



OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
FACILITIES DEVELOPMENT DIVISION

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

OFFICE USE ONLY

APPLICATION #: OSP – 0558 – 10

OSHPD Special Seismic Certification Preapproval (OSP)

Type: ☒ New ☐ Renewal

Manufacturer Information

Manufacturer: Global Plasma Solutions

Manufacturer's Technical Representative: Charlie Waddell, President

Mailing Address: 10 Mall Terrace, Building C, Savannah, GA 31406

Telephone: (912) 356-0115

Email: Charlie@globalplasmasolutions.com

Product Information

Product Name: iMOD Modular Ionization System

Product Type: Electronic air purification device

Product Model Number: See attachment

(List all unique product identification numbers and/or part numbers) OSP-0558-10

General Description: Modular ionization system consisting of 6-inch ionization bar sections, end cap, ion detector sensor, power cable with connectors, power supply, and optional NEMA enclosure for power supply.

Mounting Description: Units are wall mounted (rigid or flexible)

DATE: 12/28/2018

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

I hereby agree to reimburse the Office of Statewide Health Planning and Development review fees in accordance with the California Administrative Code, 2016.

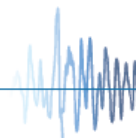
Signature of Applicant:

Date: 4/20/18

Title: President

Company Name: The VMC Group

"Access to Safe, Quality Healthcare Environments that Meet California's Diverse and Dynamic Needs"





**OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
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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: SE-2851

Mailing Address: 113 Main Street, Bloomingdale, NJ 07403

Telephone: (973) 838-1780 Email: Ken.tarlow@thevmcgroup.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: Dynamic Certification Laboratories

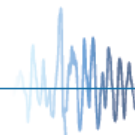
Contact Name: Josh Sailer, Laboratory Manager

Mailing Address: 1315 Greg Street, Suite 109, Sparks, NV 89431

Telephone: (775) 358-5085 Email: josh@shaketest.com

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STATE OF CALIFORNIA – HEALTH AND HUMAN SERVICES AGENCY
OSH-FD-759 (REV 12/16/15)



OSHPD

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Seismic Parameters

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

Design Basis of Equipment or Components (F_p/W_p) = 1.50 (Sds 2.0g, z/h=1); 1.13 (Sds 2.5g, z/h=0)

S_{DS} (Design spectral response acceleration at short period, g) = Sds 2.0g, z/h=1; Sds 2.5g, z/h=0

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

R_p (Equipment or component response modification factor) = 6.0

Ω_0 (System overstrength factor) = 2.0

I_p (Importance factor) = 1.5

z/h (Height factor ratio) = 1.0 for Sds 2.0g; 0.0 for Sds 2.5g

Equipment or Component Natural Frequencies (Hz) = See attachment

Overall dimensions and weight (or range thereof) = See attachment

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) = OSP-0558-10

Ω_0 (System overstrength factor) = _____

C_d (Deflection amplification factor) = BY: Ali Sumer

I_p (Importance factor) = 1.5

Height to Center of Gravity above base = DATE: 12/28/2018

Equipment or Component Natural Frequencies (Hz) = _____

Overall dimensions and weight (or range thereof) = _____

Tank(s) designed in accordance with ASME BPVC, 2015: ☐ Yes ☒ No

List of Attachments Supporting Special Seismic Certification

☒ Test Report(s) ☐ Drawings ☐ Calculations ☒ Manufacturer's Catalog

☐ Other(s) (Please Specify): _____

OSHPD Approval (For Office Use Only) – Approval Expires on December 31, 2022

Signature: Ali Sumer Date: 12/28/2018

Print Name: Ali Sumer Title: DSE

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

Condition of Approval (if applicable): _____

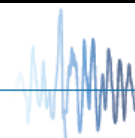


Table 1 - Certified Units

Ionization Bars						
Manufacturer Model Number	Manufacturer	Max. Horizontal Distance Between Attachments (in)	Support Material Thickness (gage)	Max. Distance for Unsupported Mid-Coil Span (in)	Mounting	Unit
GPS-iMOD-6	GPS	32	18	65	Wall mounted	UUT1a,b, UUT2a,b
Power Supplies						
Manufacturer Model Number	Manufacturer	Dimensions (DxWxH) (in)		Weight (lb)	Mounting	Unit
GPS-iMOD	GPS	5.0 x 3.5 x 8.0		5.0	Wall mounted	UUT3a,b
GPS-iMOD with NEMA enclosure	GPS	7.5 x 14.0 x 15.0		15.0	Wall mounted	UUT4a,b

REVIEWED FOR CODE COMPLIANCE

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BY: Ali Sumer

DATE: 12/28/2018

CALIFORNIA BUILDING CODE 2016

Table 2 - Subcomponents

Subcomponent [MFR]	Model	Notes	Material of Construction	Weight (lb)	Unit
6-Inch Ionization Bar Sections [GLOBAL PLASMA SOLUTIONS]	GPS-iMOD-6	6"L x 0.75"W x 0.75"H	UL94VO Composite	0.3	UUT1a,b, UUT2a,b
End Cap [GLOBAL PLASMA SOLUTIONS]	GPS-iMOD-EC	0.5" diameter	UL94VO Composite	<0.1	UUT1a,b, UUT2a,b
Ion Detector Sensor [GLOBAL PLASMA SOLUTIONS]	GPS-iDetect-P	1" diameter x 10" long	UL94VO Composite	0.2	UUT1a,b, UUT2a,b
Power Cable with Connectors [GLOBAL PLASMA SOLUTIONS]	GPS-iMOD-PC	5500VAC / 2mA	UL94VO Composite	0.3	UUT1a,b, UUT2a,b
Power Supply [GLOBAL PLASMA SOLUTIONS] Note: Power supplies with different ratings are physically identical; an internal voltage selector switch is employed to change between electrical ratings.	GPS-iMOD	24V/0.625A	Carbon steel	5.0	UUT3a,b
		110V/0.14A			Interpolated
		208-240V/0.07A			UUT4a,b
NEMA Enclosure for Power Supply [ALLIED MOULDED PRODUCTS, INC.]	AMU1426TF	7.5"D x 14.0"W x 15.0"H	Fiberglass / NEMA 4X	8.0	UUT4a,b

DATE: 12/28/2018

Table 3 - Tested Units

Ionization Bars								
Manufacturer Model Number	Manufacturer	Ion Detector Sensor Attached	Support Material Thickness (gage)	Tested Distance Between Attachments (in)	Max. Distance for Unsupported Mid-Coil Span (in)	Tested Weight [lb]	Mounting	Unit
GPS-iMOD-6	GPS	Yes	18	16 and 32	N/A	3.0	Rigid wall	UUT1a
GPS-iMOD-6	GPS	Yes	18	16 and 32	N/A	3.0	Isolated wall	UUT1b
GPS-iMOD-6	GPS	Yes	18	60	60	3.5	Rigid wall	UUT2a
GPS-iMOD-6	GPS	Yes	18	60	60	3.5	Isolated wall	UUT2b
Power Supplies								
Manufacturer Model Number	Manufacturer	Dimensions (DxWxH) (in)				Tested Weight [lb]	Mounting	Unit
GPS-iMOD	GPS	5.0 x 3.5 x 8.0				5.0	Rigid wall	UUT3a
GPS-iMOD	GPS	5.0 x 3.5 x 8.0				5.0	Isolated wall	UUT3b
GPS-iMOD with NEMA enclosure	GPS	7.5 x 14.0 x 15.0				15.0	Rigid wall	UUT4a
GPS-iMOD with NEMA enclosure	GPS	7.5 x 14.0 x 15.0				15.0	Isolated wall	UUT4b

UUT1a,b**UNIT UNDER TEST (UUT) Summary Sheet****Manufacturer:** Global Plasma Solutions**Product Line:** iMOD Modular Ionization System**Model Number:** GPS-iMOD-6**Product Construction Summary:** UL94VO Composite**Options / Component Summary:** Power cable with connectors, 6-inch ionization bar sections, end cap, and ion detector sensor

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained.

UUT Properties

Operating Weight (lb)	Dimensions (in)				Lowest Natural Frequency (Hz)		
		Depth	Width	Height	Front-Back	Side-Side	Vertical
3.0	UUT1a,b	2.0	60.0	3.0	N/A	N/A	N/A

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2016	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	1.67	0.67
		2.50	0.0					

Unit Mounting Description:

UUT1a,b

UUT1a,b was mounted to the DCL wall fixture with (4) #8 self-tapping screws, one screw per connection, into 18 gage sheet metal. The span between the screws varied from left to right: 16", 32" and 3", respectively. 18 gage sheet metal backed the entire length of the UUT. For the isolated shake (UUT1b), the DCL wall fixture was mounted on (4) VMC M2SSH-1E-530N spring isolators. Isolators were mounted to the shake table interface plate with (4) ½" diameter, Grade 5, bolts each. Each isolator had a single ¾" diameter, Grade 5, bolt to connect to the DCL wall fixture.

UUT2a,b**UNIT UNDER TEST (UUT) Summary Sheet****Manufacturer:** Global Plasma Solutions**Product Line:** iMOD Modular Ionization System**Model Number:** GPS-iMOD-6**Product Construction Summary:** UL94VO Composite**Options / Component Summary:** Power cable with connectors, 6-inch ionization bar sections, end cap, and ion detector sensor

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained.

UUT Properties

Operating Weight (lb)	Dimensions (in)				Lowest Natural Frequency (Hz)		
		Depth	Width	Height	Front-Back	Side-Side	Vertical
3.5	UUT2a,b	2.0	73.0	3.0	N/A	N/A	N/A

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2016	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	1.67	0.67
		2.50	0.0					

Unit Mounting Description:

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UUT2a,b

UUT2a,b was mounted to the DCL wall fixture with (4) #8 self-tapping screws, one per connection, into 18 gage sheet metal. The span between the screws varied from left to right: 3", 65" and 3", respectively. 18 gage sheet metal backed the two 3" spans, but the 65" span was unsupported. For the isolated shake (UUT2b), the DCL wall fixture was mounted on (4) VMC M2SSH-1E-530N spring isolators. Isolators were mounted to the shake table interface plate with (4) ½" diameter, Grade 5, bolts each. Each isolator had a single ¾" diameter, Grade 5, bolt to connect to the DCL wall fixture.

UUT3a,b

UNIT UNDER TEST (UUT) Summary Sheet

Manufacturer: Global Plasma Solutions

Product Line: iMOD Modular Ionization System

Model Number: GPS-iMOD

Product Construction Summary: Carbon steel power supply box

Options / Component Summary: Power supply

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained.

UUT Properties

Operating Weight (lb)	Dimensions (in)				Lowest Natural Frequency (Hz)		
		Depth	Width	Height	Front-Back	Side-Side	Vertical
5.0	UUT3a,b	5.0	3.5	8.0	N/A	N/A	N/A

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2016	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	1.67	0.67
		2.50	0.0					

Unit Mounting Description:



UUT3a,b

UUT3a,b was attached to the DCL wall fixture with (4) #8 self-tapping screws, one in each corner. For the isolated shake (UUT3b), the DCL wall fixture was mounted on (4) VMC M2SSH-1E-530N spring isolators. Isolators were mounted to the shake table interface plate with (4) ½" diameter, Grade 5, bolts each. Each isolator had a single ¾" diameter, Grade 5, bolt to connect to the DCL wall fixture.

UUT4a,b

UNIT UNDER TEST (UUT) Summary Sheet

Manufacturer: Global Plasma Solutions

Product Line: iMOD Modular Ionization System

Model Number: GPS-iMOD with NEMA enclosure

Product Construction Summary: Carbon steel power supply box and fiberglass / NEMA 4x enclosure

Options / Component Summary: Power supply with fiberglass / NEMA 4X enclosure

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component and attachment system and force-resisting systems was maintained.

UUT Properties

Operating Weight (lb)	Dimensions (in)				Lowest Natural Frequency (Hz)		
		Depth	Width	Height	Front-Back	Side-Side	Vertical
15.0	UUT4a,b	7.5	14.0	15.0	N/A	N/A	N/A

Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2016	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	1.67	0.67
		2.50	0.0					

Unit Mounting Description:



UUT4a,b

UUT4a,b was attached to the DCL wall fixture with (4) ¼" diameter, Grade 5, bolts with channel nuts, one per each corner, slotted into 12 gage unistrut. For the isolated shake (UUT4b), the DCL wall fixture was mounted on (4) VMC M2SSH-1E-530N spring isolators. Isolators were mounted to the shake table interface plate with (4) ½" diameter, Grade 5, bolts each. Each isolator had a single ¾" diameter, Grade 5, bolt to connect to the DCL wall fixture.