



DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION
OFFICE OF STATEWIDE HOSPITAL PLANNING AND DEVELOPMENT

APPLICATION FOR HCAI SPECIAL SEISMIC
CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY

APPLICATION #: OSP-0851

HCAI Special Seismic Certification Preapproval (OSP)

Type: ☒ New ☐ Renewal

Manufacturer Information

Manufacturer: Discovery Energy. LLC.

Manufacturer's Technical Representative: Brady Eifrid

Mailing Address: N7650 CTH LS, Sheboygan, WI 53083

Telephone: (920) 457-4441

Email: Brady.eifrid@rehlko.com

Product Information

Product Name: Kohler Diesel

Product Model Number(s): KD2000, KD2250, KD2500, KD2800, KD3000, KD3250

Product Category: Emergency and Standby Power Systems

Product Sub-Category: Generators

General Description: Diesel generator sets mounted off tank with or without external spring isolators.

Mounting Description: Base Mounted Rigid with Internal Spring Vibration Isolation or Externally Spring Vibration Isolated

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: VMC Group

Contact Person: John Giuliano

Mailing Address: 101 William White Blvd., Pueblo, 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: U.S. ARMY ENGINEER RESEARCH AND DEVELOPMENT CENTER, CONSTRUCTION ENGINEERING RESEARCH LABORATORY (CERL)

Contact Person: James Wilcoski

Mailing Address: 2902 Newmark Dr., Champaign IL 61822-1076

Telephone: (217) 373-4565

Email: James.wilcoski@usace.army.mil

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) = [SDS=2.0 @ $z/h=0$: 1.5; SDS=1.75 @ $z/h=1$: 3.94]

SDS (Design spectral response acceleration at short period, g) = 2.0 @ $z/h=0$ & 1.75 @ $z/h=1$

a_p (Amplification factor) = 2.5

R_p (Response modification factor) = 2.0

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 05/06/2031

Date: 5/6/2025

Name: Mohammad Karim

Title: Supervisor, Health Facilities

Special Seismic Certification Valid Up to: SDS (g) = 1.75

z/h = 1

Condition of Approval (if applicable):

Table 1 - Certified Gensets Off Tank

Model	Max Rating [kW]	Config.	Dimensional Data [in]			Max Weight [lb]	Mounting Configuration	UUT
			Max Length	Max Width	Max Height			
KD2000	2000	Open	263.0	114.8	130.0	48,516	Rigid Base Mounted with Internal Isolation or Base Mounted with External Isolation	Extrapolated
	2000	Enclosed	503.0	137.0	163.0	66,344		
KD2250	2250	Open	263.0	114.8	130.0	49,222		
	2250	Enclosed	503.0	137.0	163.0	67,050		
KD2500	2500	Open	270.6	114.8	130.0	51,913	Rigid Base Mounted with Internal Isolation	UUT-13
	2500	Enclosed	500.0	137.0	163.0	70,500		
KD2800	2800	Open	301.0	125.0	136.0	69,240	Rigid Base Mounted with Internal Isolation or Base Mounted with External Isolation	Interpolated
KD2800	2800	Open	297.0	137.6	136.1	68,239		
KD3000	3000	Open	301.0	125.0	136.0	69,240		
KD3000	3000	Open	297.0	137.6	136.1	68,239		
KD3250	3250	Open	297.0	137.6	136.0	61,870	Base Mounted with External Isolation	UUT-14

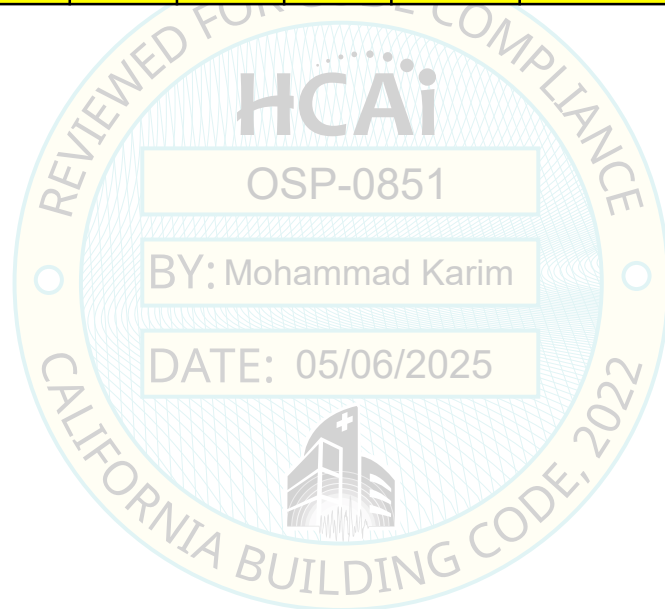


Table 2 - Certified Enclosures

Model Range	Part Number	Type	Manufacturer	Weight [lb]	UUT
KD2000-2500	114011216XX	Aluminum Sound Level 2	Kohler	17,828	UUT-13

Table 3 - Certified Engines

Model Range	Model	Manufacturer	Operating Weight [lb]	UUT
KD2000-KD3250	KD2000 (KD62V12A)	Kohler	19,698	Extrapolated
	KD2250 (KD62V12A)		19,698	
	KD2500 (KD62V12A)		19,698	UUT-13
	KD2800 (KD83V16A)		24,291	Intepolated
	KD3000 (KD83V16A)		24,292	
	KD3250 (KD83V16A)		24,293	UUT-14

Table 4 - Certified Fuel/Water Separators

Model	Manufacturer	Part	Weight	UUT
KD2000-KD3250	Parker/Racor	DLDP160	16	UUT-13, UUT-14

Table 5 - Certified Block Heaters

Model	Manufacturer	PartNumber	Weight	UUT
KD2000 - KD3250	Kim Hotstart	CSM Series Style A	37	Extrapolated
		CSM Series Style B	54	UUT-13, UUT-14
	PTI ²	Topstart Series ¹	35	UUT-13a,b

¹ Includes Control Box² Carlor is now PTI**Table 6 - Certified Air Filters**

Model Range	Manufacturer	Standard Duty Air Filter Assembly			Heavy Duty Air Filter Assembly		
		Part Number	Weight [lb]	UUT	Part Number	Weight [lb]	UUT
KD2000	Kohler	30801168701	17	Extrapolated (Lower Mass than Heavy Duty)	10801002801	88	Extrapolated
KD2250		30801168701	17		10801002801	88	
KD2500		30801168701	17		10801002801	88	UUT-13
KD2800		30801168701	17		10801002801	88	Interpolated
KD3000		30801168701	17		10801002801	88	
KD3250		30801168701	17		10801002801	88	UUT-14

Table 7A - Certified Alternators

Model Range	Part Number	Power Rating [kW]	Manufacturer	Weight [lb]	UUT
KD800-KD3250	LS941-VL70 / KH08590TO4D	2000, 2250, 2500, 2800, 3000, 3250	Leroy Somer [branded Kohler]	19,888	UUT-14

Table 7B - Certified Alternators

Model Range	Part Number	Power Rating [kW]	Manufacturer	Weight [lb]	UUT
KD2000-KD3250	4P6.7-2975 / KH08100TO4D, KH08101TO4D	2250, 2500	Kato [branded Kohler]	17,723	UUT-13

Table 8 - Certified Radiators

Model Range	Customer Part Number	Manufacturer	Operating Weight [lb]	UUT
KD2000	40C	WABTEC, [branded Kohler]	6,700	Extrapolated
	50C		7,630	
KD2250	40C		6,700	
	50C		7,630	
KD2500	40C		6,700	UUT-13
	50C		7,630	
KD2800	40C		12,740	Interpolated
	50C		12,740	
KD3000	40C		12,740	
	50C		12,740	
KD3250	40C		12,740	UUT-14
	50C		12,570	

Table 9 - Certified Controllers

Model Range	Customer Model	Manufacturer	Weight [lb]	UUT
KD2000-KD3250	APM802	Kohler	<10	UUT-13
	APM603: KD Small Pedestal	Kohler	<10	Interpolated
	APM603: KD Large Pedestal	Kohler	<10	UUT-14

Table 10 - Certified Skids

Model	Material	Manufacturer	UUT
KD2000	Carbon Steel	Kohler ¹	Extrapolated
KD2250			
KD2500			UUT-13
KD2800			Interpolated
KD3000			
KD3250			UUT-14

¹ Kohler holds design control of skid designs.

Table 11 - Miscellaneous Components

Model Range	Description	Model Number	MFR	Weight [lb]	UUT
KD610-3250	Oil Level Regulator	LM Series	Murphy	<10	UUT-13, UUT-14
KD2000-2500	Redundant Starter(s)	10702003701, 30702250701	Kohler	141	UUT-13
KD2800-3250	Redundant Starter(s)	10702003701, 30702250701	Kohler	141	UUT-14
KD2000-3250	Battery Rack (for redundant starters)	10702002401-MA2	Kohler	122	UUT-13, UUT-14
KD2000-2500	DC Light Package	11412000300-KA1 11412000300-KA2 11412000300-KA3	Kohler	1	UUT-13
KD2000-2500	Ventilating Fan	11412013600-KA3 11412014000-KA3 11412006400-KA1 11412004000-KA1 11412000500-KA1	Kohler	35	UUT13
KD2000-2500	Enclosure Heater	11412006300-KA1 11412000400-KA1 11412003900-KA1	Kohler / Berko	25	UUT13
KD800-2500	Motorized Air Inlet, Insulated Aluminum	Series 9000	Tamco	230	UUT-13
KD2000-2500	Motorized Air Outlet, Galvanized	VCD-23	Greenheck	605	UUT-13
KD610-2500	External Emergency Stop	11412012900-KA1	Kohler	25	UUT-13
KD2000-2500	Stepdown Transformer	11605000700-KA2	Square D	370	UUT-13
KD610-3250	Battery Charger (s)	MSM-20-24V-U1	LaMarche	11	UUT-13, UUT-14
KD610-3250	Automatic Redundant Battery Selector	ES-82649 "ARBS-4800-150"	LaMarche	124	UUT-13

Table 12 - Circuit Breakers

Model Range	Manufacturer	Description	Alternator Range	Weight [lb]	UUT
KD2000-3250	Schneider	MTZ-Frame	220/380, 240/416, 277/480, 347/600	279	UUT-14
KD800-3250	ABB	Emax 2	120/208, 127/220, 139/240, 220/380, 240/416, 254/440, 277/480, 230/400, 240/415, 347/600	314	UUT-13



UNIT UNDER TEST (UUT) Summary Sheet

UUT-13

Test Report: 22584-2301 (Test Performed at CERL, Report by DCL)

Model Line	Model Number	Manufacturer
KD	KD2500	Kohler

Product Construction Summary

Painted Carbon Steel Skid, Aluminum Enclosure

Options / Subcomponent Summary

Enclosure, Fuel/Water Separator, Block Heater, Air Filter, Radiator, Controller, Redundant Starter, Battery Rack, Motorized Air Inlet (Aluminum), Motorized Air Inlet (Galvanized), Automatic Redundant Battery Selector, Engine, Alternator, circuit breakers, DC Light Package, Ventilating Fan, Enclosure Heater, Motorized Air Inlet, (Insulated Aluminum), External Emergency Stop, Stepdown Transformer, Battery Charger (s).

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
70,500	500.0	137.0	163.0	3.0	2.5	6.0

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S _{DS} (g)	z/h	I _p	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2022	ICC-ES AC156	1.75	1.0	1.5	2.80	2.10	-	-
		2.00	0.0	1.5	-	-	1.34	0.54

Test Mounting Details

UUT-13 was rigidly mounted to the shake table using (20) 3/4" diameter Grade 8 bolts. The generator was isolated from the lifting frame with (10) VMC M2SSH-1E-6500N and (2) VMC M2SSH-1E-5980N spring isolators. Each isolator was bolted to the lifting base using (4) 5/8" Grade 8 bolts, washers, and nuts. The generator was attached to each isolator with (1) 3/4" Grade 8 bolt, nut, and flat washer."



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



UNIT UNDER TEST (UUT) Summary Sheet

UUT-13A

Test Report: 23739-2401 (Test Performed at DCL, Report by DCL)

Model Line	Model Number	Manufacturer
KD	Topstart Series	PTI

Product Construction Summary

Painted Carbon Steel Mounting Brackets

Options / Subcomponent Summary

Block Heater

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
35	17.8	10.5	20.1	8.5	27.0	27.0

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S _{DS} (g)	z/h	I _p	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2022	ICC-ES AC156	1.75	1.0	1.5	2.80	2.10	-	-
		2.00	0.0	1.5	-	-	1.34	0.54

Test Mounting Details

UUT-13a was base mounted to shake table fixture brackets using (2) manufacturer-provided 0.14" thick steel mounting brackets. Manufacturer-provided mounting brackets were attached to the unit using (4) M8 Grade 8.8 hardware. The manufacturer-provided mounting brackets were attached to shake table fixture brackets using (4) M10 Grade 8.8 hardware.



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



UNIT UNDER TEST (UUT) Summary Sheet

UUT-13B

Test Report: 23739-2401 (Test Performed at DCL, Report by DCL)

Model Line	Model Number	Manufacturer
KD	Topstart Series	PTI

Product Construction Summary

Painted Carbon Steel Mounting Brackets

Options / Subcomponent Summary

Block Heater

UUT Properties

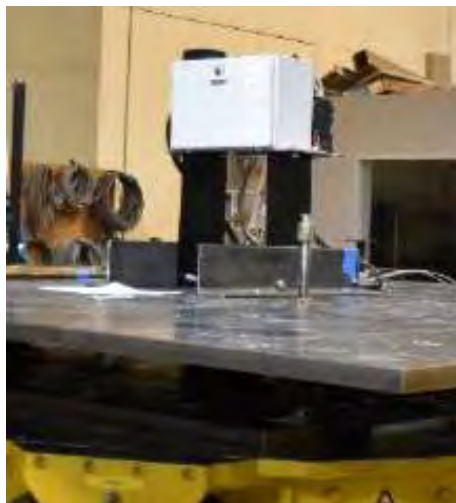
Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
35	17.8	10.5	20.1	6.5	5.0	6.0

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S _{DS} (g)	z/h	I _p	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2022	ICC-ES AC156	1.75	1.0	1.5	2.80	2.10	-	-
		2.00	0.0	1.5	-	-	1.34	0.54

Test Mounting Details

UUT-13b was base mounted to shake table fixture brackets using (2) manufacturer-provided 0.14" thick steel mounting brackets. Manufacturer-provided mounting brackets were attached to the unit using (4) M8 Grade 8.8 hardware. The manufacturer-provided mounting brackets were attached to shake table fixture brackets using (4) M10 Grade 8.8 hardware. The shake table interface plate was attached to the shake table using VMC MSSH-1E spring isolators.



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



UNIT UNDER TEST (UUT) Summary Sheet

UUT-14

Test Report: 32366-2401 (Test Performed at CERL, Report by DCL)

Model Line	Model Number	Manufacturer
KD	KD3250	Kohler

Product Construction Summary

Painted Carbon Steel Skid

Options / Subcomponent Summary

Fuel/Water Separator, Block Heater, Air Filter, Alternator, Radiator, Engine, Controller, Circuit Breakers, Battery Charger, Oil Level Regulator, Redundant Starter(s), Battery Rack (for redundant starters)

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
61,870	297.0	137.6	136.0	4.0	2.0	6.0

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S _{DS} (g)	z/h	I _p	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
CBC 2022	ICC-ES AC156	1.75	1.0	1.5	2.80	2.10	-	-
		2.00	0.0	1.5	-	-	1.34	0.54

Test Mounting Details

UUT-14 was isolated using (18) VMC Group M2SSH-1E-6150N 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.