



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

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

OFFICE USE ONLY

APPLICATION #: **OSP – 0397 – 10**

OSHPD Special Seismic Certification Preapproval (OSP)

Type: New Renewal

Manufacturer Information

Manufacturer: **GE HEALTHCARE**

Manufacturer's Technical Representative: Tom Farnow

Mailing Address: 3000 N. Grandview Blvd., Waukesha, WI 53188-1696

Telephone: 888-406-1101 Email: Tom.Farnow@gehcseismic.com

Product Information

Product Name: LIGHTSPEED VCT System

Product Type: MEDICAL IMAGING EQUIPMENT

Product Model Number: See Attachment 1

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

General Description: System components of multiple-component Computed Tomography (CT) medical imaging system. Equipment shall include all enhancements present in test specimens.

Mounting Description: Rigid base mounted

Applicant Information

Applicant Company Name: **EASE LLC**

Contact Person: JONATHAN ROBERSON, S.E.

Mailing Address: 5877 Pine Ave. Suite 210, Chino Hills, CA 91709

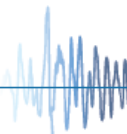
Telephone: (406) 541-EASE (3273) Email: j.roberson@easeco.com

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: _____

Title: Principal Engineer Company Name: EASE LLC

"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: EASE LLC
Name: Jonathan Roberson, S.E. California License Number: S4197
Mailing Address: 5877 Pine Ave. Suite 210, Chino Hills, CA 91709
Telephone: (909) 606-7622 Email: j.roberson@easeco.com

Supports and Attachments Preapproval

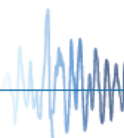
- Supports and attachments are preapproved under OPM- _____
(Separate application for OSHPD Preapproval of Manufacturer's Certification (OPM) of Supports and attachments is required)
- Supports and attachments are not preapproved

Certification Method

- Testing in accordance with: ICC-ES AC156
- Other (Please Specify): _____

Testing Laboratory

Company Name: Environmental Testing Laboratory, Inc.
Contact Name: Brady Richard
Mailing Address: 11034 Indian Trail, Dallas, TX 75229-3513
Telephone: (972) 247-9657 Email: brady@etldallas.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) = See Attachment 1, Table 2

S_{DS} (Design spectral response acceleration at short period, g) = See Attachment 1, Table 2

a_p (In-structure equipment or component amplification factor) = See Attachment 1, Table 2

R_p (Equipment or component response modification factor) = See Attachment 1, Table 2

Ω_0 (System overstrength factor) = See Attachment 1, Table 2

I_p (Importance factor) = **1.5**

z/h (Height factor ratio) = See Attachment 1, Table 2

Equipment or Component Natural Frequencies (Hz) = See Attachment 2

Overall dimensions and weight (or range thereof) = See Attachment 1, Table 1

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): Attachments 1 & 2

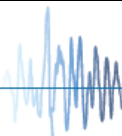
OSHPD Approval (For Office Use Only) – Approval Expires on December 31, 2022

Signature:  Date: February 27, 2017

Print Name: Timothy J. Piland Title: SSE

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

Condition of Approval (if applicable): _____



ATTACHMENT 1: SEISMIC CERTIFIED COMPONENTS

TABLE 1: SEISMIC CERTIFIED SYSTEMS & COMPONENTS

Manufacturer	GE HEALTHCARE							
System	LIGHTSPEED VCT							
COMPONENT	MODEL NUMBER	APPROX. DIMENSIONS (IN.)			MAX. WT. (LB.)	MOUNT	BASIS ^[1]	
		W	D	H				
GANTRIES								
LightSpeed VCT Gantry	5124069-11	89.25	39.65	74.6	4085	Floor	UUT1	
LightSpeed VCT Gantry	5124069-5	89.25	39.65	74.6	4085	Floor	SAME (UUT1)	
LightSpeed VCT Gantry	5124069-6	89.25	39.65	74.6	4085	Floor	SAME (UUT1)	
LightSpeed VCT Gantry	5124069-2	89.25	39.65	74.6	4130	Floor	UUT2	
LightSpeed VCT Gantry	5124069	89.25	39.65	74.6	4130	Floor	SAME (UUT2)	
PATIENT TABLES								
GT2000	5121647-3	25.6	114.5	19.2 / 41.3	1146 ^[2]	Floor	UUT4	
GT2000	5121647	25.6	114.5	19.2 / 41.3	1146	Floor	SAME (UUT4)	
GT2000	5121647-4	25.6	114.5	19.2 / 41.3	1146	Floor	SAME (UUT4)	
GT1700	5122080-3	25.6	93.3	19.2 / 41.3	1047	Floor	INT	
GT1700	5122080-4	25.6	93.3	19.2 / 41.3	1047	Floor	INT	
GT1700	5122080	25.6	93.3	19.2 / 41.3	1047	Floor	INT	
GT1700V	5122080-11	25.6	93.3	19.2 / 41.3	1059 ^[3]	Floor	UUT6	
CONSOLES ^[4]								
GOC 6.5	5212920-310	48.74	46.54 / 54.74	26.7 / 34.7	512	Floor	UUT5	
GOC 6.6	5212920-350	48.74	46.54 / 54.74	26.7 / 34.7	405	Floor	INT	
GOC 6.6	5212920-355	48.74	46.54 / 54.74	26.7 / 34.7	405	Floor	INT	
GOC 6.6	5212920-360	48.74	46.54 / 54.74	26.7 / 34.7	405	Floor	INT	
GOC 6.6	5212920-365	48.74	46.54 / 54.74	26.7 / 34.7	405	Floor	INT	
GOC 6.6	5212920-150	48.74	46.54 / 54.74	26.7 / 34.7	405	Floor	UUT7	
POWER DISTRIBUTION (PDU) ^[4]								
Power Distribution Unit	2326492-4	27.6	21.7	41.8	806	Floor	UUT3	
Power Distribution Unit	2326492-60	27.6	21.7	41.8	818	Floor	SAME (UUT8)	
Power Distribution Unit	2326492-61	27.6	21.7	41.8	818	Floor	UUT8	
Mount	Floor (Rigid Base): free-standing, base-mounted condition with the component rigidly attached to a supporting structure and no lateral support above the base.							
Notes	<ol style="list-style-type: none"> BASIS: <ul style="list-style-type: none"> UUT#: Indicates that a test specimen matching these characteristics was tested as part of this testing program. SAME: Model is physically, mechanically & electrically the same as test specimen. Difference is limited to model number, color, software and/or GE manufacturing location. INT (Interpolated or Extrapolated): indicates a model that was not specifically tested, and by which seismic certification is established through evaluation of testing of other, similar models in the product line. Patient Table weight does not include the 550 lb. simulated patient load present during testing. Patient Table weight does not include the 350 lb. simulated patient load present during testing. Weight includes mounting brackets used in testing. All components listed above are manufactured by GE Healthcare unless otherwise noted. 							

ATTACHMENT 1: SEISMIC CERTIFIED COMPONENTS

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TABLE 2: ASCE 7-10 DESIGN BASIS FOR EQUIPMENT

COMPONENT	MODEL No.	F _p /W _p	S _{DS}	z/h	a _p	R _p	Ω ₀
LightSpeed VCT Gantry	5124069-11 5124069-5 5124069-6	2.40	2.0	1.0	1	1 ½	1 ½
	5124069-2 5124069	1.13	2.5	0			
GT2000 Patient Table GT1700 Patient Table	5121647-3 5121647 5121647-4	2.40	2.0	1.0	1	1 ½	1 ½
	5122080-3 5122080-4 5122080	1.13	2.5	0			
GT1700V Patient Table	5122080-11	2.4	2.0	1.0	1	1 ½	1 ½
		1.17	2.6	0			
GOC6 GOC6.6 GOC6.6	5212920-310 5212920-350 5212920-355	1.50	2.0	1.0	2 ½	6	2
		1.13	2.5	0			
GOC6.6	5212920-150	1.50	2.0	1.0	2 ½	6	2
		1.17	2.6	0			
Power Distribution Unit	2326492-4	1.44	2.0	1.0	1	2 ½	2
		1.13	2.5	0			
Power Distribution Unit	2326492-60 2326492-61	1.44	2.0	1.0	1	2 ½	2
		1.17	2.6	0			

ATTACHMENT 2: TEST SPECIMEN SUMMARY

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UUT- 1 LightSpeed VCT Gantry								
MANUFACTURER:	General Electric Company							
IDENTIFICATION:	Model No.: 5124069-11							
DESCRIPTION:	System Component of the LightSpeed VCT System. Gantry includes "Seismic Kit"							
MOUNTING:	Floor mounted using (4) – 5/8" dia GR 8 hex head bolts(torqued to 60 lb-ft) w/ GEHC supplied Gantry foot assembly							
PROPERTIES:								
DIMENSIONS (in.)			Weight (lb.)	LOWEST RESONANT FREQUENCY (Hz.)				
Width	Depth	Height		X-Axis	Y-Axis	Z-Axis		
89.25	39.65	74.6	4085	8.6	6.2	20.0		
SHAKE TABLE TEST PARAMETERS								
CODE	TEST CRITERIA	S _{DS}	z/h	I _p	A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-V}
CBC 2013	ICC-ES AC156-12	2.0 2.5	1.0 0.0	1.5	3.2 2.5	2.4 1.0	1.34 1.68	0.54 0.68
Unit maintained structural integrity and functionality after the ICC-ES AC 156 test								




UUT- 2 LightSpeed VCT Gantry								
MANUFACTURER:	General Electric Company							
IDENTIFICATION:	Model No.: 5124069-2							
DESCRIPTION:	System Component of the LightSpeed VCT System. Gantry includes "Seismic Kit"							
MOUNTING:	Floor mounted using (4) – 5/8" dia GR 8 hex head bolts(torqued to 60 lb-ft) w/ GEHC supplied Gantry foot assembly							
PROPERTIES:								
DIMENSIONS (in.)			Weight (lb.)	LOWEST RESONANT FREQUENCY (Hz.)				
Width	Depth	Height		Front-Axis	Side-Axis	Vertical-Axis		
89.25	39.65	74.6	4130	8.8	7.1	21.7		
SHAKE TABLE TEST PARAMETERS								
CODE	TEST CRITERIA	S _{DS}	z/h	I _p	A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-V}
CBC 2013	ICC-ES AC156-12	2.0 2.5	1.0 0.0	1.5	3.2 2.5	2.4 1.0	1.34 1.68	0.54 0.68
Unit maintained structural integrity and functionality after the ICC-ES AC 156 test								



ATTACHMENT 2: TEST SPECIMEN SUMMARY

UUT- 3 Power Distribution Unit	
MANUFACTURER:	GE Hangwei Medical Systems CO. LTD.
IDENTIFICATION:	Model No.: 2326492-4
DESCRIPTION:	System Component of the LightSpeed VCT System.
MOUNTING:	Floor mounted using (4) – 3/8" dia. socket head bolts through GEHC supplied mounting brackets to aluminum interface plate.




PROPERTIES:							
DIMENSIONS (in.)				Weight (lb.)	LOWEST RESONANT FREQUENCY (Hz.)		
Width	Depth	Height	Front-Axis		Side-Axis	Vertical-Axis	
27.6	21.7	41.8	806+22 brackets	26.7	18.9	>50	

SHAKE TABLE TEST PARAMETERS								
CODE	TEST CRITERIA	S _{DS}	z/h	I _P	A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-V}
CBC 2013	ICC-ES AC156-12	2.0 2.5	1.0 0.0	1.5	3.2 2.5	2.4 1.0	1.34 1.68	0.54 0.68

Unit maintained structural integrity and functionality after the ICC-ES AC 156 test

UUT- 4 GT2000 Patient Table	
MANUFACTURER:	GE Hangwei Medical Systems CO. LTD.
IDENTIFICATION:	Model No.: 5121647-3
DESCRIPTION:	System Component of the LightSpeed VCT System GT2000 N9 Patient Table Test specimen included a simulated patient load of 550 lb. Seismic Kit
MOUNTING:	Floor: (4) – 5/8" dia GR 8 hex head bolts (torqued to 60 lb-ft) w/ GEHC supplied patient table foot assembly.



PROPERTIES:							
DIMENSIONS (in.)				Weight (lb.)	LOWEST RESONANT FREQUENCY (Hz.)		
Width	Depth	Height	Transverse-Axis		Longitudinal-Axis	Vertical-Axis	
25.6	114.5	19.2 / 41.3	1146+550 Patient	2.7	7.1	5.7	

SHAKE TABLE TEST PARAMETERS								
CODE	TEST CRITERIA	S _{DS}	z/h	I _P	A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-V}
CBC 2013	ICC-ES AC156-12	2.0 2.5	1.0 0.0	1.5	3.2 2.5	2.4 1.0	1.34 1.68	0.54 0.68

Unit maintained structural integrity and functionality after the ICC-ES AC 156 test

ATTACHMENT 2: TEST SPECIMEN SUMMARY

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UUT- 5		GOC6 VCT Console						
MANUFACTURER:	GE Healthcare Japan Corporation							
IDENTIFICATION:	Model No.: 5212920-310							
DESCRIPTION:	System Component of the LightSpeed VCT System. GOC6.5 Console with Xstream HD upgrade							
MOUNTING:	Floor mounted using (4) – 3/8" dia. socket head bolts through GEHC supplied mounting brackets to aluminum interface plate.							
PROPERTIES:								
DIMENSIONS (in.)			Weight (lb.)	LOWEST RESONANT FREQUENCY (Hz.)				
Width	Depth	Height		Front-Axis	Side-Axis	Vertical-Axis		
48.74	46.54 to 54.74	26.7 to 34.7	501+11 brackets	14.2	6.5	14.6		
SHAKE TABLE TEST PARAMETERS								
CODE	TEST CRITERIA	S _{DS}	z/h	I _p	A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-V}
CBC 2013	ICC-ES AC156-12	2.0 2.5	1.0 0.0	1.5	3.2 2.5	2.4 1.0	1.34 1.68	0.54 0.68
Unit maintained structural integrity and functionality after the ICC-ES AC 156 test								



UUT- 6		GT1700V Table						
MANUFACTURER:	GE Hangwei Medical Systems Co., LTD							
IDENTIFICATION:	Model No.: 5122080-11							
DESCRIPTION:	System component of the Optima CT660 System Test specimen included a simulated patient load of 350 lb.							
MOUNTING:	Floor mounted using (4) – 5/8" dia GR 8 hex head bolts (torqued to 60 lb-ft) w/ GEHC supplied patient table foot assembly. Leveling foot bushing excluded.							
PROPERTIES:								
DIMENSIONS (in.)			Weight (lb.)	LOWEST RESONANT FREQUENCY (Hz.)				
Width	Depth	Height		Transverse-Axis	Longitudinal-Axis	Vertical-Axis		
25.6	93.3	19.2 / 41.3	1059+ 350 Patient	3.9	15.2	14.2		
SHAKE TABLE TEST PARAMETERS								
CODE	TEST CRITERIA	S _{DS}	z/h	I _p	A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-V}
CBC 2013	ICC-ES AC156-12	2.0 2.6	1.0 0.0	1.5	3.2 2.6	2.4 1.04	1.34 1.74	0.54 0.70
Unit maintained structural integrity and functionality after the ICC-ES AC 156 test								



ATTACHMENT 2: TEST SPECIMEN SUMMARY

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UUT- 7		GOC6.6 Console						
MANUFACTURER:	General Electric Company							
IDENTIFICATION:	Model No.: 5212920-150							
DESCRIPTION:	System component of the Discovery CT750 HD System							
MOUNTING:	Floor mounted using (4) – 3/8" dia. socket head bolts through GEHC supplied mounting brackets to aluminum interface plate.							
PROPERTIES:								
DIMENSIONS (in.)			Weight (lb.)	LOWEST RESONANT FREQUENCY (Hz.)				
Width	Depth	Height		Side-Axis	Front-Axis	Vertical-Axis		
48.74	46.54 / 54.74	26.7 / 34.7	405	6.2	17.3	22.9		
SHAKE TABLE TEST PARAMETERS								
CODE	TEST CRITERIA	S _{DS}	z/h	I _P	A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-V}
CBC 2013	ICC-ES AC156-12	2.0 2.6	1.0 0.0	1.5	3.2 2.6	2.40 1.04	1.34 1.74	0.54 0.70
Unit maintained structural integrity and functionality after the ICC-ES AC 156 test								



UUT- 8		Power Distribution Unit						
MANUFACTURER:	GE Hangwei Medical Systems CO., LTD							
IDENTIFICATION:	Model No.: 2326492-61							
DESCRIPTION:	System component of the Optima CT580 System							
MOUNTING:	Floor mounted using (4) – 3/8" dia. socket head bolts through GEHC supplied mounting brackets to aluminum interface plate.							
PROPERTIES:								
DIMENSIONS (in.)			Weight (lb.)	LOWEST RESONANT FREQUENCY (Hz.)				
Width	Depth	Height		X-Axis	Y-Axis	Z-Axis		
27.6	21.7	41.8	796+22 brackets	15.7	19.9	45		
SHAKE TABLE TEST PARAMETERS								
CODE	TEST CRITERIA	S _{DS}	z/h	I _P	A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-V}
CBC 2013	ICC-ES AC156-12	2.0 2.6	1.0 0.0	1.5	3.2 2.6	2.40 1.04	1.34 1.74	0.54 0.70
Unit maintained structural integrity and functionality after the ICC-ES AC 156 test								

