APPLICATION FOR HCAI SPECIAL SEISMIC CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY

APPLICATION #: OSP-0018

HCAI Special Seismic Certification Preapproval (OSP)

Type: ☐ New ☒ Renewal

Manufacturer Information

Manufacturer: Eaton Corporation

Manufacturer's Technical Representative: Dan Hrncir

Mailing Address: 221 Heywood Road, Arden, NC 28704

Telephone: (828) 687-3401 Email: DanEHrncir@eaton.com

Product Information

Product Name: Magnum DS & PXR LV Switchgear

Product Model Number(s): Magnum DS & PXR LV Switchgear

Product Category: Switchgear/Switchboards

Product Sub-Category: Switchgear - Low Voltage

General Description: Low Voltage (600V Maximum), Metal-Enclosed Switchgear, 5000A maximum, NEMA type 1 enclosures, front and rear accessible.

Mounting Description: Several - See Certified Product Tables and UUT Sheet

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

REVIEWED FOR CODE COMPLIANCE HCAi OSP-0018 BY: Mohammad Rahim EXPIRATION DATE: 12/31/2025 CALIFORNIA BUILDING CODE

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: NATIONAL TECHNICAL SYSTEMS (NTS)

Contact Person: Tom Boonarkat

Mailing Address: 7800 Highway 20 West, Huntsville AL 35806

Telephone: (256) 837-4411 Email: tom.boonarkat@nts.com

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Seismic Parameters

Design Basis of Equipment or Components (F_p/W_p) = 1.69 at z/h = 1.0 and 1.13 at z/h = 0

S_{DS} (Design spectral response acceleration at short period, g) = 2.25 at z/h = 1.0 and 2.5 at z/h = 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) = 0 and 1

Natural frequencies (Hz) = See Attachment

Overall dimensions and weight = See Attachment

HCAI Approval (For Office Use Only) - Approval Expires on 12/30/2031

Date: 12/31/2025

Name: Mohammad Karim Title: Supervisor, Health Facilities

Special Seismic Certification Valid Up to: S_{DS} (g) = 2.25 z/h = 1

Condition of Approval (if applicable):

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TABLE 1

EATON MAGNUM DS & PXR LV SWITCHGEAR SEISMIC CERTIFICATION PRODUCT LINE MATRIX

Seismic Certification Limits: S_{DS} = 2.25 at z / h = 1.0 and S_{DS} = 2.50 at z / h = 0

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

Section Type[1]	Main Bus Amperage	NEMA[2]	Enclosure Dimensions (in)			Max Height COG (in)	Max Weight (lbs)	Representative UUT[3]
			Width	Depth	Height			
Rigid Floor Mounted Configurations								
XL022002-001	**3200A**	**1**	**22.0**	**40.3**	**96.0**	**50**	**1353**	**UUT_w-39**
Magnum DS - 2000	2000A	1	20-30	40-54	96.0	46.0	1400	Interpolated
Magnum DS - 3200	3200A	1	20-30	40-54	96.0	46	1400	Interpolated
Magnum DS - 2000	2000A	1	20-30	54-92	96.0	46.0	1700	Interpolated
Magnum DS - 3200	3200A	1	20-30	54-92	96.0	46.0	1700	Interpolated
Magnum DS - 2000	2000A	1	30-36	40-54	96.0	48	2200	Interpolated
Magnum DS - 3200	3200A	1	30-36	40-54	96.0	48	2200	Interpolated
Magnum DS - 4000	4000A	1	30-36	40-54	96.0	48.0	2200	Interpolated
Magnum DS - 2000	2000A	1	30-36	54-92	96.0	50	2400	Interpolated
Magnum DS - 3200	3200A	1	30-36	54-92	96.0	50.0	2400	Interpolated
Magnum DS - 4000	4000A	1	30-36	54-92	96.0	50.0	2400	Interpolated
L00G7JD-PA01	**4000A**	**1**	**30.0**	**66.0**	**96.0**	**49.9**	**2478**	**UUT_x-1**
Magnum DS - 2000	2000A	1	36-44	40-92	96.0	50.0	2500	Interpolated
Magnum DS - 3200	3200A	1	36-44	40-92	96.0	50	2600	Interpolated
Magnum DS - 4000	4000A	1	36-44	40-92	96.0	50.0	2600	Interpolated
Magnum DS - 5000	5000A	1	36-44	40-92	96.0	50.0	2600	Interpolated
Magnum DS - 3200	3200A	1	36-44	54-92	96.0	50.0	3000	Interpolated
Magnum DS - 4000	4000A	1	36-44	54-92	96.0	50.0	3000	Interpolated
Magnum DS - 5000	5000A	1	36-44	54-92	96.0	50.0	3000	Interpolated
Magnum DS - 4000	4000A	1	44-60	40-92	96.0	50.0	3200	Interpolated
Magnum DS - 5000	5000A	1	44-60	40-92	96.0	50.0	3200	Interpolated
XL022002-002	**5000A**	**1**	**60.0**	**40.3**	**96.0**	**50.0**	**3657**	**UUT_w-40**
Magnum DS - 4000	4000A	1	44-60	54-92	96.0	50.0	3800	Interpolated
Magnum DS - 5000	5000A	1	44-60	54-92	96.0	50.0	3800	Interpolated
XL13031-002d	**5000A**	**1**	**61.0**	**58.0**	**99.1**	**51.3**	**4287**	**UUT_y-14**
Magnum DS - 4000	4000A	1	60.0	54-92	96.0	50.0	4300	Interpolated
Magnum DS - 5000	5000A	1	60.0	54-92	96.0	48.0	4400	Interpolated
XL13031-001b	**5000A**	**1**	**60.0**	**92.0**	**96.5**	**48.1**	**4419**	**UUT_y-9**

General Notes:

[1] Standalone sections of switchgear are not seismically certified. A minimum of 2 mated sections is required for seismic certification.

[2] NEMA 1 enclosures are constructed of carbon steel.

[3] Subscript indicates the test report in which the units were qualified:
w - PR167093-TR-23 / x - PR091398-01TR-Rev.3 / y - 71152R13 / z - 71272R13-RevA

REVIEWED FOR CODE COMPLIANCE HCAI OSP-0018 BY: Mohammad Karim DATE: 12/31/2025 CALIFORNIA BUILDING CODE

TABLE 1	EATON MAGNUM DS & PXR LV SWITCHGEAR SEISMIC CERTIFICATION PRODUCT LINE MATRIX *Seismic Certification Limits: S_{DS} = 2.25 at z / h = 1.0 and S_{DS} = 2.50 at z / h = 0*							
Additional Rigid Floor Mounted Configurations for Certification of Subcomponents								
XL13031-002b	**3200A**	**1**	**22.0**	**58.0**	**117.0**	**53.4**	**998**	**UUT_y-12**
XL13031-001a	**2000A**	**1**	**19.0**	**92.0**	**96.5**	**47.71**	**1433**	**UUT_y-8**
L00G7JD-PA02	**4000A**	**1**	**22.0**	**66.0**	**96.0**	**43.18**	**1395**	**UUT_x-2**
XL13031-001c	**3200A**	**1**	**23.0**	**92.0**	**96.5**	**46.03**	**1426**	**UUT_y-10**
XL13031-002c	**3200A**	**1**	**22.0**	**58.0**	**99.1**	**51.2**	**1475**	**UUT_y-13**
XL13031-002a	**3200A**	**1**	**23.0**	**58.0**	**117.0**	**54.1**	**1437**	**UUT_y-11**
L00G7JD-PA03	**4000A**	**1**	**22.0**	**66.0**	**96.0**	**50.38**	**1613**	**UUT_x-3**
Combined Rigid Floor / Wall Mounted Configurations								
XL13031-007a	**3200A**	**1**	**22.5**	**58.3**	**99.5**	**51.1**	**1450**	**UUT_z-40**
XL13031-007b	**3200A**	**1**	**22.0**	**58.3**	**99.5**	**50.9**	**1007**	**UUT_z-41**
XL13031-007c	**3200A**	**1**	**22.5**	**58.3**	**99.5**	**51**	**1488**	**UUT_z-42**

General Notes:

[1] Standalone sections of switchgear are not seismically certified. A minimum of 2 mated sections is required for seismic certification.

[2] NEMA 1 enclosures are constructed of carbon steel.

[3] Subscript indicates the test report in which the units were qualified:
w - PR167093-TR-23 / x - PR091398-01TR-Rev.3 / y - 71152R13 / z - 71272R13-RevA

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TABLE 2	EATON RIGID FLOOR MOUNTED MAGNUM DS & PXR LV SWITCHGEAR CERTIFIED SUBCOMPONENTS			WEGAI W.E. GUNDY & ASSOCIATES, INC. STRUCTURAL & EARTHQUAKE ENGINEERING
ID/Catalog Number	Manufacturer	Description	Weight (lbs)	Representative UUT [1]
Power Circuit Breakers - MDS / MDN / MSB / MPS				
MDN	Eaton	800A - 600Vac	130	Extrapolated
MDN	Eaton	1600A - 600Vac	130	Extrapolated
MDN	Eaton	2000A - 600Vac	145	Extrapolated
MDNC20XEA	Eaton	2000A - 600Vac	145	UUT_y-8
MDS/MSB/MPS	Eaton	800A - 600Vac	145	Interpolated
MDS/MSB/MPS	Eaton	1600A - 600Vac	145	Interpolated
MDS/MSB/MPS	Eaton	2000A - 600Vac	145	Interpolated
MDS/MSB/MPS	Eaton	2500A - 600Vac	175	Interpolated
MDS/MSB/MPS	Eaton	3200A - 600Vac	175	Interpolated
MPSC253WEA	Eaton	2500A - 600Vac	175	UUT_w-39
MDSC323WEA	Eaton	3200A - 600Vac	175	UUT_y-10/11/13
MDN64N	Eaton	4000A - 600Vac	177	UUT_x-1
MDN	Eaton	3200A - 600Vac	180	Extrapolated
MDN	Eaton	4000A - 600Vac	180	Extrapolated
MDS/MSB/MPS	Eaton	4000A - 600Vac	310	Interpolated
MDS/MSB/MPS	Eaton	5000A - 600Vac	310	Interpolated
MDSC5A4WEA	Eaton	5000A - 600Vac	310	UUT_y-9/14
Control Power Transformers				
114B738G01	ITI	1000 VA (600-120)	30	Extrapolated
114B738G02	ITI	1000 VA (480-120)	30	UUT_y-8/11
114B738G04	ITI	1000 VA (240-120)	30	Interpolated
114B738G05	ITI	1000 VA (208-120)	30	Interpolated
114B738G11	ITI	2000 VA (600-120)	35	Interpolated
114B738G12	ITI	2000 VA (480-120)	35	Interpolated
114B738G14	ITI	2000 VA (240-120)	35	Interpolated
114B738G15	ITI	2000 VA (208-120)	35	Interpolated
114B738G21	ITI	3000 VA (600-120)	40	Interpolated
114B738G24	ITI	3000 VA (240-120)	40	Interpolated
114B738G25	ITI	3000 VA (208-120)	40	Interpolated
114B738G22	ITI	3000 VA (480-120)	40	UUT_y-13
Potential Transformers				
475-480	ITI	300 VA (480-120)	13	UUT_y-8
4601B05H16	ITI	150 VA (480-120)	24	UUT_y-11
450-480	ITI	750 VA (480-120)	25	UUT_y-9

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TABLE 2	EATON RIGID FLOOR MOUNTED MAGNUM DS & PXR LV SWITCHGEAR CERTIFIED SUBCOMPONENTS			WEGAI W.E. GUNDY & ASSOCIATES, INC. STRUCTURAL & EARTHQUAKE ENGINEERING
ID/Catalog Number	Manufacturer	Description	Weight (lbs)	Representative UUT [1]
Metering Components				
PXD-MMG	Eaton	Power Expert Meter	2	UUT_y-9/14
PXM2000	Eaton	Power Expert Meter	2	UUT_y-13
PXM4000	Eaton	Power Expert Meter	9	Interpolated
PXM6000	Eaton	Power Expert Meter	9	UUT_y-14
PXM8000	Eaton	Power Expert Meter	9	UUT_y-14
Quenching Devices				
478C709G01	Eaton	Arc Quenching Device	175	UUT_x-2/3

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TABLE 3	EATON RIGID FLOOR / WALL MOUNTED MAGNUM DS & PXR LV SWITCHGEAR CERTIFIED SUBCOMPONENTS			WEGAI W.E. GUNDY & ASSOCIATES, INC. STRUCTURAL & EARTHQUAKE ENGINEERING
ID/Catalog Number	Manufacturer	Description	Weight (lbs)	Representative UUT [1]
Power Circuit Breakers - MDS / MDN / MSB / MPS				
MDN	Eaton	800A - 600Vac	130	Extrapolated
MDN	Eaton	1600A - 600Vac	130	Extrapolated
MDN	Eaton	2000A - 600Vac	145	Extrapolated
MDS/MSB/MPS	Eaton	800A - 600Vac	145	Extrapolated
MDS/MSB/MPS	Eaton	1600A - 600Vac	145	Extrapolated
MDS/MSB/MPS	Eaton	2000A - 600Vac	145	Extrapolated
MDS/MSB/MPS	Eaton	2500A - 600Vac	175	Extrapolated
MDS/MSB/MPS	Eaton	3200A - 600Vac	175	Extrapolated
MDSC323WEA	Eaton	3200A - 600Vac	175	UUT_z-40/42
MDN	Eaton	3200A - 600Vac	180	Interpolated
MDN	Eaton	4000A - 600Vac	180	Interpolated
MDS/MSB/MPS	Eaton	4000A - 600Vac	320	Interpolated
MDS/MSB/MPS	Eaton	5000A - 600Vac	320	Interpolated
MPSC503WEA	Eaton	5000A - 600Vac	320	UUT_w-40
Control Power Transformers				
114B738G01	ITI	1000 VA (600-120)	30	Extrapolated
114B738G02	ITI	1000 VA (480-120)	30	UUT_z-40
114B738G04	ITI	1000 VA (240-120)	30	Interpolated
114B738G05	ITI	1000 VA (208-120)	30	Interpolated
114B738G11	ITI	2000 VA (600-120)	35	Interpolated
114B738G12	ITI	2000 VA (480-120)	35	Interpolated
114B738G14	ITI	2000 VA (240-120)	35	Interpolated
114B738G15	ITI	2000 VA (208-120)	35	Interpolated
114B738G21	ITI	3000 VA (600-120)	40	Interpolated
114B738G24	ITI	3000 VA (240-120)	40	Interpolated
114B738G25	ITI	3000 VA (208-120)	40	Interpolated
114B738G22	ITI	3000 VA (480-120)	40	UUT_z-42
Potential Transformers				
4601B05H16	ITI	150 VA (480-120)	24	UUT_z-40
Metering Components				
PXM2000	Eaton	Power Expert Meter	2	UUT_z-42

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

Mounting Details: Rigid floor mounted with (6) 1/2" grade 5 bolts



Manufacturer: Eaton	**Test Location:** NTS, Huntsville AL
Product Line: Magnum LV Switchgear	**Test Date:** December 11, 2018
Component: L00G7JD-PA01	**Report Number:** PR091398-01TR Rev.3
UUT Function: Control, protection, and isolation of electrical equipment	
UUT Description: 4000A Magnum Switchgear Section consisting of NEMA 1 carbon steel enclosure, 4000A MDN circuit breaker (MDN64N), and circuit breaker lifting device.	

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
2,478	30.0	66.0	96.0	8.0	6.3	29.6

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	2.40	1.0	1.5	3.84	2.88	-	-
	2.50	0	1.5	-	-	1.68	0.68

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

Mounting Details: Rigid floor mounted with (6) 1/2" grade 5 bolts



Manufacturer: Eaton	**Test Location:** NTS, Huntsville AL
Product Line: Magnum LV Switchgear	**Test Date:** December 11, 2018
Component: L00G7JD-PA02	**Report Number:** PR091398-01TR Rev.3

UUT Function: Control, protection, and isolation of electrical equipment

UUT Description: 4000A Magnum Switchgear Section consisting of NEMA 1 carbon steel enclosure, Arc Quenching Device (478C709G01) and CAT generator control components.

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
1,395	22.0	66.0	96.0	8.0	6.3	29.6

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	2.40	1.0	1.5	3.84	2.88	-	-
	2.50	0	1.5	-	-	1.68	0.68

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-3	**UNIT UNDER TEST (UUT) SUMMARY SHEET**	WEGAI W.E. GUNDY & ASSOCIATES, INC. STRUCTURAL & EARTHQUAKE ENGINEERING

Mounting Details: Rigid floor mounted with (6) 1/2" grade 5 bolts



Manufacturer: Eaton	**Test Location:** NTS, Huntsville AL
Product Line: Magnum LV Switchgear	**Test Date:** December 11, 2018
Component: L00G7JD-PA03	**Report Number:** PR091398-01TR Rev.3

UUT Function: Control, protection, and isolation of electrical equipment

UUT Description: 4000A Magnum Switchgear Section consisting of NEMA 1 carbon steel enclosure, Arc Quenching Device (478C709G01) and CAT generator control components.

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
1,613	22.0	66.0	96.0	7.9	6.2	29.6

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	2.40	1.0	1.5	3.84	2.88	-	-
	2.50	0	1.5	-	-	1.68	0.68

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-8	UNIT UNDER TEST (UUT) SUMMARY SHEET	WEGAI W.E. Gundy & Associates, Inc. Structural & Earthquake Engineering

Mounting Details: Rigid floor mounted with (6) 1/2" grade 5 bolts



Manufacturer: Eaton	**Test Location:** Wyle Lab, Huntsville AL
Product Line: Magnum LV Switchgear	**Test Date:** August 26-30, 2013
Component: XL13031-001a	**Report Number:** 71152R13

UUT Function: Control, protection, and isolation of electrical equipment

UUT Description: 2000A Magnum Switchgear Section consisting of NEMA 1 carbon steel enclosure, 2000A Magnum breaker (MDNC20XEA), ITI Control Power Transformer (114B738G02), and ITI Potential Transformer (475-480)

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
1,433	19.0	92.0	96.5	9.8	8.5	>33

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	3.0	1.0	1.5	4.80	3.60	2.01	0.81

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-9	UNIT UNDER TEST (UUT) SUMMARY SHEET	WEGAI W.E. GUNDY & ASSOCIATES, INC. STRUCTURAL & EARTHQUAKE ENGINEERING

Mounting Details: Rigid floor mounted with (6) 1/2" grade 5 bolts



Manufacturer: Eaton	**Test Location:** Wyle Lab, Huntsville AL
Product Line: Magnum LV Switchgear	**Test Date:** August 26-30, 2013
Component: XL13031-001b	**Report Number:** 71152R13

UUT Function: Control, protection, and isolation of electrical equipment

UUT Description: 5000A Magnum Switchgear Section consisting of NEMA 1 carbon steel enclosure, 5000A Magnum breaker (MDSC5A4WEA), ITI Potential Transformer (450-480), and Power Xpert Meter (PXD-MMG)

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
4,419	60.0	92.0	96.5	9.8	8.5	> 33.0

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	3.0	1.0	1.5	4.80	3.60	2.01	0.81

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.

UUTy-10	UNIT UNDER TEST (UUT) SUMMARY SHEET	WEGAI W.E. Gundy & Associates, Inc. Structural & Earthquake Engineering

Mounting Details: Rigid floor mounted with (6) 1/2" grade 5 bolts



Manufacturer: Eaton	**Test Location:** Wyle Lab, Huntsville AL
Product Line: Magnum LV Switchgear	**Test Date:** August 26-30, 2013
Component: XL13031-001c	**Report Number:** 71152R13

UUT Function: Control, protection, and isolation of electrical equipment

UUT Description: 3200A Magnum Switchgear Section consisting of NEMA 1 carbon steel enclosure, 3200A Magnum breaker (MDSC323WEA)

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
1,426	23.0	92.0	96.5	9.8	8.5	> 33.0

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	3.0	1.0	1.5	4.80	3.60	2.01	0.81

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$_y$-11	UNIT UNDER TEST (UUT) SUMMARY SHEET	WEGAI W.E. Gundy & Associates, Inc. Structural & Earthquake Engineering

Mounting Details: Rigid floor mounted with (4) 1/2" grade 5 bolts



Manufacturer: Eaton	**Test Location:** Wyle Lab, Huntsville AL
Product Line: Magnum LV Switchgear	**Test Date:** August 26-30, 2013
Component: XL13031-002a	**Report Number:** 71152R13
UUT Function: Control, protection, and isolation of electrical equipment	
UUT Description: 3200A Magnum Switchgear Section consisting of NEMA 1 carbon steel enclosure, 3200A Magnum breaker (MDSC323WEA), ITI Control Power Transformer (114B738G02), and ITI Potential Transformer (4601B05H16)	

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
1,437	23.0	58.0	117.0	7.0	6.8	20.0

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	3.0	1.0	1.5	4.80	3.60	2.01	0.81

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$_y$-12	UNIT UNDER TEST (UUT) SUMMARY SHEET	WEGAI W.E. Gundy & Associates, Inc. Structural & Earthquake Engineering

Mounting Details: Rigid floor mounted with (4) 1/2" grade 5 bolts



Manufacturer: Eaton	**Test Location:** Wyle Lab, Huntsville AL
Product Line: Magnum LV Switchgear	**Test Date:** August 26-30, 2013
Component: XL13031-002b	**Report Number:** 71152R13

UUT Function: Control, protection, and isolation of electrical equipment

UUT Description: 3200A Magnum Switchgear Section consisting of NEMA 1 carbon steel enclosure.

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
998	22.0	58.0	117.0	7.0	6.8	20.0

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	3.0	1.0	1.5	4.80	3.60	2.01	0.81

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$_y$-13	UNIT UNDER TEST (UUT) SUMMARY SHEET	WEGAI W.E. GUNDY & ASSOCIATES, INC. STRUCTURAL & EARTHQUAKE ENGINEERING

Mounting Details: Rigid floor mounted with (4) 1/2" grade 5 bolts



Manufacturer: Eaton	**Test Location:** Wyle Lab, Huntsville AL
Product Line: Magnum LV Switchgear	**Test Date:** August 26-30, 2013
Component: XL13031-002c	**Report Number:** 71152R13
UUT Function: Control, protection, and isolation of electrical equipment	
UUT Description: 3200A Magnum Switchgear Section consisting of NEMA 1 carbon steel enclosure, 3200A Magnum breaker (MDSC323WEA), ITI Control Power Transformer (114B738G22), and Power Xpert Meter (PXM2000)	

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
1,475	22.0	58.0	99.1	7.0	6.8	20.0

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	3.0	1.0	1.5	4.80	3.60	2.01	0.81

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$_y$-14	UNIT UNDER TEST (UUT) SUMMARY SHEET	WEGAI W.E. Gundy & Associates, Inc. Structural & Earthquake Engineering

Mounting Details: Rigid floor mounted with (4) 1/2" grade 5 bolts



Manufacturer: Eaton	**Test Location:** Wyle Lab, Huntsville AL
Product Line: Magnum LV Switchgear	**Test Date:** August 26-30, 2013
Component: XL13031-002d	**Report Number:** 71152R13
UUT Function: Control, protection, and isolation of electrical equipment	
UUT Description: 5000A Magnum Switchgear Section consisting of NEMA 1 carbon steel enclosure, 5000A Magnum breaker (MDSC5A4WEA), Power Xpert Meters (PXD-MMG / PXM6000 / PMX8000)	

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
4,287	61.0	58.0	99.1	7.0	6.8	21.0

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	3.0	1.0	1.5	4.80	3.60	2.01	0.81

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-40	**UNIT UNDER TEST (UUT) SUMMARY SHEET**	WEGAI W.E. GUNDY & ASSOCIATES, INC. STRUCTURAL & EARTHQUAKE ENGINEERING

Mounting Details: Rigid floor mounted with (2) 1/2" grade 5 bolts in the front base of the section and rigid wall mounted with (2) 1/2" grade 5 bolts at the top back of the section.



Manufacturer: Eaton	**Test Location:** Wyle Lab, Huntsville AL
Product Line: Magnum LV Switchgear	**Test Date:** Sept. 30 – Oct. 11, 2013
Component: XL13031-007a	**Report Number:** 71272R13-RevA

UUT Function: Control, protection, and isolation of electrical equipment

UUT Description: 3200A Magnum Switchgear Section consisting of NEMA 1 carbon steel enclosure, 3200A Magnum breaker (MDSC323WEA), ITI Control Power Transformer (114B738G02), ITI Potential Transformer (4601B05H16)

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
1,450	22.5	58.25	99.5	NA	NA	NA

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	2.80	1.0	1.5	4.48	3.36	1.88	0.76

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-41	UNIT UNDER TEST (UUT) SUMMARY SHEET	WEGAI W.E. GUNDY & ASSOCIATES, INC. STRUCTURAL & EARTHQUAKE ENGINEERING

Mounting Details: Rigid floor mounted with (2) 1/2" grade 5 bolts in the front base of the section and rigid wall mounted with (2) 1/2" grade 5 bolts at the top back of the section.



Manufacturer: Eaton	**Test Location:** Wyle Lab, Huntsville AL
Product Line: Magnum LV Switchgear	**Test Date:** Sept. 30 – Oct. 11, 2013
Component: XL13031-007b	**Report Number:** 71272R13-RevA

UUT Function: Control, protection, and isolation of electrical equipment

UUT Description: 3200A Magnum Switchgear Section consisting of NEMA 1 carbon steel enclosure.

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
1,007	22.0	58.25	99.5	NA	NA	NA

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	2.80	1.0	1.5	4.48	3.36	1.88	0.76

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-42	**UNIT UNDER TEST (UUT) SUMMARY SHEET**	WEGAI W.E. Gundy & Associates, Inc. Structural & Earthquake Engineering

Mounting Details: Rigid floor mounted with (2) 1/2" grade 5 bolts in the front base of the section and rigid wall mounted with (2) 1/2" grade 5 bolts at the top back of the section.



Manufacturer: Eaton	**Test Location:** Wyle Lab, Huntsville AL
Product Line: Magnum LV Switchgear	**Test Date:** Sept. 30 – Oct. 11, 2013
Component: XL13031-007c	**Report Number:** 71272R13-RevA

UUT Function: Control, protection, and isolation of electrical equipment

UUT Description: 3200A Magnum Switchgear Section consisting of NEMA 1 carbon steel enclosure, 3200A Magnum breaker (MDSC323WEA), ITI Control Power Transformer (114B738G22), and Power Xpert Meter (PMX2000)

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
1,488	22.5	58.25	99.5	NA	NA	NA

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	2.80	1.0	1.5	4.48	3.36	1.88	0.76

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_w-39	**UNIT UNDER TEST (UUT) SUMMARY SHEET**	WEGAI W.E. Gundy & Associates, Inc. Structural & Earthquake Engineering

Mounting Details: Rigid floor mounted with (4) 1/2" grade 5 bolts



Manufacturer: Eaton	**Test Location:** NTS, Huntsville AL
Product Line: Magnum LV Switchgear	**Test Date:** January 9-10, 2023
Component: XL022002-001	**Report Number:** PR167093-TR-23
UUT Function: Control, protection, and isolation of electrical equipment	
UUT Description: 3200A Magnum PXR Switchgear Section consisting of NEMA 1 carbon steel enclosure, 2500A Magnum PXR breaker (MPSC253WEA)	

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
1,353	22.0	40.25	96.0	4.1	7.5	24.0

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	2.50	1.0	1.5	4.0	3.0	1.68	0.68

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_w-40	**UNIT UNDER TEST (UUT) SUMMARY SHEET**	WEGAI W.E. Gundy & Associates, Inc. Structural & Earthquake Engineering

Mounting Details: Rigid floor mounted with (6) 1/2" grade 5 bolts



Manufacturer: Eaton	**Test Location:** Wyle Lab, Huntsville AL
Product Line: Magnum LV Switchgear	**Test Date:** January 9-10, 2023
Component: XL022002-002	**Report Number:** PR167093-TR-23
UUT Function: Control, protection, and isolation of electrical equipment	
UUT Description: 5000A Magnum PXR Switchgear Section consisting of NEMA 1 carbon steel enclosure, 5000A Magnum PXR breaker (MPSC503WEA)	

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Frequency (Hz)		
	Width	Depth	Height	FB	SS	V
3,657	60.0	40.25	96.0	4.1	7.5	24.0

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	2.50	1.0	1.5	4.0	3.0	1.68	0.68

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.