APPLICATION FOR OSHPD SPECIAL SEISMIC CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY	
APPLICATION #:	OSP – 0515 – 10

OSHPD Special Seismic Certification Preapproval (OSP)

Type: ☒ New ☐ Renewal

Manufacturer Information

Manufacturer: ait-deutschland GmbH

Manufacturer's Technical Representative: Markus Zobler

Mailing Address: Industriestrasse 3; 95359 Kasendorf

Telephone: +49-9228-9906-1580 Email: markus.zobler@ait-deutschland.eu

Product Information

Product Name: cBoxX 60, cBoxX 70, Chiller Interface Panel (CIP), and Remote Control Panel (RCP)

Product Type: Water Chiller

Product Model Number: See Attachment
(List all unique product identification numbers and/or part numbers)

General Description: Chiller systems for cool fluid using air cooled refrigerant.

Mounting Description: Isolated floor mounted chillers and rigid wall mounted CIP and RCP units.

Applicant Information

Applicant Company Name: W.E. Gundy & Associates, Inc.

Contact Person: Travis Soppe, SE

Mailing Address: 250 Bobwhite Ct, Suite 100, Boise, ID 83706

Telephone: (208) 342-5898 Ext. 115 Email: tsoppe@wegai.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: Travis Soppe Date: 04-13-2017

Title: Vice President Company Name: W.E. Gundy & Associates, Inc.

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

Company Name: W.E. Gundy & Associates, Inc.

Name: Travis Soppe, SE California License Number: S6115

Mailing Address: 205 Bobwhite Ct, Suite 100, Boise, ID 83706

Telephone: (208) 342-5898 Ext. 115 Email: tsoppe@wegai.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: IABG mbH

Contact Name: Dr. Steffen Roedling

Mailing Address: Einsteinstrasse 20, Ottobrunn, Germany D-85521

Telephone: +49 (0) 89 / 6088-2052 Email: roedling@iabg.de

Seismic Parameters

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

Design Basis of Equipment or Components (F_p/W_p) = See attachment

S_{DS} (Design spectral response acceleration at short period, g) = 2.0 for z/h = 1.0 and 2.5 for z/h = 0

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

R_p (Equipment or component response modification factor) = See attachment

Ω_0 (System overstrength factor) = See attachment

I_p (Importance factor) = 1.5

z/h (Height factor ratio) = 1.0 at S_{DS} = 2.0g and 0 at S_{DS} = 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) =

Ω_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, 2015: ☐ Yes ☒ No

List of Attachments Supporting Special Seismic Certification

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

☒ Other(s) (Please Specify): Certified System Matrix, UUT Summary Sheets, Subcomponent Certification Letter

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

Signature: Date: June 12, 2017

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):

KKT Chillers - AIT Deutschland GmbH
SPECIAL SEISMIC CERTIFICATION
CERTIFIED SYSTEM AND COMPONENTS

WEGAI
W.E. GUNDY & ASSOCIATES, INC.
STRUCTURAL & EARTHQUAKE ENGINEERING

Manufacturer: KKT Chillers - AIT Deutschland GmbH

System: KKT Compact Chillers

System Component	KKT Chillers ID Number	Dimensions (in)			Weight (lb)	Mounting	UUT
		Width	Length	Height			
cBoxX 60 Chiller	909060-00244 909060-00424	79.9	48.8	32.7	1,300[2)]	flexible floor	UUT-1
cBoxX 70 Chiller	909070-00249 909070-00425	79.9	72.4	32.7	1,620[2)]	flexible floor	UUT-2
Chiller Interface Panel (CIP)	909000.0072	43.3	24.0	13.6	120	rigid wall	UUT-3
Remote Control Panel (RCP)	909000.0071	11.8	12.0	4.7	11	rigid wall	UUT-4

[1)] All components are manufactured by AIT Deutschland GmbH unless noted otherwise.The part numbers listed uniquely identify the type of component, manufacturer, and material of construction for each sub-component within the tested units.

[2)] Weight includes normal operating fluid used during seismic test.

[3)] The identified chillers each have two internal KKT identification numbers that are used for marketing. The chillers listed with the two identification numbers above are identical in design and construction.

SEISMIC CERTIFICATION LIMITS

System Component	Code	S_{DS} (g)	z / h	I_P	a_P	R_P	Ω_0	F_P / W_P
cBoxX 60 Chiller	CBC 2016 ASCE 7-10	2.0	1.0	1.50	2.5	2.5	2.0	3.60
		2.5	0					1.50
cBoxX 70 Chiller		2.0	1.0	1.50	2.5	2.5	2.0	3.60
		2.5	0					1.50
Chiller Interface Panel (CIP)		2.0	1.0	1.50	2.5	6.0	2.0	1.50
		2.5	0					1.13
Remote Control Panel (RCP)		2.0	1.0	1.50	2.5	6.0	2.0	1.50
		2.5	0					1.13

UUT-1	UNIT UNDER TEST (UUT) SUMMARY SHEET	WEGAI W.E. GUNDY & ASSOCIATES, INC. STRUCTURAL & EARTHQUAKE ENGINEERING

Mounting Details: Flexible floor mounted on 4 - AMC Mecanocaucho Marinelager S/N:136024 isolation devices. Each isolator connects to the UUT with one M16 Grade 8.8 bolt and mounts to the table with 2 - M12 Grade 8.8 bolts.

Manufacturer: KKT Chillers - AIT Deutschland GmbH

Component: Compact Chiller cBoxX 60 | **SAP Number:** 909060-00244

UUT Function: Cools liquids using an air cooled refrigerant system

UUT Description: KKT Compact Chiller with 66kW net cooling capacity. Unit is floor mounted on vibration isolators as detailed above.

Test Location: IABG mbH, Germany | **Test Date:** November 2016

UUT PROPERTIES

Weight (lb)*	Dimensions (inches)			Natural Fequency (Hz)		
	Width	Depth	Height	FB	SS	V
1,300	79.9"	48.8"	32.7"	4.2	3.0	9.4

*Weight includes normal operating fluid.

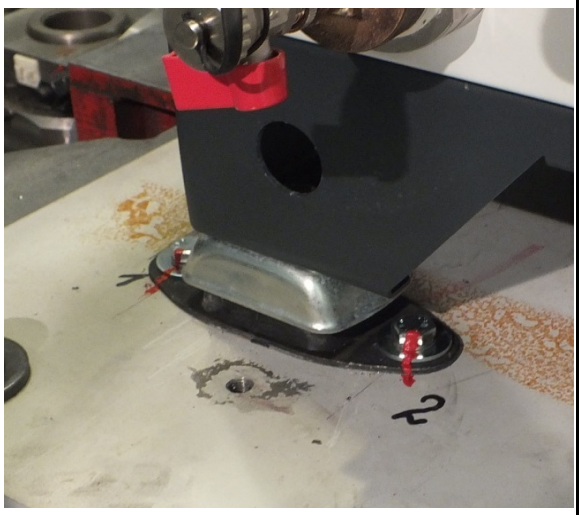
SEISMIC TEST PARAMETERS

Building Code / Test Criteria	S_{DS} (g)	z / h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016 / ICC-ES AC156	2.00	1.0	1.5	3.20	2.40		
	2.50	0.0	1.5			1.67	0.67

Note: The unit was full of contents during testing and remained fuctional before and after the ICC-ES AC156 test. The unit maintained structural integrity during and after the ICC-ES AC156 Test.

UUT-2	UNIT UNDER TEST (UUT) SUMMARY SHEET	WEGAI W.E. GUNDY & ASSOCIATES, INC. STRUCTURAL & EARTHQUAKE ENGINEERING

Mounting Details: Flexible floor mounted on 4 - AMC Mecanocaucho Marinelager S/N:136024 isolation devices. Each isolator connects to the UUT with one M16 Grade 8.8 bolt and mounts to the table with 2 - M12 Grade 8.8 bolts.



Manufacturer: KKT Chillers - AIT Deutschland GmbH

Component: Compact Chiller cBoxX 70 | **SAP Number:** 909070-00249

UUT Function: Cools liquids using an air cooled refrigerant system

UUT Description: KKT Compact Chiller with 79kW net cooling capacity. Unit is floor mounted on vibration isolators as detailed above.

Test Location: IABG mbH, Germany | **Test Date:** November 2016

UUT PROPERTIES

Weight (lb)*	Dimensions (inches)			Natural Fequency (Hz)		
	Width	Depth	Height	FB	SS	V
1,620	79.9"	72.4"	32.7"	4.8	2.6	8.5

*Weight includes normal operating fluid.

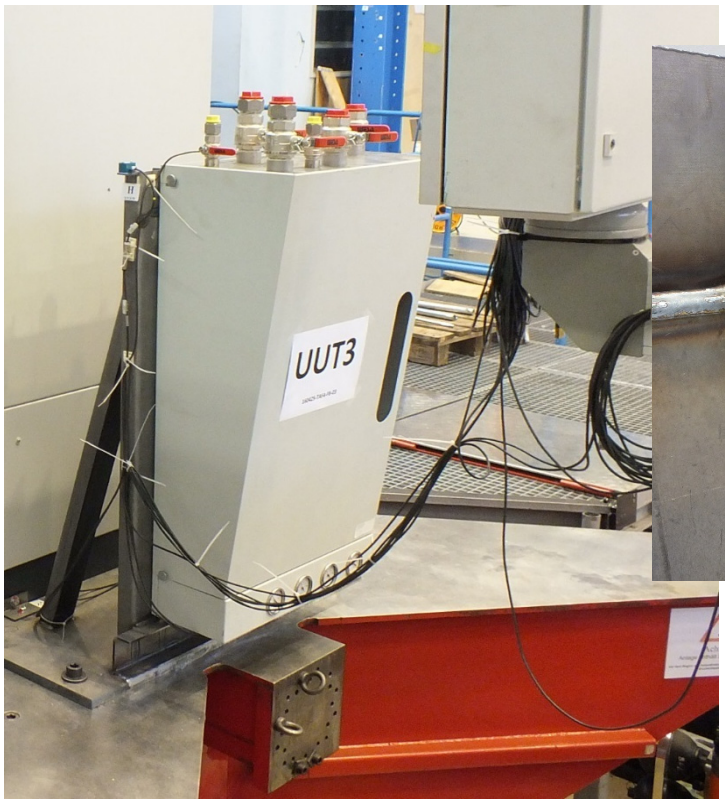
SEISMIC TEST PARAMETERS

Building Code / Test Criteria	S_{DS} (g)	z / h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016 / ICC-ES AC156	2.00	1.0	1.5	3.20	2.40		
	2.50	0.0	1.5			1.67	0.67

Note: The unit was full of contents during testing and remained fuctional before and after the ICC-ES AC156 test. The unit maintained structural integrity during and after the ICC-ES AC156 Test.

UUT-3	UNIT UNDER TEST (UUT) SUMMARY SHEET	WEGAI W.E. GUNDY & ASSOCIATES, INC. STRUCTURAL & EARTHQUAKE ENGINEERING

Mounting Details: Rigid wall mounted with 3 - M8 Grade 8.8 bolts



Manufacturer: KKT Chillers - AIT Deutschland GmbH

Component: Chiller Interface Panel (CIP) | **SAP Number:** 909000.0072

UUT Function: Serves as interface between connecting fluid lines and chiller

UUT Description: Component of KKT Chiller configurations. Contains pressure gauges, manual shut off valve, flow meter, and thermometer.

Test Location: IABG mbH, Germany | **Test Date:** April 2016

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Fequency (Hz)		
	Width	Depth	Height	FB	SS	V
120	43.3"	24.0"	13.6"	NA	NA	NA

SEISMIC TEST PARAMETERS

Building Code / Test Criteria	S_{DS} (g)	z / h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016 / ICC-ES AC156	2.00	1.0	1.5	3.20	2.40		
	2.50	0.0	1.5			1.67	0.67

Note: The unit was full of contents during testing and remained fuctional before and after the ICC-ES AC156 test. The unit maintained structural integrity during and after the ICC-ES AC156 Test.

UUT-4	UNIT UNDER TEST (UUT) SUMMARY SHEET	WEGAI W.E. Gundy & Associates, Inc. Structural & Earthquake Engineering

Mounting Details: Rigid wall mounted with 4 - M8 Grade 8.8 bolts

Manufacturer: KKT Chillers - AIT Deutschland GmbH

Component: Remote Control Panel (RCP) | **SAP Number:** 909000.0071

UUT Function: Remotely controls the KKT Compact Chillers

UUT Description: Remote control unit for KKT Compact Chiller configurations

Test Location: IABG mbH, Germany | **Test Date:** April 2016

UUT PROPERTIES

Weight (lb)	Dimensions (inches)			Natural Fequency (Hz)		
	Width	Depth	Height	FB	SS	V
11	11.8"	12.0"	4.7"	NA	NA	NA

SEISMIC TEST PARAMETERS

Building Code / Test Criteria	S_{DS} (g)	z / h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016 / ICC-ES AC156	2.00	1.0	1.5	3.20	2.40		
	2.50	0.0	1.5			1.67	0.67

Note: The unit was full of contents during testing and remained fuctional before and after the ICC-ES AC156 test. The unit maintained structural integrity during and after the ICC-ES AC156 Test.