APPLICATION FOR HCAI SPECIAL SEISMIC CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY

APPLICATION #: OSP-0727

HCAI Special Seismic Certification Preapproval (OSP)

Type: [X] New [ ] Renewal

Manufacturer Information

Manufacturer: ABB

Manufacturer's Technical Representative: Samuel Kim

Mailing Address: 45 Griffin Road South, Bloomfield, CT 06002

Telephone: (860) 996-2518 Email: samuel.kim@us.abb.com

Product Information

Product Name: Switchgear/Switchboards

Product Type: Switchboards

Product Model Number: Enclosed Breakers

General Description: Enclosed circuit breakers

Mounting Description: Rigid, Floor/Wall Mounted

Tested Seismic Enhancements: None

REVIEWED FOR CODE COMPLIANCE
HCAi
OSP-0727
BY: Mohammad Karim
DATE: 01/28/2022
CALIFORNIA BUILDING CODE, 2019

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

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: 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

REVIEWED FOR CODE COMPLIANCE
HCAi
OSP-0727
BY : Mohammad Karimi
DATE: 01/28/2022
CALIFORNIA BUILDING CODE, 2019

Seismic Parameters

Design Basis of Equipment or Components (F_p/W_p) = 1.5 for SDS = 2.0 at z/h = 1 and 1.13 for SDS = 2.5 at z/h = 0

S_{DS} (Design spectral response acceleration at short period, g) = 2.00 (z/h = 1.0), 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

REVIEWED FOR CODE COMPLIANCE
HCAi
OSP-0727
BY: Mohammad Karim
DATE: 01/28/2022
CALIFORNIA BUILDING CODE, 2019

HCAI Approval (For Office Use Only) - Approval Expires on 01/28/2028

Date: 1/28/2022

Name: Mohammad Karim Title: Supervisor, Health Facilities

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

Condition of Approval (if applicable):

TABLE 1	ABB, INC. ENCLOSED BREAKERS CERTIFIED PRODUCT LINE MATRICES					WEGAI W.E. GUNDY & ASSOCIATES, INC. STRUCTURAL & EARTHQUAKE ENGINEERING
ID/Catalog Number	**NEMA Rating**	**Equipment Dimensions**			**Weight (lbs)**	**Representative UUT**
		Width (in)	**Depth (in)**	**Height (in)**		
A2ENCL200NR	3R	8.0	4.6	19.5	15	extrapolated
XT1ENCL125-S	1	9.5	5.3	19.3	16	UUT-1
XT1ENCL125-F,S,SB,R	1 / 3R	9.0 - 10.0	5.3	19.0 - 20.0	25	interpolated
XT2ENCL125-F,S,SB,R	1 / 3R	9.0 - 10.0	5.3	19.0 - 20.0	25	interpolated
XT1ENCL125-CS, J	4X/12	9.5	7.8	19.1	25	interpolated
XT2ENCL125-CS, J	4X/12	9.5	7.8	19.1	25	interpolated
A2ENCL250-F,S,SB, R	1/3R	10.1	5.3	31.0	40	interpolated
XT3ENCL225-F,S,SB,R	1/3R	10.1	5.0 - 6.0	31.0	40	interpolated
XT4ENCL250-F,S,SB,R	1/3R	10.1	5.0 - 6.0	31.0	40	interpolated
XT3ENCL225-CS, J	4X/12	10.5	8.3	31.1	40	interpolated
XT4ENCL250-CS, J	4X/12	10.5	8.3	31.1	40	interpolated
XT5ENCL400-F,S,SB,R	1/3R	16.0 - 18.0	7.0 - 8.0	31.0 - 32.0	85	interpolated
XT5ENCL600-F,S,SB,R	1/3R	16.0 - 18.0	7.0 - 8.0	42.0 - 43.0	115	interpolated
XT5ENCL600-CS, J	4X/12	17.5	9.0	42.3	115	interpolated
XT6ENCL800-F,S,SB,R	1/3R	20.0 - 21.0	6.0 - 8.0	45.0 - 46.0	135	interpolated
XT6ENCL800-CS, J	4X/12	17.5	7.5	42.9	135	interpolated
XT7ENCL1200-CS	4X	22.0	11.1	49.0	136	UUT-3
XT7ENCL1200-F,S,SB,R	1/3R	21.0 - 22.0	8.0 - 11.0	48.0 - 49.0	169	interpolated
XT7ENCL1200-CS, J	4X/12	22.0	8.3	47.6	169	interpolated
XT7ENCL1200-R	3R	22.0	11.0	49.0	169	UUT-2

General Notes:

[1] All components are manufactured by ABB, Inc. unless 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] NEMA 1/3R/4/5/12 enclosures are constructed of carbon steel and NEMA 4X enclosures are constructed of stainless steel.

REVIEWED FOR CODE COMPLIANCE HCAI OSP-0727 BY: Mohamad Karmi DATE: 01/28/2022 CALIFORNIA BUILDING CODE 2019

TABLE 2	ABB, INC. ENCLOSED BREAKERS CERTIFIED SUBCOMPONENT MATRICES			WEGAI W.E. GUNDY & ASSOCIATES, INC. STRUCTURAL & EARTHQUAKE ENGINEERING
Identification Number	**Manufacturer**	**Description**	**Weight (lbs)**	**Representative UUT**
Circuit Breakers				
XT1	ABB	XT1 125A	2	UUT-1
A2		A2 25A - 250A	2	interpolated
XT2		XT2 15A - 125A	3	interpolated
XT3		XT3 225A	4	interpolated
XT4		XT4 250A	5	interpolated
XT5		XT5 400A, 600A	10	interpolated
XT6		XT6 800A	19	interpolated
XT7		XT7 600A - 1200A	27	UUT-2, UUT-3
Neutral Kits				
TNIA	ABB	Neutral kit	2	UUT-1,2,3
Ground Kits				
TGL	ABB	Ground kit	2	UUT-1,2,3

General Notes:

REVIEWED FOR CODE COMPLIANCE
HCAI
OSP-0727
BY: Mohammad Karim
DATE: 01/28/2022
CALIFORNIA BUILDING CODE, 2019

UUT-1	UNIT UNDER TEST (UUT) SUMMARY SHEET	WEGAI W.E. GUNDY & ASSOCIATES, INC. STRUCTURAL & EARTHQUAKE ENGINEERING

Mounting Details: Rigid wall mounted with (2) 1/4" Grade 5 bolts at bottom and (2) 5/16" Grade 5 bolts at the top.





REVIEWED FOR CODE COMPLIANCE
HCAi
OSP-0727
BY: Mohammad Karim
DATE: 01/28/2022
CALIFORNIA BUILDING CODE 2019

Manufacturer: ABB, Inc.	**Test Location:** ETL (Dallas, TX)
Component: Enclosed Breaker	**Test Date:** October 2021
Model Number: XT1ENCL125-S	**Report Number:** 16380
UUT Function: Circuit Breaker	
UUT Description: NEMA 1 carbon steel enclosure with 125A XT1 circuit breaker, TNIA neutral kit, and TGL ground kit.	

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
16	9.5	5.25	19.25	n/a	n/a	n/a

SEISMIC TEST PARAMETERS

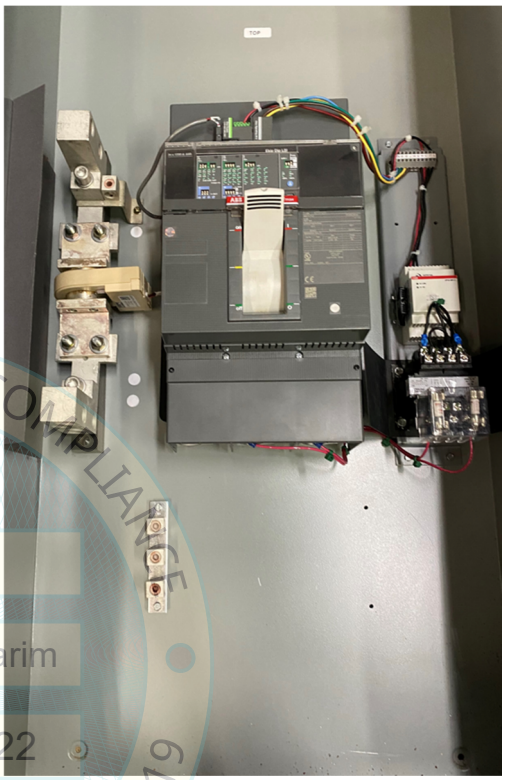
Building Code / Test Criteria	S_{DS} (g)	z / h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2019 / ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	-	-
	2.50	0.0	1.5	-	-	1.67	0.67

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

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

Mounting Details: Rigid wall mounted with (4) 1/4" Grade 5 bolts





REVIEWED FOR CODE COMPLIANCE
HCAi
OSP-0727
Mohammad Karim
DATE: 01/28/2022
CALIFORNIA BUILDING CODE 2019

Manufacturer: ABB, Inc.	**Test Location:** ETL (Dallas, TX)
Component: Enclosed Breaker	**Test Date:** October 2021
Model Number: XT7ENCL1200-R	**Report Number:** 16380
UUT Function: Circuit Breaker	
UUT Description: NEMA 3R carbon steel enclosure with 1200A XT7 circuit breaker, TNIA neutral kit, and TGL ground kit.	

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
169	22.0	11.0	49.0	n/a	n/a	n/a

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 functional before and after the ICC-ES AC156 test. The unit maintained structural integrity during and after the ICC-ES AC156 test.

UUT-3	UNIT UNDER TEST (UUT) SUMMARY SHEET	WEGAI W.E. Gundy & Associates, Inc. Structural & Earthquake Engineering

Mounting Details: Rigid wall mounted with (4) 5/16” Grade 5 bolts





REVIEWED FOR CODE COMPLIANCE
HCAi
OSP-0727
BY: Mohammad Karim
DATE: 01/28/2022
CALIFORNIA BUILDING CODE 2019

Manufacturer: ABB, Inc.	**Test Location:** ETL (Dallas, TX)
Component: Enclosed Breaker	**Test Date:** October 2021
Model Number: XT7ENCL1200-CS	**Report Number:** 16380
UUT Function: Circuit Breaker	
UUT Description: NEMA 4X stainless steel enclosure with 1200A XT7 circuit breaker, TNIA neutral kit, and TGL ground kit.	

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
136	22.0	11.13	49.0	n/a	n/a	n/a

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 functional before and after the ICC-ES AC156 test. The unit maintained structural integrity during and after the ICC-ES AC156 test.