



DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION
FACILITIES DEVELOPMENT DIVISION

APPLICATION FOR HCAI SPECIAL SEISMIC
CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY

APPLICATION #: OSP-0304

HCAI Special Seismic Certification Preapproval (OSP)

Type: [] New [X] Renewal

Manufacturer Information

Manufacturer: ABB (formerly GE)

Manufacturer's Technical Representative: Chrissy Swol

Mailing Address: 41 Woodford Ave., Plainville, CT 06062

Telephone: (860) 747-7791

Email: christine.swol@us.abb.com

Product Information

Product Name: Panelboards

Product Type: Panelboards

Product Model Number: See Certified Product Table attached

General Description: 250A-1200A ReliaGear neXT and EntellEon Power Panels.

Mounting Description: Rigid, Wall 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

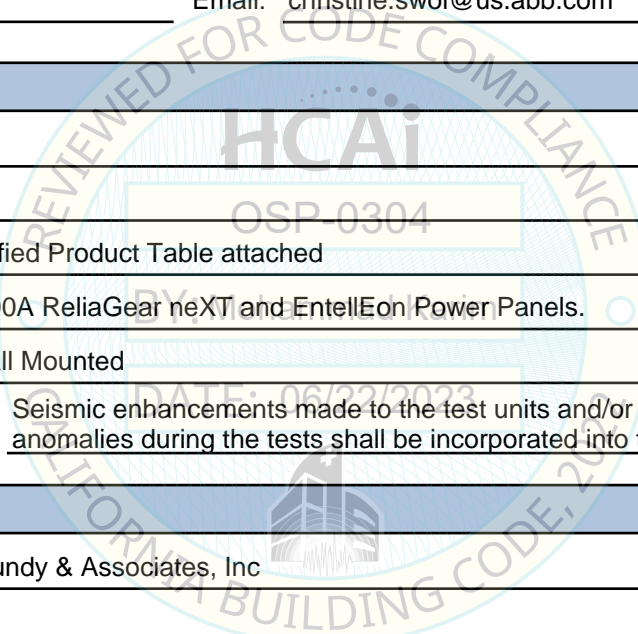
Contact Person: Travis Soppe

Mailing Address: PO Box 9121, Boise, ID 83707

Telephone: (208) 342-5989

Email: tsoppe@wegai.com

Title: President





**DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION
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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

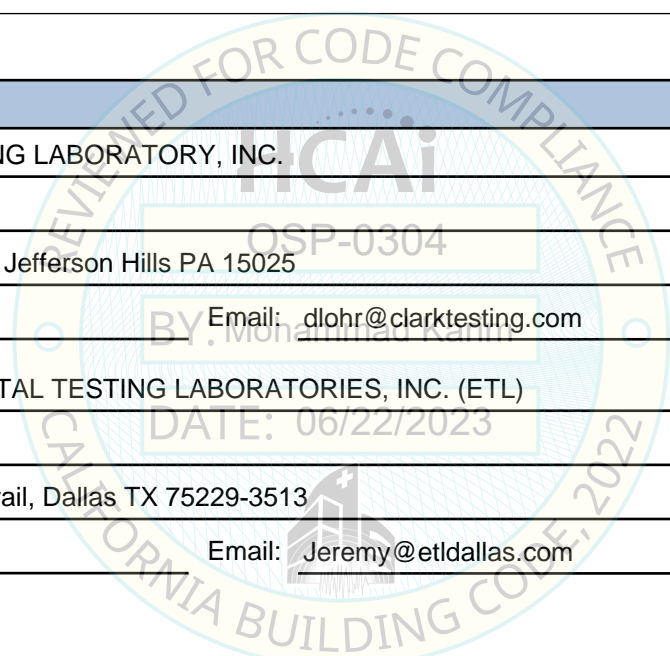
Certification Method

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: Davon Lohr
Mailing Address: 1801 Route 51, Jefferson Hills PA 15025
Telephone: (412) 387-1001 Email: dlohr@clarktesting.com

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





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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

SDS (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

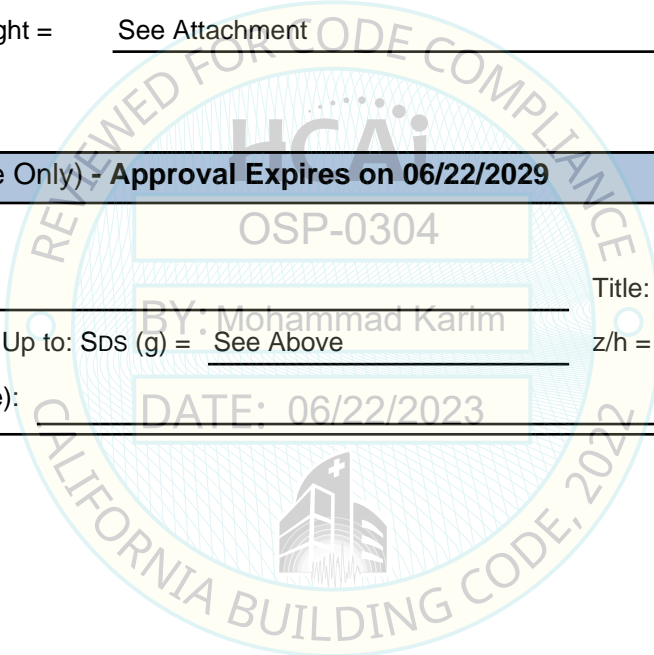
HCAI Approval (For Office Use Only) - Approval Expires on 06/22/2029

Date: 6/22/2023

Name: Mohammad Karim Title: Supervisor, Health Facilities

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

Condition of Approval (if applicable): DATE: 06/22/2023



**ABB, Inc. ReliaGear neXT (EntellEon) Power Panels
Certified Product Line Matrix**



ID/Catalog Number ¹	Ampere Rating	NEMA ² Rating	Equipment Dimensions			Weight (lbs)	Representative UUT ³
			Width (in)	Depth (in)	Height (in)		
Indoor 250-1200A NEMA 1 / NEMA 2 Power Panels Product Line - Max S_{DS} = 2.00g at z/h = 1.0 and S_{DS} = 2.50g at z/h = 0							
ENC6030A / ENT1602NN3H2	250	1	30.0	15.0	60.0	250	UUT _z -1
ENCxxxxx / ENTxxxxxxxxxx, ERxxxxx / INxxxxxxxxxx	250 - 1200	1 / 2	30.0 - 45.0	10.5 - 16.0	60.0 - 96.0	250 - 970	interpolated
ER9645A / IN1612NN3H2	1200	1	45.0	13.0	96.0	577	UUT _x -7
ENC9645A / ENT4012BL3H2	1200	1	45.0	10.5	96.0	896	UUT _z -2
ER9645A / IN4012BL4H1	1200	1	45.0	16.0	96.0	970	UUT _y -6
Outdoor 250 - 1200A NEMA 12 / 3R / 4 / 4X Power Panel Product Line - Max S_{DS} = 2.00g at z/h = 1.0 and S_{DS} = 2.50g at z/h = 0							
ENC7230X / ENT1604BL3H2	400	4X	32.0	13.0	72.0	436	UUT _z -3
ENCxxxxx, ENTxxxxxxxxxx, ERxxxxx, INxxxxxxxxxx	250 - 1200	12 / 3R / 4 / 4X	32.0 - 47.0	12.5 - 16.0	60 - 97.8	436 - 1182	interpolated
ER9645S / IN1612NN3H2	1200	4X	47.0	16.0	97.8	838	UUT _x -8
ENC9645R / ENT3212BL3H2	1200	3R	47	12.5	96.0	988	UUT _z -4
ER9645S / IN4012BL4B3	1200	4X	47.0	16.0	96.0	1182	UUT _y -5

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 with 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.

³ Subscript indicates the test report in which the units were qualified: _z - 17-00749, _y - 19-00474, _x - 16380

**ABB, Inc. ReliaGear neXT (EntellEon) Power Panels
Certified Subcomponent Matrices**



Identification Number	Manufacturer	Description	Approximate Weights (lbs)	Representative UUT ¹
Molded Case Circuit Breakers				
EZSEDA36AT0030	ABB (formerly GE)	Spectra 30A	7	UUT _z -1 / UUT _z -2
EZSEDA36AT0150		Spectra 150A	7	UUT _z -2 / UUT _z -3
EZSFHA36AT0250		Spectra 250A	11	UUT _z -4
EZSGHA36AT0400		Spectra 400A	17	UUT _z -4
EZSGHA36AT0600		Spectra 600A	17	UUT _z -4
EZSHA36AT0800		Spectra 800A	50	UUT _z -2
EZSxxxxxxxxxx		Spectra 30A - 1200A	7 - 50	interpolated
EZSKHA36AT1200		Spectra 1200A	50	UUT _z -2
EUSGHA36AT0400		Spectra 400A	60	UUT _z -3
EUSxxxxxxxxxx		Spectra 400A - 1200A	50 - 60	interpolated
EUSKHC3612L3XX		Spectra 1200A	60	UUT _z -4
EZFBV16TE015R2A		Record Plus 15A	3	UUT _z -1
EZFBxxxxxxxxxx, NEFBxxxxxxxxxx		Record Plus 15A - 100A	3 - 5	interpolated
EZFBV26TE100R2BC		Record Plus 100A	5	UUT _z -1
TEYxxxxxxxxxx		TEY 15A - 125A	2 - 4	interpolated
A2xxxxxxxxxx		A2 25A - 250A	4	interpolated
XT1xxxxxxxxxx		XT 15A - 125A	4	interpolated
XT1HU3125AYD000XXX		XT 125A	4	UUT _y -6
XT2xxxxxxxxxx		XT2 15A - 250A	4	interpolated
XT4xxxxxxxxxx		XT 25A - 250A	4 - 7	interpolated
XT4VU3250BYJ000XXX		XT 250A	7	UUT _y -5 / _y -6 / _x -7 / _x -8
XT5xxxxxxxxxx		XT 250A - 600A	7 - 15	interpolated
XT5LU360BAFN000XXX		XT 600A	15	UUT _y -5
XT5LU360BAYN000XXX		XT 600A	15	UUT _y -6
XT6xxxxxxxxxx		XT 600A - 800A	15 - 30	interpolated
XT7xxxxxxxxxx		XT 600A - 1200A	15 - 43	interpolated
XT7LU12EQFX000XXX		XT 1200A	43	UUT _y -6
XT7LU12EQYX000XXX		XT 1200A	43	UUT _y -5
Xxxxxxxxxxx	XT7M 600A - 1200A	43	interpolated	
XHUAATDZZNTFAG0000	XT7M 1200A	43	UUT _x -7	

General Notes:

¹ Subscript indicates the test report in which the units were qualified: _z - 17-00749, _y - 19-00474, _x - 16380

**ABB, Inc. ReliaGear neXT (EntellEon) Power Panels
Certified Subcomponent Matrices**



Identification Number	Manufacturer	Description	Approximate Weights (lbs)	Representative UUT ¹
Lugs				
LUGML45	ABB (formerly GE)	Copper/Aluminum Main	<10	UUT _z -2
LUGML47		Copper/Aluminum Main	<10	UUT _z -2
LUGxxxx, LGxxxx		Copper/Aluminum	<10	interpolated
LUGCL45		Aluminum	<10	UUT _z -2
Bus Stack				
ENT1602NN3H2	ABB (formerly GE)	Copper	48	UUT _z -1
ENT1604BL3H2		Copper	53	UUT _z -3
ENT3212BL3H2		Copper	117	UUT _z -4
ENT4012BL3H2		Copper	145	UUT _z -2
ENTxxxxxxxx, INxxxxxxxx		Aluminum or Copper	48 - 168	interpolated
IN4012BL4H1		Aluminum	168	UUT _y -6
ENTxxxxxxxx, INxxxxxxxx		Aluminum or Copper	168 - 250	interpolated
IN4012BL4B3		Copper	250	UUT _y -5 / UUT _y -6
Frame				
FRMxxxxx, IFxxxxx	ABB (formerly GE)		<14	extrapolated
FRM1630C		16" x 30"	14	UUT _z -1 / UUT _z -3
FRMxxxxx, IFxxxxx			14 - 40	interpolated
FRM3245C		32" x 45"	40	UUT _z -4
FRMxxxxx, IFxxxxx			40 - 48	interpolated
FRM4045F		40" x 45"	48	UUT _z -2
IF4045F		40" x 45"	48	UUT _y -5 / UUT _y -6
Neutrals				
NEU04I0N	ABB (formerly GE)		7	UUT _z -3
NEU12I0N			8	UUT _z -2
NEUxxxxx, NLxxxxx			7 - 60	interpolated
NL12I6NDH45AL		Ground Fault Neutral	62	UUT _x -7
NL12I0ND245CU		200%	60	UUT _x -8
NEU12I0GML45			22	UUT _z -4
RELT				
MOD04A	ABB (formerly GE)	120/240V RELT Module	25	UUT _z -4
MODxxxx, RTxxx		RELT Module	25	interpolated
MOD04C		600V	25	UUT _z -4

General Notes:

¹ Subscript indicates the test report in which the units were qualified: _z - 17-00749, _y - 19-00474, _x - 16380

**ABB, Inc. ReliaGear neXT (EntellEon) Power Panels
Certified Subcomponent Matrices**



Identification Number	Manufacturer	Description	Approximate Weights (lbs)	Representative UUT ¹
Surge Protective Devices				
SPD120S06SE02	ABB (formerly GE)	SPD with disconnect	50	UUT _z -4
SPDxxxxxxxx, SPxxxxxxxx		SPD with disconnect	50	interpolated
SPD347Y10SE02		SPD with disconnect	50	UUT _z -4
Metering²				
AMUSPM04AP	ABB (formerly GE)		16	UUT _z -4
AMUxxxxxxx, MTxxxxxxx		Main metering	16	interpolated
AMUSPM04AM			16	UUT _z -4
RGM40xxxx		Main metering	22	interpolated
RGM4500Q1X6DUX		Submetering (small)	27	UUT _x -7
RGMxxxxxxxx		Submetering	27-50	interpolated
RGM4500Q4X4DUT		Submetering (larger)	50	UUT _x -8
Current Transformers²				
AMUSPMA0302CT	ABB (formerly GE)	Main metering CTs	<10	UUT _z -4
AMUSPMA0308CT		Main metering CTs	<10	UUT _z -4
AMUxxxxxxxCT, MTxxxxxxxCT		Main metering CTs	<10	interpolated
AMUSPMA0312CT		Main metering CTs	<10	UUT _z -4

General Notes:

¹ Subscript indicates the test report in which the units were qualified: _z - 17-00749, _y - 19-00474, _x - 16380

² AMU- and MT- prefixes are used for identical meters. AMU- was the GE ID used during testing, MT- is the ABB designation for the Reliagear neXT meters and current transformers.

UUT_{z-1}

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



Mounting Details: Rigid wall mounted with (4) 3/8" Grade 5 bolts



Manufacturer: ABB, Inc.	Test Location: Clark Testing (Pittsburgh, PA)
Component: EntellEon Power Panel	Test Date: September 2017
Model Number: ENC6030A / ENT1602NN3H2	Report Number: 17-00749
UUT Function: Divides electrical power feed to branch circuits	
UUT Description: NEMA 1 carbon steel enclosure with 30A Spectra circuit breaker and 15A Record Plus circuit breaker	

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
250	30.0	15.0	60.0	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 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.

UUT_{Z-2}

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



Mounting Details: Rigid wall mounted with (6) 3/8” Grade 5 bolts



Manufacturer: ABB, Inc.	Test Location: Clark Testing (Pittsburgh, PA)
Component: EntellEon Power Panel	Test Date: September 2017
Model Number: ENC9645A / ENT4012BL3H2	Report Number: 17-00749
UUT Function: Divides electrical power feed to branch circuits	
UUT Description: NEMA 1 carbon steel enclosure with 30A, 150A, 800A, and 1200A Spectra circuit breakers	

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
896	45.0	10.5	96.0	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 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.

UUT_{Z-3}

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



Mounting Details: Rigid wall mounted with (4) 1/2” Grade 5 bolts



Manufacturer: ABB, Inc.	Test Location: Clark Testing (Pittsburgh, PA)
Component: EntellEon Power Panel	Test Date: September 2017
Model Number: ENC7230X / ENT1604BL3H2	Report Number: 17-00749
UUT Function: Divides electrical power feed to branch circuits	
UUT Description: NEMA 4X stainless steel enclosure with 150A and 400A Spectra circuit breakers	

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
436	32.0	13.0	72.0	n/a	n/a	n/a

SEISMIC TEST PARAMETERS

Building Code / Test Criteria	S _{DS} (g)	z / h	I _P	A _{FLEX-H} (g)	A _{RIG-H} (g)	A _{FLEX-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.

UUT_{z-4}

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



Mounting Details: Rigid wall mounted with (4) 1/2" Grade 5 bolts



Manufacturer: ABB, Inc.	Test Location: Clark Testing (Pittsburgh, PA)
Component: EntellEon Power Panel	Test Date: September 2017
Model Number: ENC9645R / ENT3212BL3H2	Report Number: 17-00749

UUT Function: Divides electrical power feed to branch circuits

UUT Description: NEMA 3R carbon steel enclosure with 250A, 400A, 600A, 1200A Spectra circuit breakers, MOD04A and MOD04C RELT, SPD120S06SE02 and SPD347Y10SE02 Surge Protective Devices, AMUSPM04P and AMUSPM04AM meters, and AMUSPMA0302CT, AMUSPMA0308CT, and AMUSPMA0312CT CTs

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
988	47.0	12.5	96.0	n/a	n/a	n/a

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.

UUT_y-5

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



Mounting Details: Rigid wall mounted with (4) 1/2" Grade 5 bolts



Manufacturer: ABB, Inc.	Test Location: Clark Testing (Pittsburgh, PA)
Component: ReliaGear neXT Power Panel	Test Date: July 2019
Model Number: ER9645S / IN4012BL4B3	Report Number: 19-00474 Rev1
UUT Function: Divides electrical power feed to branch circuits	
UUT Description: NEMA 4X stainless steel enclosure with 250A, 600A, and 1200A XT circuit breakers	

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
1,182	47.0	16.0	96.0	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 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.

UUT_y-6

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



Mounting Details: Rigid wall mounted with (6) 3/8" Grade 5 bolts



Manufacturer: ABB, Inc.	Test Location: Clark Testing (Pittsburgh, PA)
Component: ReliaGear neXT Power Panel	Test Date: July 2019
Model Number: ER9645A / IN4012BL4H1	Report Number: 19-00474 Rev1
UUT Function: Divides electrical power feed to branch circuits	
UUT Description: NEMA 1/2 carbon steel enclosure with 125A, 250A, 600A, and 1200A XT circuit breakers	

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
970	45.0	16.0	96.0	n/a	n/a	n/a

SEISMIC TEST PARAMETERS

Building Code / Test Criteria	SDS (g)	z / h	I _p	AFLX-H (g)	ARIG-H (g)	AFLX-V (g)	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 were made to the test unit which shall be incorporated into the production units.

UUT_{x-7}

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



Mounting Details: Rigid wall mounted with (6) 3/8" Grade 5 bolts



Manufacturer: ABB, Inc.	Test Location: ETL (Dallas, TX)
Component: ReliaGear neXT Power Panel	Test Date: October 2021
Model Number: ER9645A / IN612NN3H2	Report Number: 16380 Rev 0
UUT Function: Divides electrical power feed to branch circuits	
UUT Description: NEMA 1 carbon steel enclosure with XT7M and 250A XT circuit breakers, ground fault neutral, and submetering devices	

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
577	45.0	13.0	96.0	n/a	n/a	n/a

SEISMIC TEST PARAMETERS

Building Code / Test Criteria	SDS (g)	z / h	I _p	AFLX-H (g)	ARIG-H (g)	AFLX-V (g)	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.

UUT_x-8

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



Mounting Details: Rigid wall mounted with (4) 1/2" Grade 5 bolts



Manufacturer: ABB, Inc.	Test Location: ETL (Dallas, TX)
Component: ReliaGear neXT Power Panel	Test Date: October 2021
Model Number: ER9645S / IN1612NN3H2	Report Number: 16380 Rev 0
UUT Function: Divides electrical power feed to branch circuits	
UUT Description: NEMA 4X stainless steel enclosure with 250A circuit breakers, 200% neutral, and submetering devices	

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
838	47.0	16.0	97.8	n/a	n/a	n/a

SEISMIC TEST PARAMETERS

Building Code / Test Criteria	SDS (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.