



DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION
FACILITIES DEVELOPMENT DIVISION

APPLICATION FOR HCAI SPECIAL SEISMIC
CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY

APPLICATION #: OSP-0767

HCAI Special Seismic Certification Preapproval (OSP)

Type: New Renewal

Manufacturer Information

Manufacturer: Fuel Oil Systems

Manufacturer's Technical Representative: Doug Nakano

Mailing Address: 17500 Murphy Parkway, Lathrop, CA 95330

Telephone: (925) 556-5424

Email: dnakano@fueloilsystems.net

Product Information

Product Name: Emergency and Standby Power Systems

Product Type: Fuel Tanks

Product Model Number: UL 2085 Fuel Tanks

General Description: Welded carbon steel inner and outer tanks meeting UL 2085.

Mounting Description: Rigid, Floor 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: Manwill Engineering LLC

Contact Person: Derek Manwill

Mailing Address: PO Box 1194, Bend, OR 97709

Telephone: (541) 241-2102

Email: derek@manwillse.com

Title: President





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

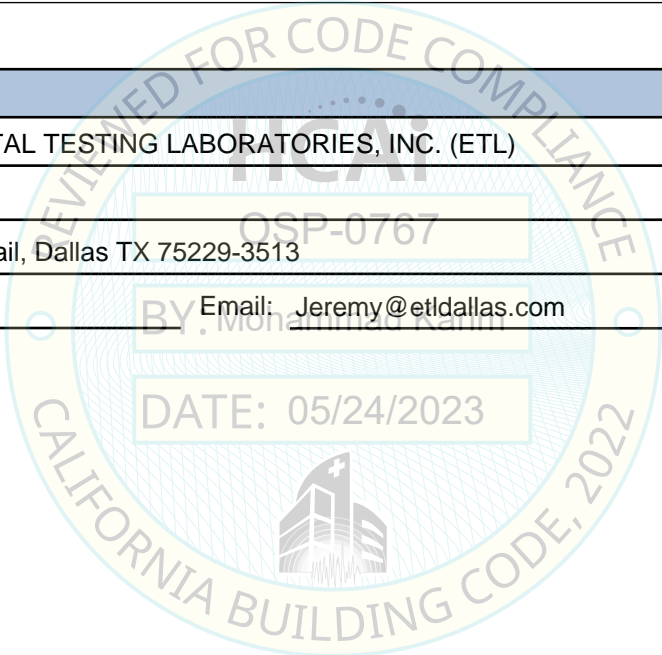
Company Name: MANWILL ENGINEERING LLC
Name: Derek Manwill California License Number: S6266
Mailing Address: PO Box 1194, Bend, OR 97709
Telephone: (541) 241-2102 Email: derek@manwillse.com

Certification Method

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

Testing Laboratory

Company Name: ENVIRONMENTAL TESTING LABORATORIES, INC. (ETL)
Contact Person: Jeremy Lange
Mailing Address: 11034 Indian Trail, Dallas TX 75229-3513
Telephone: (972) 247-9657 Email: Jeremy@etldallas.com





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Seismic Parameters

Design Basis of Equipment or Components (F_p/W_p) = 1.44 (SDS=2.00, z/h=1), 1.13 (SDS=2.50, 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) = 1.0

R_p (Response modification factor) = 2.5

Ω_0 (System overstrength factor) = 2.0

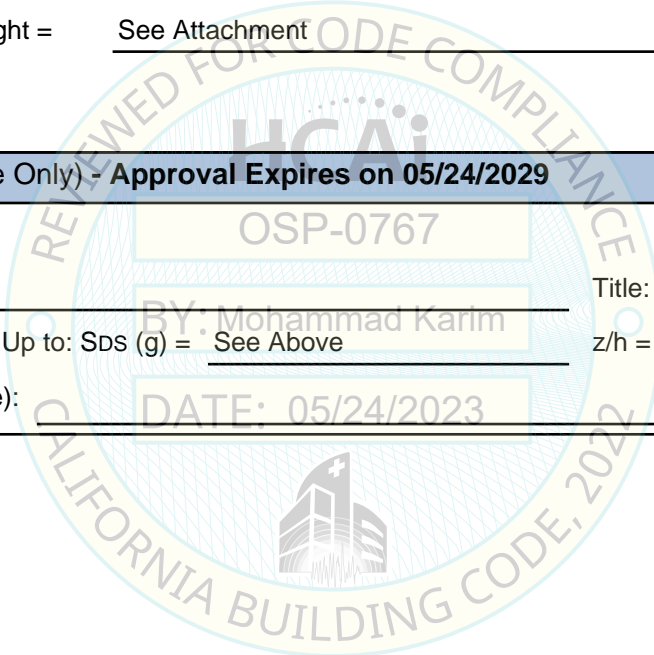
I_p (Importance factor) = 1.5

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 05/24/2029			
Date:	<u>5/24/2023</u>	OSP-0767	
Name:	<u>Mohammad Karim</u>	BY: <u>Mohammad Karim</u>	Title: <u>Supervisor, Health Facilities</u>
Special Seismic Certification Valid Up to:	SDS (g) = <u>See Above</u>		z/h = <u>See Above</u>
Condition of Approval (if applicable):	<u>DATE: 05/24/2023</u>		



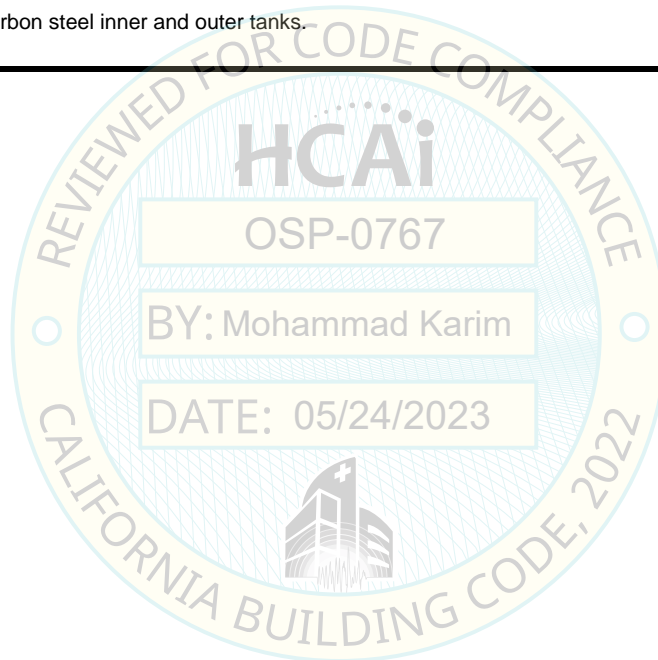
ATTACHMENT 1: CERTIFIED COMPONENTS

SPECIAL SEISMIC CERTIFICATION

TABLE 1

DOCUMENT NO.: 22095CR1.0

MANUFACTURER: FUEL OIL SYSTEMS						
PRODUCT FAMILY: UL 2085 FUEL TANKS						
MODEL NUMBER	DIMENSIONS (in)			MAX. WT. (lb)	DESCRIPTION / NOTES	BASIS
	DEPTH	WIDTH	HEIGHT			
UL 2085 Fuel Tanks						
250-Gal UL 2085 Tank	78.4	50.4	37.4	4,913		UUT 2
500-Gal UL 2085 Tank	94.0	50.0	52.0	8,006		UUT 1
MOUNTING: Rigid floor mounted.				SEISMIC LEVELS:	$S_{DS} = 2.0g$ for $z/h = 1$ $S_{DS} = 2.5g$ for $z/h = 0$	
NOTES: Product Construction: Welded carbon steel inner and outer tanks. Options/Subcomponents: None.						



ATTACHMENT 2: UNIT UNDER TEST SUMMARIES

SPECIAL SEISMIC CERTIFICATION

UUT 1

DOCUMENT NO.: 22095CR1.0

MANUFACTURER:		FUEL OIL SYSTEMS				
MODEL NUMBER:		500-Gal UL 2085 TANK				
UNIT FUNCTION:		FUEL TANK				
SERIAL NUMBER:		N/A				
DIMENSIONS (in)			WEIGHT (lb)	RES. FREQ. (Hz)		
DEPTH	WIDTH	HEIGHT		F-B	S-S	V
94.0	50.0	52.0	8,006	10.4	13.7	14.9
CODE & CRITERIA:		2022 CBC, ICC-ES AC156				
TEST LABORATORY:		ENVIRONMENTAL TESTING LABORATORY				
REPORT:		22095TR1.0 (dated 5/22/23), tested on 02/28/2023				
S _{DS} (g)	z/h	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)	
2.00	1	3.20	2.40	1.68	0.68	
2.50	0					
IMPORTANCE FACTOR, I_p = 1.5						
Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.						
MOUNTING:		Rigid floor mounted to fixture using (4) 5/8" Grade 8 bolts with heavy plate washer.				
CONSTRUCTION:		Welded carbon steel inner and outer tanks.				
SUBCOMPONENTS:		None.				
TESTING NOTES:		N/A				



UUT 2

MANUFACTURER:		FUEL OIL SYSTEMS				
MODEL NUMBER:		250-Gal UL 2085 TANK				
UNIT FUNCTION:		FUEL TANK				
SERIAL NUMBER:		N/A				
DIMENSIONS (in)			WEIGHT (lb)	RES. FREQ. (Hz)		
DEPTH	WIDTH	HEIGHT		F-B	S-S	V
78.4	50.4	37.4	4,913	31.9	>33	>33
CODE & CRITERIA:		2022 CBC, ICC-ES AC156				
TEST LABORATORY:		ENVIRONMENTAL TESTING LABORATORY				
REPORT:		22095TR1.0 (dated 5/22/23), tested on 05/18/2023				
S _{DS} (g)	z/h	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)	
2.00	1	3.20	2.40	1.68	0.68	
2.50	0					
IMPORTANCE FACTOR, I_p = 1.5						
Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.						
MOUNTING:		Rigid floor mounted to fixture using (4) 5/8" Grade 8 bolts with heavy plate washer.				
CONSTRUCTION:		Welded carbon steel inner and outer tanks.				
SUBCOMPONENTS:		None.				
TESTING NOTES:		N/A				

