APPLICATION FOR HCAI SPECIAL SEISMIC CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY

APPLICATION #: OSP-0820

HCAI Special Seismic Certification Preapproval (OSP)

Type: [X] New [ ] Renewal

Manufacturer Information

Manufacturer: Siemens Healthcare GmbH

Manufacturer's Technical Representative: Don Medlar

Mailing Address: Siemensstr. 3, Forchheim, Fo 91301

Telephone: (49919) 118-6521 Email: don.medlar@siemens-healthineers.com

Product Information

Product Name: SOMATOM Pro.Pulse CT System

Product Model Number(s): NA

Product Category: CT Systems

Product Sub-Category: NA

General Description: Multiple component system for producing Computed Tomography (CT) medical images for a wide variety of medical diagnostic results.

Mounting Description: Base Mounted Rigid -

Tested Seismic Enhancements: None

Applicant Information

Applicant Company Name: WE Gundy & Associates, Inc

Contact Person: Travis Soppe

Mailing Address: PO Box 9121, Boise, ID 83707

Telephone: (208) 342-5989 Email: tsoppe@wegai.com

Title: President

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

Company Name: W.E. GUNDY & ASOCIATES INC.

Name: Travis Soppe California License Number: S6115

Mailing Address: P.O. Box 9121, Boise, ID 83707

Telephone: (208) 342-5989 Email: tsoppe@wegai.com

Certification Method

☐ GR-63-Core ☒ ICC-ES AC156 ☐ IEEE 344 ☐ IEEE 693 ☐ NEBS 3

☐ Other (Please Specify):

Testing Laboratory

Company Name: SUZHOU ELECTRICAL APPARATUS SCIENCE RESEARCH INSTITUTE CO., LTD. (EETI)

Contact Person: Tangfu Ji

Mailing Address: No. 5, Yuexi Qianzhu Road, Wuzhong District, Suzhou Jiangsu 215104

Telephone: (5126) 955-2195 Email: eeti-kz@eeti.cn

Company Name: IABG TEST LABORATORY

Contact Person: Steffen Roedling

Mailing Address: Einsteinstrasse 20, Ottobrunn Bavaria 85521

Telephone: (49896) 088-2052 Email: roedling@iabg.de

Seismic Parameters

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

S_{DS} (Design spectral response acceleration at short period, g) = 2.00 (z/h = 1.0) and 2.50 (z/h = 0.0)

a_p (Amplification factor) = 1.0

R_p (Response modification factor) = See Attachments

Ω_0 (System overstrength factor) = 2.0

I_p (Importance factor) = 1.5

z/h (Height ratio factor) = 1 and 0

Natural frequencies (Hz) = See Attachment

Overall dimensions and weight = See Attachment

HCAI Approval (For Office Use Only) - Approval Expires on 09/06/2030

Date: 9/6/2024

Name: Mohammad Karim Title: Supervisor, Health Facilities

Special Seismic Certification Valid Up to: S_{DS} (g) = 2.0 z/h = 1

Condition of Approval (if applicable):

TABLE 1	SIEMENS HEALTHCARE GmbH SPECIAL SEISMIC CERTIFICATION CERTIFIED SYSTEM COMPONENTS	WEGAI W.E. GUNDY & ASSOCIATES, INC. STRUCTURAL & EARTHQUAKE ENGINEERING

Manufacturer: Siemens Healthcare GmbH

System: SOMATOM Pro.Pulse CT System

System Component[1]	Siemens Part Number	Dimensions (in)			Weight[2] (lb)	Mounting	UUT[3]
		Width	Depth	Height			
Gantry							
SOMATOM Pro.Pulse	11594788	96.3	52.5	76.5	4960	floor	UUT_w-1
SOMATOM Pro.Pulse	11594780	96.3	52.5	76.5	4960	floor	same[4]
SOMATOM Pro.Pulse Velo	11594798	96.3	52.5	76.5	4960	floor	same[4]
Patient Tables							
Vario 2.D PHS	11061335	27.6	97.6-179.5	24.0-40.7	803[2]	floor	UUT_y-4
Vario 2.D PHS	11061338	27.6	97.6-179.5	24.0-40.7	803[2]	floor	interpolated
PHS-Vario 2	11061337	27.6	97.6-179.5	24.0-40.7	810[2]	floor	interpolated
PHS-Vario 2	11061334	27.6	97.6-179.5	24.0-40.7	810[2]	floor	UUT_z-2
Image Reconstruction and UPS Systems							
UPS Rack - IRSxp2e and UPS GXT-05	11501180	15.4	32.7	22.5	149	floor	UUT_x-5

Notes:

[1] All components are manufactured by Siemens Healthcare GmbH unless noted. Part numbers listed uniquely identify type of component, manufacturer, and material of construction for each sub-componenent within the tested units.

[2] Patient table weights do not include simulated patient weight used for test. See UUT summary sheets for simulated patient weights.

[3] The units were tested at different times and the subscripts on the UUT's reference the following lab test reports:
w - sa1019-29 / x - TA-B3-000477-V1 / y - TAB3-PB-21-074-V1 / z - TAB3-PB-18-035-V1

[4] The listed units are identical, the same as the tested units, and utilize different part numbers for marketing only.

SEISMIC CERTIFICATION LIMITS

System Component	Code	S_{DS} (g)	z / h	I_P	a_P	R_P	Ω_0	F_P / W_P
Gantry	CBC 2022	2.0	1.0	1.50	1.0	1.5	2.0	2.40
		2.5	0					1.13
Patient Tables	CBC 2022	2.0	1.0	1.50	1.0	1.5	2.0	2.40
		2.5	0					1.13
IRS and UPS Systems	CBC 2022	2.0	1.0	1.50	1.0	2.5	2.0	1.44
		2.5	0					1.13

UUT_w-1	**UNIT UNDER TEST (UUT) SUMMARY SHEET**	WEGAI W.E. Gundy & Associates, Inc. Structural & Earthquake Engineering

Mounting Details: Rigid floor mounted with (4) M14 grade 12.9 bolts

Manufacturer: Siemens Healthcare GmbH	**Test Location:** EETI, Shanghai China
Component: SOMATOM Pro.Pulse Gantry	**Test Date:** May 2024
Model Number: 11594788	**Report Number:** 1019-29
UUT Function: Continuous rotating x-ray to generate diagnostic imaging	
UUT Description: Gantry for the SOMATOM Pro.Pulse CT system.	

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
4,960	96.3	52.5	76.5	11.0	28.0	> 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 2022 / ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	-	-
	2.50	0	1.5	-	-	1.67	0.67

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

UUT_y-4	**UNIT UNDER TEST (UUT) SUMMARY SHEET**	WEGAI W.E. Gundy & Associates, Inc. Structural & Earthquake Engineering

Mounting Details: Rigid floor mounted with (4) 5/8" grade 8 bolts.

Manufacturer: Siemens Healthcare GmbH	**Test Location:** IABG mbH, Germany
Component: Vario 2.D PHS	**Test Date:** May 2021
Model Number: 11061335	**Report Number:** TAB3-PB-21-074-V1
UUT Function: Motorized patient support	
UUT Description: Patient table for the Pro.Pulse CT system	

UUT PROPERTIES

Weight (lb) with Patient	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
1,343	27.6	137.0	36.8	11.6	14.9	> 33

The patient table moves vertically and horizontally to accommodate different positions and procedures. The system was tested in the normal operating position, with the tabletop extended 39.4 inches, vertically extended 36.8 inches, and with a total simulated patient weight of 540lbs.

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 2022 / ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	-	-
	2.50	0	1.5	-	-	1.67	0.67

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

UUT_z-2	**UNIT UNDER TEST (UUT) SUMMARY SHEET**	WEGAI W.E. Gundy & Associates, Inc. Structural & Earthquake Engineering

Mounting Details: Rigid Floor mounted with 4 - 5/8" grade 8 bolts.

Manufacturer: Siemens Healthcare GmbH	**Test Location:** IABG mbH, Germany
Component: PHS-Vario 2 Patient Table	**Test Date:** June 2018
Model Number: 11061334 / 1005	**Report Number:** TAB3-PB-18-035-V1
UUT Function: Motorized patient support	
UUT Description: Component of the Pro.Pulse CT system	

UUT PROPERTIES

Weight (lb) with Patient	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
1,362	27.6	137.0	40.7	12.1	7.0	> 33

The patient table moves vertically and horizontally to accommodate different positions and procedures. The system was tested in the normal operating position, with the tabletop extended 39.4 inches, vertically extended 40.7 inches, and with a total simulated patient weight of 552lbs.

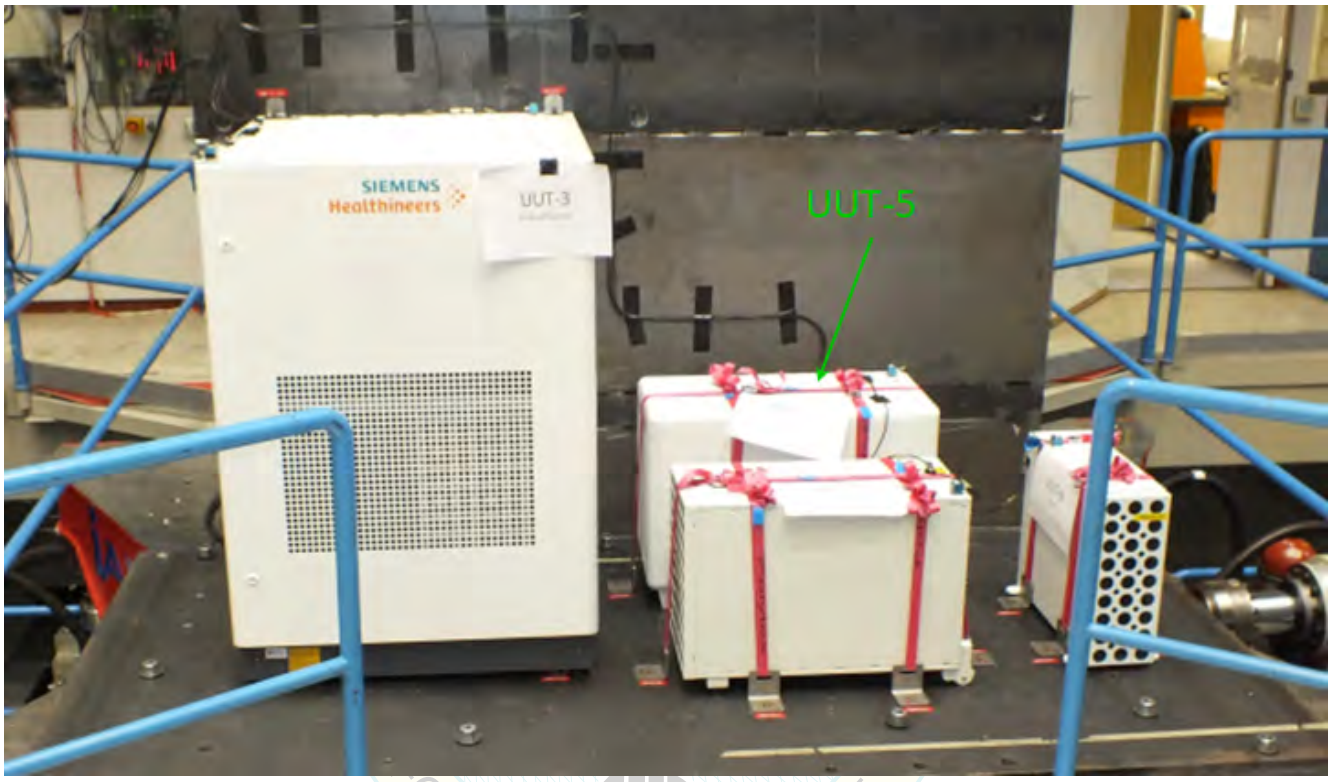
SEISMIC TEST PARAMETERS

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 2022 / ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	-	-
	2.50	0	1.5	-	-	1.67	0.67

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

UUT_x-5	UNIT UNDER TEST (UUT) SUMMARY SHEET	WEGAI W.E. Gundy & Associates, Inc. Structural & Earthquake Engineering

Mounting Details: Rigid Floor mounting using Siemens provided seismic restraint kit SN:11500840. Seismic restraint kit includes three 1" wide hand tightened cam buckle straps (560lb WLL) looped thru angle brackets positioned on the long and short sides of the unit. The six angle brackets are attached to the table with individual 3/8" grade 5 bolts.



Manufacturer: Siemens Healthcare GmbH	**Test Location:** IABG mbH, Germany
Component: UPS Rack: IRSxp2e & UPS GXT-05	**Test Date:** March 2022
Model Number: 11501180	**Report Number:** TA-B-000477-V1
UUT Function: Combined Uninterruptable Power System and Image Reconstruction System	
UUT Description: Component of the Pro.Pulse CT system.	

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
149.0	15.4	32.7	22.5	> 33	9.8	> 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 2022 / ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	-	-
	2.50	0	1.5	-	-	1.67	0.67

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