



OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
FACILITIES DEVELOPMENT DIVISION

APPLICATION FOR OSHPD SPECIAL SEISMIC
CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY

APPLICATION #: OSP-0370-10

OSHPD Special Seismic Certification Preapproval (OSP)

Type: New Renewal

Manufacturer Information

Manufacturer: Pacific Crest Transformers

Manufacturer's Technical Representative: Carrie Holmes Stanton

Mailing Address: 300 West Antelope Road, Medford, Oregon 97503

Telephone: 541-826-8830

Email: Carrie.Holmes@pacificcresttrans.com

Product Information

Product Name: Transformer Product Family

Product Type: Liquid Filled Transformers

Product Model Number: Product Model Range: PCT-75KVA-ES thru PCT-5000KVA-ES

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

General Description: 75 KVA to 5000 KVA liquid filled electrical transformers.

Mounting Description: Rigid Base Mounted

Applicant Information

Applicant Company Name: Pacific Crest Transformers


Contact Person: Carrie Holmes Stanton

Mailing Address: 300 West Antelope Road, Medford, Oregon 97503

Telephone: 541-826-8830

Email: Carrie.Holmes@pacificcresttrans.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: 

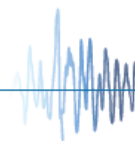
Date: November 1, 2013

VP of Quality Assurance &

Title: Product Support

Company Name: Pacific Crest Transformers

"Access to Safe, Quality Healthcare Environments that Meet California's Diverse and Dynamic Needs"



osHPD



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

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

Company Name: Degenkolb Engineers

Name: Adrian M. Nacamuli California License Number: S 4857

Mailing Address: 235 Montgomery Street, San Francisco, California 94104

Telephone: 415-354-6460 Email: nacamuli@degenkolb.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): _____

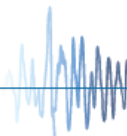
Testing Laboratory

Company Name: University of California at Berkeley

Contact Name: Wesley Neighbour

Mailing Address: Richmond Field Station, 1301 S. 46th Street, Richmond, California 94804

Telephone: 510-665-3409 Email: wdn@berkeley.edu





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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) = See Certified Unit Table

S_{DS} (Design spectral response acceleration at short period, g) = See Certified Unit Table

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) = 2.5

I_p (Importance factor) = 1.5

z/h (Height factor ratio) = See Certified Unit Table

Equipment or Component Natural Frequencies (Hz) = See UUT Test Summary Sheets

Overall dimensions and weight (or range thereof) = See Certified Unit 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, 2010: Yes No

List of Attachments Supporting Special Seismic Certification

Test Report(s) Drawings Calculations Manufacturer's Catalog

Other(s) (Please Specify): Equipment and Subcomponent Summary

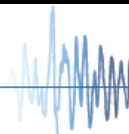
OSHDP Approval (For Office Use Only) – Approval Expires on December 31, 2019

Signature:  Date: 3/11/2014

Print Name: M. R. Karim Title: SHFR

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

Condition of Approval (if applicable): _____



OSHPD Special Seismic Certification Summary of Certified Units



Manufacturer: Pacific Crest Transformers

Product Line: Liquid Filled Transformer

Product Construction Summary:

Mineral oil filled, steel stacked core with copper circular coils, and welded carbon steel tank.

Certified Range:

75 KVA to 5000 KVA

Mounting Condition Tested:

Transformer tank and compartment base rigidly bolted.

UUT	Model	Description	Dimensions (in)			Weight (lbs)	SDS (g)	z/h	Fp
			Width	Depth	Height				
Extrapolated	PCT-75KVA-ES	75 KVA Transformer	54	47	60	3,900	2.33 1.8	0.0 1.0	0.56 1.30
UUT-1	PCT-300KVA-ES	300 KVA Transformer	57	52	69	6,600	2.33 2.0	0.0 1.0	0.56 1.44
Interpolated		300 KVA to 5000 KVA Transformer	57 to 70	50 to 52	69 to 100	6,600 to 25,730	2.33 1.8	0.0 1.0	0.56 1.30
UUT-2	PCT-5000KVA-ES	4000/5000 KVA Transformer	70	50	100	25,730	2.33 1.8	0.0 1.0	0.56 1.30

OSHPD Special Seismic Certification Summary of Certified Sub-Components



Manufacturer: Pacific Crest Transformers

Product Line: Liquid Filled Transformer

Model Number	Manufacturer	Description	Weight (lbs)	Material	Units with Component	S _{DS}	z/h	Quantity Tested
Cooling Panels (Radiators)								
WC952-4P	Trantech	4 Panel, 20.5" width, 3.5" diameter welded header	94	Carbon Steel	UUT-1	2.33 2.0	0.0 1.0	1
WC952-18P	Trantech	18 Panel, 20.5" width, 3.5" diameter welded header	785	Carbon Steel	UUT-2	2.33 1.8	0.0 1.0	4
Load Break Switches								
70343660	Central Moloney	2-position 300 AMP	7.6	Bronze, Stainless Steel, Thermo-plastic	UUT-1	2.33 2.0	0.0 1.0	3
De-Energized Tap Changer								
40A010-03	Specialty Switch	3 deck 5 position	5.4	Brass, Stainless Steel	UUT-1 UUT-2	2.33 2.0	0.0 1.0	2
Gauges								
INT 005-001	H-J	Liquid Level Indicator	< 1	Brass, Thermoplastic	UUT-1 UUT-2	2.33 2.0	0.0 1.0	2
HPG-2000	Heartland	Pressure Vacuum Gauge	< 1	Brass, Copper, Polycarbonate	UUT-1 UUT-2	2.33 2.0	0.0 1.0	2
INT 002-002	H-J	Dial Type Thermometer	< 1	Brass, Stainless Steel, Aluminum	UUT-1	2.33 2.0	0.0 1.0	1
2562A	ORTO	Dial Type Thermometer	< 1	Brass, Stainless Steel, Aluminum	UUT-2	2.33 1.8	0.0 1.0	1
4000361C99FV	Cooper	Bay-O-Net Fuse Holders	< 1	Thermoplastic, Brass	UUT-1	2.33 2.0	0.0 1.0	3
Fans								
F16-A8477	Krenz	1/6 HP, 120VAC, Single Phase, 16" Fan	42	Aluminum blades galvanized steel fan guards	UUT-2	2.33 1.8	0.0 1.0	2
F24-A8052, F24-A8606	Krenz	1/6 HP, 120VAC, Single Phase, 24" Fan	60	Aluminum blades galvanized steel fan guards	Interpolated	2.33 2.0	0.0 1.0	-
F24-A8484	Krenz	1/6 HP, 480VAC, Three Phase, 24" Fan	60	Aluminum blades galvanized steel fan guards	Interpolated	2.33 2.0	0.0 1.0	-
F26D-A9714	Krenz	1/3 HP, 480VAC, Three Phase, 26" Fan	60	Aluminum blades galvanized steel fan guards	UUT-1	2.33 2.0	0.0 1.0	2

OSHPD Special Seismic Certification
Unit Under Test Summary
UUT-1



Unit Number:	UUT-1
Manufacturer:	Pacific Crest Transformers
Product Line:	Liquid Filled Transformer
Product Description:	300 KVA 3-Phase Transformer, Model PCT-300KVA-ES
Test Results:	Unit maintained structural integrity and functionality at the conclusion of shake table testing. Transformer tank was filled with content (mineral oil) during testing.

Product Construction Summary:

Mineral oil filled, steel stacked core with copper circular coils, and welded carbon steel tank.

Options and Sub-component Summary:

Trantech radiators, Krenz cooling fans, Specialty Switch Tap Changer, Central Moloney Load Break Switches

Unit Properties

Operating Weight (lbs)	Width (in)	Depth (in)	Height (in)
6,600	57	52	69
Natural Frequencies (Hz)			
Front-Back	Side-Side	Vertical	
16.5	19.7	13.8	

Unit Mounting: Rigidly mounted to shake table with four 7/8" diameter A325 bolts at tank and four 3/8" diameter Grade 5 bolts at compartment.



Seismic Test Parameters

Building Code:	2013 California Building Code					
Test Criteria:	ICC-ES AC156, February 2012					
Sds	Ip	z/h	Arig (horizontal)	Aflex (horizontal)	Arig (vertical)	Aflex (vertical)
2.33	1.5	0.0	0.93	2.33	0.62	1.55
2.0	1.5	1.0	2.40	3.20	0.54	1.34

OSHPD Special Seismic Certification
Unit Under Test Summary
UUT-2



Unit Number:	UUT-2
Manufacturer:	Pacific Crest Transformers
Product Line:	Liquid Filled Transformer
Product Description:	4000/5000 KVA 3-Phase Transformer, Model PCT-5000KVA-ES
Test Results:	Unit maintained structural integrity and functionality at the conclusion of shake table testing. Transformer tank was filled with content (mineral oil) during testing.

Product Construction Summary:

Mineral oil filled, steel stacked core with copper circular coils, and welded carbon steel tank.

Options and Sub-component Summary:

Trantech radiators, Krenz cooling fans, Specialty Switch Tap Changer

Unit Properties

Operating Weight (lbs)	Width (in)	Depth (in)	Height (in)
25,730	70	50	100
Natural Frequencies (Hz)			
Front-Back	Side-Side	Vertical	
12	20	None under 33	
Unit Mounting:	Rigidly mounted to shake table with six 7/8" diameter A325 bolts at tank and two 3/8" diameter Grade 5 bolts at compartment.		



Seismic Test Parameters

Building Code:	2013 California Building Code					
Test Criteria:	ICC-ES AC156, February 2012					
Sds	Ip	z/h	Arig (horizontal)	Aflex (horizontal)	Arig (vertical)	Aflex (vertical)
2.33	1.5	0.0	0.93	2.33	0.62	1.55
1.8	1.5	1.0	2.16	2.88	0.48	1.20