APPLICATION FOR OSHPD SPECIAL SEISMIC CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY	
APPLICATION #:	OSP – 0314 – 10

OSHPD Special Seismic Certification Preapproval (OSP)

Type: ☒ New ☐ Renewal

Manufacturer Information

Manufacturer: General Electric

Manufacturer's Technical Representative: William Maurer

Mailing Address: 41 Woodford Avenue, Plainville, CT 06062-2372

Telephone: (860) 747-7412 Email: William.Maurer@ge.com

Product Information

Product Name: Spectra Busways

Product Type: Busways

Product Model Number: Spectra Busways – See I. Certified Product Table attached
(List all unique product identification numbers and/or part numbers)

General Description: Aluminum and copper busways. Seismic enhancements made to the test units and modifications required to address anomalies observed during the tests shall be incorporated into the production units.

Mounting Description: Mounted vertically at 12' and 16' max spacing with vibrations spring isolators, and mounted horizontally on a suspended trapeze or floor mounted frame at 10' max spacing with two GE supplied clips with ¼" screws per clip .

Applicant Information

Applicant Company Name: General Electric

Contact Person: William Maurer

Mailing Address: 41 Woodford Avenue, Plainville, CT 06062-2372

Telephone: (860) 747-7412 Email: William.Maurer@ge.com

I hereby agree to reimburse the Office of Statewide Health Planning and Development review fees in accordance with the California Administrative Code, 2013.

Signature of Applicant: William Maurer Date: 1/30/2013

Title: Design Engineer Company Name: General Electric

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

Company Name: Forell/Elsesser Engineers, Inc.

Name: Marco Scanu, SE California License Number: S4454

Mailing Address: 160 Pine St., 6th Flr., San Francisco, CA 94111

Telephone: (415) 837-0700 Email: m.scanu@forell.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: Structural Engineering and Earthquake Simulation Laboratory (SEESL) University of Buffalo

Contact Name: Mark Pitman

Mailing Address: Dept. of Civil, Structural and Environmental Engineering
212 Ketter Hall, North Campus, Buffalo, NY 14260

Telephone: (716) 645-4377 Email: mpitman@buffalo.edu

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, "I. Certified Product Table"

S_{DS} (Design spectral response acceleration at short period, g) = See attachment, "I. Certified Product Table"

a_p (In-structure equipment or component amplification factor) = See attachment, "I. Certified Product Table"

R_p (Equipment or component response modification factor) = See attachment, "I. Certified Product Table"

Ω_0 (System overstrength factor) = 2.5

I_p (Importance factor) = 1.5

z/h (Height factor ratio) = 1.0

Equipment or Component Natural Frequencies (Hz) = See attachment, "III. UUT Summary Sheets"

Overall dimensions and weight (or range thereof) = See attachment, "I. Certified Product Table"

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, 2010: ☐ Yes ☒ No

List of Attachments Supporting Special Seismic Certification

☒ Test Report(s) ☐ Drawings ☒ Calculations ☒ Manufacturer's Catalog

☒ Other(s) (Please Specify): I. Certified Product Table, II. Certified Subcomponents Table, III. UUT Summary Sheets

OSHPD Approval (For Office Use Only) – Approval Expires on December 31, 2019

Signature: Date: May 3, 2013

Print Name: Timothy J. Piland Title: SSE

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

Condition of Approval (if applicable):

General Electric - Spectra Busway
I. Certified Product Table

Unit	Width	Height	Weight[1]		Construction Material	Part No.	Horizontal Mounting - Trapeze Suspended 10' max spacing					Horizontal Mounting - Under-Mounted[2] 10' max spacing					Vertical Mounting 12' max spacing					Vertical Mounting 16' max spacing				
			Min	Max			Test Status	a_p	R_p	S_{DS}	F_p/W	Test Status	a_p	R_p	S_{DS}	F_p/W	Test Status	a_p	R_p	S_{DS}	F_p/W	Test Status	a_p	R_p	S_{DS}	F_p/W
Spectra Busway																										
225 A Busway	3 - 4.5"	4.5-5.9"	5.0 lbs	6.0 lbs	Aluminum	(L)(F,P,R)xxA02xxxxx	UUT-3A, UUT-4A	1.0	2.5	1.97g	1.42	UUT-3B, UUT-4B	1.0	2.5	1.11g	0.8	UUT-3C	2.5	2.0	1.97g	4.43	UUT-4C	2.5	2.0	1.11g	2.5
400 A Busway	3.375 - 4.38"	4.5-5.9"	5.0 lbs	6.0 lbs	Aluminum	(L)(F,P,R)xxA04xxxxx	Interpolated	1.0	2.5	1.97g	1.42	Interpolated	1.0	2.5	1.11g	0.8	Interpolated	2.5	2.0	1.97g	4.43	Interpolated	2.5	2.0	1.11g	2.5
600 A Busway	4 - 4.38"	4.5-5.9"	5.0 lbs	7.5 lbs	Aluminum	(L)(F,P,R)xxA06xxxxx	Interpolated	1.0	2.5	1.97g	1.42	Interpolated	1.0	2.5	1.11g	0.8	Interpolated	2.5	2.0	1.97g	4.43	Interpolated	2.5	2.0	1.11g	2.5
800 A Busway	5 - 5.63"	4.5-5.9"	6.0 lbs	10.0 lbs	Aluminum	(L)(F,P,R)xxA08xxxxx	Interpolated	1.0	2.5	1.97g	1.42	Interpolated	1.0	2.5	1.11g	0.8	Interpolated	2.5	2.0	1.97g	4.43	Interpolated	2.5	2.0	1.11g	2.5
1000 A Busway	6.1 in	4.5 in	7.0 lbs	8.0 lbs	Aluminum	(F,P,R)xxA10xxxxx	Interpolated	1.0	2.5	1.97g	1.42	Interpolated	1.0	2.5	1.11g	0.8	Interpolated	2.5	2.0	1.97g	4.43	Interpolated	2.5	2.0	1.11g	2.5
1200 A Busway	7.0 in	4.5 in	8.0 lbs	9.0 lbs	Aluminum	(F,P,R)xxA12xxxxx	Interpolated	1.0	2.5	1.97g	1.42	Interpolated	1.0	2.5	1.11g	0.8	Interpolated	2.5	2.0	1.97g	4.43	Interpolated	2.5	2.0	1.11g	2.5
1350 A Busway	8.5 in	4.5 in	9.0 lbs	10.0 lbs	Aluminum	(F,P,R)xxA13xxxxx	Interpolated	1.0	2.5	1.97g	1.42	Interpolated	1.0	2.5	1.11g	0.8	Interpolated	2.5	2.0	1.97g	4.43	Interpolated	2.5	2.0	1.11g	2.5
1600 A Busway	9.3 in	4.5 in	10.0 lbs	12.0 lbs	Aluminum	(F,P,R)xxA16xxxxx	Interpolated	1.0	2.5	1.97g	1.42	Interpolated	1.0	2.5	1.11g	0.8	Interpolated	2.5	2.0	1.97g	4.43	Interpolated	2.5	2.0	1.11g	2.5
2000 A Busway	11.0 in	4.5 in	12.0 lbs	15.0 lbs	Aluminum	(F,P,R)xxA20xxxxx	Interpolated	1.0	2.5	1.97g	1.42	Interpolated	1.0	2.5	1.11g	0.8	Interpolated	2.5	2.0	1.97g	4.43	Interpolated	2.5	2.0	1.11g	2.5
2500 A Busway	15.5 in	4.5 in	17.0 lbs	20.0 lbs	Aluminum	(F,P,R)xxA25xxxxx	Interpolated	1.0	2.5	1.97g	1.42	Interpolated	1.0	2.5	1.11g	0.8	Interpolated	2.5	2.0	1.97g	4.43	Interpolated	2.5	2.0	1.11g	2.5
3000 A Busway	18.0 in	4.5 in	19.0 lbs	23.0 lbs	Aluminum	(F,P,R)xxA30xxxxx	Interpolated	1.0	2.5	1.97g	1.42	Interpolated	1.0	2.5	1.11g	0.8	Interpolated	2.5	2.0	1.97g	4.43	Interpolated	2.5	2.0	1.11g	2.5
3200 A Busway	19.5 in	4.5 in	21.0 lbs	24.0 lbs	Aluminum	(F,P,R)xxA32xxxxx	Interpolated	1.0	2.5	1.97g	1.42	Interpolated	1.0	2.5	1.11g	0.8	Interpolated	2.5	2.0	1.97g	4.43	Interpolated	2.5	2.0	1.11g	2.5
4000 A Busway	23.0 in	4.5 in	25.0 lbs	30.0 lbs	Aluminum	(F,P,R)xxA40xxxxx	UUT-1A, UUT-2A	1.0	2.5	1.97g	1.42	UUT-2B	1.0	2.5	1.11g	0.8	UUT-1C	2.5	2.0	1.97g	4.43	UUT-2C	2.5	2.0	1.11g	2.5
225 A Busway	3 - 4.38"	4.5-5.9"	6.6 lbs	9.0 lbs	Copper	(L)(F,P,R)xxC02xxxxx	UUT-3A, UUT-4A	1.0	2.5	1.97g	1.42	UUT-3B, UUT-4B	1.0	2.5	1.11g	0.8	UUT-3C	2.5	2.0	1.97g	4.43	UUT-4C	2.5	2.0	1.11g	2.5
400 A Busway	3 - 4.38 "	4.5-5.9"	6.6 lbs	8.0 lbs	Copper	(L)(F,P,R)xxC04xxxxx	Interpolated	1.0	2.5	1.97g	1.42	Interpolated	1.0	2.5	1.11g	0.8	Interpolated	2.5	2.0	1.97g	4.43	Interpolated	2.5	2.0	1.11g	2.5
600 A Busway	3.375 - 4.38"	4.5-5.9"	8.0 lbs	9.2 lbs	Copper	(L)(F,P,R)xxC06xxxxx	Interpolated	1.0	2.5	1.97g	1.42	Interpolated	1.0	2.5	1.11g	0.8	Interpolated	2.5	2.0	1.97g	4.43	Interpolated	2.5	2.0	1.11g	2.5
800 A Busway	4 - 4.38"	4.5-5.9"	8.0 lbs	12.2 lbs	Copper	(L)(F,P,R)xxC08xxxxx	Interpolated	1.0	2.5	1.97g	1.42	Interpolated	1.0	2.5	1.11g	0.8	Interpolated	2.5	2.0	1.97g	4.43	Interpolated	2.5	2.0	1.11g	2.5
1000 A Busway	5.0 in	4.5 in	10.0 lbs	12.0 lbs	Copper	(F,P,R)xxC10xxxxx	Interpolated	1.0	2.5	1.97g	1.42	Interpolated	1.0	2.5	1.11g	0.8	Interpolated	2.5	2.0	1.97g	4.43	Interpolated	2.5	2.0	1.11g	2.5
1200 A Busway	5.6 in	4.5 in	12.0 lbs	15.0 lbs	Copper	(F,P,R)xxC12xxxxx	Interpolated	1.0	2.5	1.97g	1.42	Interpolated	1.0	2.5	1.11g	0.8	Interpolated	2.5	2.0	1.97g	4.43	Interpolated	2.5	2.0	1.11g	2.5
1350 A Busway	6.1 in	4.5 in	14.0 lbs	17.0 lbs	Copper	(F,P,R)xxC13xxxxx	Interpolated	1.0	2.5	1.97g	1.42	Interpolated	1.0	2.5	1.11g	0.8	Interpolated	2.5	2.0	1.97g	4.43	Interpolated	2.5	2.0	1.11g	2.5
1600 A Busway	7.0 in	4.5 in	16.0 lbs	20.0 lbs	Copper	(F,P,R)xxC16xxxxx	Interpolated	1.0	2.5	1.97g	1.42	Interpolated	1.0	2.5	1.11g	0.8	Interpolated	2.5	2.0	1.97g	4.43	Interpolated	2.5	2.0	1.11g	2.5
2000 A Busway	8.5 in	4.5 in	21.0 lbs	26.0 lbs	Copper	(F,P,R)xxC20xxxxx	Interpolated	1.0	2.5	1.97g	1.42	Interpolated	1.0	2.5	1.11g	0.8	Interpolated	2.5	2.0	1.97g	4.43	Interpolated	2.5	2.0	1.11g	2.5
2500 A Busway	10.3 in	4.5 in	26.0 lbs	33.0 lbs	Copper	(F,P,R)xxC25xxxxx	Interpolated	1.0	2.5	1.97g	1.42	Interpolated	1.0	2.5	1.11g	0.8	Interpolated	2.5	2.0	1.97g	4.43	Interpolated	2.5	2.0	1.11g	2.5
3000 A Busway	14.5 in	4.5 in	32.0 lbs	40.0 lbs	Copper	(F,P,R)xxC30xxxxx	Interpolated	1.0	2.5	1.97g	1.42	Interpolated	1.0	2.5	1.11g	0.8	Interpolated	2.5	2.0	1.97g	4.43	Interpolated	2.5	2.0	1.11g	2.5
3200 A Busway	15.5 in	4.5 in	34.0 lbs	43.0 lbs	Copper	(F,P,R)xxC32xxxxx	Interpolated	1.0	2.5	1.97g	1.42	Interpolated	1.0	2.5	1.11g	0.8	Interpolated	2.5	2.0	1.97g	4.43	Interpolated	2.5	2.0	1.11g	2.5
4000 A Busway	18.0 in	4.5 in	42.0 lbs	52.0 lbs	Copper	(F,P,R)xxC40xxxxx	Interpolated	1.0	2.5	1.97g	1.42	Interpolated	1.0	2.5	1.11g	0.8	Interpolated	2.5	2.0	1.97g	4.43	Interpolated	2.5	2.0	1.11g	2.5
5000 A Busway	21.5 in	4.5 in	52.0 lbs	66.0 lbs	Copper	(F,P,R)xxC50xxxxx	UUT-1A, UUT-2A	1.0	2.5	1.97g	1.42	UUT-2B	1.0	2.5	1.11g	0.8	UUT-1C	2.5	2.0	1.97g	4.43	UUT-2C	2.5	2.0	1.11g	2.5

Notes

1. Weight / foot
2. Under-mounted is defined as being supported from below by a rigid support.

FORELL/ELSESSER ENGINEERS, INC.
160 Pine Street, 6th Floor
San Francisco, CA 94111

General Electric - Spectra Busway
I. Certified Product Table

Spectra Busway - Fittings

Fitting	Width	Depth	Height	Weight		Part. No.	Material	Test Status	S_{DS}
				Min	Max				
Joints & turns									
Joint	4.5-23 in.	12 in.	4.5 in.	5 lbs	25 lbs	212C1085*	Copper	UUT-1, UUT-2, UUT-3, UUT-4	1.97g
Joint	4.5-23 in.	12 in.	4.5 in.	5 lbs	25 lbs	212C1085*	Aluminum	UUT-1, UUT-2, UUT-3, UUT-4	1.97g
Elbow (joint) - up/down	4.5-22 in.	14-36 in.	4.5 in.	5 lbs	66 lbs	xxxxxxE(U/D)xST	Copper	UUT-1, UUT-2	1.97g
Elbow (joint) - up/down	4.5-22 in.	14-36 in.	4.5 in.	5 lbs	66 lbs	xxxxxxE(U/D)xST	Aluminum	UUT-3	1.97g
Elbow (joint) - left/right	14-36 in.	12 in.	12 in.	5 lbs	132 lbs	xxxxxxE(L/R)xST	Copper	Interpolated	1.97g
Elbow (joint) - left/right	14-36 in.	12 in.	12 in.	5 lbs	132 lbs	xxxxxxE(L/R)xST	Aluminum	Interpolated	1.97g
Reducer Section	4.5-22 in.	36 in.	4.5 in.	15 lbs	200 lbs	212C1057G*, 212C1208G*	Copper	UUT-1, UUT-2	1.97g
Reducer Section	4.5-22 in.	36 in.	4.5 in.	15 lbs	200 lbs	212C1057G*, 212C1208G*	Aluminum	UUT-1, UUT-2	1.97g
Combination Elbow	12 in.	10-38 in.	14-36 in.	16 lbs	275 lbs	xxxxxx(LU/LD/RU/RD/UL/UR/DL/DR)xST	Copper	Interpolated	1.97g
Combination Elbow	12 in.	10-38 in.	14-36 in.	16 lbs	275 lbs	xxxxxx(LU/LD/RU/RD/UL/UR/DL/DR)xST	Aluminum	Interpolated	1.97g
Offset - Edgewise	3-32 in.	20 in.	10 in.	10 lbs	143 lbs	xxxxxxO(U/D)xxx	Copper	Interpolated	1.97g
Offset - Edgewise	3-32 in.	20 in.	10 in.	10 lbs	143 lbs	xxxxxxO(U/D)xxx	Aluminum	Interpolated	1.97g
Offset - Flatwise	8-32 in.	24-48 in.	4.5 in.	12 lbs	315 lbs	xxxxxxO(R/L)xxx	Copper	Interpolated	1.97g
Offset - Flatwise	8-32 in.	24-48 in.	4.5 in.	12 lbs	315 lbs	xxxxxxO(R/L)xxx	Aluminum	Interpolated	1.97g
Tee - Flat	24-48 in.	14-26 in.	4.5 in.	15 lbs	400 lbs	xxxxxxT(R/L)xxx	Copper	UUT-1, UUT-2, UUT-3, UUT-4	1.97g
Tee - Flat	24-48 in.	14-26 in.	4.5 in.	15 lbs	400 lbs	xxxxxxT(R/L)xxx	Aluminum	UUT-1, UUT-2, UUT-3, UUT-4	1.97g
Ends									
Cable tap box	17-39 in.	34 in.	26-34 in.	40 lbs	150 lbs	xxxxxx(CT/CB/TT/TB)xST	Copper	UUT-1, UUT-2, UUT-3, UUT-4	1.97g
Cable tap box	17-39 in.	34 in.	26-34 in.	40 lbs	150 lbs	xxxxxx(CT/CB/TT/TB)xST	Aluminum	UUT-1, UUT-2, UUT-3, UUT-4	1.97g
Switches and plugs									
Bus plugs	11-17 in.	8-12 in.	13-45 in.	25 lbs	160 lbs	S(B/L)xxx	Copper	UUT-1, UUT-2	1.97g

FORELL/ELSESSER ENGINEERS, INC.
160 Pine Street, 6th Floor
San Francisco, CA 94111

General Electric - Spectra Busway
II. Certified Subcomponents Table

Bus Plug Internal Components						
Circuit Breakers						
Breaker Frame	**Ampacity**	**Testing Status**	**Manufacturer**	**Material**	**Part No.**	**S_{DS}**
E	15-150 A	UUT-1, UUT-2	GE	Copper	TE*, SE*	1.97g
F	70-250 A	Interpolated	GE	Copper	TF*, SF*	1.97g
G	125-600 A	Interpolated	GE	Copper	SG*	1.97g
J	125-600 A	Interpolated	GE	Copper	TJ*	1.97g
K	300-800 A	UUT-1, UUT-2	GE	Copper	TK*, SK*	1.97g

UUT 1

5000A Busway

1A – Horizontal Busway Trapeze Mounted 10’ spacing

1C – Vertical Busway Mounted 12’ spacing

Figure 2-4: Southwest view of UUT1 mounted on support frame attached to shake table

UUT 1 - Internal Components

Internal Components	Manufacturer	Part #
5000A Copper Busway	GE	F4HC50SL10, R4HC50SL10
4000A Aluminum Busway	GE	F4HA40SL10, R4HA40SL10
Joint Fitting	GE	212C1085
Elbow Joint - Edgewise	GE	F4HC50EUST
Tee Joint - Flat	GE	F4HC50TRST
Reducer Section	GE	212C1057G
Cable Tap Box	GE	F4HA40TTST
100A Bus Plug	GE	SB31SEDG
800A Bus Plug	GE	SB380SKHG
15A Circuit Breaker	GE	SEDA36AT0030
800A Circuit Breaker	GE	SKHA36AT0800

Shake Table Test Parameters

BUILDING CODE	TEST CRITERIA	S_{DS} (g)	z/h	HORIZONTAL		VERTICAL	
				A_{FLX-H}	A_{RIG-H}	A_{FLX-V}	A_{RIG-V}
CBC 2013	ICC-ES AC156	1.98	1.0	3.16	2.37	1.43	0.80

Resonant Frequency Summary

UUT Identification	RESONANT FREQUENCY (Hz)		
	Front-Back	Side-Side	Vertical
UUT-1A	N/A	N/A	N/A
UUT-1C	6.1	3.6	13.1

UUT Seismic Test Results
The structural integrity and functionality of the UUT was maintained after the AC156 test.

UUT 2

5000A Busway

2A – Horizontal Busway Trapeze Mounted 10’ spacing

2B – Horizontal Busway Under Mounted (supported from below by a rigid support) 10’ spacing

2C – Vertical Busway Mounted 16’ spacing

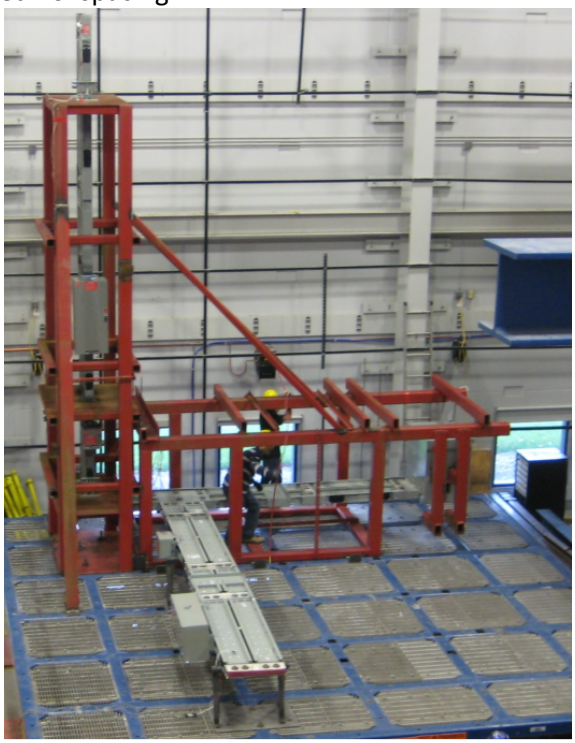

Figure 2-2: South view of UUT2 mounted on support frame attached to shake table

UUT 2 - Internal Components

Internal Components	Manufacturer	Part #
5000A Copper Busway	GE	F4HC50SL10, R4HC50SL10
4000A Aluminum Busway	GE	F4HA40SL10, R4HA40SL10
Joint Fitting	GE	212C1085
Elbow Joint - Edgewise	GE	F4HC50EUST
Tee Joint - Flat	GE	F4HC50TRST
Reducer Section	GE	212C1057G
Cable Tap Box	GE	F4HA40TTST
100A Bus Plug	GE	SB31SEDG
800A Bus Plug	GE	SB380SKHG
15A Circuit Breaker	GE	SEDA36AT0030
800A Circuit Breaker	GE	SKHA36AT0800

Shake Table Test Parameters

BUILDING CODE	TEST CRITERIA	S_{DS} (g)	z/h	HORIZONTAL		VERTICAL	
				A_{FLX-H}	A_{RIG-H}	A_{FLX-V}	A_{RIG-V}
CBC 2013	ICC-ES AC156	1.11	1.0	1.78	1.4	0.74	0.42

Resonant Frequency Summary

UUT Identification	RESONANT FREQUENCY (Hz)		
	Front-Back	Side-Side	Vertical
UUT-2A	N/A	N/A	N/A
UUT-2B	5.7	5.2	8.4
UUT-2C	6.8	3.4	12.1

UUT Seismic Test Results
The structural integrity and functionality of the UUT was maintained after the AC156 test.

UUT 3

225A Busway

3A – Horizontal Busway Trapeze Mounted 10’ spacing

3B – Horizontal Busway Under Mounted (supported from below by a rigid support) 10’ spacing

3C – Vertical Busway Mounted 12’ spacing

Figure 2-6: South view of UUT3 mounted on support frame attached to shake table

UUT 3 - Internal Components

Internal Components	Manufacturer	Part #
225A Copper Busway	GE	LF3HC02SL10, LR3HC02SL10
225A Aluminum Busway	GE	LF3HA02SL10, LR3HA02SL10
Joint Fitting	GE	212C1085
Elbow Joint - Edgewise	GE	LF3HA02EUST
Tee Joint - Flat	GE	LF3HA02TRST
Reducer Section	GE	212C1057G
Cable Tap Box	GE	LF3HC02STBST

Shake Table Test Parameters

BUILDING CODE	TEST CRITERIA	S_{DS} (g)	z/h	HORIZONTAL		VERTICAL	
				A_{FLX-H}	A_{RIG-H}	A_{FLX-V}	A_{RIG-V}
CBC 2013	ICC-ES AC156	1.97	1.0	3.15	2.4	1.45	0.71

Resonant Frequency Summary

UUT Identification	RESONANT FREQUENCY (Hz)		
	Front-Back	Side-Side	Vertical
UUT-3A	N/A	N/A	N/A
UUT-3B	8.8	8.4	17.7
UUT-3C	7.8	7.5	22.4

UUT Seismic Test Results
The structural integrity and functionality of the UUT was maintained after the AC156 test.

UUT 4

225A Busway

4A – Horizontal Busway Trapeze Mounted 10’ spacing

4B – Horizontal Busway Under Mounted (supported from below by a rigid support) 10’ spacing

4C – Vertical Busway Mounted 16’ spacing

Figure 2-7: South view UUT4 mounted on support frame attached to shake table

UUT 4 - Internal Components

Internal Components	Manufacturer	Part #
225A Copper Busway	GE	LF3HC02SL10, LR3HC02SL10
225A Aluminum Busway	GE	LF3HA02SL10, LR3HA02SL10
Joint Fitting	GE	212C1085
Tee Joint - Flat	GE	LF3HA02TRST
Reducer Section	GE	212C1057G
Cable Tap Box	GE	LF3HC02STBST

Shake Table Test Parameters

BUILDING CODE	TEST CRITERIA	S_{DS} (g)	z/h	HORIZONTAL		VERTICAL	
				A_{FLX-H}	A_{RIG-H}	A_{FLX-V}	A_{RIG-V}
CBC 2013	ICC-ES AC156	1.88	1.0	3.00	2.25	1.45	2.44

Resonant Frequency Summary

UUT Identification	RESONANT FREQUENCY (Hz)		
	Front-Back	Side-Side	Vertical
UUT-4A	N/A	N/A	N/A
UUT-4B	7.8	8.8	23.6
UUT-4C	7.8	5.9	22.3

UUT Seismic Test Results
The structural integrity and functionality of the UUT was maintained after the AC156 test.