# APPLICATION FOR OSHPD SPECIAL SEISMIC CERTIFICATION PREAPPROVAL (OSP)

| OFFICE USE ONLY | |
|---|---|
| APPLICATION #: | OSP-0371-10 |

## OSHPD Special Seismic Certification Preapproval (OSP)

**Type:** ☒ New ☐ Renewal

## Manufacturer Information

Manufacturer: Baldor Generators

Manufacturer's Technical Representative: David Sawasky

Mailing Address: 3815 Oregon Street, Oshkosh, WI 54902

Telephone: 920-230-1272 Email: david.sawasky@baldor.abb.com

## Product Information

Product Name: Baldor Generators

Product Type: Diesel Powered Electrical Generators

Product Model Number: 30 kW to 400 kW IDLC
(List all unique product identification numbers and/or part numbers)

General Description: Diesel powered electrical generators; on or off of UL 142 fuel tanks; with or without enclosures. Seismic enhancements made to the test units and modifications to address anomalies observed during the tests shall be incorporated into the production units.

Mounting Description: Base mounted on or off of UL 142 Fuel Tanks, with or without enclosures.

## Applicant Information

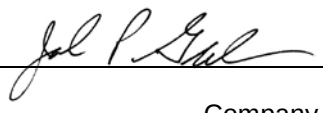
Applicant Company Name: The VMC Group

Contact Person: John P. Giuliano, P.E.

Mailing Address: 113 Main St., Bloomingdale, NJ 07403

Telephone: 973-838-1780 Email: john.giuliano@thevcmgroup.com

I hereby agree to reimburse the Office of Statewide Health Planning and Development review fees in accordance with the California Administrative Code, 2013.

Signature of Applicant:  Date: 11/13/13

Title: President Company Name: The VMC Group

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

Company Name: The VMC Group

Name: Mr. Ken Tarlow, S.E. California License Number: SE2851

Mailing Address: 113 Main St, 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: UC Berkeley – PEER

Contact Name: Wesley Neighbour

Mailing Address: 1301 South 46th Street, Building 420, Richmond, CA 94804

Telephone: 510-665-3409 Email: wdn@berkeley.edu

## Seismic Parameters

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

Design Basis of Equipment or Components ($F_p/W_p$) = 4.50 ($S_{DS}$ = 2.0 g, z/h = 1.0) ; 1.875 ($S_{DS}$ = 2.5 g, z/h = 0.0)

$S_{DS}$ (Design spectral response acceleration at short period, g) = 2.0 (z/h = 1.0) ; 2.5 (z/h = 0.0)

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

$R_p$ (Equipment or component response modification factor) = 2.0

$\Omega_0$ (System overstrength factor) = 2.5

$I_p$ (Importance factor) = 1.5

z/h (Height factor ratio) = 1.0

Equipment or Component Natural Frequencies (Hz) = See Attachments

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

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 ) = _____

$\Omega_0$ (System overstrength factor) = _____

$C_d$ (Deflection amplification factor) = _____

$I_p$ (Importance factor) = 1.5

Height to Center of Gravity above base = _____

Equipment or Component Natural Frequencies (Hz) = _____

Overall dimensions and weight (or range thereof) = _____

Tank(s) designed in accordance with ASME BPVC, 2010: ☐ 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, 2019

Signature:  Date: 2/18/2013

Print Name: M. R. Karim Title: SHFR

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

Condition of Approval (if applicable): _____

## Table 1 - Certified Gensets On Tanks

| Model | Max Rating (kW) | Configuration | EPA Rating | Dimensional Data | | | | $S_{DS}$ | z/h | UUT |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Max Length (in) | Max Width (in) | Max Height (in) | Max Weight (lbs) | | | |
| IDLC30-3J **IDLC30-3JU** | 30 | Open | Tier iT4 | 84.0 | 48.0 | 71.0 | 3,350 | 2.50 | 1.0 | 2A / 2B |
| | 30 | Enclosed | Tier iT4 | 118.5 | 50.0 | 92.5 | 5,180 | 2.50 | 1.0 | 1A / 1B |
| IDLC40-3J IDLC40-3JU | 40 | Open | Tier 3 | 96.0 | 54.0 | 83.0 | 3,885 | 2.50 | 1.0 | Interpolated |
| | 40 | Enclosed | Tier 3 | 130.5 | 56.0 | 104.5 | 6,088 | 2.50 | 1.0 | Interpolated |
| IDLC50-3J IDLC50-3JU | 50 | Open | Tier 3 | 96.0 | 54.0 | 83.0 | 4,188 | 2.50 | 1.0 | Interpolated |
| | 50 | Enclosed | Tier 3 | 130.5 | 56.0 | 104.5 | 6,510 | 2.50 | 1.0 | Interpolated |
| IDLC60-3J IDLC60-3JU | 60 | Open | Tier 3 | 96.0 | 54.0 | 83.0 | 4,735 | 2.50 | 1.0 | Interpolated |
| | 60 | Enclosed | Tier 3 | 130.5 | 56.0 | 104.5 | 7,150 | 2.50 | 1.0 | Interpolated |
| IDLC80-3J IDLC80-3JU | 80 | Open | Tier 3 | 111.0 | 54.0 | 88.0 | 5,435 | 2.50 | 1.0 | Interpolated |
| | 80 | Enclosed | Tier 3 | 159.0 | 56.0 | 110.0 | 8,418 | 2.50 | 1.0 | Interpolated |
| IDLC100-3J IDLC100-3JU | 100 | Open | Tier 3 | 111.0 | 54.0 | 88.0 | 6,085 | 2.50 | 1.0 | Interpolated |
| | 100 | Enclosed | Tier 3 | 159.0 | 56.0 | 110.0 | 9,243 | 2.50 | 1.0 | Interpolated |
| IDLC125-3J IDLC125-3JU | 125 | Open | Tier 3 | 120.0 | 54.0 | 104.0 | 6,937 | 2.50 | 1.0 | Interpolated |
| | 125 | Enclosed | Tier 3 | 166.0 | 56.0 | 125.5 | 9,720 | 2.50 | 1.0 | Interpolated |
| IDLC150-3J IDLC150-3JU | 150 | Open | Tier 3 | 120.0 | 54.0 | 104.0 | 7,487 | 2.50 | 1.0 | Interpolated |
| | 150 | Enclosed | Tier 3 | 166.0 | 56.0 | 125.5 | 10,265 | 2.50 | 1.0 | Interpolated |
| IDLC180-3J IDLC180-3JU | 180 | Open | Tier 3 | 135.0 | 54.0 | 104.0 | 8,657 | 2.50 | 1.0 | Interpolated |
| | 180 | Enclosed | Tier 3 | 184.0 | 56.0 | 137.5 | 11,243 | 2.50 | 1.0 | Interpolated |
| IDLC200-3J IDLC200-3JU | 200 | Open | Tier 3 | 135.0 | 54.0 | 104.0 | 8,907 | 2.50 | 1.0 | Interpolated |
| | 200 | Enclosed | Tier 3 | 169.0 | 56.0 | 137.5 | 11,593 | 2.50 | 1.0 | Interpolated |
| IDLC225-4J IDLC225-4JU | 225 | Open | Tier 3 | 135.0 | 72.0 | 102.0 | 10,261 | 2.50 | 1.0 | Interpolated |
| | 225 | Enclosed | Tier 3 | 184.0 | 74.0 | 143.0 | 12,718 | 2.50 | 1.0 | Interpolated |
| IDLC250-4J IDLC250-4JU | 250 | Open | Tier 3 | 135.0 | 72.0 | 102.0 | 10,770 | 2.50 | 1.0 | Interpolated |
| | 250 | Enclosed | Tier 3 | 184.0 | 74.0 | 143.0 | 13,202 | 2.50 | 1.0 | Interpolated |
| IDLC275-4J IDLC275-4JU | 275 | Open | Tier 3 | 135.0 | 72.0 | 102.0 | 12,347 | 2.50 | 1.0 | Interpolated |
| | 275 | Enclosed | Tier 3 | 184.0 | 74.0 | 143.0 | 14,069 | 2.50 | 1.0 | Interpolated |
| IDLC300-3J IDLC300-3JU | 300 | Open | Tier 3 | 159.0 | 72.0 | 128.0 | 13,496 | 2.50 | 1.0 | Interpolated |
| | 300 | Enclosed | Tier 3 | 227.5 | 74.0 | 158.5 | 16,940 | 2.50 | 1.0 | Interpolated |
| IDLC350-3J IDLC350-3JU | 350 | Open | Tier 3 | 159.0 | 72.0 | 128.0 | 13,974 | 2.50 | 1.0 | Interpolated |
| | 350 | Enclosed | Tier 3 | 227.5 | 74.0 | 158.5 | 18,084 | 2.50 | 1.0 | Interpolated |
| **IDLC400-3J IDLC400-3JU** | 400 | Open | Tier 3 | 159.0 | 72.0 | 128.0 | 14,716 | 2.50 | 1.0 | 4A / 4B |
| | 400 | Enclosed | Tier 3 | 227.5 | 74.0 | 158.5 | 19,193 | 2.50 | 1.0 | 3A / 3B |

## Table 2 - Certified Gensets Off Tanks

| Model | Max Rating (kW) | Configuration | EPA Rating | Dimensional Data | | | | $S_{DS}$ | z/h | UUT |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Max Length (in) | Max Width (in) | Max Height (in) | Max Weight (lbs) | | | |
| IDLC30-3J **IDLC30-3JU** | 30 | Open | Tier iT4 | 84.0 | 48.0 | 49.0 | 1,850 | 2.50 | 1.0 | 2C |
| | 30 | Enclosed | Tier iT4 | 118.5 | 50.0 | 70.5 | 3,680 | 2.50 | 1.0 | Extrapolated |
| IDLC40-3J IDLC40-3JU | 40 | Open | Tier 3 | 96.0 | 54.0 | 50.0 | 2,085 | 2.50 | 1.0 | Interpolated |
| | 40 | Enclosed | Tier 3 | 130.5 | 56.0 | 71.5 | 4,288 | 2.50 | 1.0 | Extrapolated |
| IDLC50-3J IDLC50-3JU | 50 | Open | Tier 3 | 96.0 | 54.0 | 50.0 | 2,188 | 2.50 | 1.0 | Interpolated |
| | 50 | Enclosed | Tier 3 | 130.5 | 56.0 | 71.5 | 4,510 | 2.50 | 1.0 | Extrapolated |
| IDLC60-3J IDLC60-3JU | 60 | Open | Tier 3 | 96.0 | 54.0 | 50.0 | 2,535 | 2.50 | 1.0 | Interpolated |
| | 60 | Enclosed | Tier 3 | 130.5 | 56.0 | 71.5 | 4,950 | 2.50 | 1.0 | Extrapolated |
| IDLC80-3J IDLC80-3JU | 80 | Open | Tier 3 | 111.0 | 54.0 | 50.0 | 3,035 | 2.50 | 1.0 | Interpolated |
| | 80 | Enclosed | Tier 3 | 159.0 | 56.0 | 74.0 | 6,018 | 2.50 | 1.0 | Extrapolated |
| IDLC100-3J IDLC100-3JU | 100 | Open | Tier 3 | 111.0 | 54.0 | 50.0 | 3,185 | 2.50 | 1.0 | Interpolated |
| | 100 | Enclosed | Tier 3 | 159.0 | 56.0 | 74.0 | 6,343 | 2.50 | 1.0 | Extrapolated |
| IDLC125-3J IDLC125-3JU | 125 | Open | Tier 3 | 120.0 | 54.0 | 56.0 | 3,937 | 2.50 | 1.0 | Interpolated |
| | 125 | Enclosed | Tier 3 | 166.0 | 56.0 | 79.5 | 6,720 | 2.50 | 1.0 | Extrapolated |
| IDLC150-3J IDLC150-3JU | 150 | Open | Tier 3 | 120.0 | 54.0 | 56.0 | 4,187 | 2.50 | 1.0 | Interpolated |
| | 150 | Enclosed | Tier 3 | 166.0 | 56.0 | 79.5 | 6,965 | 2.50 | 1.0 | Extrapolated |
| IDLC180-3J IDLC180-3JU | 180 | Open | Tier 3 | 135.0 | 54.0 | 58.0 | 4,757 | 2.50 | 1.0 | Interpolated |
| | 180 | Enclosed | Tier 3 | 184.0 | 56.0 | 91.5 | 7,343 | 2.50 | 1.0 | Extrapolated |
| IDLC200-3J IDLC200-3JU | 200 | Open | Tier 3 | 135.0 | 54.0 | 58.0 | 4,907 | 2.50 | 1.0 | Interpolated |
| | 200 | Enclosed | Tier 3 | 184.0 | 56.0 | 91.5 | 7,593 | 2.50 | 1.0 | Extrapolated |
| IDLC225-4J IDLC225-4JU | 225 | Open | Tier 3 | 135.0 | 72.0 | 62.0 | 5,886 | 2.50 | 1.0 | Interpolated |
| | 225 | Enclosed | Tier 3 | 184.0 | 74.0 | 95.0 | 8,343 | 2.50 | 1.0 | Extrapolated |
| IDLC250-4J IDLC250-4JU | 250 | Open | Tier 3 | 135.0 | 72.0 | 62.0 | 6,220 | 2.50 | 1.0 | Interpolated |
| | 250 | Enclosed | Tier 3 | 184.0 | 74.0 | 95.0 | 8,652 | 2.50 | 1.0 | Extrapolated |
| IDLC275-4J IDLC275-4JU | 275 | Open | Tier 3 | 135.0 | 72.0 | 62.0 | 6,497 | 2.50 | 1.0 | Interpolated |
| | 275 | Enclosed | Tier 3 | 184.0 | 74.0 | 95.0 | 9,219 | 2.50 | 1.0 | Extrapolated |
| IDLC300-3J IDLC300-3JU | 300 | Open | Tier 3 | 159.0 | 72.0 | 80.0 | 8,396 | 2.50 | 1.0 | Interpolated |
| | 300 | Enclosed | Tier 3 | 226.0 | 74.0 | 110.5 | 11,840 | 2.50 | 1.0 | Extrapolated |
| IDLC350-3J IDLC350-3JU | 350 | Open | Tier 3 | 159.0 | 72.0 | 80.0 | 8,649 | 2.50 | 1.0 | Interpolated |
| | 350 | Enclosed | Tier 3 | 226.0 | 74.0 | 110.5 | 12,759 | 2.50 | 1.0 | Extrapolated |
| IDLC400-3J **IDLC400-3JU** | 400 | Open | Tier 3 | 159.0 | 72.0 | 80.0 | 8,916 | 2.50 | 1.0 | 4C |
| | 400 | Enclosed | Tier 3 | 226.0 | 74.0 | 110.5 | 13,393 | 2.50 | 1.0 | Extrapolated |

## Table 3 - Certified Enclosure Matrix

| kW Range | Enclosure | | Manufacturer | UUT |
|---|---|---|---|---|
| | Type | Baldor Part No. | | |
| 30 | Steel Sound Level 1 | **EN5500S00** EN5500S10 | Baldor | 1A / 1B |
| | Steel Sound Level 2 | EN5500S20 EN5500S30 | Baldor | Interpolated |
| | Aluminum Sound Level 1 | EN5500A00 EN5500A10 | Baldor | Interpolated |
| | Aluminum Sound Level 2 | EN5500A20 EN5500A30 | Baldor | Interpolated |
| 40-60 | Steel Sound Level 1 | EN5500S01 EN5500S11 | Baldor | Interpolated |
| | Steel Sound Level 2 | EN5500S21 EN5500S31 | Baldor | Interpolated |
| | Aluminum Sound Level 1 | EN5500A01 EN5500A11 | Baldor | Interpolated |
| | Aluminum Sound Level 2 | EN5500A21 EN5500A31 | Baldor | Interpolated |
| 80-100 | Steel Sound Level 1 | EN5500S02 EN5500S12 | Baldor | Interpolated |
| | Steel Sound Level 2 | EN5500S22 EN5500S32 | Baldor | Interpolated |
| | Aluminum Sound Level 1 | EN5500A02 EN5500A12 | Baldor | Interpolated |
| | Aluminum Sound Level 2 | EN5500A22 EN5500A32 | Baldor | Interpolated |
| 125-150 | Steel Sound Level 1 | EN5500S03 EN5500S13 | Baldor | Interpolated |
| | Steel Sound Level 2 | EN5500S23 EN5500S33 | Baldor | Interpolated |
| | Aluminum Sound Level 1 | EN5500A03 EN5500A13 | Baldor | Interpolated |
| | Aluminum Sound Level 2 | EN5500A23 EN5500A33 | Baldor | Interpolated |
| 180-200 | Steel Sound Level 1 | EN5500S04 EN5500S14 | Baldor | Interpolated |
| | Steel Sound Level 2 | EN5500S24 EN5500S34 | Baldor | Interpolated |
| | Aluminum Sound Level 1 | EN5500A04 EN5500A14 | Baldor | Interpolated |
| | Aluminum Sound Level 2 | EN5500A24 EN5500A34 | Baldor | Interpolated |
| 225-275 | Steel Sound Level 1 | EN5500S05 EN5500S15 | Baldor | Interpolated |
| | Steel Sound Level 2 | EN5500S25 EN5500S35 | Baldor | Interpolated |
| | Aluminum Sound Level 1 | EN5500A05 EN5500A15 | Baldor | Interpolated |
| | Aluminum Sound Level 2 | EN5500A25 EN5500A35 | Baldor | Interpolated |
| 300-400 | Steel Sound Level 1 | EN5500S06 EN5500S16 | Baldor | Interpolated |
| | Steel Sound Level 2 | EN5500S26 EN5500S36 | Baldor | Interpolated |
| | Aluminum Sound Level 1 | EN5500A06 EN5500A16 | Baldor | Interpolated |
| | Aluminum Sound Level 2 | EN5500A26 **EN5500A36** | Baldor | 3A / 3B |

## Table 4 - Certified Tank Matrix

| kW Range | Tank | | | UUT |
|---|---|---|---|---|
| | Usable Capacity (gallons) | Baldor Part No. | Manufacturer | |
| 30 | 82 | TA2000A01 | United Alloy | Extrapolated |
| | 148 | TA2000A02 | | Extrapolated |
| | 202 | **TA0030S72** / TA2000A03 | | 1A / 1B / 2A / 2B |
| 40 - 60 | 148 | TA2000A04 | United Alloy | Interpolated |
| | 252 | TA2000A05 | | Interpolated |
| | 381 | TA2000A06 | | Interpolated |
| 80-100 | 218 | TA2000A07 | United Alloy | Interpolated |
| | 446 | TA2000A08 | | Interpolated |
| | 622 | TA2000A09 | | Interpolated |
| 125-200 | 387 | TA2000A10 | United Alloy | Interpolated |
| | 784 | TA2000A11 | | Interpolated |
| | 904 | TA2000A12 | | Interpolated |
| 225-275 | 499 | TA2000A13 | United Alloy | Interpolated |
| | 1016 | TA2000A14 | | Interpolated |
| | 1340 | TA2000A15 | | Interpolated |
| 300-350 | 804 | TA2000A16 | United Alloy | Interpolated |
| | 1554 | TA2000A17 | | Interpolated |
| | 1704 | TA2000A18 | | Interpolated |
| 400 | 804 | TA2000A16 | United Alloy | Interpolated |
| | 1554 | TA2000A17 | | Interpolated |
| | 1,705 | **TA0400S72** / TA2000A18 | | 3A / 3B / 4A / 4B |

## Table 5 - Certified Engine Matrix

| kW Range | Manufacturer Model | Manufacturer | UUT |
|---|---|---|---|
| 30 | 4024TF281 | John Deere | 1A / 1B / 2A / 2B / 2C |
| 40 - 50 | 4024HF285 | John Deere | Interpolated |
| 60 | 5030HF285 | John Deere | Interpolated |
| 80-100 | 4045HF285 | John Deere | Interpolated |
| 125-150 | 6068HF285 | John Deere | Interpolated |
| 180-200 | 6068HFG85 | John Deere | Interpolated |
| 225 - 275 | 6090HF484 | John Deere | Interpolated |
| 300 - **400** | 6135HF485 | John Deere | 3A / 3B / 4A / 4B / 4C |

## Table 6A - Certified Engine Sub-Component Matrix

| kW | Starter | | | Turbo/CAC Compressor | | |
|---|---|---|---|---|---|---|
| | Manufacturer | Model Number | UUT | Manufacturer | Model Number | UUT |
| 30 | John Deere | RE508922 | 1A / 1B / 2A / 2B / 2C | John Deere | RE524161 | 1A / 1B / 2A / 2B / 2C |
| 40 | John Deere | RE508922 | Interpolated | John Deere | RE539099 | Interpolated |
| 50 | John Deere | RE508922 | Interpolated | John Deere | RE539099 | Interpolated |
| 60 | John Deere | RE508922 | Interpolated | John Deere | RE535743 | Interpolated |
| 80 | John Deere | RE59588 | Interpolated | John Deere | RE548748 | Interpolated |
| 100 | John Deere | RE59588 | Interpolated | John Deere | RE548748 | Interpolated |
| 125 | John Deere | RE70474 | Interpolated | John Deere | RE550942 | Interpolated |
| 150 | John Deere | RE70474 | Interpolated | John Deere | RE550942 | Interpolated |
| 180 | John Deere | RE69704 | Interpolated | John Deere | RE535676 | Interpolated |
| 200 | John Deere | RE69704 | Interpolated | John Deere | RE535676 | Interpolated |
| 225 | John Deere | RE504245 | Interpolated | John Deere | RE532384 | Interpolated |
| 250 | John Deere | RE504245 | Interpolated | John Deere | RE532384 | Interpolated |
| 275 | John Deere | RE504245 | Interpolated | John Deere | RE532384 | Interpolated |
| 300 | John Deere | RE546791 | Interpolated | John Deere | RE548273 | Interpolated |
| 350 | John Deere | RE546791 | Interpolated | John Deere | RE548273 | Interpolated |
| 400 | John Deere | RE546791 | 3A / 3B / 4A / 4B / 4C | John Deere | RE548273 | 3A / 3B / 4A / 4B / 4C |

## Table 6B - Certified Engine Sub-Component Matrix

| kW | Fuel / Water Separator | | | Final Fuel Filter Assembly | | |
|---|---|---|---|---|---|---|
| | Manufacturer | Model Number | UUT | Manufacturer | Model Number | UUT |
| 30 | Racor | 230R30 | 1A / 1B / 2A / 2B / 2C | John Deere | RE508202 | 1A / 1B / 2A / 2B / 2C |
| 40 | Racor | 230R30 | Interpolated | John Deere | RE533026 | Interpolated |
| 50 | Racor | 230R30 | Interpolated | John Deere | RE533026 | Interpolated |
| 60 | Racor | 230R30 | Interpolated | John Deere | RE533026 | Interpolated |
| 80 | Racor | 230R30 | Interpolated | John Deere | RE522878 ; R113565 | Interpolated |
| 100 | Racor | 230R30 | Interpolated | John Deere | RE522878 ; R113565 | Interpolated |
| 125 | Racor | 230R30 | Interpolated | John Deere | RE522878 ; R113565 | Interpolated |
| 150 | Racor | 230R30 | Interpolated | John Deere | RE522878 ; R113565 | Interpolated |
| 180 | Racor | 230R30 | Interpolated | John Deere | RE522878 | Interpolated |
| 200 | Racor | 490R30 | Interpolated | John Deere | RE522878 | Interpolated |
| 225 | Racor | 490R30 | Interpolated | John Deere | RE525523 | Interpolated |
| 250 | Racor | 490R30 | Interpolated | John Deere | RE525523 | Interpolated |
| 275 | Racor | 490R30 | Interpolated | John Deere | RE525523 | Interpolated |
| 300 | Racor | 490R30 | Interpolated | John Deere | RE532952 ; RE533910 | Interpolated |
| 350 | Racor | 490R30 | Interpolated | John Deere | RE532952 ; RE533910 | Interpolated |
| 400 | Racor | 490R30 | 3A / 3B / 4A / 4B / 4C | John Deere | RE532952 ; RE533910 | 3A / 3B / 4A / 4B / 4C |

## Table 6C - Certified Engine Sub-Component Matrix

| kW | Water Pump | | | Fuel Pump | | |
|---|---|---|---|---|---|---|
| | Manufacturer | Model Number | UUT | Manufacturer | Model Number | UUT |
| 30 | John Deere | RE545573 | 1A / 1B / 2A / 2B / 2C | John Deere | RE532210 | 1A / 1B / 2A / 2B / 2C |
| 40 | John Deere | RE545573 | Interpolated | John Deere | RE536662 | Interpolated |
| 50 | John Deere | RE545573 | Interpolated | John Deere | RE536662 | Interpolated |
| 60 | John Deere | RE545573 | Interpolated | John Deere | RE536662 | Interpolated |
| 80 | John Deere | RE505980 | Interpolated | John Deere | RE517230 | Interpolated |
| 100 | John Deere | RE505980 | Interpolated | John Deere | RE517230 | Interpolated |
| 125 | John Deere | RE505980 | Interpolated | John Deere | RE517230 | Interpolated |
| 150 | John Deere | RE505980 | Interpolated | John Deere | RE517230 | Interpolated |
| 180 | John Deere | RE523169 | Interpolated | John Deere | RE517230 | Interpolated |
| 200 | John Deere | RE523169 | Interpolated | John Deere | RE517230 | Interpolated |
| 225 | John Deere | RE530194 | Interpolated | John Deere | RE539764 | Interpolated |
| 250 | John Deere | RE530194 | Interpolated | John Deere | RE539764 | Interpolated |
| 275 | John Deere | RE530194 | Interpolated | John Deere | RE539764 | Interpolated |
| 300 | John Deere | RE549117 | Interpolated | John Deere | RE540388 | Interpolated |
| 350 | John Deere | RE549117 | Interpolated | John Deere | RE540388 | Interpolated |
| 400 | John Deere | RE549117 | 3A / 3B / 4A / 4B / 4C | John Deere | RE540388 | 3A / 3B / 4A / 4B / 4C |

## Table 6D - Certified Engine Sub-Component Matrix

| kW | Oil Pump | | | Block Heater | | |
|---|---|---|---|---|---|---|
| | Manufacturer | Model Number | UUT | Manufacturer | Model Number | UUT |
| 30 | John Deere | RE508215 | 1A / 1B / 2A / 2B / 2C | Hotstart | TPS, CTM | 1A / 1B / 2A / 2B / 2C |
| 40 | John Deere | RE508215 | Interpolated | Hotstart | TPS, CTM | Interpolated |
| 50 | John Deere | RE508215 | Interpolated | Hotstart | TPS, CTM | Interpolated |
| 60 | John Deere | RE508215 | Interpolated | Hotstart | TPS, CTM | Interpolated |
| 80 | John Deere | RE504914 | Interpolated | Hotstart | TPS, CTM | Interpolated |
| 100 | John Deere | RE504914 | Interpolated | Hotstart | TPS, CTM | Interpolated |
| 125 | John Deere | RE504914 | Interpolated | Hotstart | TPS, CTM | Interpolated |
| 150 | John Deere | RE504914 | Interpolated | Hotstart | TPS, CTM | Interpolated |
| 180 | John Deere | RE521756 | Interpolated | Hotstart | TPS, CTM | Interpolated |
| 200 | John Deere | RE521756 | Interpolated | Hotstart | TPS, CTM | Interpolated |
| 225 | John Deere | RE543187 | Interpolated | Hotstart | CB & CL, CTM | Interpolated |
| 250 | John Deere | RE543187 | Interpolated | Hotstart | CB & CL, CTM | Interpolated |
| 275 | John Deere | RE543187 | Interpolated | Hotstart | CB & CL, CTM | Interpolated |
| 300 | John Deere | RE527933 | Interpolated | Hotstart | CB & CL, CTM | Interpolated |
| 350 | John Deere | RE527933 | Interpolated | Hotstart | CB & CL, CTM | Interpolated |
| 400 | John Deere | RE527933 | 3A / 3B / 4A / 4B / 4C | Hotstart | CB & CL, CTM | 3A / 3B / 4A / 4B / 4C |

## Table 6E - Certified Engine Sub-Component Matrix

| kW | Engine Control Module | | | Air Filter Assembly | | |
|---|---|---|---|---|---|---|
| | Manufacturer | Model Number | UUT | Manufacturer | Model Number | UUT |
| 30 | John Deere | RE523966 | 1A / 1B / 2A / 2B / 2C | Parker | ECO II 3 inch | 1A / 1B / 2A / 2B / 2C |
| 40 | John Deere | RE528702 | Interpolated | Parker | ECO II 3 inch | Interpolated |
| 50 | John Deere | RE528702 | Interpolated | Parker | ECO II 3 inch | Interpolated |
| 60 | John Deere | RE528702 | Interpolated | Parker | ECO II 3 inch | Interpolated |
| 80 | John Deere | RE526588 | Interpolated | Parker | ECO II 3 inch | Interpolated |
| 100 | John Deere | RE526588 | Interpolated | Parker | ECO II 3 inch | Interpolated |
| 125 | John Deere | RE526588 | Interpolated | Parker | ECO II 4 inch | Interpolated |
| 150 | John Deere | RE526588 | Interpolated | Parker | ECO II 4 inch | Interpolated |
| 180 | John Deere | RE531808 | Interpolated | Parker | ECO II 4 inch | Interpolated |
| 200 | John Deere | RE531808 | Interpolated | Parker | ECO II 5 inch | Interpolated |
| 225 | John Deere | RE531808 | Interpolated | Parker | ECO II 5 inch | Interpolated |
| 250 | John Deere | RE531808 | Interpolated | Parker | ECO II 5 inch | Interpolated |
| 275 | John Deere | RE531808 | Interpolated | Parker | ECO II 5 inch | Interpolated |
| 300 | John Deere | RE520954 | Interpolated | Parker | ECO II 6 inch | Interpolated |
| 350 | John Deere | RE520954 | Interpolated | Parker | ECO II 6 inch | Interpolated |
| 400 | John Deere | RE520954 | 3A / 3B / 4A / 4B / 4C | Parker | ECO II 6 inch | 3A / 3B / 4A / 4B / 4C |

## Table 7 - Certified Alternator Matrix

| kW | Manufacturer Model | Manufacturer | UUT |
|---|---|---|---|
| 30 | PI144G-311, PI144H-311, PI144J-311, PI144K-311, **UCI224C-311**, UCI224D-311, UCI224E-311, PI144G-06, PI144H-06, PI144J-06, PI144K-06, UCI224C-06, UCI224D-06, UCI224E-06 | Cummins | 1A / 1B / 2A / 2B / 2C |
| 40 | PI144J-311, PI144K-311, UCI224C-311, UCI224D-311, UCI224E-311, UCI224F-311, UCI224G-311, PI144J-06, PI144K-06, UCI224C-06, UCI224D-06, UCDI224E-06, UCDI224F-06, UCDI224G-06 | Cummins | Interpolated |
| 50 | UCI224D-311, UCI224E-311, UCI224F-311, UCI224G-311, UCI274C-311, UCI224D-06, UCI224E-06, UCI224F-06, UCI224G-06, UCI274C-06 | Cummins | Interpolated |
| 60 | UCI224E-311, UCI224F-311, UCI224G-311, UCI274C-311, UCI274D-311, UCI224E-06, UCI224F-06, UCI224G-06, UCI274C-06, UCI274D-06 | Cummins | Interpolated |
| 80 | UCI224G-311, UCI274C-311, UCI274D-311, UCI274E-311, UCI274F-311, UCI224G-06, UCI274C-06, UCI274D-06, UCI274E-06, UCI274F-06 | Cummins | Interpolated |
| 100 | UCI274C-311, UCI274D-311, UCI274E-311, UCI274F-311, UCI274G-311, UCI274C-06, UCI274D-06, UCI274E-06, UCI274F-06, UCI274G-06, | Cummins | Interpolated |
| 125 | UCI274D-311, UCI274E-311, UCI274F-311, UCI274G-311, UCI274H-311, UCI274D-06, UCI274E-06, UCI274F-06, UCI274G-06, UCI274H-06 | Cummins | Interpolated |
| 150 | UCI274E-311, UCI274F-311, UCI274G-311, UCI274H-311, HCI434C-311, UCI274E-06, UCI274F-06, UCI274G-06, UCI274H-06 | Cummins | Interpolated |
| 180 | UCI274G-311, UCI274H-311, HCI434C-311, HCI434D-311 | Cummins | Interpolated |
| 200 | UCI274G-311, UCI274H-311, HCI434C-311, HCI434D-311, HCI434E-311 | Cummins | Interpolated |
| 225 | UCDI274J-311, UCDI274K-311, HCI434C-311, HCI434D-311, HCI434E-311, HCI434F-311 | Cummins | Interpolated |
| 250 | UCDI274K-311, HCI434C-311, HCI434D-311, HCI434E-311, HCI434F-311, HCI534C-311 | Cummins | Interpolated |
| 275 | HCI434D-311, HCI434E-311, HCI434F-311, HCI534C-311 | Cummins | Interpolated |
| 300 | HCI434D-311, HCI434E-311, HCI434F-311, HCI534C-311, HCI534D-311 | Cummins | Interpolated |
| 350 | HCI434E-311, HCI434F-311, HCI534C-311, HCI534D-311, HCI534E-311 | Cummins | Interpolated |
| 400 | HCI434F-311, HCI534C-311, HCI534D-311, **HCI534E-311**, HCI534F-311 | Cummins | 3A / 3B / 4A / 4B / 4C |

## Table 8 - Certified Radiator Matrix

| kW Range | Baldor Part Number | Manufacturer | UUT |
|---|---|---|---|
| 30 | CY0001A07 | Cummins | 1A / 1B / 2A / 2B / 2C |
| 40 - 50 | CY0001A67 | Cummins | Interpolated |
| 60 | CY0001A67 | Cummins | Interpolated |
| 80 - 100 | CY0001A44 | Cummins | Interpolated |
| 125 - 150 | CY0001A34 | Cummins | Interpolated |
| 180 - 200 | EA0006A97 | Cummins | Interpolated |
| 225 - 275 | CY0001A86 | Cummins | Interpolated |
| 300 - 400 | CY0001A12 | Cummins | 3A / 3B / 4A / 4B / 4C |

## Table 9 - Certified Skid Matrix

| kW Range | Baldor Part Number or Material / Thickness | Manufacturer | UUT |
|---|---|---|---|
| 30 | HSLA steel / 7 Gauge | Baldor | 1A / 1B / 2A / 2B / 2C |
| 40 - 60 | HSLA steel / 7 Gauge | Baldor | Interpolated |
| 80 - 100 | HSLA steel / 7 Gauge | Baldor | Interpolated |
| 125 - 200 | HSLA steel / 7 Gauge | Baldor | Interpolated |
| 225 - 350 | HSLA steel / 0.25" | Baldor | Interpolated |
| 400 | HSLA steel / 0.25" | Baldor | 3A / 3B / 4A / 4B / 4C |

HSLA = High Strength Low Alloy

## Table 10 - Certified Controller Matrix

| kW Range | Manufacturer Model | Manufacturer | UUT |
|---|---|---|---|
| 30 - 400 | IL-NT | Baldor | 1A / 1B / 2A / 2B / 2C |
| | IG-NT | Baldor | 3A / 3B / 4A / 4B / 4C |

## Table 11A - Certified Controller Sub-Component Matrix

| kW Range | Breaker | | | Emergency Stop Switch | | |
|---|---|---|---|---|---|---|
| | Manufacturer | Material | UUT | Manufacturer | Material | UUT |
| 30 - 400 | Square D | PCB | 1A / 1B / 2A / 2B / 2C 3A / 3B / 4A / 4B / 4C | IDEC | Plastic | 1A / 1B / 2A / 2B / 2C 3A / 3B / 4A / 4B / 4C |

PCB = Printed Circuit Board

## Table 11B - Certified Controller Sub-Component Matrix

| kW Range | Vacuum Fluorescent Display | | | Key Selector Switch | | |
|---|---|---|---|---|---|---|
| | Manufacturer | Material | UUT | Manufacturer | Material | UUT |
| 30 - 400 | ComAp | Plastic | 1A / 1B / 2A / 2B / 2C 3A / 3B / 4A / 4B / 4C | IDEC | PCB | 1A / 1B / 2A / 2B / 2C 3A / 3B / 4A / 4B / 4C |

PCB = Printed Circuit Board

## Table 11C - Certified Controller Sub-Component Matrix

| kW Range | Terminal Block | | | Circuit Breaker | | |
|---|---|---|---|---|---|---|
| | Manufacturer | Material | UUT | Manufacturer | Material | UUT |
| 30 - 400 | Marathon | Plastic | 1A / 1B / 2A / 2B / 2C 3A / 3B / 4A / 4B / 4C | Square-D | Plastic | 1A / 1B / 2A / 2B / 2C 3A / 3B / 4A / 4B / 4C |
| | Vernitron | Plastic | 1A / 1B / 2A / 2B / 2C 3A / 3B / 4A / 4B / 4C | | | |

## Table 12 - Certified Other Sub-Components

| kW Range | Description | Model Number | Manufacturer | UUT |
|---|---|---|---|---|
| 30 - 400 | Receptacle & Switch Enclosure | 521711234E | Steel City / T & B | 3A / 3B |
| 30 - 400 | Receptacle | 2095I | Pass & Seymour | 3A / 3B |
| 30 - 400 | Lighting | VK1GC | Crescent & Stonco | 3A / 3B |
| 30 - 400 | Light Switches | HBL1201 / HBL1203 | Hubbell | 3A / 3B |
| 30-400 | Motorized Louvers | OpenAir GCA / OpenAir GMA | Siemens | 3A / 3B |

Steel City/T & B is one company. Steel City is a subsidiary of Thomas & Betts

Pass & Seymour is one company.

Crescent & Stonco is one company.

## Table 13 - Shake Test Matrix

| UUT | Model | Tank | | Enclosure | | Length [ in ] | Width [ in ] | Height [ in ] | Measured Oper Wt [ lbs ] | Lowest Nat. Freq. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Capacity [ gal ] | Fluid Level | Type | Material | | | | | X | Y | Z |
| 1A | IDLC30-3JU | 202 | Full | Sound Lvl 1 | Carbon Steel | 118.50 | 50.00 | 92.50 | 6,100 | 5.8 | 7.0 | 10.9 |
| 1B | IDLC30-3JU | 202 | Empty | Sound Lvl 1 | Carbon Steel | 118.50 | 50.00 | 92.50 | 4,500 | 5.3 | 6.9 | 12.2 |
| 2A | IDLC30-3JU | 202 | Full | N/A | N/A | 84.00 | 48.00 | 71.00 | 4,200 | 6.5 | 6.1 | 11.2 |
| 2B | IDLC30-3JU | 202 | Empty | N/A | N/A | 84.00 | 48.00 | 71.00 | 2,600 | 6.4 | 6.3 | 13.5 |
| 2C | IDLC30-3JU | N/A | N/A | N/A | N/A | 84.00 | 48.00 | 49.00 | 1,800 | 6.1 | 7.3 | 12.7 |
| 3A | IDLC400-3J | 1,705 | Full | Sound Lvl 2 | Aluminum | 227.50 | 74.00 | 158.50 | 26,800 | 4.3 | 7.0 | 9.8 |
| 3B | IDLC400-3J | 1,705 | Empty | Sound Lvl 2 | Aluminum | 227.50 | 74.00 | 158.50 | 14,000 | 2.3 | 6.4 | 12.1 |
| 4A | IDLC400-3JU | 1,705 | Full | N/A | N/A | 159.00 | 72.00 | 128.00 | 25,400 | 6.5 | 6.4 | 9.3 |
| 4B | IDLC400-3JU | 1,705 | Empty | N/A | N/A | 159.00 | 72.00 | 128.00 | 12,600 | 5.3 | 6.2 | 11.2 |
| 4C | IDLC400-3JU | N/A | N/A | N/A | N/A | 159.00 | 72.00 | 80.00 | 8,900 | 4.8 | 6.1 | 11.7 |

Shake Test Matrix Component Table

| UUT | Engine Mnf. | Alternator Mnf. | Radiator Mnf. | Controller | | $S_{DS}$ | z/h | $A_{FLX-H}$ | $A_{RIG-H}$ | $A_{FLX-V}$ | $A_{RIG-V}$ | Mounting Config. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Model | Mnf. | | | | | | | |
| 1A<br>1B<br>2A<br>2B<br>2C<br>3A<br>3B<br>4A<br>4B<br>4C | John Deere | Cummins | Diesel Radiator | IL-NT | CompAp | 2.00<br>2.50 | 1.0<br>0.0 | 3.20 | 2.40 | 1.67 | 0.67 | Rigid |

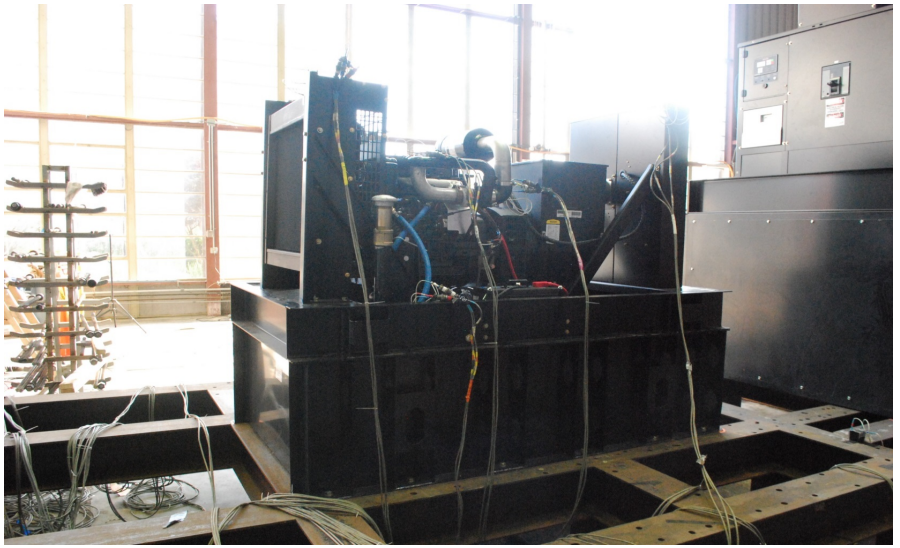
**Notes:**

1) All sub-base fuels tanks are UL142 certified

2) All units were filled with contents and maintained functionality and structural integrity.

## Table 13 - Shake Test Matrix

**UUTs 1A & 1B (Same Unit Tested With and Without Water)**
Sub-Base Fuel Tank is Mounted Directly to the Fixture Using (12) 3/4” Diameter ASTM A490 Bolts.



**UUTs 2A & 2B (Same Unit Tested With and Without Water)**
Sub-Base Fuel Tank is Mounted Directly to the Fixture Using (12) 3/4” Diameter ASTM A490 Bolts.

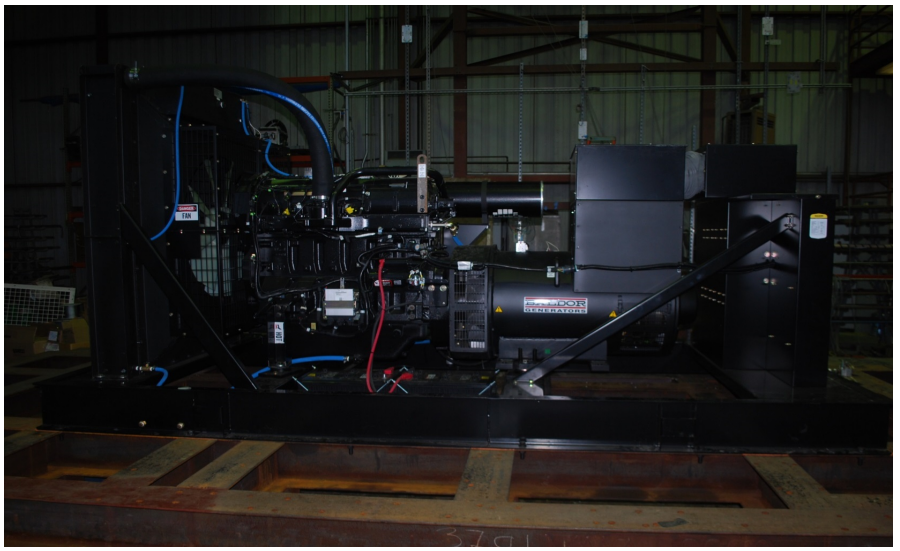
**UUT 2C**
Genset Skid is Mounted Directly to the Fixture Using (12) 3/4” Diameter ASTM A490 Bolts.


**UUTs 3A & 3B (Same Unit Tested With and Without Water)**
Sub-Base Fuel Tank is Mounted Directly to the Fixture Using (12) 3/4” Diameter ASTM

## Table 13 - Shake Test Matrix

A490 Bolts.

**UUTs 4A & 4B (Same Unit Tested With and Without Water)**
Sub-Base Fuel Tank is Mounted Directly to the Fixture Using (12) 3/4” Diameter ASTM A490 Bolts.



**UUT 4C**
Genset Skid is Mounted Directly to the Fixture Using (12) 3/4” Diameter ASTM A490 Bolts.