APPLICATION FOR HCAI SPECIAL SEISMIC CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY

APPLICATION #: OSP-0511

HCAI Special Seismic Certification Preapproval (OSP)

Type: ☐ New ☒ Renewal

Manufacturer Information

Manufacturer: Siemens Healthcare GmbH

Manufacturer's Technical Representative: Dieter Freitag

Mailing Address: Siemensstraße 3, 91301 Forchheim, Germany

Telephone: +49 (9191) 18-5412 Email: freitag.dieter@siemens-healthineers.com

Product Information

Product Name: Fluoroscopy and Radiography Systems

Product Type: NA

Product Model Number: Luminos dRF Systems

General Description: Combined radiography and fluoroscopy system for producing medical images for a wide variety of medical diagnostic results.

Mounting Description: Rigid, Floor Mounted

Tested Seismic Enhancements: None

Applicant Information

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

Contact Person: Travis Soppe

Mailing Address: P.O. 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: ENVIRONMENTAL TESTING LABORATORIES, INC. (ETL)

Contact Person: Brady Richard

Mailing Address: 11034 Indian Trail, Dallas TX 75229-3513

Telephone: (972) 247-9657 Email: brady@etldallas.com

Company Name: IABG TEST LABORATORY

Contact Person: Steffen Roedling

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

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

Seismic Parameters

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

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

a_p (Amplification factor) = 1.0

R_p (Response modification factor) = 1.5

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 01/28/2028

Date: 1/28/2022

Name: Mohammad Karim Title: Supervisor, Health Facilities

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: Luminos dRF Max Radiography and Fluoroscopy System

System Component	Siemens Part Number	Dimensions (in)			Weight (lb)[2]	Mounting	UUT
		Width	Depth	Height			
Luminos dRF	10094200	83.0	75.0	107.0	2892	floor	UUT_x-3
Luminos Lotus Max[4]	11574100 11252300-12	101.0	69.9	106.1	3250	floor	interpolated
Luminos dRF max	10762471 11252300-12	101.0	69.9	106.1	3250	floor	UUT_y-1A/B[3]

Notes:

[1] All components are manufactured by Siemens Healthcare GmbH 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] Luminos dRF and Luminos dRF max weight listed does not include 330lbs and 528lb simulated patient weights, respectively, that were included during the horizontal position seismic test.

[3] The integrated patient table / detector of the Luminos dRF max system is designed to operate in both the vertical and horizonatal positions. The system was tested with the patient table / dectector in both the vertical (UUT_y-1A) and horizontal (UUT_y-1B) positions.

[4] The Luminos Lotus Max system is identical to the Luminos dRF with exception to the non-active cover configuration. This differentiation is indicated in the overall system identification numbers (first part number listed above)

[5] The units were tested at different times and the subscripts on the UUTs reference the following seismic test reports:
x = SSC10-1010-2 y = TAF4-PB-16-373-V1

SEISMIC CERTIFICATION LIMITS

System Component	Code	S_{DS} (g)	z / h	I_P	a_P	R_P	Ω_0	F_P / W_P
Luminos dRF max	CBC 2019	2.0	1.0	1.50	1.0	1.5	2.0	2.40
		2.0	0					0.90
Luminos Lotus max	CBC 2019	2.0	1.0	1.50	1.0	1.5	2.0	2.40
		2.0	0					0.90
Luminos dRF max	CBC 2019	2.0	1.0	1.50	1.0	1.5	2.0	2.40
		2.5	0					1.13

UUT_x-3	UNIT UNDER TEST (UUT) SUMMARY SHEET	WEGAI W.E. GUNDY & ASSOCIATES, INC. STRUCTURAL & EARTHQUAKE ENGINEERING

Mounting Details: Rigid floor mounted with 6 - 3/4" grade 5 bolts

Manufacturer: Siemens Healthcare GmbH

Component: Luminos dRF - Horizontal Position	**Model / Serial Number:** 10094200

UUT Function: Device used to visualize anatomical structures by converting a pattern of X-ray into a visible image.

UUT Description: Luminos dRF Max System with patient table / detector in horizontal position
Installed Dectector: wi-D

Test Location: Environmental Testing Laboratory	**Test Date:** April 2010

UUT PROPERTIES

Weight (lb) with Patient	Overall Dimensions (inches)			Natural Fequency (Hz)		
	Width	Depth	Height	FB	SS	V
2892	83.0"	75.0"	107.0"	4.6	4.8	4.6

The patient table in the horizonatal position moves vertically (20.0" to 39.0") to accommodate different patients and procedures. The system was tested in the normal vertical operating position of 31.0" and with a total simulated patient weight of 330lbs.

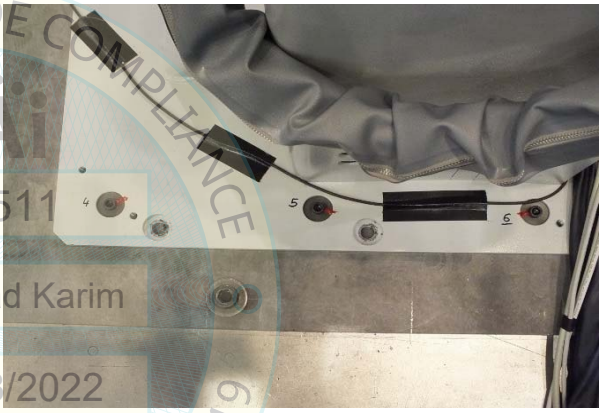
SEISMIC TEST PARAMETERS

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 2019 / ICC-ES AC156	2.00	1.0	1.5	3.20	2.40		
	2.00	0.0	1.5			1.34	0.54

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

Mounting Details: Rigid floor mounted with 6 - M12 bolts



Manufacturer: Siemens Healthcare GmbH

Component: Luminos dRF Max - Vertical Position	**Model / Serial Number:** 11252300-12

UUT Function: Device used to visualize anatomical structures by converting a pattern of X-ray into a visible image.

UUT Description: Luminos dRF max System with patient table / detector in vertical position
Installed Dectector: Max wi-D, SN:10762402

Test Location: IABG mbH, Germany	**Test Date:** October 2016

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Fequency (Hz)		
	Width	Depth	Height	FB	SS	V
3,250	101.0"	69.9"	106.1"	5.0	5.1	5.9

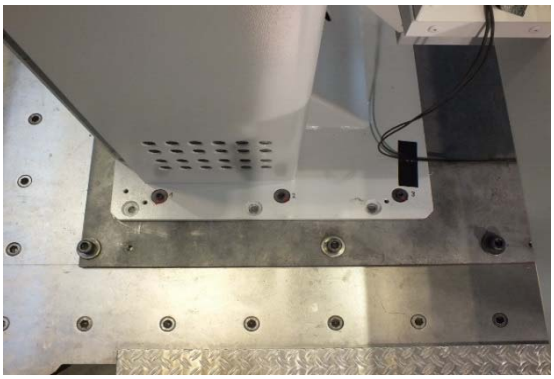
SEISMIC TEST PARAMETERS

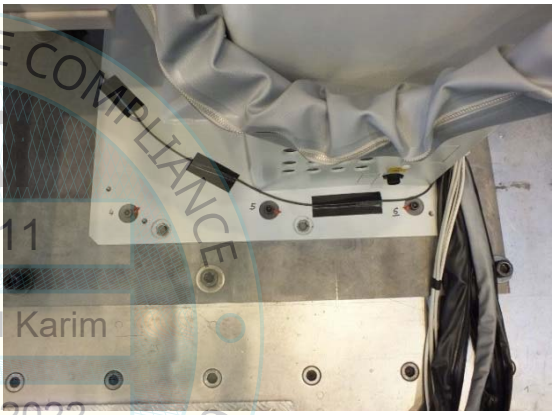
Building Code / Test Criteria	S_{DS} (g)	z / h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2019 / ICC-ES AC156	2.00	1.0	1.5	3.20	2.40		
	2.50	0.0	1.5			1.67	0.67

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.

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

Mounting Details: Rigid floor mounted with 6 - M12 bolts





Manufacturer: Siemens Healthcare GmbH

Component: Luminos dRF max - Horizontal Position **Model / Serial Number:** 11252300-12

UUT Function: Device used to visualize anatomical structures by converting a pattern of X-ray into a visible image.

UUT Description: Luminos dRF Max System with patient table / detector in horizontal position
Installed Dectector: Max wi-D, SN:10762402

Test Location: IABG mbH, Germany **Test Date:** October 2016

UUT PROPERTIES

Weight (lb) with Patient	Overall Dimensions (inches)			Natural Fequency (Hz)		
	Width	Depth	Height	FB	SS	V
3780	101.0"	69.9"	106.1"	4.5	4.0	4.0

The patient table in the horizonatal position moves vertically (18.9" to 38.5") to accommodate different patients and procedures. The system was tested in the normal vertical operating position of 29.5" and with a total simulated patient weight of 528lbs.

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 2019 / 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.