

# DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION FACILITIES DEVELOPMENT DIVISION

APPLICATION FOR HCAI SPECIAL SEISMIC	OFFICE USE ONLY
CERTIFICATION PREAPPROVAL (OSP)	APPLICATION #: OSP-0451
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	s-royce.com
Product Information	
Product Name: Emergency and Standby Power Systems	-
Product Type: Generators	Z
Product Model Number: 1600-series Diesel Powered Electrical Generator Sets	m
General Description: Diesel Powered Electrical Generators and Karim	0
Mounting Description: Rigid Base Mounted Enclosure/Genset/Tank, or Extern	ally I <mark>solat</mark> ed Enclosure/Genset
Tested Seismic Enhancements: Seismic enhancements made to the test unit anomalies during the tests shall be incorporated anomalis durin	
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@thevm	
Title: President	



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OSP-0451



# DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION FACILITIES DEVELOPMENT DIVISION

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 X ICC-ES AC156 IEEE 344 IEEE 693 NEBS 3
Other (Please Specify):
FOR CODE CO.
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
Company Name: Pacific Earthquake Engineering Research Center (PEER)
Contact Person: Amarnath Kasalanati
Mailing Address: 1301 South 46th St., Bldg. 420, Richmond CA 947201729
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BUILDING

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#### Seismic Parameters

Desię	n Basis of Equipment or Components	(Fp/Wp) = 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 accele	eration at short period, g) = $2.00 (z/h=1) \& 2.50 (z/h=0)$						
	a <sub>P</sub> (Amplification factor) = 2.5 (Isolated) & 1.0 (Rigid)							
	R <sub>p</sub> (Response modification factor) = 2.0 (Isolated) & 2.5 (Rigid)							
	$\Omega_0$ (System overstrength factor) =	2.0						
	lp (Importance factor) =	1.5						
	z/h (Height ratio factor) =	1 and 0						
	Natural frequencies (Hz) =	See Attachment						
	Overall dimensions and weight =	See Attachment						
		JED FOR SOMBLE						
HCA	Approval (For Office Use Only) -	Approval Expires on 05/14/2030						
Date	5/14/2024	OSP-0451						
Nam	e: Mohammad Karim	Title: Supervisor, Health Fa	cilities					
Spec	al Seismic Certification Valid Up to: St	ps (g) = 2.0 $z/h = 1$						
Cond	ition of Approval (if applicable):	DATE: 05/14/2024						
		PRIVIA BUILDING CODE DE						



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OSP-0451

# Table 1 - Certified Components - Gensets Off Tanks

	_	Max Rating	0	EPA	Max Pack	age Dimens	sions [ in ]	Max Weight <sup>1</sup>	Mounting	
Model	Freq.	[ kW ]	Config.	Rating	Length	Width	Height <sup>2</sup>	[ lb ]	Configuration	UUT
<i>mtu</i> 6R1600 DS230										
<i>mtu</i> 6R1600 DS250		300	Open	Tier 3	144	76	73	7,500	Rigid/Isolated	Extrapolated
<i>mtu</i> 6R1600 DS275	60Hz									
<i>mtu</i> 6R1600 DS300			Enclosed	Tier 3	190	76	100	11,000	Rigid/Isolated	Extrapolated
<i>mtu</i> 6R1600 DS330								,		
<i>mtu</i> 8V1600 DS350			Open	Tier 3	131	73	78	9,000	Rigid/Isolated	Extrapolated
<i>mtu</i> 8V1600 DS400	60Hz	400	•					,	-	•
<i>mtu</i> 8V1600 DS440			Enclosed	Tier 3	246	84	100	13,000	Rigid/Isolated	Extrapolated
<i>mtu</i> 6R0225 DS400	60 Hz	400	Enclosed	Tier 3	207	88	111	13,000	Isolated	UUT-10B
<i>mtu</i> 10V1600 DS450			Open	Tier 3	139	73	80	11,000	Rigid/Isolated	Extrapolated
<i>mtu</i> 10V1600 DS500	60Hz	500	Open		100	10	00	11,000	Tiglu/Isolateu	
<i>mtu</i> 10V1600 DS550		000	Enclosed	Tier 2/3	SP-276-51	84	100	14,780	Rigid/Isolated	Interpolated
<i>mtu</i> 10V1600 DS560			Enclosed		270-0	04	FILO	14,700	T tigla/150lated	Interpolated
<i>mtu</i> 12V1600 DS550										
<i>mtu</i> 12V1600 DS600			Open	Tier 3	157	73	84	12,000	Rigid/Isolated	Extrapolated
<i>mtu</i> 12V1600 DS650	60Hz	600								
<i>mtu</i> 12V1600 DS660		000		ATE.	05/11/20	124				
<i>mtu</i> 12V1600 DS715			Enclosed	Tier 2	05/ <sub>270</sub> /20	JZ484	100	14,780	Rigid/Isolated	Interpolated
<i>mtu</i> 12V1600 DS730						SEPERATE SE	61			
<i>mtu</i> 12V1600 DS600	60 Hz	600	Enclosed	Tier 2	270	84	100	14,780	Isolated	UUT-8B
<i>mtu</i> 12V1600 DS600	60 Hz	600	Enclosed	Tier 2	273	99	113	17,000	Rigid / Isolated	Interpolated <sup>3</sup>

Notes:

1. Max Weights includes operating genset weight and enclosure weight (where applicable)

2. Exhaust is not included in height dimension

3. Unit is interpolated between off tank and on tank test units.

	_	Max Rating	0.5	EPA	Max Pack	age Dimens	sions [ in ]	Max Weight <sup>1</sup>	Mounting	
Model	Freq.	[ kW ]	Config.	Rating	Length <sup>3</sup>	Width	Height <sup>2</sup>	[ lb ]	Configuration	UUT
<i>mtu</i> 6R1600 DS300	60 Hz	300	Enclosed	Tier 3	230	84	135	11,430	Rigid	UUT-7
<i>mtu</i> 6R1600 DS230 <i>mtu</i> 6R1600 DS250	60 Hz	300	Open	Tier 3	230	84	108	11,430	Rigid/Isolated	Interpolated
<i>mtu</i> 6R1600 DS275 <i>mtu</i> 6R1600 DS300	60 Hz	300	Enclosed	Tier 3	230	84	135	11,430	Rigid/Isolated	Interpolated
<i>mtu</i> 6R1600 DS300	60 Hz	300	Enclosed	Tier 3	280	76	143	28,500	Rigid/Isolated	Interpolated
<i>mtu</i> 8V1600 DS350 <i>mtu</i> 8V1600 DS400	60 Hz	400	Open	Tier 3	235	84	115	30,000	Rigid/Isolated	Interpolated
<i>mtu</i> 8V1600 DS400 <i>mtu</i> 8V1600 DS440	00112		Enclosed	Tier 3	286	84	135	34,000	Rigid/Isolated	Interpolated
<i>mtu</i> 6R0225 DS400	60 Hz	400	Enclosed	Tier 3	287	88	147	32,500	Rigid	UUT-10A
<i>mtu</i> 6R0225 DS400	60 Hz	400	Enclosed	Tier 4	206	84	104	36,093	Isolated	UUT-12
<i>mtu</i> 10∨1600 DS450 <i>mtu</i> 10∨1600 DS500	60 Hz	500	Open	Tier 2/3	326	84	125	41,000	Rigid/Isolated	Interpolated
<i>mtu</i> 10V1600 DS550 <i>mtu</i> 10V1600 DS560		500	Enclosed	Tier 2/3	330	84	135	44,980	Rigid/Isolated	Interpolated
<i>mtu</i> 12V1600 DS550 <i>mtu</i> 12V1600 DS600 <i>mtu</i> 12V1600 DS650	60 Hz	600	Open	Tier 2	326	84	125	42,000	Rigid/Isolated	Interpolated
<i>mtu</i> 12V1600 DS660 <i>mtu</i> 12V1600 DS715 <i>mtu</i> 12V1600 DS730		000	Enclosed	Tier 2	330	84	135	44,980	Rigid/Isolated	Interpolated
<i>mtu</i> 12V1600 DS600	60 Hz	600	Enclosed	Tier 2	377	99	149	44,980	Rigid / Isolated	Interpolated
<i>mtu</i> 12V1600 DS600	60 Hz	600	Enclosed	Tier 2	330	84	150	44,980	Isolated	UUT-8A

## Table 2 - Certified Components - Gensets On Tanks

Notes:

1. Max Weights include operating genset weight, enclosure, empty tank, and fuel weight

2. Tank is included in height dimension. Exhaust is not included in height dimension

3. Length measurement includes tank

## Table 2a - Certified Enclosures

			Max D	imensior	is [ in ]	Max	
Part Number	Туре	Material	Length	Width	Height	Weight [ lb ]	UUT
XS573300.00006	350-400 kW 130 mph		143	84	92	695	Interpolated
XS575300.00053	450-600 kW 130 mph		170	84	92	791	Interpolated
XS572300.00068	230-300 kW 190 mph)		144	56	85	805	Interpolated
XSG30380.00063	275-400 kW (130 mph)		155	84	93	862	UUT-10a, UUT-10b
XSG30380.00036	210-300 kW (130 mph)		144	56	85	899	Interpolated
XSG30380.00105	210-300 kW (130 mph)		144	56	85	948	Interpolated
XSG30380.00038	210-300 kW (190 mph)	Aluminum	144	56	85	962	Interpolated
XSG30380.00065	275-400 kW (190 mph)		155	84	93	981	Interpolated
XS573300.00007	350-400 kW 190 mph		143	84	92	995	Interpolated
XSG30380.00101	210-300 kW (190 mph)		144	56	85	1,012	Interpolated
XSG30380.00111	300-400 kW (130 mph)		155	84	93	1,048	Interpolated
XSG30380.00113	300-400 kW (190 mph)		155	84	93	1,048	Interpolated
XS575300.00054	450-600 kW(190 mph)		170	84	92	1,088	UUT-8a UUT-8b
XS572300.00065	230-300 kW (190 mph)		155	84	93	981	Interpolated
XS572300.00060	230-300 kW (130 mph)		144	56	85	1,367	UUT-7
XS573300.00001	350-400 kW 130 mph		143	84	92	1,465	Interpolated
XSG30380.00033	210-300 kW (130 mph)		144	56	85	1,616	Interpolated
XSG30380.00027	210 <mark>-300</mark> kW (190 mph)		144	<mark>56</mark>	85	1,678	Interpolated
XS575300.00047	450-600 kW 130 mph		170	84	92	1,685	Interpolated
XSG30380.00103	210-300 kW (130 mph)	Carbon Steel	144	56	85	1,700	Interpolated
XSG30380.00099	210 <mark>-300</mark> kW (190 mph)	Carbon Steer	144	<u>56</u>	85	1,700	Interpolated
XS573300.00002	350-400 kW 190 mph		143	84	92	1,760	Interpolated
XSG30380.00060	275-400 kW (130 mph)		155	84	93	1,814	Interpolated
XSG30380.00058	275-400 kW (190 mph)		155	84	93	1,933	Interpolated
XS575300.00055	450-600 kW 190 mph		170	<mark>V</mark> 84	92	1,980	Interpolated
XSG30380.00109	300-400 kW (190 mph)		155	84	93	2,051	Interpolated
XSG30380.00108	300-400 kW (130 mph)		155	84	93	2,051	UUT-12

Notes:

Notes: 1. Rolls-Royce Solutions America Inc. is the manufacturer of all enclosures

# Table 2b - Certified Enclosure Scoops

			Max D	imension	is [ in ]	Max	
Part Number	Туре	Material	Length	Width	Height	Weight [ lb ]	UUT
XSG30380.00051	210-300 kW	Aluminum	46	56	85	177	Extrapolated
XS575300.00057	350-600 kW		52	84	92	262	UUT-8a
X3373300.00037	330-800 KW		52	04	52		UUT-8b
XSG30380.00078	350-400 kW		52	84	93	263	UUT-10a,
X0030300.00070	330-400 KW			02	01	00	200
XS572300.00061	230-300 kW		46	56	85	435	Extrapolated
XSG30380.00028	210-300 kW		46	56	85	434	Extrapolated
XS572300.00062	230-300 kW	Carbon Steel	46	56	85	435	UUT-7
XSG30380.00059	350-400 kW	Carbon Steel	52	84	93	644	UUT-12
XS575300.00049	350-600 kW		52	84	92	645	Extrapolated

#### Notes:

1. Rolls-Royce Solutions America Inc. is the manufacturer of all enclosure scoops

# Table 3 - Certified Subcomponents

Component [ MFR ]	Part Number	Notes	Material	Weight [ lb ]	UUT
Engine	SUA100171	200-300 kW		2,620	UUT-7
[ Rolls-Royce Solutions	SUA96384	325-400 kW	Carbon Steel, Cast Iron, Aluminum,	3,400	Interpolated
America Inc. ]	SUA100149	400-500 kW	Plastic, Brass, Stainless Steel	3,860	Interpolated
America Inc. j	SUA100139	500-600 kW		4,300	UUT-8A, UUT-8B
Engine	XSG30240.00015	350-400 kW	Carbon Steel, Cast Iron, Aluminum,	3,100	UUT-10A, UUT-10B
[ John Deere ]	XSG30240.00016		Plastic, Brass, Stainless Steel	3,475	UUT-12
Alternators	430 Frame	75-600 kW	Carbon Steel, Cast Iron, Aluminum,	2,400	UUT-7
[ Marathon ]	570 Frame	300-600 kW	Copper	5,000	UUT-8A, UUT-8B, UUT-10A, UUT-10B, UUT-12
	SUA91969	230-300 kW		500	UUT-7
Radiators	SUA98975	350-400 kW		540	Interpolated
[ Bearward ]	SUA98809	450-500 kW P-045	Carbon Steel, Aluminum, Copper	835	Interpolated
	SUA98581	550-600 kW		875	UUT-8A, UUT-8B
Radiators	XSG30200.00010	275-400 kW	Carbon Steel Aluminum Conner	810	UUT-10A, UUT-10B
[ AKG ]	XSG30200.00011	300-400 kW	Carbon Steel, Aluminum, Copper	852	UUT-12
	MGC-1500 Series	Each controller is a depopulated version of the controller with a		2	UUT-7
Controller [ Rolls-Royce Solutions America Inc. ]	MGC-2000 Series	higher number. The boxes of the 2000 and 3000 series are the same. The 1500 series box is	Carbon Steel, Aluminum, Copper, Plastic	5	Interpolated
	MGC-3000 Series	smaller. All boxes are carbon steel.		6	UUT-8A, UUT-8B, UUT-12
Jacket Water Heaters	SUA90334	2500 W	Carbon Steel, Cast Iron, Stainless	5	UUT-7
[ Kim Hotstart ]	CL/WL 4000 W	4000 W	Steel, Brass, Copper, Plastic	10	UUT-12
	SUA98951	5000 W		15	UUT-8A, UUT-8B
	H Frame	150 Amp Max Rating		4.8	Extrapolated
	J Frame	250 Amp Max Rating		5.3	UUT-7
Breakers	L Frame	600 Amp Max Rating	Carbon Steel, Aluminum, Copper,	14	UUT-7
[ Square-D ]	M Frame	800 Amp Max Rating	Plastic	29	Interpolated
[ oqualo D ]	P Frame	1200 Amp Max Rating		32	UUT-8A, UUT-8B
	MTZ Frame	6000 Amp Max Rating		363	Interpolated
	NW Frame	4000 Amp Max Rating		363	UUT-10A, UUT-10B, UUT-12
	SUA100604	Switchable/Dual		17	UUT-12
Fuel Water Separator	1000FV10	Single Filter; 180 GPH	Carbon/Stainless Steel, Cast Iron,	11	UUT-13A, UUT-13B
[ Racor ]	751000FV10	Double Filter; 360 GPH	Brass, Copper, Plastic, Glass	24	Interpolated
	791000FV10 Triple Filter; 540 GPH			36	UUT-13A, UUT-13B
Fuel Monitor System o⊈∕ <b>⊡S</b> b}4	CMS-2M-MTU	iFuel monitor and flow meter assembly OSP-0451	Carbon/Stainless Steel, Cast Iron, Brass, Copper, Plastic, Glass	250	UUT-13A, UUT-13B Page 7 of 16

Component [ MFR ]	Part Number	Notes	Material	Weight [ lb ]	UUT
Space Heater [ King Electric ]	XSG3006100004	Space Heater	Carbon Steel, Aluminum, Copper, Plastic	12	UUT-12
Air Filters [ Donaldson ]	SUA86885	230-600 kW	Carbon Steel, Plastic, Paper	5	UUT-7
Air Filters [ Vortox ]	SUA96271 XG3012100036	230-600 kW 300-400 kW	Carbon Steel, Plastic, Paper	31 51	UUT-8A, UUT-8B UUT-12
Battery [ Exide ]	SUA120299	12 V	Carbon Steel, Aluminum, Copper, Plastic	56	UUT-7, UUT-8A, UUT-8B, UUT-12
Battery Charger [ SENS ]	XG3042500014 SUA89983 SUA87576	15 A 10 A 20 A	Carbon Steel, Cast Iron, Aluminum, Copper, Plastic	6 22 42	UUT-7 UUT-8A, UUT-8B
Battery Warming Plate [ Zero Start ]	SUA33218	200 W	Plastic, Copper, Aluminum	1	UUT-12
Lighting Kit [ Rolls-Royce Solutions	XSG30300.02442 XS572500.00268 XS575340.00209 /	Lighting Kit (AC / DC)	Carbon Steel, Aluminum, Copper, Plastic, Glass	18 20	UUT-12 UUT-7
America Inc. ]	XS575340.00226			32	UUT-8A, UUT-8B
Carbon Steel Silencer [ Phillips & Temro ]	SUA101916 SUA99120 / SUA99121 SUA97987 / SUA97988	5" Space Saver 18" Dia. 4" Space Saver 18" Dia. 5" Space Saver 18" Dia.	Carbon Steel	71 64 64	UUT-7 Interpolated UUT-8A, UUT-8B
Motorized Intake Louver [ Vent Products ]	XSG3062300147	210-400 kW	Carbon Steel, Aluminum	105	UUT-12
Gravity Exhaust Louver [ Rolls-Royce Solutions					
America Inc. ]	XSG3062300263	275-400 kW	Carbon Steel, Aluminum	30	UUT-12
	XS572360.00017	265 Gallon Tank	Carbon Steel, Aluminum	1,630	Extrapolated
	XS572360.00017 XS573360.00002	265 Gallon Tank 340 Gallon Tank	Carbon Steel, Aluminum	1,630 2,000	Extrapolated Extrapolated
	XS572360.00017 XS573360.00002 XS575360.00034	265 Gallon Tank 340 Gallon Tank 500 Gallon Tank	Carbon Steel, Aluminum	1,630 2,000 2,510	Extrapolated Extrapolated Extrapolated Extrapolated
	XS572360.00017 XS573360.00002 XS575360.00034 XS572360.00018	265 Gallon Tank 340 Gallon Tank 500 Gallon Tank 525 Gallon Tank	Carbon Steel, Aluminum	1,630 2,000 2,510 2,220	Extrapolated Extrapolated Extrapolated UUT-7
	XS572360.00017 XS573360.00002 XS575360.00034 XS572360.00018 XS573360.00003	265 Gallon Tank 340 Gallon Tank 500 Gallon Tank 525 Gallon Tank 675 Gallon Tank	Carbon Steel, Aluminum	1,630 2,000 2,510 2,220 2,650	Extrapolated Extrapolated Extrapolated UUT-7 Interpolated
	XS572360.00017 XS573360.00002 XS575360.00034 XS572360.00018 XS573360.00003 XS575360.00035	265 Gallon Tank 340 Gallon Tank 500 Gallon Tank 525 Gallon Tank 675 Gallon Tank 1000 Gallon Tank	Carbon Steel, Aluminum	1,630 2,000 2,510 2,220 2,650 3,330	Extrapolated Extrapolated Extrapolated UUT-7 Interpolated Interpolated
America Inc. ]	XS572360.00017 XS573360.00002 XS575360.00034 XS572360.00018 XS573360.00003 XS575360.00035 XS572360.00019	265 Gallon Tank 340 Gallon Tank 500 Gallon Tank 525 Gallon Tank 675 Gallon Tank 1000 Gallon Tank 1050 Gallon Tank	Carbon Steel, Aluminum	1,630 2,000 2,510 2,220 2,650 3,330 3,630	Extrapolated Extrapolated Extrapolated UUT-7 Interpolated Interpolated Interpolated
America Inc. ] Fuel Tank	XS572360.00017 XS573360.00002 XS575360.00034 XS572360.00018 XS573360.00003 XS575360.00035 XS572360.00019 XS573360.00004	265 Gallon Tank 340 Gallon Tank 500 Gallon Tank 525 Gallon Tank 675 Gallon Tank 1000 Gallon Tank 1050 Gallon Tank 1350 Gallon Tank		1,630 2,000 2,510 2,220 2,650 3,330 3,630 4,210	Extrapolated Extrapolated Extrapolated UUT-7 Interpolated Interpolated Interpolated Interpolated
America Inc. ] Fuel Tank [ Rolls-Royce Solutions	XS572360.00017 XS573360.00002 XS575360.00034 XS572360.00034 XS573360.00003 XS575360.00035 XS572360.00019 XS573360.00004 XS572360.00020	265 Gallon Tank 340 Gallon Tank 500 Gallon Tank 525 Gallon Tank 675 Gallon Tank 1000 Gallon Tank 1050 Gallon Tank 1350 Gallon Tank 1575 Gallon Tank		1,630 2,000 2,510 2,520 2,650 3,330 3,630 4,210 4,950	Extrapolated Extrapolated Extrapolated UUT-7 Interpolated Interpolated Interpolated Interpolated Interpolated
America Inc. ] Fuel Tank [ Rolls-Royce Solutions	XS572360.00017 XS573360.00002 XS575360.00034 XS572360.00038 XS573360.00003 XS575360.00035 XS572360.00019 XS572360.00019 XS572360.00020 XS575360.00036	265 Gallon Tank 340 Gallon Tank 500 Gallon Tank 525 Gallon Tank 675 Gallon Tank 1000 Gallon Tank 1050 Gallon Tank 1350 Gallon Tank 1575 Gallon Tank 2000 Gallon Tank		1,630 2,000 2,510 2,220 2,650 3,330 3,630 4,210 4,950 5,350	Extrapolated Extrapolated Extrapolated UUT-7 Interpolated Interpolated Interpolated Interpolated Interpolated Interpolated Interpolated
America Inc. ] Fuel Tank [ Rolls-Royce Solutions	XS572360.00017 XS573360.00002 XS575360.00034 XS572360.00038 XS573360.00035 XS575360.00035 XS572360.00019 XS572360.00004 XS572360.00020 XS575360.00036 XS573360.00005	265 Gallon Tank 340 Gallon Tank 500 Gallon Tank 525 Gallon Tank 675 Gallon Tank 1000 Gallon Tank 1050 Gallon Tank 1350 Gallon Tank 1575 Gallon Tank 2000 Gallon Tank 2020 Gallon Tank		1,630 2,000 2,510 2,220 2,650 3,330 3,630 4,210 4,950 5,350 5,210	Extrapolated Extrapolated Extrapolated UUT-7 Interpolated Interpolated Interpolated Interpolated Interpolated Interpolated Interpolated Interpolated
America Inc. ] Fuel Tank [ Rolls-Royce Solutions	XS572360.00017 XS573360.00002 XS575360.00034 XS572360.00038 XS573360.00003 XS575360.00035 XS572360.00019 XS572360.00019 XS572360.00020 XS575360.00036	265 Gallon Tank 340 Gallon Tank 500 Gallon Tank 525 Gallon Tank 675 Gallon Tank 1000 Gallon Tank 1050 Gallon Tank 1350 Gallon Tank 1575 Gallon Tank 2000 Gallon Tank		1,630 2,000 2,510 2,220 2,650 3,330 3,630 4,210 4,950 5,350	Extrapolated Extrapolated Extrapolated UUT-7 Interpolated Interpolated Interpolated Interpolated Interpolated Interpolated Interpolated

# Table 3 - Certified Subcomponents, Continued



### UUT-7

					Test Rep	port: PEER \$	STI 2015-17
	Мо	odel Numb	er		Ν	lanufacture	r
	mtu	6R1600 DS	300		Rolls-Royce Solutions America Inc		merica Inc.
1	Product Co	onstruction	Summary				
oon Steel Enclosure, Ca	rbon Steel Ta	nk					
	Options / Su	bcompone	nt Summar	у			
a Inc.; Fuel Tank: Rol	ls-Royce Solu	itions Amer	ica Inc. ; Si	ilencer: Phil	lips & Temro	; Air Filter:	Donaldson
		T Properti	es				
					Lowes	st Nat. Freq	. [ Hz ]
Length			Hei	ight	F-B	S-S	v
230.04	84.	0P-045			5.1	4.9	13.0
UUT H	lighest Pass	ed Seismic	Run Inforr	nation			
Test Criteria	SVS <sub>DS10</sub>	an <sup>z/h</sup> ad	Karl	A <sub>FLX-H</sub>	A <sub>RIG-H</sub>	A <sub>FLX-V</sub>	A <sub>RIG-V</sub>
	2.00	1.0	1.5	3.20	2.40	-	-
ICC-ES AC156	2.50	_0.0	1.5	-	-	1.67	0.67
	DA Test N	Nounting D	etails		•		
ade 8 bolts.							
	bon Steel Enclosure, Ca lutions America Inc. ; A ia Inc. ; Fuel Tank: Rol e Solutions America Inc Enclose Length 230.0 UUT I Test Criteria ICC-ES AC156	mtu Product Co pon Steel Enclosure, Carbon Steel Ta Options / Su lutions America Inc. ; Alternator: Ma a Inc. ; Fuel Tank: Rolls-Royce Solu e Solutions America Inc. ; Jacket W UU Dimensic Length Wid 230.0 84. UUT Highest Pass Test Criteria Sps ICC-ES AC156 2.00 2.50 Test M ted to the fuel tank using (12) 5/8" dia	mtu 6R1600 DS Product Construction oon Steel Enclosure, Carbon Steel Tank Options / Subcompone lutions America Inc. ; Alternator: Marathon ; Ra a Inc. ; Fuel Tank: Rolls-Royce Solutions Americ e Solutions America Inc. ; Jacket Water Heater UUT Propertie UUT Propertie UUT Propertie UUT Highest Passed Seismic Test Criteria Sos z/h ICC-ES AC156 2.00 1.0 2.50 0.0 Test Mounting D ted to the fuel tank using (12) 5/8" diameter Grade	mtu 6R1600 DS300         Product Construction Summary         pon Steel Enclosure, Carbon Steel Tank         Options / Subcomponent Summar         Iutions America Inc. ; Alternator: Marathon ; Radiator: Bea         a Inc. ; Fuel Tank: Rolls-Royce Solutions America Inc. ; Si         Esolutions America Inc. ; Jacket Water Heater: Kim-Hotst         UUT Properties         Dimensions [ in ]         Length       Width       Hei         230.0       84.0       13         UUT Highest Passed Seismic Run Inforr         Test Criteria       Sps       z/h       Ip         ICC-ES AC156       2.00       1.0       1.5         Test Mounting Details         Ited to the fuel tank using (12) 5/8" diameter Grade 8 bolts. T	mtu 6R1600 DS300         Product Construction Summary         oon Steel Enclosure, Carbon Steel Tank         Options / Subcomponent Summary         Jutions America Inc. ; Alternator: Marathon ; Radiator: Bearward ; En         UUT ank: Rolls-Royce Solutions America Inc. ; Silencer: Phil         e Solutions America Inc. ; Jacket Water Heater: Kim-Hotstart ; Break         UUT Properties         Dimensions [ in ]         Length       Width       Height         Z30.0       84.0       135.0         UUT Properties         Dimensions [ in ]         Length       Width       Height         230.0       84.0       135.0         UUT Highest Passed Seismic Run Information         Test Criteria       Sps       z/h       Implement AFLX-H         ICC-ES AC156       2.00       1.0       1.5       3.20       -         Test Mounting Details         ted to the fuel tank using (12) 5/8" diameter Grade 8 bolts. The tank was	Model Number         M           mtu 6R1600 DS300         Rolls-Royce           Product Construction Summary           bon Steel Enclosure, Carbon Steel Tank           Options / Subcomponent Summary           lutions America Inc. ; Alternator: Marathon ; Radiator: Bearward ; Enclosure and I           a Inc. ; Fuel Tank: Rolls-Royce Solutions America Inc. ; Silencer: Phillips & Temro           e Solutions America Inc. ; Jacket Water Heater: Kim-Hotstart ; Breakers: Square-           UUT Properties           Dimensions [ in ]         Lowes           UUT Highest Passed Seismic Run Information           Test Criteria         Spsi         Z/h         Ip         A <sub>FLX-H</sub> A <sub>RIG-H</sub> ICC-ES AC156         2.00         1.0         1.5         3.20         2.40           ted to the fuel tank using (12) 5/8" diameter Grade 8 bolts. The tank was rigidly connormation         Test Kank was rigidly connormation	mtu 6R1600 DS300       Rolls-Royce Solutions A         Product Construction Summary         pon Steel Enclosure, Carbon Steel Tank         Options / Subcomponent Summary         Jutions America Inc. ; Alternator: Marathon ; Radiator: Bearward ; Enclosure and Enclosure Solutions America Inc. ; Sulencer: Phillips & Temro ; Air Filter:         UUT Properties         UUT Properties         UUT Properties         UUT Properties         UUT Highest Passed Seismic Run Information         Test Criteria       Sos       Z/h       I.e         UUT Highest Passed Seismic Run Information         Test Mounting Details         ted to the fuel tank using (12) 5/8" diameter Grade 8 bolts. The tank was rigidly connected to the



### UUT-8A

					Test Rep	oort: PEER \$	STI 2015-17
Model Line		Model Number			Ν	lanufacture	er
1600		mtu 12V1600 DS6	00		Rolls-Royce	Solutions A	merica Inc.
		Product Construction S	ummary				
Carbon Steel Skid, Carb	oon Steel Enclosure, Car						
	(	Options / Subcomponent	Summary	y			
Royce Solutions Americ	a Inc.; Silencer: Phillip	Iternator: Marathon ; Rac s & Temro ; Air Filter: Vo Square-D ; Battery: Exi	rtox;Cor	ntroller: Rol	ls-Royce Solu		
		FORCEBL	On				
	14	UUT Properties				A Not From	F 11- 1
Weight [Ibs]	Length	Dimensions [ in ] Width	Uci	ght	F-B	st Nat. Freq S-S	v
44,980	330.04	(84.0P_0451	X	0.0	<b>г-р</b> 3.3	3.7	5.1
++,300		lighest Passed Seismic F			5.5	5.7	5.1
Building Code	Test Criteria	S <sub>DSI h</sub> z/h		A <sub>FLX-H</sub>	A <sub>RIG-H</sub>	A <sub>FLX-V</sub>	A <sub>RIG-V</sub>
-		2.00 1.0	1.5	3.20	2.40	- +LA-V	
CBC 2022	ICC-E <mark>S AC1</mark> 56	2.50 0.0	1.5	-	-	1.67	0.67
		Test Mounting Det					
using (40) 5/8" Grade 8	bolts. Fuel tank was con	MC Group MSSH-3C sprin nected to the fixture using		Grade 8 bo	Its.	ttached to tr	ie fuel tank
10 miles	Kappa lixiure	131	-				



### UUT-8B

						Test Rep	port: PEER \$	STI 2015-17	
Model Line		M	odel Numbe	er	Manufacturer				
1600		mtu <sup>-</sup>	12V1600 DS	600		Rolls-Royce	Rolls-Royce Solutions America Inc.		
	ł	Product Co	onstruction	Summary					
Carbon Steel Skid, Carb	oon Steel Enclosure								
		Options / Su	=		-				
Engine: Rolls-Royce So Royce Solutions Americ Jacket Water Heater: K	a Inc. ; Silencer: Philli	ps & Temro ;	Air Filter: V	ortox; Co	ontroller: Rol	ls-Royce Solu			
		FOR	CODE	COA					
			JT Propertie	es 🛛	2				
Weight	5	Dimensio					st Nat. Freq		
[lbs]	Length	Wic			ight	F-B	S-S	V	
14,780	270.0		<u>9P-045</u>		0.0	2.9	3.7	4.9	
		Highest Pass	*****	44444444444					
Building Code	Test Criteria	BV S <sub>DSION</sub>	am <mark>z/h</mark> ad	Karim	A <sub>FLX-H</sub>	A <sub>RIG-H</sub>	A <sub>FLX-V</sub>	A <sub>RIG-V</sub>	
CBC 2022	ICC-E <mark>S AC1</mark> 56	2.00	1.0	1.5	3.20	2.40	-	-	
		2.50	0.0 Aounting De	1.5		-	1.67	0.67	
UUT-8B was isolated us Grade 8 bolt each, and v DCRs: Additional suppo	were connected to the s	shake table us	sing (4) 3/4"						



### UUT-10A

						Test Re	port: DCL 3	0889-1801
Model Line		Model Number				Manufacturer		
6R0225		mtu 6R0225 DS400 Tier 3				Rolls-Royce Solutions America Inc		
		Product Construction Summary						
Carbon Steel Skid, Alum	inum Enclosure. Carbo			ounnury				
- ,	, -							
		Options / Su	bcomponen	t Summar	у			
Enclosure and Enclosure Alternator: Marathon; Ra Hotstart; Breaker: Squar	diator: AKG; Air Filter: \	Vortox; Contr	oller: Rolls-R					
		0	JT Propertie					
Waight	, Pr	Dimensions [ in ]		3		Lowest Nat. Freq. [ Hz ]		
Weight [ lbs ]	Length	Width		Height		F-B	S-S	v
32,500	287.04	(88.0P_0/5		1 147.0		5.0	4.5	9.5
,		lighest Pass	ed Seismic	Run Infor	mation			
Building Code	Test Criteria	SVS <sub>DSIOH</sub>	am <sup>z/h</sup> ad	(arl <del>m</del>	A <sub>FLX-H</sub>	A <sub>RIG-H</sub>	A <sub>FLX-V</sub>	A <sub>RIG-V</sub>
CDC 2022	ICC-E <mark>S AC</mark> 156	2.00	1.0	1.5	3.20	2.40	-	-
CBC 2022		2.50	_0.0	1.5	-	-	1.67	0.67
		JA Test M	Nounting De	tails		•	•	•
UUT-10A was rigidly mo table using (12) 5/8" Gra DCRs: (6) additional 5/1 width of the top and bott displacement, addition o at the widths of the radia steel tube mounted with the tank flange is require diameter galvanized stee	de 8 bolts. 6" diameter Grade 8 bol om back corners of the f 2" galvanized washers tor feet that mount to th 1/2" diameter Grade 5 to d to have the mounting	Its for attachr breaker box, to the attach e skid, replac bolt at each e bolt fully three	nent of break an added pir ment betwee cement of the end, the attac eaded into the	ter box to junt in the breen the junc (2) radiate hment piece e attachme	unction box, aker box do tion box and or lateral bra ce connectir	1"x1"x1/8" a or hinge to p d alternator, ( aces with 1-3 og the tank ve	ngle steel w revent vertio 4) additiona /4"x1-3/4"x1 ent pipe late	relded to ful cal I 3" welds /8" carbon ral brace to



#### UUT-10B

	·					Test Re	port: DCL 3	0889-1801b
Model Line		Model Number				Manufacturer		
6R0225		mtu 6R0225 DS400 Tier 3			Rolls-Royce Solutions America Inc.			
		Product C	onstruction	Summary	,			
Carbon Steel Skid, Alun	ninum Enclosure	1100000		Gaininary				
		Options / Su	ubcompone	nt Summa	ry			
Alternator: Marathon; Ra	e Scoop: Rolls-Royce S adiator: AKG; Air Filter: re-D; Battery: Exide; Ba	Vortox; Cont	roller: Rolls-F					
		FOR	CODE	CON				
		<b>V</b> U	UT Propertie	es	0,			
Weight	L.S.	Dimensions [ in ]		Height		Lowest Nat. Freq. [ Hz ]		
[ lbs ]	Length	Width				F-B	S-S	v
13,000	207.04		30P-045		11.0	3.0	4.0	5.0
		Highest Pas		-				
Building Code	Test Criteria ICC-E <mark>S AC1</mark> 56	BYSpslot	an <mark>z/h</mark> ad	Karim	A <sub>FLX-H</sub>	A <sub>RIG-H</sub>	A <sub>FLX-V</sub>	A <sub>RIG-V</sub>
CBC 2022		2.00 2.50	1.0 0.0	1.5	3.20	2.40	- 1.67	- 0.67
			Mounting D	1.5		-	1.07	0.07
width of the top and both displacement, addition of at the widths of the radia steel tube mounted with the enclosure door latch	of 2" galvanized washer ator feet that mount to tl 1/2" diameter Grade 5	s to the attac ne skid, repla	hment betwe cement of th	en the jund e (2) radiat	ction box an tor lateral br	d alternator, ( aces with 1-3	4) additiona /4"x1-3/4"x1	l 3" welds /8" carbon
All units	were filled with contents	and maintai	ned structura	al integrity a	and function	ality after AC-	-156 test.	



#### UUT-12

Model Line	Model Number			Manufacturer					
6R0225		mtu 6R0225 DS400 Tier 4				Rolls-Royce Solutions America Ir			
		Product Co	onstruction	Summary					
on Steel Skid, Carl	bon Steel Enclosure, Ca	rbon Steel Fu	el Tank						
		Options / Su	bcomponei	nt Summar	у				
e; Alternator: Mara Hotstart; Breaker: ६	re Scoop: Rolls-Royce S thon; Radiator: AKG; Air Square-D; Battery: Exide ca Inc.; Space Heater: K ere	Filter: Vortox ; Battery Cha ing Electric; M	; Controller: rger: SENS; lotorized Int	Rolls-Royc Battery Wa ake Louver:	e Solutions arming Plate	America Inc. e: Zero Start;	.; Jacket Wa Lighting Kit:	iter Heat Rolls-	
Weight	S.	UUT Propertie Dimensions [ in ] Width					Lowest Nat. Freq. [ Hz ]		
[ lbs ]	Length			Height		F-B	S-S		
36,093	206.04	84.	P-045		4.0	3.5	3.5	6.5	
	с инт н	Highest Pass	ed Seismic	Run Inform	nation				
Building Code	Test <mark>Criter</mark> ia	BVS <sub>DS/Oh</sub>	am <sup>z/h</sup> ad	Karim	A <sub>FLX-H</sub>	A <sub>RIG-H</sub>	A <sub>FLX-V</sub>	A <sub>RIG</sub>	
CBC 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	-	-	
000 2022		2.50	0.0	1.5	-	-	1.67	0.6	
8" Grade 8 bolt ea	sing (8) VMC Group M2S ch, and were connected table using (12) 5/8" Gr	to the tank us							



**UUT-13A** 

Test Report: DCL 20479-2201; UUT-1A

#### Model Line Model Number Manufacturer Fuel Water Separators/Filters and Fuel Water Separators/Filters and Fuel Monitor Racor and ESI **Fuel Monitor Product Construction Summary** Carbon Steel, Cast Iron, Stainless Steel, Brass, Copper, Plastic, Glass **Options / Subcomponent Summary** Fuel Filters: Racor; Fuel Monitor System: ESI **UUT Properties** Dimensions [ in ] Lowest Nat. Freq. [ Hz ] Weight [ lbs ] Width Height Length F-B S-S V 2.990 133.0 77.0 49.5 >33.3 20.5 9.5 **UUT Highest Passed Seismic Run Information Building Code Test** Criteria z/h A<sub>FLX-H</sub> A<sub>RIG-H</sub> A<sub>FLX-V</sub> A<sub>RIG-V</sub> SDS Ip. 2.00 1.0 1.5 3.20 2.40 CBC 2022 ICC-ES AC156 2.50 0.0 1.5 1.68 0.68 **Test Mounting Details** The mock skid was rigidly mounted to the shake table using (4) 5/8" diameter Grade 8 bolts. The Triple Fuel Filter was mounted to the skid with (8) M12 Grade 8.8 bolts. The Single Fuel Filter was mounted to the skid with (6) M10 Grade 8.8 bolts. The Fuel Monitor System was mounted to the skid with (4) M12 Grade 8.8 bolts; the flow meter assembly was mounted to the skids with (3) M16 Grade 8.8 bolts. NGC



UUT-13B

Test Report: DCL 20479-2201; UUT-1B

#### Model Line Model Number Manufacturer Fuel Water Separators/Filters and Fuel Water Separators/Filters and Fuel Monitor Racor and ESI **Fuel Monitor Product Construction Summary** Carbon Steel, Cast Iron, Stainless Steel, Brass, Copper, Plastic, Glass **Options / Subcomponent Summarv** Fuel Filters: Racor; Fuel Monitor System: ESI **UUT Properties** Dimensions [ in ] Lowest Nat. Freq. [ Hz ] Weight [ lbs ] Width Length Height F-B S-S V 2.990 133.0 77.0 49.5 3.5 4.5 6.0 **UUT Highest Passed Seismic Run Information Building Code Test** Criteria z/h A<sub>FLX-H</sub> A<sub>RIG-H</sub> A<sub>FLX-V</sub> A<sub>RIG-V</sub> S<sub>DS</sub> Ip. 2.00 1.0 1.5 3.20 2.40 CBC 2022 ICC-ES AC156 2.50 0.0 1.5 \_ 1.68 0.68 Test Mounting Details The mock skid was isolated using (4) VMC Group MSSH spring isolators. The isolators were connected to the equipment using (1) 5/8" Grade 8 bolt each, and were connected to the shake table using (4) 5/8" diameter Grade 8 bolts per isolator. The Triple Fuel Filter was mounted to the skid with (8) M12 Grade 8.8 bolts. The Single Fuel Filter was mounted to the skid with (6) M10 Grade 8.8 bolts. The Fuel Monitor System was mounted to the skid with (4) M12 Grade 8.8 bolts; the flow meter assembly was mounted to the skids with (3) M16 Grade 8.8 bolts. All units were filled with contents and maintained structural integrity and functionality after AC-156 test.