



DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION
FACILITIES DEVELOPMENT DIVISION

APPLICATION FOR HCAI SPECIAL SEISMIC
CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY

APPLICATION #: OSP-0450

HCAI Special Seismic Certification Preapproval (OSP)

Type: [] New [X] Renewal

Manufacturer Information

Manufacturer: Rolls Royce Solutions America Inc.

Manufacturer's Technical Representative: Ben Stratton

Mailing Address: 100 Power Drive Mankato, MN 56001

Telephone: (507) 625-7973

Email: ben.stratton@ps.rolls-royce.com

Product Information

Product Name: Emergency and Standby Power Systems

Product Type: Generators

Product Model Number: OM-Series Diesel Generator Sets

General Description: Diesel Powered Electrical Generators; 80kW to 200kW

Mounting Description: Rigid Base Mounted Enclosure/Genset/Tank or Externally Isolated Enclosure/Genset, on or off Tank.

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

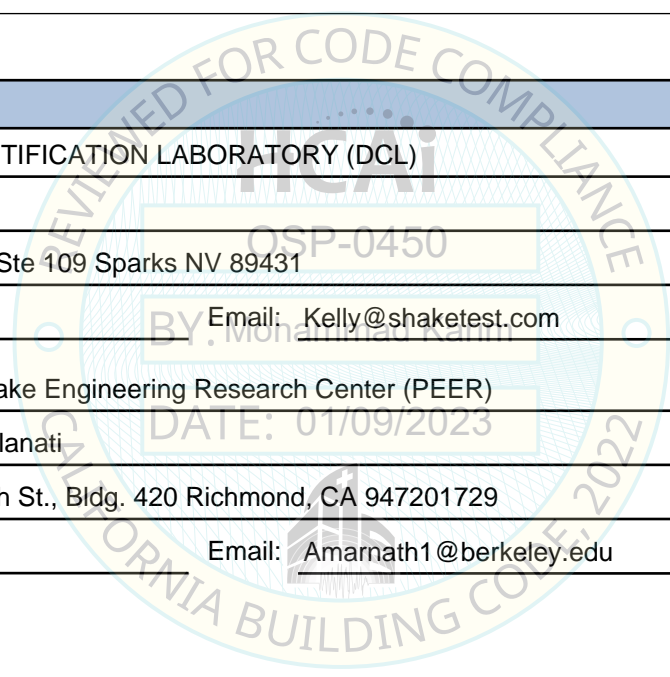
Certification Method

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

Company Name: Pacific Earthquake Engineering Research Center (PEER)
Contact Person: Amarnath Kasalanati
Mailing Address: 1301 South 46th St., Bldg. 420 Richmond, CA 947201729
Telephone: (510) 642-3437 Email: Amarnath1@berkeley.edu





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Seismic Parameters

Design Basis of Equipment or Components (F_p/W_p) = Isolated [4.50 (z/h=1) & 1.88 (z/h=0)] Rigid [1.44 (z/h=1) & 1.13 (z/h=0)]

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

a_p (Amplification factor) = 2.5 (Isolated) & 1.0 (Rigid)

R_p (Response modification factor) = 2.0 (Isolated); 2.5 (Rigid)

Ω_0 (System overstrength factor) = 2.0

I_p (Importance factor) = 1.5

z/h (Height ratio factor) = 1 and 0

Natural frequencies (Hz) = See Attachment

Overall dimensions and weight = See Attachment

HCAI Approval (For Office Use Only) - Approval Expires on 01/09/2029

Date: 1/9/2023

Name: Mohammad Karim Title: Supervisor, Health Facilities

Special Seismic Certification Valid Up to: SDS (g) = 2.00 (z/h=1); 2.50 (z/h=0) z/h = 1 and 0

Condition of Approval (if applicable): DATE: 01/09/2023

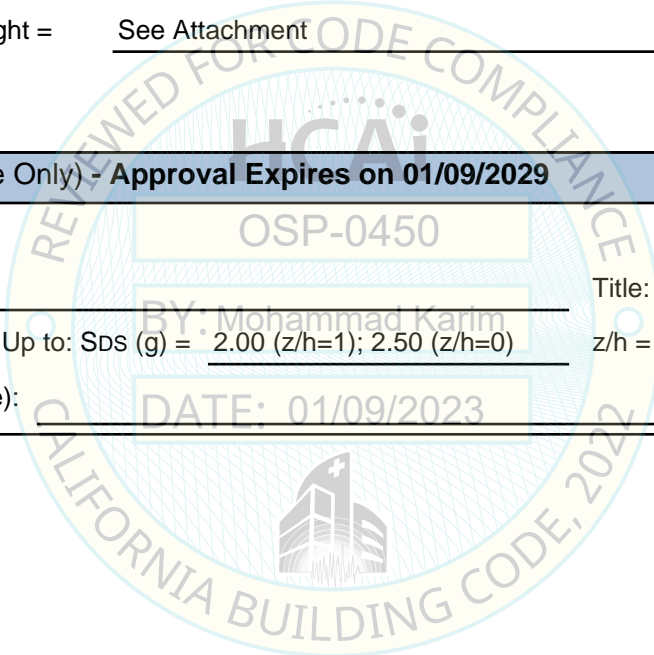


Table 1a - Certified Components: Gensets Off Tank

Model	Max Rating [kW]	Configuration	Length [in]	Width [in]	Height [in]	Weight [lbs]	Mounting Configuration	UUT
<i>mtu</i> 4R0120DS80 <i>mtu</i> 4R0120DS90 <i>mtu</i> 4R0120DS100 <i>mtu</i> 4R0120DS110 <i>mtu</i> 4R0120DS125 <i>mtu</i> 4R0120DS140	125	Open	92.0	43.0	66.0	3,300	Rigid / Isolated	Interpolated
Enclosed		120.0	51.0	85.0	4,000	Rigid / Isolated	Interpolated	
<i>mtu</i> 6R0120DS150 <i>mtu</i> 6R0120DS165 <i>mtu</i> 6R0120DS180 <i>mtu</i> 6R0120DS200 <i>mtu</i> 6R0120DS220	200	Open	102.0	43.0	66.0	4,200	Rigid / Isolated	Interpolated
Enclosed		145.0	51.0	96.0	5,000	Rigid / Isolated	Interpolated	
<i>mtu</i> 6R0120DS200	200	Enclosed	120.0	48.0	100.0	5,060	Isolated	UUT-6B

Table 1b - Certified Components: Gensets On Tank

Model	Max Rating [kW]	Configuration	Length [in]	Width [in]	Height [in]	Weight [lbs]	Mounting Configuration	UUT
<i>mtu</i> 4R0120DS80 <i>mtu</i> 4R0120DS90 <i>mtu</i> 4R0120DS100 <i>mtu</i> 4R0120DS110 <i>mtu</i> 4R0120DS125 <i>mtu</i> 4R0120DS140	125	Open	140.0	48.0	102.0	10,300	Rigid / Isolated	Interpolated
Enclosed		140.0	51.0	121.0	11,000	Rigid / Isolated	Interpolated	
<i>mtu</i> 4R0120DS125	125	Enclosed	180.0	48.0	130.0	12,020	Rigid	UUT-5
<i>mtu</i> 6R0120DS150 <i>mtu</i> 6R0120DS165 <i>mtu</i> 6R0120DS180 <i>mtu</i> 6R0120DS200 <i>mtu</i> 6R0120DS220	200	Open	250.0	48.0	102.0	16,400	Rigid / Isolated	Interpolated
Enclosed		250.0	51.0	132.0	17,200	Rigid / Isolated	Interpolated	
<i>mtu</i> 6R0120DS200	200	Enclosed	270.0	48.0	130.0	18,320	Isolated	UUT-6A

Table 2 - Certified Subcomponents: Enclosures

mtu Part Number	Notes	Length [in]	Width [in]	Height [in]	Weight [lbs]	Material	Manufacturer	UUT
XSG21300.00038	OM924 kW Scoop	19	48	72	71	Aluminum	Rolls Royce Solutions America Inc.	Interpolated
XSG21300.00042	OM926 kW Scoop	33	48	79	88			UUT-06a,b
XSG21300.00006	OM924 kW Enclosure	100	48	72	337			Interpolated
XSG21300.00014	OM926 kW Enclosure	112	48	79	450			UUT-06a,b
XSG21300.00039	OM924 kW Scoop	19	48	72	171	Carbon Steel		UUT-05
XSG21300.00043	OM926 kW Scoop	33	48	79	224			Interpolated
XSG21300.00008	OM924 Enclosure	100	48	72	725			UUT-05
XSG21300.00016	OM926 Enclosure	112	48	79	915			Interpolated



Table 3 - Certified Subcomponents

Component (MFR)	mtu Part Number	Notes	Weight [lbs]	UUT
Engine (Mercedes-Benz)	SUA107006 / XG2140800001	80-125 kW 1500 rpm / 1800 rpm	893	UUT-05
	SUA107007 / XG2140800002	150-200 kW 1500 rpm / 1800 rpm	2,377	UUT-06a,b
Radiator (Nissens)	XD0341100001	90 lbs, dry	90	UUT-05 / 06a,b
Alternator (Marathon)	360 Frame	80-125 kW	929	UUT-05
	430 Frame	80-200 kW	2,365	UUT-06a,b
UL 142 Fuel Tank (Rolls Royce Solutions America Inc.)	XG2141200077	115 Gallon - 80-125 kW non-ext NF	620	Extrapolated
	XG2141200079	200 Gallon - 150-225 kW NF	823	Extrapolated
	XG2141200078	230 Gallon - 80-125 kW non-ext NF	880	Extrapolated
	XG2141200058	230 Gallon - 80-125 kW ext WF SF	975	Extrapolated
	XG2141200061	230 Gallon - 80-125 kW ext NF NY	1,017	Extrapolated
	XG2141200080	400 Gallon non-ext - 150-225 kW NF	1,258	Extrapolated
	XG2141200055	230 Gallon - 80-125 kW ext NF	1,328	Extrapolated
	XG2141200027	230 Gallon Ext - 80-125 kW WF	1,329	Extrapolated
	XG2141200056	460 Gallon - 80-125 kW ext NF	1,342	Extrapolated
	XG2141200059	460 Gallon - 80-125 kW ext NF SF	1,358	Extrapolated
	XG2141200068	400 Gallon Ext - 150-225 kW NF	1,396	Extrapolated
	XG2141200063	460 Gallon - 80-125 kW ext NF NY	1,402	Extrapolated
	XG2141200071	400 Gallon Ext - 150-225 kW NF SF	1,412	Extrapolated
	XG2141200074	400 Gallon Ext - 150-225 kW NF NY	1,453	Extrapolated
	XG2141200060	690 Gallon Ext - 80-125 kW SF	1,819	Extrapolated
	XG2141200064	690 Gallon Ext - 80-125 kW NY	1,864	Extrapolated
	XG2141200032	400 Gallon Ext - 150-225 kW WF	1,909	Extrapolated
	XG2141200069	800 Gallon Ext- 150-225 kW NF	1,954	Extrapolated
	XG2141200072	800 Gallon - 150-225 kW ext NF SF	1,970	Extrapolated
	XG2141200075	800 Gallon - 150-225 kW ext NF NY	2,016	Extrapolated
XG2141200029	690 Gallon Ext - 80-125 kW WF	2,445	UUT-05	
XG2141200057	690 Gallon Ext - 80-125 kW NF	2,445	Interpolated	
XG2141200070	1200 Gallon Ext - 150-225 kW NF	2,713	Interpolated	
XG2141200073	1200 Gallon Ext - 150-225 kW NF SF	2,729	Interpolated	
XG2141200076	1200 Gallon Ext - 150-225 kW NF NY	2,775	Interpolated	
XG2141200034	1200 Gallon Ext - 150-225 kW WF	4,061	UUT-06a	

Table 3 - Certified Subcomponents (Continued)

Component (MFR)	mtu Part Number	Notes	Weight [lbs]	UUT
Silencer (Phillips & Temro)	SUA106938	Space Saver Model CPJS-04X	44	UUT-05
	SUA106939	Space Saver Model CPJS-05X	65	UUT-06a,b
Air Filter (Baldwin)	XG2112100001	80-200 kW	4	UUT-05 / 06a,b
Battery (Exide)	SUA120299	12 V	56	UUT-05 / 06a,b
Controller (Rolls Royce Solutions America Inc.)	MGC-1500 Series	Each controller is a depopulated version of the controller with a higher number. The boxes of the 2000 and 3000 series are the same. The 1500 series box is smaller. All boxes are carbon steel.	55	UUT-05
	MGC-2000 Series		88	Interpolated
	MGC-3000 Series		90	UUT-06a,b
Breakers (Square-D)	H Frame	150 Amp Max Rating	5	Extrapolated
	J Frame	250 Amp Max Rating	7	UUT-05
	L Frame	600 Amp Max Rating	24	UUT-05
	M Frame	800 Amp Max Rating	31	Interpolated
	P Frame	1200 Amp Max Rating	31	UUT-06a,b
Lighting Kit (Rolls Royce Solutions America Inc.)	XSD03300.00003	Lighting Kit	10	UUT-05 / 06a,b
Jacket Water Heater (Kim Hotstart)	XSG21300.00031	1500 W	13	UUT-05
	XSG21300.00032	1800 W	13	UUT-06a,b
Battery Chargers (SENS)	XSG30340.00092	6 A	14	UUT-05
	SUA85257	6A	14	Interpolated
	SUA87358	6A	14	Interpolated
	SUA85204	10A	28	Interpolated
	SUA86468	10A	28	Interpolated
	SUA83187	10A	25	Interpolated
	XSG21360.00001	10 A	28	UUT-06a,b
Battery Chargers (Marinco)	XG3130100003	6 A	4	UUT-07a



UNIT UNDER TEST (UUT) Summary Sheet

UUT-5

Test Report: PEER STI 2015-17

Model Line	Model Number	Manufacturer
OM Series	<i>mtu</i> 4R0120DS125	Rolls Royce Solutions America Inc.

Product Construction Summary

Carbon Steel Skid, Carbon Steel Enclosure, Carbon Steel Fuel Tank

Options / Subcomponent Summary

Engine: Mercedes-Benz ; Alternator: Marathon ; Radiator: Nissens ; Enclosure: Rolls Royce Solutions America Inc. ; Fuel Tank: Rolls Royce Solutions America Inc. ; Silencer: Phillips & Temro ; Air Filter: Baldwin ; Controller: Rolls Royce Solutions America Inc. ; Jacket Water Heater: Kim-Hotstart ; Breakers: Square-D ; Battery: Exide ; Battery Charger: SENS

UUT Properties						
Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
12,020	180.0	48.0	130.0	7.4	6.8	7.2

UUT Highest Passed Seismic Run Information									
Building Code	Test Criteria	S _{DS}	z/h	I _p	A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-V}	
CBC 2022	ICC-ES AC156	2.50	0.0	1.5	-	-	1.68	0.68	
		2.00	1.0	1.5	3.20	2.40	-	-	

Test Mounting Details

UUT-5 was rigidly mounted to the fuel tank using (10) 5/8" diameter Grade 8 bolts. The tank was rigidly connected to the shake table using (10) 5/8" Grade 8 bolts.



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



UNIT UNDER TEST (UUT) Summary Sheet

UUT-6A

Test Report: PEER STI 2015-17

Model Line	Model Number	Manufacturer
OM Series	<i>mtu</i> 6R0120DS200	Rolls Royce Solutions America Inc.

Product Construction Summary

Carbon Steel Skid, Aluminum Enclosure, Carbon Steel Fuel Tank

Options / Subcomponent Summary

Engine: Mercedes-Benz ; Alternator: Marathon ; Radiator: Nissens ; Enclosure: Rolls Royce Solutions America Inc. ; Fuel Tank: Rolls Royce Solutions America Inc. ; Silencer: Phillips & Temro ; Air Filter: Baldwin ; Controller: Rolls Royce Solutions America Inc. ; Jacket Water Heater: Kim-Hotstart ; Breakers: Square-D ; Battery: Exide ; Battery Charger: SENS ; Battery Charger: Guest

UUT Properties						
Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
18,320	270.0	48.0	130.0	3.9	4.9	8.4

UUT Highest Passed Seismic Run Information								
Building Code	Test Criteria	S _{DS}	z/h	I _p	A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-V}
CBC 2022	ICC-ES AC156	2.50	0.0	1.5	-	-	1.68	0.68
		2.00	1.0	1.5	3.20	2.40	-	-

Test Mounting Details

UUT-6A was isolated using (8) VMC MSSH-1E spring isolators. The isolators were connected to the equipment using (1) 3/4" Grade 8 bolt each, and were connected to the tank using (4) 5/8" diameter Grade 8 bolts per isolator. The tank was rigidly connected to the shake table using (20) 5/8" Grade 8 bolts.



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



UNIT UNDER TEST (UUT) Summary Sheet

UUT-6B

Test Report: PEER STI 2015-17

Model Line	Model Number	Manufacturer
OM Series	<i>mtu</i> 6R0120DS200	Rolls Royce Solutions America Inc.

Product Construction Summary

Carbon Steel Skid, Aluminum Enclosure

Options / Subcomponent Summary

Engine: Mercedes-Benz ; Alternator: Marathon ; Radiator: Nissens ; Enclosure: Rolls Royce Solutions America Inc. ; Silencer: Phillips & Temro ; Air Filter: Baldwin ; Controller: Rolls Royce Solutions America Inc. ; Jacket Water Heater: Kim-Hotstart ; Breakers: Square-D ; Battery: Exide ; Battery Charger: SENS ; Battery Charger: Guest

UUT Properties						
Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
5,060	120.0	48.0	100.0	3.9	5.9	10.6

UUT Highest Passed Seismic Run Information								
Building Code	Test Criteria	S _{DS}	z/h	I _p	A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-V}
CBC 2022	ICC-ES AC156	2.50	0.0	1.5	-	-	1.68	0.68
		2.00	1.0	1.5	3.20	2.40	-	-

Test Mounting Details

UUT-6B was isolated using (8) VMC MSS-3E spring isolators. The isolators were connected to the equipment using (1) 3/4 Grade 8 bolt each, and were connected to the shake table using (4) 5/8" diameter Grade 8 bolts per isolator.



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



UNIT UNDER TEST (UUT) Summary Sheet

UUT-7A

Test Report: 31444-2001

Model Line	Model Number	Manufacturer
Low Power Generators	<i>mtu</i> 8V0110GS150	Rolls Royce Solutions America Inc.

Product Construction Summary

Carbon Steel Skid

Options / Subcomponent Summary

Battery Charger: Marinco

UUT Properties						
Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
4,550	132.0	48.0	79.0	5.0	7.0	14.0

UUT Highest Passed Seismic Run Information									
Building Code	Test Criteria	S _{DS}	z/h	I _p	A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-V}	
CBC 2022	ICC-ES AC156	2.50	0.0	1.5	-	-	1.68	0.68	
		2.00	1.0	1.5	3.20	2.40	-	-	

Test Mounting Details

UUT-7A was rigidly mounted to the shake table using (6) 5/8" diameter Grade 8 bolts.



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