



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

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

OFFICE USE ONLY

APPLICATION #: **OSP – 0474 – 10**

OSHPD Special Seismic Certification Preapproval (OSP)

Type: New Renewal

Manufacturer Information

Manufacturer: Siemens Healthcare GmbH, Diagnostic Imaging, Computed Tomography

Manufacturer's Technical Representative: Ottmar Förstel

Mailing Address: Siemensstr. 1, 91301 Forchheim, Germany

Telephone: +49 9191 – 18 8761 Email: ottmar.foerstel@siemens.com

Product Information

Product Name: SOMATOM Drive CT System

Product Type: Computed Tomography (CT) medical imaging system

Product Model Number: See Attachment

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

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

Mounting Description: See attachment.

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

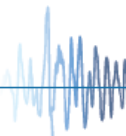
Telephone: (208) 342-5898 Ext. 115 Email: tsoppe@wegai.com

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:  Date: 08-10-2016

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

"Access to Safe, Quality Healthcare Environments that Meet California's Diverse and Dynamic Needs"





OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT FACILITIES DEVELOPMENT DIVISION

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): _____

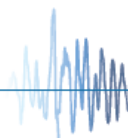
Testing Laboratory

Company Name: IABG mbH

Contact Name: Dr. Steffen Roedling

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

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





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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) = See attachment

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) = See attachment

R_p (Equipment or component response modification factor) = See attachment

Ω_0 (System overstrength factor) = Multiple, See attachment

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 attachment

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

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

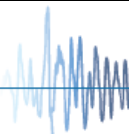
OSHPD Approval (For Office Use Only) – Approval Expires on December 31, 2022

Signature:  Date: 3/3/17

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 GmbH
SPECIAL SEISMIC CERTIFICATION
CERTIFIED SYSTEM AND COMPONENTS**



Manufacturer: Siemens Healthcare GmbH

System: Somatom Drive CT System

System Component	Siemens Part Number	Dimensions (in)			Weight (lb)	Mounting	UUT
		Width	Length	Height			
SOMATOM Gantry	10430610	94.5	48.0	78.4	5672	floor	UUT-1
PHS-4n Patient Table ³	11268204	100.8-179.5	29.3	18.9-36.2	1038 ²	floor	UUT-2
MPT-2n Patient Table ³	11268202	96.3-175.0	29.5	21.6-36.2	1175 ²	floor	UUT-3
PDC-A	10662877	35.4	27.2	76.8	1162	floor/wall	UUT-4
PDC-B	10662878	35.4	27.2	76.8	814	floor/wall	UUT-5
Image Control System	11062028	7.3	18.9	16.9	25	floor	UUT-1B ⁴
Image Recon. System	10890636	26.2	10.0	20.1	61	floor	UUT-3B ⁴

- ¹⁾ All components are manufactured by Siemens Healthcare unless noted. The part numbers listed uniquely identify the type of component, manufacturer, and material of construction for each sub-component within the tested units.
- ²⁾ Patient table weight does not include 308lb simulated patient weight included during seismic test.
- ³⁾ Condition of Approval: Patient table may only be used for maximum patient weight of 385lbs, not for bariatric use.
- ⁴⁾ B designation on UUT's indicates that the tests were performed separately from the first series of testing and some of the UUT numbers were the same for different tested components.

SEISMIC CERTIFICATION LIMITS

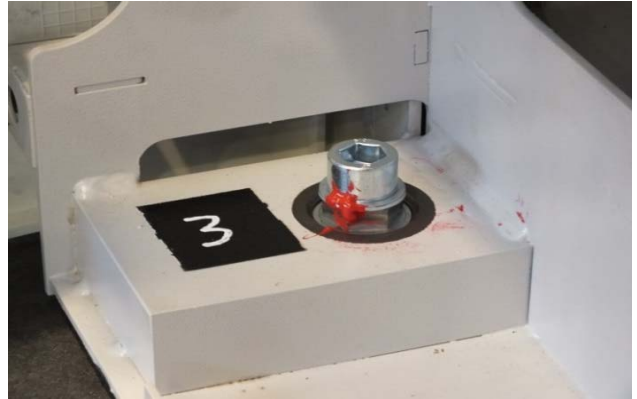
System Component	Code	S _{DS} (g)	z / h	I _P	a _P	R _P	Ω ₀	F _P / W _P
SOMATOM Gantry	CBC 2016 ASCE7-10	2.0	1.0	1.50	1.0	1.5	1.5	2.40
		2.5	0					1.13
PHS-4n Patient Table		2.0	1.0	1.50	1.0	1.5	1.5	2.40
		2.5	0					1.13
MPT-2n Patient Table		2.0	1.0	1.50	1.0	1.5	1.5	2.40
		2.5	0					1.13
Power Distribution Cabinet (PDC-A)		2.0	1.0	1.50	2.5	6.0	2.0	1.50
		2.5	0					1.13
Power Distribution Cabinet (PDC-B)		2.0	1.0	1.50	2.5	6.0	2.0	1.50
		2.5	0					1.13
Image Control System	2.0	1.0	1.50	1.0	2.5	2.0	1.44	
	2.5	0					1.13	
Image Recon. System	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**



Mounting Details: Rigid floor mounted with 4 - M16 bolts



Manufacturer: Siemens Healthcare GmbH

Component: SOMATOM Drive Gantry

Serial Number: 10430610

UUT Function: Continuous rotating two tube-detector for high-resolution data acquisition

UUT Description: Component of SOMATOM Drive CT System

Test Location: IABG mbH, Germany

Test Date: May 2016

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
5,672	94.5"	48"	78.4"	11.5	23.7	>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 2016 / ICC-ES AC156	2.00	1.0	1.5	3.20	2.40		
	2.50	0.0	1.5			1.67	0.67

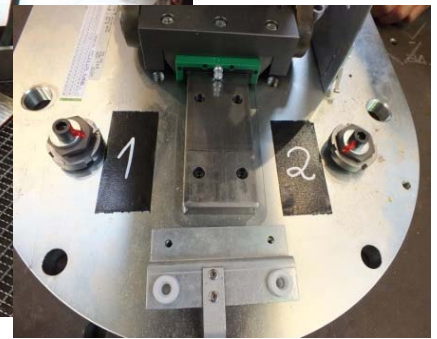
Note: The unit was full of contents during testing and remained functional before and after the ICC-ES AC156 test. The unit maintained structural integrity during and after the ICC-ES AC156 Test.

UUT-2

**UNIT UNDER TEST (UUT)
SUMMARY SHEET**



Mounting Details: Rigid Floor mounted with 4 - M10 bolts



Manufacturer: Siemens Healthcare GmbH

Component: PHS-4n Patient Table

Serial Number: 11268204

UUT Function: Motorized table which moves patient through circular opening in the CT system

UUT Description: Component of SOMATOM Drive CT System

Test Location: IABG mbH, Germany

Test Date: May 2016

UUT PROPERTIES

Weight (lb) with Patient	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
1346*	100.8" - 179.5"	29.3"	18.9" - 36.2"	28.9	3.1	12.3

The patient table moves vertically and horizontally to accommodate different patients and procedures. The system was tested in the tallest configuration (36.2") with a horizontal extension of 39.4" (total width = 140.2") and a total simulated patient weight of 308lbs. The patient table may only be used for a maximum patient weight of 385 lbs, not for bariatric use.

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 2016 / ICC-ES AC156	2.00	1.0	1.5	3.20	2.40		
	2.50	0.0	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-3

**UNIT UNDER TEST (UUT)
SUMMARY SHEET**



Mounting Details: Rigid Floor mounted with 4 - M10 bolts



Manufacturer: Siemens Healthcare GmbH

Component: MPT-2n Patient Table

Serial Number: 11268202

UUT Function: Motorized table which moves patient through circular opening in the CT system

UUT Description: Component of SOMATOM Drive CT System

Test Location: IABG mbH, Germany

Test Date: May 2016

UUT PROPERTIES

Weight (lb) with Patient	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
1,483	96.3" - 175.0"	29.5"	21.6" - 36.2"	11.6	4.0	15.7

The patient table moves vertically and horizontally to accommodate different patients and procedures. The system was tested in the tallest configuration (36.2") with a horizontal extension of 39.4" (total width = 135.7") and a total simulated patient weight of 308lbs. The patient table may only be used for a maximum patient weight of 385 lbs, not for bariatric use.

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 2016 / ICC-ES AC156	2.00	1.0	1.5	3.20	2.40		
	2.50	0.0	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-4**UNIT UNDER TEST (UUT)
SUMMARY SHEET****Mounting Details:** Rigid Floor/Wall mount with 4 - M10 bolts to floor and 2 - M8 bolts to wall fixture**Manufacturer:** Siemens Healthcare GmbH**Component:** Power Distribution Cabinet (PDC-A) | **Serial Number:** 10662877**UUT Function:** Power distribution to CT system**UUT Description:** Component of SOMATOM Drive CT System**Test Location:** IABG mbH, Germany**Test Date:** May 2016**UUT PROPERTIES**

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
1,162	35.4"	27.2"	76.8"	NA	NA	NA

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 2016 / ICC-ES AC156	2.00	1.0	1.5	3.20	2.40		
	2.50	0.0	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-5

**UNIT UNDER TEST (UUT)
SUMMARY SHEET**



Mounting Details: Rigid Floor/Wall mount with 4 - M10 bolts to floor and 2 - M8 bolts to wall fixture



Manufacturer: Siemens Healthcare GmbH

Component: Power Distribution Cabinet (PDC-B) | **Serial Number:** 10662878

UUT Function: Power distribution to CT system

UUT Description: Component of SOMATOM Drive CT System

Test Location: IABG mbH, Germany | **Test Date:** May 2016

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
814	35.4"	27.2"	76.8"	NA	NA	NA

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 2016 / ICC-ES AC156	2.00	1.0	1.5	3.20	2.40		
	2.50	0.0	1.5			1.67	0.67

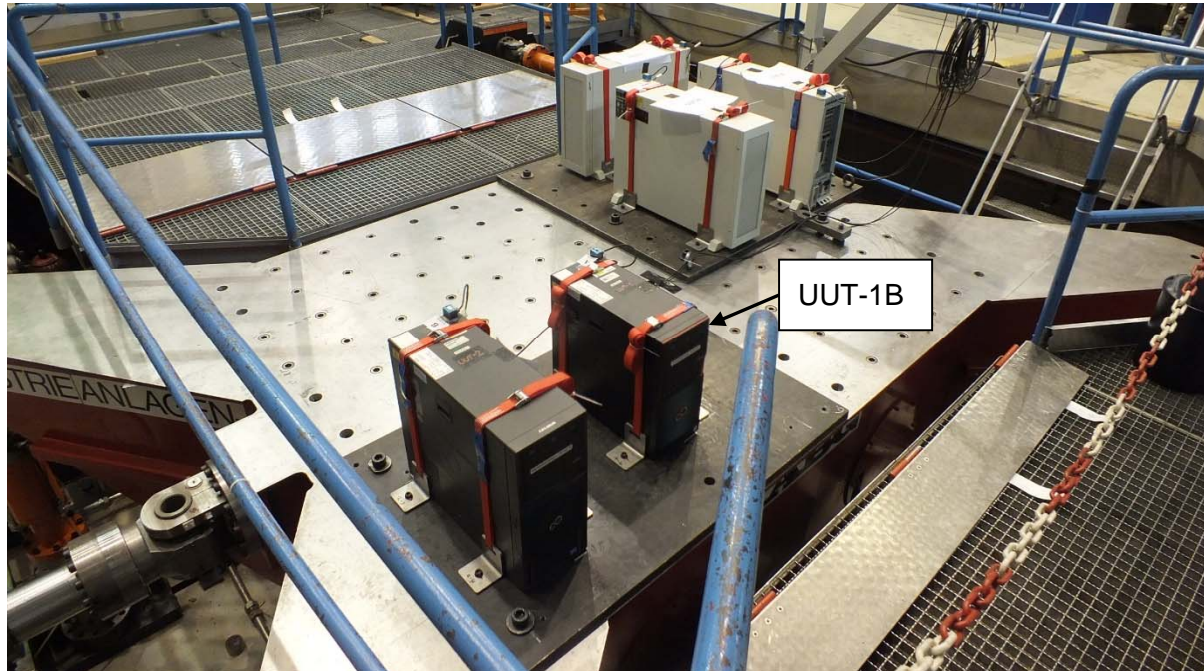
Note: The unit was full of contents during testing and remained functional before and after the ICC-ES AC156 test. The unit maintained structural integrity during and after the ICC-ES AC156 Test.

UUT-1B

**UNIT UNDER TEST (UUT)
SUMMARY SHEET**



Mounting Details: Rigid Floor mounting using Siemens provided seismic restraint kit. Seismic restraint kit includes two 1" wide hand tightened cam buckle straps (560lb WLL) looped thru angle brackets positioned on each side of the unit. The four angle brackets are attached to the table with individual M10 bolts.



Manufacturer: Siemens Healthcare GmbH

Component: Image Control System **Model / Serial Number:** 11062028 / 1008

UUT Function: Computer for data acquisition, image reconstruction, and processing

UUT Description: Component of SOMATOM Drive CT System

Test Location: IABG mbH, Germany **Test Date:** January 2017

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
25	7.3"	18.9"	16.9"	>33	30.9	>33

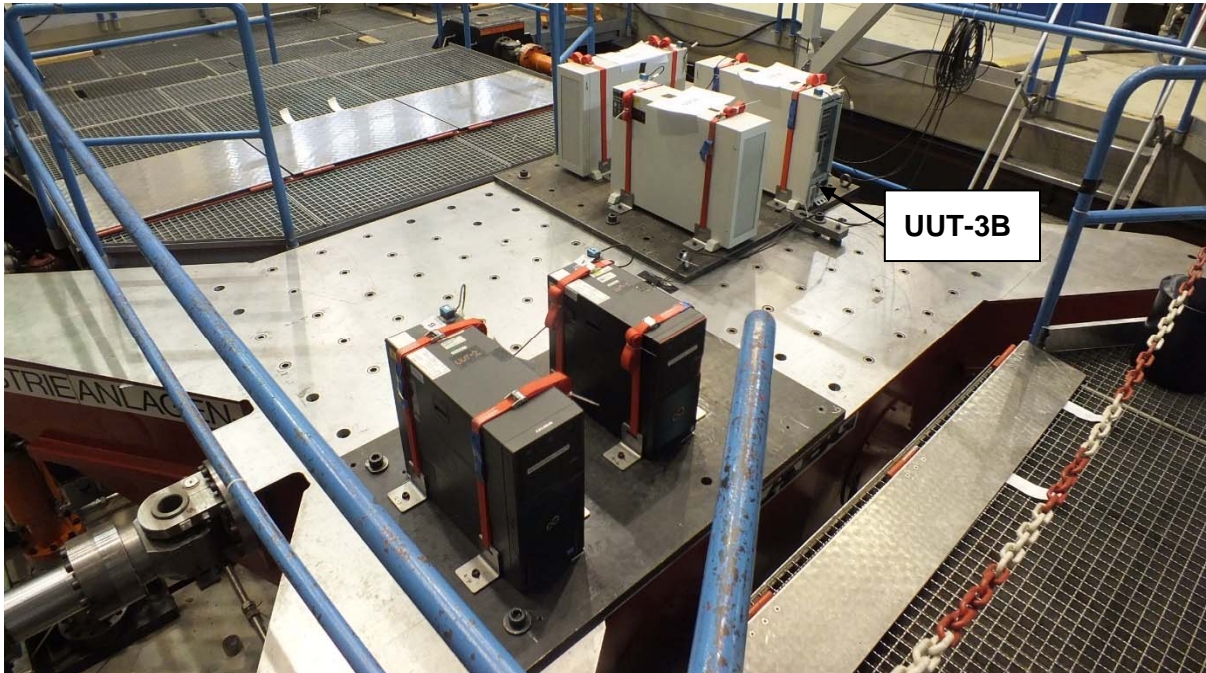
SEISMIC TEST PARAMETERS

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 2016 / ICC-ES AC156	2.00	1.0	1.5	3.20	2.40		
	2.50	0.0	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-3B**UNIT UNDER TEST (UUT)
SUMMARY SHEET**

Mounting Details: Rigid Floor mounting using Siemens provided seismic restraint kit. Siesmic restraint kit includes two 1" wide hand tightened cam buckle straps (560lb WLL) looped thru angle brackets positioned on each side of the unit. The four angle brackets are attached to the table with individual M10 bolts.

**Manufacturer:** Siemens Healthcare GmbH**Component:** Image Reconstruction System**Model / Serial Number:** 10890636 / LBHD8D0683**UUT Function:** Computer for data acquisition, image reconstruction, and processing**UUT Description:** Component of SOMATOM Drive CT System**Test Location:** IABG mbH, Germany**Test Date:** January 2017**UUT PROPERTIES**

Weight (lb)	Dimensions (inches)			Natural Fequency (Hz)		
	Width	Depth	Height	FB	SS	V
61	26.2"	10.0"	20.1"	>33	26.0	>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 2016 / ICC-ES AC156	2.00	1.0	1.5	3.20	2.40		
	2.50	0.0	1.5			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.