Connie Goers

From: Labiche, Lance [Lance.Labiche@boemre.gov]
Sent: Monday, June 13, 2011 2:48 PM
To: Connie Goers
Cc: Adam Currier; Aimee Deady
Subject: RE: Arena ST 172, Well No. C003 - RPM For Zone Change Using Hercules Rig No. 265

Connie,

We have reviewed the hurricane jack-up application submitted for the *Hercules 265* Jack-up rig at the South Timbalier Block 172, "C" Platform. BOEMRE will allow the *Hercules 265* to be on the ST 172, "C" Platform through the entire 2011 hurricane season with the rig and procedures as described in your attached jack-up checksheet. Please attach this approval email along with the checksheet to your ewell submittal.

Thanks,

Lance Labiche
Petroleum Engineer
Bureau of Ocean Energy Management,
Regulation and Enforcement
504-736-2433 (Office)
504-329-2516 (Cell)
lance.labiche@boemre.gov

From: Connie Goers [mailto:connie@remsolutionsinc.com]
Sent: Monday, June 13, 2011 2:42 PM
To: Labiche, Lance
Cc: Adam Currier; Deady, Aimee P
Subject: Arena ST 172, Well No. C003 - RPM For Zone Change Using Hercules Rig No. 265

Lance:

Arena Offshore, LP currently has this rig on location at ST 161 C Platform, and anticipates moving same to ST 172 C Platform to perform a zone change operation on Well No. C003.

An indicated below, they could be ready to move off location on Friday to move to ST 172 C Platform.

Connie Goers
R.E.M. Solutions, Inc.
16290 Katy Freeway, Suite 150
Houston, TX. 77094
281.492.8562 (Main)
281.492.3240 (Direct)
281.492.6117 (Fax)

From: Adam Currier [mailto:adam@arenaoffshore.com]
Sent: Monday, June 13, 2011 1:41 PM
To: Connie Goers; Aimee Deady
Subject: FW: ST 172 C Platform Hurricane Checklist

Connie/Aimee,

See the attached checklist from Hercules for the 172 C location. We should be jacking down sometime on Friday to move to location.

Adam

From: Kevin Trahan [mailto:ktrahan@herculesoffshore.com]
Sent: Monday, June 13, 2011 12:44 PM
To: Adam Currier
Subject: RE: ST 172 C Platform Hurricane Checklist

Adam,

Attached is the hurricane rig fitness check sheet.

Please feel free to contact me if you have questions.

Thanks,

Kevin Trahan
Site Assessment Engineer
Hercules Offshore
713-350-8411 Phone
713-302-4688 Cell
ktrahan@herculesoffshore.com

From: Adam Currier [mailto:adam@arenaoffshore.com]
Sent: Wednesday, June 08, 2011 3:09 PM
To: Kevin Trahan; George Kelley
Cc: Connie Goers
Subject: FW: ST 172 C Platform Hurricane Checklist

Kevin,

I've attached the Hurricane checklist for the ST 172 C location and a soil boring re-assessment, the latest soil boring information we have. Please let me know what further information you will need from me. Thanks Kevin.

Adam

From: Connie Goers [mailto:connie@remsolutionsinc.com]
Sent: Wednesday, June 08, 2011 6:57 AM
To: Adam Currier
Subject: ST 172 C Platform Hurricane Checklist

Adam:

Attached is the Hurricane Checklist, which we will need completed for ST 172 and for GI 82. You will need to review the second and third spreadsheet and make changes as required before you send to the drilling contractor. When you complete, and send on to them, please copy me on the email.

We did not submit one for ST 161 C platform; and surprised BOEMRE did not require for the last approval we obtained. Anyway, I would suggest we go ahead and complete for ST 161 if you are going to be there for at least another week or so (I believe you told me yesterday about 14 days)…

Connie Goers
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Jack-up Checksheet: Minerals Management Service

Date	Action/Modification
11-Mar-09	Rev: 10 Password: "password"
24-Mar-09	Rev: 11 Optional page N/A added to options Yes/No. - Reporting of optional issues delete from Assessment page. Structural question after establishing class -removed since structure is USCG issue. Add comment to characterize estimate and calculations in Structural Factor. Location:: Brackets around scour issue (Max bearing area of spud can + 5ft on sand) for clarity Location: note added to explain answer after mat rig on <100 psf shear strength. Metocean: Max W.D. Rating removed from metocean page - irrelevant Corrected: Remove requirement for FofS of 1.3 in Survival storm on sand - FofS for Survival is
7-Apr-09	Max Airgap in Factors!p6 =62 not 62.5; Structures Tab - G26to G34 formula AE11 changed to AE14. Change G36 to a fill in field.

Incorporated References:
30 CFR 250.417 What must I provide if I plan to use a mobile offshore drilling unit (MODU)? -
NTL 2008-G10 June 1, 2008-Dec 1, 2013 -Guidelines for Jack-Up Drilling Rig Fitness Requirements for Hurricane Season
NTL 2008-G05 Shallow Hazards Program - April 1, 2008, to March 31, 2013
API RP 95J 1st Edition June 2006
Recommended Practice for Site Specific Assessment of Mobile Jack-up Units - Gulf of Mexico Annex (SNAME 5-5A) Rev 0 August 2006.
API 2 Int- Met 1st Edition, May 2007
OTC 17879 - Metocean Criteria for Jack-ups in the Gulf of Mexico - 2006
McClelland Engineers 1979 - Strength Characteristics of the Near Seafloor Continental Shelf Deposits of Northern Central Gulf of Mexico.
NOTE: This Checksheet does not constitute a rigorous engineering approach to safety. It merely provides a draft Checksheet for Permitting with whatever benefits/limitations that apply to that process. It in no-way confirms that the jack-up is suitable for the location. This is a Draft Checksheet and further calculations/information is required after suitable explanations are provided as requested herein. The User of this document should check accuracy and interpolation of any industry curves (e.g. API 95J, API 2 Int-Met, GoM Annex etc) to verify correctness and accuracy. prior to using.

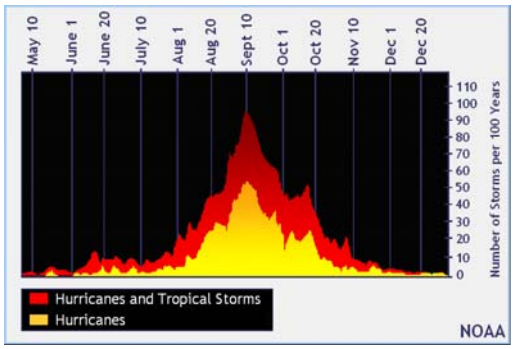
	To be filled in: Used in Calculating other entries
	To be filled in for Info only
	Red Flag warning - or requiring Explanation
	Green Flag warning - Explanation is probably not required.
	Explanation may be required or Explanation from another worksheet
123	Generally a response from another "cell" - No input needed
123	Responses for Assessment Results - from another "cell" - No input needed

Date on which Checksheet completed	
Drawing #, Revision & Date for Infrastructure Chart (if Submitted)	

Jack-up Checksheet

Location Assessment Worksheet

Jack-up Name:	Hercules 265	
Jack-up Owner:	Hercules Offshore	
Rig Type:	Mat Supported	
Operator:	Arena Energy	
Location Name:	ST 172 "C"	
Location Area	South Timbalier	
Block No	172	
OCS Designation:	G-01256	
Water Depth:	**108.0**	Feet
Rig Heading:	322.00	[deg-Grid]
Total Leg Length:	**321.0**	Feet
Distance over Guides	**44.0**	Feet
Proposed Air Gap:	**83.0**	Feet
Expected Penetration from bottom of mat	**0.0**	Feet
Latitude	28.53	Degrees (decimal)
Longitude	**90.60**	Degrees (decimal)
UTM-N (Grid)	-48,342.68	Feet
UTM-E (Grid)	2,234,251.90	Feet



Insert Explanation in this colored square/ column, if required by "Flag" in box to the left. It will appear on the "Assessment Results" worksheet. (It does not matter if it is not all entirely visible on this worksheet)

Potential Mudslide Area	Not in Mudslide Zone		Loc 1: Mudslide:
Leaseholder Data	LOW CONSEQUENCE FROM INFRASTRUCTURE	(Result from Leaseholder Data worksheet)	
Zone	West Central	(Result from Longitude value)	

Year Jack-Up was built	1982	
Maximum Design Water Depth (feet)	250 feet	
Reserve of Leg at this Location	**80 feet**	(Results from Structure worksheet)

NTL 2008-G10 Requirements:			Explain (if any)
Is the Geotech (soil) information supplied sufficient to determine the soil characteristics over depth and also sufficient to determine the foundation strength at the location to satisfy NTL 2008-G10?	Yes		Loc 2:
How will you comply w/ Airgap Requirement?	API 95J		
Are you anticipating Punchthru Conditions going onto location?	No		Loc 3:

GoM Annex Information & Survival Case Selection			
Does the jack-up meet the Structural and Foundation requirements of the SNAME GoM Annex (Assessment and Contingency cases)?	Yes		Loc 4:
What Return Period was selected by Drilling Contractor for the Survival Case?	10-Yr Int Met		Loc 5:
Operator minimum required Survival Storm (Full Population) was:	**10-Yr Int Met**		**Leaseholder 4:**

Overall Information - Independent Leg Units Only			
Mat Rig: Please ignore	Yes		Loc 6:
Mat Rig: Please ignore	Yes		Loc 7:
Mat Rig: Please ignore	Yes	**Please attach Load-Penetration Curve for soils to at least half the spudcan diameter below expected penetration. Show stillwater and preload reactions on the curve**	
Mat Rig: Please ignore	No		Loc 8:

Overall Information - Mat Units Only			
Is Soil shear strength <100 psf at mat penetration level? Note: Flag appears if either answer is YES or if the Value from the Geotech worksheet is below 100 psf)	No	Value from Geotech Worksheet:	**400**
Does the soil consist of Sand with High Current or Breaking Wave?	No		Loc 9:

Checksheet completed by:
Phone:
Email:
Kevin Trahan; 713-350-8411 office 713-350-8411 cell; ktrahan@herculesoffshore.com

Jack-up Checksheet

Leaseholder/Operator Provided Information Worksheet incl.
Infrastructure Proximity Information
Survivability Assumptions

Dates on Location				Item	Start and End Date	
Note that there is a ramping period from 1 Aug to 14 Aug before the peak and 7 Oct to 21 Oct after the peak. These ramping periods have been assumed to be within the "Peak Hurricane	Planned date for Arrival at Location	June	17th	Hurricane Season	1-Jun	30-Nov
	Planned date for Departure from Location	July	1st	Pre-Peak	1-Jun	1-Aug
	Days on Location	14	Days	Peak	1-Aug	20-Oct
	On Location during Hurricane Season?	Yes		Post Peak	20-Oct	30-Nov
	On Location during PEAK Hurricane Season?	No		Non-Hurricane	30-Nov	1-Jun

High Level Overview of Threat		
Not Peak: worst combination of weather and location has been avoided		Leaseholder: 1

Select from Potential Issues Below: Note "numeric" to all that apply

"Number of Items"	**Description of Critical Items: LEASEHOLDER SUPPLIED INFORMATION**

HIGH CONSEQUENCE

How Many Major Pipelines = or >12" , 200 yards of the jack-up?	0	Note: High or Medium Consequence sites trigger a check on Punchthrough going onto location: calculations to be used rather than estimates of Survivability: and a check against scour or sliding on location for mat units. If mitigations exist that downrates the consequence, then type "downrated" instead of the number to indicate there "was" a consequence that is downrated and the number will reduce to the default addition of other consequences
How Many Major Hub Structures (throughput >50,000 bopd or equivalent) are within 2	0	
How Many Critical Facilities (production >50,000 bopd or equivalent) within 2 miles?	0	
If jack-up is working in an area (2 mi) where H_2S is expected - type "1", otherwise type "0".	0	
How many Offshore Terminals or similar structures within 2 miles (e.g. LNG Offloading/ LOOP Facility)?	0	
Total Number of High Consequence Items	**0**	
If there are mitigating factors that would downgrade the consequences e.g. 12" pipeline flow is reduced or pipeline is abandoned: Please Explain : or type NONE	NONE	

Information on Calculation Requirements for High Consequence

Rigorous Calculations Required: Approximate Methods not allowed

MEDIUM CONSEQUENCE

How Many Major Pipelines (= or > 10" diam.) are <200 yards of the jack-up?	0	Note: As above, type in "downrated" if mitigating factors presented in the Explanation provide for downgrading of risk from criteria set.
How Many Major Hub Structures (throughput >10,000 bopd or equivalent) are within 2	0	
How Many Critical Facilities within 2 miles = or >10,000 bopd going through facility?	0	
Total Number of Medium Consequence Items	**0**	
If there are mitigating factors that would downgrade the consequences e.g. Critical facility is not on line: Please Explain: or type NONE	NONE	

Information on Calculation Requirements for Medium Consequence

Rigorous Calculations Required: Approximate Methods not allowed

LOW CONSEQUENCE

Anything Else

SUMMARY INFORMATION: LEASEHOLDER SUPPLIED INFORMATION

Consequence Summation for this Location from Above and Further Explanation of any consequence of movement	LOW CONSEQUENCE FROM INFRASTRUCTURE	Leaseholder 3 :	
What are your (Leaseholder/Operator) minimum requirements for the Survival Case at this location (GoM Annex)	10-Yr Int Met		Leaseholder 4:

Note: It may be necessary in the future to characterize Offshore Terminals close by, and Offshore Wind farms

NTL 2008-G10 Requirements: LEASEHOLDER SUPPLIED INFORMATION			Explain (if any)
Have you supplied Geotech (Soils) data sufficient to determine soil characteristics over depth and foundation strength of the proposed location (in satisfaction of the NTL 2008-G10) ?	Yes		Leaseholder 5:
Has data been supplied that allows a geotechnical professional to give a high confidence prediction of expected penetration and final soil beneath the spucan (e.g. a load-penetration curve)	Yes		Mat supported rig
Have you supplied the appropriate bottom survey data (shallow hazards survey and/or bottom Mesotech scan) for best positioning of the jack-up on location to satisfy NTL 2008-G10? Note: Guidance to requirements for shallow hazards is in NTL 2008-G05.	Yes		Leaseholder 7:
Is there a plan for the cantilever to be skidded in for a storm? Is there a plan for the conductor to be supported during the storm?	Yes Yes		Leaseholder 8:
What is the proposed depth below mudline of your storm packer? (feet)	100		

Jack-up Checksheet

Leaseholder/Operator Provided Information Worksheet incl.
Infrastructure Proximity Information
Survivability Assumptions

API RP 95 J Information: LEASEHOLDER SUPPLIED INFORMATION - HAZARD INFORMATION ONLY: NOT AS ONLY PENETRATION DATA			
Has there been a jack-up operating at this location before?	Yes		
Has the history of jack-up type and leg penetrations at position been provided?	Yes		Leaseholder 9:

Overall Information: LEASEHOLDER SUPPLIED INFORMATION			Explain (if any)
What is the year the site Geotechnical Information was obtained at the proposed site? (YYYY)	1981		
How Far Away from the Center of the Rig was the geotechnical information? (ft)	130		Leaseholder 10:
What is the basis of Soils Assumptions ?	Old Geotech	Optional Explanation of Suitability of the soil data for evaluating fitness for purpose	Leaseholder 11:
Has a Borehole Log been Provided?	No		
Description of Soil at Location			

Overall Information - Independent Leg Units Only: LEASEHOLDER SUPPLIED INFORMATION			Explain (if any)
Mat Rig: Please ignore	No		Leaseholder 13:

Date on which Leaseholder Information completed	6/8/2011
Drawing #, Revision & Date for Infrastructure Chart (if Submitted)	
Name of person completing Leaseholder Information: Phone: Email:	Adam V. Currier / 281-210-3115 / adam@arenaenergy.com

Jack-up Checksheet

Metocean Worksheet

Waterdepth (ft)	108

This worksheet's job is to develop the appropriate airgap, API 95J, or API Int-Met and to interrogate the various standards for wave height, wind speed, and current parameters from API 95J, API Int-Met and GOM Annex. If Site Specific numbers are available it requires you fill in those numbers here. Int-Met data is provided for comparison purposes only.

Please NOTE WARNING:
The numbers generated for the GoM Annex and API Int-Met need to be verified for correctness and accuracy. They are produced by curve fitting to the charts within these documents which should be referenced for correctness and change as appropriate.

Selected Airgap Compliance Method	API 95J
Airgap (ft)	83
Airgap Compliance with API 95J?	Complies with API 95J
API 95J Airgap (ft)	62.0
Sufficient Airgap for API 95J?	YES
Is the Location in the area that Int-Met requires Site-Specific Data?	NO
Airgap Compliance with Int-Met incl 3% and 4 ft settlement	YES
Airgap Compliance with Int-Met and no Contingency or Settlement	YES
Airgap Compliance with Site-Specific Data?	Please Ignore

Table For Site Specific Data: Survival Case	10-Yr Int Met
Report Source: Author/Company	
Return Period for Site-Specific (yrs)	
1-Min Wind for Site-Specric Return Period (kts)	
1-min Wind 100 Yr (kts)	
1-min Wind 50 Yr (kts)	
1-min Wind 10 Yr (kts)	
Crest Elevation = or > 100-year (ft)	0
Site-Specific Hmax (ft)	50
Tide = or > 100-year (ft)	0
Surge = or > 100-year (ft)	0
Contingency 3%-5% 3%	0.00
Settlement Amount	0
Airgap based on Site Specific data Total (ft)	0.00

Table For API Int-Met Data for Applicable Region -	
API INT-MET Region	West Central
1-min Wind 100 Yr (kts)	93.6
1-min Wind 50 Yr (kts)	83.3
1-min Wind 10 Yr (kts)	58.5
100 Year Hmax Int-Met (ft)	53.7
50 Year Hmax Int-Met (ft)	50.4
25 Year Hmax Int-Met (ft)	44.5
10 Year - see below	
100 Year Crest Elevation (ft) Incl (Surge & Tide)	44.4

Wave Heights	Value
Contingency Case (ft)	36.6
Assessment Case (ft)	32.5
Winter Storm Case (ft)	28.6
10-Yr Site Specific (ft)	

10 Year Hmax Int-Met (ft)	35.1

Wind Speed	1 Min mean / feet/sec
Return Period	Wind Speed
Contingency 1-min mean (kts)	65.4
Assessment 1-min mean (kts)	58.4
Winter Storm 1-min mean (kts)	52.3
10 yr Site Specific	0
50 yr Site Specific	0
100 yr Site Specific	0

Wind Speed	Int- Met Wind Speed
1-Min Mean Wind (knots)	1-Min Mean (knots)
65.4	
58.4	
52.3	
0.0	58.5
0.0	83.3
0.0	93.6

GOM Annex Current		
Designation	Value (kts)	
Contingency- Surface	2.33	
Contingency- MidDepth	2.08	
Contingency- Off Bottom	1.86	
Off Bottom Distance	-13.38	(ft)
Assessment- Surface	1.96	
Assessment- MidDepth	1.77	
Assessment- Off Bottom	1.64	
Off Bottom Distance	-13.38	(ft)
Winter Storm- Surface	1.48	
Winter-MidDepth	1.38	
Winter-Off Bottom	1.20	

Site Specific Current	feet/sec	
Return Period	Value	Value (kts)
10 Yr - Surface	1	0.6
10 Yr - MidDepth		0.0
10 Yr- Off-Bottom		0.0
Off Bottom Distance		0.0
50 Yr - Surface		0.0
50 Yr - MidDepth		0.0
50 Yr- Off-Bottom		0.0
Off Bottom Distance		0.0
100 Yr - Surface		0.0
100 Yr - MidDepth		0.0
100 Yr- Off-Bottom		0.0

Jack-up Checksheet

GEOTECH (SOILS) WORKSHEET

Note: Many of the items on this worksheet are input from other worksheets, and assembled on this page as a reminder of answers given elsewhere related to Geotech matters.

Note: 30 CFR 250.417 requires submission of information to show that site-specific soil and oceanographic conditions will support the drilling unit			
Rig Type:	Mat		
Consequence & Mudslide Potential:	LOW CONSEQUENCE FROM INFRASTRUCTURE		Not in Mudslide Zone
Waterdepth on Location (ft)	108		
Site-Specific Soils both Mat and Independent Leg Jack-ups			**Explanation (if any)**
Year the Site Geotechnical Information was obtained at the proposed site (YYYY)	Leaseholder Provided Data sheet	1981	Geotech 1:
What is the basis of Soils Assumptions	Old Geotech	**Optional Explanation of Suitability of the soil data for evaluating fitness for**	Leaseholder 11:
Description of Soil at the Location	Leaseholder Provided Data sheet	0	
Are you Relying on Mc Clelland Reference 1979? Or other similar reference; and Explanation if appropriate	No	→	Geotech 2:
Please ignore this block of questions for Mat Supported Jack-Up			
Independent Leg Jack-up Only			**Explanation (if any)**
Mat Rig: Please ignore			
Mat Rig: Please ignore	(See Leaseholder Provided Data worksheet)		
Mat Rig: Please ignore			Geotech 3:
Mat Rig: Please ignore	(See Location worksheet)		
Mat Rig: Please ignore		Survivability Selected on Location worksheet	
Mat Rig: Please ignore	0 feet	(from Location worksheet)	
Mat Rig: Please ignore	Sand		
Mat Rig: Please ignore	No		Geotech 4: this is ind leg
Mat Rig: Please ignore			
Mat Rig: Please ignore			
Please complete this Block of Questions for this Mat Supported Jack-Up			
Mat Jack-up Only			**Explanation (if any)**
How Far Away from the Center of the Rig was the geotechnical information? (ft)	130		Geotech 6:
What is the average Soil Shear Strength at the Seabed? (psf) (threshold value is < or > 100 psf)	400		Geotech 7:
Explanation of any consequence of movement: (Repeated from Leaseholder Data worksheet		→	Leaseholder 3 :
Sliding Calculation not Compulsory			**Geotech 8:**
Overturning Calculation not Compulsory			**Geotech 9:**
Scour Potential:	Scour less important at this location		Loc 9:
Expected Penetration including Skirt (ft)	2		
Skirt Height: (ft)	2		
Storm used for Evaluation based on Drilling Contractor's Survivability Case:	10-Yr Int Met	Survivability Selected on Location Page:	Loc 5:
Does the Geotechnical Information go to a depth equal to or greater than the width of the mat	Yes		Geotech 10:

Jack-up Checksheet

Jack-up Rig Information Worksheet - and Pre-Structural Evaluation

Principal Particulars:	
Length (ft)	166
Breadth (ft)	145
Depth (ft)	20
No of Legs	3
Cantilever (Yes/No)	Yes
No of Chords/leg (1-4)	N/A
If Other: Describe	Cylindrical

Arrangements at Location	
Reserve of Leg (ft)	80
Total Leg Length to Bottom of Mat	321
Distance Over Guides	44
Airgap (ft)	83
Waterdepth (ft)	108
Expected Penetration: surface to mat bottom (ft)	0

Zone:	West Central

Mat Length (ft)	236
Mat Height (excluding Skirt) (ft)	11
Mat Width	205
Skirt Height	2
Maximum Design Operating Waterdepth (ft)	250
Rig Type (Builder)	Bethlehem
Model	JU-250 MC
Classification - In Class?	Yes

Structure 1:

From the Location Sheet: The rig meets the Structural requirements of the SNAME GoM Annex (both curves)

Loc 4:

COMPARISON OF Benchmark Information to GoM Annex Cases						Survival Case as defined by GoM Annex	
Maximum Environmental Information: (may be contained in Marine Operating Manual) referred herein as "Benchmark" Cases (Optional)				**GoM Annex**	**GoM Annex**	**Survival Case in Full Population Hurricane**	**Please Ignore Below**
Note: 30 CFR 250.417 requires submission of maximum environmental and operating conditions: Fill in Closest match in #1, #2 and/or #3	**#1**	**#2**	**#3**	Assessment **Case**	Contingency **Case**	**10-Yr Int Met**	
Waterdepth (ft)				108.0	108.0	108.0	108.0
Wind Speed (kts)				58.4	65.4	58.5	
Wave Height (ft)				32.5	36.6	35.1	
Wave Period (secs)							
Surge Ht (ft)				Incl. in C.E.	Incl. in C.E.	Incl. in C.E.	
Tide (ft)				Incl. in C.E.	Incl. in C.E.	Incl. in C.E.	
Air Gap (ft)				83.0	83.0	83.0	83.0
Surface Current (kts)				1.96	2.33	1.5	
Penetration Assumed (ft)						0.0	0.0
Analysis Method:					**Calculated**	Estimated *	Estimated *

Note: Estimates and Calculations are subject to many variable factors. The stated "Structural Factor" is intended to be an inexact comparison of chosen storm to adjusted MOM storm conditions by those with sufficient experience to make an engineering judgement about the values.

Estimated/Calculated Amount of Structural Overload compared to calculated Design Conditions	Calculated	Calculated	Calculated			0.42	Structure Factor 2
Further Explanation if Needed:							