



OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT  
FACILITIES DEVELOPMENT DIVISION

APPLICATION FOR OSHPD SPECIAL SEISMIC  
CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY

APPLICATION #: OSP – 0298 – 10

OSHPD Special Seismic Certification Preapproval (OSP)

Type:  New  Renewal

Manufacturer Information

Manufacturer: Russelectric, Inc.

Manufacturer's Technical Representative: Elizabeth Stark

Mailing Address: South Shore Park, Hingham, MA 02043

Telephone: 781-749-6000 Email: estark@russelectric.com

Product Information

Product Name: Russelectric Switchgear Systems

Product Type: Low & Medium Voltage Switchgear with Eaton Circuit Breakers

Product Model Number: See Certified Product List Table 1A & 1B

(List all unique product identification numbers and/or part numbers)

General Description: Low and medium voltage switchgear systems with Eaton circuit breakers.

Each system is comprised of minimum two or more cubicles line up together. 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

Applicant Information

Applicant Company Name: Russelectric, Inc.

Contact Person: Elizabeth Stark

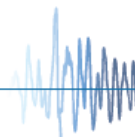
Mailing Address: South Shore Park, Hingham, MA 02043

Telephone: 781-749-6000 Email: estark@russelectric.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 Stark* Date: 5/14/2013

Title: Mechanical Engineering Supervisor Company Name: Russelectric, Inc.





**OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT  
FACILITIES DEVELOPMENT DIVISION**

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

Company Name: Mason West  
Name: Jimmy Wong California License Number: S4744  
Mailing Address: 1601 E Miralome Ave, Placentia, CA 92870  
Telephone: 714-630-0701 Email: jwong@masonwest.com

**Supports and Attachments Preapproval**

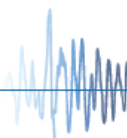
- Supports and attachments are preapproved under OPM- \_\_\_\_\_  
(Separate application for OSHPD Preapproval of Manufacturer's Certification (OPM) of Supports and attachments is required)
- Supports and attachments are not preapproved

**Certification Method**

- Testing in accordance with:  ICC-ES AC156
- Other (Please Specify): \_\_\_\_\_

**Testing Laboratory**

Company Name: Wyle Laboratories  
Contact Name: Don Smith  
Mailing Address: 7800 Highway 20 West, Hunstville, AL 35806  
Telephone: 256-837-4411 Email: don.smith@wyle.com





**OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT  
FACILITIES DEVELOPMENT DIVISION**

**Seismic Parameters**

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

Design Basis of Equipment or Components ( $F_p/W_p$ ) = 1.88 (Low Voltage),  
1.50 (Medium Voltage, NEMA 1) & 1.13 (Medium Voltage, NEMA 3R)

$S_{DS}$  (Design spectral response acceleration at short period, g) = 2.5 (Low Voltage), 2.0 (Medium Voltage, NEMA 1)  
& 1.5 (Medium Voltage, NEMA 3R)

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

$R_p$  (Equipment or component response modification factor) = 6.0

$\Omega_0$  (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-4

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

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) = \_\_\_\_\_

$\Omega_0$  (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, 2A to 2D & UUT-1 to UUT-4

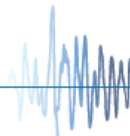
**OSHPD Approval (For Office Use Only) – Approval Expires on December 31, 2019**

Signature:  Date: July 19, 2013

Print Name: Timothy J. Piland Title: SSE

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

**SPECIAL SEISMIC CERTIFICATION  
 CERTIFIED PRODUCT TABLE  
 TABLE 1A**

**Manufacturer:** Russelectric, Inc.  
**Product Line:** Low Voltage Switchgear Systems with Eaton Circuit Breakers

**Certified Product Construction Summary:**  
 Carbon steel light gage enclosures, NEMA Type 1.

**Certified Options / Component Summary:**

**Certified Mounting Summary:**  
 Units are rigid floor mounted and must be comprised of minimum two (2) cubicles line up together.

Building Code: CBC 2013		Seismic Certification Limits: S <sub>Ds</sub> = 2.50      z/h = 1.00      I <sub>p</sub> = 1.50						
Test Report & Report UUT No.	UUT Number	Cubicle Arrangements (Note 2)	Cubicle Type & Function	NEMA	Dimensions (in.)			Weight (lbs)
					Width	Depth	Height	
n/a	Extrapolated	(2) 800 to 3200A	Distribution	1	24	78-84	98	1700
T59065, UUT-1	UUT-1a	(1) 800A & (1) 3200A	Distribution	1	24	78	98	1900
n/a	Interpolated	(3) 800 to 3200A	Distribution	1	24	78-84	98	1900
n/a	Interpolated	(4) 800 to 2000A	Distribution	1	24	78-84	98	2200
n/a	Interpolated	(1) 800 to 3200A	Distribution	1	30	78-84	98	1800
n/a	Interpolated	(2) 800 to 3200A	Distribution	1	30	78-84	98	2100
n/a	Interpolated	(3) 800 to 2000A	Distribution	1	30	78-84	98	2300
T59065, UUT-2	UUT-2a	(1) 800A & (1) 3200A	Distribution	1	36	78	98	2600
n/a	Interpolated	(2) 800 to 3200A	Distribution	1	36	78-84	98	2600
n/a	Interpolated	(3) 800 to 2000A	Distribution	1	36	78-84	98	3000
n/a	Interpolated	(4) 800 to 2000A	Distribution	1	36	78-84	98	3200
n/a	Extrapolated	(1) 800 to 3200A	Generator	1	24	78-84	98	1500
T59065, UUT-2	UUT-2b	(1) 800A	Generator	1	26	78	98	1650
n/a	Interpolated	(1) 800 to 3200A	Generator	1	26	78-84	98	1650
n/a	Interpolated	(1) 800 to 3200A	Generator	1	36	78-84	98	2300
n/a	Interpolated	(1) 4000 to 5000A	Generator	1	44	78-84	98	3200
T59065, UUT-1	UUT-1b	(1) 5000A	Generator	1	44	78	98	3200

**Notes:**

1. UUT-1 was comprised of a Distribution and a Generator cubicles.  
 UUT-2 was comprised of a Distribution and a Generator cubicles.
2. The Cubicle Arrangement represents the numbers of circuit breakers or electrical components to be installed in each cubicle.



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

**SPECIAL SEISMIC CERTIFICATION  
 CERTIFIED PRODUCT TABLE  
 TABLE 1B**

**Manufacturer:** Russelectric, Inc.

**Product Line:** Medium Voltage Switchgear Systems with Eaton Circuit Breakers

**Certified Product Construction Summary:**  
 Carbon steel light gage enclosures, NEMA Type 1 & 3R

**Certified Options / Component Summary:**

**Certified Mounting Summary:**  
 Units are rigid floor mounted.

**Building Code:** CBC 2013      **Seismic Certification Limits:** S<sub>DS</sub> = (Note 3)    z/h = 1.00      I<sub>p</sub> = 1.50

Test Report & Report UUT No.	UUT Number	Cubicle Arrangements (Note 2)	Cubicle Type & Function	NEMA	Dimensions (in.)			Weight (lbs)
					Width	Depth	Height	
n/a	Extrapolated	(1) 1200A	Distribution	1 & 3R	36	96	96.5	2500
n/a	Extrapolated	(1) 2000A	Distribution	1 & 3R	36	96	96.5	2600
n/a	Extrapolated	(1) 3000A	Distribution	1 & 3R	36	96	96.5	2800
n/a	Extrapolated	(2) 1200A	Distribution	1 & 3R	36	96	96.5	2800
n/a	Extrapolated	(1) 1200A & (1) 2000A	Distribution	1 & 3R	36	96	96.5	2850
T58426, UUT-2	UUT-3a	(1) 1200A & (1) 3000A	Distribution	1	36	96	96.5	3000
T58426, UUT-4	UUT-4a	(1) 1200A & (1) 3000A	Distribution	3R	36	96	96.5	3000
n/a	Extrapolated	(1) Potential Transformer	Potential Transformer	1 & 3R	36	96	96.5	2500
n/a	Extrapolated	(1) 1200A & (1) Potential Transformer	Potential Transformer	1 & 3R	36	96	96.5	2800
n/a	Extrapolated	(1) 2000A & (1) Potential Transformer	Potential Transformer	1 & 3R	36	96	96.5	2850
n/a	Extrapolated	(1) 1200A & (2) Potential Transformers	Potential Transformer	1 & 3R	36	96	96.5	3000
n/a	Extrapolated	(2) Potential Transformers	Potential Transformer	1 & 3R	36	96	96.5	2800
n/a	Extrapolated	(1) 2000A & (2) Potential Transformers	Potential Transformer	1 & 3R	36	96	96.5	3100
T58426, UUT-3	UUT-3b	(3) Potential Transformers	Potential Transformer	1	36	96	96.5	3200
T58426, UUT-4	UUT-4b	(3) Potential Transformers	Potential Transformer	3R	36	96	96.5	3200

**Notes:**

- UUT-3 was comprised of a Distribution and a Potential Transformer cubicles.  
 UUT-4 was comprised of a Distribution and a Generator cubicles.
- The Cubicle Arrangement represents the numbers of circuit breakers and/or potential transformers with electrical and control components to be installed in each cubicle.
- S<sub>DS</sub> = 2.0 for NEMA Type 1 and 1.5 for NEMA Type 3R.



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

**SPECIAL SEISMIC CERTIFICATION  
 CERTIFIED ENCLOSURES  
 TABLE 2A**

**Manufacturer:** Russelectric, Inc.  
**Product Line:** Low & Medium Voltage Switchgear Enclosures

**Certified Product Construction Summary:**

Carbon steel light gage enclosures

**Certified Options / Component Summary:**

**Certified Mounting Summary:**

Units are rigid floor mounted and must be comprised of minimum two (2) cubicles line up together.

**Low Voltage Switchgear Enclosures**

**Building Code: CBC 2013**      **Seismic Certification Limits: Sds = 2.50      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	12 ga, CS	1	24	78-84	98	1500-2200	Floor Mounted	Interpolated
59065, UUT-1	12 ga, CS	1	24	78	98	1900	Floor Mounted	UUT-1a
n/a	12 ga, CS	1	26	78-84	98	1650	Floor Mounted	Interpolated
59065, UUT-2	12 ga, CS	1	26	78	98	1650	Floor Mounted	UUT-2b
n/a	12 ga, CS	1	30	78-84	98	1800-2300	Floor Mounted	Interpolated
n/a	12 ga, CS	1	36	78-84	98	2300-3200	Floor Mounted	Interpolated
59065, UUT-2	12 ga, CS	1	36	78	98	2600	Floor Mounted	UUT-2a
n/a	12 ga, CS	1	44	78-84	98	3200	Floor Mounted	Interpolated
59065, UUT-1	12 ga, CS	1	44	78	98	3200	Floor Mounted	UUT-1b

**Medium Voltage Switchgear Enclosures**

**Building Code: CBC 2013**      **Seismic Certification Limits: Sds = (Note 2)      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			
58426, UUT-2	11 ga, CS	1	36	96	97	3000	Floor Mounted	UUT-3a
58426, UUT-4	11 ga, CS	3R	36	96	97	3000	Floor Mounted	UUT-4a
n/a	11 ga, CS	1 & 3R	36	96	97	2500-3200	Floor Mounted	Interpolated
58426, UUT-3	11 ga, CS	1	36	96	97	3000	Floor Mounted	UUT-3b
58426, UUT-4	11 ga, CS	3R	36	96	97	3200	Floor Mounted	UUT-4b

Notes:

- Listed weights are for entire tested unit not just enclosure.  
CS = Carbon Steel
- Sds = 2.0 for NEMA Type 1 medium voltage enclosures and 1.5 for NEMA Type 3R medium voltage enclosures.



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

**SPECIAL SEISMIC CERTIFICATION  
 CERTIFIED CIRCUIT BREAKERS  
 TABLE 2B**

**Manufacturer:** Eaton  
**Product Line:** Low & Medium Voltage Eaton Circuit Breakers

**Certified Component Summary:**

**Certified Mounting Summary:**

Circuit Breakers are base mounted in the drawout compartments of the enclosure.

**Low Voltage Circuit Breakers & Cradle**

Building Code: CBC 2013		Seismic Certification Limits: Sds = 2.50 z/h = 1.00 Ip = 1.50				
Model Number	Manufacturer	Model Description	Weight	Mounting	Test Report	UUT Number
MDS-C08	Eaton / Cutler Hammer	800A Magnum DS	200	Base mounted	T59065-1	1a & 2a
MDS-C08	Eaton / Cutler Hammer	800A Magnum DS	200	Base mounted	T59065-1	2b
MDS-C16	Eaton / Cutler Hammer	1600A Magnum DS	200	Base mounted	Interpolated	n/a
MDS-C20	Eaton / Cutler Hammer	2000A Magnum DS	220	Base mounted	Interpolated	n/a
MDS-C32	Eaton / Cutler Hammer	3200A Magnum DS	260	Base mounted	T59065-1	1a & 2a
MDS-C40	Eaton / Cutler Hammer	4000A Magnum DS	400	Base mounted	Interpolated	n/a
MDS-C50	Eaton / Cutler Hammer	5000A Magnum DS	450	Base mounted	T59065-1	1b

**Medium Voltage Circuit Breakers & Cradle**

Building Code: CBC 2013		Seismic Certification Limits: Sds = 2.00 z/h = 1.00 Ip = 1.50				
Model Number	Manufacturer	Model Description	Approx. Weight	Installed Compartment	Test Report	UUT Number
50VCP-W350 1200A	Eaton / Cutler Hammer	1200A VCP-W	350	Base mounted	T58426-1	3a & 4a
50VCP-W350 1200-3000A	Eaton / Cutler Hammer	1200-3000A VCP-W	350-525	Base mounted	Interpolated	n/a
75VCP-W500 1200-3000A	Eaton / Cutler Hammer	1200-3000A VCP-W	375-525	Base mounted	Interpolated	n/a
150VCP-W500 1200-3000A	Eaton / Cutler Hammer	1200-3000A VCP-W	350-525	Base mounted	Interpolated	n/a
150VCP-W750 1200-3000A	Eaton / Cutler Hammer	1200-3000A VCP-W	350-525	Base mounted	Interpolated	n/a
150VCP-W1000 1200-3000A	Eaton / Cutler Hammer	1200-3000A VCP-W	460-550	Base mounted	Interpolated	n/a
150VCP-W1500 1200-3000A	Eaton / Cutler Hammer	1200-3000A VCP-W	525-550	Base mounted	Interpolated	n/a
150VCP-W1000 3000A	Eaton / Cutler Hammer	3000A VCP-W	550	Base mounted	T58426-1	3a & 4a



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

**SPECIAL SEISMIC CERTIFICATION  
 CERTIFIED SUBCOMPONENTS  
 TABLE 2C**

**Manufacturer:** See Below Listed

**Product Line:** Russelectric Low Voltage Switchgear Systems - Internal Electrical & Control Components

**Certified Component Summary:**

**Building Code:** CBC 2013      **Seismic Certification Limits:** Sds = 2.50      z/h = 1.00      Ip = 1.50

Description	Manufacturer	Model	Model Number	Weight (lbs)	T59065 Test Report UUT No.	UUT Number
<b>Current Transformers</b>						
C.T., 600V 2000:5	ITI	Model 120	120-202	12	UUT2	2b
C.T., 600 Volts 200:5 to 4000:5	ITI	Model 120	120-201 to 120-402	12	Interpolated	n/a
C.T., 600 Volts 200:5 to 4000:5	ITI	Model 130	130-201 to 130-402	18	Interpolated	n/a
C.T., 600V 4000:5	ITI	Model 140	140-402	22	UUT1	1b
C.T., 600 Volts 50:5 to 6000:5	ITI	Model 140	140-500 to 140-602	22	Extrapolated	n/a
<b>Switchboard Meters</b>						
Frequency Meter	Crompton	070	07941LA	2	UUT1 & 2	1b, 2b
A.C. Ammeter	Crompton	070	07905FA	2	UUT1 & 2	1b, 2b
A.C. Voltmeter	Crompton	070	07905GA	2	UUT1 & 2	1b, 2b
A.C. Voltmeter Expanded Scale	Crompton	070	07905YA	2	Interpolated	n/a
Synchroscope	Crompton	077	077-146A	2	UUT1 & 2	2b
<b>Display Lights &amp; Flat Panel Displays</b>						
LCD PC 17"	Wonderware	TFT	C-TPC1770H	37	UUT1	1b
Display Lights	IDEC	SLC40	SLC40N	5	UUT1 & 2	1b, 2b
<b>Programmable Logic Controllers (PLC) and Controller Components</b>						
PLC CPU	GE Fanuc	90-30	IC693CPU	5	UUT1 & 2	1b, 2b
Power Logic PLC	Square D	EGX	EGX100SD	1	UUT1 & 2	1b, 2b
<b>Transformers &amp; Power Supplies</b>						
Transformer 1000VA	Square D	Type K	K1000D1	21	UUT1	1b
Transformer 300VA	Square D	Type K	K300D1	8	UUT2	2b
Power Supply	VICOR	VI	VI-LW3-CV	1	UUT1 & 2	1b, 2b
<b>Mini Circuit Breakers &amp; Control Switches</b>						
Mini Circuit Breakers	ABB	UL 489	S200U	1	UUT1 & 2	1b, 2b
Circuit Breaker Control Switch	Electroswitch	24	2440D	2	UUT1 & 2	1b, 2b
Ethernet Switch	N-TRON	Type TX	108TX	3	UUT1	1b
<b>Protective Relays &amp; Other Protection System</b>						
Generator Protection System	GE Multilin	489	SR 489	17	UUT2	2b
Reverse Power Relay	ABB	Type 32R	Type 32R	4	UUT2	2b
<b>Others Internal Components</b>						
Watt Transducer	Crompton	256	256-TWMU	3	UUT1 & 2	1b, 2b
Load Sharing Module	Woodward	9907	9907-175	3.5	UUT1	1b
Pushbutton	Cutler Hammer	10250T	10250T	< 1 ea.	UUT1 & 2	1b, 2b
Potential Transformer	ITI	Model 460	460-480	8	UUT1 & 2	1b, 2b





**Manufacturer:** See Below Listed

**Product Line:** Russelectric Medium Voltage Switchgear Systems - Internal Electrical & Control Components

**Certified Component Summary:**

**Building Code:** CBC 2013      **Seismic Certification Limits:** Sds = 2.00      z/h = 1.00      Ip = 1.50

Description	Manufacturer	Model	Model Number	Weight (lbs)	T58426 Test Report UUT No.	UUT Number
<b>Potential Transformers</b>						
P.T., 2400-4800 Volt / 60kV	GE	JVM-2C/3C	763X121031	50	UUT3 & 4	3b, 4b
P.T., 2400-4800 Volt / 60kV	GE	JVM-2C/3C	763X121001-763X121042	50	Interpolated	n/a
P.T., 4800-7200 Volt / 75kV	GE	JVM-4C	764X120001-764X120024	110	Interpolated	n/a
P.T., 7200-14400 Volt / 110kV	GE	JVM-5C	765X121030-765X121061	110	Interpolated	n/a
P.T., 7200-14400 Volt / 110kV	GE	JVM-5C	765X121050	110	UUT3 & 4	3b, 4b
<b>Switchboard Meters</b>						
Frequency Meter	Crompton	070	07941LA	2	Note 1	1b, 2b
A.C. Ammeter	Crompton	070	07905FA	2	Note 1	1b, 2b
A.C. Voltmeter	Crompton	070	07905GA	2	UUT3 & 4	3b, 4b
A.C. Voltmeter Expanded Scale	Crompton	070	07905YA	2	Note 1	n/a
Synchroscope	Crompton	077	077-146A	2	Note 1	1b, 2b
<b>Display Lights &amp; Flat Panel Displays</b>						
LCD PC 17"	Wonderware	TFT	C-TPC1770H	37	Note 1	1b
Display Lights	IDEC	SLC40	SLC40N	5	UUT2 & 4	3a, 4a
<b>Programmable Logic Controllers (PLC) and Controller Components</b>						
PLC CPU	GE Fanuc	90-30	IC693CPU	<1	UUT2 & 4	3a, 4a
Power Logic PLC	Square D	EGX	EGX100SD	<1	UUT2 & 4	3a, 4a
<b>Transformers &amp; Power Supplies</b>						
Power Supply	VICOR	VI	VI-LW3-CV	< 1	Note 1	1b, 2b
Auxiliary Current Transformer	ITI	Model 20X	20XSUM	8	UUT3 & 4	3b, 4b
<b>Mini Circuit Breakers &amp; Control Switches</b>						
Mini Circuit Breakers	ABB	UL 489	S200U	< 1 ea.	UUT2, 3 & 4	3a, 3b, 4a, 4b
Circuit Breaker Control Switch	Electroswitch	24	2440D	2	UUT2 & 4	3a, 4a
Synchronizing Switch	Electroswitch	24	24203B			
<b>Protective Relays &amp; Other Protection System</b>						
Relay	GE Multilin	750	750P5G5S6H1A	10	UUT2 & 4	3a, 4a
Relay	Basler	BE1	BE1-47N	8	UUT2 & 4	3a, 4a
<b>Others Internal Components</b>						
Power Module	SOLA	SDU	SDU10	1.7	UUT2 & 4	3a, 4a
Pushbutton	Cutler Hammer	10250T	10250T	< 1 ea.	UUT2 & 4	3a, 4a
Current Transformer	ITI	Model 780	780-122	50	UUT3 & 4	3b, 4a
Current Transformer	GE	Model JKM	JKM-5C	25	UUT3 & 4	3b, 4a
Power Meter	Square D	800	PM820	5	UUT3 & 4	3b, 4a
Protective Relay	Schweitzer	700	SEL-700G	10	UUT2 & 4	3a, 4a

Note:

- The sub-component is certified with Sds = 2.50 in Low Voltage System. See Table 2C.



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

UUT-1

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

**Manufacturer:** Russelectric, Inc.  
**Product Line:** Low Voltage Switchgear Systems with Eaton Circuit Breakers  
**Model:** 2 cubicles switchgear system comprised of  
 a (1) 3200A & (1) 800A Circuit Breakers Distribution Cubicle and a 5000A Circuit Breaker Generator Cubicle.  
**Test Laboratory:** Wyle Laboratories **Report No.:** T59065 **UUT No. in Report :** UUT-1

**Product Construction Summary:**  
 Rigid floor mounted, light gage metal painted enclosure, NEMA Type 1

**Component Summary:**

Description	Manufacturer	Model	Model Number	Weight (lb)
<b>Distribution Cubicle (UUT-1a)</b>				
800A L.V. Circuit Breakers	Eaton	Magnum DS	MDS-C08	200
3200A L.V. Circuit Breakers	Eaton	Magnum DS	MDS-C32	260
<b>Generator Cubicle (UUT-1b)</b>				
5000A L.V. Circuit Breakers	Eaton	Magnum DS	MDS-C50	450
A..C. Ammeter	Crompton	070	07905FA	2
A..C. Voltmeter	Crompton	070	07905GA	2
Frequency Meter	Crompton	070	07941LA	2
Display Lights	IDEC	SLC40	SLC40N	5
Flat Panel Display	Wonderware	TFT LCD 17"	C-TPC1770H	37
PLC CPU	GE Fanuc	90-30	IC693CPU	5
Power Logic PLC	Square D	EGX	EGX100SD	1
Transformer, 1000VA	Square D	Type K	K1000D1	21
Power Supply	VICOR	VI	VI-LW3-CV	1
Mini Circuit Breaker	ABB	UL489	S200U	1
Circuit Breaker Control Switches	Electroswitch	24	2440D	2
Ethernet Switch	N-Tron	TX	108TX	3
Push button	Cutler Hammer	10250T	10250T	< 1
Watt Transducer	Crompton	256-TWMU	256-TWMU	3
Load Sharing Module	Woodward	9907	9907-175	3.5
Potential Transformer	ITI	460	460-480	8
Current Transformer	ITI	140	140-402	22



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

UUT-1

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

**Manufacturer:** Russelectric, Inc.  
**Product Line:** Low Voltage Switchgear Systems with Eaton Circuit Breakers  
**Model:** 2 cubicles switchgear system comprised of  
 a (1) 3200A & (1) 800A Circuit Breakers Distribution Cubicle and a 5000A Circuit Breaker Generator Cubicle.  
**Test Laboratory:** Wyle Laboratories **Report No.:** T59065 **UUT No. in Report :** UUT-1

**Product Construction Summary:**  
 Rigid floor mounted, light gage metal painted enclosure, NEMA Type 1

Cubicle Type	Weight (lbs)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
		Width	Depth	Height	Front-Back	Side-Side	Vertical
Distribution	1900	24	78	98			
Generator	3200	44	78	98			
Overall Unit	5100	68	78	98	11.50	8.0	31.5

**SEISMIC TEST PARAMETERS**

Building Code	Sbs	z/h	Ip	Afix-H	Arig-H	Aflx-V	Arig-V
CBC 2013	2.50	1.00	1.50	4.00	3.00	1.68	0.68

**Unit Details:** Unit was rigid floor mounted with (6) - 1/2" diameter Carbon Steel Hex Head Bolts per each cubicle for a total of (12) bolts.



**UUT 1**  
**98018-P-S7**

UUT maintained structural integrity and functionality as confirmed in post test inspection and operation checks.



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

UUT-2

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

**Manufacturer:** Russelectric, Inc.  
**Product Line:** Low Voltage Switchgear Systems with Eaton Circuit Breakers  
**Model:** 2 cubicles switchgear system comprised of  
 a Distribution Cubicle with (1) 3200A & (1) 800A Circuit Breakers and a Generator Cubicle with 800A Circuit Breaker.  
**Test Laboratory:** Wyle Laboratories **Report No.:** T59065 **UUT No. in Report :** UUT-2

**Product Construction Summary:**  
 Rigid floor mounted, light gage metal painted enclosure, NEMA Type 1

**Component Summary:**

Description	Manufacturer	Model	Model Number	Weight (lb)
<b>Distribution Cubicle (UUT-2a)</b>				
800A L.V. Circuit Breakers	Eaton	Magnum DS	MDS-C08	200
3200A L.V. Circuit Breakers	Eaton	Magnum DS	MDS-C32	260
<b>Generator Cubicle (UUT-2b)</b>				
800A L.V. Circuit Breakers	Eaton	Magnum DS	MDS-C08	200
A..C. Ammeter	Crompton	070	07905FA	2
A..C. Voltmeter	Crompton	070	07905GA	2
Frequency Meter	Crompton	070	07941LA	2
Display Lights	IDEC	SLC40	SLC40N	5
Synchroscope	Crompton	077	077-146A	2
PLC CPU	GE Fanuc	90-30	IC693CPU	5
Power Logic PLC	Square D	EGX	EGX100SD	1
Transformer, 300VA	Square D	Type K	K300D1	8
Power Supply	VICOR	VI	VI-LW3-CV	1
Mini Circuit Breaker	ABB	UL489	S200U	1
Circuit Breaker Control Switches	Electroswitch	24	2440D	2
Generator Protection System	GE Multilin	489.00	SR 489	17
Push button	Cutler Hammer	10250T	10250T	<1
Watt Transducer	Crompton	256-TWMU	256-TWMU	3
Reverse Power Relay	ABB	32R	32R	4
Potential Transformer	ITI	460	460-480	8
Current Transformer	ITI	120	120-202	12



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

UUT-2

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

<b>Manufacturer:</b>	Russelectric, Inc.
<b>Product Line:</b>	Low Voltage Switchgear Systems with Eaton Circuit Breakers
<b>Model:</b>	2 cubicles switchgear system comprised of a Distribution Cubicle with (1) 3200A & (1) 800A Circuit Breakers and a Generator Cubicle with 800A Circuit Breaker.
<b>Test Laboratory:</b>	Wyle Laboratories <b>Report No.:</b> T59065 <b>UUT No. in Report :</b> UUT-2

**Product Construction Summary:**  
 Rigid floor mounted, light gage metal painted enclosure, NEMA Type 1

Cubicle Type	Weight (lbs)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
		Width	Depth	Height	Front-Back	Side-Side	Vertical
Distribution	2600	36	78	98			
Generator	1650	26	78	98			
Overall Unit	4250	62	78	98	9.80	8.8	32.2

**SEISMIC TEST PARAMETERS**

Building Code	Sbs	z/h	Ip	Afix-H	Arig-H	Afix-V	Arig-V
CBC 2013	2.50	1.00	1.50	4.00	3.00	1.68	0.68

**Unit Details:** Unit was rigid floor mounted with (6) - 1/2" diameter Carbon Steel Hex Head Bolts per each cubicle for a total of (12) bolts.



**UUT 2**  
**98018-P-S6**

UUT maintained structural integrity and functionality as confirmed in post test inspection and operation checks.



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

UUT-3

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

<b>Manufacturer:</b>	Russelectric, Inc.		
<b>Product Line:</b>	Medium Voltage Switchgear Systems with Eaton Circuit Breakers		
<b>Model:</b>	2 cubicles switchgear system comprised of a Circuit Breaker Cubicle with (1) 3000A & (1) 1200A circuit breakers and a Potential Transformer Cubicle with (3) potential transformers.		
<b>Test Laboratory:</b>	Wyle Laboratories	<b>Report No.:</b> T58426	<b>UUT No. in Report :</b> UUT-2&3

**Product Construction Summary:**  
Rigid floor mounted, light gage metal painted enclosure, NEMA Type 1

**Component Summary:**

Description	Manufacturer	Model	Model Number	Weight (lb)
<b>Circuit Breaker Cubicle (UUT-3a)</b>				
1200A L.V. Circuit Breakers	Eaton	50VCP	50VCP-W350	350
3000A L.V. Circuit Breakers	Eaton	150VCP	150VCP-W1000	550
Display Lights	IDEC	SLC40	SLC40N	5
PLC	GE Fanuc	90-30	IC693CHS	2
Power Logic PLC	Square D	EGX	EGX100SD	1
Mini Circuit Breaker	ABB	UL489	S200U	1
Circuit Breaker Control Switches	Electroswitch	24	2440D	2
Relay	GE Multilin	750	750P5G5S6H1A	10
Relay	Basler	BEI	BEI-47N	8
Power module	SOLA	SDU	SDU-10	2
Push button	Cutler Hammer	10250T	10250T	< 1
Current Transformer	ITI	180	180-122	50
Protective Relay	Schweitzer	700	SEL-700G	10
<b>Potential Transformer Cubicle (UUT-3b)</b>				
Potential Transformer	GE	JVM-3C	763X121031	50
Potential Transformer	GE	JVM-3C	763X121031	50
Potential Transformer	GE	JVM-5C	763X121050	110
A..C. Voltmeter	Crompton	070	07905GA	2
Auxiliary Current Transformer	ITI	20X	20XSUM	8
Mini Circuit Breaker	ABB	UL489	S200U	1
Current Transformer	GE	JKM	JKM-5C	25
Power Meter	Square D	800	PM820	5



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

UUT-3

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

<b>Manufacturer:</b>	Russelectric, Inc.
<b>Product Line:</b>	Medium Voltage Switchgear Systems with Eaton Circuit Breakers
<b>Model:</b>	2 cubicles switchgear system comprised of a Circuit Breaker Cubicle with (1) 3000A & (1) 1200A circuit breakers and a Potential Transformer Cubicle with (3) potential transformers.
<b>Test Laboratory:</b>	Wyle Laboratories
<b>Report No.:</b>	T58426
<b>UUT No. in Report :</b>	UUT-2&3

**Product Construction Summary:**  
 Rigid floor mounted, light gage metal painted enclosure, NEMA Type 1

Cubicle Type	Weight (lbs)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
		Width	Depth	Height	Front-Back	Side-Side	Vertical
Distribution	3000	36	96	102			
Generator	3000	36	96	102			
Overall Unit	6000	72	96	102	9.90	5.8	14.0

**SEISMIC TEST PARAMETERS**

Building Code	Sds	z/h	Ip	Aflx-H	Arig-H	Aflx-V	Arig-V
CBC 2013	2.00	1.00	1.50	3.20	2.40	1.34	0.54

**Unit Details:** Unit was rigid floor mounted with (6) - 5/8" diameter Carbon Steel Hex Head Bolts per each cubicle for a total of (12) bolts.



UUT maintained structural integrity and functionality as confirmed in post test inspection and operation checks.



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

UUT-4

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

<b>Manufacturer:</b>	Russelectric, Inc.		
<b>Product Line:</b>	Medium Voltage Switchgear Systems with Eaton Circuit Breakers		
<b>Model:</b>	2 cubicles switchgear system comprised of a Circuit Breaker Cubicle with (1) 3000A & (1) 1200A circuit breakers and a Potential Transformer Cubicle with (3) potential transformers.		
<b>Test Laboratory:</b>	Wyle Laboratories	<b>Report No.:</b> T58426	<b>UUT No. in Report :</b> UUT-4

**Product Construction Summary:**  
 Rigid floor mounted, light gage metal painted enclosure, NEMA Type 3R

**Component Summary:**

Description	Manufacturer	Model	Model Number	Weight (lb)
<b>Circuit Breaker Cubicle (UUT-4a)</b>				
1200A L.V. Circuit Breakers	Eaton	50VCP	50VCP-W350	350
3000A L.V. Circuit Breakers	Eaton	150VCP	150VCP-W1000	550
Display Lights	IDEC	SLC40	SLC40N	5
PLC	GE Fanuc	90-30	IC693CHS	2
Power Logic PLC	Square D	EGX	EGX100SD	1
Mini Circuit Breaker	ABB	UL489	S200U	1
Circuit Breaker Control Switches	Electroswitch	24	2440D	2
Relay	GE Multilin	750	750P5G5S6H1A	10
Relay	Basler	BEI	BEI-47N	8
Power module	SOLA	SDU	SDU-10	2
Push button	Cutler Hammer	10250T	10250T	< 1
Current Transformer	ITI	180	180-122	50
Protective Relay	Schweitzer	700	SEL-700G	10
<b>Potential Transformer Cubicle (UUT-4b)</b>				
Potential Transformer	GE	JVM-3C	763X121031	50
Potential Transformer	GE	JVM-3C	763X121031	50
Potential Transformer	GE	JVM-5C	763X121050	110
A..C. Voltmeter	Crompton	070	07905GA	2
Auxiliary Current Transformer	ITI	20X	20XSUM	8
Mini Circuit Breaker	ABB	UL489	S200U	1
Current Transformer	GE	JKM	JKM-5C	25
Power Meter	Square D	800	PM820	5





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

UUT-4

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

<b>Manufacturer:</b>	Russelectric, Inc.
<b>Product Line:</b>	Medium Voltage Switchgear Systems with Eaton Circuit Breakers
<b>Model:</b>	2 cubicles switchgear system comprised of a Circuit Breaker Cubicle with (1) 3000A & (1) 1200A circuit breakers and a Potential Transformer Cubicle with (3) potential transformers.
<b>Test Laboratory:</b>	Wyle Laboratories <b>Report No.:</b> T58426 <b>UUT No. in Report :</b> UUT-4

**Product Construction Summary:**  
 Rigid floor mounted, light gage metal painted enclosure, NEMA Type 3R

Cubicle Type	Weight (lbs)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
		Width	Depth	Height	Front-Back	Side-Side	Vertical
Distribution	3000	36	96	102			
Generator	3000	36	96	102			
Overall Unit	9745	80	104	138	17.0	5.1	17.5

**SEISMIC TEST PARAMETERS**

Building Code	Sds	z/h	Ip	Aflx-H	Arig-H	Aflx-V	Arig-V
CBC 2013	1.50	1.00	1.50	2.40	1.80	1.01	0.41

**Unit Details:** Unit was rigid floor mounted with (16) - 1/2" diameter Carbon Steel Hex Head Bolts.



UUT maintained structural integrity and functionality as confirmed in post test inspection and operation checks.