oshpd
"Equitable Healthcare Accessibility for California"
Office of Statewide Health Planning and Development

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 – 0028-10

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

1.0

CUMMINS POWER GENERATION	PAUL O'HARA
Manufacturer	*Manufacturer's Technical Representative*

1939 Deere Ave., Irvine, CA 92606
Mailing Address

(949) 337-5393	paul.n.ohara@cummins.com
Telephone	*E-mail Address*

2.0

CUMMINS GENSETS	Cummins Gensets Line between 10-kW to 2500-kW
Product Name	*Product Type*

See Attachment # 1

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

General Description: ***10-kW to 230-kW Gensets shall have internal isolators only and no external isolators at mounting. 250-kW to 2500-kW Gensets shall have external isolators at mounting only and no internal isolators.***

3.0

CUMMINS CAL PACIFIC	***PAUL O'HARA***
Applicant Company Name	*Contact Person*

1939 Deere Ave., Irvine, CA 92606
Mailing Address

(949)337-5393	**paul.n.ohara@cummins.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.

	8/23/10
Signature of Applicant	*Date*
General Manager, Power Generation	***CUMMINS CAL PACIFIC, LLC***

Registered Design Professional Preparing the Report

4.0

PANACHE ENGINEERING INC

Company Name

AHMED HAIDER, Ph.D, P.E.	**C68541**
Contact Name	*California License Number*

150 N. SANTA ANITA AVE,
SUITE 300,
ARCADIA, CA 91006

Mailing Address

626-203-6401	***AHMED.HAIDER@PANACHEG.COM***
Telephone	*E-mail Address*

California Licensed Structural Engineer Review and Acceptance of the Report

5.0

PANACHE ENGINEERING INC

Company Name

EUI S. KIM	**S5138**
Contact Name	*California License Number*

150 N. SANTA ANITA AVE, SUITE 300, ARCADIA, CA 91006

Mailing Address

626-203-6401	**PANACHEG@GMAIL.COM**
Telephone	*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):*

☐ *Analysis*

☐ *Experience data*

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

Testing Laboratory (if applicable)

8.0

CLARK DYNAMIC TEST LABORATORY	***JOHN R. ANTENUCCI***
Company Name	*Contact Name*

1801 ROUTE 51, JEFFERSON HILLS, PA 15025

Mailing Address

412-382-7173	jrantenucci@clarkdynamic.com
Telephone	E-mail:

Testing Laboratory (if applicable)

ENVIRON LABORATORIES, LLC	KENT ERICKSON
Company Name	Contact Name
9725 Girard Avenue South ☐ Minneapolis, MN 55431	
Mailing Address	
(952) 888-7795	KLE@environlab.com
Telephone	E-mail:

Testing Laboratory (if applicable)

University of California Berkeley	Don Clyde
Company Name	Contact Name
1301 South 46th St, Bldg. 484, Richmond, CA 94804	
Mailing Address	
(510) 665-3414	dclyde@berkeley.edu
Telephone	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) = $2.25S_{DS}$ ***at z/h = 1.0***

S_{DS} *(Spectral response acceleration at short period)* = ***See Attachment # 1***

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

R_p *(Equipment or component response modification factor)* = 2.0

I_p *(Importance factor)* = 1.5

z/h (Height factor ratio)= ***See Attachment # 1***

Equipment or Component fundamental period(s) = ***See Attachment # 2***

Building period limits (if any) =N/A

Overall dimensions and weight (or range thereof) = ***See Attachment # 1***

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:):*

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

Signature & Date **8/30/2010**	**December 31, 2016** *Approval Expiration Date*
Chris Tokas, SHFR *Name & Title*	S_{DS} (g) = **See Section 9.0** z/h = **See Section 9.0** *Special Seismic Certification Valid Up to*

Condition of Approval (if any):

ATTACHMENT #1

Gen Models	kW Rating	Max Length (in)	Max Width (in)	Max Height (in)	Max Weight (lbs)	Fuel Tank Options	Dimensional Outline Drawings			S_{DS}	z/h
							Genset	Enclosure Approved	Tank Approved		
DSKAA,B, BA, CA	10,15,20,25	102	31	55	2668	80-126 gal	500-4863, 4864,4866	n/a	Yes[4]	2.28	1
DSKAA,B, BA, CA	10,15,20,25	102	31	78	3208	80-126 gal	500-4863, 4864,4866	Yes	Yes[4]	2.28	1
GGMA, B, C	20,25,29,30	65	31	36	1161	note 1	0500-4510	n/a	Note 1	2.28	1
GGMA, B, C	20,25,29,30	86	31	47	1340	note 1	0500-4510	Yes	Note 1	2.28	1
DSFAA-E	35,40,50,60,80	83	42	48	4555	75-559 gal	500-4552	n/a	Yes[4]	2.28	1
DSFAA-E	35,40,50,60,80	102	42500_	97	5508	75-559 gal	500-4552	Yes	Yes[4]	2.28	1
GGPA,B.C	35,40,45	83	42	49	2031	note 1	500-5030	n/a	Note 1	2.28	1
GGPA,B.C	35,40,45	83	42	77	2984	note 1	500-5030	Yes	Note 1	2.28	1
GGHE, F	**60, 70, 75**	83	42	50	2165	note 1	500-3447	n/a	Note 1	2.28	1
GGHE, F	**60, 70, 75**	102	42	77	3118	note 1	500-3447	Yes	Note 1	2.28	1
GGHG, H	85, 100	105	42	70	2755	note 1	500-4908	n/a	Note 1	2.28	1
GGHG, H	85, 100	142	42	70	3545	note 1	500-4908	Yes	Note 1	2.28	1
GGLA,B	125, 140, 150	105	42	70	2675	note 1	500-4907	n/a	Note 1	2.28	1
GGLA,B	125, 140, 150	142	42	70	3450	note 1	500-4907	Yes	Note 1	2.28	1
DSGAA,B,C	100,125,150	119	44	78	6897	344 - 956 gal	500-4690	n/a	Yes[4]	2.28	1
DSGAA,B,C	100,125,150	145	44	97	7571	344 - 956 gal	500-4690	Yes	Yes[4]	2.28	1
DSHAB,C,D	175,200,230	105	42	73	6,969	127-1398 gal	500-4303	n/a	Yes[4]	2.28	1
DSHAB,C,D	175,200,230	143	42	54	8,313	127-1398 gal	500-4303	Yes	Yes[4]	2.28	1
DQDAA	250	104	54	66	11308	300-550 gal	500-4288	Note 2	Note 1	1.94[3]	0
DQDAA	250	222	86	128	23490	270-1470 gal	500-4288	Note 2	Note 1	1.94[3]	0
DQHAA,B	275-300	136	60	71	13141	300-700 gal	500-4645	Note 2	Note 1	1.94[3]	0
DQHAA,B	275-300	234	86	128	26024	270-1700 gal	500-4645	Note 2	Note 1	1.94[3]	0
DFEG,H, J,K	350-500	153	63	71	18605	425 & 900 gal	500-4227	Note 2	Note 1	1.94[3]	0
DFEG,H, J,K	350-500	234	86	128	36084	270-2525 gal	500-4227	Note 2	Note 1	1.94[3]	0
DQMAA	600	163	77	85	11240	note 1	500-4649	Note 2	Note 1	1.94[3]	0
DQMAA	600	338	102	143	45560	200-2400 gal	500-4650	Note 2	Note 1	1.94[3]	0
DQCA,B,C	600-800	173	67	81	15646	note 1	500-4050	Note 2	Note 1	1.94[3]	0
DQCA,B,C	600-800	338	102	143	49996	200-2400 gal	500-4050	Note 2	Note 1	1.94[3]	0
DQFAA,B,C,D	750-1000	167	79	92		550-1700 gal	500-4391	Note 2	Note 1	1.94[3]	0
DQFAA,B,C,D	750-1000	338	102	143	52100	200-2400 gal	500-43 91	Note 2	Note 1	1.94[3]	0
DQGAA,B	1250-1500	235	79	112	53097	1000-2500 gal	500-4357	Note 2	Note 1	1.94[3]	0
DQGAE,F	1250-1500	246	98	124	33556	note 1	A029J186	Note 2	Note 1	1.94[3]	0
DQKAD,E,F	1750-2250	246	98	124	36000	note 1	0500_4780	Note 2	Note 1	1.94[3]	0
DQKAA,B	1750-2000	244	100	127	72345	700-3400 gal	0500_4392	Note 2	Note 1	1.94[3]	0
DQLE	2500	301	126	153	46222	note 1	500_4258	Note 2	Note 1	1.94[3]	0

Notes:

1. Tanks designed in accordance with UL 142 or UL 2085 are supplied on a project basis.
2. Enclosures are not part of the approval and shall require separate OSHPD approval.
3. Approval is for braced radiators. For unbraced Radiators to the Genset Skid the approved S_{DS} values should not exceed 1.44g at z/h = 0.0
4. Tank Type can be either UL 142 or UL 2085

9/15

ATTACHMENT # 2

Tested Specimen Natural Frequencies

Calrk Report # 8385

Title: IBC Seismic Qualification Test of Cummins Motor/Generator Cabinet

		Genset Dimensional Data				Front-Back Motion	Sid-Side Motion	Vertical Motion
Equipment	Mounting Configuration	Max Length (in)	Max Width (in)	Max Height (in)	Genset Style	R.F. (Hz)	R.F. (Hz)	R.F. (Hz)
DSHAD-230KW	Top of a empty tank	143	42	54	ENCLOSED	11.70	22.50	NA
DSHAD-230KW	Top of a tank 80% Full	"	"	"	ENCLOSED	NA	NA	NA

Environ Report # 41494-1A

Title: IBC Seismic Qualification Test of Cummins Motor/Generator Cabinet

		Genset Dimensional Data				Front-Back Motion	Sid-Side Motion	Vertical Motion
Equipment	Mounting Configuration	Max Length (in)	Max Width (in)	Max Height (in)	Genset Style	R.F. (Hz)	R.F. (Hz)	R.F. (Hz)
DSKAA-10KW	Without Tank	102	31	55	ENCLOSED	5.863	6.83	15.58
DSKAA-10KW	Top of a empty tank	"	"	"	"	5.769	7.055	15.53
DSKAA-10KW	Top of a tank 100% Full	"	"	"	"	5.513	6.633	15.73

PEER Report STI/2010-05

		Genset Dimensional Data				Front-Back Motion	Sid-Side Motion	Vertical Motion
Equipment	Mounting Configuration	Max Length (in)	Max Width (in)	Max Height (in)	Genset Style	R.F. (Hz)	R.F. (Hz)	R.F. (Hz)
DQKAB-2000 KW	Without Tank	244	100	127	OPEN	2.79	6.98	4.09
DQKAB-2000 KW	Top of a empty tank	"	"	"	"	NA	NA	NA
DQKAB-2000 KW	Top of a tank 100% Full	"	"	"	"	NA	NA	NA