



OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
FACILITIES DEVELOPMENT DIVISION

**APPLICATION FOR OSHPD SPECIAL SEISMIC
CERTIFICATION PREAPPROVAL (OSP)**

OFFICE USE ONLY

APPLICATION #: OSP – 0152-10

OSHPD Special Seismic Certification Preapproval (OSP)

Type: ☐ New ☒ Renewal

Manufacturer Information

Manufacturer: IEA, LLC, an Engendren Corporation Subsidiary

Manufacturer's Technical Representative: Greg Guthrie

Mailing Address: 9625 55th Street, Kenosha, WI 53144

Telephone: (262) 942-1414 Email: gguthrie@iearead.com

Product Information

Product Name: Remote Charge Coolers (RCC)

Product Type: Radiators

Product Model Number: RCC10001S-AFC, RCC1002S-AFC, RCC1502S-AFC

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

General Description: RCCs are stand-alone air cooling units used to cool hot turbocharger air prior to being introduced to the engine's combustion process. An RCC is used when the radiator cannot be mounted near the engine.

Mounting Description: Rigidly mounted to wall

Applicant Information

Applicant Company Name: The VMC Group

Contact Person: John Giuliano

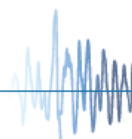
Mailing Address: 113 Main Street, Bloomingdale, NJ 07403

Telephone: (973) 838-1780 Email: john.giuliano@thevmcgroup.com

I hereby agree to reimburse the Office of Statewide Health Planning and Development review fees in accordance with the California Administrative Code, 2016.

Signature of Applicant:  Date: 1/11/17

Title: President Company Name: The VMC Group





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

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

Company Name: The VMC Group

Name: Ken Tarlow California License Number: SE2851

Mailing Address: 980 9th Street, Sacramento, CA 95814

Telephone: (973) 838-1780 Email: Ken.Tarlow@thevmcgroup.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): _____

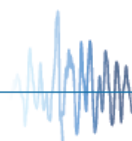
Testing Laboratory

Company Name: Dynamic Certification Laboratories, LLC

Contact Name: Kelly Laplace, Quality Manager

Mailing Address: 1315 Greg Street, Suite 109, Sparks, NV 89431

Telephone: (775) 358-5085 Email: Kelly@shaketest.com





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Seismic Parameters

Design in accordance with ASCE 7-10 Chapter 13: ☒ Yes ☐ No

Design Basis of Equipment or Components (F_p/W_p) = 1.70

S_{DS} (Design spectral response acceleration at short period, g) = 2.26

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

R_p (Equipment or component response modification factor) = 6.0

Ω_0 (System overstrength factor) = 2.0

I_p (Importance factor) = 1.5

z/h (Height factor ratio) = 1.0

Equipment or Component Natural Frequencies (Hz) = See Attachments

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

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, 2015: ☐ Yes ☒ No

List of Attachments Supporting Special Seismic Certification

☐ Test Report(s) ☐ Drawings ☐ Calculations ☐ Manufacturer's Catalog

☒ Other(s) (Please Specify): Previous OSP

OSHPD Approval (For Office Use Only) – Approval Expires on December 31, 2022

Signature: M. R. Karim Date: 2/24/17

Print Name: M. R. Karim Title: SHFR

Special Seismic Certification Valid Up to : S_{DS} (g) = 2.26 z/h = 1.0

Condition of Approval (if applicable): _____

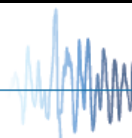


Table 1 - Certified Components

Model	Dimensions (in)			Approx. Weight (lb)	Manufacturer	Frame Construction	Sds (g), z/h=1.0	UUT
	Length	Width	Height					
RCC1001-AFC	30.5	26	64.9	350	IEA	Carbon steel	2.26	Extrapolated
RCC1002S-AFC	78	22	50.7	690	IEA			UUT 1
RCC1502S-AFC	66.4	36	81	1,100	IEA			UUT 2

Note: RCC1001-AFC uses the same radiators as UUT 1 and the frame is of similar construction of UUT 2

Table 2 - Subcomponents: Frame

Model	Dimensions (in)			Approx. Weight (lb)	Manufacturer	Construction Material	UUT
	Length	Width	Height				
Frame Assy RCC10 X2 1000KW	78.00	16.66	41.38	256	IEA	Carbon steel	UUT 1
Frame Assy RCC15 X2 2000KW	66.38	36.00	71.13	383			UUT 2

Table 3 - Subcomponents: Housing

Model	Dimensions			Approx. Weight (lb)	Manufacturer	Construction Material	UUT
	Length	Width	Height				
Housing RCC1001S	15.75	17.32	39.26	121	Professional Fabricators	Stainless Steel	UUT 1
Housing Welded SS RCC15	18.88	20.32	44.00	205			UUT 2

Table 4 - Subcomponents: Core

Model	Dimensions			Approx. Weight (lb)	Manufacturer	Construction Material	UUT
	Length	Width	Height				
Cool Sect RCC10 SX3 500 KW	15.75	14.75	22.13	48	IEA	Aluminum	UUT 1
Cool Sect RCC SX4 1.5	18.88	17.52	25.13	89			UUT 2

Table 5 - Tested Components

Model	Dimensions			Approx. Weight (lb)	Manufacturer	Construction Material	UUT
	Length	Width	Height				
RCC1002S-AFC	78.00	22.00	50.70	690	IEA	Carbon steel	UUT 1
RCC1502S-AFC	66.40	36.00	81.00	1100			UUT 2



UNIT UNDER TEST (UUT) SUMMARY SHEET

UUT-01

88135-1001

Model Line	Model Number	Manufacturer
RCC	RCC1002S-AFC	IEA, LLC

Product Construction Summary

Steel structure with inlet and outlet pipes

Options / Subcomponent Summary

Carbon steel frame, stainless steel housing, and aluminum core

UUT Properties

Weight [lb]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
690	78.0	22.0	50.7	9.8	9.5	>33

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S _{DS} (g)	z/h	I _P	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.26	1	1.5	3.20	2.71	1.51	0.60

Test Mounting Details

Each radiator was mounted to the manufacturer-provided steel frame with twelve 3/8-inch Grade 8 bolts, as shown on the drawing on the following page. The frame was mounted to the shake table using eight 1/2-inch Grade 8 bolts.



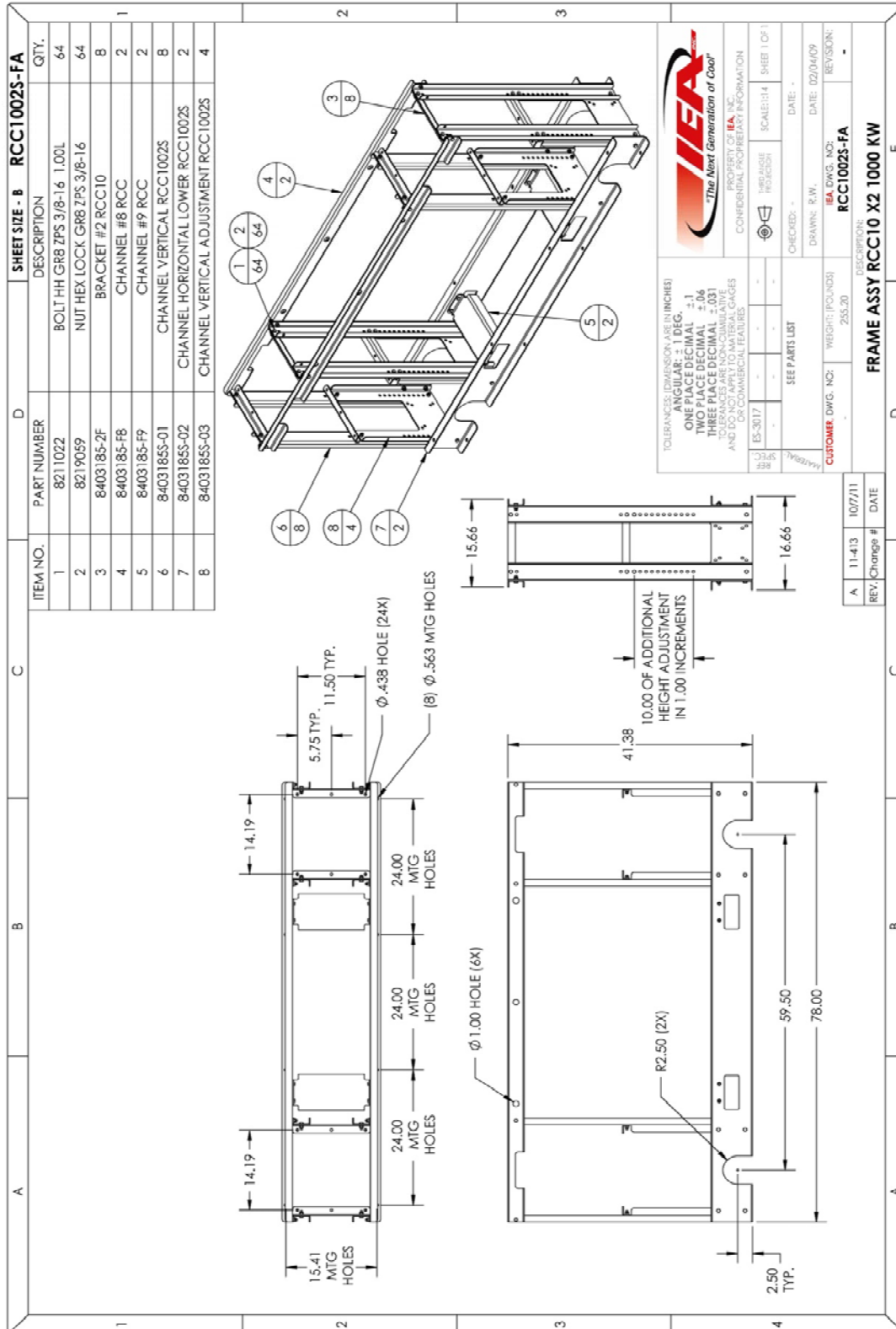
All units were filled with contents and maintained structural integrity and functionality after shake table test



UNIT UNDER TEST (UUT) FRAME DETAIL

UUT-01

88135-1001





UNIT UNDER TEST (UUT) SUMMARY SHEET

UUT-02

88135-1001

Model Line	Model Number	Manufacturer
RCC	RCC1502S-AFC	IEA, LLC

Product Construction Summary

Steel structure with inlet and outlet pipes

Options / Subcomponent Summary

Carbon steel frame, stainless steel housing, and aluminum core

UUT Properties

Weight [lb]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
1,100	66.40	36.00	81.00	8.2	4.7	27.4

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S _{DS} (g)	z/h	I _P	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2016	ICC-ES AC156	1.93	1.00	1.50	3.09	2.32	1.29	0.52

Test Mounting Details

Each radiator was mounted to the manufacturer-provided steel frame with twelve 3/8-inch Grade 8 bolts, as shown on the drawing on the following page. The frame was mounted to the shake table using six 5/8-inch Grade 8 bolts.



All units were filled with contents and maintained structural integrity and functionality after shake table test



UNIT UNDER TEST (UUT) FRAME DETAIL

UUT-02

88135-1001

