APPLICATION FOR HCAI SPECIAL SEISMIC CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY

APPLICATION #: OSP-0035

HCAI Special Seismic Certification Preapproval (OSP)

Type: ☐ New ☒ Renewal

Manufacturer Information

Manufacturer: ABB Inc.

Manufacturer's Technical Representative: Tiwari Dhirendra

Mailing Address: 830 W 40th Street, Chicago, IL 60609

Telephone: (860) 969-8494 Email: Dhirendra.Tiwari@us.abb.com

Product Information

Product Name: Emergency and Standby Power Systems

Product Type: Automatic Transfer Switches

Product Model Number: See certified product line matrices

General Description: Automatic and By-pass Transfer Switches, which are manual, automatic, or a combination of both.

Mounting Description: Rigid, Floor Mounted

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: W.E. Gundy & Associates, Inc.

Contact Person: Travis Soppe

Mailing Address: 1199 Shoreline Dr., Suite 310, Boise, ID 83702

Telephone: (208) 342-5989 Email: tsoppe@wegai.com

Title: SE

REVIEWED FOR CODE COMPLIANCE HCAi OSP-0035 BY: Mohammed Hamid DATE: 02/04/2022 CALIFORNIA BUILDING CODE, 2019

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: CLARK TESTING LABORATORY, INC.

Contact Person: Devon Lohr

Mailing Address: 1801 Route 51 South, Jefferson Hills PA 15025

Telephone: (412) 387-1027 Email: dlohr@clarktesting.com

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Seismic Parameters

Design Basis of Equipment or Components (F_p/W_p) = 1.5

S_{DS} (Design spectral response acceleration at short period, g) = 2.0

a_p (Amplification factor) = 2.5

R_p (Response modification factor) = 6.0

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

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HCAI Approval (For Office Use Only) - Approval Expires on 02/04/2028

Date: 2/4/2022

Name: Mohammad Karim Title: Supervisor, Health Facilities

Special Seismic Certification Valid Up to: S_{DS} (g) = 2.0 z/h = 1

Condition of Approval (if applicable):

ABB INC. (FORMERLY GE) HORIZONTAL BYPASS TRANSFER SWITCH CERTIFIED PRODUCT LINE MATRIX

WEGAI
W.E. GUNDY & ASSOCIATES, INC.
STRUCTURAL & EARTHQUAKE ENGINEERING

ID Number[1]	Ampre Rating	Frame Size[2]	Pole	NEMA Rating	Enclosure Dimensions (in)			Service Weight (lbs)	Representative UUT
					Width	Depth	Height		
ZBTS-B1-1200	1200	64B	3	1	42.0	36.0	80.0	1334	UUT_x-5
ZBTS-B1/ZBTSD-B1/ZBTSCT-B1/Z30/Z3D/Z3C-600	600	64B	3 / 4	1	39.0 - 42.0	36.0	80.0	1335 - 1640	interpolated
ZBTS-B1/ZBTSD-B1/ZBTSCT-B1/Z30/Z3D/Z3C-800	800	64B	3 / 4	1	39.0 - 42.0	36.0	80.0	1335 - 1640	interpolated
ZBTS-B1/ZBTSD-B1/ZBTSCT-B1/Z30/Z3D/Z3C-1000	1000	64B	3 / 4	1	39.0 - 42.0	36.0	80.0	1335 - 1640	interpolated
ZBTS-B1/ZBTSD-B1/ZBTSCT-B1/Z30/Z3D/Z3C-1200	1200	64B	3 / 4	1	39.0 - 42.0	36.0	80.0	1335 - 1640	interpolated
ZBTS-B1/ZBTSD-B1/ZBTSCT-B1/Z30/Z3D/Z3C-1600	1600	65B	3 / 4	1	40.0 - 46.1	64.6	80.0	4453 - 5750	interpolated
ZBTS-B1/ZBTSD-B1/ZBTSCT-B1/Z30/Z3D/Z3C-2000	2000	65B	3 / 4	1	40.0 - 46.1	64.6	80.0	4454 - 5750	interpolated
ZBTS-B1/ZBTSD-B1/ZBTSCT-B1/Z30/Z3D/Z3C-2600	2600	65B	3 / 4	1	40.0 - 46.1	64.6	80.0	4455 - 5750	interpolated
ZBTS-B1/ZBTSD-B1/ZBTSCT-B1/Z30/Z3D/Z3C-3000	3000	65B	3 / 4	1	40.0 - 46.1	64.6	80.0	4456 - 5750	interpolated
ZBTS-B1-3000	3000	65B	4	1	46.1	64.6	80.0	5747	UUT_x-6

Notes:

[1] All components are manufactured by ABB Inc. (formerly GE) unless otherwise noted. The part numbers listed uniquely identify the type of component, manufacturer, and material of construction for each sub-component within the tested units. The ZBTS-B1/ZBTSD-B1/ZBTSCT-B1/Z30/Z3D/Z3C Horizontal Bypass transfer switches are of nearly identical construction and have minor control differences listed below.

[2] Enclosures are constructed of bolted and welded carbon steel.

[3] Subscript indicates the test report in which the units were qualified:
x - T4761

ZBT AND Z3 - Horizontal Bypass Switch Models
-ZBTS-B1 - Open Transition with MX250 Controler
-ZBTSD-B1 - Delay Transition with MX250 Controler
-ZBTSCT-B1 - Closed Transition with MX250 Controler
-Z30 - Open Transition with MX350 Controler
-Z3D - Delay Transition with MX350 Controler
-Z3C - Closed Transition with MX350 Controler

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ABB INC. (FORMERLY GE) VERTICAL BYPASS TRANSFER SWITCH CERTIFIED PRODUCT LINE MATRIX

WEGAI
W.E. GUNDY & ASSOCIATES, INC.
STRUCTURAL & EARTHQUAKE ENGINEERING

ID Number[1]	Ampre Rating	Frame Size[2]	Pole	NEMA Rating	Enclosure Dimensions (in)			Service Weight (lbs)	Representative UUT
					Width	Depth	Height		
ZBTS-B0/ZBTSD-B0/Z20/Z2D/Z2C-100 to 400	100 - 400	F14C	3 / 4	1, 3R, 4, 12	30.0	28.5	86.0	770 - 875	extrapolated
ZBTS-B0-400	400	F14C	3	1	30.0	28.5	86.0	875	UUT_w-3
ZBTSCT-B0-100 to 400	100 - 400	64B	3 / 4	1, 3R, 4, 12	36.0 - 40.0	28.3	90.0	1220 - 1385	interpolated
ZBTS-B0/ZBTSD-B0/ZBTSCT-B0/Z20/Z2D/Z2C-600	600	64B	3 / 4	1, 3R, 4, 12	36.0 - 40.0	28.3	90.0	1220 - 1385	interpolated
ZBTS-B0/ZBTSD-B0/ZBTSCT-B0/Z20/Z2D/Z2C-800	800	64B	3 / 4	1, 3R, 4, 12	40.0 - 46.0	28.3	90.0	1355 - 1640	interpolated
ZBTS-B0/ZBTSD-B0/ZBTSCT-B0/Z20/Z2D/Z2C-1000	1000	64B	3 / 4	1, 3R, 4, 12	40.0 - 46.0	28.3	90.0	1355 - 1640	interpolated
ZBTS-B0/ZBTSD-B0/ZBTSCT-B0/Z20/Z2D/Z2C-1200	1200	64B	3 / 4	1, 3R, 4, 12	40.0 - 46.0	28.3	90.0	1355 - 1640	interpolated
ZBTS-B0/ZBTSD-B0/ZBTSCT-B0/Z20/Z2D/Z2C-1600	1600	65B	3 / 4	1, 3R, 4, 12	40.6 - 46.1	64.6	80.0	4044 - 4431	interpolated
ZBTS-B0/ZBTSD-B0/ZBTSCT-B0/Z20/Z2D/Z2C-2000	2000	65B	3 / 4	1, 3R, 4, 12	40.6 - 46.1	64.6	80.0	4044 - 4431	interpolated
ZBTS-B0/ZBTSD-B0/ZBTSCT-B0/Z20/Z2D/Z2C-2600	2600	65B	3 / 4	1, 3R, 4, 12	40.6 - 46.1	64.6	80.0	4044 - 4431	interpolated
ZBTS-B0/ZBTSD-B0/ZBTSCT-B0/Z20/Z2D/Z2C-3000	3000	65B	3 / 4	1, 3R, 4, 12	40.6 - 46.1	64.6	80.0	4456 - 5750	interpolated
ZBTS-B0/ZBTSD-B0/ZBTSCT-B0/Z20/Z2D/Z2C-4000	4000	65B	3 / 4	1, 3R, 4, 12	47.5 - 54.0	81.0	90.0	4660 - 6400	interpolated
ZBTS-B0-4000	4000	65B	4	3R, 4, 12	54.0	81.0	90.0	6406	UUT_z-6

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Notes:

[1] All components are manufactured by ABB Inc. (formerly GE) unless otherwise noted. The part numbers listed uniquely identify the type of component, manufacturer, and material of construction for each sub-component within the tested units. The ZBTS-B0/ZBTSD-B0/ZBTSCT-B0/Z20/Z2D/Z2C Vertical Bypass transfer switches are of nearly identical construction with minor control differences listed below.

[2] Enclosures are constructed of bolted and welded carbon steel.

[3] Subscript indicates the test report in which the units were qualified:
w - T4343, z - JID: 19-01143-1

ZBT AND Z2 - Vertical Bypass Switch Models
-ZBTS-B0 - Open Transition with MX250 Controler
-ZBTSD-B0 - Delay Transition with MX250 Controler
-ZBTSCT-B0 - Closed Transition with MX250 Controler
-Z20 - Open Transition with MX350 Controler
-Z2D - Delay Transition with MX350 Controler
-Z2C - Closed Transition with MX350 Controler

ABB INC. (FORMERLY GE) AUTOMATIC TRANSFER SWITCH CERTIFIED PRODUCT LINE MATRIX

WEGAI
W.E. GUNDY & ASSOCIATES, INC.
STRUCTURAL & EARTHQUAKE ENGINEERING

ID Number[1]	Ampre Rating	Frame Size[2]	Pole	NEMA Rating	Enclosure Dimensions (in)			Service Weight (lbs)	Representative UUT
					Width	Depth	Height		
ZTG-A0/ZTGD-A0-600	600	F14	2 / 3 / 4	1, 3R, 4, 12	24.0	20.0	69.0	214 - 265	extrpolated
ZTG-A0-600	600	F14	3	1	24.0	20.0	69.0	265	UUT_w-1
ZSAC-040	400	63L	2 / 3 / 4	1, 3R, 4, 12	40.0	20.0	74.0	410 - 538	interpolated
ZSAC-060	600	63L	2 / 3 / 4	1, 3R, 4, 12	40.0	20.0	74.0	410 - 538	interpolated
ZSAC-060	600	63L	4	1	40.0	20.0	74.0	538	UUT_v-1
ZTG-A0/ZTGD-A0-800	800	63L	2 / 3 / 4	1, 3R, 4, 12	40.0	20.0	74.0	460 - 490	interpolated
ZTS-B0/ZTSD-B0/ZTSCT-B0/Z1O/Z1D/Z1C-800	800	63L	2 / 3 / 4	1, 3R, 4, 12	40.0	20.0	74.0	455 - 560	interpolated
ZSAC-080	800	63L	2 / 3 / 4	1, 3R, 4, 12	40.0	20.0	74.0	460 - 560	interpolated
ZTG-A0/ZTGD-A0-1000	1000	63L	2 / 3 / 4	1, 3R, 4, 12	40.0	20.0	74.0	475 - 560	interpolated
ZTS-B0/ZTSD-B0/ZTSCT-B0/Z1O/Z1D/Z1C-1000	1000	63L	2 / 3 / 4	1, 3R, 4, 12	40.0	20.0	74.0	455 - 560	interpolated
ZSAC-100	1000	63L	2 / 3 / 4	1, 3R, 4, 12	40.0	20.0	74.0	500 - 590	interpolated
ZTG-A0/ZTGD-A0-1200	1200	63L	2 / 3 / 4	1, 3R, 4, 12	40.0	20.0	74.0	475 - 560	interpolated
ZTS-B0/ZTSD-B0/ZTSCT-B0/Z1O/Z1D/Z1C-1200	1200	63L	2 / 3 / 4	1, 3R, 4, 12	40.0	20.0	74.0	455 - 560	interpolated
ZSAC-120	1200	63L	2 / 3 / 4	1, 3R, 4, 12	40.0	20.0	74.0	500 - 590	interpolated
ZT3-1000	1000	40LA	3	1	36.5	23.5	90.0	917	UUT_y-1
ZT3-1000	1000	40LA	2 / 3 / 4	1, 3R, 4, 12	36.5-38.8	23.5	90.0	867-1062	interpolated

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Notes:

[1] All components are manufactured by GE unless otherwise 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] Enclosures are constructed of bolted and welded carbon steel.

[3] The transfer switches are of nearly identical construction with minor control differences listed to right.

[4] Subscript indicates the test report in which the units were qualified:
w - T4343, x - T4761, y - JID: 5050, z - JID: 19-01143-1

ZT and Z1 - Transfer Switch Models
- -ZTG-A0/A4 - Open Transition, MX150 Controller
- -ZTGD-A0/A4 - Delay Transition, MX150 Controller
- -ZTS-B0/B4 - Open Transition, MX250 Controller
- -ZTSD-B0/B4 - Delay Transition, MX250 Controller
- -ZTSCT-B0/B4 - Closed Transition, MX250 Controller
- -Z1O/Z4O - Open Transition, MX350 Controller
- -Z1D/Z4D - Delay Transition, MX350 Controller
- -Z1C/Z4C - Closed Transition, MX350 Controller

ZS and ZG - Transfer Switch Models
- -ZSAO - Open Transition, OXCO1 Controller
- -ZSAD - Delay Transition, OXCO1 Controller
- -ZSAC - Closed Transition, OXCO1 Controller
- -ZGAO - Open Transition, OXCO1 Controller
- -ZGAD - Delay Transition, OXCO1 Controller

ABB INC. (FORMERLY GE) AUTOMATIC TRANSFER SWITCH CERTIFIED PRODUCT LINE MATRIX

WEGAI
W.E. GUNDY & ASSOCIATES, INC.
STRUCTURAL & EARTHQUAKE ENGINEERING

ID Number[1]	Ampre Rating	Frame Size[2]	Pole	NEMA Rating	Enclosure Dimensions (in)			Service Weight (lbs)	Representative UUT
					Width	Depth	Height		
ZT3-1200	1200	40LA	2 / 3 / 4	1, 3R, 4, 12	36.5-38.8	23.5	90.0	867-1062	interpolated
ZT3-1600	1600	40LA	2 / 3 / 4	1, 3R, 4, 12	36.5-38.8	23.5	90.0	867-1062	interpolated
ZTG-A4/ZTGD-A4-1600	1600	65L	2 / 3 / 4	1, 3R, 4, 12	35.5-37.5	48.0-49.0	90.0	1010 - 1480	interpolated
ZTS-B0/ZTSD-B0/ZTSCT-B0/Z1O/Z1D/Z1C-1600	1600	65L	2 / 3 / 4	1	36.0	48.0	90.0	1010 - 1190	interpolated
ZTS-B4/ZTSD-B4/ZTSCT-B4/Z4O/Z4D/Z4C-1600	1600	65L	2 / 3 / 4	1, 3R, 4, 12	35.5-37.5	48.0-49.0	90.0	1010 - 1480	interpolated
ZGAO/ZGAD-160	1600	R5	3 / 4	1, 3R, 4, 12	36.0	48.0	90.0	1375 - 1540	interpolated
ZSAO/ZSAD/ZSAC-160	1600	R5	3 / 4	1, 3R, 4, 12	36.0	48.0	90.0	1375 - 1540	interpolated
ZTG-A4/ZTGD-A4-2000	2000	65L	2 / 3 / 4	1, 3R, 4, 12	35.5-37.5	48.0-49.0	90.0	1010 - 1480	interpolated
ZTS-B0/ZTSD-B0/ZTSCT-B0/Z1O/Z1D/Z1C-2000	2000	65L	2 / 3 / 4	1	36.0	48.0	90.0	1010 - 1190	interpolated
ZT3-2000	2000	40LA	2 / 3 / 4	1, 3R, 4, 12	36.5-38.8	23.5	90.0	867-1062	interpolated
ZTS-B4/ZTSD-B4/ZTSCT-B4/Z4O/Z4D/Z4C-2000	2000	65L	2 / 3 / 4	1, 3R, 4, 12	35.5-37.5	48.0-49.0	90.0	1010 - 1480	interpolated
ZGAO/ZGAD-200	2000	R5	3 / 4	1, 3R, 4, 12	36.0	48.0	90.0	1375 - 1540	interpolated
ZSAO/ZSAD/ZSAC-200	2000	R5	3 / 4	1, 3R, 4, 12	36.0	48.0	90.0	1375 - 1540	interpolated
ZTG-A4/ZTGD-A4-2600	2600	65L	2 / 3 / 4	1, 3R, 4, 12	35.5-37.5	48.0-49.0	90.0	1010 - 1480	interpolated
ZT3-2600	2600	40LA	2 / 3 / 4	1, 3R, 4, 12	36.5-38.8	23.5-53.5	90.0	950-1430	interpolated
ZGAO/ZGAD-260	2600	R5	3 / 4	1, 3R, 4, 12	36.0	48.0	90.0	1375 - 1540	interpolated

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Notes:

[1] All components are manufactured by GE unless otherwise 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] Enclosures are constructed of bolted and welded carbon steel.

[3] The transfer switches are of nearly identical construction with minor control differences listed to right.

[4] Subscript indicates the test report in which the units were qualified:
w - T4343, x - T4761, y - JID: 5050, z - JID: 19-01143-1

ZT and Z1 - Transfer Switch Models
- -ZTG-A0/A4 - Open Transition, MX150 Controller
- -ZTGD-A0/A4 - Delay Transition, MX150 Controller
- -ZTS-B0/B4 - Open Transition, MX250 Controller
- -ZTSD-B0/B4 - Delay Transition, MX250 Controller
- -ZTSCT-B0/B4 - Closed Transition, MX250 Controller
- -Z1O/Z4O - Open Transition, MX350 Controller
- -Z1D/Z4D - Delay Transition, MX350 Controller
- -Z1C/Z4C - Closed Transition, MX350 Controller

ZS and ZG - Transfer Switch Models
- -ZSAO - Open Transition, OXCO1 Controller
- -ZSAD - Delay Transition, OXCO1 Controller
- -ZSAC - Closed Transition, OXCO1 Controller
- -ZGAO - Open Transition, OXCO1 Controller
- -ZGAD - Delay Transition, OXCO1 Controller

ABB INC. (FORMERLY GE) AUTOMATIC TRANSFER SWITCH CERTIFIED PRODUCT LINE MATRIX

WEGAI
W.E. GUNDY & ASSOCIATES, INC.
STRUCTURAL & EARTHQUAKE ENGINEERING

ID Number[1]	Ampre Rating	Frame Size[2]	Pole	NEMA Rating	Enclosure Dimensions (in)			Service Weight (lbs)	Representative UUT
					Width	Depth	Height		
ZSAO/ZSAD/ZSAC-260	2600	R5	3 / 4	1, 3R, 4, 12	36.0	48.0	90.0	1375 - 1540	interpolated
ZTG-A4/ZTGD-A4-3000	3000	65L	2 / 3 / 4	1, 3R, 4, 12	35.5-37.5	48.0-49.0	90.0	1010 - 1480	interpolated
ZT3-3000	3000	40LA	2 / 3 / 4	1, 3R, 4, 12	36.5-38.8	23.5-53.5	90.0	950-1430	interpolated
ZT3-3000	3000	40LA	4	3R, 4, 12	38.8	41.5	90.0	1295	UUT_y-2
ZTS-B0/ZTSD-B0/ZTSCT-B0/Z1O/Z1D/Z1C-3000	3000	65L	2 / 3 / 4	1	36.0	48.0	90.0	1130 - 1415	interpolated
ZTS-B4/ZTSD-B4/ZTSCT-B4/Z4O/Z4D/Z4C-3000	3000	65L	2 / 3 / 4	1, 3R, 4, 12	35.5-37.5	48.0-49.0	90.0	1010 - 1480	interpolated
ZGAO/ZGAD-300	3000	R5	3 / 4	1, 3R, 4, 12	36.0	48.0	90.0	1375 - 1540	interpolated
ZSAO/ZSAD/ZSAC-300	3000	R5	3 / 4	1, 3R, 4, 12	36.0	48.0	90.0	1375 - 1540	interpolated
ZTS-B0/ZTSD-B0/ZTSCT-B0/Z1O/Z1D/Z1C-4000	4000	65L	2 / 3 / 4	1	46.0	60.0	90.0	1595 - 2100	interpolated
ZTS-B0-4000	4000	65L	4	1	46.0	60.0	90.0	2100	UUT_w-2

Notes:

[1] All components are manufactured by GE unless otherwise 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] Enclosures are constructed of bolted and welded carbon steel.

[3] The transfer switches are of nearly identical construction with minor control differences listed to right.

[4] Subscript indicates the test report in which the units were qualified:
v - 21-00870 Rev.0, w - T4343, y - JID: 5050

ZT and Z1 - Transfer Switch Models
-ZTG-A0/A4 - Open Transition, MX150 Controller
-ZTGD-A0/A4 - Delay Transition, MX150 Controller
-ZTS-B0/B4 - Open Transition, MX250 Controller
-ZTSD-B0/B4 - Delay Transition, MX250 Controller
-ZTSCT-B0/B4 - Closed Transition, MX250 Controller
-Z1O/Z4O - Open Transition, MX350 Controller
-Z1D/Z4D - Delay Transition, MX350 Controller
-Z1C/Z4C - Closed Transition, MX350 Controller

ZS and ZG - Transfer Switch Models
-ZSAO - Open Transition, OXCO1 Controller
-ZSAD - Delay Transition, OXCO1 Controller
-ZSAC - Closed Transition, OXCO1 Controller
-ZGAO - Open Transition, OXCO1 Controller
-ZGAD - Delay Transition, OXCO1 Controller

PREPARED FOR CODE COMPLIANCE BY: Mohammad Karim DATE: 02/04/2022 OSP-0035 HCAI CALIFORNIA BUILDING CODE 2019

ABB INC. (FORMERLY GE) AUTOMATIC AND BYPASS TRANSFER SWITCH BRANDED PRODUCT LINE SEISMIC CERTIFICATION MATRICES

ABB Identification	Caterpillar Identification	Representative UUT
HORIZONTAL BYPASS TRANSFER SWITCH PRODUCT LINE		
ZBTS-B1-1200	CBTS-B1-1200	UUT_x-5
ZBTS-B1/ZBTSD-B1/ZBTSCT-B1/Z30/Z3D/Z3C-600	CBTS-B1/CBTSD-B1/CBTSCT-B1/C30/C3D/C3C-600	interpolated
ZBTS-B1/ZBTSD-B1/ZBTSCT-B1/Z30/Z3D/Z3C-800	CBTS-B1/CBTSD-B1/CBTSCT-B1/C30/C3D/C3C-800	interpolated
ZBTS-B1/ZBTSD-B1/ZBTSCT-B1/Z30/Z3D/Z3C-1000	CBTS-B1/CBTSD-B1/CBTSCT-B1/C30/C3D/C3C-1000	interpolated
ZBTS-B1/ZBTSD-B1/ZBTSCT-B1/Z30/Z3D/Z3C-1200	CBTS-B1/CBTSD-B1/CBTSCT-B1/C30/C3D/C3C-1200	interpolated
ZBTS-B1/ZBTSD-B1/ZBTSCT-B1/Z30/Z3D/Z3C-1600	CBTS-B1/CBTSD-B1/CBTSCT-B1/C30/C3D/C3C-1600	interpolated
ZBTS-B1/ZBTSD-B1/ZBTSCT-B1/Z30/Z3D/Z3C-2000	CBTS-B1/CBTSD-B1/CBTSCT-B1/C30/C3D/C3C-2000	interpolated
ZBTS-B1/ZBTSD-B1/ZBTSCT-B1/Z30/Z3D/Z3C-2600	CBTS-B1/CBTSD-B1/CBTSCT-B1/C30/C3D/C3C-2600	interpolated
ZBTS-B1/ZBTSD-B1/ZBTSCT-B1/Z30/Z3D/Z3C-3000	CBTS-B1/CBTSD-B1/CBTSCT-B1/C30/C3D/C3C-3000	interpolated
ZBTS-B1-3000	CBTS-B1-3000	UUT_x-6
VERTICAL BYPASS TRANSFER SWITCH PRODUCT LINE		
ZBTS-B0/ZBTSD-B0/Z20/Z2D/Z2C-100 to 400	CBTS-B0/CBTSD-B0/C20/C2D/C2C-100 to 400	extrapolated
ZBTS-B0-400	CBTS-B0-400	UUT_w-3
ZBTSCT-B0-100 to 400	CBTSCT-B0-100 to 400	interpolated
ZBTS-B0/ZBTSD-B0/ZBTSCT-B0/Z20/Z2D/Z2C-600	CBTS-B0/CBTSD-B0/CBTSCT-B0/C20/C2D/C2C-600	interpolated
ZBTS-B0/ZBTSD-B0/ZBTSCT-B0/Z20/Z2D/Z2C-800	CBTS-B0/CBTSD-B0/CBTSCT-B0/C20/C2D/C2C-800	interpolated
ZBTS-B0/ZBTSD-B0/ZBTSCT-B0/Z20/Z2D/Z2C-1000	CBTS-B0/CBTSD-B0/CBTSCT-B0/C20/C2D/C2C-1000	interpolated
ZBTS-B0/ZBTSD-B0/ZBTSCT-B0/Z20/Z2D/Z2C-1200	CBTS-B0/CBTSD-B0/CBTSCT-B0/C20/C2D/C2C-1200	interpolated
ZBTS-B0/ZBTSD-B0/ZBTSCT-B0/Z20/Z2D/Z2C-1600	CBTS-B0/CBTSD-B0/CBTSCT-B0/C20/C2D/C2C-1600	interpolated
ZBTS-B0/ZBTSD-B0/ZBTSCT-B0/Z20/Z2D/Z2C-2000	CBTS-B0/CBTSD-B0/CBTSCT-B0/C20/C2D/C2C-2000	interpolated
ZBTS-B0/ZBTSD-B0/ZBTSCT-B0/Z20/Z2D/Z2C-2600	CBTS-B0/CBTSD-B0/CBTSCT-B0/C20/C2D/C2C-2600	interpolated
ZBTS-B0/ZBTSD-B0/ZBTSCT-B0/Z20/Z2D/Z2C-3000	CBTS-B0/CBTSD-B0/CBTSCT-B0/C20/C2D/C2C-3000	interpolated
ZBTS-B0/ZBTSD-B0/ZBTSCT-B0/Z20/Z2D/Z2C-4000	CBTS-B0/CBTSD-B0/CBTSCT-B0/C20/C2D/C2C-4000	interpolated
ZBTS-B0-4000	CBTS-B0-4000	UUT_z-6

Note: The seismically certified ABB Inc. automatic transfer switches are brand labeled and sold by Caterpillar. This table provides the link between the seismically certified ABB Automatic Transfer Switch product line and the associated brand labeled Caterpillar product offerings.

REVIEWED FOR CODE COMPLIANCE BY: Mohammad Rahim DATE: 02/04/2022 CALIFORNIA BUILDING CODE, 2019

ABB INC. (FORMERLY GE) AUTOMATIC AND BYPASS TRANSFER SWITCH BRANDED PRODUCT LINE SEISMIC CERTIFICATION MATRICES

ABB Identification	Caterpillar Identification	Representative UUT
AUTOMATIC TRANSFER SWITCH PRODUCT LINE		
ZTG-A0/ZTGD-A0-600	CTG-A0/CTGD-A0-600	extrpolated
ZTG-A0-600	CTG-A0-600	UUT_w-1
ZTS-B0/ZTSD-B0/ZTSCT-B0/Z1O/Z1D/Z1C-600	CTS-B0/CTSD-B0/CTSCT-B0/C1O/C1D/C1C-600	interpolated
ZSAC-040	CSAC-040	extrapolated
ZSAC-060	CSAC-060	interpolated
ZTG-A0/ZTGD-A0-800	CTG-A0/CTGD-A0-800	interpolated
ZTS-B0/ZTSD-B0/ZTSCT-B0/Z1O/Z1D/Z1C-800	CTS-B0/CTSD-B0/CTSCT-B0/C1O/C1D/C1C-800	interpolated
ZSAC-080	CSAC-080	interpolated
ZTG-A0/ZTGD-A0-1000	CTG-A0/CTGD-A0-1000	interpolated
ZTS-B0/ZTSD-B0/ZTSCT-B0/Z1O/Z1D/Z1C-1000	CTS-B0/CTSD-B0/CTSCT-B0/C1O/C1D/C1C-1000	interpolated
ZSAC-100	CSAC-100	interpolated
ZTG-A0/ZTGD-A0-1200	CTG-A0/CTGD-A0-1200	interpolated
ZTS-B0/ZTSD-B0/ZTSCT-B0/Z1O/Z1D/Z1C-1200	CTS-B0/CTSD-B0/CTSCT-B0/C1O/C1D/C1C-1200	interpolated
ZSAC-120	CSAC-120	interpolated
ZT3-1000	CT3-1000	UUT_y-1
ZT3-1000	CT3-1000	interpolated
ZT3-1200	CT3-1200	interpolated
ZT3-1600	CT3-1600	interpolated
ZTG-A4/ZTGD-A4-1600	CTG-A4/CTGD-A4-1600	interpolated
ZTS-B0/ZTSD-B0/ZTSCT-B0/Z1O/Z1D/Z1C-1600	CTS-B0/CTSD-B0/CTSCT-B0/C1O/C1D/C1C-1600	interpolated
ZTS-B4/ZTSD-B4/ZTSCT-B4/Z4O/Z4D/Z4C-1600	CTS-B4/CTSD-B4/CTSCT-B4/C4O/C4D/C4C-1600	interpolated
ZGAO/ZGAD-160	CGAO/CGAD-160	interpolated
ZSAO/ZSAD/ZSAC-160	CSAO/CSAD/CSAC-160	interpolated
ZTG-A4/ZTGD-A4-2000	CTG-A4/CTGD-A4-2000	interpolated
ZTS-B0/ZTSD-B0/ZTSCT-B0/Z1O/Z1D/Z1C-2000	CTS-B0/CTSD-B0/CTSCT-B0/C1O/C1D/C1C-2000	interpolated

Note: The seismically certified ABB Inc. automatic transfer switches are brand labeled and sold by Caterpillar. This table provides the link between the seismically certified ABB Automatic Transfer Switch product line and the associated brand labeled Caterpillar product offerings.

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By: Mohammad Rahim
DATE: 02/04/2022

ABB INC. (FORMERLY GE) AUTOMATIC AND BYPASS TRANSFER SWITCH BRANDED PRODUCT LINE SEISMIC CERTIFICATION MATRICES

ABB Identification	Caterpillar Identification	Representative UUT
ZT3-2000	CT3-2000	interpolated
ZTS-B4/ZTSD-B4/ZTSCT-B4/Z4O/Z4D/Z4C-2000	CTS-B4/CTSD-B4/CTSCT-B4/C4O/C4D/C4C-2000	interpolated
ZGAO/ZGAD-200	CGAO/CGAD-200	interpolated
ZSAO/ZSAD/ZSAC-200	CSAO/CSAD/CSAC-200	interpolated
ZTG-A4/ZTGD-A4-2600	CTG-A4/CTGD-A4-2600	interpolated
ZT3-2600	CT3-2600	interpolated
ZGAO/ZGAD-260	CGAO/CGAD-260	interpolated
ZSAO/ZSAD/ZSAC-260	CSAO/CSAD/CSAC-260	interpolated
ZTG-A4/ZTGD-A4-3000	CTG-A4/CTGD-A4-3000	interpolated
ZT3-3000	CT3-3000	interpolated
ZT3-3000	CT3-3000	UUT_y-2
ZTS-B0/ZTSD-B0/ZTSCT-B0/Z1O/Z1D/Z1C-3000	CTS-B0/CTSD-B0/CTSCT-B0/C1O/C1D/C1C-3000	interpolated
ZTS-B4/ZTSD-B4/ZTSCT-B4/Z4O/Z4D/Z4C-3000	CTS-B4/CTSD-B4/CTSCT-B4/C4O/C4D/C4C-3000	interpolated
ZGAO/ZGAD-300	CGAO/CGAD-300	interpolated
ZSAO/ZSAD/ZSAC-300	CSAO/CSAD/CSAC-300	interpolated
ZTS-B0/ZTSD-B0/ZTSCT-B0/Z1O/Z1D/Z1C-4000	CTS-B0/CTSD-B0/CTSCT-B0/C1O/C1D/C1C-4000	interpolated
ZTS-B0-4000	CTS-B0-4000	UUT_w-2

Note: The seismically certified ABB Inc. automatic transfer switches are brand labeled and sold by Caterpillar. This table provides the link between the seismically certified ABB Automatic Transfer Switch product line and the associated brand labeled Caterpillar product offerings.

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DATE: 02/04/2022

ABB INC. (FORMERLY GE) AUTOMATIC AND BYPASS TRANSFER SWITCH CERTIFIED SUBCOMPONENT MATRIX

WEGAI
W.E. GUNDY & ASSOCIATES, INC.
STRUCTURAL & EARTHQUAKE ENGINEERING

Subcomponent ID Number	Description	Manufacturer	General Dimensions (in)			Weight (lbs)	Representative UUT
			Width	Depth	Height		
Automatic Transfer Switch Power Panel Assembly							
50C-2034-600	600A ZTG-A0	ABB	25.2	12.0	36.3	80	UUT_w-1
50C-1100-600	600 ZSAC	ABB	25.2	12.0	36.3	230	UUT_v-1
50C-1100-400/1200	400-1200A ZSAC-OXCO1	ABB	21.6-27.4	12.0	36.3	230-250	interpolated
50C-1050-1600/3000	1600-3000A ZTG-A4/ZTGD-A4 1600-3000A ZTS-B4/ZTSD-B4/ZTSCT-B4/Z4O/Z4D/Z4C 1600-3000A ZGAO/ZGAD/ZSAO/ZSAD/ZSAC-OXCO1	ABB	32.3	34.1	25.3	410-463	interpolated
23C-4001-1000/3000	1000-3000A ZT3	ABB	28.9	14.6	28.6	450	UUT_y-1/UUT_y-2
50C-2005-1600/3000	1600-3000A ZTG-A0/ZTGD-A0 1600-3000A ZTS-B0/ZTSD-B0/ZTSCT-B0/Z1O/Z1D/Z1C	ABB	24.8-30.3	28.6	30.5	365-690	interpolated
50C-2030-4000	4000A ZTS-B0/ZTSD-B0/ZTSCT-B0/Z1O/Z1D/Z1C	ABB	32.3-38.8	31.6	30.5	820-1045	interpolated
50C-2030-4000	4000A ZTS-B0	ABB	38.8	31.6	30.5	1045	UUT_w-2
Vertical Bypass Power Panel Assembly							
50C-2036-100/400	100-400A ZBTS-B0/ZBTSD-B0/ZBTSCT-B0 100-400A Z20/Z2D/Z2C	ABB	25.2	28.0	45.3	310-380	extrapolated
50C-2036-400	400A ZBTS-B0	ABB	25.2	28.0	45.3	380	UUT_w-3
50C-2022-600/1200	600-1200A ZBTS-B0/ZBTSD-B/ZBTSCT-B0 600-1200A Z20/Z2D/Z2C	ABB	31.8-37.4	26.4	69.4	660-910	interpolated
50C-2024-1600/3000	1600-3000A ZBTS-B0/ZBTSD-B0/ZBTSCT-B0 1600-3000A Z20/Z2D/Z2C	ABB	40.0-50.0	72.0	89.9	1978-3049	interpolated
50C-2031-4000	4000A ZBTS-B0/ZBTSD-B0/ZBTSCT-B0 4000A Z20/Z2D/Z2C	ABB	47.5-54.0	80.0	89.9	4310-5510	interpolated
50C-2031-4000	4000A ZBTS-B0	ABB	54.0	80.0	89.9	5510	UUT_z-6

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ABB INC. (FORMERLY GE) AUTOMATIC AND BYPASS TRANSFER SWITCH CERTIFIED SUBCOMPONENT MATRIX

WEGAI
W.E. GUNDY & ASSOCIATES, INC.
STRUCTURAL & EARTHQUAKE ENGINEERING

Subcomponent ID Number	Description	Manufacturer	General Dimensions (in)			Weight (lbs)	Representative UUT
			Width	Depth	Height		
Horizontal Bypass Power Panel Assembly							
50C-2048-600-1200	600-1200A ZBTS-B1/ZBTSD-B1/ZBTSCT-B1 600-1200A Z30/Z3D/Z3C	ABB	32.5-37.5	41.2	38.6	660-738	extrapolated
50C-2048-1200	1200A ZBTS-B1	ABB	37.5	41.2	38.6	738	UUT_x-5
50C-2042-1600-3000	1600-3000A ZBTS-B1/ZBTSD-B1/ZBTSCT-B1 600-1200A Z30/Z3D/Z3C	ABB	40.0-45.5	63.0	79.5	2870-3225	interpolated
50C-2042-3000	3000A ZBTS-B1	ABB	45.5	63.0	79.5	3225	UUT_x-6
Electrical Panel / Controler Components							
OXCO1[1]	Controller and CPU	ABB	8.4	4.5	6.6	2.4	UUT_v-1
MX150	Controller and CPU	ABB	11.0	4.0	14.0	12.0	UUT_w-1/UUT_y-1
MX250	Controller and CPU	ABB	11.0	4.0	14.0	12.0	UUT_w-2/UUTw-3 UUT_z-6 UUT_x-5/UUTx-6
MX350	Controller and CPU	ABB	12.0	4.0	10.0	10.0	UUT_y-2

Notes:

[1]OXCO1 is the primary controller identification number representative of the OXAMI1-L3, OXAMI1-L2, OXBMI1-L3, OXBMI1-L4, OXAMI1-L4 controller configuations with varied software.

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UUT_v-1 (63L 600A)	UNIT UNDER TEST (UUT) SUMMARY SHEET	WEGAI W.E. Gundy & Associates, Inc. Structural & Earthquake Engineering

Mounting Details: Rigid floor mounted with 4 - 1/2" diameter grade 5 bolts

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Manufacturer: ABB INC. (formerly GE)

Product Line: Automatic Transfer Switch

Component: ZSAC-060

UUT Function: Manual/Automatic power switching from utility power to emergency power.

UUT Description: 600A 3-Pole Automatic Transfer Switch with 600A ZSAC Power Panel, OXCO1 Controller, and NEMA 1 Frame Size 63L enclosure.

Test Location: Clark Testing, PA - Report #JID 21-00870 Rev. 0 | **Test Date:** September 2021

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Fequency (Hz)		
	Width	Depth	Height	FB	SS	V
538	40.0	20.0	74.0	10.3	10.3	26.6

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. Seismic enhancements made to the test unit shall be incorporated into the production units.

UUT_w-1 (F14 600A)	UNIT UNDER TEST (UUT) SUMMARY SHEET	WEGAI W.E. Gundy & Associates, Inc. Structural & Earthquake Engineering

Mounting Details: Rigid floor mounted with 4 - 1/2" diameter grade 5 bolts

Manufacturer: ABB INC. (formerly GE)

Product Line: Automatic Transfer Switch

Component: ZTG-A0-600

UUT Function: Manual/Automatic power switching from utility power to emergency power.

UUT Description: 600A 3-Pole Automatic Transfer Switch with 600A ZTG-A0 Power Panel, MX150 Controller, and NEMA 1 Frame Size F14 enclosure.

Test Location: Clark Testing, PA - Report #T4343 | **Test Date:** December 2006

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Fequency (Hz)		
	Width	Depth	Height	FB	SS	V
265	24.0	20.0	69.0	29.7	10.9	>33.3

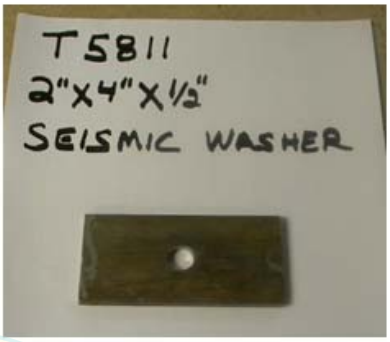
SEISMIC TEST PARAMETERS

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	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-1 (40LA-1000A)	UNIT UNDER TEST (UUT) SUMMARY SHEET	WEGAI W.E. Gundy & Associates, Inc. Structural & Earthquake Engineering

Mounting Details: Rigid floor mount with 6 - 1/2" diameter anchor bolts and 2x4x0.25" plate washers.



Use seismic washer at all six anchor bolt locations

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Manufacturer: ABB INC. (formerly GE)

Product Line: Automatic Transfer Switch

Component: ZT3-1000

UUT Function: Manual/Automatic power switching from utility power to emergency power.

UUT Description: 1000A 3-Pole Automatic Transfer Switch with 1000A ZT3 Power Panel, MX150 Controller, and NEMA 1 Frame Size 40LA enclosure.

Test Location: Clark Testing, PA - Report JID: 2050 | **Test Date:** December 2012

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Fequency (Hz)		
	Width	Depth	Height	FB	SS	V
917	36.5	23.5	90.0	6.8	9.0	>33.3

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	2.13	1.0	1.5	3.40	2.55	-	-
	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_w-2 (65L-4000A)	UNIT UNDER TEST (UUT) SUMMARY SHEET	WEGAI W.E. Gundy & Associates, Inc. Structural & Earthquake Engineering

Mounting Details: Rigid floor mounted with 8 - 1/2" diameter grade 5 bolts

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FLORIDA BUILDING CODE, 2019

Manufacturer: ABB INC. (formerly GE)

Product Line: Automatic Transfer Switch

Component: ZTS-B0-4000

UUT Function: Manual/Automatic power switching from utility power to emergency power.

UUT Description: 4000A 4-Pole Automatic Transfer Switch with 4000A ZTS-B0 Power Panel, MX250 Controller, and NEMA 1 Frame Size 65L enclosure.

Test Location: Clark Testing, PA - Report #T4343 | **Test Date:** December 2006

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Fequency (Hz)		
	Width	Depth	Height	FB	SS	V
2,100	46.0	60.0	90.0	19.5	10.9	>33.3

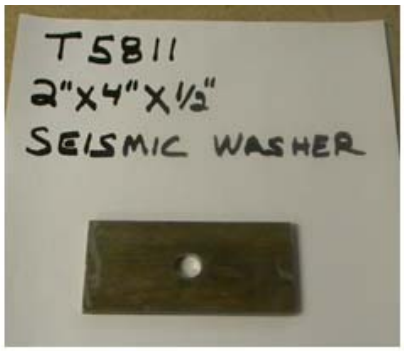
SEISMIC TEST PARAMETERS

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	1.34	0.54

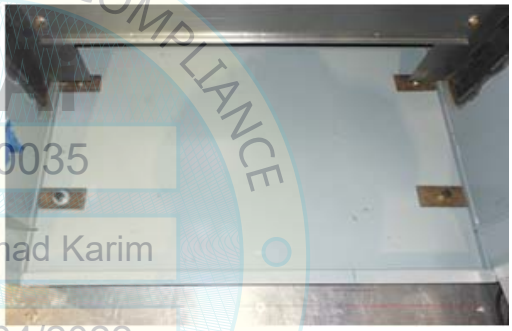
Note: The unit was full of contents during testing and remained fuctional before and after the ICC-ES AC156 test. The unit maintained structural integrity during and after the ICC-ES AC156 Test.

UUT_y-2 (40LA-3000A)	UNIT UNDER TEST (UUT) SUMMARY SHEET	WEGAI W.E. GUNDY & ASSOCIATES, INC. STRUCTURAL & EARTHQUAKE ENGINEERING

Mounting Details: Rigid floor mount with 6 - 1/2" diameter grade 5 bolts and 2x4x0.25" A36 plate



Use seismic washer at all six anchor bolt locations



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Manufacturer: ABB INC. (formerly GE)

Product Line: Automatic Transfer Switch

Component: ZT3-3000

UUT Function: Manual/Automatic power switching from utility power to emergency power.

UUT Description: 3000A 3-Pole Automatic Transfer Switch with 3000A ZT3 Power Panel, MX350 Controller, and NEMA 3r, 4, 12 Frame Size 40LA enclosure.

Test Location: Clark Testing, PA - Report JID: 2050 | **Test Date:** December 2012

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Fequency (Hz)		
	Width	Depth	Height	FB	SS	V
1,295	38.8	41.5	90.0	19.7	14.7	>33.3

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	2.13	1.0	1.5	3.40	2.55	-	-
	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_w-3 (14C-400A)	UNIT UNDER TEST (UUT) SUMMARY SHEET	WEGAI W.E. GUNDY & ASSOCIATES, INC. STRUCTURAL & EARTHQUAKE ENGINEERING

Mounting Details: Rigid floor mounted with 4 - 1/2" diameter grade 5 bolts

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Manufacturer: ABB INC. (formerly GE)

Product Line: Vertical Bypass Switch

Component: ZBTS-B0-400

UUT Function: Manual/Automatic power switching from utility power to emergency power.

UUT Description: 400A 3-Pole Vertical Bypass Switch with 400A ZBTS-B0 Power Panel, MX250 Controller, and NEMA 1 Frame Size F14C enclosure.

Test Location: Clark Testing, PA - Report #T4343 | **Test Date:** December 2006

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Fequency (Hz)		
	Width	Depth	Height	FB	SS	V
875	30.0	28.5	86.0	10.2	7.0	>33.3

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	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_z-6 (65B-4000A)	UNIT UNDER TEST (UUT) SUMMARY SHEET	WEGAI W.E. Gundy & Associates, Inc. Structural & Earthquake Engineering

Mounting Details: Rigid floor mounted with 8 - 1/2" diameter grade 5 bolts

REVIEWED FOR CODE COMPLIANCE
HCAi
OSP-0035
BY: Mohammad Karim
DATE: 02/04/2022
CALIFORNIA BUILDING CODE, 2019

Manufacturer: ABB INC. (formerly GE)

Product Line: Vertical Bypass Switch

Component: ZBTS-B0-4000

UUT Function: Manual/Automatic power switching from utility power to emergency power.

UUT Description: 4000A 4-Pole Vertical Bypass Switch with 4000A ZBTS-B0 Power Panel, MX250 Controller, and NEMA 3R,4,12 Frame Size 65B enclosure.

Test Location: Clark Testing, PA - Report JID 19-01143-1 | **Test Date:** September 2019

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Fequency (Hz)		
	Width	Depth	Height	FB	SS	V
6,406	54.0	81.0	90.0	20.0	4.7	17.9

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_x-5 (64B-1200A)	UNIT UNDER TEST (UUT) SUMMARY SHEET	WEGAI W.E. GUNDY & ASSOCIATES, INC. STRUCTURAL & EARTHQUAKE ENGINEERING

Mounting Details: Rigid floor mounted with 4 - 1/2" diameter grade 5 bolts

Manufacturer: ABB INC. (formerly GE)

Product Line: Horizontal Bypass Switch

Component: ZBTS-B1-1200

UUT Function: Manual/Automatic power switching from utility power to emergency power.

UUT Description: 1200A 3-Pole Horizontal Bypass Switch with 1200A ZBTS-B1 Power Panel, MX250 Controller, and NEMA 1 Frame Size 64B enclosure.

Test Location: Clark Testing, PA - Report #T4761 | **Test Date:** May 2010

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Fequency (Hz)		
	Width	Depth	Height	FB	SS	V
1,334	42.0	36.0	80.0	9.0	8.9	>33.3

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	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_x-6 (65B-3000A)	UNIT UNDER TEST (UUT) SUMMARY SHEET	WEGAI W.E. Gundy & Associates, Inc. Structural & Earthquake Engineering

Mounting Details: Rigid floor mounted with 4 - 1/2" diameter grade 5 bolts and 3x7x0.5" A36 plate

Manufacturer: ABB INC. (formerly GE)

Product Line: Horizontal Bypass Switch

Component: ZBTS-B1-3000

UUT Function: Manual/Automatic power switching from utility power to emergency power.

UUT Description: 3000A 4-Pole Horizontal Bypass Switch with 3000A ZBTS-B1 Power Panel, MX250 Controller, and NEMA 1 Frame Size 65B enclosure.

Test Location: Clark Testing, PA - Report #T4761 | **Test Date:** May 2010

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Fequency (Hz)		
	Width	Depth	Height	FB	SS	V
5,747	46.1	64.6	80.0	17.2	15.5	24.1

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	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.