



**DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION
FACILITIES DEVELOPMENT DIVISION**

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

OFFICE USE ONLY

APPLICATION #: OSP-0800

HCAI Special Seismic Certification Preapproval (OSP)

Type: New Renewal

Manufacturer Information

Manufacturer: ABB - Branded for CAT

Manufacturer's Technical Representative: Dhirendra Tiwari

Mailing Address: 41 Woodford Ave, Plainville, CT 06062

Telephone: (860) 747-7935

Email: Dhirendra.Tiwari@us.abb.com

Product Information

Product Name: Emergency and Standby Power Systems

Product Type: Automatic Transfer Switches

Product Model Number: RB3 / RB4 / RB5 Product Lines

General Description: Automatic Bypass Transfer Switches that provide manual / automatic power switching from a primary power source to a backup power source.

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: WE Gundy & Associates, Inc

Contact Person: Travis Soppe

Mailing Address: PO Box 9121, Boise, ID 83707

Telephone: (208) 342-5989

Email: tsoppe@wegai.com

Title: President





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

Company Name: W.E. GUNDY & ASSOCIATES 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

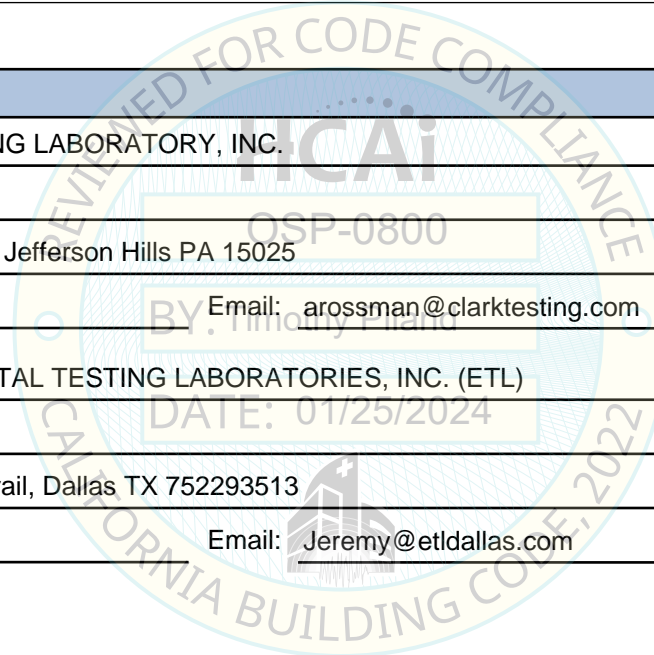
Certification Method

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: Alex Rossman
Mailing Address: 1801 Route 51, Jefferson Hills PA 15025
Telephone: (412) 387-1676 Email: arossman@clarktesting.com

Company Name: ENVIRONMENTAL TESTING LABORATORIES, INC. (ETL)
Contact Person: Jeremy Lange
Mailing Address: 11034 Indian Trail, Dallas TX 752293513
Telephone: (972) 247-9657 Email: Jeremy@etldallas.com





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Seismic Parameters

Design Basis of Equipment or Components (F_p/W_p) = 1.50 for SDS = 2.0 at z/h = 1 and 1.13 for SDS = 2.5 at z/h = 0

SDS (Design spectral response acceleration at short period, g) = 2.00 (z/h = 1.0) and 2.50 (z/h = 0.0)

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 and 0

Natural frequencies (Hz) = See Attachment

Overall dimensions and weight = See Attachment

HCAI Approval (For Office Use Only) - Approval Expires on 01/25/2030

Date: 1/25/2024

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): DATE: 01/25/2024

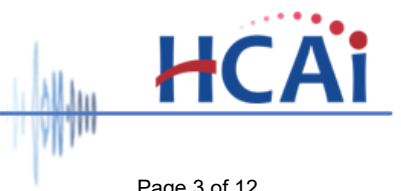
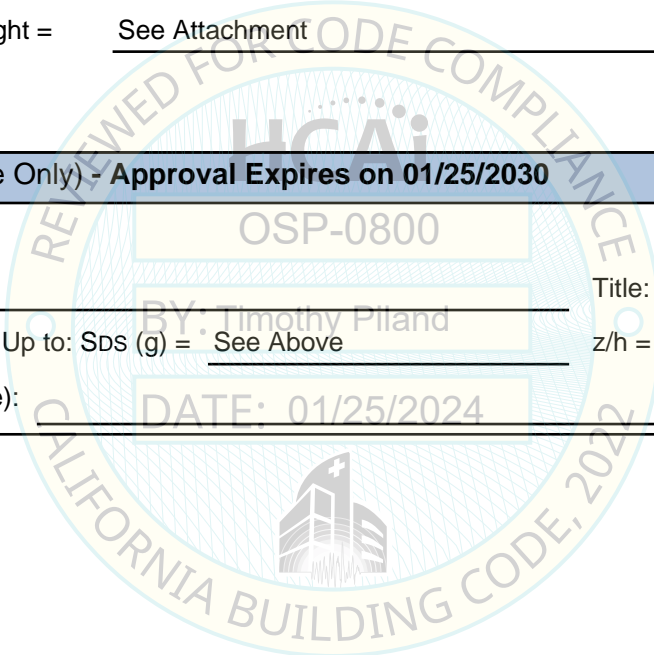


TABLE 1

**CATERPILLAR CTX / CTG / CTS ATS BYPASS
CERTIFIED COMPONENTS TABLE**



ID/Catalog Number	Ampere rating	NEMA Rating	Equipment Dimensions (in)			Weight (lbs)	Representative UUT ³
			Width	Depth	Height		
R3B / R4B ATS BYPASS Product Line							
CSBD120WS1S5TBXX3X	600	1	40	35	86	1277	UUT _y -2
CTX, CTG(D)(C), CTS(D)(C)	100 - 600	1	40	35	86	1250 - 1300	interpolated
CTX, CTG(D)(C), CTS(D)(C)	100 - 1200	1	36	38 - 50	92 - 94	1300 - 1730	interpolated
CSBD120WS1S5TBXX4X	1200	1	36	38	92	1728	UUT _z -1
CSBD120WS1S5TBXX4X	1200	1	40	40	90	1923	UUT _y -3
CTX, CTG(D)(C), CTS(D)(C)	100 - 600	3R/4/5/12	40	42 - 57	94 - 96	1645 - 2110	interpolated
CTX, CTG(D)(C), CTS(D)(C)	100 - 1200	3R/4/5/12	40	42 - 57	94 - 96	1845 - 2310	interpolated
CSBD120WSCS5TBXX4X	1200	3R/4/5/12	40	60	92	2191	UUT _y -4
CSBD120WSDS5TBXX4X	1200	3R/4/5/12	40	57	96	2310	UUT _z -2
R5B ATS BYPASS Product Line							
CTX, CTG(D)(C), CTS(D)(C)	1000 - 3000	1	45.6	67.7	77.0 - 79.7	3020 - 3500	interpolated
CSBO300WS1L6TBXXXX	3000	1	45.6	67.7	77.0	3490	UUT _z -4
CTX, CTG(D)(C), CTS(D)(C)	1000 - 3000	3R/4/5/12	45.9	70.6	77.0 - 79.7	3240 - 3820	interpolated
CSBD300WS3L6TBXXXX	3000	3R/4/5/12	45.9	70.6	77.0	3820	UUT _z -3

Notes:


¹ All components are manufactured by ABB and branded for Caterpillar. 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 of made of carbon steel bolted / welded construction.

³ Subscript indicates the test report in which the units were qualified: y - 16827, C - 22-00885

⁴ The CTX/CTG/CTS(D) products are represented with the following ID numbers:
 CTX - CXxxxxxxxxxxxxxx
 CTG(D)(C) - CGxxxxxxxxxxxxxx
 CTS(D)(C) - CSxxxxxxxxxxxxxx

⁵ The CTX/CTG(D)/CTS(D) automatic transfer switches (ATS) are of nearly identical construction in a withdrawable / fixed or withdrawable / withdrawable configuration and the controler software differences listed below:
 CXBO(D) - CTX withdrawable / fixed bypass with open or delayed transition control
 CXDO(D) - CTX withdrawable / withdrawable bypass with open or delayed transition control
 CGBO(D)(C) - CTG withdrawable / fixed bypass with open or delayed or closed transition control
 CGDO(D)(C) - CTG withdrawable / withdrawable bypass with open or delayed or closed transition control
 CSBO(D)(C) - CTS withdrawable / fixed bypass with open or delayed or closed transition control
 CSDO(D)(C) - CTS withdrawable / withdrawable bypass open or delayed or closed transition control

TABLE 2	CATERPILLAR ATS BYPASS CERTIFIED SUBCOMPONENT MATRICES			 WEGAI <small>W.E. GUNDY & ASSOCIATES, INC.</small> <small>STRUCTURAL & EARTHQUAKE ENGINEERING</small>
Identification Number	Manufacturer	Description	Weight (lbs)	Representative UUT
R3B / R4B ATS BYPASS Product Line Subcomponents				
Switch / Power Panel				
OXB0600U3S4QBY	ABB	R3B Switch 3P	43	UUT _y -2
OXB1200U3E4QBY		R4B Switch 3P	97	interpolated
OXB1200U3O4QBY		R4B Switch 4P (Overlap Neutral)	126	interpolated
OXB0600U3O4QBY		R3B Switch 4P (Overlap Neutral)	48	interpolated
OXB0600U3S4QBY		R3B Switch 4P	48	interpolated
OXB1200U3S4QBY		R4B Switch 4P	126	UUT _z -1/UUT _z -2 UUT _y -3 / UUT _y -4
Bus Structure				
OXYB0600TU4CU	ABB	R3B Bus 3 Pole	151	UUT _y -2
OXYB0600TU4CU		R3B Bus 4 Pole	173	extrapolated
OXYB1200TU4CU	ABB	R4B Bus 3 Pole	260	extrapolated
OXYB1200TU4CU		R4B Bus 4 Pole	310	UUT _z -1/UUT _z -2 UUT _y -3 / UUT _y -4
Control Panel and Controller				
OXYJ2	ABB	R3B / R4B 3P & 4P	66	UUT _z -1 / UUT _z -2 UUT _y -3 / UUT _y -4
OXCO1 ¹		Controller	2	UUT _z -1 / UUT _z -2 UUT _y -3 / UUT _y -4
R5B ATS BYPASS Product Line Subcomponents				
Switch / Power Panel				
2TFC360012R1001	ABB	ATSE / MTSE Panel 3P Open	2676	extrapolated
2TFC360012R1003		ATSE / MTSE Panel 3P Delayed/Closed	2690	extrapolated
2TFC360012R1002		ATSE / MTSE Panel 4P Open	2896	UUT _z -4
2TFC360012R1004		ATSE / MTSE Panel 4P Delayed	2910	UUT _z -3
Bus Structure				
2TFR360297A1806	ABB	750MCM (1600-4000A)	467	UUT _z -4
2TFR360297A18XX		500 to 750MCM (1600-4000A)	88-511	Interpolated
2TFR360297A1808		750MCM (1600-4000A)	511	UUT _z -3
Controller				
OXCO1 ¹	ABB	Controller	2	UUT _z -3 / UUT _z -4
Notes:				
¹ OXCO1 is the primary controller identification number representative of the OXAMI1-L2, OXBMI1-L2, OXAMI1-L3, OXBMI1-L3, OXAMI1-L4, OXBMI1-L4 controller configurations with varied software.				

UUT_{Z-1}

**UNIT UNDER TEST (UUT)
SUMMARY SHEET**



Mounting Details: Rigid floor mounted with (4) ½" diameter grade 5 bolts



Manufacturer: Caterpillar (ABB)	Test Location: Clark Testing (Pittsburgh, PA)
Component: R3B / R4B ATS BYPASS	Test Date: August 2022
Model Number: CSBD120WS1S5TBXX4X (ZSBD120WS1S5TBXX4X)	Report Number: JID 22-00885 REV.1
UUT Function: Manual/Automatic power switching from utility to emergency power	
UUT Description: 1200A 4-Pole Automatic Transfer Switch with OXB1200U3E4QBY power panel, OXYJ2 control panel, and OXCO1 HMI in a NEMA 1 welded enclosure construction	

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
1,728	36	38	92	7.7	7.9	31.1

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 2022 / 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 functional before and after the ICC-ES AC156 test. The unit maintained structural integrity during and after the ICC-ES AC156 test. The UUT is manufactured by ABB and branded Caterpillar. The first digit of the ID is "Z" for ABB and this is changed to "C" for the branded Caterpillar product.

UUT_{Z-2}

**UNIT UNDER TEST (UUT)
SUMMARY SHEET**



Mounting Details: Rigid floor mounted with (4) ½" diameter grade 5 bolts



Manufacturer: Caterpillar (ABB)	Test Location: Clark Testing (Pittsburgh, PA)
Component: R3B / R4B ATS BYPASS	Test Date: August 2022
Model Number: CSBD120WSDS5TBXX4X (ZSBD120WSDS5TBXX4X)	Report Number: JID 22-00885 REV.1
UUT Function: Manual/Automatic power switching from utility to emergency power	
UUT Description: 1200A 4-Pole Automatic Transfer Switch with OXB1200U3E4QBY power panel, OXYJ2 control panel, and OXCO1 HMI in NEMA 3R welded enclosure construction	

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
2,310	40	57	94	16.8	8.7	>33 Hz

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 2022 / 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 functional before and after the ICC-ES AC156 test. The unit maintained structural integrity during and after the ICC-ES AC156 test. The UUT is manufactured by ABB and branded Caterpillar. The first digit of the ID is "Z" for ABB and this is changed to "C" for the branded Caterpillar product.

UUT_{Z-3}

**UNIT UNDER TEST (UUT)
SUMMARY SHEET**



Mounting Details: Rigid floor mounted with (4) ½" diameter grade 5 bolts



Manufacturer: Caterpillar (ABB)	Test Location: Clark Testing (Pittsburgh, PA)
Component: R5B ATS BYPASS	Test Date: August 2022
Model Number: CSBD300WS3L6TBXXXX (ZSBD300WS3L6TBXXXX)	Report Number: JID 22-00885 REV.1
UUT Function: Manual/Automatic power switching from utility to emergency power	
UUT Description: 3000A 4-Pole Automatic Transfer Switch with 2TFC360012R1004 delayed transition power panel and OXCO1 HMI in NEMA 3R bolted / welded enclosure construction	

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
3,820	45.9	70.6	77.0	10.3	8.0	28.8

SEISMIC TEST PARAMETERS

Building Code / Test Criteria	S _{DS} (g)	z / h	I _p	A _{AFLX-H} (g)	A _{ARIG-H} (g)	A _{AFLX-V} (g)	A _{ARIG-V} (g)
CBC 2022 / 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 functional 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 units shall be incorporated into the production units. The UUT is manufactured by ABB and branded Caterpillar. The first digit of the ID is "Z" for ABB and this is changed to "C" for the branded Caterpillar product.

UUT_{Z-4}

**UNIT UNDER TEST (UUT)
SUMMARY SHEET**



Mounting Details: Rigid floor mounted with (4) ½" diameter grade 5 bolts



Manufacturer: Caterpillar (ABB)	Test Location: Clark Testing (Pittsburgh, PA)
Component: R5B ATS BYPASS	Test Date: August 2022
Model Number: CSBO300WS1L6TBXXXX (ZSBO300WS1L6TBXXXX)	Report Number: JID 22-00885 REV.1
UUT Function: Manual/Automatic power switching from utility to emergency power	
UUT Description: 3000A 4-Pole Automatic Transfer Switch with 2TFC360012R1002 open transition power panel and OXCO1 HMI in a NEMA 1 welded enclosure construction	

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
3,490	45.6	67.7	77.0	13.7	9.6	12.3

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 2022 / ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	--	--
	2.50	0.0	1.5	--	--	1.67	0.67

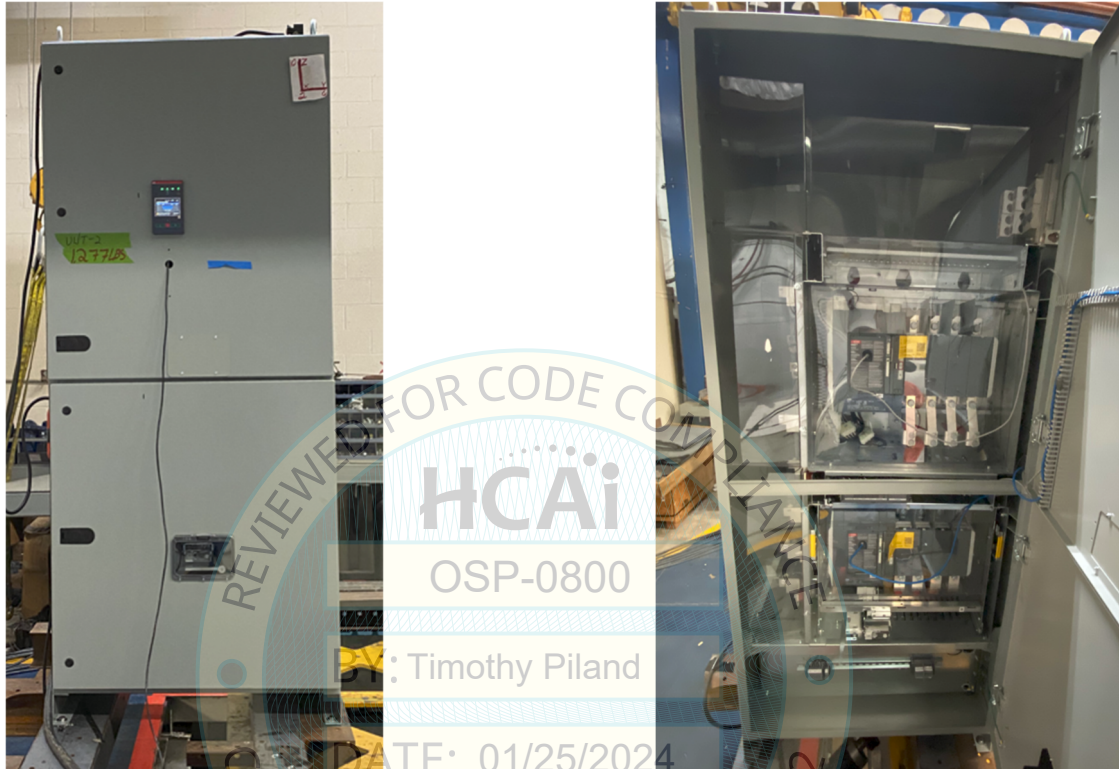
Note: The unit was full of contents during testing and remained functional before and after the ICC-ES AC156 test. The unit maintained structural integrity during and after the ICC-ES AC156 test. Seismic enhancements made to the test units shall be incorporated into the production units. The UUT is manufactured by ABB and branded Caterpillar. The first digit of the ID is "Z" for ABB and this is changed to "C" for the branded Caterpillar product.

UUT_y-2

**UNIT UNDER TEST (UUT)
SUMMARY SHEET**



Mounting Details: Rigid floor mounted with (4) ½" diameter grade 8 bolts



Manufacturer: Caterpillar (ABB)	Test Location: ETL (Dallas, TX)
Component: R3B / R4B ATS BYPASS	Test Date: December 2022
Model Number: CSBD060WS1S5TBXX3X (ZSBD060WS1S5TBXX3X)	Report Number: 16827
UUT Function: Manual/Automatic power switching from utility to emergency power	
UUT Description: 600A 4-Pole Automatic Transfer Switch with OXB0600U3S4QBY power panel, OXYJ2 control panel, and OXCO1 HMI in a NEMA 1 welded enclosure construction	

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
1,277	40	35	86	10.8	6.0	6.8

SEISMIC TEST PARAMETERS

Building Code / Test Criteria	S _{DS} (g)	z / h	I _p	A _{AFLX-H} (g)	A _{ARIG-H} (g)	A _{AFLX-V} (g)	A _{ARIG-V} (g)
CBC 2022 / 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 functional before and after the ICC-ES AC156 test. The unit maintained structural integrity during and after the ICC-ES AC156 test. The UUT is manufactured by ABB and branded Caterpillar. The first digit of the ID is "Z" for ABB and this is changed to "C" for the branded Caterpillar product.

UUT_y-3

**UNIT UNDER TEST (UUT)
SUMMARY SHEET**



Mounting Details: Rigid floor mounted with (4) ½" diameter grade 8 bolts



Manufacturer: Caterpillar (ABB)	Test Location: ETL (Dallas, TX)
Component: R3B / R4B ATS BYPASS	Test Date: December 2022
Model Number: CSBD120WS1S5TBXX4X (ZSBD120WS1S5TBXX4X)	Report Number: 16827
UUT Function: Manual/Automatic power switching from utility to emergency power	
UUT Description: 1200A 4-Pole Automatic Transfer Switch with OXB1200U3S4QBY power panel, OXYJ2 control panel, and OXCO1 HMI in a NEMA 1 bolted enclosure construction	

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
1,923	40	40	90	9.9	6.5	19.6

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 2022 / ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	--	--
	2.50	0.0	1.5	--	--	1.67	0.67

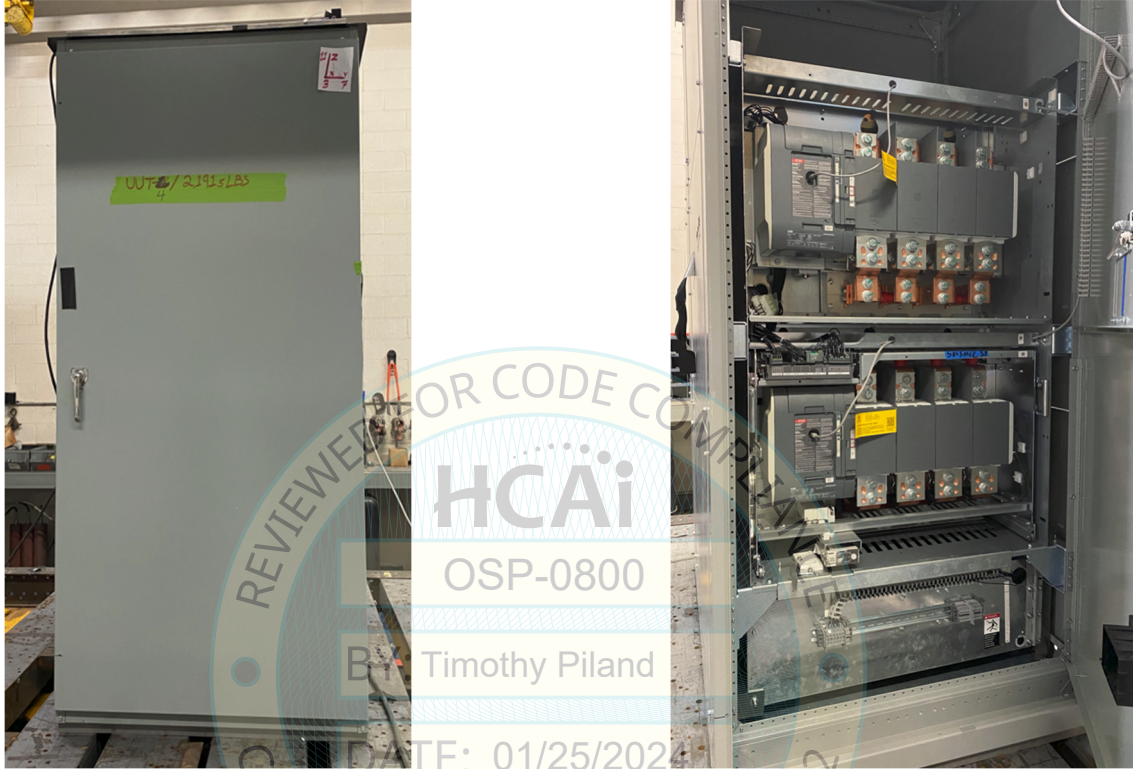
Note: The unit was full of contents during testing and remained functional before and after the ICC-ES AC156 test. The unit maintained structural integrity during and after the ICC-ES AC156 test. The UUT is manufactured by ABB and branded Caterpillar. The first digit of the ID is "Z" for ABB and this is changed to "C" for the branded Caterpillar product.

UUT_y-4

**UNIT UNDER TEST (UUT)
SUMMARY SHEET**



Mounting Details: Rigid floor mounted with (10) ½" diameter grade 8 bolts



Manufacturer: Caterpillar (ABB)	Test Location: ETL (Dallas, TX)
Component: R3B / R4B ATS BYPASS	Test Date: December 2022
Model Number: CSBD120WSCS5TBXX4X (ZSBD120WSCS5TBXX4X)	Report Number: 16827
UUT Function: Manual/Automatic power switching from utility to emergency power	
UUT Description: 1200A 4-Pole Automatic Transfer Switch with OXB1200U3S4QBY power panel, OXYJ2 control panel, and OXCO1 HMI in a NEMA 3R bolted enclosure construction	

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
2,191	40	60	92	10.1	7.0	16.0

SEISMIC TEST PARAMETERS

Building Code / Test Criteria	S _{DS} (g)	z / h	I _p	A _{AFLX-H} (g)	A _{ARIG-H} (g)	A _{AFLX-V} (g)	A _{ARIG-V} (g)
CBC 2022 / 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 functional before and after the ICC-ES AC156 test. The unit maintained structural integrity during and after the ICC-ES AC156 test. The UUT is manufactured by ABB and branded Caterpillar. The first digit of the ID is "Z" for ABB and this is changed to "C" for the branded Caterpillar product.