APPLICATION FOR OSHPD SPECIAL SEISMIC CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY	
APPLICATION #:	OSP – 0461-10

OSHPD Special Seismic Certification Preapproval (OSP)

Type: ☒ New ☐ Renewal

Manufacturer Information

Manufacturer: Siemens Healthcare GmbH

Manufacturer's Technical Representative: Mr. Friedrich Distler

Mailing Address: Siemensstr.1, 91301 Forchheim, Germany

Telephone: +49 (9191) 18-9031 Email: friedrich.distler@siemens.com

Product Information

Product Name: 17kW Water Cooling System Extern

Product Type: CT Scanner cooling system

Product Model Number: 17kW Indoor Unit: 10430821 / 2NK6 745-1W, Outdoor Unit 2: 10743384 / 2NK6 745-1A
(List all unique product identification numbers and/or part numbers)

General Description: Water chiller used to cool hot air from CT scanner system.
Seismic enhancements made to the test units required to address the anomalies observed during the tests shall be incorporated into the production units.

Mounting Description: 17kW Indoor Unit: Rigid Floor and Wall Mounted, Outdoor Unit 2: Rigid Floor Mounted

Applicant Information

Applicant Company Name: W.E. Gundy & Associates, Inc.

Contact Person: Travis Soppe, SE

Mailing Address: 250 Bobwhite Ct, Suite 100, Boise, ID 83706

Telephone: (208) 342-5898 Ext. 115 Email: tsoppe@wegai.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: Travis Soppe Date: 3-08-2016

Title: Vice President Company Name: W.E. Gundy & Associates, Inc.

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

Company Name: W.E. Gundy & Associates, Inc.

Name: Travis Soppe, SE California License Number: S6115

Mailing Address: 205 Bobwhite Ct, Suite 100, Boise, ID 83706

Telephone: (208) 342-5898 Ext. 115 Email: tsoppe@wegai.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: IABG Test Laboratory

Contact Name: Dr. Steffen Roedling

Mailing Address: Einsteinstrasse 20, Ottobrunn, Germany D-85521

Telephone: +49 (0) 89 / 6088-2052 Email: roedling@iabg.de

Seismic Parameters

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

Design Basis of Equipment or Components (F_p/W_p) = 1.44 for S_{DS} = 2.0g & z/h = 1.0 and 1.13 for S_{DS} = 2.5g & z/h = 0

S_{DS} (Design spectral response acceleration at short period, g) = 2.0 for z/h = 1.0 and 2.5 for z/h = 0

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

R_p (Equipment or component response modification factor) = 2.5

Ω_0 (System overstrength factor) = 2.0

I_p (Importance factor) = 1.5

z/h (Height factor ratio) = 1.0 at S_{DS} = 2.0g and 0 at S_{DS} = 2.5g

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): Certified System Matrix, UUT Summary Sheets, Subcomponent Certification Letter

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

Signature: [signature] Date: 4/20/16

Print Name: M. R. Karim Title: SHFR

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

Condition of Approval (if applicable):

SIEMENS HEALTHCARE
SPECIAL SEISMIC CERTIFICATION
CERTIFIED SYSTEM AND COMPONENTS

WEGAI
W.E. GUNDY & ASSOCIATES, INC.
STRUCTURAL & EARTHQUAKE ENGINEERING

Manufacturer: Siemens / Riedel

Product Offering: 17kW External Water Cooling System

System Component	Part Number Siemens / Ridel	Dimensions (in)			Weight (lb)	Mounting	UUT
		Width	Length	Height			
17kW Indoor Unit	10430821 / 2NK6 745-1W	40	28	77	1045	floor / wall	UUT-1
Outdoor Unit 2	10743384 / 2NK6 745-1A	100	42	45	455	floor	UUT-2

Notes:

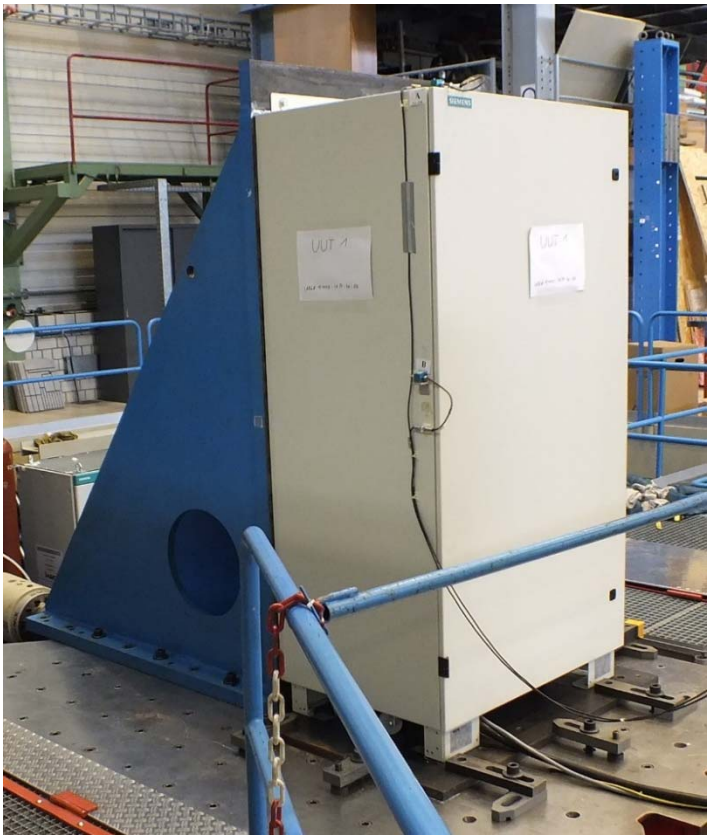
1) The part numbers listed uniquely identify the type of component, manufacturer, and material of construction for each sub-component within the tested units.
2) Mounting is rigid floor / wall or floor only with 1/2" diameter bolts. See UUT Summary sheets for mounting details.

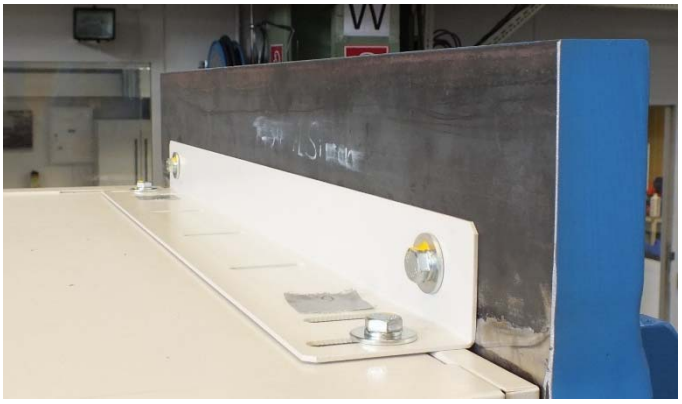
SEISMIC CERTIFICATION LIMITS

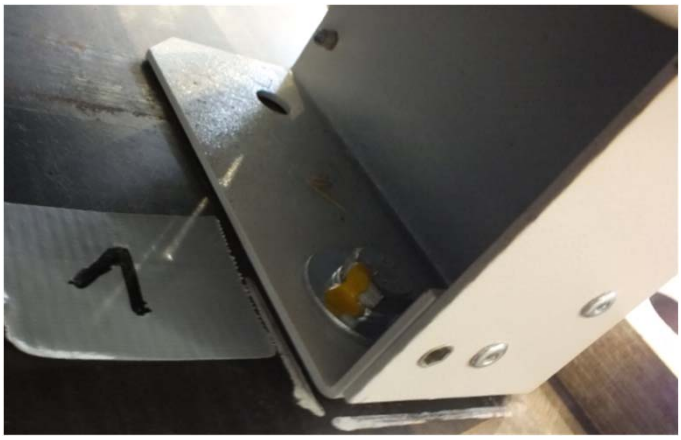
System Component	Code	S_{DS} (g)	z / h	I_P	A_P	R_P	Ω_0	F_P / W_P
17kW Indoor Unit	CBC 2013 ASCE7-10	2.0	1.0	1.50	1.0	2.5	2.0	1.44
		2.5	0					1.13
Outdoor Unit 2	CBC 2013 ASCE7-10	2.0	1.0	1.50	1.0	2.5	2.0	1.44
		2.5	0					1.13

UUT-1	UNIT UNDER TEST (UUT) SUMMARY SHEET	WEGAI W.E. GUNDY & ASSOCIATES, INC. STRUCTURAL & EARTHQUAKE ENGINEERING

Mounting Details: Rigid floor/wall mount with 4 - 1/2" anchors to floor and 2 - 1/2" anchors to wall







Manufacturer: Siemens / Riedel

Product Line: 17kW External Water Cooling System

Component: 17kW Indoor Unit | **Serial Number:** 10430821 / 2NK6 745-1W

UUT Function: Water chiller used to cool hot air from CT-scanner system.

UUT Description: Carbon steel enclosure housing a 17kW refrigeration circuit.

UUT Subcomponent Description: 2 - 5.8/7.0 kW compressors, B25THx26 evaporator, condenser unit, W-W-AP45 transformer, and piping.

Test Location: IABG Test Laboratory, Germany | **Test Date:** November 2015

UUT PROPERTIES

Weight (lb)	Dimensions (inches)				Natural Fequency (Hz)		
	Est. COG	Width	Depth	Height	FB	SS	V
1,047	51.3"	40"	28"	77"	N/A	N/A	N/A

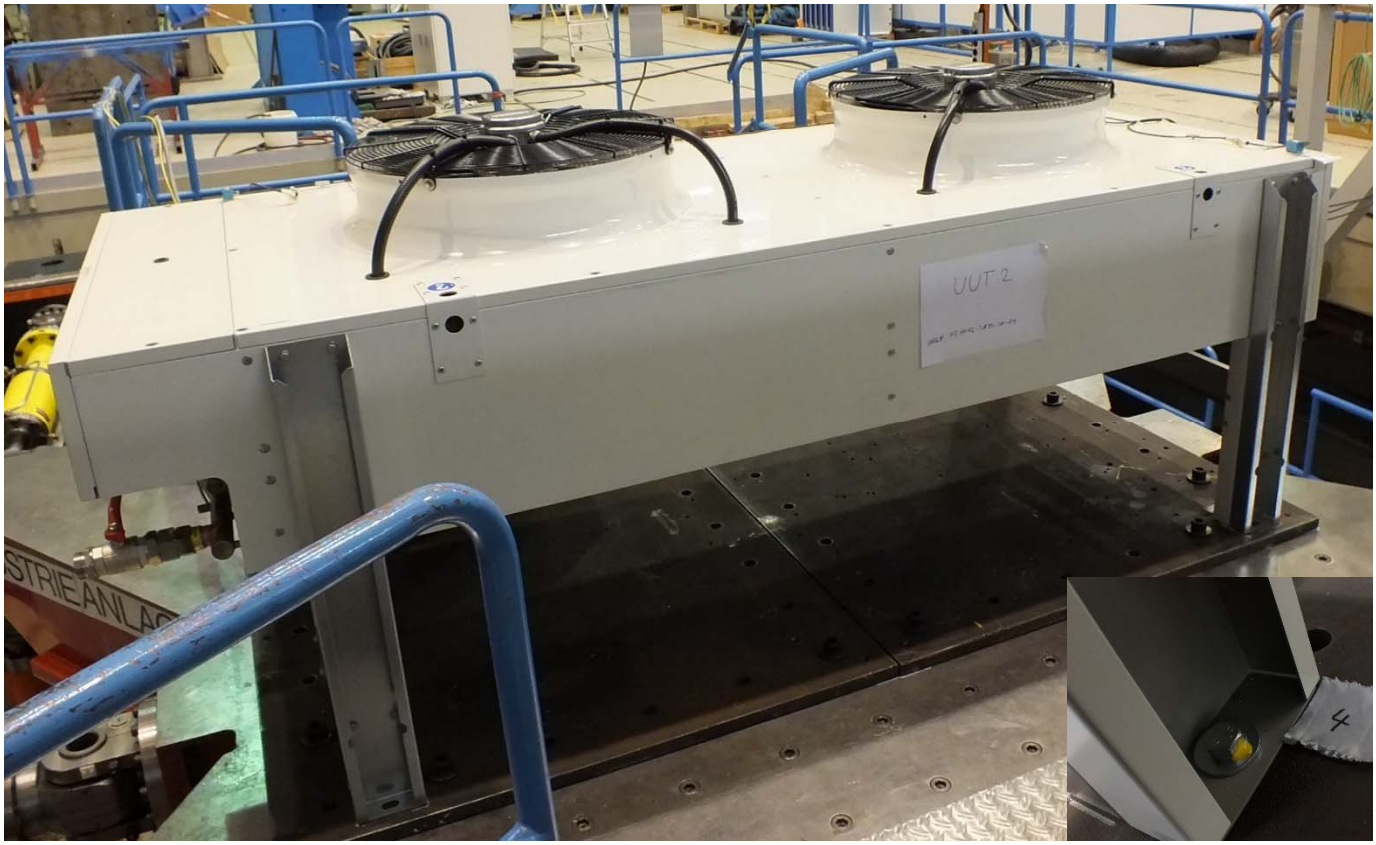
SEISMIC TEST PARAMETERS

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 2013 / ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	1.67	0.67
	2.50	0.0	1.5	2.50	1.00	1.67	0.67

Note: The unit was full of contents during testing and remained fuctional before and after the ICC-ES AC156 test. The unit maintained structural integrity during and after the ICC-ES AC156 Test.

UUT-2	UNIT UNDER TEST (UUT) SUMMARY SHEET	WEGAI W.E. GUNDY & ASSOCIATES, INC. STRUCTURAL & EARTHQUAKE ENGINEERING

Mounting Details: Rigid Floor mounted with 4 - 1/2" bolts, one on each leg



Manufacturer: Siemens / Riedel

Product Line: 17kW External Water Cooling System

Component: Outdoor Unit 2 | **Serial Number:** 10743384 / 2NK6 745-1A

UUT Function: Water chiller used to cool hot air from CT-scanner system.

UUT Description: Carbon steel enclosure housing radiator elements and fan system.

UUT Subcomponent Description: Seismic bracing kit, S8D630-CO09-06 fans, radiator elements, and piping.

Test Location: IABG Test Laboratory, Germany | **Test Date:** December 2015

UUT PROPERTIES

Weight (lb)	Dimensions (inches)				Natural Fequency (Hz)		
	Est. COG	Width	Depth	Height	FB	SS	V
445	30"	100"	42"	45"	13.8	8.4	>33

SEISMIC TEST PARAMETERS

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 2013 / ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	1.67	0.67
	2.50	0.0	1.5	2.50	1.00	1.67	0.67

Note: The unit was full of contents during testing and remained fuctional before and after the ICC-ES AC156 test. The unit maintained structural integrity during and after the ICC-ES AC156 Test.