 12 GA.; base - 7 GA., copper windings.

Options/Subcomponent Summary:
300kVA transformer, carbon steel rain hood.

UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
2588	30	37	50	16.7	11.5	15.8

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H}	A_{RIG-H}	A_{FLX-V}	A_{RIG-V}
CBC 2016	ICC-ES AC156	2.0	1.0	1.5	3.20	2.40	1.33	0.53
		3.2	0.0	1.5	3.20	1.28	2.13	0.85

Test Mounting Details:

Rigid base moutned to shake table with (4) 1/2" grade 5 bolts.
Unit maintained structural integrity and remained functional per manufacturer requirement.
Contents were included in testing per operating conditions.