



# APPLICATION FOR PREAPPROVAL SPECIAL SEISMIC CERTIFICATION OF EQUIPMENT AND COMPONENTS

For Office Use Only

**APPLICATION NO.**

**OSP – 0160-10**

Check whether application is: NEW  RENEWAL

1.0 Fuel Oil Systems Daniel Wood  
*Manufacturer* *Manufacturer's Technical Representative*

3167 Corporate Pl., Hayward, CA 94545  
*Mailing Address*

(510) 727-6701 x121 dwood@fueloilsystems.net  
*Telephone* *E-mail Address*

2.0 Master/Submaster Panels Fuel Oil Control Panel  
*Product Name* *Product Type*

Panels are custom built.  
*Product Model No. (List all unique product identification numbers and/or serial numbers)*

*General Description: Rigid wall mounted master panels contain processors, relays, and network equipment in order to control the flow of fuel oil to generators or other units. All master panels are wall-mounted in cold formed carbon steel NEMA-4 enclosures.*

3.0 Fuel Oil Systems Doug Nakano  
*Applicant Company Name* *Contact Person*

3167 Corporate Pl., Hayward, CA 94545  
*Mailing Address*

(510) 727-6701 dnakano@fueloilsystems.net  
*Telephone* *E-mail Address*

I hereby agree to reimburse the Office of Statewide Health Planning and Development for the actual costs incurred by the department for review.

*Signature of Applicant*

3/2/2011

*Date*

Owner

*Title*

Fuel Oil Systems

*Company Name*

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Registered Design Professional Preparing the Report

4.0

Forell/Elsesser Engineers

Company Name

Carlos Sempere, PE

Contact Name

C75648

California License Number

160 Pine St., 6th Flr., San Francisco, CA 94111

Mailing Address

415-837-0700

Telephone

c.sempere@forell.com

E-mail Address

California Licensed Structural Engineer Review and Acceptance of the Report

5.0

Forell-Elsesser Engineers, Inc.

Company Name

Marco Scanu, SE

Contact Name

S4454

California License Number

160 Pine St., 6th Flr., San Francisco, CA 94111

Mailing Address

415-837-0700

Telephone

m.scanu@forell.com

E-mail Address

Anchorage Pre-Approval

6.0

- Anchorage is pre-approved under OPA-  
(Separate application for anchorage pre-approval is required)
- Anchorage is not Pre-approved

Certification Method

7.0

- Testing in accordance with:
  - ICC-ES AC-156
  - Other (Please Specify):
- Analysis
- Experience data
- Combination of Testing, Analysis, and/or Experience Data (Please Specify):

Testing Laboratory (if applicable)

8.0

National Technical Systems

Company Name

Don Bennett

Contact Name

1536 E. Valencia Dr., Fullerton, CA 92831

Mailing Address

714-879-6110

Telephone

don.bennett@ntscorp.com

E-mail

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**Approval Parameters**

9.0

Design in accordance with ASCE 7-05 Chapter 13:  Yes  No

Design Basis of Equipment or Components ( $F_p/W_p$ ) = 2.54g

- $S_{DS}$  (Spectral response acceleration at short period) = 3.38g
- $a_p$  (In-structure equipment or component amplification factor) = 2.5
- $R_p$  (Equipment or component response modification factor) = 6.0
- $I_p$  (Importance factor) = 1.5
- $z/h$  (Height factor ratio) = 1.0
- Equipment or Component fundamental period(s) = n/a
- Building period limits (if any) = n/a
- Overall dimensions and weight (or range thereof) = See Attachments

Equipment or Components @ grade designed in accordance with ASCE 7-05 Chapter 15:  Yes  No

Design Basis of Equipment or Components ( $V/W$ ) =

- $S_{DS}$  (Spectral response acceleration at short period) =
- $S_1$  (Spectral response acceleration at 1 second period) =
- $R$  (Response modification coefficient) = 1.0
- $\Omega_o$  (System overstrength factor) = 1.0
- $C_d$  (Deflection amplification factor) = 1.0
- $I_p$  (Importance factor) = 1.5
- Height to Center of Gravity above base =
- Equipment or Component fundamental period(s) = Sec
- Overall dimensions and weight (or range thereof) =

Tank(s) designed in accordance with ASME BPVC, 2007:  Yes  No

**10.0 List of attachments supporting the special seismic certification of equipment or components:**

- Test Report
- Drawings
- Manufacturer's Catalog
- Calculations
- Other (Please Specify): SE Acceptance Letter, Product Range Summary

**11.0 OSHPD Approval (For Office Use Only)**

<p style="text-align: center; margin: 0;">Signature &amp; Date</p> <p style="text-align: center; margin: 0;"><b>Chris Tokas, SHFR</b></p> <p style="text-align: center; margin: 0;">Name &amp; Title</p>	<p>3/2/2011</p>	<p><b>December 31, 2016</b></p> <p style="text-align: center; margin: 0;">Approval Expiration Date</p> <p><math>S_{DS}</math> (g) = <b>3.38</b> <math>z/h</math> = <b>1.0</b></p> <p style="text-align: center; margin: 0;">Special Seismic Certification Valid Up to</p>
<p>Condition of Approval (if any):</p>		

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OSP APPLICATION  
 Fuel Oil Systems - Control Panels  
 Product Range Summary

<b>Fuel Oil Systems - Control Panels Product Range Summary</b>					
	Max. Width	Max. Depth	Max. Height	Max. Weight	Notes
<b>Enclosures</b>					
30"x24"x8" Cabinet	24.0 in	8.0 in	30.0 in	89.4 lbs	1
Seismic performance characteristics for control panels of intermediate sizes and weights are interpolated					
48"x36"x12" Cabinet	36.0 in	12.0 in	48.0 in	216 lbs	1
<b>Notes</b>					
1. All enclosures are NEMA Type 4, 14ga cold formed steel with gasketed doors.					

**INTERNAL COMPONENTS - ALL TESTED**

<b>Enclosures</b>	<b>Part #</b>
R.W. Hoffman 30"x24"x8" Cabinet	CSD30248
R.W. Hoffman 48"x36"x12" Cabinet	CSD483612
R.W. Hoffman Mounting Brackets	CMFK
Wheelock Alarm Bell 6" With gasket	43T-G6-115-S

<b>Internal Components</b>	<b>Part #</b>
A.D. DL-205 9-Slot PLC Rack	D2-09B-1
A.D. 260 CPU Processor card	D2-260
A.D. 16-Point 110VAC Input Card	D2-16NA
A.D. 8-Point 110VAC Relay Output Card	D2-08TR
A.D. 4-Point Analog Input Card	F2-04AD-1
A.D. Zip Link Connector Module	ZL-RTB20
A.D. Zip Link Cable 19-terminal 1-meter	ZL-D2-CBL19-1
A.D. Zip Link Cable 10-terminal 1-meter	ZL-D2-CBL10-1
Phoenix UT-4 term blocks Markers	1051016
Phoenix UT-4 term blocks Markers	1051032
Phoenix UT-10 term blocks Markers	1053030
Phoenix 24 VDC Power Supply	2866446
Red Lion 6" HMI	G306A000
Red Lion 10" HMI	G310C000
Red Lion to Koyo Com Cable	CBLKOY00
FBS 20-6 Plug in term jumpers	3030365
A.D. Unmanaged 5-Port Ethernet Switch	SE-SW5U
A.D. Unmanaged 8-Port Ethernet Switch	SE-SW8U
IDEC 2-Position 1-N.O. Switch 30mm	ASD210N
IDEC 120 VAC Pilot Light 30mm	APD199DN-W-120
IDEC 3-Position 2-N.O. Switch 30mm	ASD320N-B
IDEC N.O. Auxiliary Contacts	BST-010
A.D. Fuji 12A Motor Contactor 110VAC Coil	SC-E03-110VAC
A.D. Fuji 9A Motor Contactor 110VAC Coil	SC-E02-110VAC
A.D. Fuji Aux Motor Contact Top 1-N.O. 1-N.C.	SZ-A11T
A.D. Fuji 5-8A Motor Overload Relay	TK-E02-800
A.D. Fuji 7-11A Motor Overload Relay	TK-E02-1100

FORELL/ELSESSER ENGINEERS, INC.  
 160 Pine Street, 6th Floor  
 San Francisco, CA 94111

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## TEST SUMMARY

### Tested Unit #1 (UUT1)

#### UUT 1

Master Control Panel  
P/N CC-4836-10  
(largest in product line)  
36"W x 12"D x 48"H  
216 lbs



### Tested Unit #2 (UUT2)

#### UUT 2

Submaster Control Panel  
P/N CC-3624-6  
(smallest in product line)  
24"W x 8"D x 30"H  
89.4 lbs



Each panel consists of a NEMA Type 4 (gusseted) enclosure with processors, relays, and networking components that allow the user to control fuel oil delivery to generators or other equipment. The user is able to observe fuel oil delivery status through a touchscreen mounted on the door and is able to manually control pumps through contactors installed on the door below the touchscreen. An alarm mounted on the side of the panel is sounded if anomalies are detected.

See Product Range Summary for list of internal components