



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

**APPLICATION FOR OSHPD SPECIAL SEISMIC  
CERTIFICATION PREAPPROVAL (OSP)**

OFFICE USE ONLY

**APPLICATION #: OSP-0446**

**OSHPD Special Seismic Certification Preapproval (OSP)**

Type:  New  Renewal

**Manufacturer Information**

Manufacturer: Cummins Power Generation

Manufacturer's Technical Representative: B.S. Raghukumar

Mailing Address: 1400 73rd Ave NE, Fridley, MN 55432

Telephone: (763) 574-3302

Email: b.s.raghukumar@cummins.com

**Product Information**

Product Name: Switchgear/Switchboards

Product Type: Switchgear - Medium Voltage

Product Model Number: DMC 2000, DMC 6000, DMC 8000

General Description: Enclosed programmable logic controller for monitoring and controlling generator set paralleling

Mounting Description: Rigid, Rigid Base 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: The VMC Group

Contact Person: John Giuliano

Mailing Address: 113 Main Street, Bloomingdale, NJ 07403

Telephone: (973) 838-1780

Email: john.giuliano@thvmcgroup.com

Title: President





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

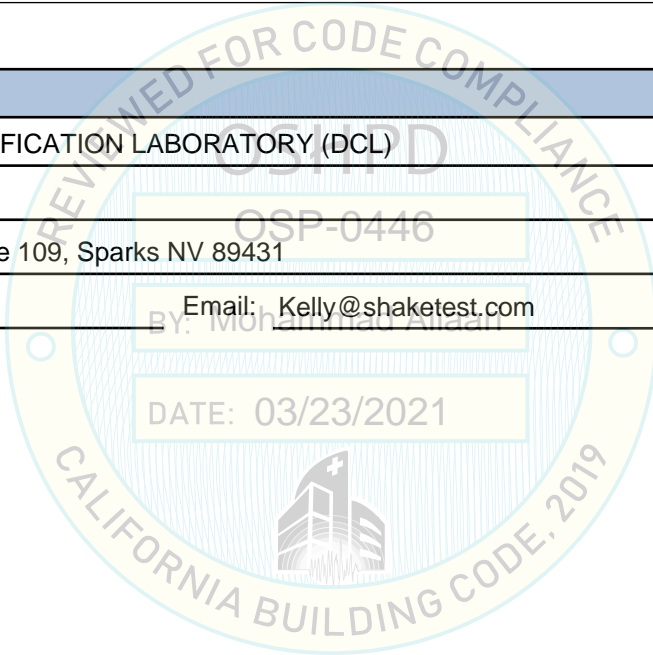
Company Name: THE VMC GROUP  
Name: Kenneth Tarlow California License Number: S2851  
Mailing Address: 980 9th Street, 16th Floor, Sacramento, CA 95814  
Telephone: (832) 627-2214 Email: ken.tarlow@thevmcgroup.com

**Certification Method**

GR-63-Core     ICC-ES AC156     IEEE 344     IEEE 693     NEBS 3  
 Other (Please Specify): \_\_\_\_\_

**Testing Laboratory**

Company Name: DYNAMIC CERTIFICATION LABORATORY (DCL)  
Contact Person: Kelly Laplace  
Mailing Address: 1315 Greg St., Ste 109, Sparks NV 89431  
Telephone: (775) 358-5085 Email: Kelly@shaketest.com





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**Seismic Parameters**

Design Basis of Equipment or Components ( $F_p/W_p$ ) = 1.44

SDS (Design spectral response acceleration at short period, g) = 2.00 (z/h=1), 2.50 (z/h=0)

$a_p$  (Amplification factor) = 1.0 rigid mounted

$R_p$  (Response modification factor) = 2.5 rigid mounted

$\Omega_0$  (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

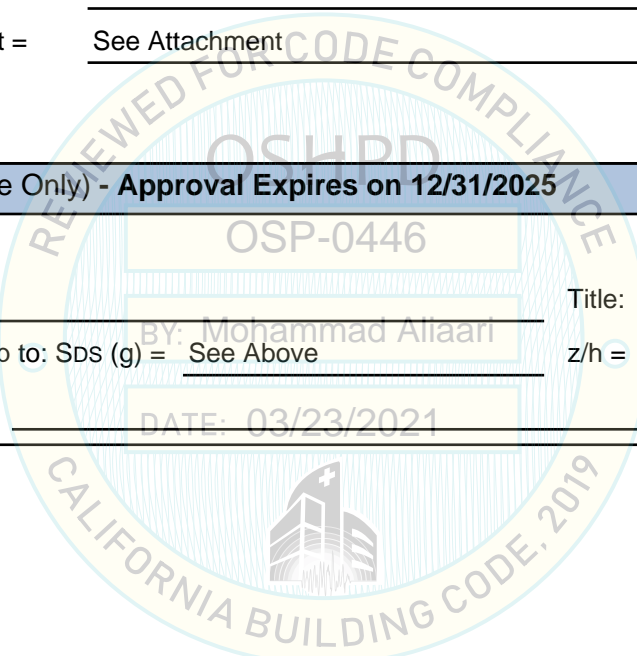
**OSHPD Approval (For Office Use Only) - Approval Expires on 12/31/2025**

Date: 3/23/2021

Name: Mohammad Aliaari Title: Senior Structural Engineer

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

Condition of Approval (if applicable): DATE: 03/23/2021

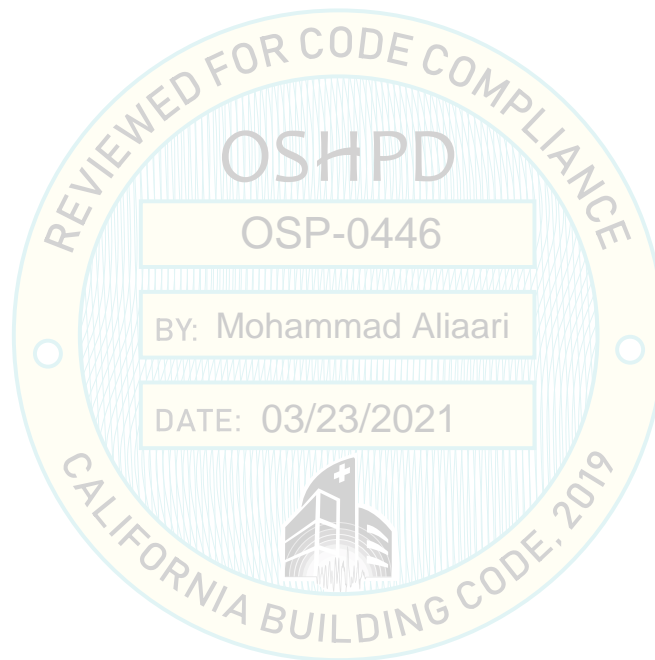


**Table 1 - Certified Product Table**

Model	Manufacturer	Dimensions [ in ]			Max. Weight [ lb ]	UUT
		Height	Depth	Width		
DMC 2000	Cummins	90	31	31	563	Extrapolated
DMC 6000		90	31	31	710	UUT-1
DMC 8000		90	31	32	710	UUT-2

Rigid floor mounted

Enclosures: Carbon Steel Base Frame,  
 Carbon Steel Enclosure Frame: 12GA Steel, External Top/side covers: 16GA Steel,  
 External Door/Rear covers: 14GA Steel, Interior panels: 12 GA Galvanized Steel



**Table 2 - Human Machine Interface**

Model	Description	Specifications	MFR	CPG P/N	Weight [ lb ]	UUT
DMC2000	Screen, Touch	Screen - 7", 24VDC, 1 Serial, 2 USB	Advantech	A058X442	1.32	Extrapolated
DMC6000	Screen, Touch	Screen - 19", 24VDC, 1 VGA, 1 Serial, 2 USB	Advantech	A049K341	9.7	UUT-1
DMC8000	Screen, Touch	Screen - 19", 24VDC, 1 VGA, 1 Serial, 2 USB	Advantech	A049K341	22	UUT-2

**Table 3 - Controller**

Model	Description	Specifications	MFR	CPG P/N	Weight [ lb ]	UUT
DMC2000	MCM3320	Full Featured Control	Cummins	0327-1520-01	4.5	Extrapolated
DMC6000	MCM3320	Full Featured Control	Cummins	0327-1520-01	4.5	UUT-1
DMC8000	MCM3320	Full Featured Control	Cummins	0327-1520-01	4.5	UUT-2

**Table 4 - Power Supply**

Model	Description	Specifications	MFR	CPG P/N	Weight [ lb ]	UUT
DMC2000	Batteries	Battery, UPS-BAT/7.2Ah	Phoenix Contact	A043K841	15	Extrapolated
	UPS	Uninterruptible Power Supply, QUINT-UPS		A043H869	1.1	
	Power Supply	Power Supply, QUINT-PS		A028Z053	2.4	
DMC6000	Batteries	Battery, UPS-BAT/7.2Ah	Phoenix Contact	A043K841	15	UUT-1
	UPS	Uninterruptible Power Supply, QUINT-UPS		A043H869	1.1	
	Power Supply	Power Supply, QUINT-PS		A028Z053	2.4	
DMC8000	Batteries	Battery, UPS-BAT/7.2Ah	Phoenix Contact	A043K841	15	UUT-2
	UPS	Uninterruptible Power Supply, QUINT-UPS		A043H869	1.1	
	Power Supply	Power Supply, QUINT-PS		A028Z053	2.4	

**Table 5 - Relay & Contractor**

Model	Description	Specifications	MFR	CPG P/N	Weight [ lb ]	UUT
DMC2000	Contact Style Relay	4 NO, 1 NC (3.03"H x 1.77"W x 3.76"D)	Telemecanique	0307-2900-05	0.91	UUT-1
	Terminal Style Control Relay	1 FORM C	Phoenix Contact	A029A411	0.16	Extrapolated
DMC6000	Contact Style Relay	4 N/O, 0 N/C	Allen Bradley	A041E508	0.91	UUT-1
	Terminal Style Control Relay	1 FORM C	Phoenix Contact	A029A411	0.16	
DMC8000	Contact Style Relay	4 N/O, 0 N/C	Allen Bradley	A041E508	0.91	UUT-2
	Terminal Style Control Relay	1 FORM C	Phoenix Contact	A029A411	0.16	

Telemecanique Contact Style Relay was added to UUT-1

**Table 6 - Circuit Breaker**

Model	Description	Specifications	MFR	CPG P/N	Weight [ lb ]	UUT
DMC2000	Breaker, Miniature	2P C 20A, 240VAC, 125VDC	Schneider Electric	A034H154	0.3	Extrapolated
		1P C 10A, 240VAC, 125VDC		A034H170	0.3	
DMC6000	Breaker, Miniature	2P C 20A, 240VAC, 125VDC	Schneider Electric	A034H154	0.3	UUT-1
		1P C 10A, 240VAC, 125VDC		A034H170	0.3	
DMC8000	Breaker, Miniature	2P C 20A, 240VAC, 125VDC	Schneider Electric	A034H154	0.3	UUT-2
		1P C 10A, 240VAC, 125VDC		A034H170	0.3	

**Table 7 - Enclosure**

Model	Description	Specifications	MFR	CPG P/N	Weight [ lb ]	UUT
DMC2000	Enclosure	Single Frame	Hoffman	A049V849	348	Extrapolated
DMC6000	Enclosure	Single Frame	Hoffman	A063Z937	363	UUT-1
DMC8000	Enclosure	Single Frame	Hoffman	A048S311	363	UUT-2

**Table 8 - Other Parts**

Model	Description	Specifications	MFR	CPG P/N	Weight [ lb ]	UUT
DMC2000	Switch, Automatic Manual	2 POS Maint, 10 C Form Conacts (2.13"H x 2.13"W x 4.63"D)	Electroswitch	A034L730	0.5	UUT-1
	Dual Rectifier	1200V	IXYS	A047C626	0.1	Extrapolated
DMC6000	Dual Rectifier	1200V	IXYS	A047C626	0.1	UUT-1
DMC8000	Dual Rectifier	1200V	IXYS	A047C626	0.1	UUT-2

Electroswitch Automatic Manual Switch was added to UUT-1



## UNIT UNDER TEST (UUT) Summary Sheet

UUT-1

13677-2001

Model Line	Model Number	Manufacturer
Digital Master Controller	DMC 6000	Cummins

### Product Construction Summary

Carbon Steel Base Frame, Carbon Steel Enclosure Frame: 12GA Steel, External Top/side covers: 16GA Steel, External Door/Rear covers: 14GA Steel, Interior panels: 12 GA Galvanized Steel

### Options / Subcomponent Summary

Advantech Touchscreen, Cummins Controller, Phoenix Contact Power Supply, Allen Bradley Contactor Style Relay, Phoenix Contact Terminal Style Control Relay, Schneider Electric Circuit Breaker, Hofman Enclosure, IXYS Dual Rectifier, Telemecanique Relay, Electros witch Switch

### UUT Properties

Weight [ lbs ]	Dimensions [ in ]			Lowest Nat. Freq. [ Hz ]		
	Length	Width	Height	F-B	S-S	V
710	31	31	90	7	5.5	32.5

### UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S <sub>DS</sub>	z/h	I <sub>p</sub>	A <sub>FLX-H</sub>	A <sub>RIG-H</sub>	A <sub>FLX-V</sub>	A <sub>RIG-V</sub>
CBC 2019	ICC-ES AC156	2	1.00	1.5	3.2	2.4	1.34	0.54

### Test Mounting Details

UUT rigidly attached to shake table using (4) Grade 5, 3/4" Dia. bolts, round washers, triangular plate washers (supplied by manufacturer)



All units were filled with contents and maintained structural integrity and functionality after AC-156 test.





# UNIT UNDER TEST (UUT) Summary Sheet

UUT-1

13677-2001

Model Line	Model Number	Manufacturer
Digital Master Controller	DMC 6000	Cummins

### Product Construction Summary

Carbon Steel Base Frame, Carbon Steel Enclosure Frame: 12GA Steel, External Top/side covers: 16GA Steel, External Door/Rear covers: 14GA Steel, Interior panels: 12 GA Galvanized Steel

### Design Changes On Unit

Top and Bottom two side panel mounting bolts - M5-0.8 x 12 mm Class 8.8 Bolts and M5-0.8 nuts.  
Two side panel mounting bolts that support center of side panels - M5-0.8 x 12 mm Class 8.8 Bolts, round washers, M5-0.8 nuts and collar.  
Refer to pictures shown below.

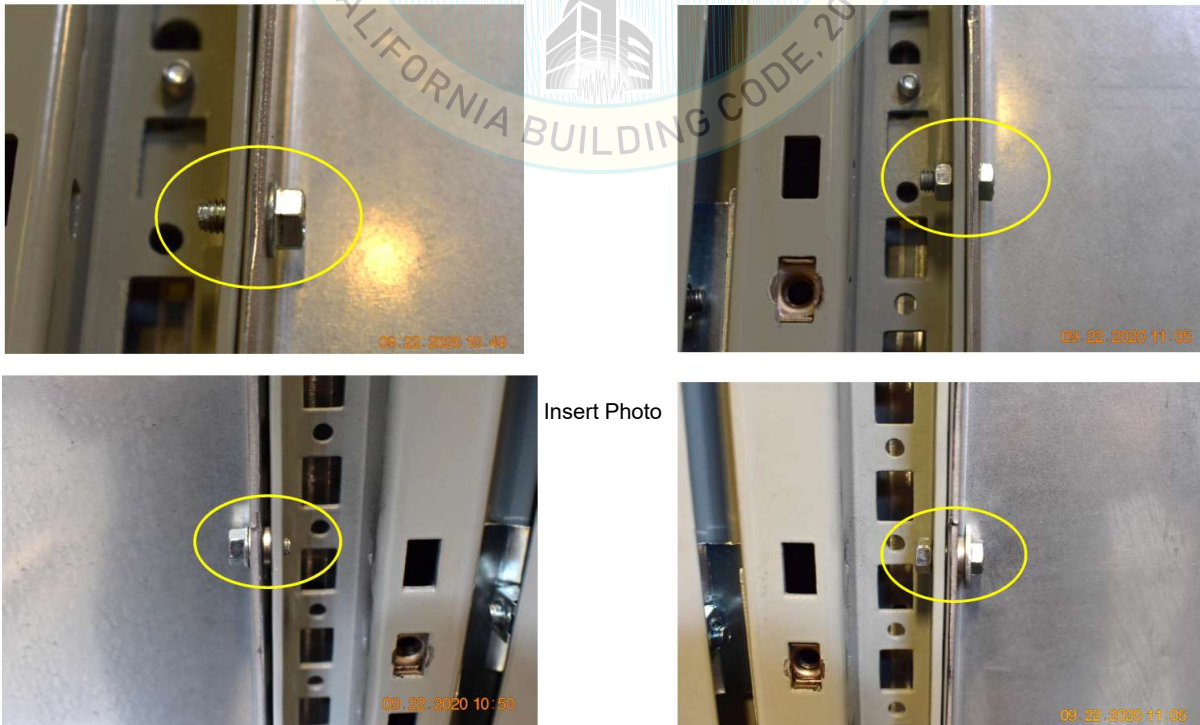
### UUT Properties

Weight [ lbs ]	Dimensions [ in ]			Lowest Nat. Freq. [ Hz ]		
	Length	Width	Height	F-B	S-S	V
710	31	31	90	7	5.5	32.5

### UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S <sub>DS</sub>	z/h	I <sub>p</sub>	A <sub>FLX-H</sub>	A <sub>RIG-H</sub>	A <sub>FLX-V</sub>	A <sub>RIG-V</sub>
CBC 2019	ICC-ES AC156	2	1.00	1.5	3.2	2.4	1.34	0.54

### Design Changes On Unit



Insert Photo

All units were filled with contents and maintained structural integrity and functionality after AC-156 test.





## UNIT UNDER TEST (UUT) Summary Sheet

UUT-2

99414-1501

Model Line	Model Number	Manufacturer
Digital Master Controller	DMC 8000	Cummins

### Product Construction Summary

Carbon Steel Base Frame, Carbon Steel Enclosure, Frame: 12GA Steel, External Top/side covers: 16GA Steel, External Door/Rear covers: 14GA Steel, Interior panels: 12 GA Galvanized Steel

### Options / Subcomponent Summary

Advantech Touchscreen, Cummins Controller, Phoenix Contact Power Supply, Allen Bradley Contactor Style Relay, Phoenix Contact Terminal Style Control Relay, Schneider Electric Circuit Breaker, Hofman Enclosure, IXYS Dual Rectifier

### UUT Properties

Weight [ lbs ]	Dimensions [ in ]			Lowest Nat. Freq. [ Hz ]		
	Length	Width	Height	F-B	S-S	V
710	31	32	90	7	6.3	16.3

### UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S <sub>DS</sub>	z/h	I <sub>P</sub>	A <sub>FLX-H</sub>	A <sub>RIG-H</sub>	A <sub>FLX-V</sub>	A <sub>RIG-V</sub>
CBC 2019	ICC-ES AC156	2	1.00	1.5	3.2	2.4	1.34	0.54

### Test Mounting Details

UUT rigidly attached to shake table using (4) Grade 5, 5/8" Dia. bolts. round washers, triangular plate washers (supplied by manufacturer)



All units were filled with contents and maintained structural integrity and functionality after AC-156 test.