APPLICATION FOR OSHPD SPECIAL SEISMIC CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY	
APPLICATION #:	OSP – 0029 – 10

OSHPD Special Seismic Certification Preapproval (OSP)

Type: ☐ New ☒ Renewal

Manufacturer Information

Manufacturer: Cummins Power Generation

Manufacturer's Technical Representative: Elizabeth K. Kerr

Mailing Address: 1400 73rd Avenue, Fridley, MN 55432

Telephone: 651-787-6304 Email: Beth.k.kerr@cummins.com

Product Information

Product Name: Cummins Automatic & By-Pass Transfer Switches

Product Type: BTPC, OTPC, OTEC, CHPC, OHPC

Product Model Number: See Certified Product List Table 1A, 1B & 1C
(List all unique product identification numbers and/or part numbers)

General Description: Cummins ATS's are designed for operation & switching of electrical loads between primary power and standby generator sets. They are suitable for use in emergency, legally required and optional standby applications. Bypass Isolation transfer switches combine an automatic transfer switch with a draw out isolation mechanism and a manual bypass switch. It provides a redundant power transfer capability for critical-need applications that require a reliable power supply to the load. Seismic enhancements made to the test units and modifications required to address anomalies observed during the tests, shall be incorporated into the production units.

Mounting Description: Rigid floor mounted and rigid wall mounted.

Applicant Information

Applicant Company Name: Cummins Power Generation

Contact Person: Elizabeth K. Kerr

Mailing Address: 1400 73rd Avenue, Fridley, MN 55432

Telephone: 651-787-6304 Email: Beth.k.kerr@cummins.com

I hereby agree to reimburse the Office of Statewide Health Planning and Development review fees in accordance with the California Administrative Code, 2013.

Signature of Applicant: Elizabeth Kerr Date: 1/17/2013

Title: Chief Engineer Company Name: Cummins Power Generation

oshpd
"Equitable Healthcare Accessibility for California"

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

Company Name: Mason West, Inc.

Name: Jimmy Wong California License Number: S4744

Mailing Address: 1601 E Miraloma Ave, Placentia, CA 92870

Telephone: 714-630-0701 Email: jwong@masonwest.com

Supports and Attachments Preapproval

☐ Supports and attachments are preapproved under OPM- _____
(Separate application for OSHPD Preapproval of Manufacturer's Certification (OPM) of Supports and attachments is required)

☒ Supports and attachments are not preapproved

Certification Method

☒ Testing in accordance with: ☒ ICC-ES AC156

☐ Other (Please Specify): _____

Testing Laboratory

Company Name: Clark Dynamic Test Laboratory

Contact Name: John Antenucci

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

Telephone: 412-382-7173 Email: jrantenucci@clarkdynamic.com

Seismic Parameters

Design in accordance with ASCE 7-10 Chapter 13: ☒ Yes ☐ No

Design Basis of Equipment or Components (F_p/W_p) = 1.63

S_{DS} (Design spectral response acceleration at short period, g) = 2.17g

a_p (In-structure equipment or component amplification factor) = 2.5

R_p (Equipment or component response modification factor) = 6.0

Ω_0 (System overstrength factor) = 2.5

I_p (Importance factor) = 1.5

z/h (Height factor ratio) = 1.0

Equipment or Component Natural Frequencies (Hz) = See UUT-1 to UUT-9

Overall dimensions and weight (or range thereof) = See Table 1A, 1B, 1C, & 2A

Equipment or Components @ grade designed in accordance with ASCE 7-10 Chapter 15: ☐ Yes ☒ No

Design Basis of Equipment or Components (V/W) =

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

S_{D1} (Design spectral response acceleration at 1 second period, g) =

R (Response modification coefficient) =

Ω_0 (System overstrength factor) =

C_d (Deflection amplification factor) =

I_p (Importance factor) = 1.5

Height to Center of Gravity above base =

Equipment or Component Natural Frequencies (Hz) =

Overall dimensions and weight (or range thereof) =

Tank(s) designed in accordance with ASME BPVC, 2010: ☐ Yes ☒ No

List of Attachments Supporting Special Seismic Certification

☒ Test Report(s) ☐ Drawings ☐ Calculations ☒ Manufacturer's Catalog

☒ Other(s) (Please Specify): Table 1A, 1B, 1C, 2A, 2B, 2C, 3 & UUT-1 to UUT-9

OSHPD Approval (For Office Use Only) – **Approval Expires on December 31, 2019**

Signature: Date: 1/18/2013

Print Name: Timothy J. Piland Title: SSE

Special Seismic Certification Valid Up to : S_{DS} (g) = 2.17 z/h = 1.0

Condition of Approval (if applicable):

MASON WEST, INC.
1601 E. Miraloma Ave. Placentia, CA 92870
TEL (714) 630 - 0701, FAX (714) 632 - 0302

TABLE 1A
SPECIAL SEISMIC CERTIFICATION
CERTIFIED PRODUCT LIST

Manufacturer: Cummins Power Generation

Product Line: Cummins Automatic Transfer Switches - OTPC & OTEC

Certified Product Construction Summary:

Carbon steel enclosures, NEMA 1, 3R, 4 or 12 rating.

Certified Options / Component Summary:

3 or 4 pole transfer switches

Certified Mounting Summary:

All listed units from 40 to 1000 amps are rigid wall mounted.

All listed units from 1200 to 4000 amps are rigid floor mounted.

RIGID WALL MOUNTED UNITS

Building Code: CBC 2013 — **Seismic Certification Limits: S_{DS} = 2.17 z/h = 1.00 Ip = 1.50**

Frame	Test Report & Report UUT No.	UUT Number	Models	Amperages	Poles	Dimension (in.)			Weight (lbs)	NEMA
						Width	Depth	Height		
A	n/a	Extrapolated	OTPC	40 - 125	3 & 4	21-32	12-16	27-46	82 - 255	1, 3R, 4, & 12
B	n/a	Extrapolated	OTPC	150 - 260	3 & 4	26-32	16	36-46	165 - 255	1, 3R, 4, & 12
C	n/a	Extrapolated	OTPC	300 - 600	3 & 4	26-34	18-20	54-74	224 - 560	1, 3R, 4, & 12
C	T4683, EL:8642 UUT-2	8	OTPC	600	4	34	20	74	560	3R
D	n/a	Interpolated	OTPC	800-1000	3 & 4	30-33	21	68-74	360 - 410	1, 3R, 4, & 12
D	T4374, EL:8169 UUT-4	2	OTPC	1000	4	30	21	68	362	1

RIGID FLOOR MOUNTED UNITS

Building Code: CBC 2013 — **Seismic Certification Limits: S_{DS} = 2.17 z/h = 1.00 Ip = 1.50**

Frame	Test Report & Report UUT No.	UUT Number	Models	Amperages	Poles	Dimension (in.)			Weight (lbs)	NEMA Type
						Width	Depth	Height		
E	E11383A UUT-1	9	OTEC	1200	4	39	28	90	730	1
E	n/a	Interpolated	OTPC / OTEC	1200	3 & 4	39	28	90	450 - 730	1, 3R, 4, & 12
F	n/a	Interpolated	OTPC	1600	3 & 4	36-38	48-51	90	1100	1, 3R, 4, & 12
G	n/a	Interpolated	OTPC	2000	3 & 4	36-38	48-51	90	1100	1, 3R, 4, & 12
H	n/a	Interpolated	OTPC	3000	3 & 4	30-38	48-51	90	1250	1, 3R, 4, & 12
H	T4374, EL:8169 UUT-6	3	OTPC	3000	4	30	50	90	1250	1
J	n/a	Interpolated	OTPC	4000	3 & 4	46-49	60	90	1850 Max	1, 3R, 4, & 12
J	T4418, EL:8255 UUT-3	6	OTPC	4000	4	47	60	90	1800	1

Note: OTEC and OTPC models are identical except for equipping with different types of controllers.
OTEC uses EC Type controller.
OTPC uses PC type controller.

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TABLE 1B
SPECIAL SEISMIC CERTIFICATION
CERTIFIED PRODUCT LIST

Manufacturer: Cummins Power Generation

Product Line: Cummins Automatic Transfer Switches - CHPC & OHPC

Certified Product Construction Summary:

Carbon steel enclosures, NEMA 1, 3R, 4 or 12 rating.

Certified Options / Component Summary:

4 pole transfer switches

Certified Mounting Summary:

All listed units are rigid wall mounted.

Building Code: CBC 2013 | **Seismic Certification Limits:** S_{DS} = 2.17 | z/h = 1.00 | Ip = 1.50

Frame	Test Report & Report UUT No.	UUT Number	Models	Amperages	Poles	Dimension (in.)			Weight (lbs)	NEMA Type
						Width	Depth	Height		
D	n/a	Extrapolated	CHPC / OHPC	800	4	35	21	72	411 - 455	1, 3R, 4 & 12
D	T4374, EL:8169 UUT-3	1	CHPC	800	4	35	21	72	455	1

Note: CHPC and OHPC models are identical except for equipping with different types of controllers.
OHPC uses PC Type Level 1 or 2 Controller.
CHPC uses PC Type Level 2 Controller.

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TABLE 1C
SPECIAL SEISMIC CERTIFICATION
CERTIFIED PRODUCT LIST

Manufacturer: Cummins Power Generation

Product Line: Cummins By-Pass Isolation Switches - BTPC

Certified Product Construction Summary:

Carbon steel enclosures, NEMA 1, 3R, 4 or 12 rating.

Certified Options / Component Summary:

3 or 4 pole transfer switches

Certified Mounting Summary:

All listed units are rigid floor mounted.

Building Code: CBC 2013 | **Seismic Certification Limits:** S_{DS} = 2.17 | z/h = 1.00 | Ip = 1.50

Frame	Test Report & Report UUT No.	UUT Number	Models	Amperages	Poles	Dimension (in.)			Weight (lbs)	NEMA Type
						Width	Depth	Height		
B	n/a	Extrapolated	BTPC	150-260	3 & 4	36	23	72	564	1, 3R, 4, & 12
C	n/a	Extrapolated	BTPC	300-600	3 & 4	36	23	83	639	1, 3R, 4, & 12
D	n/a	Extrapolated	BTPC	800-1000	3 & 4	48	28	90	1100	1, 3R, 4, & 12
D	T4683, EL8642 UUT-1	7	BTPC	1000	4	48	28	90	1100	3R
E	n/a	Interpolated	BTPC	1200	3 & 4	40-46	28	90	1450 - 2185	1, 3R, 4, & 12
F	n/a	Interpolated	BTPC	1600	3 & 4	41-46	63	80	3139 - 3538	1, 3R, 4, & 12
G	n/a	Interpolated	BTPC	2000	3 & 4	41-46	63	80	3139 - 3538	1, 3R, 4, & 12
H	n/a	Interpolated	BTPC	3000	3 & 4	41-54	63-72	80-90	3513 - 5030	1, 3R, 4, & 12
H	T4418, EL:8255 UUT-2	5	BTPC	3000	4	54	72	90	5030	1
J	n/a	Interpolated	BTPC	4000	3 & 4	49-54	81	90	4730 - 6300	1, 3R, 4, & 12
J	T4418, EL:8255 UUT-1	4	BTPC	4000	4	54	81	90	6300	1

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TABLE 2A
SPECIAL SEISMIC CERTIFICATION
TESTED & CERTIFIED ENCLOSURES

Manufacturer: Cummins Power Generation

Product Line: H&F, Cummins Automatic & By-Pass Transfer Switch Enclosures

Tested Product Construction Summary:

Carbon steel enclosures, NEMA 1, 3R, 4 or 12 rating.

Tested Options / Component Summary:

n/a

Tested Mounting Summary:

Units are rigid floor and/or wall mounted.

Building Code: CBC 2013 **Seismic Certification Limits:** S_{DS} = **2.17** **z/h = 1.00** **Ip = 1.50**

Test Report & Report UUT No.	Construction Material	NEMA Type	Dimension (in.)			Weight (lbs)	Mounting Configuration	UUT Number
			Width	Depth	Height			
n/a	10, 12 & 14 ga CS	1, 3R, 4 or 12	21-35	12-21	27-74	82-560	Wall Mounted	Interpolated
T4374, EL:8169, UUT-3	12 ga CS	1	35	19	72	455	Wall Mounted	1
T4374, EL:8169, UUT-4	14 ga CS	1	30	19	68	362	Wall Mounted	2
T4683, EL:8642, UUT-2	12 ga CS	3R	34	20	74	560	Wall Mounted	8
n/a	10, 12 & 14 ga CS	1, 3R, 4 or 12	30-54	23-81	72-90	564-6300	Floor mounted	Interpolated
ETL11383A, UUT-1	12 ga CS	1	39	28	90	730	Floor mounted	9
T4683, EL:8642, UUT-1	12 ga CS	3R	48	28	90	1100	Floor Mounted	7
T4374, EL:8169, UUT-6	14 ga CS	1	30	50	90	1250	Floor mounted	3
T4418, EL:8255, UUT-2	10 ga CS	1	46.5	60	90	1800	Floor mounted	5
T4418, EL:8255, UUT-3	14 ga CS	1	54	72	90	5030	Floor mounted	6
T4418, EL:8255, UUT-1	10 ga. CS	1	54	81	90	6300	Floor mounted	4

NOTE:

1. Listed weights are for entire tested unit not just enclosure.

CS = Carbon Steel

2. NEMA Type 3R construction is identical to NEMA Type 4 and 12 with the exception of the drain holes.

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TABLE 2B
SPECIAL SEISMIC CERTIFICATION
TESTED & CERTIFIED AUTOMATIC & BYPASS TRANSFER SWITCHES

Manufacturer: Cummins Power Generation

Product Line: Cummins Automatic & By-Pass Transfer Switches

Building Code: CBC 2013 | **Seismic Certification Limits:** S_{DS} = 2.17 | z/h = 1.00 | Ip = 1.50

Model Number	Old Part Numbers / New Part Numbers	Description	Approx. Weight (lbs)	Test Report & Report UUT No.	UUT number
BT	0306-5135 to 0306-5395 A007E103 to A019U481	Std Bypass 150 to 800 A	250 to 610	n/a	Extrapolated
BT	0306-4351 A000X254	Std Bypass 1000A	720	T4683, EL:8642, UUT-1	7
BT	0306-4358 A000X303	Std Bypass 3000A	2739	T4418, EL:8255, UUT-2	5
BT	0306-4351 to 0306-5121 A00X254 to A026C332	Std Bypass 1000 to 4000 A	720 to 4230	n/a	Interpolated
BT	0306-5121 A026C332	Std Bypass 4000A	4230	T4418, EL:8255, UUT-1	4
CH	0306-4773 n/a	Std ATS 800A	186	T4374, EL:8169, UUT-3	1
OT	0306-5024 to 0306-5342 A000X511 to A007C619	Std ATS 40 to 300A	20 to 89	n/a	Extrapolated
OT	0306-3456 A007D538	Std ATS 600A	90	T4683, EL:8642, UUT-2	8
OT	0306-4413 A007D705	Std ATS 1000A	165	T4374, EL:8169, UUT-4	2
OT	0306-5079 A030D541	Std ATS 1200A	368	E11383A, UUT-1	9
OT	0306-5087 A007D585	Std ATS 3000A	685	T4374, EL:8169, UUT-6	3
OT	0306-3456 to 0306-5321 A007D538 to A030D586	Std ATS 600 to 4000A	90 to 790	n/a	Interpolated
OT	0306-5321 A030D586	Std ATS 4000A	790	T4418, EL:8255, UUT-3	6

Note: The 0306 part number series is the old part number series and the A series is the new part number series.
The part is marked with either the new part number series or old part number series

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TABLE 2C
SPECIAL SEISMIC CERTIFICATION
TESTED & CERTIFIED CONTROLLERS

Manufacturer: Cummins Power Generation

Product Line: Cummins Automatic & By-Pass Transfer Switches Controllers

Building Code: CBC 2013 **Seismic Certification Limits:** S_{DS} = 2.17 z/h = 1.00 Ip = 1.50

Model Number	Manufacturer	Description	Mounting	Approx. Weight (lbs)	Test Report & Report UUT No.	UUT number
PC Type C023	Cummins	PC Level 1 Controller	Wall mounted	6	T4374, EL:8169 UUT-4	2
PC Type C023	Cummins	PC Level 1 Controller	Floor mounted	6	T4374, EL:8169 UUT-6	3
PC Type C023	Cummins	PC Level 1 Controller	Floor mounted	6	T4418, EL:8255 UUT-2	5
PC Type C023	Cummins	PC Level 1 Controller	Floor mounted	6	T4418, EL 8255 UUT-3	6
PC Type C024	Cummins	PC Level 2 Controller	Wall mounted	9	T4374, EL:8169 UUT-3	1
PC Type C024	Cummins	PC Level 2 Controller	Floor mounted	9	T4418, EL 8255 UUT-1	4
PC Type C024	Cummins	PC Level 2 Controller	Floor mounted	9	T4683, EL:8642 UUT-1	7
PC Type C024	Cummins	PC Level 2 Controller	Wall mounted	9	T4683, EL:8642 UUT-2	8
EC Type M034	Cummins	EC Controller	Floor mounted	1	E11383A UUT-1	9

Nomenclature Chart

Model	Frame	Amperage	Voltage	Code	Frequency	Code	Poles	Code	Control	Type	Code	Enclosure	Code
OTPC	A	40	120	R020-7	50HZ	A045-7	2	A065-7	PC Model Control	Level 1	C023-7	Type 1	B001-7
OTEC	B	70	190	R038-7	60HZ	A044-7	3	A028-7	PC Model Control	Level 2	C024-7	Type 3R	B002-7
BTPC	C	125	208	R021-7			4	A029-7	EC Model Control	12V	M033-7	Type 4	B003-7
CHPC	D	150	220	R022-7					EC Model Control	24V	M034-7	Open	B004-7
OHPC	E	225	240	R023-7								Type 12	B010-7
	F	260	380	R024-7								Type 4X	B025-7
	G	300	416	R025-7									
	H	400	440	R035-7									
	J	600	480	R026-7									
		800	600	R027-7									
		1000											
		1200											
		1600											
		2000											
		3000											
		4000											

Example of Nomenclature data:

OTPC 1000 A Features: R026 A044 A028 C024 B001

.= OTPC 1000 A
D Frame
480 V
60Hz
3 Pole
Level 2 Control
Type 1 enclosure

Note: Model can be broken down to get the switch and controller configuration.

OTPC = OT Type Switch & PC Type Controller
OTEC = OT Type Switch & EC Type Controller
BTPC = BT Type Switch & PC Type Controller
CHPC = CH Type Switch & PC Type Controller
OHPC = OH Type Switch & PC Type Controller

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TABLE 3
SPECIAL SEISMIC CERTIFICATION
SUMMARY OF TESTED UNITS

Manufacturer: Cummins Power Generation

Product Line: Cummins Automatic & By-Pass Transfer Switches

Tested Product Construction Summary:

Automatic & By-Pass Transfer Switches in steel cabinets, NEMA Type 1, 3R, 4, & 12

Tested Options / Component Summary:

4 pole Transfer Switches, 600-4000A, 120-600V

Tested Mounting Summary:

Units are rigid floor or wall mounted.

Building Code: CBC 2013 **Seismic Certification Limits:** **S_{DS} = 2.17** **z/h = 1.00** **Ip = 1.50**

Test Report & Report UUT No.		Model Tested	NEMA Type	Dimension (in.)			Weight (lbs)	Mounting Configuration	UUT
				Width	Depth	Height			
T4374, EL8169	UUT-3	CHPC 800A, 4 pole, ATS	1	35	21	72	455	Wall Mounted	1
	UUT-4	OTPC 1000A, 4 pole, ATS	1	30	21	68	362	Wall Mounted	2
	UUT-6	OTPC 3000A, 4 pole, ATS	1	30	50	90	1250	Floor mounted	3
T4418, EL8255	UUT-1	BTPC 4000A, 4 pole, ATS	1	54	81	90	6300	Floor mounted	4
	UUT-2	BTPC 3000A, 4 pole, By-Pass	1	54	72	90	5030	Floor mounted	5
	UUT-3	OTPC 4000A, 4 pole, ATS	1	46.5	60	90	1800	Floor mounted	6
T4683, EL8642	UUT-1	BTPC 1000A, 4 pole, By-Pass	3R	48	28	90	1100	Floor Mounted	7
	UUT-2	OTPC 600A, 4 pole, ATS	3R	34	20	74	560	Wall Mounted	8
E11383A	UUT-1	OTEC 1200A, 4 pole, ATS	1	39	28	90	730	Floor mounted	9

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UUT-1

UNIT UNDER TEST (UUT) SUMMARY SHEET

Manufacturer:	Cummins Power Generation
Product Line:	Cummins Automatic Transfer Switches
Model:	CHPC 800A

Test Laboratory: Clark Dynamic Test Laboratory, Inc. **Report No.:** T4374, EL:8169 dated December 2006

Product Construction Summary:

Wall mounted, metal enclosure NEMA Type 1 rated

Options / Component Summary:

CH Switch, 800A, 4 pole, 480V, PC Type Level 2 Controller

UUT PROPERTIES

Test Criteria: ICC-ES AC156

Weight (lbs)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Width	Depth	Height	Front-Back	Side-Side	Vertical
455	35	21	72	n/a	n/a	n/a

SEISMIC TEST PARAMETERS

Building Code	S_{DS}	z/h	Ip	Aflx-H	Arig-H	Aflx-V	Arig-V
CBC 2013	2.17	1.00	1.50	3.47	2.60	2.33	1.74

Unit Mounting Details: Unit was wall mounted with (4) - 7/16" diameter Carbon Steel Hex Head Bolts.

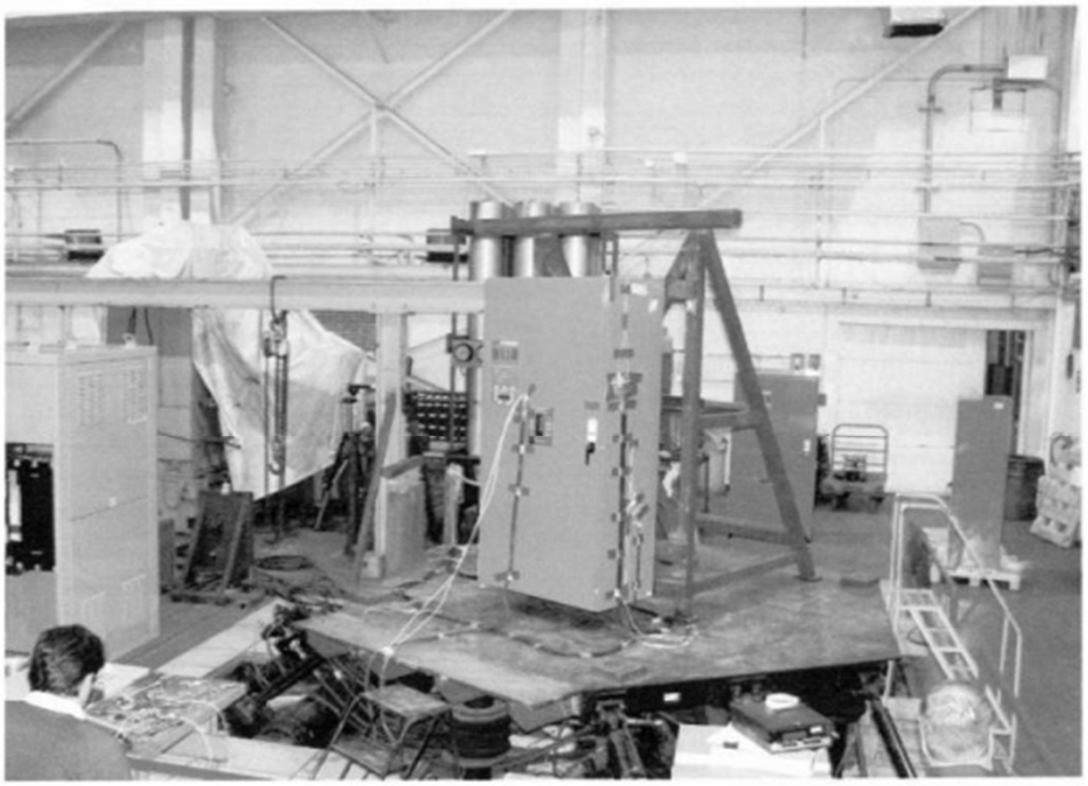

Figure 3 CHPC800 Cabinet Mounted on Tri-axial Table

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UNIT UNDER TEST (UUT) SUMMARY SHEET

Manufacturer:	Cummins Power Generation
Product Line:	Cummins Automatic Transfer Switches
Model:	OTPC 1000A

Test Laboratory: Clark Dynamic Test Laboratory, Inc. **Report No.:** T4374, EL:8169 dated December 2006

Product Construction Summary:

Wall mounted, metal enclosure NEMA Type 1 rated

Options / Component Summary:

OT Switch, 1000A, 4 pole, 480V, PC Type Level 1 Controller

UUT PROPERTIES

Test Criteria: ICC-ES AC156

Weight (lbs)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Width	Depth	Height	Front-Back	Side-Side	Vertical
362	30	21	68	n/a	n/a	n/a

SEISMIC TEST PARAMETERS

Building Code	S_{DS}	z/h	Ip	Aflx-H	Arig-H	Aflx-V	Arig-V
CBC 2013	2.17	1.00	1.50	3.47	2.60	2.33	1.74

Unit Mounting Details: Unit was wall mounted with (4) - 3/8" diameter Carbon Steel Hex Head Bolts.

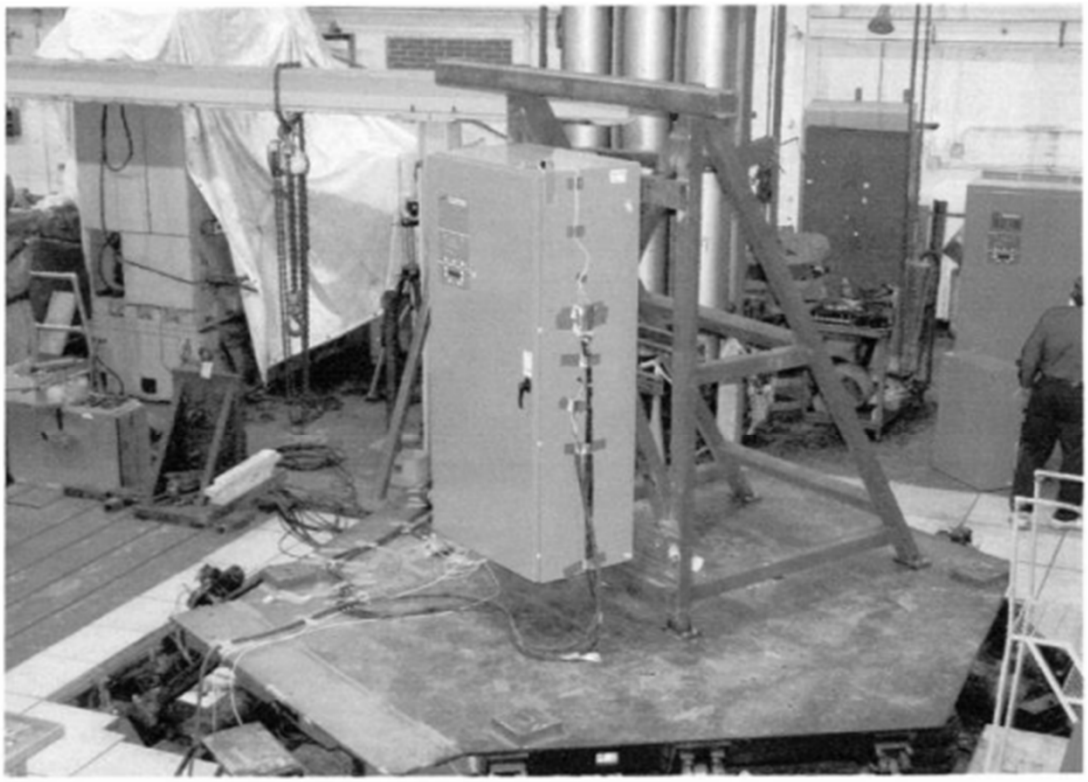

Figure 4 OTPC1000 Cabinet Mounted on the Tri-axial Table

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UUT-3

UNIT UNDER TEST (UUT) SUMMARY SHEET

Manufacturer:	Cummins Power Generation
Product Line:	Cummins Automatic Transfer Switches
Model:	OTPC 3000A

Test Laboratory: Clark Dynamic Test Laboratory, Inc. **Report No.:** T4374, EL:8169 dated December 2006

Product Construction Summary:

Floor mounted, metal enclosure NEMA Type 1 rated

Options / Component Summary:

OT Switch, 3000A, 4 pole, 480V, PC Type Level 1 Controller

UUT PROPERTIES

Test Criteria: ICC-ES AC156

Weight (lbs)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Width	Depth	Height	Front-Back	Side-Side	Vertical
1250	30	50	90	17.9	7.8	n/a

SEISMIC TEST PARAMETERS

Building Code	S_{DS}	z/h	Ip	Aflx-H	Arig-H	Aflx-V	Arig-V
CBC 2013	2.17	1.00	1.50	3.47	2.60	2.33	1.74

Unit Mounting Details: Unit was floor mounted with (4) - 5/8" diameter Carbon Steel Hex Head Bolts.

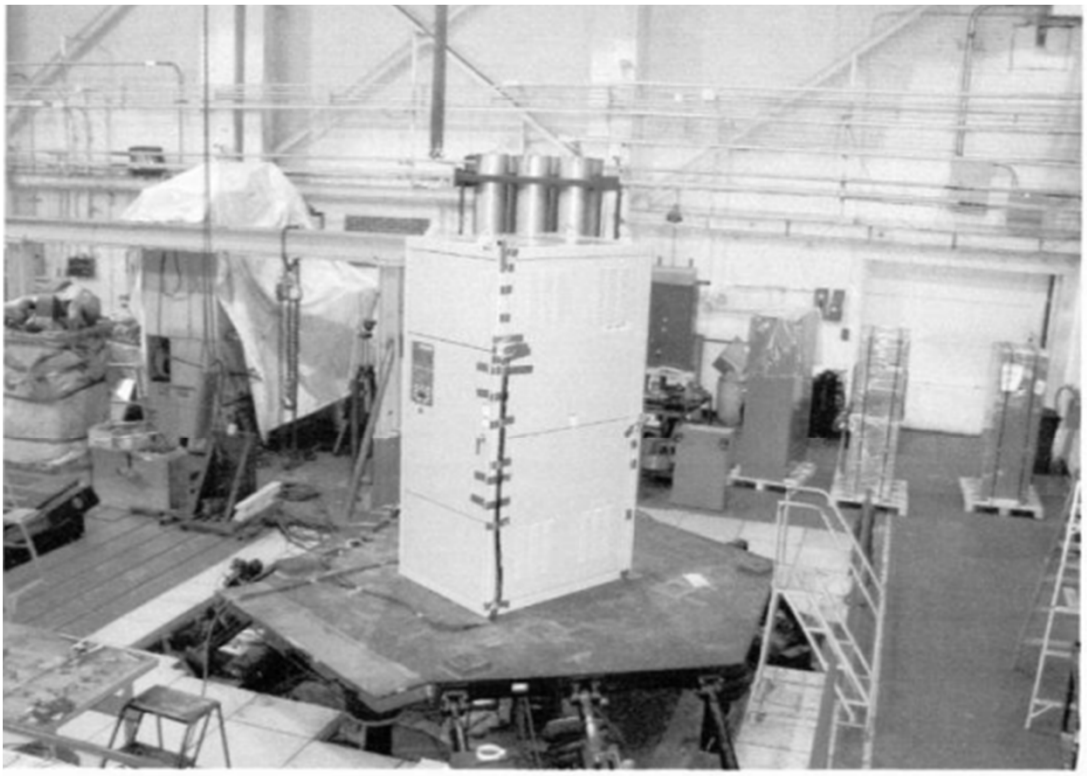

Figure 6 OTPC3000 Cabinet Mounted on Tri-axial Table

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UUT-4

UNIT UNDER TEST (UUT) SUMMARY SHEET

Manufacturer:	Cummins Power Generation
Product Line:	Cummins Automatic Transfer Switches
Model:	BTPC 4000A

Test Laboratory: Clark Dynamic Test Laboratory, Inc. **Report No.:** T4418, EL:8255 dated June 2007

Product Construction Summary:

Floor mounted, metal enclosure NEMA Type 1 rated

Options / Component Summary:

BT By-Pass Switch, 4000A, 4 pole, 480V, PC Type Level 2 Controller

UUT PROPERTIES

Test Criteria: ICC-ES AC156

Weight (lbs)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Width	Depth	Height	Front-Back	Side-Side	Vertical
6300	54	81	90	21.1	8.6	n/a

SEISMIC TEST PARAMETERS

Building Code	S_{DS}	z/h	Ip	Aflx-H	Arig-H	Aflx-V	Arig-V
CBC 2013	2.17	1.00	1.50	3.47	2.60	2.33	1.74

Unit Mounting Details: Unit was floor mounted with (4) - 5/8" diameter Carbon Steel Hex Head Bolts.

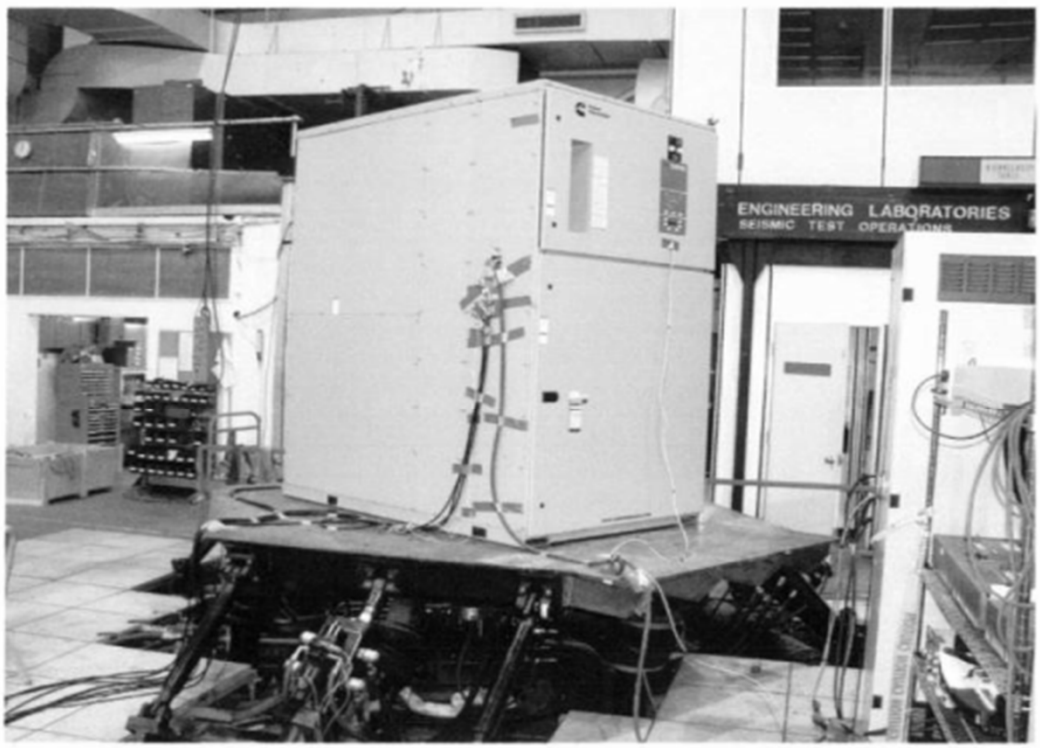

Figure 1 BTPC4000 Cabinet Mounted on Tri-axial Table

MASON WEST, INC.
1601 E. Miraloma Ave. Placentia, CA 92870
TEL (714) 630 - 0701, FAX (714) 632 - 0302

UUT-5

UNIT UNDER TEST (UUT) SUMMARY SHEET

Manufacturer:	Cummins Power Generation
Product Line:	Cummins Automatic Transfer Switches
Model:	BTPC 3000A

Test Laboratory: Clark Dynamic Test Laboratory, Inc. **Report No.:** T4418, EL:8255 dated June 2007

Product Construction Summary:

Floor mounted, metal enclosure NEMA Type 1 rated

Options / Component Summary:

BT By-Pass Switch, 3000A, 4 pole, 480V, PC Type Level 1 Controller

UUT PROPERTIES

Test Criteria: ICC-ES AC156

Weight (lbs)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Width	Depth	Height	Front-Back	Side-Side	Vertical
5030	54	72	90	13.3	8.6	n/a

SEISMIC TEST PARAMETERS

Building Code	S_{DS}	z/h	Ip	Aflx-H	Arig-H	Aflx-V	Arig-V
CBC 2013	2.17	1.00	1.50	3.47	2.60	2.33	1.74

Unit Mounting Details: Unit was floor mounted with (4) - 5/8" diameter Carbon Steel Hex Head Bolts.

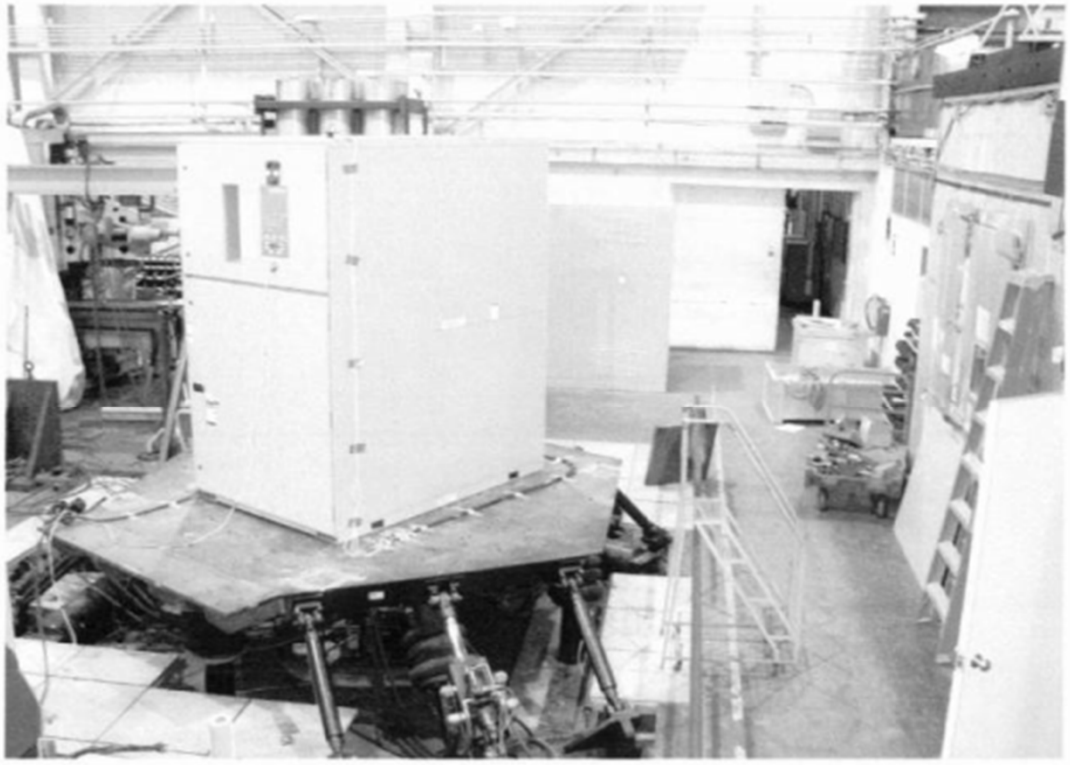

Figure 2 BTPC3000 Cabinet Mounted on Tri-axial Table

MASON WEST, INC.
1601 E. Miraloma Ave. Placentia, CA 92870
TEL (714) 630 - 0701, FAX (714) 632 - 0302

UUT-6

UNIT UNDER TEST (UUT) SUMMARY SHEET

Manufacturer:	Cummins Power Generation
Product Line:	Cummins Automatic Transfer Switches
Model:	OTPC 4000A

Test Laboratory: Clark Dynamic Test Laboratory, Inc. **Report No.:** T4418, EL:8255 dated June 2007

Product Construction Summary:

Floor mounted, metal enclosure NEMA Type 1 rated

Options / Component Summary:

OT Switch, 4000A, 4 pole, 480V, PC Type Level 1 Controller

UUT PROPERTIES

Test Criteria: ICC-ES AC156

Weight (lbs)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Width	Depth	Height	Front-Back	Side-Side	Vertical
1800	46.5	60	90	16.3	8.6	n/a

SEISMIC TEST PARAMETERS

Building Code	S_{DS}	z/h	I	AfIx-H	Arig-H	AfIx-V	Arig-V
CBC 2013	2.17	1.00	1.50	3.47	2.60	2.33	1.74

Unit Mounting Details: Unit was floor mounted with (4) - 5/8" diameter Carbon Steel Hex Head Bolts.

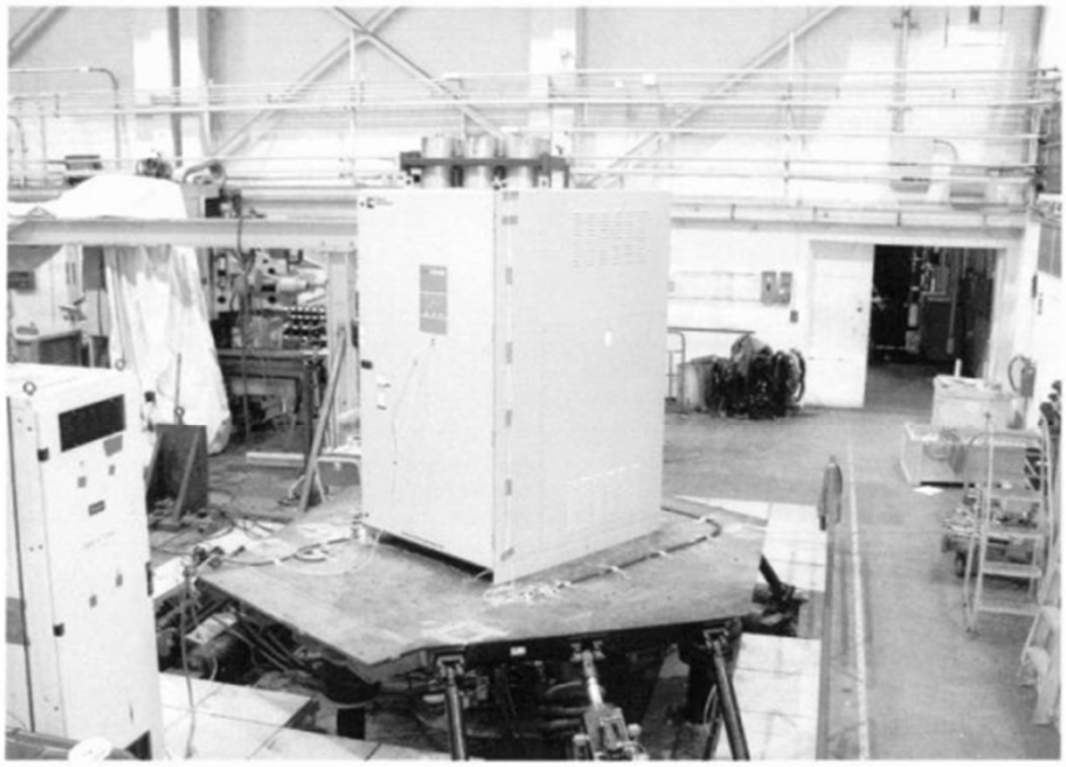

Figure 3 OTPC4000 Cabinet Mounted on Tri-axial Table

MASON WEST, INC.
1601 E. Miraloma Ave. Placentia, CA 92870
TEL (714) 630 - 0701, FAX (714) 632 - 0302

UUT-7

UNIT UNDER TEST (UUT) SUMMARY SHEET

Manufacturer:	Cummins Power Generation
Product Line:	Cummins Automatic Transfer Switches
Model:	BTPC 1000A

Test Laboratory: Clark Dynamic Test Laboratory, Inc. **Report No.:** T4683, EL:8642 dated January 2009

Product Construction Summary:

Floor mounted, metal enclosure NEMA Type 3R rated

Options / Component Summary:

BT By-Pass Switch, 1000A, 4 pole, 480V, PC Type Level 2 Controller

UUT PROPERTIES

Test Criteria: ICC-ES AC156

Weight (lbs)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Width	Depth	Height	Front-Back	Side-Side	Vertical
1100	48	28	90	25.8	N/A	n/a

SEISMIC TEST PARAMETERS

Building Code	S_{DS}	z/h	Ip	Aflx-H	Arig-H	Aflx-V	Arig-V
CBC 2013	2.17	1.00	1.50	3.47	2.60	2.33	1.74

Unit Mounting Details: Unit was floor mounted with (4) - 5/8" diameter Carbon Steel Hex Head Bolts.

Figure 1 BTPC 1000A Cabinet mounted on Tri-axial Table

MASON WEST, INC.
1601 E. Miraloma Ave. Placentia, CA 92870
TEL (714) 630 - 0701, FAX (714) 632 - 0302

UUT-8

UNIT UNDER TEST (UUT) SUMMARY SHEET

Manufacturer:	Cummins Power Generation
Product Line:	Cummins Automatic Transfer Switches
Model:	OTPC 600A

Test Laboratory: Clark Dynamic Test Laboratory, Inc. **Report No.:** T4683, EL:8642 dated January 2009

Product Construction Summary:

Wall mounted, metal enclosure NEMA Type 3R rated

Options / Component Summary:

OT Switch, 600A, 4 pole, 480V, PC Type Level 2 Controller

UUT PROPERTIES

Test Criteria: ICC-ES AC156

Weight (lbs)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Width	Depth	Height	Front-Back	Side-Side	Vertical
560	34	20	74	25.8	33.6	n/a

SEISMIC TEST PARAMETERS

Building Code	S_{DS}	z/h	Ip	Aflx-H	Arig-H	Aflx-V	Arig-V
CBC 2013	2.17	1.00	1.50	3.47	2.60	2.33	1.74

Unit Mounting Details: Unit was wall mounted with (4) - 3/8" diameter Carbon Steel Hex Head Bolts.

Figure 2 OTPC 600A Cabinet mounted on Tri-axial Table

MASON WEST, INC.
1601 E. Miraloma Ave. Placentia, CA 92870
TEL (714) 630 - 0701, FAX (714) 632 - 0302

UUT-9

UNIT UNDER TEST (UUT) SUMMARY SHEET

Manufacturer:	Cummins Power Generation
Product Line:	Cummins Automatic Transfer Switches
Model:	OTEC 1200A

Test Laboratory: Environmental Testing Laboratory **Report No.:** E11383A dated Nov. 3, 2010

Product Construction Summary:

Floor mounted, metal enclosure NEMA Type 1 rated

Options / Component Summary:

OT Switch, 1200A, 4 pole, 480V, EC Type Controller

UUT PROPERTIES

Test Criteria: ICC-ES AC156

Weight (lbs)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Width	Depth	Height	Front-Back	Side-Side	Vertical
730	39	28	90	6.4	8.7	30.4

SEISMIC TEST PARAMETERS

Building Code	S_{DS}	z/h	Ip	Aflx-H	Arig-H	Aflx-V	Arig-V
CBC 2013	2.28	1.00	1.50	3.65	2.74	2.44	1.83

Unit Mounting Details: Unit was floor mounted with (4) - 3/4" diameter Carbon Steel Hex Head Bolts.

Seismic Qualification for Cummins OTEC 1200 ATS Goldfinger Switch