



OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT  
FACILITIES DEVELOPMENT DIVISION

APPLICATION FOR OSHPD SPECIAL SEISMIC  
CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY

APPLICATION #: OSP - 0415 - 10

OSHPD Special Seismic Certification Preapproval (OSP)

Type:  New  Renewal

Manufacturer Information

Manufacturer: Toshiba International Corporation

Manufacturer's Technical Representative: Jhonny Cardenas

Mailing Address: 13131 West Little York Rd., Houston, Texas 77041

Telephone: 713-466-0277 Ext.3618 Email: MV.DRIVE.SEISMICS@TIC.TOSHIBA.COM

Product Information

Product Name: YORK OptiSpeed & Toshiba T300MVi Drives

Product Type: Medium Voltage Adjustable Speed Drives

Product Model Number: See Attachment 1, Table 1

(List all unique product identification numbers and/or part numbers)

General Description: Medium Voltage Adjustable Speed Drives for the control of AC induction motors. Seismic enhancements made to the test units and modifications required to address the anomalies observed during the tests shall be incorporated into the production units.

Mounting Description: Rigid base mounted.

Applicant Information

Applicant Company Name: EASE Co.

Contact Person: Jonathan Roberson, S.E.

Mailing Address: 5877 Pine Ave, Suite 210, Chino Hills, CA. 91709

Telephone: (909) 606-7622 Email: J.Roberson@EASECo.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: 11/14/2014

Title: Principal Engineer Company Name: EASE Co.

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





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

Company Name:           EASE Co.          

Name: Jonathan Roberson, S.E. California License Number: S4197

Mailing Address: 5877 Pine Ave, Suite 210, Chino Hills, CA. 91709

Telephone: (909) 606-7622 Email: J.Roberson@EASECo.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: Environmental Testing Laboratory, Inc.

Contact Name: Brady Richard

Mailing Address: 11034 Indian Trail, Dallas, TX 75229-3513

Telephone: 972-247-9657 Email: brady@etldallas.com

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**Seismic Parameters**

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

Design Basis of Equipment or Components ( $F_p/W_p$ ) = 1.13 @ SDS=2.5 & 1.17 @ SDS=1.56

$S_{DS}$  (Design spectral response acceleration at short period, g) = 2.5 @ z/h=0 & 1.56 @ z/h = 1

$a_p$  (In-structure equipment or component amplification factor) = 2 1/2

$R_p$  (Equipment or component response modification factor) = 6

$\Omega_0$  (System overstrength factor) = 2 1/2

$I_p$  (Importance factor) = 1.5

z/h (Height factor ratio) = 0 & 1 (See  $S_{DS}$  above)

Equipment or Component Natural Frequencies (Hz) = See Attachment 2

Overall dimensions and weight (or range thereof) = See Attachment 1, Table 1

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) = \_\_\_\_\_

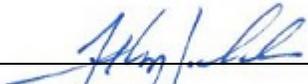
Tank(s) designed in accordance with ASME BPVC, 2010:  Yes  No

**List of Attachments Supporting Special Seismic Certification**

Test Report(s)  Drawings  Calculations  Manufacturer's Catalog

Other(s) (Please Specify): Attachments 1 & 2

**OSHPD Approval (For Office Use Only) – Approval Expires on December 31, 2019**

Signature:  Date: March 9, 2015

Print Name: Timothy J. Piland Title: SSE

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

Condition of Approval (if applicable): \_\_\_\_\_



**ATTACHMENT 1: SEISMIC CERTIFIED COMPONENTS**

**TABLE 1: SEISMIC CERTIFIED SYSTEMS & COMPONENTS**

<i>Manufacturer</i>		<b>TOSHIBA INTERNATIONAL CORPORATION</b>						
<i>Product Line</i>		<b>YORK Optispeed &amp; Toshiba T300MVi Medium Voltage Adjustable Speed Drives</b>						
<b>COMPONENT</b>	<b>MODEL NO.</b>	<b>DIMENSIONS (IN.)</b>			<b>APPROX. WT. (LB.)</b>	<b>MOUNT</b>	<b>BASIS <sup>(1)</sup></b>	
		<b>W</b>	<b>D</b>	<b>H</b>				
YORK, OptiSpeed 4160V,1000HP,YK OIL PUMP	TX-024-39341-313	122.0	43.4	103.7	9,200	Rigid Base	INT	
YORK, OptiSpeed 4160V,1250HP,YK OIL PUMP	TX-024-39341-314	122.0	43.4	103.7	10,400	Rigid Base	INT	
YORK, OptiSpeed 4160V,1500HP,YK OIL PUMP	TX-024-39341-315	122.0	43.4	103.7	11,200	Rigid Base	INT	
YORK, OptiSpeed 4160V,1750HP,YK OIL PUMP	TX-024-39341-316	122.0	43.4	103.7	12,100	Rigid Base	INT	
YORK, OptiSpeed 4160V,2000HP,YK OIL PUMP	TX-024-39341-317	122.0	43.4	103.7	12,700	Rigid Base	UUT-1	
Toshiba T300MVi,4160V,1000HP,124A,INT	M3A44100SAAS	122.0	43.4	103.7	9,000	Rigid Base	INT	
Toshiba T300MVi,4160V,1250HP,155A,INT	M3A44125SAAS	122.0	43.4	103.7	10,200	Rigid Base	INT	
Toshiba T300MVi,4160V,1500HP,186A,INT	M3A44150SAAS	122.0	43.4	103.7	11,000	Rigid Base	INT	
Toshiba T300MVi,4160V,1750HP,217A,INT	M3A44175SAAS	122.0	43.4	103.7	11,900	Rigid Base	INT	
Toshiba T300MVi,4160V,2000HP,248A,INT	M3A44200SAAS	122.0	43.4	103.7	12,500	Rigid Base	INT	
Toshiba T300MVi,4160V,1000HP,124A,EXT	M3A44100SABS	122.0	43.4	103.7	8,900	Rigid Base	INT	
Toshiba T300MVi,4160V,1250HP,155A,EXT	M3A44125SABS	122.0	43.4	103.7	10,100	Rigid Base	INT	
Toshiba T300MVi,4160V,1500HP,186A,EXT	M3A44150SABS	122.0	43.4	103.7	10,900	Rigid Base	INT	
Toshiba T300MVi,4160V,1750HP,217A,EXT	M3A44175SABS	122.0	43.4	103.7	11,800	Rigid Base	INT	
Toshiba T300MVi,4160V,2000HP,248A,EXT	M3A44200SABS	122.0	43.4	103.7	12,400	Rigid Base	INT	
T300MVi,4160V,2250HP,279A,INT	M3A44225SAAS	164.0	49.5	103.7	15,700	Rigid Base	INT	
T300MVi,4160V,2500HP,310A,INT	M3A44250SAAS	164.0	49.5	103.7	16,500	Rigid Base	INT	
T300MVi,4160V,2250HP,279A,EXT	M3A44225SABS	164.0	49.5	103.7	15,600	Rigid Base	INT	
T300MVi,4160V,2500HP,310A,EXT	M3A44250SABS	164.0	49.5	103.7	16,400	Rigid Base	INT	
YORK, OptiSpeed 4160V,2250HP,YK OIL PUMP	TX-024-39341-318	164.0	49.5	103.7	15,900	Rigid Base	INT	
YORK, OptiSpeed 4160V,2500HP,YK OIL PUMP	TX-024-39341-319	164.0	49.5	103.7	16,700	Rigid Base	UUT-2	
<i>Mounting</i>	<b>RIGID BASE (FLOOR):</b> a free-standing, base mounted condition with the component rigidly attached to a supporting structure and no lateral support above the base.							
<i>Enclosure</i>	Powder coated carbon steel. NEMA 1 Ventilated, & IP20 Per IEC-60529; Gasket & Filter; Free-Standing; Front-Access Only.							
<i>Notes</i>	1. BASIS: <ul style="list-style-type: none"> <li>• UUT#: Indicates that a test specimen matching these characteristics was tested as part of this testing program.</li> <li>• INT (Interpolate/Extrapolate): indicates a model that was not specifically tested, and by which seismic certification is established through evaluation of testing of other, similar models in the product line</li> </ul>							

**ATTACHMENT 1: SEISMIC CERTIFIED COMPONENTS**

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**TABLE 2: SEISMICALLY CERTIFIED SUBCOMPONENTS**

SUBCOMPONENT	DESCRIPTION/RATING	MANUFACTURER	MODEL/PART NO.	BASIS
Primary Fuses	FUSE E/200E 5.5KV 12D	Mersen	PC16101P663	INT
	FUSE E/250E 5.5KV 12DD	Mersen	PC16101P671	INT
	FUSE E/300E 5.5KV 12DD	Mersen	PC16101P672	INT
	FUSE E/350E 5.5KV 12DD	Mersen	PC16101P673	UUT-1
	FUSE E/400E 5.5KV 12DD	Mersen	PC16101P674	UUT-2
Input Controller	ASSY,INPUT CONTROLLER, 7.2kV, 360A	Toshiba Int'l Corp	GCI6721G100SE-YRK	UUT-1
	ASSY,INPUT CONTROLLER, 7.2kV, 360A	Toshiba Int'l Corp	GCI6721G100SE	SAME
	ASSY,INPUT CONTROLLER, 7.2kV, 360A	Toshiba Int'l Corp	GCI6722G100SEYRK	SAME
	ASSY,INPUT CONTROLLER, 7.2kV, 360A	Toshiba Int'l Corp	GCI6722G100SE	UUT-2
Precharge Contactor	VACUUM CONTACTOR 7.2 kV, 400A	Toshiba Int'l Corp	HCV-5HA	UUT-1
Precharge Contactor	VACUUM CONTACTOR 5KV 400A/4160V	Toshiba Int'l Corp	HCV-5HA	UUT-2
Precharge Reactor	PRE-CHARGE REACTOR,4160V,1695kVA	Neeltran	PC34740P001	UUT-1
Precharge Reactor	PRE-CHRG REACTR,4160V,2119kVA	Neeltran	PC34740P002	UUT-2
Primary Transformer	XFMR,24 Pulse,4160V,1000HP,W/AUX,F1 SEISMIC	Hammond	PC32741P100S	INT
	XFMR,24 Pulse,4160V,1250HP,W/AUX SEISMIC	Hammond	PC32741P125S	INT
	XFMR,24 Pulse,4160V,1500HP,W/AUX SEISMIC	Hammond	PC32741P150S	INT
	XFMR,24 Pulse,4160V,1750HP,W/AUX SEISMIC	Hammond	PC32741P175S	INT
	XFMR,24 Pulse,4160V,2000HP,W/AUX SEISMIC	Hammond	PC32741P200S	UUT-1
	XFMR,24 Pulse,4160V,1000HP,F1 SEISMIC	Hammond	PC32740P100S	INT
	XFMR,24 Pulse,4160V,1250HP SEISMIC	Hammond	PC32740P125S	INT
	XFMR,24 Pulse,4160V,1500HP SEISMIC	Hammond	PC32740P150S	INT
	XFMR,24 Pulse,4160V,1750HP SEISMIC	Hammond	PC32740P175S	INT
	XFMR,24 Pulse,4160V,2000HP SEISMIC	Hammond	PC32740P200S	INT
	XFMR,24 Pulse,4160V,2250HP,W/AUX SEISMIC	Hammond	PC32741P225S	INT
	XFMR,24 Pulse,4160V,2500HP,W/AUX SEISMIC	Hammond	PC32741P250S	UUT-2
	XFMR,24 Pulse,4160V,2250HP SEISMIC	Hammond	PC32740P225S	INT
	XFMR,24 Pulse,4160V,2500HP SEISMIC	Hammond	PC32740P250S	INT
Rectifier Assembly	ASSY,RECTIFIERS W/ 200A FUSE PC15373P201	Toshiba Int'l Corp	GCI6721G060	INT
	ASSY,RECTIFIERS W/ 250A FUSE PC15373P250	Toshiba Int'l Corp	GCI6721G060	UUT-1
	ASSY,RECTIFIERS	Toshiba Int'l Corp	GCI6722G060	UUT-2
Power Module	ASSY,POWER MODULES,2000HP,4.16kV,BF,248A	Toshiba Int'l Corp	GCI6721G050BSE	UUT-1
	ASSY,Power Module,372A,4.16kV,HD	Toshiba Int'l Corp	GCI6722G050A	UUT-2
Fan Assembly	ASSY,FAN,SINGLE,3700CFM	Toshiba Int'l Corp	GCI6721G195-YRK	SAME
	ASSY,FAN,SINGLE,3700CFM	Toshiba Int'l Corp	GCI6721G195	UUT-1

**ATTACHMENT 1: SEISMIC CERTIFIED COMPONENTS**

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**TABLE 2: SEISMICALLY CERTIFIED SUBCOMPONENTS**

SUBCOMPONENT	DESCRIPTION/RATING	MANUFACTURER	MODEL/PART NO.	BASIS
	ASSY,FAN,3700CFM,SINGLE	Toshiba Int'l Corp	GCI6722G190	SAME
	ASSY,FAN,3700CFM,SINGLE	Toshiba Int'l Corp	GCI6722G190-YRK	UUT-2
Low Voltage Component Assembly	PWB/CNN/CTR,T300MVi	Toshiba Int'l Corp	GCI6721G280I-YRK	UUT-1
	PWB/CNN/CTR,T300MVi	Toshiba Int'l Corp	GCI6721G280I	INT
	PWB/CNN/CTR,YORK,2400,4.16k	Toshiba Int'l Corp	GCI6722G280I	INT
	PWB/CNN/CTR,YORK,2400,4.16k	Toshiba Int'l Corp	GCI6722G280I-YRK	UUT-2
Output Reactor	ACL,4160V,260/195A,0.1mH,300MV	Hitran	PC34741P101	UUT-1
	ACL,4160V,380A,0.10mH,T300MV	Hitran	PC34741P102	UUT-2
York CPT	CPT 4160:460/115 3/2KVA 5K' YK	Hitran	PC33260P103	UUT-1
	CPT 4160:460/115 3/2KVA 5K' YK	Hitran	PC33260P103	UUT-2
York CPT Fuses	FU E/3E 4.8KV 5.63	Mersen	PC16109P903	UUT-1
	FU E/3E 4.8KV 5.63	Mersen	PC16109P903	UUT-2
Notes	1. BASIS: <ul style="list-style-type: none"> <li>• UUT#: Indicates that a test specimen matching these characteristics was tested as part of this testing program.</li> <li>• INT (Interpolate/Extrapolate): indicates a model that was not specifically tested, and by which seismic certification is established through evaluation of testing of other, similar models in the product line</li> </ul>			

**ATTACHMENT 2: TEST SPECIMEN SUMMARY**

UUT-1 YORK OPTISPEED 2000HP MEDIUM VOLTAGE DRIVE								
MANUFACTURER:		Toshiba International Corporation						
IDENTIFICATION:		Model No.: MVVSD2000RK-84						
DESCRIPTION:		2000 HP, 4160 V, Frame 1 Adjustable Speed Drive YORK OptiSpeed interface, monitoring devices and control software. See Attachment 1, Table 2. <u>Optional features present in UUT:</u> 1. Seismic Configuration Option. 2. Interface, monitoring devices and control software unique to the Toshiba T300MVi brand product line. <u>Modifications to UUT made at Lab:</u> 1. Plastic cable ties added around DIN rail mounted relay in Control Section. 2. Torque on vertical tie rods securing Primary Transformers to support beam increase from 80 ft-lb to 100 ft-lb. 3. Plastic wire ties around FRP isolation shields at primary fuses.						
MOUNTING:		Rigid Base mount using (11) – 5/8" dia. hex head Gr.8 bolts w/ washers.						
PROPERTIES:								
DIMENSIONS (in.)				Weight (lb.)	LOWEST RESONANT FREQUENCY (Hz.)			
Width	Depth	Height	Side-Axis		Front-Axis	Vertical-Axis		
122	43	104	12,700	3.8	2.1	6.2		
SHAKE TABLE TEST PARAMETERS								
CODE	TEST CRITERIA	SDS	z/h	Ip	AFLX-H	ARIG-H	AFLX-V	ARIG-V
CBC 2013	ICC-ES AC156-12	1.56 2.00	1 0	1.5	2.50 2.50	1.87 1.00	1.05 1.68	0.42 0.68
Unit maintained structural integrity and functionality after the ICC-ES AC 156 test								



UUT-2 YORK OPTISPEED 2500HP MEDIUM VOLTAGE DRIVE								
MANUFACTURER:		Toshiba International Corporation						
IDENTIFICATION:		Model No.: MVVSD2500RK-84						
DESCRIPTION:		2500 HP, 4160 V, Frame 2 Adjustable Speed Drive YORK OptiSpeed interface, monitoring devices and control software. See Attachment 1, Table 2. <u>Optional features present in UUT:</u> • Seismic Configuration Option. • Interface, monitoring devices and control software unique to the Toshiba T300MVi brand product line. <u>Modifications to UUT made at Lab:</u> Plastic cable ties added around DIN rail mounted relay in Control Section.						
MOUNTING:		Rigid Base mount using (16) – 5/8" dia. hex head Gr.8 bolts w/ washers						
PROPERTIES:								
DIMENSIONS (in.)				Weight (lb.)	LOWEST RESONANT FREQUENCY (Hz.)			
Width	Depth	Height	Side-Axis		Front-Axis	Vertical-Axis		
164	50	104	16,700	2.5	9.3	5.2		
SHAKE TABLE TEST PARAMETERS								
CODE	TEST CRITERIA	S <sub>DS</sub>	z/h	I <sub>P</sub>	A <sub>F</sub> FLX-H	A <sub>R</sub> IG-H	A <sub>F</sub> FLX-V	A <sub>R</sub> IG-V
CBC 2013	ICC-ES AC156-12	1.56 2.00	1 0	1.5	2.50 2.50	1.87 1.00	1.05 1.68	0.42 0.68
Unit maintained structural integrity and functionality after the ICC-ES AC 156 test								

