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 – 0130-10

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

1.0

YoungTouchstone — *Manufacturer*

Michael Spees — *Manufacturer's Technical Representative*

200 Smith Lane, Jackson TN, 38308 — *Mailing Address*

414-768-7427 — *Telephone*

mspees@wabtec.com — *E-mail Address*

2.0

CAC — *Product Name*

Charge Air Coolers for Gensets — *Product Type*

1.5 Square Feet thru 8 Square Feet

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

General Description: These units are remote mounted charge air coolers (also called intercoolers or aftercoolers) for turbocharged Diesel Powered Gensets. Base mounted units are installed with or without external vibration isolation.

3.0

The VMC Group — *Applicant Company Name*

John P. Giuliano, PE — *Contact Person*

113 Main St, Bloomingdale NJ, 07403

Mailing Address

973-838-1780 — *Telephone*

john.giuliano@thevmcgroup.com — *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

11/13/2010 — *Date*

President — *Title*

The VMC Group — *Company Name*

Registered Design Professional Preparing the Report

4.0

The VMC Group
Company Name

Samantha Kersting — *Contact Name*
C-57001 — *California License Number*

113 Main St, Bloomingdale, NJ 07403
Mailing Address

973-838-1780 — *Telephone*
samantha.kersting@thevmcgroup.com — *E-mail Address*

California Licensed Structural Engineer Review and Acceptance of the Report

5.0

The VMC Group
Company Name

Samantha Kersting — *Contact Name*
S-4642 — *California License Number*

113 Main St, Bloomingdale, NJ 07403
Mailing Address

973-838-1780 — *Telephone*
samantha.kersting@thevmcgroup.com — *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

UC Berkeley — *Company Name*
Don Clyde — *Contact Name*

1301 South 46th St, Richmond CA, 94804
Mailing Address

513-528-7900 — *Telephone*
dclyde@berkeley.edu — *E-mail:*

2/1

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) = 1.44g

S_{DS} (Spectral response acceleration at short period) = 2.0g

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

R_p (Equipment or component response modification factor) = 2.5

I_p (Importance factor) = 1.5

z/h (Height factor ratio)= 1.0

Equipment or Component fundamental period(s) = See Attachment

Building period limits (if any) = N/A

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

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)*

11/15/2010	**December 31, 2016**
Signature & Date	*Approval Expiration Date*
Chris Tokas, SHFR	S_{DS} (g) = **2.0** z/h = **1.0**
Name & Title	*Special Seismic Certification Valid Up to*

Condition of Approval (if any):

3/6

YoungTouchstone Remote Mounted Charge Air Coolers (CAC)							
Unit Size	Weight [lb]	CAC Orientation	Core Orientation	Isolated	Non-Isolated	UUT	Mounting
1.5 ft^2 CAC	370	H	V	X	X	1a, 1b	Vertical Legs Mounted to Skid
1.5 ft^2 CAC	370	H	H	X	X	1c, 1d	Direct Frame Mount to Skid
2 ft^2 CAC	440	H	H	X	X		Direct Frame Mount to Skid
2 ft^2 CAC	440	H	V	X	X		Vertical Legs Mounted to Skid
2.5 ft^2 CAC	480	H	H	X	X		Direct Frame Mount to Skid
2.5 ft^2 CAC	480	H	V	X	X		Vertical Legs Mounted to Skid
3 ft^2 CAC	510	H	H	X	X		Direct Frame Mount to Skid
3 ft^2 CAC	510	H	V	X	X		Vertical Legs Mounted to Skid
4 ft^2 CAC	650	H	H	X	X		Direct Frame Mount to Skid
4 ft^2 CAC	650	H	V	X	X		Vertical Legs Mounted to Skid
5 ft^2 CAC	900	H	H	X	X		Direct Frame Mount to Skid
5 ft^2 CAC	900	H	V	X	X		Vertical Legs Mounted to Skid
5 ft^2 CAC	1200	H	H	X	X		Direct Frame Mount to Skid
5 ft^2 CAC	1200	H	V	X	X		Vertical Legs Mounted to Skid
8 ft^2 CAC	1700	H	V	X	X	2a, 2b	Vertical Legs Mounted to Skid
8 ft^2 CAC	1700	H	H	X	X	2c, 2d	Direct Frame Mount to Skid

'H' indicaties horizontal, 'V' indicates vertical

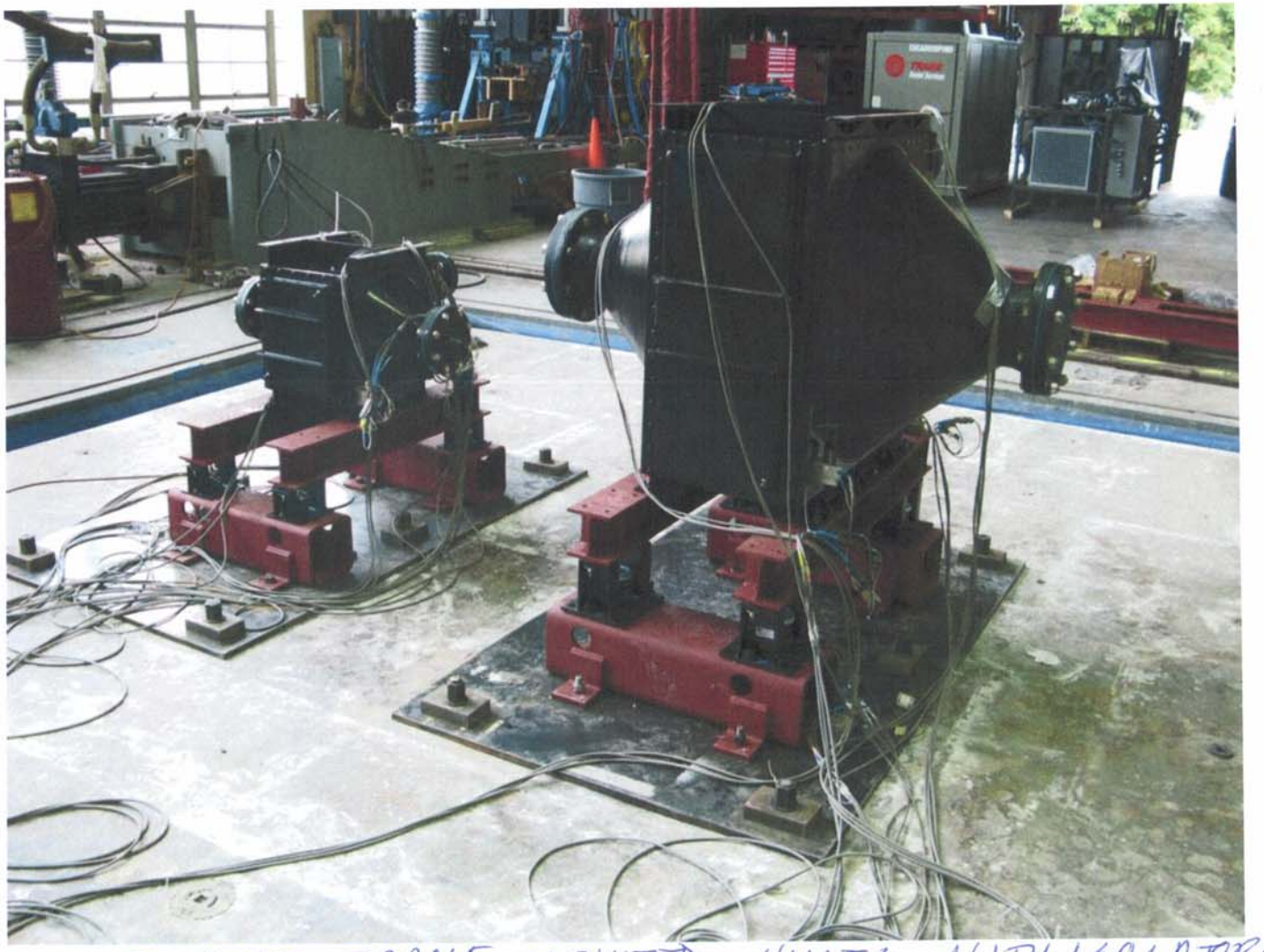
Same test specimen were used in all configurations within size

Lowest Natural Frequencies					
Unit Size	Configuration	X-X	Y-Y	Z-Z	UUT
1.5 ft^2	H-V Isolated	1.4	3.1	N/A	1a
1.5 ft^2	H-V Non-Iso	33	N/A	N/A	1b
1.5 ft^2	H-H Non-Iso	N/A	9	N/A	1c
1.5 ft^2	H-H Isolated	1.9	N/A	4.5	1d
8 ft^2	H-V Isolated	1.1	1.5	3.1	2a
8 ft^2	H-V Non-Iso	19	29	10	2b
8 ft^2	H-H Non-Iso	20.6	9	31	2c
8 ft^2	H-H Isolated	3.5	1.9	7.3	2d

THE VMC GROUP

The Power of Together ™

UNITS ON VERTICAL LEGS WITHOUT ISOLATORS



DIRECT FRAME MOUNTED UNITS WITH ISOLATORS