oshpd
Office of Statewide Health Planning and Development

State of California – Health and Human Services Agency

Facilities Development Division www.oshpd.ca.gov/fdd
400 R Street. Suite 200, Sacramento, California 95811-6213 Phone (916) 440-8300 Fax (916) 654-2973

APPLICATION FOR PREAPPROVAL

SPECIAL SEISMIC CERTIFICATION OF EQUIPMENT AND COMPONENTS

For Office Use Only

APPLICATION NO.

OSP -0017-10

Check whether application is: NEW [X] RENEWAL [ ]

1.0

Eaton Corporation	Eddie Wilkie
Manufacturer	*Manufacturer's Technical Representative*
1000 Cherrington Parkway, Moon Township, PA 15108	175 Vista Blvd, Arden, NC 28704
Mailing Address	
828-651-0707	eddiewilkie@eaton.com
Telephone	*E-mail Address*

2.0

Unitized Power Centers	Integrated Primary Switch, Transformer and LV Distribution Switchboard Substation
Product Name	*Product Type*

Custom Product, order specific numbers

Product model No (List all unique product identification numbers and/or serial numbers)

General Description: *Integrated Unit Substation for electrical distribution systems per applicable UL listings; Floor Mounted – Free Standing; Rear or Front Access only; Three-Phase 3 or 4 Wire; 112 through 1000-kVA; Primary 2.4 to15-kV; Secondary 208Y/120 to 575Y/380-Volt; 50-60Hz; Multiple Sections; NEMA Type 1 ; Silver plated copper bus; Fully Rated up to 65-kAIC.*

3.0

Eaton Corporation	*Eddie Wilkie*
Applicant Company Name	*Contact Person*
1000 Cherrington Parkway, Moon Township, PA 15108	*175 Vista Blvd, Arden, NC 28704*
Mailing Address	
828-651-0707	eddiewilkie@eaton.com
Telephone	*E-mail Address*

I hereby agree to reimburse the Office of Statewide Health Planning and Development for the actual costs incurred by the department for review.

Eddie Wilkie	3/4/11
Signature of Applicant	*Date*
Division Engineering Manager	Eaton Corporation
Title	*Company Name*

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Registered Design Professional Preparing the Report

4.0

Westinghouse Electric Co., LLC
Company Name

Nathan Glenn — *Contact Name*
M35222 — *California License Number*

1000 Westinghouse Drive, New Stanton, PA 15672
Mailing Address

724-722-5737 — *Telephone*
glennnm@westinghouse.com — *E-mail Address*

California Licensed Structural Engineer Review and Acceptance of the Report

5.0

William Merkel Associates
Company Name

William Merkel — *Contact Name*
SE1993 — *California License Number*

2804 Fulton Avenue, Sacramento, CA 95821
Mailing Address

916-481-1962 — *Telephone*
wmase@pacbell.net — *E-mail Address*

Anchorage Pre-Approval

6.0

☐ *Anchorage is pre-approved under OPA-*
(Separate application for anchorage pre-approval is required)

☒ Anchorage is not Pre-approved

Certification Method

70. ☐ *Testing in accordance with:* ☐ *ICC-ES AC-156* ☒ *Other (Please Specify):*

Eaton Test Protocol, Publication SA12501SE. Test results are compared to ICC-ES AC 156 requirements to prove equivalence.

☐ *Analysis*
☐ *Experience data*
☐ *Combination of Testing, Analysis, and/or Experience Data (Please Specify):*

Testing Laboratory (if applicable)

8.0

Wyle Laboratories/Clark Dynamic Testing Lab — *Company Name*
Don Smith / John Antenucci — *Contact Name*

7800 Hwy 20 West / 1801 Route 51
Huntsville, AL 35806 / Jefferson Hills, PA 15025
Mailing Address

256-716-4445/412-382-7173 — *Telephone*
Don.smith@wyle.com / jantenucci@clarktesting.com — E-mail:

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Approval Parameters

9.0

Design in accordance with ASCE 7-05 Chapter 13: ☒ Yes ☐ No

Design Basis of Equipment or Components (F_p/W_p) = 1.04g

S_{DS} (Spectral response acceleration at short period) = 1.38g

a_p (In-structure equipment or component amplification factor) =2.5

R_p (Equipment or component response modification factor) =6.0

I_p (Importance factor) = 1.5

z/h (Height factor ratio)=1.0

Equipment or Component fundamental period(s) =See Attachments

Building period limits (if any) =n./a

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

Equipment or Components @ grade designed in accordance with ASCE 7-05 Chapter 15: ☐ Yes ☒ No

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

S_{DS} (Spectral response acceleration at short period) =

S_1 (Spectral response acceleration at 1 second period) =

R (Response modification coefficient)=1.0

Ω_0 (System overstrength factor) =1.0

C_d (Deflection amplification factor) =1.0

I_p (Importance factor) =1.5

Height to Center of Gravity above base =

Equipment or Component fundamental period(s) = Sec

Overall dimensions and weight (or range thereof) =

Tank(s) designed in accordance with ASME BPVC, 2007: ☐ Yes ☐ No

10.0 ***List of attachments supporting the special seismic certification of equipment or components:***

☒ *Test Report* ☐ *Drawings* ☐ *Manufacturer's Catalog*

☐ *Calculations* ☒ *Others (Please Specify): On file under existing OSP's (LV Panelboards – OSP-0009-10, LV Switchboards – OSP-0010-10, MV Switch – OSP-0019-10)*

11.0 ***OSHPD Approval*** *(For Office Use Only)*

Signature & Date **4/8/2011**	**December 31, 2016** *Approval Expiration Date*
Chris Tokas, SHFR *Name & Title*	S_{DS} (g) = **1.38** z/h = **1.0** *Special Seismic Certification Valid Up to*

Condition of Approval (if any): **Expiration dates and limitations in OSP's referred in Section 10.0 of this application shall apply to this approval, where any component within the unit depends on certification of the OSP's referred.**

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Powering Business Worldwide

Attachment #4
Unit Under Test (UUT)
Summary Sheet

Manufacturer: Eaton Corporation
Product Family: Unitized Power Centers
Model Number: GWDMVS0PO6
Product Construction Summary:
NEMA 1 Enclosure, painted carbon steel. Open core-coil transformerv (112kVA), copper windings.
Assembly is attached to the foundation via (8) 1/2-13 Grade 5 bolts.
Major components include: Medium Voltage Switch, Transformer, LV panelboard with MCCB's.

UUT Properties						
	Dimensions			Lowest Natural Frequency (Hz)		
Weight (lbs.)	Depth (in.)	Width (in.)	Height (in.)	Front-Back (Hz)	Side-Side (Hz)	Vertical (Hz)
3675	36	48	80	11.4	14.6	>33

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}
IBC 2009	ICC-ES AC 156	1.38	1	1.5	2.21	1.66	0.92	0.37

Attachment #5
Unit Under Test (UUT)
Summary Sheet

Manufacturer: Eaton Corporation
Product Family: Unitized Power Centers
Model Number:
Product Construction Summary:
NEMA 1 Enclosure, painted carbon steel. Open core-coil transformer (1000kVA), copper windings. Assembly is attached to the foundation via (10) 1/2-13 Grade 5 bolts.
Major components include: Medium Voltage Switch, Transformer

UUT Properties						
	Dimensions			Lowest Natural Frequency (Hz)		
Weight (lbs.)	Depth (in.)	Width (in.)	Height (in.)	Front-Back (Hz)	Side-Side (Hz)	Vertical (Hz)
9010	36	96	80	6	6	30

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}
IBC 2009	ICC-ES AC 156	1.92	1	1.5	3.06	2.3	1.28	0.52

TEST SETUP
EUT 14

EATON
Powering Business Worldwide

Attachment #3
Seismic Certification
Product Matrix

Product	Product Numbering	Transformer Size (kVA)	Primary Voltage Class	Dimensions			Weight (lbs.)	Mounting Hardware	Notes	Comments
				Width (in.)	Depth (in.)	Height (in.)				
Unitized Power Center (UPC)	Custom Product configured per order	112	5	84	37.92	100	3675	8	1,2,3,4,5,6,8,9	Tested (EL9401), EUT #1
		112	15	84	37.92	100	4097	8	1,2,3,4,5,6,8,9	Interpolated
		150	5	84	37.92	100	4317	8	1,2,3,4,5,6,8,9	Interpolated
		150	15	84	37.92	100	4317	8	1,2,3,4,5,6,8,9	Interpolated
		225	5	84	37.92	100	4744	8	1,2,3,4,5,6,8,9	Interpolated
		225	15	84	37.92	100	4744	8	1,2,3,4,5,6,8,9	Interpolated
		300	5	84	37.92	100	5247	8	1,2,3,4,5,6,8,9	Interpolated
		300	15	84	37.92	100	5247	8	1,2,3,4,5,6,8,9	Interpolated
		500	5	84	37.92	100	5659	10	1,2,3,4,5,6,8,9	Interpolated
		500	15	84	37.92	100	5659	10	1,2,3,4,5,6,8,9	Interpolated
		750	5	84	37.92	100	6721	10	1,2,3,4,5,6,8,9	Interpolated
		750	15	84	37.92	100	6721	10	1,2,3,4,5,6,8,9	Interpolated
		1000	5	96	37.92	100	9010	10	1,2,3,4,6,7,8,9	Interpolated
		1000	15	96	37.92	100	9010	10	1,2,3,4,6,7,8,9	Tested 55906R08-11A, EUT #14

1 NEMA Type 1 enclosure
2 Mild steel sheet metal construction
3 Rigid floor anchored, 1/2-13 Grade 5 bolts per manufacturers floor plan
4 Dimensions and weights include optional cooling fans, and ventilation packages
5 Single Fused Primary Switch, LV distribution in front of the transformer
6 Open core and coil construction, Copper and Aluminum Windings, Optional
7 Single Fused Primary Switch, Separate LV switchboard close coupled to transformer, with weight and seismic performance characteristics established by separate OSP
8 Major Components & Vendors - Transformer/Hammond & Eaton, Enclosure/Eaton, HV Switch/Eaton, LV Panelboard (Eaton), Fuses (Eaton)
9 1/2-13, Grade 5 Mounting Hardware

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Powering Business Worldwide

Attachment #6
Major Component Data

Transformer Enclosure Dimensions						
Size (kVA)	Width (in.)	Depth (in.)	Height (in.)	Weight (lbs)	Transformer Vendor 1	Transformer Vendor 2
112	48	36	85	3697	Hammond	Eaton
150	48	36	85	3917	Hammond	Eaton
225	48	36	85	4074	Hammond	Eaton
300	48	36	85	4847	Hammond	Eaton
500	60	36	85	6321	Hammond	Eaton
750	60	36	85	5259	Hammond	Eaton
1000	60	36	85	8610	Hammond	Eaton

HV Switch					
	Dimensions				
Size (Amperes)	Width (in.)	Depth (in.)	Height (in.)	Weight (lbs.)	Vendor
600	36	36	80	400	Eaton