



DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION
OFFICE OF STATEWIDE HOSPITAL PLANNING AND DEVELOPMENT

APPLICATION FOR HCAI SPECIAL SEISMIC
CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY

APPLICATION #: OSP-0616

HCAI 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 531881696

Telephone: (888) 406-1101

Email: Tom.Farnow@gehcseismic.com

Product Information

Product Name: Discovery MI PET-CT System

Product Model Number(s): See Attachment 1

Product Category: CT Systems

Product Sub-Category: NA

General Description: System components of multiple-component medical imaging systems. Special Seismic Certification is limited to functions related to Computed Tomography (CT) medical imaging services.

Mounting Description: Several - See Certified Product Tables -

Tested Seismic Enhancements: Seismic enhancements made to the test units and/or modifications required to address anomalies during the tests shall be incorporated into the production units.

Applicant Information

Applicant Company Name: EASE LLC

Contact Person: Jonathan Roberson

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

Telephone: (909) 606-7622

Email: j.roberson@easeco.com

Title: Principal Engineer



**DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION
OFFICE OF STATEWIDE HOSPITAL PLANNING AND DEVELOPMENT**

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

Company Name: EASE LLC

Name: Jonathan Roberson

California License Number: S4197

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

Telephone: (951) 295-1892

Email: jon@EASECo.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: Jeremy Lange

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

Telephone: (972) 247-9657

Email: jeremy@etldallas.com



DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION
OFFICE OF STATEWIDE HOSPITAL PLANNING AND DEVELOPMENT

Seismic Parameters

Design Basis of Equipment or Components (F_p/W_p) = See Attachment 1; Table 2

SDS (Design spectral response acceleration at short period, g) = 1.52

a_p (Amplification factor) = See Attachment 1; Table 2

R_p (Response modification factor) = See Attachment 1; Table 2

Ω_0 (System overstrength factor) = 2.0

I_p (Importance factor) = 1.5

z/h (Height ratio factor) = 1

Natural frequencies (Hz) = See Attachment

Overall dimensions and weight = See Attachment 1

HCAI Approval (For Office Use Only) - Approval Expires on 04/23/2031

Date: 4/23/2025

Name: Timothy Piland

Title: Senior Structural Engineer

Special Seismic Certification Valid Up to: SDS (g) = See Above

z/h = See Above

Condition of Approval (if applicable):

ATTACHMENT 1: SEISMIC CERTIFIED COMPONENTS

ATTACHMENT PAGE | 1 OF 2

TABLE 1: SEISMIC CERTIFIED SYSTEMS & COMPONENTS ^[6]

Manufacturer	GE Healthcare							
System	Discovery MI PET/CT System ^[2]							
COMPONENT		MODEL NUMBER	APPROX. DIMENSIONS (IN.)			MAX. WT. (LB.)	MOUNT	BASIS ^[1]
			W	D	H			
PET-CT GANTRIES ^[7]								
Revolution EVO CT Gantry, PET Specific		5454001-170	77.4	93.59	76	3940	Floor	UUT-1901-1
25cm Columbia PET Gantry, Weldment		5990025-22				2443		
Revolution EVO CT Gantry, PET Specific		5454001-170	77.4	93.59	76	3940	Floor	SAME
25cm Columbia PET Gantry, Weldment		5990025-20				2443		
Revolution EVO CT Gantry, PET Specific		5454001-170	77.4	93.59	76	3940	Floor	INT
20cm Columbia PET Gantry, Weldment		5990020-20				2402		
Revolution EVO CT Gantry, PET Specific		5454001-170	77.4	93.59	76	3940	Floor	INT
15cm Columbia PET Gantry, Weldment		5990015-20				2380		
Revolution EVO CT Gantry, PET Specific		5454001-170	77.4	93.59	76	3940	Floor	INT
30cm Columbia PET Gantry, Weldment		5990030-30				2553		
Revolution EVO CT Gantry, PET Specific		5454001-170	77.4	93.59	76	3940	Floor	INT
25cm Columbia PET Gantry, Weldment		5990025-30				2443		
Revolution EVO CT Gantry, PET Specific		5454001-170	77.4	93.59	76	3940	Floor	INT
20cm Columbia PET Gantry, Weldment		5990020-30				2402		
Revolution EVO CT Gantry, PET Specific		5454001-170	77.4	93.59	76	3940	Floor	INT
15cm Columbia PET Gantry, Weldment		5990015-30				2380		
Revolution EVO CT Gantry, PET Specific		5454001-170	77.4	93.59	76	3940	Floor	UUT-1601-1
25cm Columbia PET Gantry		5990025				3915		
PATIENT TABLES								
PROSCAN Patient Table ^[3]		5101900	26	136	22 / 42	1808 ^[4]	Floor	UUT-10390-3
Mobile Ready Global PET-CT Table Ed3		5101900-20	26	136	22 / 42	1808	Floor	SAME
POWER DISTRIBUTION								
NGPDU-61		2326492-61	27.6	21.7	41.8	818	Floor	UUT-1313-2
Power Distribution Box (PDB)		5627940	19.7	9.5	24.8	68	Wall	UUT-1901-3
CONSOLES								
Console Assembly (HDe6) ^[3]		5940904-10	15.7	26.4	22.7	138	Floor	UUT-1805-2
Revolution EVO Open Console, WSO		5946404-21	15.7	26.4	22.7	138	Floor	SAME
Revolution Frontier Open Console ^[3]		5940904-12	15.7	26.4	22.7	142.2	Floor	UUT-1818-1
Operator Console – Z8G4		5946404-22	15.7	26.4	22.7	142.2	Floor	SAME
Revolution EVO Open Console w/ Z8G4		5946404-21_Z8G4	15.7	26.4	22.7	142.2	Floor	SAME
OTHER EQUIPMENT								
Lytron Chiller		5582166	22	28	32	314 ^[5]	Floor	UUT-1601-3
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. Wall: refers to a condition where the unit is fully supported- both vertically and laterally – by a building wall or partition.							

Table continues next page

ATTACHMENT 1: SEISMIC CERTIFIED COMPONENTS

ATTACHMENT PAGE | 2 OF 2

TABLE 1: SEISMIC CERTIFIED SYSTEMS & COMPONENTS ^[6]

Manufacturer	GE Healthcare						
System	Discovery MI PET/CT System ^[2]						
COMPONENT	MODEL NUMBER	APPROX. DIMENSIONS (IN.)			MAX. WT. (LB.)	MOUNT	BASIS ^[1]
		W	D	H			
Notes	<div>1. 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 and/or software.• INT (Interpolate or extrapolate): indicates a model that was not specifically tested, and by which seismic qualification was established through evaluation of testing of other, similar models in the product line.</div> <div>2. Requires use of GE Seismic Kit (P3000BK) or equivalent when used with Lytron Chiller; Otherwise requires use of GE Seismic Kit (P3000LG).</div> <div>3. Model is not part of the listed system; it is included only to provide a basis for seismic qualification of a similar component of the system.</div> <div>4. Patient Table weight does not include the 300 lb. simulated patient load present during testing.</div> <div>5. Chiller operating weight: full of fluid.</div> <div>6. Seismic certification is limited to functions related to Computed Tomography (CT) for diagnostic assessment of trauma.</div> <div>7. Removable service rails for PET gantry shall be stored separately from gantry during operation.</div>						


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
PET-CT GANTRIES							
Revolution EVO CT Gantry, PET Specific	5454001-170	1.82	1.52	1	1	1 ½	2
25cm Columbia PET Gantry	5990025						
25cm Columbia PET Gantry	5990025-22						
25cm Columbia PET Gantry	5990025-20						
20cm Columbia PET Gantry	5990020-20						
15cm Columbia PET Gantry	5990015-20						
PATIENT TABLES							
PROSCAN Patient Table	5101900	1.82	1.52	1	1	1 ½	2
Mobile Ready Global PET-CT Table Ed3	5101900-20						
POWER DISTRIBUTION							
NGPDU-61	2326492-61	1.10	1.52	1	1	2 ½	2
Power Distribution Box (PDB)	5627940						
CONSOLES							
Console Assembly (HDe6)	5940904-10	1.10	1.52	1	1	2 ½	2
Revolution EVO Open Console, WSO	5946404-21						
Revolution Frontier Open Console	5940904-12						
Operator Console – Z8G4	5946404-22						
EVO Open Console with Z8G4	5946404-21_Z8G4						
OTHER EQUIPMENT							
Lytron Chiller	5582166	1.10	1.52	1	1	2 ½	2

ATTACHMENT 2: TEST UNIT SUMMARY

ATTACHMENT PAGE | 1 OF 4

UUT-1901-1 Discovery MI PET-CT Gantry						
Manufacturer:		GE Healthcare				
Identification:	CT Gantry		PET Gantry			
	Model No.	5454001-170	5990025-22			
	Serial No.	CJRPX16000014CN	CL251900001PT			
Description:	System component of the Discovery MI PET-CT System. <ul style="list-style-type: none">• Revolution EVO CT Gantry, PET Specific• 25cm Columbia PET Gantry (Weldment) The tested configuration included both a PET gantry and a CT gantry in a complete PET-CT assembly. Seismic Kit (P3000BK) installed. Unit included enhancements to construction not found on then-standard production units. These enhancements subsequently include in revision of Seismic Kit (P3000BK).					
Mounting:	Rigid Base (Floor) mounted using: (8) – 5/8" dia. SAE J429 Grade 8 bolts.					
DIMENSIONS (in.)				LOWEST RESONANT FREQUENCY (Hz.)		
Width	Depth	Height	Weight (lb.)	Side-Axis	Front-Axis	Vert-Axis
77.4	93.59	76	6383 (reported) 6206 (measured)	7.4	5.9	10.7
ICC-ES AC156 SHAKE TABLE TEST PARAMETERS						
S _{DS} (G)	z/h	I _P	A _{FLX-H} (G)	A _{RIG-H} (G)	A _{FLX-V} (G)	A _{RIG-V} (G)
2.0	1.0	1.5	3.20	2.40	1.68	0.68
2.5	0.0					
Unit maintained structural integrity and satisfied manufacturer requirement for CT diagnostic imaging.						







UUT-1601-1 Discovery MI PET-CT Gantry							
Manufacturer:		GE Healthcare					
Identification:	CT		PET				
	Model No.	5454001-170	5990025				
	Serial No.	10002	10002				
Description:		<p>System component of the Discovery MI PET-CT System:</p> <ul style="list-style-type: none">• Revolution EVO CT Gantry, PET Specific• 25cm Columbia PET Gantry <p>The tested configuration included both a PET gantry and a CT gantry in a complete PET-CT assembly. Seismic Kit (P3000BK) installed.</p> <p>Unit included enhancements to construction not found on then-standard production units. These enhancements subsequently include in revision of Seismic Kit (P3000BK).</p>					
Mounting:		Rigid Base (Floor) mounted using: (11) – 5/8" diameter SAE J429 Grade 8 bolts.					
DIMENSIONS (in.)				Weight (lb.)	LOWEST RESONANT FREQUENCY (Hz.)		
Width	Depth	Height	Side-Axis		Front-Axis	Vert-Axis	
77.4	93.59	76	7855	8.6	8.1	14.7	
ICC-ES AC156 SHAKE TABLE TEST PARAMETERS							
S _{DS} (G)	z/h	I _p	A _{FLX-H} (G)	A _{RIG-H} (G)	A _{FLX-V} (G)	A _{RIG-V} (G)	
2.0	1.0	1.5	3.20	2.40	1.68	0.68	
2.5	0.0						
Unit maintained structural integrity and satisfied manufacturer requirement for CT diagnostic imaging.							



ATTACHMENT 2: TEST UNIT SUMMARY

ATTACHMENT PAGE | 2 OF 4

UUT-1901-3				Power Distribution Box		
Manufacturer:		CETC ECRIEEEPOWER (ANHUI) CO., LTD				
Identification:		Model No. 5627940				
		Serial No.: 56200000003				
Description:		System component of the Discovery MI PET-CT System. CT/PET Panel Door secured closed with M8-8.8 SHCS at two locations.				
Mounting:		Rigid wall mounted using: (4) - ¼" dia. Hex Washer Head, self-tapping, self-threading sheet metal (TEK) screws w/ - (2) - 1.25" O.D. x 5/16" I.D. fender washers at top and - (2) - standard washers at bottom to 16ga. backing plate.				
DIMENSIONS (in.)				LOWEST RESONANT FREQUENCY (Hz.)		
Width	Depth	Height	Weight (lb.)	Side-Axis	Front-Axis	Vert-Axis
19.7	9.5	24.8		66	---	---
ICC-ES AC156 SHAKE TABLE TEST PARAMETERS						
S _{DS} (G)	z/h	I _p	A _{FLX-H} (G)	A _{RIG-H} (G)	A _{FLX-V} (G)	A _{RIG-V} (G)
2.0	1	1.5	3.2	2.4	1.68	0.68
2.5	0					
Unit maintained structural integrity and remained functional per manufacturer requirement						

UUT-1805-2 Console Assembly (HDe6)						
Manufacturer:						
Identification:						
Description:						
Mounting:						
GE Healthcare						
Model No.: 5940904-10 Serial No.: HDE60 – 002						
Component of the Revolution Frontier CT system. Open style console HP Z840 Computer						
<u>Rigid Base (Floor) mounted using:</u> GE console to floor mounting assembly (3 locations total): - Bracket (P/N 5357148-3) each w/ - (2) – M6 x 16 10.9 Class bolts (Torque = 7.9 N-m) (P/N 2262896-30) - (2) – Flat washers (P/N 2001-M8-02) - 3/8" dia. ASTM A574 Socket Head Cap Screw w/ washer.						
DIMENSIONS (in.)			Weight (lb.)	LOWEST RESONANT FREQUENCY (Hz.)		
Width	Depth	Height		Side-Axis	Front-Axis	Vert-Axis
15.7	26.4	22.7		138	14.46	30.24
ICC-ES AC156 SHAKE TABLE TEST PARAMETERS						
S _{DS} (G)	z/h	I _p	A _{FLX-H} (G)	A _{RIG-H} (G)	A _{FLX-V} (G)	A _{RIG-V} (G)
2.0	1	1.5	3.2	2.4	1.68	0.68
2.5	0					
Unit maintained structural integrity and remained functional per manufacturer requirement						

ATTACHMENT 2: TEST UNIT SUMMARY

ATTACHMENT PAGE | 3 OF 4

UUT-10390-3 PROSCAN Patient Table						
Manufacturer:		GE Healthcare				
Identification:		P/N: 5101900				
		S/N: 176453HM9				
Description:		System component of several GEHC PET/CT systems. Tested as component of Discovery PET/CT 690 System				
Mounting:		Rigid Base (Floor) Mounted using (4) - 5/8" diameter SAE J429 Grade 8 bolts to interface plate.				
DIMENSIONS (in.)				LOWEST RESONANT FREQUENCY (Hz.)		
Width	Depth	Height	Weight (lb.)	Side-Axis	Front-Axis	Vert-Axis
25.6	135.8	22/ 42	1808	---	5.3	>33
ICC-ES AC156 SHAKE TABLE TEST PARAMETERS						
S _{DS} (G)	z/h	I _p	A _{FLX-H} (G)	A _{RIG-H} (G)	A _{FLX-V} (G)	A _{RIG-V} (G)
1.52	1	1.5	2.43	1.82	1.02	0.41
Unit maintained structural integrity and remained functional per manufacturer requirement						



UUT-1313-2 NGPDU-61						
Manufacturer:		GE Hangwei Medical Systems CO., LTD				
Identification:		Model No.: 2326492-61				
		Serial No.: 322132HM2				
Description:		System component of several GEHC CT systems. Tested as component of Optima CT580 System.				
Mounting:		<u>Rigid Base (Floor) mounted using:</u> (2) – 3/8" dia. ASTM A574 Socket Head Cap Screws w/ washer through GE mounting brackets to floor plate. <u>GE mounting assembly including:</u> (2) – Seismic Bracket, System Cabinet (P/N 2354563-2) Each bracket mounted to cabinet w/ (2) – M10-1.5 X25mm Class 12.9 Socket Head Cap Screw, Black Oxide (Torque= 38.4 N-m) (2) – M10 Lock Washer (P/N 2203-M10-07) (2) – M10 Flat Washer (P/N 2000-M10-03)				
DIMENSIONS (in.)				LOWEST RESONANT FREQUENCY (Hz.)		
Width	Depth	Height	Weight (lb.)	Side-Axis	Front-Axis	Vert-Axis
27.6	21.7	41.8	796 + 22 brackets = 818	15.7	19.9	45
ICC-ES AC156 SHAKE TABLE TEST PARAMETERS						
S _{DS} (G)	z/h	I _p	A _{FLX-H} (G)	A _{RIG-H} (G)	A _{FLX-V} (G)	A _{RIG-V} (G)
2.0 2.6	1.0 0.0	1.5	3.20	2.40	1.74	0.70
Unit maintained structural integrity and remained functional per manufacturer requirement						



ATTACHMENT 2: TEST UNIT SUMMARY

ATTACHMENT PAGE | 4 OF 4

UUT-1601-3 Discovery PET-CT Chiller						
Manufacturer:			GE Healthcare			
Identification:			Lytron P/N: RC045J03YY3C017 REV B			
			Lytron Serial No.: 898088-01			
			GEHC P/N: 5582166			
Description:			System component of the Discovery PET-CT System. Unit included enhancements to construction not found on then-standard production units. These enhancements subsequently released Chiller Seismic Collector (P/N 5748212), an element of Seismic Kit (P3000BK).			
			Unit include contents at operating level.			
Mounting:			Rigid Base (Floor) mounted using (4) – ½" diameter SAE J429 Grade 8 bolts using GE provided mounting brackets.			
DIMENSIONS (in.)				LOWEST RESONANT FREQUENCY (Hz.)		
Width	Depth	Height	Weight (lb.)	Side-Axis	Front-Axis	Vert-Axis
21.375	27.75	31.875		313.5	25.9	10.6
ICC-ES AC156 SHAKE TABLE TEST PARAMETERS						
S _{DS} (G)	z/h	I _p	A _{FLX-H} (G)	A _{RIG-H} (G)	A _{FLX-V} (G)	A _{RIG-V} (G)
2.0	1.0	1.5	3.20	2.40	1.68	0.68
2.5	0.0					
Unit maintained structural integrity and remained functional per manufacturer requirement						

UUT-1818-1 Console Assembly						
MANUFACTURER:			GE Healthcare			
IDENTIFICATION:			Model No.: 5940904-12 Serial No.: 460049CN1			
DESCRIPTION:			Component of the Revolution Frontier CT System. HP Z8 Computer mounted in an open style console.			
MOUNTING:			<u>Rigid Base (Floor) mounted using:</u> GE console to floor mounting assembly (3 locations total): Console Anti Seismic Bracket (P/N 5357148-3) each w/ - (2) – M6 x 16 flange screw, hexagon socket, black oxide RoHS fastener (Torque=7.9 N-m) (P/N 2262896-30) - (2) – Flat washers (P/N 2001-M8-02) - (1) – 3/8" dia. ASTM A574 Socket Head Cap Screw w/ washer.			
DIMENSIONS (in.)			Weight (lb.)	LOWEST RESONANT FREQUENCY (Hz.)		
Width	Depth	Height		Side-Axis	Front-Axis	Vert-Axis
15.7	26.4	22.7	142.2	15.12	34.41	48.65
ICC-ES AC156 SHAKE TABLE TEST PARAMETERS						
S _{DS} (G)	z/h	I _p	A _{FLX-H} (G)	A _{RIG-H} (G)	A _{FLX-V} (G)	A _{RIG-V} (G)
2.0	1	1.5	3.2	2.4	1.68	0.68
2.5	0					
Unit satisfied AC156 requirements for structural integrity and manufacturer requirements for functionality after AC156 test.						