



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

1.0 CUMMINS POWER GENERATION PAUL O'HARA
Manufacturer *Manufacturer's Technical Representative*
 1939 Deere Ave., Irvine, CA
 92606
Mailing Address

(949) 337-5393
Telephone

paul.n.ohara@cummins.com
E-mail Address

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

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.

Signature of Applicant

8/23/10

Date

General Manager, Power Generation

CUMMINS CAL PACIFIC, LLC



Registered Design Professional Preparing the Report

4.0

PANACHE ENGINEERING INC

<i>Company Name</i>	
AHMED HAIDER, Ph.D, P.E.	C68541
<i>Contact Name</i>	
150 N. SANTA ANITA AVE, SUITE 300, ARCADIA, CA 91006	
<i>Mailing Address</i>	
626-203-6401	AHMED.HAIDER@PANACHEG.COM
<i>Telephone</i>	<i>E-mail Address</i>

California Licensed Structural Engineer Review and Acceptance of the Report

5.0

PANACHE ENGINEERING INC

<i>Company Name</i>	
EUI S. KIM	S5138
<i>Contact Name</i>	
150 N. SANTA ANITA AVE, SUITE 300, ARCADIA, CA 91006	
<i>Mailing Address</i>	
626-203-6401	PANACHEG@GMAIL.COM
<i>Telephone</i>	<i>E-mail Address</i>

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

<i>Company Name</i>	
CLARK DYNAMIC TEST LABORATORY	JOHN R. ANTENUCCI
<i>Contact Name</i>	
1801 ROUTE 51, JEFFERSON HILLS, PA 15025	
<i>Mailing Address</i>	
412-382-7173	jrantenucci@clarkdynamic.com
<i>Telephone</i>	<i>E-mail:</i>



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

dcl Clyde@berkeley.edu

Telephone

E-mail:



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

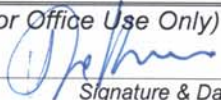
Overall dimensions and weight (or range thereof) =

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)



Chris Tokas, SHFR

8/30/2010

December 31, 2016

Signature & Date

Approval Expiration Date

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
DQGA,A,B	1250-1500	235	79	112	53097	1000-2500 gal	500-4357	Note 2	Note 1	1.94 ³	0
DQGA,E,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:

- Tanks designed in accordance with UL 142 or UL 2085 are supplied on a project basis.
- Enclosures are not part of the approval and shall require separate OSHPD approval.
- 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
- Tank Type can be either UL 142 or UL 2085

ATTACHMENT # 2

Tested Specimen Natural Frequencies

Calirk Report #
Title:

8385
IBC Seismic Qualification Test of Cummins Motor/Generator Cabinet

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

Environ Report #
Title:

41494-1A
IBC Seismic Qualification Test of Cummins Motor/Generator Cabinet

Equipment	Mounting Configuration	Genset Dimensional Data			Front-Back Motion R.F. (Hz)	Sid-Side Motion R.F. (Hz)	Vertical Motion R.F. (Hz)
		Max Length (in)	Max Width (in)	Max Height (in)			
DSKAA-10KW	Without Tank	102	31	55	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

Equipment	Mounting Configuration	Genset Dimensional Data			Front-Back Motion R.F. (Hz)	Sid-Side Motion R.F. (Hz)	Vertical Motion R.F. (Hz)
		Max Length (in)	Max Width (in)	Max Height (in)			
DQKAB-2000 KW	Without Tank	244	100	127	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